Supplemental Table-1

Ensembl_ID	ssociated Gene Nam	HGNC symbol	chr	start	end
ENSG00000115977	AAK1	AAK1	2	69688532	69901481
ENSG00000181409	AATK	AATK	17	79091095	79139872
ENSG00000165029	ABCA1	ABCA1	9	107543283	107690518
ENSG00000097007	ABL1	ABL1	9	133589268	133763062
ENSG00000143322	ABL2	ABL2	1	179068462	179198819
ENSG00000145348	TBCK	TBCK	4	106965474	107242652
ENSG00000167524	AC005726.6		17	26907030	26941474
ENSG00000162878	PKDCC	PKDCC	2	42275160	42285668
ENSG00000164327	RICTOR	RICTOR	5	38938021	39074510
ENSG00000185900	AC113191.1		8	42948658	42978577
ENSG00000177453	AC114947.1		5	43192173	43280952
ENSG00000141564	RPTOR	RPTOR	17	78518619	78940173
ENSG00000161533	ACOX1	ACOX1	17	73937596	73975515
ENSG00000197142	ACSL5	ACSL5	10	114133776	114188138
ENSG00000115170	ACVR1	ACVR1	2	158592958	158732374
ENSG00000135503	ACVR1B	ACVR1B	12	52345451	52390862
ENSG00000123612	ACVR1C	ACVR1C	2	158388888	158485517
ENSG00000114739	ACVR2B	ACVR2B	3	38495342	38524948
ENSG00000139567	ACVRL1	ACVRL1	12	52301202	52317145
ENSG00000168594	ADAM29	ADAM29	4	175750819	175899331
ENSG00000166106	ADAMTS15	ADAMTS15	11	130318869	130346532
ENSG00000140873	ADAMTS18	ADAMTS18	16	77316025	77469011
ENSG00000156218	ADAMTSL3	ADAMTSL3	15	84322838	84708594
ENSG00000063761	ADCK1	ADCK1	14	78266426	78400296
ENSG00000133597	ADCK2	ADCK2	7	140372953	140396061
ENSG00000123815	ADCK4	ADCK4	19	41197434	41222790
ENSG00000173137	ADCK5	ADCK5	8	145596790	145618457
ENSG00000173020	ADRBK1	ADRBK1	11	67033881	67054027
ENSG00000100077	ADRBK2	ADRBK2	22	25960816	26118985
ENSG00000142208	AKT1	AKT1	14	105235689	105262080
ENSG00000105221	AKT2	AKT2	19	40736224	40791302
ENSG00000117020	AKT3	AKT3	1	243651535	244013430
ENSG00000171094	ALK	ALK	2	29415640	30144432
ENSG00000073331	ALPK1	ALPK1	4	113206665	113363776
ENSG00000198796	ALPK2	ALPK2	18	56148479	56296189
ENSG00000136383	ALPK3	ALPK3	15	85359911	85416713
ENSG00000082146	STRADB	STRADB	2	202252581	202345574
ENSG00000138395	CDK15	CDK15	2	202655184	202760273
ENSG00000135409	AMHR2	AMHR2	12	53817639	53825318
ENSG00000171819	ANGPTL7	ANGPTL7	1	11249398	11256038
ENSG00000170209	ANKK1	ANKK1	11	113258513	113271140
ENSG00000160584	SIK3	SIK3	11	116714118	116969137
ENSG00000134982	APC	APC	5	112043195	112203279
ENSG00000115266	APC2	APC2	19	1450148	1473243
ENSG00000078061	ARAF	ARAF	X	47420516	47431307
ENSG00000177479	ARIH2	ARIH2	3	48956254	49023815
ENSG00000169379	ARL13B	ARL13B	3	93698983	93774512

ENSG00000185829	ARL17A	ARL17A	17	44594069	44657088
ENSG00000113966	ARL6	ARL6	3	97483365	97519953
ENSG00000143437	ARNT	ARNT	1	150782181	150849244
ENSG00000138303	ASCC1	ASCC1	10	73856278	73980083
ENSG00000169696	ASPSCR1	ASPSCR1	17	79935426	79975280
ENSG00000149311	ATM	ATM	11	108093211	108239829
ENSG00000175054	ATR	ATR	3	142168077	142297668
ENSG00000087586	AURKA	AURKA	20	54944445	54967393
ENSG00000178999	AURKB	AURKB	17	8108051	8113936
ENSG00000105146	AURKC	AURKC	19	57742377	57746915
ENSG00000103126	AXIN1	AXIN1	16	337440	402673
ENSG00000168646	AXIN2	AXIN2	17	63524685	63557765
ENSG00000108641	B9D1	B9D1	17	19244550	19281469
ENSG00000002330	BAD	BAD	11	64037302	64052176
ENSG00000175866	BAIAP2	BAIAP2	17	79008947	79091232
ENSG00000174483	BBS1	BBS1	11	66278077	66301098
ENSG00000125124	BBS2	BBS2	16	56518259	56554008
ENSG00000140463	BBS4	BBS4	15	72978527	73030817
ENSG00000163093	BBS5	BBS5	2	170335688	170382432
ENSG00000138686	BBS7	BBS7	4	122745595	122791652
ENSG00000122507	BBS9	BBS9	7	33168856	33645680
ENSG00000103507	BCKDK	BCKDK	16	31117428	31123888
ENSG00000121380	BCL2L14	BCL2L14	12	12202797	12363947
ENSG00000116128	BCL9	BCL9	1	147013182	147098017
ENSG00000186716	BCR	BCR	22	23521891	23660224
ENSG00000089685	BIRC5	BIRC5	17	76210277	76221715
ENSG00000136573	BLK	BLK	8	11351510	11422113
ENSG00000125378	BMP4	BMP4	14	54416454	54423529
ENSG00000204217	BMPR2	BMPR2	2	203241659	203432474
ENSG00000102010	BMX	BMX	X	15482369	15574652
ENSG00000157764	BRAF	BRAF	7	140424943	140624564
ENSG00000012048	BRCA1	BRCA1	17	41196312	41322290
ENSG00000139618	BRCA2	BRCA2	13	32889611	32973805
ENSG00000160469	BRSK1	BRSK1	19	55795534	55823901
ENSG00000174672	BRSK2	BRSK2	11	1411129	1483919
ENSG00000010671	BTK	BTK	X	100604435	100641183
ENSG00000166167	BTRC	BTRC	10	103113820	103317078
ENSG00000169679	BUB1	BUB1	2	111395275	111435691
ENSG00000156970	BUB1B	BUB1B	15	40453227	40513378
ENSG00000154473	BUB3	BUB3	10	124913793	124924886
ENSG00000107938	C10orf137	C10orf137	10	127408084	127452712
ENSG00000185823	C15orf2	C15orf2	15	24920541	24928593
ENSG00000163050	ADCK3	ADCK3	1	227085237	227175246
ENSG00000134072	CAMK1	CAMK1	3	9799026	9811676
ENSG00000183049	CAMK1D	CAMK1D	10	12391481	12877545
ENSG00000008118	CAMK1G	CAMK1G	1	209757062	209787283
ENSG00000070808	CAMK2A	CAMK2A	5	149599054	149669854
ENSG00000058404	CAMK2B	CAMK2B	7	44256749	44374176
ENSG00000145349	CAMK2D	CAMK2D	4	114372188	114683083
ENSG00000148660	CAMK2G	CAMK2G	10	75572259	75634343

ENSG00000152495	CAMK4	CAMK4	5	110559351	110830584
ENSG00000004660	CAMKK1	CAMKK1	17	3763609	3796338
ENSG00000110931	CAMKK2	CAMKK2	12	121675497	121736111
ENSG00000164076	CAMKV	CAMKV	3	49895421	49907655
ENSG00000187796	CARD9	CARD9	9	139256355	139268133
ENSG00000110092	CCND1	CCND1	11	69455855	69469242
ENSG00000134480	CCNH	CCNH	5	86687311	86708836
ENSG00000156345	CDK20	CDK20	9	90581356	90589695
ENSG00000156535	CD109	CD109	6	74405508	74538040
ENSG00000174807	CD248	CD248	11	66081958	66084515
ENSG00000079335	CDC14A	CDC14A	1	100810584	100985833
ENSG00000081377	CDC14B	CDC14B	9	99252523	99382112
ENSG00000170312	CDK1	CDK1	10	62538089	62554610
ENSG00000164045	CDC25A	CDC25A	3	48198636	48229892
ENSG00000101224	CDC25B	CDC25B	20	3767578	3786762
ENSG00000158402	CDC25C	CDC25C	5	137620954	137674044
ENSG00000008128	CDK11A	CDK11A	1	1571100	1655966
ENSG00000065883	CDK13	CDK13	7	39989636	40136733
ENSG00000155111	CDK19	CDK19	6	110931181	111137161
ENSG00000070831	CDC42	CDC42	1	22379120	22419437
ENSG00000143776	CDC42BPA	CDC42BPA	1	227177566	227506175
ENSG00000198752	CDC42BPB	CDC42BPB	14	103398717	103523799
ENSG00000171219	CDC42BPG	CDC42BPG	11	64590859	64612041
ENSG00000097046	CDC7	CDC7	1	91966404	91991321
ENSG00000134690	CDCA8	CDCA8	1	38158090	38175391
ENSG00000039068	CDH1	CDH1	16	68771128	68869444
ENSG00000185324	CDK10	CDK10	16	89747145	89762772
ENSG00000123374	CDK2	CDK2	12	56360556	56366565
ENSG00000108504	C17orf106	C17orf106	17	73975301	74002080
ENSG00000135446	CDK4	CDK4	12	58142005	58146164
ENSG00000164885	CDK5	CDK5	7	150750899	150755617
ENSG00000105810	CDK6	CDK6	7	92234235	92465908
ENSG00000134058	CDK7	CDK7	5	68530668	68573250
ENSG00000132964	CDK8	CDK8	13	26828276	26979375
ENSG00000136807	CDK9	CDK9	9	130547958	130553066
ENSG00000100490	CDKL1	CDKL1	14	50796310	50883179
ENSG00000138769	CDKL2	CDKL2	4	76503215	76555900
ENSG00000006837	CDKL3	CDKL3	5	133541305	133706738
ENSG00000205111	CDKL4	CDKL4	2	39402787	39456729
ENSG00000008086	CDKL5	CDKL5	X	18443703	18671749
ENSG00000111276	CDKN1B	CDKN1B	12	12867992	12875305
ENSG00000145835	AC011740.3		2	27050037	27050388
ENSG00000167513	CDT1	CDT1	16	88870186	88875665
ENSG00000138778	CENPE	CENPE	4	104026963	104119566
ENSG00000198707	CEP290	CEP290	12	88442961	88535747
ENSG00000149554	CHEK1	CHEK1	11	125495036	125546150
ENSG00000183765	CHEK2	CHEK2	22	29083731	29138410
ENSG00000109220	CHIC2	CHIC2	4	54875956	54930857
ENSG00000134121	CHL1	CHL1	3	238279	451090
ENSG00000213341	CHUK	CHUK	10	101948055	101989376

ENSG00000122966	CIT	CIT	12	120123595	120315095
ENSG00000163347	CLDN1	CLDN1	3	190023490	190040264
ENSG00000130779	CLIP1	CLIP1	12	122755979	122907179
ENSG00000092853	CLSPN	CLSPN	1	36185819	36235568
ENSG00000171603	CLSTN1	CLSTN1	1	9789084	9884584
ENSG00000103351	CLUAP1	CLUAP1	16	3550963	3586581
ENSG00000144619	CNTN4	CNTN4	3	2140497	3099645
ENSG00000005339	CREBBP	CREBBP	16	3775055	3930722
ENSG00000167258	CDK12	CDK12	17	37617739	37690800
ENSG00000182578	CSF1R	CSF1R	5	149432854	149492935
ENSG00000103653	CSK	CSK	15	75074425	75095539
ENSG00000164796	CSMD3	CSMD3	8	113235157	114449328
ENSG00000113712	CSNK1A1	CSNK1A1	5	148871760	148931007
ENSG00000180138	CSNK1A1L	CSNK1A1L	13	37677398	37679803
ENSG00000141551	CSNK1D	CSNK1D	17	80202246	80231576
ENSG00000213923	CSNK1E	CSNK1E	22	38686697	38794527
ENSG00000169118	CSNK1G1	CSNK1G1	15	64457716	64665968
ENSG00000133275	CSNK1G2	CSNK1G2	19	1941161	1981309
ENSG00000151292	CSNK1G3	CSNK1G3	5	122847793	122952739
ENSG00000101266	CSNK2A1	CSNK2A1	20	459116	524482
ENSG00000070770	CSNK2A2	CSNK2A2	16	58191811	58231782
ENSG00000168036	CTNNB1	CTNNB1	3	41236328	41301587
ENSG00000108094	CUL2	CUL2	10	35297479	35379570
ENSG00000205795	CYS1	CYS1	2	10196907	10221071
ENSG00000196730	DAPK1	DAPK1	9	90112143	90323548
ENSG00000035664	DAPK2	DAPK2	15	64199235	64338521
ENSG00000167657	DAPK3	DAPK3	19	3958452	3971038
ENSG00000133083	DCLK1	DCLK1	13	36343122	36705467
ENSG00000170390	DCLK2	DCLK2	4	150999426	151178609
ENSG00000163673	DCLK3	DCLK3	3	36753913	36781352
ENSG00000168209	DDIT4	DDIT4	10	74033678	74035794
ENSG00000204580	DDR1	DDR1	6	30844198	30867933
ENSG00000162733	DDR2	DDR2	1	162601163	162750237
ENSG00000100056	DGCR14	DGCR14	22	19117792	19132197
ENSG00000185559	DLK1	DLK1	14	101193164	101201465
ENSG00000104936	DMPK	DMPK	19	46272978	46285815
ENSG00000105877	DNAH11	DNAH11	7	21582833	21941457
ENSG00000039139	DNAH5	DNAH5	5	13690440	13944652
ENSG00000007174	DNAH9	DNAH9	17	11501748	11873485
ENSG00000122735	DNAI1	DNAI1	9	34457412	34520982
ENSG00000204348	DOM3Z	DOM3Z	6	31937587	31940069
ENSG00000101412	E2F1	E2F1	20	32263489	32274210
ENSG00000007968	E2F2	E2F2	1	23832922	23857712
ENSG00000112242	E2F3	E2F3	6	20402137	20493945
ENSG00000205250	E2F4	E2F4	16	67226068	67232821
ENSG00000133740	E2F5	E2F5	8	86089460	86129387
ENSG00000169016	E2F6	E2F6	2	11584501	11606297
ENSG00000165891	E2F7	E2F7	12	77415026	77459360
ENSG00000129173	E2F8	E2F8	11	19245610	19263389
ENSG00000103319	EEF2K	EEF2K	16	22217616	22297954

ENSG00000090776	EFNB1	EFNB1	X	68048840	68061990
ENSG00000125266	EFNB2	EFNB2	13	107142093	107187462
ENSG00000146648	EGFR	EGFR	7	55086714	55324313
ENSG00000135766	EGLN1	EGLN1	1	231499497	231560790
ENSG00000171570	EGLN2	EGLN2	19	41305048	41314336
ENSG00000129521	EGLN3	EGLN3	14	34393437	34638972
ENSG00000120738	EGR1	EGR1	5	137801169	137805004
ENSG00000086232	EIF2AK1	EIF2AK1	7	6061881	6098861
ENSG00000055332	EIF2AK2	EIF2AK2	2	37326353	37384208
ENSG00000172071	EIF2AK3	EIF2AK3	2	88856259	88927094
ENSG00000128829	EIF2AK4	EIF2AK4	15	40226347	40327797
ENSG00000063046	EIF4B	EIF4B	12	53400062	53435992
ENSG00000151247	EIF4E	EIF4E	4	99792835	99851788
ENSG00000126767	ELK1	ELK1	X	47494920	47510003
ENSG00000111145	ELK3	ELK3	12	96588207	96661608
ENSG00000158711	ELK4	ELK4	1	205566707	205601090
ENSG00000100393	EP300	EP300	22	41487790	41576081
ENSG00000116016	EPAS1	EPAS1	2	46520806	46613836
ENSG00000146904	EPHA1	EPHA1	7	143087382	143105985
ENSG00000183317	EPHA10	EPHA10	1	38179552	38230805
ENSG00000142627	EPHA2	EPHA2	1	16450832	16482582
ENSG00000044524	EPHA3	EPHA3	3	89156674	89531284
ENSG00000116106	EPHA4	EPHA4	2	222282747	222438922
ENSG00000145242	EPHA5	EPHA5	4	66185281	66536213
ENSG00000080224	EPHA6	EPHA6	3	96533425	97471304
ENSG00000135333	EPHA7	EPHA7	6	93949738	94129265
ENSG00000070886	EPHA8	EPHA8	1	22890057	22930087
ENSG00000154928	EPHB1	EPHB1	3	134316643	134979309
ENSG00000133216	EPHB2	EPHB2	1	23037332	23241818
ENSG00000182580	EPHB3	EPHB3	3	184279572	184300197
ENSG00000196411	EPHB4	EPHB4	7	100400187	100425121
ENSG00000106123	EPHB6	EPHB6	7	142552792	142568847
ENSG00000141736	ERBB2	ERBB2	17	37844393	37884915
ENSG00000065361	ERBB3	ERBB3	12	56473892	56497128
ENSG00000178568	ERBB4	ERBB4	2	212240446	213403565
ENSG00000187672	ERC2	ERC2	3	55542336	56502391
ENSG00000032514	ERCC6	10	50336715	50417078	
ENSG00000186871	ERCC6L	ERCC6L	X	71424510	71458897
ENSG00000125991	ERGIC3	ERGIC3	20	34129770	34145405
ENSG00000104714	ERICH1	ERICH1	8	564744	688106
ENSG00000178607	ERN1	ERN1	17	62120390	62207502
ENSG00000134398	ERN2	ERN2	16	23701630	23724821
ENSG00000197930	ERO1L	ERO1L	14	53106634	53162423
ENSG00000171320	ESCO2	ESCO2	8	27629466	27670157
ENSG00000196405	EVL	EVL	14	100438151	100610572
ENSG00000131558	EXOC4	EXOC4	7	132937829	133751342
ENSG00000112319	EYA4	EYA4	6	133561736	133853258
ENSG00000164220	F2RL2	F2RL2	5	75911328	75919259
ENSG00000164896	FASTK	FASTK	7	150773679	150777953
ENSG00000171823	FBXL14	FBXL14	12	1675159	1703331

ENSG00000109670	FBXW7	FBXW7	4	153242410	153456172
ENSG00000151422	FER	FER	5	108083523	108532542
ENSG00000182511	FES	FES	15	91426925	91439006
ENSG00000077782	FGFR1	FGFR1	8	38268656	38326352
ENSG00000066468	FGFR2	FGFR2	10	123237848	123357972
ENSG00000068078	FGFR3	FGFR3	4	1795034	1810599
ENSG00000160867	FGFR4	FGFR4	5	176513887	176525145
ENSG00000000938	FGR	FGR	1	27938575	27961788
ENSG00000088832	FKBP1A	FKBP1A	20	1349622	1373806
ENSG00000154803	FLCN	FLCN	17	17115526	17140502
ENSG00000102755	FLT1	FLT1	13	28874489	29069265
ENSG00000122025	FLT3	FLT3	13	28577411	28674729
ENSG00000037280	FLT4	FLT4	5	180028506	180076624
ENSG00000170345	FOS	FOS	14	75745481	75748937
ENSG00000054598	FOXC1	FOXC1	6	1610679	1614127
ENSG00000176692	FOXC2	FOXC2	16	86600857	86602539
ENSG00000111206	FOXM1	FOXM1	12	2966847	2986206
ENSG00000150907	FOXO1	FOXO1	13	41129817	41240734
ENSG00000118689	FOXO3	FOXO3	6	108881038	109005977
ENSG00000184481	FOXO4	FOXO4	X	70316047	70323385
ENSG00000198793	MTOR	MTOR	1	11166592	11322608
ENSG00000111816	FRK	FRK	6	116262693	116381921
ENSG00000010810	FYN	FYN	6	111981535	112194655
ENSG00000157240	FZD1	FZD1	7	90893783	90898123
ENSG00000111432	FZD10	FZD10	12	130647004	130650285
ENSG00000180340	FZD2	FZD2	17	42634827	42636907
ENSG00000174804	FZD4	FZD4	11	86656721	86666433
ENSG00000163251	FZD5	FZD5	2	208627310	208634287
ENSG00000164930	FZD6	FZD6	8	104310661	104345094
ENSG00000155760	FZD7	FZD7	2	202899310	202903160
ENSG00000177283	FZD8	FZD8	10	35927177	35930362
ENSG00000188763	FZD9	FZD9	7	72848109	72850450
ENSG00000178950	GAK	GAK	4	843064	926161
ENSG00000141012	GALNS	GALNS	16	88880142	88923374
ENSG00000168621	GDNF	GDNF	5	37812779	37839788
ENSG00000164949	GEM	GEM	8	95261481	95274578
ENSG00000111087	GLI1	GLI1	12	57853918	57866045
ENSG00000074047	GLI2	GLI2	2	121493199	121750229
ENSG00000106571	GLI3	GLI3	7	42000548	42277469
ENSG00000213705	NESP55	20	57414750	57486249	
ENSG00000087460	GNAS	GNAS	20	57414773	57486247
ENSG00000177885	GRB2	GRB2	17	73314157	73401790
ENSG00000185974	GRK1	GRK1	13	114321594	114438637
ENSG00000125388	GRK4	GRK4	4	2965335	3042474
ENSG00000198873	GRK5	GRK5	10	120967101	121215131
ENSG00000198055	GRK6	GRK6	5	176830205	176869902
ENSG00000114124	GRK7	GRK7	3	141496990	141537332
ENSG00000177602	GSG2	GSG2	17	3627211	3630067
ENSG00000180613	GSX2	GSX2	4	54965690	54968672
ENSG00000082701	GSK3B	GSK3B	3	119540170	119813264

ENSG00000152402	GUCY1A2	GUCY1A2	11	106555148	106889250
ENSG00000145681	HAPLN1	HAPLN1	5	82933624	83017432
ENSG00000101336	HCK	HCK	20	30639991	30689659
ENSG00000116478	HDAC1	HDAC1	1	32757687	32799236
ENSG00000100429	HDAC10	HDAC10	22	50683612	50689834
ENSG00000163517	HDAC11	HDAC11	3	13521224	13547916
ENSG00000196591	HDAC2	HDAC2	6	114254192	114332472
ENSG00000171720	HDAC3	HDAC3	5	141000443	141016437
ENSG00000068024	HDAC4	HDAC4	2	239969864	240323348
ENSG00000108840	HDAC5	HDAC5	17	42154121	42201014
ENSG00000094631	HDAC6	HDAC6	X	48659784	48683392
ENSG00000061273	HDAC7	HDAC7	12	48176505	48226915
ENSG00000147099	HDAC8	HDAC8	X	71549366	71792953
ENSG00000048052	HDAC9	HDAC9	7	18126572	19036993
ENSG00000100644	HIF1A	HIF1A	14	62162231	62214976
ENSG00000124440	HIF3A	HIF3A	19	46800303	46846690
ENSG00000163349	HIPK1	HIPK1	1	114471814	114520426
ENSG00000064393	HIPK2	HIPK2	7	139246316	139477577
ENSG00000110422	HIPK3	HIPK3	11	33278218	33378569
ENSG00000160396	HIPK4	HIPK4	19	40885179	40896094
ENSG00000184357	HIST1H1B	HIST1H1B	6	27834570	27835359
ENSG00000135100	HNF1A	HNF1A	12	121416346	121441746
ENSG00000108753	HNF1B	HNF1B	17	36046434	36105237
ENSG00000126945	HNRNPH2	HNRNPH2	X	100663207	100669121
ENSG00000174775	HRAS	HRAS	11	532242	537287
ENSG00000080824	HSP90AA1	HSP90AA1	14	102547073	102606086
ENSG00000096384	HSP90AB1	HSP90AB1	6	44214824	44221620
ENSG00000166598	HSP90B1	HSP90B1	12	104324160	104341679
ENSG00000152137	HSPB8	HSPB8	12	119616447	119658936
ENSG00000142149	HUNK	HUNK	21	33245628	33416946
ENSG00000112144	ICK	ICK	6	52866077	52926600
ENSG00000165949	IFI27	IFI27	14	94577079	94583033
ENSG00000216490	IFI30	IFI30	19	18284579	18288927
ENSG00000138002	IFT172	IFT172	2	27667238	27712656
ENSG00000114446	IFT57	IFT57	3	107879659	107941417
ENSG00000122970	IFT81	IFT81	12	110562140	110656590
ENSG00000032742	IFT88	IFT88	13	21140585	21265572
ENSG00000140443	IGF1R	IGF1R	15	99192200	99507759
ENSG00000104365	IKBKB	IKBKB	8	42128820	42189973
ENSG00000143466	IKBKE	IKBKE	1	206643791	206670223
ENSG00000096996	IL12RB1	IL12RB1	19	18170371	18197697
ENSG00000137496	IL18BP	IL18BP	11	71709587	71716761
ENSG00000166333	ILK	ILK	11	6624961	6632102
ENSG00000149503	INCENP	INCENP	11	61891445	61920635
ENSG00000168918	INPP5D	INPP5D	2	233924677	234116549
ENSG00000165458	INPPL1	INPPL1	11	71934745	71950149
ENSG00000171105	INSR	INSR	19	7112266	7294011
ENSG00000027644	INSRR	INSRR	1	156809855	156828810
ENSG00000119509	INVS	INVS	9	102861538	103063282
ENSG00000145703	IQGAP2	IQGAP2	5	75699074	76003957

ENSG00000184216	IRAK1	IRAK1	X	153275951	153285431
ENSG00000146243	IRAK1BP1	IRAK1BP1	6	79577189	79608320
ENSG00000134070	IRAK2	IRAK2	3	10206549	10285427
ENSG00000090376	IRAK3	IRAK3	12	66582659	66648402
ENSG00000198001	IRAK4	IRAK4	12	44152747	44183346
ENSG00000083457	ITGAE	ITGAE	17	3617920	3704537
ENSG00000113263	ITK	ITK	5	156569944	156682201
ENSG00000162434	JAK1	JAK1	1	65298912	65432187
ENSG00000096968	JAK2	JAK2	9	4985033	5128183
ENSG00000105639	JAK3	JAK3	19	17935589	17958880
ENSG00000106305	AIMP2	AIMP2	7	6048876	6063465
ENSG00000171223	JUNB	JUNB	19	12902310	12904124
ENSG00000185760	KCNQ5	KCNQ5	6	73331520	73908574
ENSG00000128052	KDR	KDR	4	55944644	55991756
ENSG00000133958	KIAA1409	KIAA1409	14	93799565	94173689
ENSG00000054523	KIF1B	KIF1B	1	10270764	10441661
ENSG00000131437	KIF3A	KIF3A	5	132028368	132073330
ENSG00000101350	KIF3B	KIF3B	20	30865467	30922814
ENSG00000075945	KIFAP3	KIFAP3	1	169890467	170054349
ENSG00000157404	KIT	KIT	4	55524085	55606881
ENSG00000080986	NDC80	NDC80	18	2571510	2616634
ENSG00000133703	KRAS	KRAS	12	25358182	25403854
ENSG00000186049	KRT73	KRT73	12	53001355	53012343
ENSG00000141068	KSR1	KSR1	17	25783670	25953461
ENSG00000171435	KSR2	KSR2	12	117890817	118406788
ENSG00000185513	L3MBTL1	L3MBTL1	20	42136320	42179590
ENSG00000131023	LATS1	LATS1	6	149979289	150039392
ENSG00000150457	LATS2	LATS2	13	21547171	21635718
ENSG00000182866	LCK	LCK	1	32716840	32751766
ENSG00000138795	LEF1	LEF1	4	108968701	109090112
ENSG00000133067	LGR6	LGR6	1	202162938	202288909
ENSG00000164715	LMTK2	LMTK2	7	97736197	97838945
ENSG00000142235	LMTK3	LMTK3	19	48988528	49016446
ENSG00000072201	LNX1	LNX1	4	54325468	54567572
ENSG00000162337	LRP5	LRP5	11	68080077	68216743
ENSG00000070018	LRP6	LRP6	12	12268959	12419946
ENSG00000176681	LRRC37A	LRRC37A	17	44370099	44415160
ENSG00000154099	LRRC50	LRRC50	16	84178865	84212364
ENSG00000129295	LRRC6	LRRC6	8	133584320	133687838
ENSG00000154237	LRRK1	LRRK1	15	101459420	101610317
ENSG00000188906	LRRK2	LRRK2	12	40590546	40763087
ENSG00000062524	LTK	LTK	15	41795783	41806085
ENSG00000147507	LYN	8	56792386	56923933	
ENSG00000002822	MAD1L1	MAD1L1	7	1855383	2272878
ENSG00000164109	MAD2L1	MAD2L1	4	120980577	120988229
ENSG00000124688	MAD2L1BP	MAD2L1BP	6	43597277	43608689
ENSG00000111837	MAK	MAK	6	10762956	10838764
ENSG00000078018	MAP2	MAP2	2	210288782	210598842
ENSG00000169032	MAP2K1	MAP2K1	15	66679155	66783882
ENSG00000126934	MAP2K2	MAP2K2	19	4090319	4124126

ENSG00000034152	MAP2K3	MAP2K3	17	21187984	21218552
ENSG00000065559	MAP2K4	MAP2K4	17	11924135	12047050
ENSG00000137764	MAP2K5	MAP2K5	15	67835021	68116181
ENSG00000108984	MAP2K6	MAP2K6	17	67410838	67538451
ENSG00000076984	MAP2K7	MAP2K7	19	7968728	7979363
ENSG00000095015	MAP3K1	MAP3K1	5	56111401	56191979
ENSG00000130758	MAP3K10	MAP3K10	19	40697651	40721481
ENSG00000173327	MAP3K11	MAP3K11	11	65365226	65382853
ENSG00000073803	MAP3K13	MAP3K13	3	185000729	185206885
ENSG00000143674	RP5-862P8.2		1	233463514	233520894
ENSG00000169967	MAP3K2	MAP3K2	2	128056306	128146041
ENSG00000198909	MAP3K3	MAP3K3	17	61699801	61773667
ENSG00000085511	MAP3K4	MAP3K4	6	161412759	161551917
ENSG00000197442	MAP3K5	MAP3K5	6	136878185	137113656
ENSG00000142733	MAP3K6	MAP3K6	1	27681670	27693383
ENSG00000135341	MAP3K7	MAP3K7	6	91223292	91296786
ENSG00000107968	MAP3K8	MAP3K8	10	30722866	30750762
ENSG00000006432	MAP3K9	MAP3K9	14	71194852	71275888
ENSG00000104814	MAP4K1	MAP4K1	19	39078281	39108643
ENSG00000168067	MAP4K2	MAP4K2	11	64556290	64570713
ENSG00000011566	MAP4K3	MAP4K3	2	39476407	39664453
ENSG00000071054	MAP4K4	MAP4K4	2	102313312	102508449
ENSG00000012983	MAP4K5	MAP4K5	14	50885249	50999376
ENSG00000100030	MAPK1	MAPK1	22	22108789	22221970
ENSG00000109339	MAPK10	MAPK10	4	86936276	87515284
ENSG00000185386	MAPK11	MAPK11	22	50702142	50709196
ENSG00000188130	MAPK12	MAPK12	22	50683879	50700254
ENSG00000156711	MAPK13	MAPK13	6	36095586	36107842
ENSG00000112062	MAPK14	MAPK14	6	35995488	36079013
ENSG00000181085	MAPK15	MAPK15	8	144798429	144804628
ENSG00000102882	MAPK3	MAPK3	16	30125426	30134827
ENSG00000141639	MAPK4	MAPK4	18	48086484	48258196
ENSG00000069956	MAPK6	MAPK6	15	52311417	52358462
ENSG00000166484	MAPK7	MAPK7	17	19281034	19286857
ENSG00000107643	MAPK8	MAPK8	10	49514698	49647403
ENSG00000050748	MAPK9	MAPK9	5	179660143	179719099
ENSG00000162889	MAPKAPK2	MAPKAPK2	1	206858289	206907628
ENSG00000114738	MAPKAPK3	MAPKAPK3	3	50648951	50686720
ENSG00000089022	MAPKAPK5	MAPKAPK5	12	112280279	112331227
ENSG00000101367	MAPRE1	MAPRE1	20	31407699	31438211
ENSG00000084764	MAPRE3	MAPRE3	2	27193480	27250064
ENSG00000116141	MARK1	MARK1	1	220701568	220837803
ENSG00000072518	MARK2	MARK2	11	63606400	63678491
ENSG00000075413	MARK3	MARK3	14	103851701	103970164
ENSG00000007047	MARK4	MARK4	19	45754550	45808541
ENSG00000105613	MAST1	MAST1	19	12949259	12985765
ENSG00000086015	MAST2	MAST2	1	46252659	46501896
ENSG00000099308	MAST3	MAST3	19	18208603	18262499
ENSG00000069020	MAST4	MAST4	5	65892176	66465423
ENSG00000120539	MASTL	MASTL	10	27443753	27475848

ENSG00000007264	MATK	MATK	19	3777968	3801810
ENSG00000171444	MCC	MCC	5	112357796	112824527
ENSG00000135679	MDM2	MDM2	12	69201956	69239214
ENSG00000144893	MED12L	MED12L	3	150803484	151154860
ENSG00000165304	MELK	MELK	9	36572859	36677678
ENSG00000153208	MERTK	MERTK	2	112656056	112787138
ENSG00000105976	MET	MET	7	116312248	116438440
ENSG00000174514	MFSD4	MFSD4	1	205538013	205572046
ENSG00000141503	MINK1	MINK1	17	4736635	4801355
ENSG00000125863	MKKS	MKKS	20	10385832	10414870
ENSG00000079277	MKNK1	MKNK1	1	47023090	47082515
ENSG00000099875	MKNK2	MKNK2	19	2037481	2051243
ENSG00000179455	MKRN3	MKRN3	15	23810454	23856709
ENSG00000011143	MKS1	MKS1	17	56282799	56296966
ENSG00000076242	MLH1	MLH1	3	37034823	37107380
ENSG00000119684	MLH3	MLH3	14	75480467	75518235
ENSG00000168404	MLKL	MLKL	16	74705755	74734789
ENSG00000055609	MLL3	MLL3	7	151832010	152133090
ENSG00000087245	MMP2	MMP2	16	55512883	55540603
ENSG00000172680	MOS	MOS	8	57025501	57026541
ENSG00000020922	MRE11A	MRE11A	11	94152895	94227074
ENSG00000095002	MSH2	MSH2	2	47630108	47789450
ENSG00000116062	MSH6	MSH6	2	48010221	48034092
ENSG00000164078	MST1R	MST1R	3	49924435	49941299
ENSG00000030304	MUSK	MUSK	9	113431051	113563859
ENSG00000013364	MVP	MVP	16	29831729	29859355
ENSG00000136997	MYC	MYC	8	128747680	128753674
ENSG00000095777	MYO3A	MYO3A	10	26223196	26501456
ENSG00000071909	MYO3B	MYO3B	2	171034655	171511662
ENSG00000203836	NBPF24	NBPF24	1	147574428	147624601
ENSG00000111859	NEDD9	NEDD9	6	11183531	11382581
ENSG00000137601	NEK1	NEK1	4	170314426	170533780
ENSG00000163491	NEK10	NEK10	3	27151576	27410951
ENSG00000114670	NEK11	NEK11	3	130745694	131069309
ENSG00000117650	NEK2	NEK2	1	211836114	211848960
ENSG00000136098	NEK3	NEK3	13	52706779	52733996
ENSG00000114904	NEK4	NEK4	3	52744800	52804965
ENSG00000197168	NEK5	NEK5	13	52611093	52703214
ENSG00000119408	NEK6	NEK6	9	127019885	127115586
ENSG00000151414	NEK7	NEK7	1	198126093	198291550
ENSG00000160602	NEK8	NEK8	17	27055822	27069784
ENSG00000119638	NEK9	NEK9	14	75548819	75593778
ENSG00000196712	NF1	NF1	17	29421945	29708905
ENSG00000186575	NF2	NF2	22	29999545	30094587
ENSG00000109320	NFKB1	NFKB1	4	103422486	103538459
ENSG00000087095	NLK	NLK	17	26369182	26523407
ENSG00000144061	NPHP1	NPHP1	2	110879888	110962643
ENSG00000113971	NPHP3	NPHP3	3	132276986	132441303
ENSG00000131697	NPHP4	NPHP4	1	5922871	6052533
ENSG00000213281	NRAS	NRAS	1	115247090	115259515

ENSG00000115216	NRBP1	NRBP1	2	27650657	27665126
ENSG00000185189	NRBP2	NRBP2	8	144915764	144924200
ENSG00000123572	NRK	NRK	X	105066536	105202602
ENSG00000198400	NTRK1	NTRK1	1	156785432	156851642
ENSG00000148053	NTRK2	NTRK2	9	87283466	87638505
ENSG00000140538	NTRK3	NTRK3	15	88402982	88799978
ENSG00000143228	NUF2	NUF2	1	163236366	163325554
ENSG00000115758	ODC1	ODC1	2	10580094	10588630
ENSG00000046651	OFD1	OFD1	X	13752832	13787480
ENSG00000114026	OGG1	OGG1	3	9791628	9829903
ENSG00000112038	OPRM1	OPRM1	6	154331631	154568001
ENSG00000172939	OXSR1	OXSR1	3	38206580	38296979
ENSG00000089041	P2RX7	P2RX7	12	121570622	121623876
ENSG00000174944	P2RY14	P2RY14	3	150929905	150996255
ENSG00000149269	PAK1	PAK1	11	77032752	77185680
ENSG00000180370	PAK2	PAK2	3	196466728	196559518
ENSG00000077264	PAK3	PAK3	X	110187513	110464173
ENSG00000130669	PAK4	PAK4	19	39616420	39670046
ENSG00000137843	PAK6	PAK6	15	40509629	40569688
ENSG00000101349	PAK7	PAK7	20	9518036	9819689
ENSG00000162073	PAQR4	PAQR4	16	3019246	3023490
ENSG00000148498	PARD3	PARD3	10	34398488	35104253
ENSG00000102981	PARD6A	PARD6A	16	67694851	67696680
ENSG00000115687	PASK	PASK	2	242045514	242089679
ENSG00000168078	PBK	PBK	8	27667137	27695612
ENSG00000102225	CDK16	CDK16	X	47077259	47089396
ENSG00000059758	CDK17	CDK17	12	96672042	96794366
ENSG00000117266	CDK18	CDK18	1	205473723	205501921
ENSG00000134853	PDGFRA	PDGFRA	4	55095264	55164414
ENSG00000113721	PDGFRB	PDGFRB	5	149493400	149535423
ENSG00000140992	PDPK1	PDPK1	16	2587965	2653189
ENSG00000058091	CDK14	CDK14	7	90095738	90839905
ENSG00000146247	PHIP	PHIP	6	79650263	79787953
ENSG00000164776	PHKG1	PHKG1	7	56148440	56160689
ENSG00000156873	PHKG2	PHKG2	16	30759591	30772495
ENSG00000144824	PHLDB2	PHLDB2	3	111451327	111695364
ENSG00000165462	PHOX2A	PHOX2A	11	71950121	71956708
ENSG00000043822	PI4K2A	10	99390433	99426177	
ENSG00000038210	PI4K2B	PI4K2B	4	25162263	25280714
ENSG00000133511	PI4KA	22	19391981	19543070	
ENSG00000143393	PI4KB	PI4KB	1	151264273	151300191
ENSG00000011405	PIK3C2A	PIK3C2A	11	17099277	17229530
ENSG00000133056	PIK3C2B	PIK3C2B	1	204391756	204463852
ENSG00000139144	PIK3C2G	PIK3C2G	12	18400548	18801348
ENSG00000078142	PIK3C3	PIK3C3	18	39535171	39667794
ENSG00000121879	PIK3CA	PIK3CA	3	178865902	178957881
ENSG00000051382	PIK3CB	PIK3CB	3	138372860	138553780
ENSG00000171608	PIK3CD	PIK3CD	1	9711790	9789172
ENSG00000105851	PIK3CG	PIK3CG	7	106505723	106547590
ENSG00000145675	PIK3R1	PIK3R1	5	67511548	67597649

ENSG00000105647	PIK3R2	PIK3R2	19	18263928	18281343
ENSG00000196455	PIK3R4	PIK3R4	3	130397779	130465673
ENSG00000141506	PIK3R5	PIK3R5	17	8782228	8869024
ENSG00000137193	PIM1	PIM1	6	37137979	37143202
ENSG00000102096	PIM2	PIM2	X	48770459	48776301
ENSG00000198355	PIM3	PIM3	22	50354161	50357728
ENSG00000102309	PIN4	PIN4	X	71401203	71522776
ENSG00000158828	PINK1	PINK1	1	20959948	20978004
ENSG00000008710	PKD1	PKD1	16	2138711	2185899
ENSG00000118762	PKD2	PKD2	4	88928820	88998929
ENSG00000170927	PKHD1	PKHD1	6	51480098	51952423
ENSG00000127564	PKMYT1	PKMYT1	16	3018103	3030505
ENSG00000123143	PKN1	PKN1	19	14544169	14582678
ENSG00000065243	PKN2	PKN2	1	89149905	89301938
ENSG00000160447	PKN3	PKN3	9	131464802	131483197
ENSG00000160199	PKNOX1	PKNOX1	21	44394620	44453692
ENSG00000188257	PLA2G2A	PLA2G2A	1	20301925	20306932
ENSG00000182378	PLCXD1	PLCXD1	X	192989	220023
ENSG00000182836	PLCXD3	PLCXD3	5	41307056	41510730
ENSG00000139151	PLCZ1	PLCZ1	12	18836103	18890991
ENSG00000179598	PLD6	PLD6	17	17104309	17109646
ENSG00000166851	PLK1	PLK1	16	23690143	23701688
ENSG00000145632	PLK2	PLK2	5	57749809	57756087
ENSG00000173846	PLK3	PLK3	1	45265897	45271662
ENSG00000142731	PLK4	PLK4	4	128802016	128820350
ENSG00000122512	PMS2	PMS2	7	6012870	6048756
ENSG00000130822	PNCK	PNCK	X	152935185	152954465
ENSG00000205236	UPK3BL	UPK3BL	7	102222970	102283316
ENSG00000197373	POLR2J3	7	101965373	102000093	
ENSG00000170836	PPM1D	PPM1D	17	58677554	58742036
ENSG00000143294	PRCC	PRCC	1	156720402	156770607
ENSG00000132356	AC008810.1		5	40759481	40798476
ENSG00000162409	PRKAA2	PRKAA2	1	57110995	57181008
ENSG00000072062	PRKACA	PRKACA	19	14202509	14228574
ENSG00000142875	PRKACB	PRKACB	1	84543745	84704181
ENSG00000165059	PRKACG	PRKACG	9	71627469	71629039
ENSG00000154229	PRKCA	PRKCA	17	64298944	64801114
ENSG00000166501	PRKCB	PRKCB	16	23847322	24231932
ENSG00000163932	PRKCD	PRKCD	3	53190025	53226733
ENSG00000171132	PRKCE	PRKCE	2	45878484	46415129
ENSG00000126583	PRKCG	PRKCG	19	54382444	54410906
ENSG00000027075	PRKCH	PRKCH	14	61788435	62017698
ENSG00000163558	PRKCI	PRKCI	3	169940153	170023769
ENSG00000065675	PRKCQ	PRKCQ	10	6469105	6622263
ENSG00000067606	PRKCZ	PRKCZ	1	1981909	2116834
ENSG00000184304	PRKD1	PRKD1	14	30045687	30396948
ENSG00000105287	PRKD2	PRKD2	19	47177574	47220384
ENSG00000115825	PRKD3	PRKD3	2	37477645	37551951
ENSG00000121031	PRKDC	8	48685669	48872743	
ENSG00000183943	PRKX	PRKX	X	3522411	3631649

ENSG00000099725	PRKY	PRKY	Y	7142013	7249589
ENSG00000136875	PRPF4	PRPF4	9	116037623	116055466
ENSG00000150687	PRSS23	PRSS23	11	86502101	86663886
ENSG00000159792	PSKH1	PSKH1	16	67927175	67963581
ENSG00000147613	PSKH2	PSKH2	8	87060602	87100850
ENSG00000146733	PSPH	PSPH	7	56078744	56119297
ENSG00000185920	PTCH1	PTCH1	9	98205262	98279339
ENSG00000171862	PTEN	PTEN	10	89622870	89731687
ENSG00000169398	PTK2	PTK2	8	141667999	142012315
ENSG00000120899	PTK2B	PTK2B	8	27168999	27316903
ENSG00000101213	PTK6	PTK6	20	62159778	62168723
ENSG00000112655	PTK7	PTK7	6	43044006	43129457
ENSG00000132670	PTPRA	PTPRA	20	2844830	3019320
ENSG00000153707	PTPRD	PTPRD	9	8314246	10612723
ENSG00000060656	PTPRU	PTPRU	1	29563028	29653325
ENSG00000164611	PTTG1	PTTG1	5	159848829	159855748
ENSG00000213005	PTTG3P	PTTG3P	8	67679632	67680240
ENSG00000168297	PXK	PXK	3	58318607	58411748
ENSG00000089159	PXN	PXN	12	120648250	120703574
ENSG00000136238	RAC1	RAC1	7	6414154	6443608
ENSG00000172613	RAD9A	RAD9A	11	67159176	67165881
ENSG00000164520	RAET1E	RAET1E	6	150204511	150219238
ENSG00000203722	RAET1G	RAET1G	6	150238014	150244257
ENSG00000132155	RAF1	RAF1	3	12625100	12705725
ENSG00000080823	RAGE	RAGE	14	102692622	102771537
ENSG00000079337	RAPGEF3	RAPGEF3	12	48128455	48164823
ENSG00000091428	RAPGEF4	RAPGEF4	2	173600002	173917621
ENSG00000145715	RASA1	RASA1	5	86563705	86688145
ENSG00000155903	RASA2	RASA2	3	141205889	141334184
ENSG00000185989	RASA3	RASA3	13	114747194	114898086
ENSG00000105808	RASA4	RASA4	7	102220093	102389144
ENSG00000170667	RASA4B	RASA4B	7	102122892	102257155
ENSG00000162437	RAVER2	RAVER2	1	65210778	65298915
ENSG00000139687	RB1	RB1	13	48877883	49056122
ENSG00000165731	RET	RET	10	43572475	43625799
ENSG00000106615	RHEB	RHEB	7	151163098	151217206
ENSG00000163914	RHO	RHO	3	129247483	129254012
ENSG00000137275	RIPK1	RIPK1	6	3064092	3115421
ENSG00000104312	RIPK2	RIPK2	8	90769975	90803291
ENSG00000129465	RIPK3	RIPK3	14	24805227	24809204
ENSG00000183421	RIPK4	RIPK4	21	43159529	43187266
ENSG00000133059	DSTYK	DSTYK	1	205111632	205180727
ENSG00000135828	RNASEL	RNASEL	1	182542769	182558391
ENSG00000067900	ROCK1	ROCK1	18	18529701	18691812
ENSG00000134318	ROCK2	ROCK2	2	11319887	11488456
ENSG00000185483	ROR1	ROR1	1	64239693	64647181
ENSG00000169071	ROR2	ROR2	9	94325373	94712444
ENSG00000047936	ROS1	ROS1	6	117609463	117747018
ENSG00000092200	RPGRIP1	RPGRIP1	14	21756136	21819458
ENSG00000103494	RPGRIP1L	RPGRIP1L	16	53633824	53737771

ENSG00000079102	RUNX1T1	RUNX1T1	8	92967203	93115514
ENSG00000163785	RYK	RYK	3	133794023	133969689
ENSG00000188322	SBK1	SBK1	16	28303840	28335170
ENSG00000187550	SBK2	SBK2	19	56041100	56048456
ENSG00000166257	SCN3B	SCN3B	11	123499895	123525952
ENSG00000142186	SCYL1	SCYL1	11	65292548	65306175
ENSG00000136021	SCYL2	SCYL2	12	100660964	100733912
ENSG00000000457	SCYL3	SCYL3	1	169821804	169863408
ENSG00000125775	SDCBP2	SDCBP2	20	1290619	1309883
ENSG00000165525	NEMF	NEMF	14	50249997	50319539
ENSG00000117118	SDHB	SDHB	1	17345217	17380665
ENSG00000204370	SDHD	SDHD	11	111957497	111990353
ENSG00000099937	SERPIND1	SERPIND1	22	21128167	21142008
ENSG00000124193	SRSF6	SRSF6	20	42086568	42092245
ENSG00000118515	SGK1	SGK1	6	134490384	134639250
ENSG00000101049	SGK2	SGK2	20	42187608	42216877
ENSG00000104205	SGK3	SGK3	8	67579831	67774257
ENSG00000129810	SGOL1	SGOL1	3	20202085	20227784
ENSG00000027869	SH2D2A	SH2D2A	1	156776035	156786654
ENSG00000160691	SHC1	SHC1	1	154934774	154946871
ENSG00000164690	SHH	SHH	7	155592680	155604967
ENSG00000112759	SLC29A1	SLC29A1	6	44187242	44201888
ENSG00000065613	SLK	SLK	10	105726959	105788991
ENSG00000175387	SMAD2	SMAD2	18	45357922	45457515
ENSG00000166949	SMAD3	SMAD3	15	67358183	67487533
ENSG00000141646	SMAD4	SMAD4	18	48494410	48611415
ENSG00000128602	SMO	SMO	7	128828713	128853386
ENSG00000142178	SIK1	SIK1	21	44834395	44847008
ENSG00000170145	SIK2	SIK2	11	111473115	111601577
ENSG00000163788	SNRK	SNRK	3	43328004	43466256
ENSG00000115904	SOS1	SOS1	2	39208537	39351486
ENSG00000100485	SOS2	SOS2	14	50583847	50698091
ENSG00000185591	SP1	SP1	12	53773979	53810221
ENSG00000161888	SPC24	SPC24	19	11257444	11266484
ENSG00000152253	SPC25	SPC25	2	169690642	169769881
ENSG00000197122	SRC	SRC	20	35973088	36034453
ENSG00000116649	SRM	SRM	1	11114641	11120081
ENSG00000096063	SRPK1	SRPK1	6	35800743	35889119
ENSG00000135250	SRPK2	SRPK2	7	104751151	105039755
ENSG00000184343	SRPK3	SRPK3	X	153041867	153051187
ENSG00000168610	STAT3	STAT3	17	40465342	40540449
ENSG00000166888	STAT6	STAT6	12	57489195	57505196
ENSG00000072786	STK10	STK10	5	171469077	171615390
ENSG00000118046	STK11	STK11	19	1205798	1228434
ENSG00000115661	STK16	STK16	2	220110177	220115059
ENSG00000164543	STK17A	STK17A	7	43622357	43666385
ENSG00000081320	STK17B	STK17B	2	196998290	197041227
ENSG00000204344	STK19	STK19	6	31938868	31949228
ENSG00000102572	STK24	STK24	13	99102455	99230194
ENSG00000115694	STK25	STK25	2	242432089	242449145

ENSG00000104375	STK3	STK3	8	99413631	99955055
ENSG00000196335	STK31	STK31	7	23749786	23872132
ENSG00000169302	STK32A	STK32A	5	146614526	146767415
ENSG00000152953	STK32B	STK32B	4	5053169	5502725
ENSG00000165752	STK32C	STK32C	10	134020994	134145353
ENSG00000130413	STK33	STK33	11	8413418	8615836
ENSG00000125834	STK35	STK35	20	2082257	2157684
ENSG00000163482	STK36	STK36	2	219536749	219567439
ENSG00000112079	STK38	STK38	6	36461669	36515247
ENSG00000211455	STK38L	STK38L	12	27396901	27478892
ENSG00000198648	STK39	STK39	2	168810530	169104651
ENSG00000101109	STK4	STK4	20	43595115	43708600
ENSG00000196182	STK40	STK40	1	36805225	36851497
ENSG00000133115	STOML3	STOML3	13	39540062	39565203
ENSG00000125695	STRADA	STRADA	17	61780196	61819330
ENSG00000060140	STYK1	STYK1	12	10771538	10826917
ENSG00000107882	SUFU	SUFU	10	104263744	104393292
ENSG00000165025	SYK	SYK	9	93564012	93660831
ENSG00000131018	SYNE1	SYNE1	6	152442819	152958936
ENSG00000147133	TAF1	TAF1	X	70586114	70752224
ENSG00000122728	TAF1L	TAF1L	9	32629452	32635667
ENSG00000160551	TAOK1	TAOK1	17	27717943	27871502
ENSG00000149930	TAOK2	TAOK2	16	29985222	30003582
ENSG00000135090	TAOK3	TAOK3	12	118587606	118810750
ENSG00000183735	TBK1	TBK1	12	64845660	64895888
ENSG00000122145	TBX22	TBX22	X	79270255	79287268
ENSG00000071564	TCF3	TCF3	19	1609293	1652326
ENSG00000196628	TCF4	TCF4	18	52889562	53303185
ENSG00000148737	TCF7L2	TCF7L2	10	114710009	114927437
ENSG00000135605	TEC	TEC	4	48137800	48271881
ENSG00000120156	TEK	TEK	9	27109139	27230173
ENSG00000107140	TESK1	TESK1	9	35605281	35610038
ENSG00000070759	TESK2	TESK2	1	45809555	45956872
ENSG00000121101	TEX14	TEX14	17	56634042	56769416
ENSG00000106799	TGFBR1	TGFBR1	9	101867371	101916585
ENSG00000163513	TGFBR2	TGFBR2	3	30647994	30735634
ENSG00000066056	TIE1	TIE1	1	43766664	43788779
ENSG00000198586	TLK1	TLK1	2	171847333	172087824
ENSG00000146872	TLK2	TLK2	17	60556386	60692839
ENSG00000136869	TLR4	TLR4	9	120466610	120479149
ENSG00000164953	TMEM67	TMEM67	8	94767072	94831462
ENSG00000154310	TNIK	TNIK	3	170779128	171178197
ENSG00000174292	TNK1	TNK1	17	7284365	7293092
ENSG00000061938	TNK2	TNK2	3	195590235	195638816
ENSG00000116783	AC093158.1		1	74663926	75010112
ENSG00000132773	TOE1	TOE1	1	45805342	45809647
ENSG00000141510	TP53	TP53	17	7565097	7590856
ENSG00000067369	TP53BP1	TP53BP1	15	43699407	43802926
ENSG00000172315	TP53RK	TP53RK	20	45313004	45318418
ENSG00000101255	TRIB3	TRIB3	20	361261	378203

ENSG00000122779	TRIM24	TRIM24	7	138144953	138274738
ENSG00000130726	TRIM28	TRIM28	19	59055836	59062082
ENSG00000197323	TRIM33	TRIM33	1	114935399	115053781
ENSG00000196367	TRRAP	TRRAP	7	98475556	98610866
ENSG00000165699	TSC1	TSC1	9	135766735	135820020
ENSG00000103197	TSC2	TSC2	16	2097466	2138721
ENSG00000146216	TTBK1	TTBK1	6	43211222	43255997
ENSG00000128881	TTBK2	TTBK2	15	43036550	43213007
ENSG00000165533	TTC8	TTC8	14	89290497	89344334
ENSG00000112742	TTK	TTK	6	80713604	80752244
ENSG00000214021	TTLL3	TTLL3	3	9849770	9896822
ENSG00000155657	TTN	TTN	2	179390716	179695529
ENSG00000074966	TXK	TXK	4	48068410	48136273
ENSG00000105397	TYK2	TYK2	19	10461209	10491352
ENSG00000092445	TYRO3	TYRO3	15	41851220	41871536
ENSG00000175063	UBE2C	UBE2C	20	44441215	44445596
ENSG00000152332	UHMK1	UHMK1	1	162467041	162499419
ENSG00000147854	UHRF2	UHRF2	9	6413151	6507054
ENSG00000140740	UQCRC2	UQCRC2	16	21963981	21994981
ENSG00000141968	VAV1	VAV1	19	6772722	6857371
ENSG00000134086	VHL	VHL	3	10182692	10193904
ENSG00000189030	VHLL	VHLL	1	156268415	156269428
ENSG00000215305	VPS16	VPS16	20	2821349	2847378
ENSG00000100749	VRK1	VRK1	14	97263684	97347950
ENSG00000028116	VRK2	VRK2	2	58134786	58387055
ENSG00000105053	VRK3	VRK3	19	50479726	50528805
ENSG00000136918	WDR38	WDR38	9	127615755	127620160
ENSG00000166483	WEE1	WEE1	11	9595228	9615004
ENSG00000214102	WEE2	WEE2	7	141408153	141431071
ENSG00000060237	WNK1	WNK1	12	861759	1020618
ENSG00000165238	WNK2	WNK2	9	95947198	96082854
ENSG00000196632	WNK3	WNK3	X	54219256	54385075
ENSG00000126562	WNK4	WNK4	17	40932649	40949061
ENSG00000125084	WNT1	WNT1	12	49372236	49376396
ENSG00000135925	WNT10A	WNT10A	2	219745085	219764303
ENSG00000169884	WNT10B	WNT10B	12	49359123	49365546
ENSG00000085741	WNT11	WNT11	11	75897369	75921803
ENSG00000002745	WNT16	WNT16	7	120965421	120981158
ENSG00000105989	WNT2	WNT2	7	116916685	116963343
ENSG00000134245	WNT2B	WNT2B	1	113009163	113065288
ENSG00000108379	WNT3	WNT3	17	44841694	44896082
ENSG00000154342	WNT3A	WNT3A	1	228194752	228248961
ENSG00000162552	WNT4	WNT4	1	22446461	22470462
ENSG00000114251	WNT5A	WNT5A	3	55499743	55523973
ENSG00000111186	WNT5B	WNT5B	12	1639057	1756409
ENSG00000115596	WNT6	WNT6	2	219724544	219738955
ENSG00000154764	WNT7A	WNT7A	3	13857755	13921618
ENSG00000188064	WNT7B	WNT7B	22	46316242	46373009
ENSG00000061492	WNT8A	WNT8A	5	137419581	137428054
ENSG00000075290	WNT8B	WNT8B	10	102222798	102243501

ENSG00000143816	WNT9A	WNT9A	1	228106357	228135631
ENSG00000158955	WNT9B	WNT9B	17	44910621	44964096
ENSG00000176105	YES1	YES1	18	721588	812327
ENSG00000091436	AC013461.1		2	173940163	174132738
ENSG00000115085	ZAP70	ZAP70	2	98330023	98356325
ENSG00000159840	ZYX	ZYX	7	143078173	143088204
ENSG00000108684	ACCN1	ACCN1	17	31340105	32483551
ENSG00000163485	ADORA1	ADORA1	1	203059782	203136533
ENSG00000138138	ATAD1	ATAD1	10	89511269	89601100
ENSG00000206428	AL805934.9		HSCHR6_MHC_(	31573205	31575042
ENSG00000156709	AIFM1	AIFM1	X	129263337	129299861
ENSG00000042286	AIFM2	AIFM2	10	71857979	71892690
ENSG00000112297	AIM1	AIM1	6	106808784	107018335
ENSG00000110711	AIP	AIP	11	67250512	67258574
ENSG00000204673	AKT1S1	AKT1S1	19	50372295	50381716
ENSG00000167772	ANGPTL4	ANGPTL4	19	8429011	8439257
ENSG00000029534	ANK1	ANK1	8	41510739	41754280
ENSG00000145362	ANK2	ANK2	4	113739265	114309884
ENSG00000154065	ANKRD29	ANKRD29	18	21178890	21242849
ENSG00000120868	APAF1	APAF1	12	99039078	99129204
ENSG00000157500	APPL1	APPL1	3	57261765	57312980
ENSG00000101246	ARFRP1	ARFRP1	20	62329996	62339355
ENSG00000111229	ARPC3	ARPC3	12	110872695	110888212
ENSG00000162704	ARPC5	ARPC5	1	183592401	183604892
ENSG00000153317	ASAP1	ASAP1	8	131064353	131455906
ENSG00000123268	ATF1	ATF1	12	51157819	51214907
ENSG00000138363	ATIC	ATIC	2	216176540	216214487
ENSG00000081923	ATP8B1	ATP8B1	18	55313658	55470327
ENSG00000085224	ATRX	ATRX	X	76760378	77041702
ENSG00000158321	AUTS2	AUTS2	7	69063905	70258054
ENSG00000112208	BAG2	BAG2	6	57037124	57049735
ENSG00000138376	BARD1	BARD1	2	215590370	215674428
ENSG00000087088	BAX	BAX	19	49458072	49465055
ENSG00000105327	BBC3	BBC3	19	47724079	47736023
ENSG00000171552	BCL2L1	BCL2L1	20	30252255	30311792
ENSG00000153094	BCL2L11	BCL2L11	2	111876955	111924587
ENSG00000129473	BCL2L2	BCL2L2	14	23776026	23780968
ENSG00000113916	BCL6	BCL6	3	187439165	187463515
ENSG00000015475	BID	BID	22	18216906	18257261
ENSG00000168487	BMP1	BMP1	8	22022249	22069839
ENSG00000104765	BNIP3L	BNIP3L	8	26240414	26363152
ENSG00000144857	BOC	BOC	3	112929850	113006303
ENSG00000136492	BRIP1	BRIP1	17	59759985	59940755
ENSG00000107159	CA9	CA9	9	35673853	35681156
ENSG00000135932	CAB39	CAB39	2	231577560	231685790
ENSG00000084774	CAD	CAD	2	27440258	27466660
ENSG00000164047	CAMP	CAMP	3	48264837	48266981
ENSG00000042493	CAPG	CAPG	2	85621346	85645555
ENSG00000110619	CARS	CARS	11	3022152	3078843
ENSG00000137752	CASP1	CASP1	11	104896170	104972158

ENSG00000003400	CASP10	CASP10	2	202047604	202094129
ENSG00000106144	CASP2	CASP2	7	142985308	143004789
ENSG00000164305	CASP3	CASP3	4	185548850	185570663
ENSG00000196954	CASP4	CASP4	11	104813593	104840163
ENSG00000137757	CASP5	CASP5	11	104864962	104893895
ENSG00000138794	CASP6	CASP6	4	110609785	110624739
ENSG00000165806	CASP7	CASP7	10	115438942	115490662
ENSG00000064012	CASP8	CASP8	2	202098166	202152434
ENSG00000132906	CASP9	CASP9	1	15818765	15853029
ENSG00000183287	CCBE1	CCBE1	18	57102442	57364574
ENSG00000161570	CCL5	CCL5	17	34198495	34207797
ENSG00000133101	CCNA1	CCNA1	13	37005967	37017019
ENSG00000145386	CCNA2	CCNA2	4	122737599	122745087
ENSG00000134057	CCNB1	CCNB1	5	68462837	68474072
ENSG00000118971	CCND2	CCND2	12	4382938	4414516
ENSG00000112576	CCND3	CCND3	6	41902671	42018095
ENSG00000105173	CCNE1	CCNE1	19	30302901	30315216
ENSG00000163823	CCR1	CCR1	3	46243200	46249887
ENSG00000196776	CD47	CD47	3	107762145	107809872
ENSG00000085117	CD82	CD82	11	44585977	44641913
ENSG00000117399	CDC20	CDC20	1	43824599	43828874
ENSG00000093009	CDC45	CDC45	22	19466982	19508135
ENSG00000094804	CDC6	CDC6	17	38443885	38459171
ENSG00000062038	CDH3	CDH3	16	68678151	68732971
ENSG00000124762	CDKN1A	CDKN1A	6	36644305	36655116
ENSG00000129757	CDKN1C	CDKN1C	11	2904443	2907111
ENSG00000147889	CDKN2A	CDKN2A	9	21967751	21995300
ENSG00000147883	CDKN2B	CDKN2B	9	22002902	22009280
ENSG00000123080	CDKN2C	CDKN2C	1	51426417	51440305
ENSG00000129355	CDKN2D	CDKN2D	19	10677139	10679655
ENSG00000064309	CDON	CDON	11	125825691	125933230
ENSG00000139610	CELA1	CELA1	12	51722227	51740463
ENSG00000115163	CENPA	CENPA	2	26987157	27023935
ENSG00000134389	CFHR5	CFHR5	1	196946667	196978804
ENSG00000172757	CFL1	CFL1	11	65590493	65629497
ENSG00000165410	CFL2	CFL2	14	35179593	35183896
ENSG00000003402	CFLAR	CFLAR	2	201980827	202029033
ENSG00000116254	CHD5	CHD5	1	6161853	6240183
ENSG00000168539	CHRM1	CHRM1	11	62676151	62689279
ENSG00000136425	CIB2	CIB2	15	78396948	78423886
ENSG00000125931	CITED1	CITED1	X	71521488	71527037
ENSG00000141367	CLTC	CLTC	17	57697219	57773671
ENSG00000018236	CNTN1	CNTN1	12	41302156	41464094
ENSG00000134115	CNTN6	CNTN6	3	1134260	1445901
ENSG00000118260	CREB1	CREB1	2	208394461	208468155
ENSG00000182158	CREB3L2	CREB3L2	7	137559725	137686813
ENSG00000100368	CSF2RB	CSF2RB	22	37309670	37336491
ENSG00000044115	CTNNA1	CTNNA1	5	137946656	138270723
ENSG00000107562	CXCL12	CXCL12	10	44793038	44881941
ENSG00000121966	CXCR4	CXCR4	2	136871919	136875735

ENSG00000144476	CXCR7	CXCR7	2	237476430	237491001
ENSG00000168772	CXXC4	CXXC4	4	105389469	105416058
ENSG00000083799	CYLD	CYLD	16	50775961	50835846
ENSG00000213088	DARC	DARC	1	159173097	159176290
ENSG00000187323	DCC	DCC	18	49867158	51062269
ENSG00000134574	DDB2	DDB2	11	47236493	47260767
ENSG00000160049	DFFA	DFFA	1	10516579	10532583
ENSG00000169598	DFFB	DFFB	1	3773845	3801993
ENSG00000065357	DGKA	DGKA	12	56324946	56347805
ENSG00000184047	DIABLO	DIABLO	12	122692210	122712081
ENSG00000151240	DIP2C	DIP2C	10	320130	735683
ENSG00000116288	PARK7	PARK7	1	8014351	8045565
ENSG00000197635	DPP4	DPP4	2	162848751	162931052
ENSG00000177103	DSCAML1	DSCAML1	11	117298489	117688240
ENSG00000120129	DUSP1	DUSP1	5	172195093	172198198
ENSG00000167967	E4F1	E4F1	16	2273567	2285743
ENSG00000198759	EGFL6	EGFL6	X	13587724	13651694
ENSG00000104131	EIF3J	EIF3J	15	44829255	44855001
ENSG00000156976	EIF4A2	EIF4A2	3	186500994	186507689
ENSG00000187840	EIF4EBP1	EIF4EBP1	8	37887859	37917883
ENSG00000163435	ELF3	ELF3	1	201977073	201986316
ENSG00000102034	ELF4	ELF4	X	129198849	129244691
ENSG00000105656	ELL	ELL	19	18553475	18632937
ENSG00000151491	EPS8	EPS8	12	15773092	16035263
ENSG00000012061	ERCC1	ERCC1	19	45910591	45982086
ENSG00000104884	ERCC2	ERCC2	19	45854246	45873876
ENSG00000163161	ERCC3	ERCC3	2	128014866	128051752
ENSG00000175595	ERCC4	ERCC4	16	14014014	14046205
ENSG00000134899	ERCC5	ERCC5	13	103459705	103528345
ENSG00000124882	EREG	EREG	4	75230860	75254468
ENSG00000085276	MECOM	MECOM	3	168801287	169381406
ENSG00000182944	EWSR1	EWSR1	22	29663998	29696515
ENSG00000182197	EXT1	EXT1	8	118806729	119124092
ENSG00000151348	EXT2	EXT2	11	44117099	44266979
ENSG00000106462	EZH2	EZH2	7	148504475	148581413
ENSG00000168040	FADD	FADD	11	70049269	70053496
ENSG00000152767	FARP1	FARP1	13	98795434	99102023
ENSG00000026103	FAS	FAS	10	90729553	90775542
ENSG00000117560	FASLG	FASLG	1	172628154	172636014
ENSG00000156427	FGF18	FGF18	5	170846660	170884627
ENSG00000186895	FGF3	FGF3	11	69624992	69633792
ENSG00000075388	FGF4	FGF4	11	69587797	69590171
ENSG00000091483	FH	FH	1	241660903	241683061
ENSG00000165197	FIGF	FIGF	X	15363713	15402498
ENSG00000196924	FLNA	FLNA	X	153576892	153603006
ENSG00000136068	FLNB	FLNB	3	57994127	58157982
ENSG00000115414	FN1	FN1	2	216225163	216300895
ENSG00000162998	FRZB	FRZB	2	183698002	183731890
ENSG00000082074	FYB	FYB	5	39105338	39274630
ENSG00000116717	GADD45A	GADD45A	1	68150744	68154021

ENSG00000099860	GADD45B	GADD45B	19	2476123	2478257
ENSG00000130222	GADD45G	GADD45G	9	92219928	92221470
ENSG00000180447	GAS1	GAS1	9	89559279	89562104
ENSG00000167965	MLST8	MLST8	16	2255238	2259398
ENSG00000100351	GRAP2	GRAP2	22	40297086	40369725
ENSG00000188486	H2AFX	H2AFX	11	118964564	118966177
ENSG00000105894	PTN	PTN	7	136912088	137028611
ENSG00000134248	HBXIP	HBXIP	1	110943871	110950564
ENSG00000019991	HGF	HGF	7	81328322	81399754
ENSG00000166135	HIF1AN	HIF1AN	10	102288829	102309763
ENSG00000064961	HMG20B	HMG20B	19	3572775	3579086
ENSG00000125968	ID1	ID1	20	30193086	30194318
ENSG00000117318	ID3	ID3	1	23884409	23886285
ENSG00000127415	IDUA	IDUA	4	980785	998316
ENSG00000017427	IGF1	IGF1	12	102789645	102874423
ENSG00000167244	IGF2	IGF2	11	2150342	2182439
ENSG00000197081	IGF2R	IGF2R	6	160390131	160534539
ENSG00000163453	IGFBP7	IGFBP7	4	57896939	57976551
ENSG00000085552	IGSF9	IGSF9	1	159896829	159915394
ENSG00000070061	IKBKAP	IKBKAP	9	111629797	111696396
ENSG00000073009	IKBKG	IKBKG	X	153769414	153796782
ENSG00000095752	IL11	IL11	19	55875757	55881814
ENSG00000136244	IL6	IL6	7	22765503	22771621
ENSG00000134352	IL6ST	IL6ST	5	55230923	55290772
ENSG00000122641	INHBA	INHBA	7	41724712	41742706
ENSG00000074706	IPCEF1	IPCEF1	6	154475631	154677926
ENSG00000169047	IRS1	IRS1	2	227599757	227664475
ENSG00000185950	IRS2	IRS2	13	110406184	110438915
ENSG00000078747	ITCH	ITCH	20	32951041	33099198
ENSG00000177606	JUN	JUN	1	59246465	59249785
ENSG00000180843	KIAA1618	17	78234667	78310304	
ENSG00000163808	KIF15	KIF15	3	44803209	44914868
ENSG00000170498	KISS1	KISS1	1	204159469	204165614
ENSG00000049130	KITLG	KITLG	12	88886566	88974250
ENSG00000183762	KREMEN1	KREMEN1	22	29469066	29564321
ENSG00000131650	KREMEN2	KREMEN2	16	3014160	3018381
ENSG00000171431	KRT20	KRT20	17	39030852	39041479
ENSG00000139292	LGR5	LGR5	12	71833550	71978622
ENSG00000131914	LIN28A	LIN28A	1	26737269	26756213
ENSG00000113083	LOX	LOX	5	121398890	121414206
ENSG00000107816	LZTS2	LZTS2	10	102756375	102767593
ENSG00000183742	MACC1	MACC1	7	20176020	20257027
ENSG00000151332	MBIP	MBIP	14	36767764	36789882
ENSG00000142945	KIF2C	KIF2C	1	45205490	45233439
ENSG00000053524	MCF2L2	MCF2L2	3	182895831	183146566
ENSG00000143384	MCL1	MCL1	1	150547032	150552073
ENSG00000073111	MCM2	MCM2	3	127317066	127341276
ENSG00000112118	MCM3	MCM3	6	52128807	52149582
ENSG00000104738	MCM4	MCM4	8	48872745	48890720
ENSG00000100297	MCM5	MCM5	22	35796056	35820495

ENSG00000076003	MCM6	MCM6	2	136597196	136633996
ENSG00000166508	MCM7	MCM7	7	99690351	99699563
ENSG00000137337	MDC1	MDC1	6	30667584	30685666
ENSG00000198625	MDM4	MDM4	1	204485511	204542871
ENSG00000170430	MGMT	MGMT	10	131265448	131566271
ENSG00000008394	MGST1	MGST1	12	16500076	16762193
ENSG00000187098	MITF	MITF	3	69788586	70017488
ENSG00000100985	MMP9	MMP9	20	44637547	44645200
ENSG00000147065	MSN	MSN	X	64887537	64961791
ENSG00000185499	MUC1	MUC1	1	155158300	155162707
ENSG00000132781	MUTYH	MUTYH	1	45794835	45806142
ENSG00000134323	MYCN	MYCN	2	16080686	16087129
ENSG00000172936	MYD88	MYD88	3	38179969	38184513
ENSG00000133454	MYO18B	MYO18B	22	26138111	26427007
ENSG00000176654	NANOGP1	NANOGP1	12	8025534	8052674
ENSG00000111704	NANOG	NANOG	12	7940390	7948655
ENSG00000124479	NDP	NDP	X	43808022	43832750
ENSG00000136352	NKX2-1	NKX2-1	14	36985603	36990354
ENSG00000167034	NKX3-1	NKX3-1	8	23536206	23540450
ENSG00000164867	NOS3	NOS3	7	150688083	150711676
ENSG00000148400	NOTCH1	NOTCH1	9	139388896	139440314
ENSG00000134250	NOTCH2	NOTCH2	1	120454176	120612240
ENSG00000181163	NPM1	NPM1	5	170814120	170838141
ENSG00000110713	NUP98	NUP98	11	3692313	3819022
ENSG00000090621	PABPC4	PABPC4	1	40026488	40042462
ENSG00000227345	PARG	PARG	10	51026325	51130715
ENSG00000185345	PARK2	PARK2	6	161768452	163148803
ENSG00000143799	PARP1	PARP1	1	224102741	226595780
ENSG00000178685	PARP10	PARP10	8	145051321	145086940
ENSG00000111224	PARP11	PARP11	12	3900213	3982608
ENSG00000059378	PARP12	PARP12	7	139723544	139763521
ENSG00000173193	PARP14	PARP14	3	122399465	122449687
ENSG00000173200	PARP15	PARP15	3	122296449	122357894
ENSG00000138617	PARP16	PARP16	15	65550432	65579210
ENSG00000129484	PARP2	PARP2	14	20811741	20826063
ENSG00000041880	PARP3	PARP3	3	51976361	51982883
ENSG00000102699	PARP4	PARP4	13	24995064	25086948
ENSG00000137817	PARP6	PARP6	15	72523243	72563628
ENSG00000151883	PARP8	PARP8	5	49961733	50142356
ENSG00000138496	PARP9	PARP9	3	122246806	122283424
ENSG00000132646	PCNA	PCNA	20	5095599	5107272
ENSG00000113448	PDE4D	PDE4D	5	58264865	59817947
ENSG00000100311	PDGFB	PDGFB	22	39619364	39640756
ENSG00000125207	PIWIL1	PIWIL1	12	130822432	130857182
ENSG00000141682	PMAIP1	PMAIP1	18	57567180	57571538
ENSG00000204531	POU5F1	POU5F1	6	31132114	31148508
ENSG00000078304	PPP2R5C	PPP2R5C	14	102228135	102394326
ENSG00000132170	PPARG	PPARG	3	12328867	12475855
ENSG00000180817	PPA1	PPA1	10	71962587	71993667
ENSG00000138777	PPA2	PPA2	4	106290234	106395238

ENSG00000088808	PPP1R13B	PPP1R13B	14	104200088	104313927
ENSG00000066027	PPP2R5A	PPP2R5A	1	212458782	212535200
ENSG00000068971	PPP2R5B	PPP2R5B	11	64685025	64701947
ENSG00000110851	PRDM4	PRDM4	12	108126644	108154914
ENSG00000112739	PRPF4B	PRPF4B	6	4021501	4065217
ENSG00000080815	PSEN1	PSEN1	14	73603155	73687109
ENSG00000087191	PSMC5	PSMC5	17	61904810	61909386
ENSG00000095303	PTGS1	PTGS1	9	125132824	125157982
ENSG00000073756	PTGS2	PTGS2	1	186640923	186649555
ENSG00000087494	PTHLH	PTHLH	12	28111017	28125638
ENSG00000179295	PTPN11	PTPN11	12	112856155	112947717
ENSG00000163629	PTPN13	PTPN13	4	87515468	87736324
ENSG00000152104	PTPN14	PTPN14	1	214530851	214725792
ENSG00000070159	PTPN3	PTPN3	9	112137974	112260593
ENSG00000111679	PTPN6	PTPN6	12	7055631	7070479
ENSG00000142949	PTPRF	PTPRF	1	43990858	44089343
ENSG00000144724	PTPRG	PTPRG	3	61547243	62283288
ENSG00000155093	PTPRN2	PTPRN2	7	157331750	158380480
ENSG00000105426	PTPRS	PTPRS	19	5173977	5340814
ENSG00000196090	PTPRT	PTPRT	20	40701392	41818610
ENSG00000113522	RAD50	RAD50	5	131891711	131980313
ENSG00000051180	RAD51	RAD51	15	40986972	41024356
ENSG00000002016	RAD52	RAD52	12	1021243	1100356
ENSG00000085999	RAD54L	RAD54L	1	46713360	46744145
ENSG00000017797	RALBP1	RALBP1	18	9475007	9538112
ENSG00000153201	RANBP2	RANBP2	2	109335937	109402267
ENSG00000076864	RAP1GAP	RAP1GAP	1	21922708	21995856
ENSG00000109756	RAPGEF2	RAPGEF2	4	160025330	160281321
ENSG00000113319	RASGRF2	RASGRF2	5	80256491	80525975
ENSG00000080839	RBL1	RBL1	20	35624752	35724398
ENSG00000100387	RBX1	RBX1	22	41347351	41369313
ENSG00000129625	REEP5	REEP5	5	112212084	112258236
ENSG00000162924	REL	REL	2	61108656	61150645
ENSG00000035928	RFC1	RFC1	4	39289076	39367995
ENSG00000155366	RHOC	RHOC	1	113243728	113250056
ENSG00000177706	FAM20C	FAM20C	7	192969	300711
ENSG00000132383	RPA1	RPA1	17	1733266	1802848
ENSG00000169218	RSPO1	RSPO1	1	38076951	38100595
ENSG00000143171	RXRG	RXRG	1	165370159	165414433
ENSG00000136155	SCEL	SCEL	13	78109809	78219398
ENSG00000168447	SCNN1B	SCNN1B	16	23313591	23392620
ENSG00000166828	SCNN1G	SCNN1G	16	23194036	23228204
ENSG00000138674	SEC31A	SEC31A	4	83739814	83822319
ENSG00000145391	SETD7	SETD7	4	140417243	140477928
ENSG00000104332	SFRP1	SFRP1	8	41119481	41167016
ENSG00000145423	SFRP2	SFRP2	4	154701744	154710272
ENSG00000106483	SFRP4	SFRP4	7	37945543	38065297
ENSG00000120057	SFRP5	SFRP5	10	99526508	99531709
ENSG00000163069	SGCB	SGCB	4	52886872	52904648
ENSG00000163535	SGOL2	SGOL2	2	201374731	201448505

ENSG00000129946	SHC2	SHC2	19	416587	460996
ENSG00000127922	SHFM1	SHFM1	7	96110938	96339203
ENSG00000181788	SIAH2	SIAH2	3	150458914	150481264
ENSG00000100625	SIX4	SIX4	14	61176246	61190852
ENSG00000113558	SKP1	SKP1	5	133492082	133561762
ENSG00000145604	SKP2	SKP2	5	36152091	36184421
ENSG00000204385	SLC44A4	SLC44A4	6	31830969	31846823
ENSG00000077935	SMC1B	SMC1B	22	45739944	45809500
ENSG00000172062	SMN1	SMN1	5	70220768	70249769
ENSG00000143499	SMYD2	SMYD2	1	214454445	214510474
ENSG00000124216	SNAI1	SNAI1	20	48599536	48605423
ENSG00000019549	SNAI2	SNAI2	8	49830249	49834299
ENSG00000099956	SMARCB1	SMARCB1	22	24129150	24176703
ENSG00000167941	SOST	SOST	17	41831103	41836156
ENSG00000181449	SOX2	SOX2	3	181429714	181432221
ENSG00000173898	SPTBN2	SPTBN2	11	66452719	66496697
ENSG00000084112	SSH1	SSH1	12	109176466	109251359
ENSG00000141298	SSH2	SSH2	17	27952956	28257170
ENSG00000100380	ST13	ST13	22	41220539	41253026
ENSG00000136738	STAM	STAM	10	17686124	17757913
ENSG00000126561	STAT5A	STAT5A	17	40439565	40463961
ENSG00000173757	STAT5B	STAT5B	17	40351186	40428725
ENSG00000103266	STUB1	STUB1	16	730276	732753
ENSG00000152455	SUV39H2	SUV39H2	10	14920819	14946314
ENSG00000011007	TCEB3	TCEB3	1	24069645	24088549
ENSG00000042088	TDP1	TDP1	14	90422244	90511106
ENSG00000109927	TECTA	TECTA	11	120971882	121062202
ENSG00000164362	TERT	TERT	5	1253262	1295184
ENSG00000068323	TFE3	TFE3	X	48886242	48901012
ENSG00000114354	TFG	TFG	3	100428205	100467810
ENSG00000105329	TGFB1	TGFB1	19	41836813	41859831
ENSG00000125780	TGM3	TGM3	20	2276647	2321724
ENSG00000127666	TICAM1	TICAM1	19	4815939	4831737
ENSG00000163659	TIPARP	TIPARP	3	156391024	156424559
ENSG00000150455	TIRAP	TIRAP	11	126152960	126168740
ENSG00000196781	TLE1	TLE1	9	84198598	84304220
ENSG00000038295	TLL1	TLL1	4	166794410	167025047
ENSG00000174125	TLR1	TLR1	4	38792298	38858438
ENSG00000137462	TLR2	TLR2	4	154622652	154626851
ENSG00000164342	TLR3	TLR3	4	186990306	187006255
ENSG00000187554	TLR5	TLR5	1	223282748	223316624
ENSG00000174130	TLR6	TLR6	4	38825336	38858438
ENSG00000173366	RP11-330H6.5		3	52255097	52265206
ENSG00000206439	AL929587.5		HSCHR6_MHC_(	31533585	31536356
ENSG00000104689	TNFRSF10A	TNFRSF10A	8	23047965	23082639
ENSG00000120889	TNFRSF10B	TNFRSF10B	8	22877646	22926692
ENSG00000173530	TNFRSF10D	TNFRSF10D	8	22993101	23021543
ENSG00000067182	TNFRSF1A	TNFRSF1A	12	6437923	6451280
ENSG00000028137	TNFRSF1B	TNFRSF1B	1	12227060	12269285
ENSG00000120949	TNFRSF8	TNFRSF8	1	12123434	12204264

ENSG00000121858	TNFSF10	TNFSF10	3	172223298	172241297
ENSG00000161955	TNFSF13	TNFSF13	17	7461609	7464925
ENSG00000173273	TNKS	TNKS	8	9413424	9639856
ENSG00000107854	TNKS2	TNKS2	10	93558069	93625033
ENSG00000198900	TOP1	TOP1	20	39657458	39753127
ENSG00000131747	TOP2A	TOP2A	17	38544768	38574408
ENSG00000143514	TP53BP2	TP53BP2	1	223967601	224033674
ENSG00000073282	TP63	TP63	3	189349205	189615068
ENSG00000078900	TP73	TP73	1	3569084	3652765
ENSG00000088325	TPX2	TPX2	20	30327074	30389608
ENSG00000102871	TRADD	TRADD	16	67188083	67193789
ENSG00000127191	TRAF2	TRAF2	9	139776364	139821059
ENSG00000056972	TRAF3IP2	TRAF3IP2	6	111877657	111927481
ENSG00000175104	TRAF6	TRAF6	11	36508577	36531822
ENSG00000067167	TRAM1	TRAM1	8	71485677	71520622
ENSG00000101162	TUBB1	TUBB1	20	57594309	57601709
ENSG00000122691	TWIST1	TWIST1	7	19060614	19157295
ENSG00000176890	TYMS	TYMS	18	657604	673578
ENSG00000104517	UBR5	UBR5	8	103264501	103425069
ENSG00000143179	UCK2	UCK2	1	165796768	165880855
ENSG00000114491	UMPS	UMPS	3	124449213	124464040
ENSG00000005007	UPF1	UPF1	19	18942744	18979038
ENSG00000077254	USP33	USP33	1	78161672	78225537
ENSG00000124486	USP9X	USP9X	X	40944888	41092185
ENSG00000160293	VAV2	VAV2	9	136627016	136857726
ENSG00000134215	VAV3	VAV3	1	108113782	108507766
ENSG00000155959	VBP1	VBP1	X	154425284	154468098
ENSG00000112715	VEGFA	VEGFA	6	43737921	43754224
ENSG00000173511	VEGFB	VEGFB	11	64002010	64006259
ENSG00000150630	VEGFC	VEGFC	4	177604689	177713881
ENSG00000158195	WASF2	WASF2	1	27730730	27816669
ENSG00000106299	WASL	WASL	7	123321989	123389121
ENSG00000115368	WDR75	WDR75	2	190306159	190340291
ENSG00000156076	WIF1	WIF1	12	65444406	65515346
ENSG00000104415	WISP1	WISP1	8	134203282	134240603
ENSG00000101966	XIAP	XIAP	X	122993574	123047829
ENSG00000136936	XPA	XPA	9	100437191	100459639
ENSG00000154767	XPC	XPC	3	14186647	14220283
ENSG00000082898	XPO1	XPO1	2	61704984	61765761
ENSG00000073050	XRCC1	XRCC1	19	44047464	44079730
ENSG00000126215	XRCC3	XRCC3	14	104163955	104181823
ENSG00000152256	PDK1	PDK1	2	173420101	173489823
ENSG00000162302	RPS6KA4	RPS6KA4	11	64126620	64139687
ENSG00000175634	RPS6KB2	RPS6KB2	11	67195931	67202872
ENSG00000108443	RPS6KB1	RPS6KB1	17	57970447	58027925
ENSG00000013275	PSMC4	PSMC4	19	40477073	40487351
ENSG00000177169	ULK1	ULK1	12	132379196	132407695
ENSG00000081479	LRP2	LRP2	2	169983619	170219195
ENSG00000109771	LRP2BP	LRP2BP	4	186285032	186317053
ENSG00000112210	RAB23	RAB23	6	57053581	57087078

ENSG00000166452	C11orf17	C11orf17	11	8932686	8941631
ENSG00000072803	FBXW11	FBXW11	5	171288553	171433877
ENSG00000043355	ZIC2	ZIC2	13	100634026	100639018
ENSG00000138798	EGF	EGF	4	110834040	110933422
ENSG00000104213	PDGFRL	PDGFRL	8	17433942	17501580
ENSG00000116473	RAP1A	RAP1A	1	112084840	112259313
ENSG00000109270	LAMTOR3	LAMTOR3	4	100799493	100815647
ENSG00000006062	MAP3K14	MAP3K14	17	43340488	43394414
ENSG00000117632	STMN1	STMN1	1	26210672	26233482
ENSG00000112658	SRF	SRF	6	43139037	43149243
ENSG00000134259	NGF	NGF	1	115828539	115880857
ENSG00000176697	BDNF	BDNF	11	27676440	27743605
ENSG00000123358	NR4A1	NR4A1	12	52416616	52453291
ENSG00000133961	NUMB	NUMB	14	73741928	73925252
ENSG00000151694	ADAM17	ADAM17	2	9628615	9695921
ENSG00000162736	NCSTN	NCSTN	1	160313062	160328742
ENSG00000137834	SMAD6	SMAD6	15	66994670	67074338
ENSG00000101665	SMAD7	SMAD7	18	46446223	46477081
ENSG00000120693	SMAD9	SMAD9	13	37418968	37494902
ENSG00000112033	PPARD	PPARD	6	35310335	35395968
ENSG00000101773	RBBP8	RBBP8	18	20513290	20606449
ENSG00000178585	CTNNBIP1	CTNNBIP1	1	9908334	9970394
ENSG00000147869	CER1	CER1	9	14719722	14722715
ENSG00000115718	PROC	PROC	2	128176003	128186822
ENSG00000124181	PLCG1	PLCG1	20	39765600	39804361
ENSG00000142546	NOSIP	NOSIP	19	50058970	50083813
ENSG00000106211	HSPB1	HSPB1	7	75931861	75933612
ENSG00000125755	SYMPK	SYMPK	19	46318693	46366548
ENSG00000166068	SPRED1	SPRED1	15	38545052	38649450
ENSG00000110395	CBL	CBL	11	119076752	119177651
ENSG00000107404	DVL1	DVL1	1	1270656	1284760
ENSG00000171791	BCL2	BCL2	18	60790579	60987361
ENSG00000102158	MAGT1	MAGT1	X	77081861	77151090
ENSG00000204490	AL662847.2		HSCHR6_MHC_(	31530756	31533525
ENSG00000115594	IL1R1	IL1R1	2	102681004	102796334
ENSG00000125538	IL1B	IL1B	2	113587328	113594480
ENSG00000115008	IL1A	IL1A	2	113531492	113542167
ENSG00000164399	IL3	IL3	5	131396222	131398897
ENSG00000185291	IL3RA	IL3RA	X	1455509	1501578
ENSG00000059728	MXD1	MXD1	2	70124820	70170077
ENSG00000119950	MXI1	MXI1	10	111967363	112047123
ENSG00000135476	ESPL1	ESPL1	12	53662083	53687427
ENSG00000196132	MYT1	MYT1	20	62783144	62873604
ENSG00000006634	DBF4	DBF4	7	87505531	87538856
ENSG00000206206	CR759817.1		HSCHR6_MHC_I	33264261	33274971
ENSG00000100784	RPS6KA5	RPS6KA5	14	91337172	91526993
ENSG00000125952	MAX	MAX	14	65472892	65569227
ENSG00000175197	DDIT3	DDIT3	12	57910373	57914300
ENSG00000106633	GCK	GCK	7	44183872	44237769
ENSG00000173531	MST1	MST1	3	49721380	49726934

ENSG00000121653	MAPK8IP1	MAPK8IP1	11	45907202	45928016
ENSG00000008735	MAPK8IP2	MAPK8IP2	22	51039114	51049979
ENSG00000138834	MAPK8IP3	MAPK8IP3	16	1756194	1820318
ENSG00000131196	NFATC1	NFATC1	18	77155772	77289325
ENSG00000072736	NFATC3	NFATC3	16	68119375	68263162
ENSG00000130522	JUND	JUND	19	18390563	18392432
ENSG00000167193	CRK	CRK	17	1323983	1359552
ENSG00000049323	LTBP1	LTBP1	2	33172039	33624576
ENSG00000067560	RHOA	RHOA	3	49396578	49450431
ENSG00000055130	CUL1	CUL1	7	148395006	148498201
ENSG00000100592	DAAM1	DAAM1	14	59655399	59838123
ENSG00000162738	VANGL2	VANGL2	1	160370376	160398468
ENSG00000196470	SIAH1	SIAH1	16	48394442	48419361
ENSG00000169554	ZEB2	ZEB2	2	145121063	145282147
ENSG00000126353	CCR7	CCR7	17	38710021	38721724
ENSG00000126456	IRF3	IRF3	19	50162829	50169132
ENSG00000100906	NFKBIA	NFKBIA	14	35870717	35873952

Description

AP2 associated kinase 1 [Source:HGNC Symbol;Acc:19679]
apoptosis-associated tyrosine kinase [Source:HGNC Symbol;Acc:21]
ATP-binding cassette, sub-family A (ABC1), member 1 [Source:HGNC Symbol;Acc:29]
c-abl oncogene 1, non-receptor tyrosine kinase [Source:HGNC Symbol;Acc:76]
v-abl Abelson murine leukemia viral oncogene homolog 2 [Source:HGNC Symbol;Acc:77]
TBC1 domain containing kinase [Source:HGNC Symbol;Acc:28261]
Uncharacterized serine/threonine-protein kinase SgK494 [Source:UniProtKB/Swiss-Prot;Acc:Q96LW2]
protein kinase domain containing, cytoplasmic homolog (mouse) [Source:HGNC Symbol;Acc:25123]
RPTOR independent companion of MTOR, complex 2 [Source:HGNC Symbol;Acc:28611]
Protein kinase-like protein SgK196 [Source:UniProtKB/Swiss-Prot;Acc:Q9H5K3]
Serine/threonine-protein kinase NIM1 [Source:UniProtKB/Swiss-Prot;Acc:Q8IY84]
regulatory associated protein of MTOR, complex 1 [Source:HGNC Symbol;Acc:30287]
acyl-CoA oxidase 1, palmitoyl [Source:HGNC Symbol;Acc:119]
acyl-CoA synthetase long-chain family member 5 [Source:HGNC Symbol;Acc:16526]
activin A receptor, type I [Source:HGNC Symbol;Acc:171]
activin A receptor, type IB [Source:HGNC Symbol;Acc:172]
activin A receptor, type IC [Source:HGNC Symbol;Acc:18123]
activin A receptor, type IIB [Source:HGNC Symbol;Acc:174]
activin A receptor type II-like 1 [Source:HGNC Symbol;Acc:175]
ADAM metallopeptidase domain 29 [Source:HGNC Symbol;Acc:207]
ADAM metallopeptidase with thrombospondin type 1 motif, 15 [Source:HGNC Symbol;Acc:16305]
ADAM metallopeptidase with thrombospondin type 1 motif, 18 [Source:HGNC Symbol;Acc:17110]
ADAMTS-like 3 [Source:HGNC Symbol;Acc:14633]
aarF domain containing kinase 1 [Source:HGNC Symbol;Acc:19038]
aarF domain containing kinase 2 [Source:HGNC Symbol;Acc:19039]
aarF domain containing kinase 4 [Source:HGNC Symbol;Acc:19041]
aarF domain containing kinase 5 [Source:HGNC Symbol;Acc:21738]
adrenergic, beta, receptor kinase 1 [Source:HGNC Symbol;Acc:289]
adrenergic, beta, receptor kinase 2 [Source:HGNC Symbol;Acc:290]
v-akt murine thymoma viral oncogene homolog 1 [Source:HGNC Symbol;Acc:391]
v-akt murine thymoma viral oncogene homolog 2 [Source:HGNC Symbol;Acc:392]
v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma) [Source:HGNC Symbol;Acc:393]
anaplastic lymphoma receptor tyrosine kinase [Source:HGNC Symbol;Acc:427]
alpha-kinase 1 [Source:HGNC Symbol;Acc:20917]
alpha-kinase 2 [Source:HGNC Symbol;Acc:20565]
alpha-kinase 3 [Source:HGNC Symbol;Acc:17574]
STE20-related kinase adaptor beta [Source:HGNC Symbol;Acc:13205]
cyclin-dependent kinase 15 [Source:HGNC Symbol;Acc:14434]
anti-Mullerian hormone receptor, type II [Source:HGNC Symbol;Acc:465]
angiopoietin-like 7 [Source:HGNC Symbol;Acc:24078]
ankyrin repeat and kinase domain containing 1 [Source:HGNC Symbol;Acc:21027]
SIK family kinase 3 [Source:HGNC Symbol;Acc:29165]
adenomatous polyposis coli [Source:HGNC Symbol;Acc:583]
adenomatosis polyposis coli 2 [Source:HGNC Symbol;Acc:24036]
v-raf murine sarcoma 3611 viral oncogene homolog [Source:HGNC Symbol;Acc:646]
ariadne homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:690]
ADP-ribosylation factor-like 13B [Source:HGNC Symbol;Acc:25419]

ADP-ribosylation factor-like 17A [Source:HGNC Symbol;Acc:24096]
ADP-ribosylation factor-like 6 [Source:HGNC Symbol;Acc:13210]
aryl hydrocarbon receptor nuclear translocator [Source:HGNC Symbol;Acc:700]
activating signal cointegrator 1 complex subunit 1 [Source:HGNC Symbol;Acc:24268]
alveolar soft part sarcoma chromosome region, candidate 1 [Source:HGNC Symbol;Acc:13825]
ataxia telangiectasia mutated [Source:HGNC Symbol;Acc:795]
ataxia telangiectasia and Rad3 related [Source:HGNC Symbol;Acc:882]
aurora kinase A [Source:HGNC Symbol;Acc:11393]
aurora kinase B [Source:HGNC Symbol;Acc:11390]
aurora kinase C [Source:HGNC Symbol;Acc:11391]
axin 1 [Source:HGNC Symbol;Acc:903]
axin 2 [Source:HGNC Symbol;Acc:904]
B9 protein domain 1 [Source:HGNC Symbol;Acc:24123]
BCL2-associated agonist of cell death [Source:HGNC Symbol;Acc:936]
BAI1-associated protein 2 [Source:HGNC Symbol;Acc:947]
Bardet-Biedl syndrome 1 [Source:HGNC Symbol;Acc:966]
Bardet-Biedl syndrome 2 [Source:HGNC Symbol;Acc:967]
Bardet-Biedl syndrome 4 [Source:HGNC Symbol;Acc:969]
Bardet-Biedl syndrome 5 [Source:HGNC Symbol;Acc:970]
Bardet-Biedl syndrome 7 [Source:HGNC Symbol;Acc:18758]
Bardet-Biedl syndrome 9 [Source:HGNC Symbol;Acc:30000]
branched chain ketoacid dehydrogenase kinase [Source:HGNC Symbol;Acc:16902]
BCL2-like 14 (apoptosis facilitator) [Source:HGNC Symbol;Acc:16657]
B-cell CLL/lymphoma 9 [Source:HGNC Symbol;Acc:1008]
breakpoint cluster region [Source:HGNC Symbol;Acc:1014]
baculoviral IAP repeat containing 5 [Source:HGNC Symbol;Acc:593]
B lymphoid tyrosine kinase [Source:HGNC Symbol;Acc:1057]
bone morphogenetic protein 4 [Source:HGNC Symbol;Acc:1071]
bone morphogenetic protein receptor, type II (serine/threonine kinase) [Source:HGNC Symbol;Acc:1078]
BMX non-receptor tyrosine kinase [Source:HGNC Symbol;Acc:1079]
v-raf murine sarcoma viral oncogene homolog B1 [Source:HGNC Symbol;Acc:1097]
breast cancer 1, early onset [Source:HGNC Symbol;Acc:1100]
breast cancer 2, early onset [Source:HGNC Symbol;Acc:1101]
BR serine/threonine kinase 1 [Source:HGNC Symbol;Acc:18994]
BR serine/threonine kinase 2 [Source:HGNC Symbol;Acc:11405]
Bruton agammaglobulinemia tyrosine kinase [Source:HGNC Symbol;Acc:1133]
beta-transducin repeat containing [Source:HGNC Symbol;Acc:1144]
budding uninhibited by benzimidazoles 1 homolog (yeast) [Source:HGNC Symbol;Acc:1148]
budding uninhibited by benzimidazoles 1 homolog beta (yeast) [Source:HGNC Symbol;Acc:1149]
budding uninhibited by benzimidazoles 3 homolog (yeast) [Source:HGNC Symbol;Acc:1151]
chromosome 10 open reading frame 137 [Source:HGNC Symbol;Acc:24640]
chromosome 15 open reading frame 2 [Source:HGNC Symbol;Acc:1190]
aarF domain containing kinase 3 [Source:HGNC Symbol;Acc:16812]
calcium/calmodulin-dependent protein kinase I [Source:HGNC Symbol;Acc:1459]
calcium/calmodulin-dependent protein kinase ID [Source:HGNC Symbol;Acc:19341]
calcium/calmodulin-dependent protein kinase IG [Source:HGNC Symbol;Acc:14585]
calcium/calmodulin-dependent protein kinase II alpha [Source:HGNC Symbol;Acc:1460]
calcium/calmodulin-dependent protein kinase II beta [Source:HGNC Symbol;Acc:1461]
calcium/calmodulin-dependent protein kinase II delta [Source:HGNC Symbol;Acc:1462]
calcium/calmodulin-dependent protein kinase II gamma [Source:HGNC Symbol;Acc:1463]

calcium/calmodulin-dependent protein kinase IV [Source:HGNC Symbol;Acc:1464]
calcium/calmodulin-dependent protein kinase kinase 1, alpha [Source:HGNC Symbol;Acc:1469]
calcium/calmodulin-dependent protein kinase kinase 2, beta [Source:HGNC Symbol;Acc:1470]
CaM kinase-like vesicle-associated [Source:HGNC Symbol;Acc:28788]
caspase recruitment domain family, member 9 [Source:HGNC Symbol;Acc:16391]
cyclin D1 [Source:HGNC Symbol;Acc:1582]
cyclin H [Source:HGNC Symbol;Acc:1594]
cyclin-dependent kinase 20 [Source:HGNC Symbol;Acc:21420]
CD109 molecule [Source:HGNC Symbol;Acc:21685]
CD248 molecule, endosialin [Source:HGNC Symbol;Acc:18219]
CDC14 cell division cycle 14 homolog A (S. cerevisiae) [Source:HGNC Symbol;Acc:1718]
CDC14 cell division cycle 14 homolog B (S. cerevisiae) [Source:HGNC Symbol;Acc:1719]
cyclin-dependent kinase 1 [Source:HGNC Symbol;Acc:1722]
cell division cycle 25 homolog A (S. pombe) [Source:HGNC Symbol;Acc:1725]
cell division cycle 25 homolog B (S. pombe) [Source:HGNC Symbol;Acc:1726]
cell division cycle 25 homolog C (S. pombe) [Source:HGNC Symbol;Acc:1727]
cyclin-dependent kinase 11A [Source:HGNC Symbol;Acc:1730]
cyclin-dependent kinase 13 [Source:HGNC Symbol;Acc:1733]
cyclin-dependent kinase 19 [Source:HGNC Symbol;Acc:19338]
cell division cycle 42 (GTP binding protein, 25kDa) [Source:HGNC Symbol;Acc:1736]
CDC42 binding protein kinase alpha (DMPK-like) [Source:HGNC Symbol;Acc:1737]
CDC42 binding protein kinase beta (DMPK-like) [Source:HGNC Symbol;Acc:1738]
CDC42 binding protein kinase gamma (DMPK-like) [Source:HGNC Symbol;Acc:29829]
cell division cycle 7 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:1745]
cell division cycle associated 8 [Source:HGNC Symbol;Acc:14629]
cadherin 1, type 1, E-cadherin (epithelial) [Source:HGNC Symbol;Acc:1748]
cyclin-dependent kinase 10 [Source:HGNC Symbol;Acc:1770]
cyclin-dependent kinase 2 [Source:HGNC Symbol;Acc:1771]
chromosome 17 open reading frame 106 [Source:HGNC Symbol;Acc:37242]
cyclin-dependent kinase 4 [Source:HGNC Symbol;Acc:1773]
cyclin-dependent kinase 5 [Source:HGNC Symbol;Acc:1774]
cyclin-dependent kinase 6 [Source:HGNC Symbol;Acc:1777]
cyclin-dependent kinase 7 [Source:HGNC Symbol;Acc:1778]
cyclin-dependent kinase 8 [Source:HGNC Symbol;Acc:1779]
cyclin-dependent kinase 9 [Source:HGNC Symbol;Acc:1780]
cyclin-dependent kinase-like 1 (CDC2-related kinase) [Source:HGNC Symbol;Acc:1781]
cyclin-dependent kinase-like 2 (CDC2-related kinase) [Source:HGNC Symbol;Acc:1782]
cyclin-dependent kinase-like 3 [Source:HGNC Symbol;Acc:15483]
cyclin-dependent kinase-like 4 [Source:HGNC Symbol;Acc:19287]
cyclin-dependent kinase-like 5 [Source:HGNC Symbol;Acc:11411]
cyclin-dependent kinase inhibitor 1B (p27, Kip1) [Source:HGNC Symbol;Acc:1785]
Processed pseudogene
chromatin licensing and DNA replication factor 1 [Source:HGNC Symbol;Acc:24576]
centromere protein E, 312kDa [Source:HGNC Symbol;Acc:1856]
centrosomal protein 290kDa [Source:HGNC Symbol;Acc:29021]
CHK1 checkpoint homolog (S. pombe) [Source:HGNC Symbol;Acc:1925]
CHK2 checkpoint homolog (S. pombe) [Source:HGNC Symbol;Acc:16627]
cysteine-rich hydrophobic domain 2 [Source:HGNC Symbol;Acc:1935]
cell adhesion molecule with homology to L1CAM (close homolog of L1) [Source:HGNC Symbol;Acc:1939]
conserved helix-loop-helix ubiquitous kinase [Source:HGNC Symbol;Acc:1974]

citron (rho-interacting, serine/threonine kinase 21) [Source:HGNC Symbol;Acc:1985]
claudin 1 [Source:HGNC Symbol;Acc:2032]
CAP-GLY domain containing linker protein 1 [Source:HGNC Symbol;Acc:10461]
claspin [Source:HGNC Symbol;Acc:19715]
calsyntenin 1 [Source:HGNC Symbol;Acc:17447]
clusterin associated protein 1 [Source:HGNC Symbol;Acc:19009]
contactin 4 [Source:HGNC Symbol;Acc:2174]
CREB binding protein [Source:HGNC Symbol;Acc:2348]
cyclin-dependent kinase 12 [Source:HGNC Symbol;Acc:24224]
colony stimulating factor 1 receptor [Source:HGNC Symbol;Acc:2433]
c-src tyrosine kinase [Source:HGNC Symbol;Acc:2444]
CUB and Sushi multiple domains 3 [Source:HGNC Symbol;Acc:19291]
casein kinase 1, alpha 1 [Source:HGNC Symbol;Acc:2451]
casein kinase 1, alpha 1-like [Source:HGNC Symbol;Acc:20289]
casein kinase 1, delta [Source:HGNC Symbol;Acc:2452]
casein kinase 1, epsilon [Source:HGNC Symbol;Acc:2453]
casein kinase 1, gamma 1 [Source:HGNC Symbol;Acc:2454]
casein kinase 1, gamma 2 [Source:HGNC Symbol;Acc:2455]
casein kinase 1, gamma 3 [Source:HGNC Symbol;Acc:2456]
casein kinase 2, alpha 1 polypeptide [Source:HGNC Symbol;Acc:2457]
casein kinase 2, alpha prime polypeptide [Source:HGNC Symbol;Acc:2459]
catenin (cadherin-associated protein), beta 1, 88kDa [Source:HGNC Symbol;Acc:2514]
cullin 2 [Source:HGNC Symbol;Acc:2552]
cystin 1 [Source:HGNC Symbol;Acc:18525]
death-associated protein kinase 1 [Source:HGNC Symbol;Acc:2674]
death-associated protein kinase 2 [Source:HGNC Symbol;Acc:2675]
death-associated protein kinase 3 [Source:HGNC Symbol;Acc:2676]
doublecortin-like kinase 1 [Source:HGNC Symbol;Acc:2700]
doublecortin-like kinase 2 [Source:HGNC Symbol;Acc:19002]
doublecortin-like kinase 3 [Source:HGNC Symbol;Acc:19005]
DNA-damage-inducible transcript 4 [Source:HGNC Symbol;Acc:24944]
discoidin domain receptor tyrosine kinase 1 [Source:HGNC Symbol;Acc:2730]
discoidin domain receptor tyrosine kinase 2 [Source:HGNC Symbol;Acc:2731]
DiGeorge syndrome critical region gene 14 [Source:HGNC Symbol;Acc:16817]
delta-like 1 homolog (Drosophila) [Source:HGNC Symbol;Acc:2907]
dystrophia myotonica-protein kinase [Source:HGNC Symbol;Acc:2933]
dynein, axonemal, heavy chain 11 [Source:HGNC Symbol;Acc:2942]
dynein, axonemal, heavy chain 5 [Source:HGNC Symbol;Acc:2950]
dynein, axonemal, heavy chain 9 [Source:HGNC Symbol;Acc:2953]
dynein, axonemal, intermediate chain 1 [Source:HGNC Symbol;Acc:2954]
dom-3 homolog Z (C. elegans) [Source:HGNC Symbol;Acc:2992]
E2F transcription factor 1 [Source:HGNC Symbol;Acc:3113]
E2F transcription factor 2 [Source:HGNC Symbol;Acc:3114]
E2F transcription factor 3 [Source:HGNC Symbol;Acc:3115]
E2F transcription factor 4, p107/p130-binding [Source:HGNC Symbol;Acc:3118]
E2F transcription factor 5, p130-binding [Source:HGNC Symbol;Acc:3119]
E2F transcription factor 6 [Source:HGNC Symbol;Acc:3120]
E2F transcription factor 7 [Source:HGNC Symbol;Acc:23820]
E2F transcription factor 8 [Source:HGNC Symbol;Acc:24727]
eukaryotic elongation factor-2 kinase [Source:HGNC Symbol;Acc:24615]

ephrin-B1 [Source:HGNC Symbol;Acc:3226]
ephrin-B2 [Source:HGNC Symbol;Acc:3227]
epidermal growth factor receptor [Source:HGNC Symbol;Acc:3236]
egl nine homolog 1 (C. elegans) [Source:HGNC Symbol;Acc:1232]
egl nine homolog 2 (C. elegans) [Source:HGNC Symbol;Acc:14660]
egl nine homolog 3 (C. elegans) [Source:HGNC Symbol;Acc:14661]
early growth response 1 [Source:HGNC Symbol;Acc:3238]
eukaryotic translation initiation factor 2-alpha kinase 1 [Source:HGNC Symbol;Acc:24921]
eukaryotic translation initiation factor 2-alpha kinase 2 [Source:HGNC Symbol;Acc:9437]
eukaryotic translation initiation factor 2-alpha kinase 3 [Source:HGNC Symbol;Acc:3255]
eukaryotic translation initiation factor 2 alpha kinase 4 [Source:HGNC Symbol;Acc:19687]
eukaryotic translation initiation factor 4B [Source:HGNC Symbol;Acc:3285]
eukaryotic translation initiation factor 4E [Source:HGNC Symbol;Acc:3287]
ELK1, member of ETS oncogene family [Source:HGNC Symbol;Acc:3321]
ELK3, ETS-domain protein (SRF accessory protein 2) [Source:HGNC Symbol;Acc:3325]
ELK4, ETS-domain protein (SRF accessory protein 1) [Source:HGNC Symbol;Acc:3326]
E1A binding protein p300 [Source:HGNC Symbol;Acc:3373]
endothelial PAS domain protein 1 [Source:HGNC Symbol;Acc:3374]
EPH receptor A1 [Source:HGNC Symbol;Acc:3385]
EPH receptor A10 [Source:HGNC Symbol;Acc:19987]
EPH receptor A2 [Source:HGNC Symbol;Acc:3386]
EPH receptor A3 [Source:HGNC Symbol;Acc:3387]
EPH receptor A4 [Source:HGNC Symbol;Acc:3388]
EPH receptor A5 [Source:HGNC Symbol;Acc:3389]
EPH receptor A6 [Source:HGNC Symbol;Acc:19296]
EPH receptor A7 [Source:HGNC Symbol;Acc:3390]
EPH receptor A8 [Source:HGNC Symbol;Acc:3391]
EPH receptor B1 [Source:HGNC Symbol;Acc:3392]
EPH receptor B2 [Source:HGNC Symbol;Acc:3393]
EPH receptor B3 [Source:HGNC Symbol;Acc:3394]
EPH receptor B4 [Source:HGNC Symbol;Acc:3395]
EPH receptor B6 [Source:HGNC Symbol;Acc:3396]
v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian) [S
v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian) [Source:HGNC Symbol;Acc:3431]
v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian) [Source:HGNC Symbol;Acc:3432]
ELKS/RAB6-interacting/CAST family member 2 [Source:HGNC Symbol;Acc:31922]
DNA excision repair protein ERCC-6, ATP-dependent helicase ERCC6)(Cockayne syndrome protein CSB)
excision repair cross-complementing rodent repair deficiency, complementation group 6-like [Source:HGNC Symbol;A
ERGIC and golgi 3 [Source:HGNC Symbol;Acc:15927]
glutamate-rich 1 [Source:HGNC Symbol;Acc:27234]
endoplasmic reticulum to nucleus signaling 1 [Source:HGNC Symbol;Acc:3449]
endoplasmic reticulum to nucleus signaling 2 [Source:HGNC Symbol;Acc:16942]
ERO1-like (S. cerevisiae) [Source:HGNC Symbol;Acc:13280]
establishment of cohesion 1 homolog 2 (S. cerevisiae) [Source:HGNC Symbol;Acc:27230]
Enah/Vasp-like [Source:HGNC Symbol;Acc:20234]
exocyst complex component 4 [Source:HGNC Symbol;Acc:30389]
eyes absent homolog 4 (Drosophila) [Source:HGNC Symbol;Acc:3522]
coagulation factor II (thrombin) receptor-like 2 [Source:HGNC Symbol;Acc:3539]
Fas-activated serine/threonine kinase [Source:HGNC Symbol;Acc:24676]
F-box and leucine-rich repeat protein 14 [Source:HGNC Symbol;Acc:28624]

F-box and WD repeat domain containing 7 [Source:HGNC Symbol;Acc:16712]
fer (fps/fes related) tyrosine kinase [Source:HGNC Symbol;Acc:3655]
feline sarcoma oncogene [Source:HGNC Symbol;Acc:3657]
fibroblast growth factor receptor 1 [Source:HGNC Symbol;Acc:3688]
fibroblast growth factor receptor 2 [Source:HGNC Symbol;Acc:3689]
fibroblast growth factor receptor 3 [Source:HGNC Symbol;Acc:3690]
fibroblast growth factor receptor 4 [Source:HGNC Symbol;Acc:3691]
Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog [Source:HGNC Symbol;Acc:3697]
FK506 binding protein 1A, 12kDa [Source:HGNC Symbol;Acc:3711]
folliculin [Source:HGNC Symbol;Acc:27310]
fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor) [Source:HGNC
fms-related tyrosine kinase 3 [Source:HGNC Symbol;Acc:3765]
fms-related tyrosine kinase 4 [Source:HGNC Symbol;Acc:3767]
FBJ murine osteosarcoma viral oncogene homolog [Source:HGNC Symbol;Acc:3796]
forkhead box C1 [Source:HGNC Symbol;Acc:3800]
forkhead box C2 (MFH-1, mesenchyme forkhead 1) [Source:HGNC Symbol;Acc:3801]
forkhead box M1 [Source:HGNC Symbol;Acc:3818]
forkhead box O1 [Source:HGNC Symbol;Acc:3819]
forkhead box O3 [Source:HGNC Symbol;Acc:3821]
forkhead box O4 [Source:HGNC Symbol;Acc:7139]
mechanistic target of rapamycin (serine/threonine kinase) [Source:HGNC Symbol;Acc:3942]
fyn-related kinase [Source:HGNC Symbol;Acc:3955]
FYN oncogene related to SRC, FGR, YES [Source:HGNC Symbol;Acc:4037]
frizzled homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:4038]
frizzled homolog 10 (Drosophila) [Source:HGNC Symbol;Acc:4039]
frizzled homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:4040]
frizzled homolog 4 (Drosophila) [Source:HGNC Symbol;Acc:4042]
frizzled homolog 5 (Drosophila) [Source:HGNC Symbol;Acc:4043]
frizzled homolog 6 (Drosophila) [Source:HGNC Symbol;Acc:4044]
frizzled homolog 7 (Drosophila) [Source:HGNC Symbol;Acc:4045]
frizzled homolog 8 (Drosophila) [Source:HGNC Symbol;Acc:4046]
frizzled homolog 9 (Drosophila) [Source:HGNC Symbol;Acc:4047]
cyclin G associated kinase [Source:HGNC Symbol;Acc:4113]
galactosamine (N-acetyl)-6-sulfate sulfatase [Source:HGNC Symbol;Acc:4122]
glial cell derived neurotrophic factor [Source:HGNC Symbol;Acc:4232]
GTP binding protein overexpressed in skeletal muscle [Source:HGNC Symbol;Acc:4234]
GLI family zinc finger 1 [Source:HGNC Symbol;Acc:4317]
GLI family zinc finger 2 [Source:HGNC Symbol;Acc:4318]
GLI family zinc finger 3 [Source:HGNC Symbol;Acc:4319]
Neuroendocrine secretory protein 55
GNAS complex locus [Source:HGNC Symbol;Acc:4392]
growth factor receptor-bound protein 2 [Source:HGNC Symbol;Acc:4566]
G protein-coupled receptor kinase 1 [Source:HGNC Symbol;Acc:10013]
G protein-coupled receptor kinase 4 [Source:HGNC Symbol;Acc:4543]
G protein-coupled receptor kinase 5 [Source:HGNC Symbol;Acc:4544]
G protein-coupled receptor kinase 6 [Source:HGNC Symbol;Acc:4545]
G protein-coupled receptor kinase 7 [Source:HGNC Symbol;Acc:17031]
germ cell associated 2 (haspin) [Source:HGNC Symbol;Acc:19682]
GS homeobox 2 [Source:HGNC Symbol;Acc:24959]
glycogen synthase kinase 3 beta [Source:HGNC Symbol;Acc:4617]

guanylate cyclase 1, soluble, alpha 2 [Source:HGNC Symbol;Acc:4684]
hyaluronan and proteoglycan link protein 1 [Source:HGNC Symbol;Acc:2380]
hemopoietic cell kinase [Source:HGNC Symbol;Acc:4840]
histone deacetylase 1 [Source:HGNC Symbol;Acc:4852]
histone deacetylase 10 [Source:HGNC Symbol;Acc:18128]
histone deacetylase 11 [Source:HGNC Symbol;Acc:19086]
histone deacetylase 2 [Source:HGNC Symbol;Acc:4853]
histone deacetylase 3 [Source:HGNC Symbol;Acc:4854]
histone deacetylase 4 [Source:HGNC Symbol;Acc:14063]
histone deacetylase 5 [Source:HGNC Symbol;Acc:14068]
histone deacetylase 6 [Source:HGNC Symbol;Acc:14064]
histone deacetylase 7 [Source:HGNC Symbol;Acc:14067]
histone deacetylase 8 [Source:HGNC Symbol;Acc:13315]
histone deacetylase 9 [Source:HGNC Symbol;Acc:14065]
hypoxia inducible factor 1, alpha subunit (basic helix-loop-helix transcription factor) [Source:HGNC Symbol;Acc:4910]
hypoxia inducible factor 3, alpha subunit [Source:HGNC Symbol;Acc:15825]
homeodomain interacting protein kinase 1 [Source:HGNC Symbol;Acc:19006]
homeodomain interacting protein kinase 2 [Source:HGNC Symbol;Acc:14402]
homeodomain interacting protein kinase 3 [Source:HGNC Symbol;Acc:4915]
homeodomain interacting protein kinase 4 [Source:HGNC Symbol;Acc:19007]
histone cluster 1, H1b [Source:HGNC Symbol;Acc:4719]
HNF1 homeobox A [Source:HGNC Symbol;Acc:11621]
HNF1 homeobox B [Source:HGNC Symbol;Acc:11630]
heterogeneous nuclear ribonucleoprotein H2 (H') [Source:HGNC Symbol;Acc:5042]
v-Ha-ras Harvey rat sarcoma viral oncogene homolog [Source:HGNC Symbol;Acc:5173]
heat shock protein 90kDa alpha (cytosolic), class A member 1 [Source:HGNC Symbol;Acc:5253]
heat shock protein 90kDa alpha (cytosolic), class B member 1 [Source:HGNC Symbol;Acc:5258]
heat shock protein 90kDa beta (Grp94), member 1 [Source:HGNC Symbol;Acc:12028]
heat shock 22kDa protein 8 [Source:HGNC Symbol;Acc:30171]
hormonally up-regulated Neu-associated kinase [Source:HGNC Symbol;Acc:13326]
intestinal cell (MAK-like) kinase [Source:HGNC Symbol;Acc:21219]
interferon, alpha-inducible protein 27 [Source:HGNC Symbol;Acc:5397]
interferon, gamma-inducible protein 30 [Source:HGNC Symbol;Acc:5398]
intraflagellar transport 172 homolog (Chlamydomonas) [Source:HGNC Symbol;Acc:30391]
intraflagellar transport 57 homolog (Chlamydomonas) [Source:HGNC Symbol;Acc:17367]
intraflagellar transport 81 homolog (Chlamydomonas) [Source:HGNC Symbol;Acc:14313]
intraflagellar transport 88 homolog (Chlamydomonas) [Source:HGNC Symbol;Acc:20606]
insulin-like growth factor 1 receptor [Source:HGNC Symbol;Acc:5465]
inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta [Source:HGNC Symbol;Acc:5960]
inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase epsilon [Source:HGNC Symbol;Acc:14552]
interleukin 12 receptor, beta 1 [Source:HGNC Symbol;Acc:5971]
interleukin 18 binding protein [Source:HGNC Symbol;Acc:5987]
integrin-linked kinase [Source:HGNC Symbol;Acc:6040]
inner centromere protein antigens 135/155kDa [Source:HGNC Symbol;Acc:6058]
inositol polyphosphate-5-phosphatase, 145kDa [Source:HGNC Symbol;Acc:6079]
inositol polyphosphate phosphatase-like 1 [Source:HGNC Symbol;Acc:6080]
insulin receptor [Source:HGNC Symbol;Acc:6091]
insulin receptor-related receptor [Source:HGNC Symbol;Acc:6093]
inversin [Source:HGNC Symbol;Acc:17870]
IQ motif containing GTPase activating protein 2 [Source:HGNC Symbol;Acc:6111]

interleukin-1 receptor-associated kinase 1 [Source:HGNC Symbol;Acc:6112]
interleukin-1 receptor-associated kinase 1 binding protein 1 [Source:HGNC Symbol;Acc:17368]
interleukin-1 receptor-associated kinase 2 [Source:HGNC Symbol;Acc:6113]
interleukin-1 receptor-associated kinase 3 [Source:HGNC Symbol;Acc:17020]
interleukin-1 receptor-associated kinase 4 [Source:HGNC Symbol;Acc:17967]
integrin, alpha E (antigen CD103, human mucosal lymphocyte antigen 1; alpha polypeptide) [Source:HGNC Symbol;Acc
IL2-inducible T-cell kinase [Source:HGNC Symbol;Acc:6171]
Janus kinase 1 [Source:HGNC Symbol;Acc:6190]
Janus kinase 2 [Source:HGNC Symbol;Acc:6192]
Janus kinase 3 [Source:HGNC Symbol;Acc:6193]
aminoacyl tRNA synthetase complex-interacting multifunctional protein 2 [Source:HGNC Symbol;Acc:20609]
jun B proto-oncogene [Source:HGNC Symbol;Acc:6205]
potassium voltage-gated channel, KQT-like subfamily, member 5 [Source:HGNC Symbol;Acc:6299]
kinase insert domain receptor (a type III receptor tyrosine kinase) [Source:HGNC Symbol;Acc:6307]
KIAA1409 [Source:HGNC Symbol;Acc:19966]
kinesin family member 1B [Source:HGNC Symbol;Acc:16636]
kinesin family member 3A [Source:HGNC Symbol;Acc:6319]
kinesin family member 3B [Source:HGNC Symbol;Acc:6320]
kinesin-associated protein 3 [Source:HGNC Symbol;Acc:17060]
v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog [Source:HGNC Symbol;Acc:6342]
NDC80 homolog, kinetochore complex component (S. cerevisiae) [Source:HGNC Symbol;Acc:16909]
v-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog [Source:HGNC Symbol;Acc:6407]
keratin 73 [Source:HGNC Symbol;Acc:28928]
kinase suppressor of ras 1 [Source:HGNC Symbol;Acc:6465]
kinase suppressor of ras 2 [Source:HGNC Symbol;Acc:18610]
l(3)mbt-like 1 (Drosophila) [Source:HGNC Symbol;Acc:15905]
LATS, large tumor suppressor, homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:6514]
LATS, large tumor suppressor, homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:6515]
lymphocyte-specific protein tyrosine kinase [Source:HGNC Symbol;Acc:6524]
lymphoid enhancer-binding factor 1 [Source:HGNC Symbol;Acc:6551]
leucine-rich repeat containing G protein-coupled receptor 6 [Source:HGNC Symbol;Acc:19719]
lemur tyrosine kinase 2 [Source:HGNC Symbol;Acc:17880]
lemur tyrosine kinase 3 [Source:HGNC Symbol;Acc:19295]
ligand of numb-protein X 1 [Source:HGNC Symbol;Acc:6657]
low density lipoprotein receptor-related protein 5 [Source:HGNC Symbol;Acc:6697]
low density lipoprotein receptor-related protein 6 [Source:HGNC Symbol;Acc:6698]
leucine rich repeat containing 37A [Source:HGNC Symbol;Acc:29069]
leucine rich repeat containing 50 [Source:HGNC Symbol;Acc:30539]
leucine rich repeat containing 6 [Source:HGNC Symbol;Acc:16725]
leucine-rich repeat kinase 1 [Source:HGNC Symbol;Acc:18608]
leucine-rich repeat kinase 2 [Source:HGNC Symbol;Acc:18618]
leukocyte receptor tyrosine kinase [Source:HGNC Symbol;Acc:6721]
Tyrosine-protein kinase Lyn (EC 2.7.10.2) [Source:UniProtKB/Swiss-Prot;Acc:P07948]
MAD1 mitotic arrest deficient-like 1 (yeast) [Source:HGNC Symbol;Acc:6762]
MAD2 mitotic arrest deficient-like 1 (yeast) [Source:HGNC Symbol;Acc:6763]
MAD2L1 binding protein [Source:HGNC Symbol;Acc:21059]
male germ cell-associated kinase [Source:HGNC Symbol;Acc:6816]
microtubule-associated protein 2 [Source:HGNC Symbol;Acc:6839]
mitogen-activated protein kinase kinase 1 [Source:HGNC Symbol;Acc:6840]
mitogen-activated protein kinase kinase 2 [Source:HGNC Symbol;Acc:6842]

mitogen-activated protein kinase kinase 3 [Source:HGNC Symbol;Acc:6843]
mitogen-activated protein kinase kinase 4 [Source:HGNC Symbol;Acc:6844]
mitogen-activated protein kinase kinase 5 [Source:HGNC Symbol;Acc:6845]
mitogen-activated protein kinase kinase 6 [Source:HGNC Symbol;Acc:6846]
mitogen-activated protein kinase kinase 7 [Source:HGNC Symbol;Acc:6847]
mitogen-activated protein kinase kinase kinase 1 [Source:HGNC Symbol;Acc:6848]
mitogen-activated protein kinase kinase kinase 10 [Source:HGNC Symbol;Acc:6849]
mitogen-activated protein kinase kinase kinase 11 [Source:HGNC Symbol;Acc:6850]
mitogen-activated protein kinase kinase kinase 13 [Source:HGNC Symbol;Acc:6852]
Mitogen-activated protein kinase kinase kinase MLK4 [Source:UniProtKB/Swiss-Prot;Acc:Q5TCX8]
mitogen-activated protein kinase kinase kinase 2 [Source:HGNC Symbol;Acc:6854]
mitogen-activated protein kinase kinase kinase 3 [Source:HGNC Symbol;Acc:6855]
mitogen-activated protein kinase kinase kinase 4 [Source:HGNC Symbol;Acc:6856]
mitogen-activated protein kinase kinase kinase 5 [Source:HGNC Symbol;Acc:6857]
mitogen-activated protein kinase kinase kinase 6 [Source:HGNC Symbol;Acc:6858]
mitogen-activated protein kinase kinase kinase 7 [Source:HGNC Symbol;Acc:6859]
mitogen-activated protein kinase kinase kinase 8 [Source:HGNC Symbol;Acc:6860]
mitogen-activated protein kinase kinase kinase 9 [Source:HGNC Symbol;Acc:6861]
mitogen-activated protein kinase kinase kinase kinase 1 [Source:HGNC Symbol;Acc:6863]
mitogen-activated protein kinase kinase kinase kinase 2 [Source:HGNC Symbol;Acc:6864]
mitogen-activated protein kinase kinase kinase kinase 3 [Source:HGNC Symbol;Acc:6865]
mitogen-activated protein kinase kinase kinase kinase 4 [Source:HGNC Symbol;Acc:6866]
mitogen-activated protein kinase kinase kinase kinase 5 [Source:HGNC Symbol;Acc:6867]
mitogen-activated protein kinase 1 [Source:HGNC Symbol;Acc:6871]
mitogen-activated protein kinase 10 [Source:HGNC Symbol;Acc:6872]
mitogen-activated protein kinase 11 [Source:HGNC Symbol;Acc:6873]
mitogen-activated protein kinase 12 [Source:HGNC Symbol;Acc:6874]
mitogen-activated protein kinase 13 [Source:HGNC Symbol;Acc:6875]
mitogen-activated protein kinase 14 [Source:HGNC Symbol;Acc:6876]
mitogen-activated protein kinase 15 [Source:HGNC Symbol;Acc:24667]
mitogen-activated protein kinase 3 [Source:HGNC Symbol;Acc:6877]
mitogen-activated protein kinase 4 [Source:HGNC Symbol;Acc:6878]
mitogen-activated protein kinase 6 [Source:HGNC Symbol;Acc:6879]
mitogen-activated protein kinase 7 [Source:HGNC Symbol;Acc:6880]
mitogen-activated protein kinase 8 [Source:HGNC Symbol;Acc:6881]
mitogen-activated protein kinase 9 [Source:HGNC Symbol;Acc:6886]
mitogen-activated protein kinase-activated protein kinase 2 [Source:HGNC Symbol;Acc:6887]
mitogen-activated protein kinase-activated protein kinase 3 [Source:HGNC Symbol;Acc:6888]
mitogen-activated protein kinase-activated protein kinase 5 [Source:HGNC Symbol;Acc:6889]
microtubule-associated protein, RP/EB family, member 1 [Source:HGNC Symbol;Acc:6890]
microtubule-associated protein, RP/EB family, member 3 [Source:HGNC Symbol;Acc:6892]
MAP/microtubule affinity-regulating kinase 1 [Source:HGNC Symbol;Acc:6896]
MAP/microtubule affinity-regulating kinase 2 [Source:HGNC Symbol;Acc:3332]
MAP/microtubule affinity-regulating kinase 3 [Source:HGNC Symbol;Acc:6897]
MAP/microtubule affinity-regulating kinase 4 [Source:HGNC Symbol;Acc:13538]
microtubule associated serine/threonine kinase 1 [Source:HGNC Symbol;Acc:19034]
microtubule associated serine/threonine kinase 2 [Source:HGNC Symbol;Acc:19035]
microtubule associated serine/threonine kinase 3 [Source:HGNC Symbol;Acc:19036]
microtubule associated serine/threonine kinase family member 4 [Source:HGNC Symbol;Acc:19037]
microtubule associated serine/threonine kinase-like [Source:HGNC Symbol;Acc:19042]

megakaryocyte-associated tyrosine kinase [Source:HGNC Symbol;Acc:6906]
mutated in colorectal cancers [Source:HGNC Symbol;Acc:6935]
Mdm2 p53 binding protein homolog (mouse) [Source:HGNC Symbol;Acc:6973]
mediator complex subunit 12-like [Source:HGNC Symbol;Acc:16050]
maternal embryonic leucine zipper kinase [Source:HGNC Symbol;Acc:16870]
c-mer proto-oncogene tyrosine kinase [Source:HGNC Symbol;Acc:7027]
met proto-oncogene (hepatocyte growth factor receptor) [Source:HGNC Symbol;Acc:7029]
major facilitator superfamily domain containing 4 [Source:HGNC Symbol;Acc:25433]
misshapen-like kinase 1 [Source:HGNC Symbol;Acc:17565]
McKusick-Kaufman syndrome [Source:HGNC Symbol;Acc:7108]
MAP kinase interacting serine/threonine kinase 1 [Source:HGNC Symbol;Acc:7110]
MAP kinase interacting serine/threonine kinase 2 [Source:HGNC Symbol;Acc:7111]
makorin ring finger protein 3 [Source:HGNC Symbol;Acc:7114]
Meckel syndrome, type 1 [Source:HGNC Symbol;Acc:7121]
mutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli) [Source:HGNC Symbol;Acc:7127]
mutL homolog 3 (E. coli) [Source:HGNC Symbol;Acc:7128]
mixed lineage kinase domain-like [Source:HGNC Symbol;Acc:26617]
myeloid/lymphoid or mixed-lineage leukemia 3 [Source:HGNC Symbol;Acc:13726]
matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase) [Source:HGNC Symbol;Acc:716
v-mos Moloney murine sarcoma viral oncogene homolog [Source:HGNC Symbol;Acc:7199]
MRE11 meiotic recombination 11 homolog A (S. cerevisiae) [Source:HGNC Symbol;Acc:7230]
mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli) [Source:HGNC Symbol;Acc:7325]
mutS homolog 6 (E. coli) [Source:HGNC Symbol;Acc:7329]
macrophage stimulating 1 receptor (c-met-related tyrosine kinase) [Source:HGNC Symbol;Acc:7381]
muscle, skeletal, receptor tyrosine kinase [Source:HGNC Symbol;Acc:7525]
major vault protein [Source:HGNC Symbol;Acc:7531]
v-myc myelocytomatosis viral oncogene homolog (avian) [Source:HGNC Symbol;Acc:7553]
myosin IIIA [Source:HGNC Symbol;Acc:7601]
myosin IIIB [Source:HGNC Symbol;Acc:15576]
neuroblastoma breakpoint family, member 24 [Source:HGNC Symbol;Acc:27299]
neural precursor cell expressed, developmentally down-regulated 9 [Source:HGNC Symbol;Acc:7733]
NIMA (never in mitosis gene a)-related kinase 1 [Source:HGNC Symbol;Acc:7744]
NIMA (never in mitosis gene a)- related kinase 10 [Source:HGNC Symbol;Acc:18592]
NIMA (never in mitosis gene a)- related kinase 11 [Source:HGNC Symbol;Acc:18593]
NIMA (never in mitosis gene a)-related kinase 2 [Source:HGNC Symbol;Acc:7745]
NIMA (never in mitosis gene a)-related kinase 3 [Source:HGNC Symbol;Acc:7746]
NIMA (never in mitosis gene a)-related kinase 4 [Source:HGNC Symbol;Acc:11399]
NIMA (never in mitosis gene a)-related kinase 5 [Source:HGNC Symbol;Acc:7748]
NIMA (never in mitosis gene a)-related kinase 6 [Source:HGNC Symbol;Acc:7749]
NIMA (never in mitosis gene a)-related kinase 7 [Source:HGNC Symbol;Acc:13386]
NIMA (never in mitosis gene a)- related kinase 8 [Source:HGNC Symbol;Acc:13387]
NIMA (never in mitosis gene a)- related kinase 9 [Source:HGNC Symbol;Acc:18591]
neurofibromin 1 [Source:HGNC Symbol;Acc:7765]
neurofibromin 2 (merlin) [Source:HGNC Symbol;Acc:7773]
nuclear factor of kappa light polypeptide gene enhancer in B-cells 1 [Source:HGNC Symbol;Acc:7794]
nemo-like kinase [Source:HGNC Symbol;Acc:29858]
nephronophthisis 1 (juvenile) [Source:HGNC Symbol;Acc:7905]
nephronophthisis 3 (adolescent) [Source:HGNC Symbol;Acc:7907]
nephronophthisis 4 [Source:HGNC Symbol;Acc:19104]
neuroblastoma RAS viral (v-ras) oncogene homolog [Source:HGNC Symbol;Acc:7989]

nuclear receptor binding protein 1 [Source:HGNC Symbol;Acc:7993]
nuclear receptor binding protein 2 [Source:HGNC Symbol;Acc:19339]
Nik related kinase [Source:HGNC Symbol;Acc:25391]
neurotrophic tyrosine kinase, receptor, type 1 [Source:HGNC Symbol;Acc:8031]
neurotrophic tyrosine kinase, receptor, type 2 [Source:HGNC Symbol;Acc:8032]
neurotrophic tyrosine kinase, receptor, type 3 [Source:HGNC Symbol;Acc:8033]
NUF2, NDC80 kinetochore complex component, homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:14621]
ornithine decarboxylase 1 [Source:HGNC Symbol;Acc:8109]
oral-facial-digital syndrome 1 [Source:HGNC Symbol;Acc:2567]
8-oxoguanine DNA glycosylase [Source:HGNC Symbol;Acc:8125]
opioid receptor, mu 1 [Source:HGNC Symbol;Acc:8156]
oxidative-stress responsive 1 [Source:HGNC Symbol;Acc:8508]
purinergic receptor P2X, ligand-gated ion channel, 7 [Source:HGNC Symbol;Acc:8537]
purinergic receptor P2Y, G-protein coupled, 14 [Source:HGNC Symbol;Acc:16442]
p21 protein (Cdc42/Rac)-activated kinase 1 [Source:HGNC Symbol;Acc:8590]
p21 protein (Cdc42/Rac)-activated kinase 2 [Source:HGNC Symbol;Acc:8591]
p21 protein (Cdc42/Rac)-activated kinase 3 [Source:HGNC Symbol;Acc:8592]
p21 protein (Cdc42/Rac)-activated kinase 4 [Source:HGNC Symbol;Acc:16059]
p21 protein (Cdc42/Rac)-activated kinase 6 [Source:HGNC Symbol;Acc:16061]
p21 protein (Cdc42/Rac)-activated kinase 7 [Source:HGNC Symbol;Acc:15916]
progestin and adipoQ receptor family member IV [Source:HGNC Symbol;Acc:26386]
par-3 partitioning defective 3 homolog (C. elegans) [Source:HGNC Symbol;Acc:16051]
par-6 partitioning defective 6 homolog alpha (C. elegans) [Source:HGNC Symbol;Acc:15943]
PAS domain containing serine/threonine kinase [Source:HGNC Symbol;Acc:17270]
PDZ binding kinase [Source:HGNC Symbol;Acc:18282]
cyclin-dependent kinase 16 [Source:HGNC Symbol;Acc:8749]
cyclin-dependent kinase 17 [Source:HGNC Symbol;Acc:8750]
cyclin-dependent kinase 18 [Source:HGNC Symbol;Acc:8751]
platelet-derived growth factor receptor, alpha polypeptide [Source:HGNC Symbol;Acc:8803]
platelet-derived growth factor receptor, beta polypeptide [Source:HGNC Symbol;Acc:8804]
3-phosphoinositide dependent protein kinase-1 [Source:HGNC Symbol;Acc:8816]
cyclin-dependent kinase 14 [Source:HGNC Symbol;Acc:8883]
pleckstrin homology domain interacting protein [Source:HGNC Symbol;Acc:15673]
phosphorylase kinase, gamma 1 (muscle) [Source:HGNC Symbol;Acc:8930]
phosphorylase kinase, gamma 2 (testis) [Source:HGNC Symbol;Acc:8931]
pleckstrin homology-like domain, family B, member 2 [Source:HGNC Symbol;Acc:29573]
paired-like homeobox 2a [Source:HGNC Symbol;Acc:691]
Phosphatidylinositol 4-kinase type 2-alpha
phosphatidylinositol 4-kinase type 2 beta [Source:HGNC Symbol;Acc:18215]
Phosphatidylinositol 4-kinase alpha
phosphatidylinositol 4-kinase, catalytic, beta [Source:HGNC Symbol;Acc:8984]
phosphoinositide-3-kinase, class 2, alpha polypeptide [Source:HGNC Symbol;Acc:8971]
phosphoinositide-3-kinase, class 2, beta polypeptide [Source:HGNC Symbol;Acc:8972]
phosphoinositide-3-kinase, class 2, gamma polypeptide [Source:HGNC Symbol;Acc:8973]
phosphoinositide-3-kinase, class 3 [Source:HGNC Symbol;Acc:8974]
phosphoinositide-3-kinase, catalytic, alpha polypeptide [Source:HGNC Symbol;Acc:8975]
phosphoinositide-3-kinase, catalytic, beta polypeptide [Source:HGNC Symbol;Acc:8976]
phosphoinositide-3-kinase, catalytic, delta polypeptide [Source:HGNC Symbol;Acc:8977]
phosphoinositide-3-kinase, catalytic, gamma polypeptide [Source:HGNC Symbol;Acc:8978]
phosphoinositide-3-kinase, regulatory subunit 1 (alpha) [Source:HGNC Symbol;Acc:8979]

phosphoinositide-3-kinase, regulatory subunit 2 (beta) [Source:HGNC Symbol;Acc:8980]
phosphoinositide-3-kinase, regulatory subunit 4 [Source:HGNC Symbol;Acc:8982]
phosphoinositide-3-kinase, regulatory subunit 5 [Source:HGNC Symbol;Acc:30035]
pim-1 oncogene [Source:HGNC Symbol;Acc:8986]
pim-2 oncogene [Source:HGNC Symbol;Acc:8987]
pim-3 oncogene [Source:HGNC Symbol;Acc:19310]
protein (peptidylprolyl cis/trans isomerase) NIMA-interacting, 4 (parvulin) [Source:HGNC Symbol;Acc:8992]
PTEN induced putative kinase 1 [Source:HGNC Symbol;Acc:14581]
polycystic kidney disease 1 (autosomal dominant) [Source:HGNC Symbol;Acc:9008]
polycystic kidney disease 2 (autosomal dominant) [Source:HGNC Symbol;Acc:9009]
polycystic kidney and hepatic disease 1 (autosomal recessive) [Source:HGNC Symbol;Acc:9016]
protein kinase, membrane associated tyrosine/threonine 1 [Source:HGNC Symbol;Acc:29650]
protein kinase N1 [Source:HGNC Symbol;Acc:9405]
protein kinase N2 [Source:HGNC Symbol;Acc:9406]
protein kinase N3 [Source:HGNC Symbol;Acc:17999]
PBX/knotted 1 homeobox 1 [Source:HGNC Symbol;Acc:9022]
phospholipase A2, group IIA (platelets, synovial fluid) [Source:HGNC Symbol;Acc:9031]
phosphatidylinositol-specific phospholipase C, X domain containing 1 [Source:HGNC Symbol;Acc:23148]
phosphatidylinositol-specific phospholipase C, X domain containing 3 [Source:HGNC Symbol;Acc:31822]
phospholipase C, zeta 1 [Source:HGNC Symbol;Acc:19218]
phospholipase D family, member 6 [Source:HGNC Symbol;Acc:30447]
polo-like kinase 1 [Source:HGNC Symbol;Acc:9077]
polo-like kinase 2 [Source:HGNC Symbol;Acc:19699]
polo-like kinase 3 [Source:HGNC Symbol;Acc:2154]
polo-like kinase 4 [Source:HGNC Symbol;Acc:11397]
PMS2 postmeiotic segregation increased 2 (S. cerevisiae) [Source:HGNC Symbol;Acc:9122]
pregnancy up-regulated non-ubiquitously expressed CaM kinase [Source:HGNC Symbol;Acc:13415]
uroplakin 3B-like [Source:HGNC Symbol;Acc:37278]
DNA-directed RNA polymerase II subunit RPB11-b2 (RNA polymerase II subunit B11-b2)(RPB11b2)(DNA-directed RNA
protein phosphatase, Mg2+/Mn2+ dependent, 1D [Source:HGNC Symbol;Acc:9277]
papillary renal cell carcinoma (translocation-associated) [Source:HGNC Symbol;Acc:9343]
5'-AMP-activated protein kinase catalytic subunit alpha-1 [Source:UniProtKB/Swiss-Prot;Acc:Q13131]
protein kinase, AMP-activated, alpha 2 catalytic subunit [Source:HGNC Symbol;Acc:9377]
protein kinase, cAMP-dependent, catalytic, alpha [Source:HGNC Symbol;Acc:9380]
protein kinase, cAMP-dependent, catalytic, beta [Source:HGNC Symbol;Acc:9381]
protein kinase, cAMP-dependent, catalytic, gamma [Source:HGNC Symbol;Acc:9382]
protein kinase C, alpha [Source:HGNC Symbol;Acc:9393]
protein kinase C, beta [Source:HGNC Symbol;Acc:9395]
protein kinase C, delta [Source:HGNC Symbol;Acc:9399]
protein kinase C, epsilon [Source:HGNC Symbol;Acc:9401]
protein kinase C, gamma [Source:HGNC Symbol;Acc:9402]
protein kinase C, eta [Source:HGNC Symbol;Acc:9403]
protein kinase C, iota [Source:HGNC Symbol;Acc:9404]
protein kinase C, theta [Source:HGNC Symbol;Acc:9410]
protein kinase C, zeta [Source:HGNC Symbol;Acc:9412]
protein kinase D1 [Source:HGNC Symbol;Acc:9407]
protein kinase D2 [Source:HGNC Symbol;Acc:17293]
protein kinase D3 [Source:HGNC Symbol;Acc:9408]
DNA-dependent protein kinase catalytic subunit (DNA-PK catalytic subunit)(DNA-PKcs)(EC 2.7.11.1)(DNPK1)(p460) [So
protein kinase, X-linked [Source:HGNC Symbol;Acc:9441]

protein kinase, Y-linked [Source:HGNC Symbol;Acc:9444]
PRP4 pre-mRNA processing factor 4 homolog (yeast) [Source:HGNC Symbol;Acc:17349]
protease, serine, 23 [Source:HGNC Symbol;Acc:14370]
protein serine kinase H1 [Source:HGNC Symbol;Acc:9529]
protein serine kinase H2 [Source:HGNC Symbol;Acc:18997]
phosphoserine phosphatase [Source:HGNC Symbol;Acc:9577]
patched 1 [Source:HGNC Symbol;Acc:9585]
phosphatase and tensin homolog [Source:HGNC Symbol;Acc:9588]
PTK2 protein tyrosine kinase 2 [Source:HGNC Symbol;Acc:9611]
PTK2B protein tyrosine kinase 2 beta [Source:HGNC Symbol;Acc:9612]
PTK6 protein tyrosine kinase 6 [Source:HGNC Symbol;Acc:9617]
PTK7 protein tyrosine kinase 7 [Source:HGNC Symbol;Acc:9618]
protein tyrosine phosphatase, receptor type, A [Source:HGNC Symbol;Acc:9664]
protein tyrosine phosphatase, receptor type, D [Source:HGNC Symbol;Acc:9668]
protein tyrosine phosphatase, receptor type, U [Source:HGNC Symbol;Acc:9683]
pituitary tumor-transforming 1 [Source:HGNC Symbol;Acc:9690]
pituitary tumor-transforming 3 (pseudogene) [Source:HGNC Symbol;Acc:13422]
PX domain containing serine/threonine kinase [Source:HGNC Symbol;Acc:23326]
paxillin [Source:HGNC Symbol;Acc:9718]
ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1) [Source:HGNC Symbol;Acc:980
RAD9 homolog A (S. pombe) [Source:HGNC Symbol;Acc:9827]
retinoic acid early transcript 1E [Source:HGNC Symbol;Acc:16793]
retinoic acid early transcript 1G [Source:HGNC Symbol;Acc:16795]
v-raf-1 murine leukemia viral oncogene homolog 1 [Source:HGNC Symbol;Acc:9829]
renal tumor antigen [Source:HGNC Symbol;Acc:9833]
Rap guanine nucleotide exchange factor (GEF) 3 [Source:HGNC Symbol;Acc:16629]
Rap guanine nucleotide exchange factor (GEF) 4 [Source:HGNC Symbol;Acc:16626]
RAS p21 protein activator (GTPase activating protein) 1 [Source:HGNC Symbol;Acc:9871]
RAS p21 protein activator 2 [Source:HGNC Symbol;Acc:9872]
RAS p21 protein activator 3 [Source:HGNC Symbol;Acc:20331]
RAS p21 protein activator 4 [Source:HGNC Symbol;Acc:23181]
RAS p21 protein activator 4B [Source:HGNC Symbol;Acc:35202]
ribonucleoprotein, PTB-binding 2 [Source:HGNC Symbol;Acc:25577]
retinoblastoma 1 [Source:HGNC Symbol;Acc:9884]
ret proto-oncogene [Source:HGNC Symbol;Acc:9967]
Ras homolog enriched in brain [Source:HGNC Symbol;Acc:10011]
rhodopsin [Source:HGNC Symbol;Acc:10012]
receptor (TNFRSF)-interacting serine-threonine kinase 1 [Source:HGNC Symbol;Acc:10019]
receptor-interacting serine-threonine kinase 2 [Source:HGNC Symbol;Acc:10020]
receptor-interacting serine-threonine kinase 3 [Source:HGNC Symbol;Acc:10021]
receptor-interacting serine-threonine kinase 4 [Source:HGNC Symbol;Acc:496]
dual serine/threonine and tyrosine protein kinase [Source:HGNC Symbol;Acc:29043]
ribonuclease L (2',5'-oligoisoadenylate synthetase-dependent) [Source:HGNC Symbol;Acc:10050]
Rho-associated, coiled-coil containing protein kinase 1 [Source:HGNC Symbol;Acc:10251]
Rho-associated, coiled-coil containing protein kinase 2 [Source:HGNC Symbol;Acc:10252]
receptor tyrosine kinase-like orphan receptor 1 [Source:HGNC Symbol;Acc:10256]
receptor tyrosine kinase-like orphan receptor 2 [Source:HGNC Symbol;Acc:10257]
c-ros oncogene 1 , receptor tyrosine kinase [Source:HGNC Symbol;Acc:10261]
retinitis pigmentosa GTPase regulator interacting protein 1 [Source:HGNC Symbol;Acc:13436]
RPGRIP1-like [Source:HGNC Symbol;Acc:29168]

runt-related transcription factor 1; translocated to, 1 (cyclin D-related) [Source:HGNC Symbol;Acc:1535]
RYK receptor-like tyrosine kinase [Source:HGNC Symbol;Acc:10481]
SH3-binding domain kinase 1 [Source:HGNC Symbol;Acc:17699]
SH3-binding domain kinase family, member 2 [Source:HGNC Symbol;Acc:34416]
sodium channel, voltage-gated, type III, beta [Source:HGNC Symbol;Acc:20665]
SCY1-like 1 (S. cerevisiae) [Source:HGNC Symbol;Acc:14372]
SCY1-like 2 (S. cerevisiae) [Source:HGNC Symbol;Acc:19286]
SCY1-like 3 (S. cerevisiae) [Source:HGNC Symbol;Acc:19285]
syndecan binding protein (syntenin) 2 [Source:HGNC Symbol;Acc:15756]
nuclear export mediator factor [Source:HGNC Symbol;Acc:10663]
succinate dehydrogenase complex, subunit B, iron sulfur (Ip) [Source:HGNC Symbol;Acc:10681]
succinate dehydrogenase complex, subunit D, integral membrane protein [Source:HGNC Symbol;Acc:10683]
serpin peptidase inhibitor, clade D (heparin cofactor), member 1 [Source:HGNC Symbol;Acc:4838]
serine/arginine-rich splicing factor 6 [Source:HGNC Symbol;Acc:10788]
serum/glucocorticoid regulated kinase 1 [Source:HGNC Symbol;Acc:10810]
serum/glucocorticoid regulated kinase 2 [Source:HGNC Symbol;Acc:13900]
serum/glucocorticoid regulated kinase family, member 3 [Source:HGNC Symbol;Acc:10812]
shugoshin-like 1 (S. pombe) [Source:HGNC Symbol;Acc:25088]
SH2 domain containing 2A [Source:HGNC Symbol;Acc:10821]
SHC (Src homology 2 domain containing) transforming protein 1 [Source:HGNC Symbol;Acc:10840]
sonic hedgehog [Source:HGNC Symbol;Acc:10848]
solute carrier family 29 (nucleoside transporters), member 1 [Source:HGNC Symbol;Acc:11003]
STE20-like kinase [Source:HGNC Symbol;Acc:11088]
SMAD family member 2 [Source:HGNC Symbol;Acc:6768]
SMAD family member 3 [Source:HGNC Symbol;Acc:6769]
SMAD family member 4 [Source:HGNC Symbol;Acc:6770]
smoothened homolog (Drosophila) [Source:HGNC Symbol;Acc:11119]
salt-inducible kinase 1 [Source:HGNC Symbol;Acc:11142]
salt-inducible kinase 2 [Source:HGNC Symbol;Acc:21680]
SNF related kinase [Source:HGNC Symbol;Acc:30598]
son of sevenless homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:11187]
son of sevenless homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:11188]
Sp1 transcription factor [Source:HGNC Symbol;Acc:11205]
SPC24, NDC80 kinetochore complex component, homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:26913]
SPC25, NDC80 kinetochore complex component, homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:24031]
v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian) [Source:HGNC Symbol;Acc:11283]
spermidine synthase [Source:HGNC Symbol;Acc:11296]
SRSF protein kinase 1 [Source:HGNC Symbol;Acc:11305]
SRSF protein kinase 2 [Source:HGNC Symbol;Acc:11306]
SRSF protein kinase 3 [Source:HGNC Symbol;Acc:11402]
signal transducer and activator of transcription 3 (acute-phase response factor) [Source:HGNC Symbol;Acc:11364]
signal transducer and activator of transcription 6, interleukin-4 induced [Source:HGNC Symbol;Acc:11368]
serine/threonine kinase 10 [Source:HGNC Symbol;Acc:11388]
serine/threonine kinase 11 [Source:HGNC Symbol;Acc:11389]
serine/threonine kinase 16 [Source:HGNC Symbol;Acc:11394]
serine/threonine kinase 17a [Source:HGNC Symbol;Acc:11395]
serine/threonine kinase 17b [Source:HGNC Symbol;Acc:11396]
serine/threonine kinase 19 [Source:HGNC Symbol;Acc:11398]
serine/threonine kinase 24 [Source:HGNC Symbol;Acc:11403]
serine/threonine kinase 25 [Source:HGNC Symbol;Acc:11404]

serine/threonine kinase 3 [Source:HGNC Symbol;Acc:11406]
serine/threonine kinase 31 [Source:HGNC Symbol;Acc:11407]
serine/threonine kinase 32A [Source:HGNC Symbol;Acc:28317]
serine/threonine kinase 32B [Source:HGNC Symbol;Acc:14217]
serine/threonine kinase 32C [Source:HGNC Symbol;Acc:21332]
serine/threonine kinase 33 [Source:HGNC Symbol;Acc:14568]
serine/threonine kinase 35 [Source:HGNC Symbol;Acc:16254]
serine/threonine kinase 36 [Source:HGNC Symbol;Acc:17209]
serine/threonine kinase 38 [Source:HGNC Symbol;Acc:17847]
serine/threonine kinase 38 like [Source:HGNC Symbol;Acc:17848]
serine threonine kinase 39 [Source:HGNC Symbol;Acc:17717]
serine/threonine kinase 4 [Source:HGNC Symbol;Acc:11408]
serine/threonine kinase 40 [Source:HGNC Symbol;Acc:21373]
stomatin (EPB72)-like 3 [Source:HGNC Symbol;Acc:19420]
STE20-related kinase adaptor alpha [Source:HGNC Symbol;Acc:30172]
serine/threonine/tyrosine kinase 1 [Source:HGNC Symbol;Acc:18889]
suppressor of fused homolog (Drosophila) [Source:HGNC Symbol;Acc:16466]
spleen tyrosine kinase [Source:HGNC Symbol;Acc:11491]
spectrin repeat containing, nuclear envelope 1 [Source:HGNC Symbol;Acc:17089]
TAF1 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 250kDa [Source:HGNC Symbol;Acc:11535]
TAF1 RNA polymerase II, TATA box binding protein (TBP)-associated factor, 210kDa-like [Source:HGNC Symbol;Acc:18(
TAO kinase 1 [Source:HGNC Symbol;Acc:29259]
TAO kinase 2 [Source:HGNC Symbol;Acc:16835]
TAO kinase 3 [Source:HGNC Symbol;Acc:18133]
TANK-binding kinase 1 [Source:HGNC Symbol;Acc:11584]
T-box 22 [Source:HGNC Symbol;Acc:11600]
transcription factor 3 (E2A immunoglobulin enhancer binding factors E12/E47) [Source:HGNC Symbol;Acc:11633]
transcription factor 4 [Source:HGNC Symbol;Acc:11634]
transcription factor 7-like 2 (T-cell specific, HMG-box) [Source:HGNC Symbol;Acc:11641]
tec protein tyrosine kinase [Source:HGNC Symbol;Acc:11719]
TEK tyrosine kinase, endothelial [Source:HGNC Symbol;Acc:11724]
testis-specific kinase 1 [Source:HGNC Symbol;Acc:11731]
testis-specific kinase 2 [Source:HGNC Symbol;Acc:11732]
testis expressed 14 [Source:HGNC Symbol;Acc:11737]
transforming growth factor, beta receptor 1 [Source:HGNC Symbol;Acc:11772]
transforming growth factor, beta receptor II (70/80kDa) [Source:HGNC Symbol;Acc:11773]
tyrosine kinase with immunoglobulin-like and EGF-like domains 1 [Source:HGNC Symbol;Acc:11809]
tousled-like kinase 1 [Source:HGNC Symbol;Acc:11841]
tousled-like kinase 2 [Source:HGNC Symbol;Acc:11842]
toll-like receptor 4 [Source:HGNC Symbol;Acc:11850]
transmembrane protein 67 [Source:HGNC Symbol;Acc:28396]
TRAF2 and NCK interacting kinase [Source:HGNC Symbol;Acc:30765]
tyrosine kinase, non-receptor, 1 [Source:HGNC Symbol;Acc:11940]
tyrosine kinase, non-receptor, 2 [Source:HGNC Symbol;Acc:19297]
Serine/threonine-protein kinase TNNI3K [Source:UniProtKB/Swiss-Prot;Acc:Q59H18]
target of EGR1, member 1 (nuclear) [Source:HGNC Symbol;Acc:15954]
tumor protein p53 [Source:HGNC Symbol;Acc:11998]
tumor protein p53 binding protein 1 [Source:HGNC Symbol;Acc:11999]
TP53 regulating kinase [Source:HGNC Symbol;Acc:16197]
tribbles homolog 3 (Drosophila) [Source:HGNC Symbol;Acc:16228]

tripartite motif containing 24 [Source:HGNC Symbol;Acc:11812]
tripartite motif containing 28 [Source:HGNC Symbol;Acc:16384]
tripartite motif containing 33 [Source:HGNC Symbol;Acc:16290]
transformation/transcription domain-associated protein [Source:HGNC Symbol;Acc:12347]
tuberous sclerosis 1 [Source:HGNC Symbol;Acc:12362]
tuberous sclerosis 2 [Source:HGNC Symbol;Acc:12363]
tau tubulin kinase 1 [Source:HGNC Symbol;Acc:19140]
tau tubulin kinase 2 [Source:HGNC Symbol;Acc:19141]
tetratricopeptide repeat domain 8 [Source:HGNC Symbol;Acc:20087]
TTK protein kinase [Source:HGNC Symbol;Acc:12401]
tubulin tyrosine ligase-like family, member 3 [Source:HGNC Symbol;Acc:24483]
titin [Source:HGNC Symbol;Acc:12403]
TXK tyrosine kinase [Source:HGNC Symbol;Acc:12434]
tyrosine kinase 2 [Source:HGNC Symbol;Acc:12440]
TYRO3 protein tyrosine kinase [Source:HGNC Symbol;Acc:12446]
ubiquitin-conjugating enzyme E2C [Source:HGNC Symbol;Acc:15937]
U2AF homology motif (UHM) kinase 1 [Source:HGNC Symbol;Acc:19683]
ubiquitin-like with PHD and ring finger domains 2 [Source:HGNC Symbol;Acc:12557]
ubiquinol-cytochrome c reductase core protein II [Source:HGNC Symbol;Acc:12586]
vav 1 guanine nucleotide exchange factor [Source:HGNC Symbol;Acc:12657]
von Hippel-Lindau tumor suppressor [Source:HGNC Symbol;Acc:12687]
von Hippel-Lindau tumor suppressor-like [Source:HGNC Symbol;Acc:30666]
vacuolar protein sorting 16 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:14584]
vaccinia related kinase 1 [Source:HGNC Symbol;Acc:12718]
vaccinia related kinase 2 [Source:HGNC Symbol;Acc:12719]
vaccinia related kinase 3 [Source:HGNC Symbol;Acc:18996]
WD repeat domain 38 [Source:HGNC Symbol;Acc:23745]
WEE1 homolog (S. pombe) [Source:HGNC Symbol;Acc:12761]
WEE1 homolog 2 (S. pombe) [Source:HGNC Symbol;Acc:19684]
WNK lysine deficient protein kinase 1 [Source:HGNC Symbol;Acc:14540]
WNK lysine deficient protein kinase 2 [Source:HGNC Symbol;Acc:14542]
WNK lysine deficient protein kinase 3 [Source:HGNC Symbol;Acc:14543]
WNK lysine deficient protein kinase 4 [Source:HGNC Symbol;Acc:14544]
wingless-type MMTV integration site family, member 1 [Source:HGNC Symbol;Acc:12774]
wingless-type MMTV integration site family, member 10A [Source:HGNC Symbol;Acc:13829]
wingless-type MMTV integration site family, member 10B [Source:HGNC Symbol;Acc:12775]
wingless-type MMTV integration site family, member 11 [Source:HGNC Symbol;Acc:12776]
wingless-type MMTV integration site family, member 16 [Source:HGNC Symbol;Acc:16267]
wingless-type MMTV integration site family member 2 [Source:HGNC Symbol;Acc:12780]
wingless-type MMTV integration site family, member 2B [Source:HGNC Symbol;Acc:12781]
wingless-type MMTV integration site family, member 3 [Source:HGNC Symbol;Acc:12782]
wingless-type MMTV integration site family, member 3A [Source:HGNC Symbol;Acc:15983]
wingless-type MMTV integration site family, member 4 [Source:HGNC Symbol;Acc:12783]
wingless-type MMTV integration site family, member 5A [Source:HGNC Symbol;Acc:12784]
wingless-type MMTV integration site family, member 5B [Source:HGNC Symbol;Acc:16265]
wingless-type MMTV integration site family, member 6 [Source:HGNC Symbol;Acc:12785]
wingless-type MMTV integration site family, member 7A [Source:HGNC Symbol;Acc:12786]
wingless-type MMTV integration site family, member 7B [Source:HGNC Symbol;Acc:12787]
wingless-type MMTV integration site family, member 8A [Source:HGNC Symbol;Acc:12788]
wingless-type MMTV integration site family, member 8B [Source:HGNC Symbol;Acc:12789]

wingless-type MMTV integration site family, member 9A [Source:HGNC Symbol;Acc:12778]
wingless-type MMTV integration site family, member 9B [Source:HGNC Symbol;Acc:12779]
v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1 [Source:HGNC Symbol;Acc:12841]
Mitogen-activated protein kinase kinase kinase MLT [Source:UniProtKB/Swiss-Prot;Acc:Q9NYL2]
zeta-chain (TCR) associated protein kinase 70kDa [Source:HGNC Symbol;Acc:12858]
zyxin [Source:HGNC Symbol;Acc:13200]
amiloride-sensitive cation channel 1, neuronal [Source:HGNC Symbol;Acc:99]
adenosine A1 receptor [Source:HGNC Symbol;Acc:262]
ATPase family, AAA domain containing 1 [Source:HGNC Symbol;Acc:25903]
Allograft inflammatory factor 1 [Source:UniProtKB/Swiss-Prot;Acc:P55008]
apoptosis-inducing factor, mitochondrion-associated, 1 [Source:HGNC Symbol;Acc:8768]
apoptosis-inducing factor, mitochondrion-associated, 2 [Source:HGNC Symbol;Acc:21411]
absent in melanoma 1 [Source:HGNC Symbol;Acc:356]
aryl hydrocarbon receptor interacting protein [Source:HGNC Symbol;Acc:358]
AKT1 substrate 1 (proline-rich) [Source:HGNC Symbol;Acc:28426]
angiopoietin-like 4 [Source:HGNC Symbol;Acc:16039]
ankyrin 1, erythrocytic [Source:HGNC Symbol;Acc:492]
ankyrin 2, neuronal [Source:HGNC Symbol;Acc:493]
ankyrin repeat domain 29 [Source:HGNC Symbol;Acc:27110]
apoptotic peptidase activating factor 1 [Source:HGNC Symbol;Acc:576]
adaptor protein, phosphotyrosine interaction, PH domain and leucine zipper containing 1 [Source:HGNC Symbol;Acc:2
ADP-ribosylation factor related protein 1 [Source:HGNC Symbol;Acc:662]
actin related protein 2/3 complex, subunit 3, 21kDa [Source:HGNC Symbol;Acc:706]
actin related protein 2/3 complex, subunit 5, 16kDa [Source:HGNC Symbol;Acc:708]
ArfGAP with SH3 domain, ankyrin repeat and PH domain 1 [Source:HGNC Symbol;Acc:2720]
activating transcription factor 1 [Source:HGNC Symbol;Acc:783]
5-aminoimidazole-4-carboxamide ribonucleotide formyltransferase/IMP cyclohydrolase [Source:HGNC Symbol;Acc:79
ATPase, aminophospholipid transporter, class I, type 8B, member 1 [Source:HGNC Symbol;Acc:3706]
alpha thalassemia/mental retardation syndrome X-linked [Source:HGNC Symbol;Acc:886]
autism susceptibility candidate 2 [Source:HGNC Symbol;Acc:14262]
BCL2-associated athanogene 2 [Source:HGNC Symbol;Acc:938]
BRCA1 associated RING domain 1 [Source:HGNC Symbol;Acc:952]
BCL2-associated X protein [Source:HGNC Symbol;Acc:959]
BCL2 binding component 3 [Source:HGNC Symbol;Acc:17868]
BCL2-like 1 [Source:HGNC Symbol;Acc:992]
BCL2-like 11 (apoptosis facilitator) [Source:HGNC Symbol;Acc:994]
BCL2-like 2 [Source:HGNC Symbol;Acc:995]
B-cell CLL/lymphoma 6 [Source:HGNC Symbol;Acc:1001]
BH3 interacting domain death agonist [Source:HGNC Symbol;Acc:1050]
bone morphogenetic protein 1 [Source:HGNC Symbol;Acc:1067]
BCL2/adenovirus E1B 19kDa interacting protein 3-like [Source:HGNC Symbol;Acc:1085]
Boc homolog (mouse) [Source:HGNC Symbol;Acc:17173]
BRCA1 interacting protein C-terminal helicase 1 [Source:HGNC Symbol;Acc:20473]
carbonic anhydrase IX [Source:HGNC Symbol;Acc:1383]
calcium binding protein 39 [Source:HGNC Symbol;Acc:20292]
carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase [Source:HGNC Symbol;Acc:1424]
cathelicidin antimicrobial peptide [Source:HGNC Symbol;Acc:1472]
capping protein (actin filament), gelsolin-like [Source:HGNC Symbol;Acc:1474]
cysteinyl-tRNA synthetase [Source:HGNC Symbol;Acc:1493]
caspase 1, apoptosis-related cysteine peptidase (interleukin 1, beta, convertase) [Source:HGNC Symbol;Acc:1499]

caspase 10, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1500]
caspase 2, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1503]
caspase 3, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1504]
caspase 4, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1505]
caspase 5, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1506]
caspase 6, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1507]
caspase 7, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1508]
caspase 8, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1509]
caspase 9, apoptosis-related cysteine peptidase [Source:HGNC Symbol;Acc:1511]
collagen and calcium binding EGF domains 1 [Source:HGNC Symbol;Acc:29426]
chemokine (C-C motif) ligand 5 [Source:HGNC Symbol;Acc:10632]
cyclin A1 [Source:HGNC Symbol;Acc:1577]
cyclin A2 [Source:HGNC Symbol;Acc:1578]
cyclin B1 [Source:HGNC Symbol;Acc:1579]
cyclin D2 [Source:HGNC Symbol;Acc:1583]
cyclin D3 [Source:HGNC Symbol;Acc:1585]
cyclin E1 [Source:HGNC Symbol;Acc:1589]
chemokine (C-C motif) receptor 1 [Source:HGNC Symbol;Acc:1602]
CD47 molecule [Source:HGNC Symbol;Acc:1682]
CD82 molecule [Source:HGNC Symbol;Acc:6210]
cell division cycle 20 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:1723]
cell division cycle 45 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:1739]
cell division cycle 6 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:1744]
cadherin 3, type 1, P-cadherin (placental) [Source:HGNC Symbol;Acc:1762]
cyclin-dependent kinase inhibitor 1A (p21, Cip1) [Source:HGNC Symbol;Acc:1784]
cyclin-dependent kinase inhibitor 1C (p57, Kip2) [Source:HGNC Symbol;Acc:1786]
cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4) [Source:HGNC Symbol;Acc:1787]
cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4) [Source:HGNC Symbol;Acc:1788]
cyclin-dependent kinase inhibitor 2C (p18, inhibits CDK4) [Source:HGNC Symbol;Acc:1789]
cyclin-dependent kinase inhibitor 2D (p19, inhibits CDK4) [Source:HGNC Symbol;Acc:1790]
Cdon homolog (mouse) [Source:HGNC Symbol;Acc:17104]
chymotrypsin-like elastase family, member 1 [Source:HGNC Symbol;Acc:3308]
centromere protein A [Source:HGNC Symbol;Acc:1851]
complement factor H-related 5 [Source:HGNC Symbol;Acc:24668]
cofilin 1 (non-muscle) [Source:HGNC Symbol;Acc:1874]
cofilin 2 (muscle) [Source:HGNC Symbol;Acc:1875]
CASP8 and FADD-like apoptosis regulator [Source:HGNC Symbol;Acc:1876]
chromodomain helicase DNA binding protein 5 [Source:HGNC Symbol;Acc:16816]
cholinergic receptor, muscarinic 1 [Source:HGNC Symbol;Acc:1950]
calcium and integrin binding family member 2 [Source:HGNC Symbol;Acc:24579]
Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 1 [Source:HGNC Symbol;Acc:1986]
clathrin, heavy chain (Hc) [Source:HGNC Symbol;Acc:2092]
contactin 1 [Source:HGNC Symbol;Acc:2171]
contactin 6 [Source:HGNC Symbol;Acc:2176]
cAMP responsive element binding protein 1 [Source:HGNC Symbol;Acc:2345]
cAMP responsive element binding protein 3-like 2 [Source:HGNC Symbol;Acc:23720]
colony stimulating factor 2 receptor, beta, low-affinity (granulocyte-macrophage) [Source:HGNC Symbol;Acc:2436]
catenin (cadherin-associated protein), alpha 1, 102kDa [Source:HGNC Symbol;Acc:2509]
chemokine (C-X-C motif) ligand 12 [Source:HGNC Symbol;Acc:10672]
chemokine (C-X-C motif) receptor 4 [Source:HGNC Symbol;Acc:2561]

chemokine (C-X-C motif) receptor 7 [Source:HGNC Symbol;Acc:23692]
CXXC finger protein 4 [Source:HGNC Symbol;Acc:24593]
cylindromatosis (turban tumor syndrome) [Source:HGNC Symbol;Acc:2584]
Duffy blood group, chemokine receptor [Source:HGNC Symbol;Acc:4035]
deleted in colorectal carcinoma [Source:HGNC Symbol;Acc:2701]
damage-specific DNA binding protein 2, 48kDa [Source:HGNC Symbol;Acc:2718]
DNA fragmentation factor, 45kDa, alpha polypeptide [Source:HGNC Symbol;Acc:2772]
DNA fragmentation factor, 40kDa, beta polypeptide (caspase-activated DNase) [Source:HGNC Symbol;Acc:2773]
diacylglycerol kinase, alpha 80kDa [Source:HGNC Symbol;Acc:2849]
diablo homolog (Drosophila) [Source:HGNC Symbol;Acc:21528]
DIP2 disco-interacting protein 2 homolog C (Drosophila) [Source:HGNC Symbol;Acc:29150]
Parkinson disease (autosomal recessive, early onset) 7 [Source:HGNC Symbol;Acc:16369]
dipeptidyl-peptidase 4 [Source:HGNC Symbol;Acc:3009]
Down syndrome cell adhesion molecule like 1 [Source:HGNC Symbol;Acc:14656]
dual specificity phosphatase 1 [Source:HGNC Symbol;Acc:3064]
E4F transcription factor 1 [Source:HGNC Symbol;Acc:3121]
EGF-like-domain, multiple 6 [Source:HGNC Symbol;Acc:3235]
eukaryotic translation initiation factor 3, subunit J [Source:HGNC Symbol;Acc:3270]
eukaryotic translation initiation factor 4A2 [Source:HGNC Symbol;Acc:3284]
eukaryotic translation initiation factor 4E binding protein 1 [Source:HGNC Symbol;Acc:3288]
E74-like factor 3 (ets domain transcription factor, epithelial-specific) [Source:HGNC Symbol;Acc:3318]
E74-like factor 4 (ets domain transcription factor) [Source:HGNC Symbol;Acc:3319]
elongation factor RNA polymerase II [Source:HGNC Symbol;Acc:23114]
epidermal growth factor receptor pathway substrate 8 [Source:HGNC Symbol;Acc:3420]
excision repair cross-complementing rodent repair deficiency, complementation group 1 (includes overlapping antiser
excision repair cross-complementing rodent repair deficiency, complementation group 2 [Source:HGNC Symbol;Acc:34
excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum gr
excision repair cross-complementing rodent repair deficiency, complementation group 4 [Source:HGNC Symbol;Acc:34
excision repair cross-complementing rodent repair deficiency, complementation group 5 [Source:HGNC Symbol;Acc:34
epiregulin [Source:HGNC Symbol;Acc:3443]
MDS1 and EVI1 complex locus [Source:HGNC Symbol;Acc:3498]
Ewing sarcoma breakpoint region 1 [Source:HGNC Symbol;Acc:3508]
exostosin 1 [Source:HGNC Symbol;Acc:3512]
exostosin 2 [Source:HGNC Symbol;Acc:3513]
enhancer of zeste homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:3527]
Fas (TNFRSF6)-associated via death domain [Source:HGNC Symbol;Acc:3573]
FERM, RhoGEF (ARHGEF) and pleckstrin domain protein 1 (chondrocyte-derived) [Source:HGNC Symbol;Acc:3591]
Fas (TNF receptor superfamily, member 6) [Source:HGNC Symbol;Acc:11920]
Fas ligand (TNF superfamily, member 6) [Source:HGNC Symbol;Acc:11936]
fibroblast growth factor 18 [Source:HGNC Symbol;Acc:3674]
fibroblast growth factor 3 [Source:HGNC Symbol;Acc:3681]
fibroblast growth factor 4 [Source:HGNC Symbol;Acc:3682]
fumarate hydratase [Source:HGNC Symbol;Acc:3700]
c-fos induced growth factor (vascular endothelial growth factor D) [Source:HGNC Symbol;Acc:3708]
filamin A, alpha [Source:HGNC Symbol;Acc:3754]
filamin B, beta [Source:HGNC Symbol;Acc:3755]
fibronectin 1 [Source:HGNC Symbol;Acc:3778]
frizzled-related protein [Source:HGNC Symbol;Acc:3959]
FYN binding protein [Source:HGNC Symbol;Acc:4036]
growth arrest and DNA-damage-inducible, alpha [Source:HGNC Symbol;Acc:4095]

growth arrest and DNA-damage-inducible, beta [Source:HGNC Symbol;Acc:4096]
growth arrest and DNA-damage-inducible, gamma [Source:HGNC Symbol;Acc:4097]
growth arrest-specific 1 [Source:HGNC Symbol;Acc:4165]
MTOR associated protein, LST8 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:24825]
GRB2-related adaptor protein 2 [Source:HGNC Symbol;Acc:4563]
H2A histone family, member X [Source:HGNC Symbol;Acc:4739]
pleiotrophin [Source:HGNC Symbol;Acc:9630]
hepatitis B virus x interacting protein [Source:HGNC Symbol;Acc:17955]
hepatocyte growth factor (hepapoietin A; scatter factor) [Source:HGNC Symbol;Acc:4893]
hypoxia inducible factor 1, alpha subunit inhibitor [Source:HGNC Symbol;Acc:17113]
high-mobility group 20B [Source:HGNC Symbol;Acc:5002]
inhibitor of DNA binding 1, dominant negative helix-loop-helix protein [Source:HGNC Symbol;Acc:5360]
inhibitor of DNA binding 3, dominant negative helix-loop-helix protein [Source:HGNC Symbol;Acc:5362]
iduronidase, alpha-L- [Source:HGNC Symbol;Acc:5391]
insulin-like growth factor 1 (somatomedin C) [Source:HGNC Symbol;Acc:5464]
insulin-like growth factor 2 (somatomedin A) [Source:HGNC Symbol;Acc:5466]
insulin-like growth factor 2 receptor [Source:HGNC Symbol;Acc:5467]
insulin-like growth factor binding protein 7 [Source:HGNC Symbol;Acc:5476]
immunoglobulin superfamily, member 9 [Source:HGNC Symbol;Acc:18132]
inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein [Source:HGNC Symbo
inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma [Source:HGNC Symbol;Acc:5961]
interleukin 11 [Source:HGNC Symbol;Acc:5966]
interleukin 6 (interferon, beta 2) [Source:HGNC Symbol;Acc:6018]
interleukin 6 signal transducer (gp130, oncostatin M receptor) [Source:HGNC Symbol;Acc:6021]
inhibin, beta A [Source:HGNC Symbol;Acc:6066]
interaction protein for cytohesin exchange factors 1 [Source:HGNC Symbol;Acc:21204]
insulin receptor substrate 1 [Source:HGNC Symbol;Acc:6125]
insulin receptor substrate 2 [Source:HGNC Symbol;Acc:6126]
itchy E3 ubiquitin protein ligase homolog (mouse) [Source:HGNC Symbol;Acc:13890]
jun proto-oncogene [Source:HGNC Symbol;Acc:6204]
Protein ALO17 (ALK lymphoma oligomerization partner on chromosome 17) [Source:UniProtKB/Swiss-Prot;Acc:Q9HCF
kinesin family member 15 [Source:HGNC Symbol;Acc:17273]
KiSS-1 metastasis-suppressor [Source:HGNC Symbol;Acc:6341]
KIT ligand [Source:HGNC Symbol;Acc:6343]
kringle containing transmembrane protein 1 [Source:HGNC Symbol;Acc:17550]
kringle containing transmembrane protein 2 [Source:HGNC Symbol;Acc:18797]
keratin 20 [Source:HGNC Symbol;Acc:20412]
leucine-rich repeat containing G protein-coupled receptor 5 [Source:HGNC Symbol;Acc:4504]
lin-28 homolog A (C. elegans) [Source:HGNC Symbol;Acc:15986]
lysyl oxidase [Source:HGNC Symbol;Acc:6664]
leucine zipper, putative tumor suppressor 2 [Source:HGNC Symbol;Acc:29381]
metastasis associated in colon cancer 1 [Source:HGNC Symbol;Acc:30215]
MAP3K12 binding inhibitory protein 1 [Source:HGNC Symbol;Acc:20427]
kinesin family member 2C [Source:HGNC Symbol;Acc:6393]
MCF.2 cell line derived transforming sequence-like 2 [Source:HGNC Symbol;Acc:30319]
myeloid cell leukemia sequence 1 (BCL2-related) [Source:HGNC Symbol;Acc:6943]
minichromosome maintenance complex component 2 [Source:HGNC Symbol;Acc:6944]
minichromosome maintenance complex component 3 [Source:HGNC Symbol;Acc:6945]
minichromosome maintenance complex component 4 [Source:HGNC Symbol;Acc:6947]
minichromosome maintenance complex component 5 [Source:HGNC Symbol;Acc:6948]

minichromosome maintenance complex component 6 [Source:HGNC Symbol;Acc:6949]
minichromosome maintenance complex component 7 [Source:HGNC Symbol;Acc:6950]
mediator of DNA-damage checkpoint 1 [Source:HGNC Symbol;Acc:21163]
Mdm4 p53 binding protein homolog (mouse) [Source:HGNC Symbol;Acc:6974]
O-6-methylguanine-DNA methyltransferase [Source:HGNC Symbol;Acc:7059]
microsomal glutathione S-transferase 1 [Source:HGNC Symbol;Acc:7061]
microphthalmia-associated transcription factor [Source:HGNC Symbol;Acc:7105]
matrix metallopeptidase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase) [Source:HGNC Symbol;Acc:717
moesin [Source:HGNC Symbol;Acc:7373]
mucin 1, cell surface associated [Source:HGNC Symbol;Acc:7508]
mutY homolog (E. coli) [Source:HGNC Symbol;Acc:7527]
v-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian) [Source:HGNC Symbol;Acc:7559]
myeloid differentiation primary response gene (88) [Source:HGNC Symbol;Acc:7562]
myosin XVIIIB [Source:HGNC Symbol;Acc:18150]
Nanog homeobox pseudogene 1 [Source:HGNC Symbol;Acc:23099]
Nanog homeobox [Source:HGNC Symbol;Acc:20857]
Norrie disease (pseudoglioma) [Source:HGNC Symbol;Acc:7678]
NK2 homeobox 1 [Source:HGNC Symbol;Acc:11825]
NK3 homeobox 1 [Source:HGNC Symbol;Acc:7838]
nitric oxide synthase 3 (endothelial cell) [Source:HGNC Symbol;Acc:7876]
notch 1 [Source:HGNC Symbol;Acc:7881]
notch 2 [Source:HGNC Symbol;Acc:7882]
nucleophosmin (nucleolar phosphoprotein B23, numatrin) [Source:HGNC Symbol;Acc:7910]
nucleoporin 98kDa [Source:HGNC Symbol;Acc:8068]
poly(A) binding protein, cytoplasmic 4 (inducible form) [Source:HGNC Symbol;Acc:8557]
poly (ADP-ribose) glycohydrolase [Source:HGNC Symbol;Acc:8605]
parkinson protein 2, E3 ubiquitin protein ligase (parkin) [Source:HGNC Symbol;Acc:8607]
poly (ADP-ribose) polymerase 1 [Source:HGNC Symbol;Acc:270]
poly (ADP-ribose) polymerase family, member 10 [Source:HGNC Symbol;Acc:25895]
poly (ADP-ribose) polymerase family, member 11 [Source:HGNC Symbol;Acc:1186]
poly (ADP-ribose) polymerase family, member 12 [Source:HGNC Symbol;Acc:21919]
poly (ADP-ribose) polymerase family, member 14 [Source:HGNC Symbol;Acc:29232]
poly (ADP-ribose) polymerase family, member 15 [Source:HGNC Symbol;Acc:26876]
poly (ADP-ribose) polymerase family, member 16 [Source:HGNC Symbol;Acc:26040]
poly (ADP-ribose) polymerase 2 [Source:HGNC Symbol;Acc:272]
poly (ADP-ribose) polymerase family, member 3 [Source:HGNC Symbol;Acc:273]
poly (ADP-ribose) polymerase family, member 4 [Source:HGNC Symbol;Acc:271]
poly (ADP-ribose) polymerase family, member 6 [Source:HGNC Symbol;Acc:26921]
poly (ADP-ribose) polymerase family, member 8 [Source:HGNC Symbol;Acc:26124]
poly (ADP-ribose) polymerase family, member 9 [Source:HGNC Symbol;Acc:24118]
proliferating cell nuclear antigen [Source:HGNC Symbol;Acc:8729]
phosphodiesterase 4D, cAMP-specific [Source:HGNC Symbol;Acc:8783]
platelet-derived growth factor beta polypeptide (simian sarcoma viral (v-sis) oncogene homolog) [Source:HGNC Symbo
piwi-like 1 (Drosophila) [Source:HGNC Symbol;Acc:9007]
phorbol-12-myristate-13-acetate-induced protein 1 [Source:HGNC Symbol;Acc:9108]
POU class 5 homeobox 1 [Source:HGNC Symbol;Acc:9221]
protein phosphatase 2, regulatory subunit B', gamma [Source:HGNC Symbol;Acc:9311]
peroxisome proliferator-activated receptor gamma [Source:HGNC Symbol;Acc:9236]
pyrophosphatase (inorganic) 1 [Source:HGNC Symbol;Acc:9226]
pyrophosphatase (inorganic) 2 [Source:HGNC Symbol;Acc:28883]

protein phosphatase 1, regulatory (inhibitor) subunit 13B [Source:HGNC Symbol;Acc:14950]
protein phosphatase 2, regulatory subunit B', alpha [Source:HGNC Symbol;Acc:9309]
protein phosphatase 2, regulatory subunit B', beta [Source:HGNC Symbol;Acc:9310]
PR domain containing 4 [Source:HGNC Symbol;Acc:9348]
PRP4 pre-mRNA processing factor 4 homolog B (yeast) [Source:HGNC Symbol;Acc:17346]
presenilin 1 [Source:HGNC Symbol;Acc:9508]
proteasome (prosome, macropain) 26S subunit, ATPase, 5 [Source:HGNC Symbol;Acc:9552]
prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase) [Source:HGNC Symbol;Acc:9
prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase) [Source:HGNC Symbol;Acc:9
parathyroid hormone-like hormone [Source:HGNC Symbol;Acc:9607]
protein tyrosine phosphatase, non-receptor type 11 [Source:HGNC Symbol;Acc:9644]
protein tyrosine phosphatase, non-receptor type 13 (APO-1/CD95 (Fas)-associated phosphatase) [Source:HGNC Symbo
protein tyrosine phosphatase, non-receptor type 14 [Source:HGNC Symbol;Acc:9647]
protein tyrosine phosphatase, non-receptor type 3 [Source:HGNC Symbol;Acc:9655]
protein tyrosine phosphatase, non-receptor type 6 [Source:HGNC Symbol;Acc:9658]
protein tyrosine phosphatase, receptor type, F [Source:HGNC Symbol;Acc:9670]
protein tyrosine phosphatase, receptor type, G [Source:HGNC Symbol;Acc:9671]
protein tyrosine phosphatase, receptor type, N polypeptide 2 [Source:HGNC Symbol;Acc:9677]
protein tyrosine phosphatase, receptor type, S [Source:HGNC Symbol;Acc:9681]
protein tyrosine phosphatase, receptor type, T [Source:HGNC Symbol;Acc:9682]
RAD50 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:9816]
RAD51 homolog (RecA homolog, E. coli) (S. cerevisiae) [Source:HGNC Symbol;Acc:9817]
RAD52 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:9824]
RAD54-like (S. cerevisiae) [Source:HGNC Symbol;Acc:9826]
ralA binding protein 1 [Source:HGNC Symbol;Acc:9841]
RAN binding protein 2 [Source:HGNC Symbol;Acc:9848]
RAP1 GTPase activating protein [Source:HGNC Symbol;Acc:9858]
Rap guanine nucleotide exchange factor (GEF) 2 [Source:HGNC Symbol;Acc:16854]
Ras protein-specific guanine nucleotide-releasing factor 2 [Source:HGNC Symbol;Acc:9876]
retinoblastoma-like 1 (p107) [Source:HGNC Symbol;Acc:9893]
ring-box 1, E3 ubiquitin protein ligase [Source:HGNC Symbol;Acc:9928]
receptor accessory protein 5 [Source:HGNC Symbol;Acc:30077]
v-rel reticuloendotheliosis viral oncogene homolog (avian) [Source:HGNC Symbol;Acc:9954]
replication factor C (activator 1) 1, 145kDa [Source:HGNC Symbol;Acc:9969]
ras homolog gene family, member C [Source:HGNC Symbol;Acc:669]
family with sequence similarity 20, member C [Source:HGNC Symbol;Acc:22140]
replication protein A1, 70kDa [Source:HGNC Symbol;Acc:10289]
R-spondin homolog (Xenopus laevis) [Source:HGNC Symbol;Acc:21679]
retinoid X receptor, gamma [Source:HGNC Symbol;Acc:10479]
sciellin [Source:HGNC Symbol;Acc:10573]
sodium channel, nonvoltage-gated 1, beta [Source:HGNC Symbol;Acc:10600]
sodium channel, nonvoltage-gated 1, gamma [Source:HGNC Symbol;Acc:10602]
SEC31 homolog A (S. cerevisiae) [Source:HGNC Symbol;Acc:17052]
SET domain containing (lysine methyltransferase) 7 [Source:HGNC Symbol;Acc:30412]
secreted frizzled-related protein 1 [Source:HGNC Symbol;Acc:10776]
secreted frizzled-related protein 2 [Source:HGNC Symbol;Acc:10777]
secreted frizzled-related protein 4 [Source:HGNC Symbol;Acc:10778]
secreted frizzled-related protein 5 [Source:HGNC Symbol;Acc:10779]
sarcoglycan, beta (43kDa dystrophin-associated glycoprotein) [Source:HGNC Symbol;Acc:10806]
shugoshin-like 2 (S. pombe) [Source:HGNC Symbol;Acc:30812]

SHC (Src homology 2 domain containing) transforming protein 2 [Source:HGNC Symbol;Acc:29869]
split hand/foot malformation (ectrodactyly) type 1 [Source:HGNC Symbol;Acc:10845]
seven in absentia homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:10858]
SIX homeobox 4 [Source:HGNC Symbol;Acc:10890]
S-phase kinase-associated protein 1 [Source:HGNC Symbol;Acc:10899]
S-phase kinase-associated protein 2 (p45) [Source:HGNC Symbol;Acc:10901]
solute carrier family 44, member 4 [Source:HGNC Symbol;Acc:13941]
structural maintenance of chromosomes 1B [Source:HGNC Symbol;Acc:11112]
survival of motor neuron 1, telomeric [Source:HGNC Symbol;Acc:11117]
SET and MYND domain containing 2 [Source:HGNC Symbol;Acc:20982]
snail homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:11128]
snail homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:11094]
SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1 [Source:HGNC Sy
sclerostin [Source:HGNC Symbol;Acc:13771]
SRY (sex determining region Y)-box 2 [Source:HGNC Symbol;Acc:11195]
spectrin, beta, non-erythrocytic 2 [Source:HGNC Symbol;Acc:11276]
slingshot homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:30579]
slingshot homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:30580]
suppression of tumorigenicity 13 (colon carcinoma) (Hsp70 interacting protein) [Source:HGNC Symbol;Acc:11343]
signal transducing adaptor molecule (SH3 domain and ITAM motif) 1 [Source:HGNC Symbol;Acc:11357]
signal transducer and activator of transcription 5A [Source:HGNC Symbol;Acc:11366]
signal transducer and activator of transcription 5B [Source:HGNC Symbol;Acc:11367]
STIP1 homology and U-box containing protein 1, E3 ubiquitin protein ligase [Source:HGNC Symbol;Acc:11427]
suppressor of variegation 3-9 homolog 2 (Drosophila) [Source:HGNC Symbol;Acc:17287]
transcription elongation factor B (SIII), polypeptide 3 (110kDa, elongin A) [Source:HGNC Symbol;Acc:11620]
tyrosyl-DNA phosphodiesterase 1 [Source:HGNC Symbol;Acc:18884]
tectorin alpha [Source:HGNC Symbol;Acc:11720]
telomerase reverse transcriptase [Source:HGNC Symbol;Acc:11730]
transcription factor binding to IGHM enhancer 3 [Source:HGNC Symbol;Acc:11752]
TRK-fused gene [Source:HGNC Symbol;Acc:11758]
transforming growth factor, beta 1 [Source:HGNC Symbol;Acc:11766]
transglutaminase 3 (E polypeptide, protein-glutamine-gamma-glutamyltransferase) [Source:HGNC Symbol;Acc:11779]
toll-like receptor adaptor molecule 1 [Source:HGNC Symbol;Acc:18348]
TCDD-inducible poly(ADP-ribose) polymerase [Source:HGNC Symbol;Acc:23696]
toll-interleukin 1 receptor (TIR) domain containing adaptor protein [Source:HGNC Symbol;Acc:17192]
transducin-like enhancer of split 1 (E(sp1) homolog, Drosophila) [Source:HGNC Symbol;Acc:11837]
tolloid-like 1 [Source:HGNC Symbol;Acc:11843]
toll-like receptor 1 [Source:HGNC Symbol;Acc:11847]
toll-like receptor 2 [Source:HGNC Symbol;Acc:11848]
toll-like receptor 3 [Source:HGNC Symbol;Acc:11849]
toll-like receptor 5 [Source:HGNC Symbol;Acc:11851]
toll-like receptor 6 [Source:HGNC Symbol;Acc:16711]
TLR9 [Source:UniProtKB/TrEMBL;Acc:C3W5P5]
Tumor necrosis factorTumor necrosis factor, membrane formTumor necrosis factor, soluble form [Source:UniProtKB/S
tumor necrosis factor receptor superfamily, member 10a [Source:HGNC Symbol;Acc:11904]
tumor necrosis factor receptor superfamily, member 10b [Source:HGNC Symbol;Acc:11905]
tumor necrosis factor receptor superfamily, member 10d, decoy with truncated death domain [Source:HGNC Symbol;A
tumor necrosis factor receptor superfamily, member 1A [Source:HGNC Symbol;Acc:11916]
tumor necrosis factor receptor superfamily, member 1B [Source:HGNC Symbol;Acc:11917]
tumor necrosis factor receptor superfamily, member 8 [Source:HGNC Symbol;Acc:11923]

tumor necrosis factor (ligand) superfamily, member 10 [Source:HGNC Symbol;Acc:11925]
tumor necrosis factor (ligand) superfamily, member 13 [Source:HGNC Symbol;Acc:11928]
tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase [Source:HGNC Symbol;Acc:11941]
tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2 [Source:HGNC Symbol;Acc:15677]
topoisomerase (DNA) I [Source:HGNC Symbol;Acc:11986]
topoisomerase (DNA) II alpha 170kDa [Source:HGNC Symbol;Acc:11989]
tumor protein p53 binding protein, 2 [Source:HGNC Symbol;Acc:12000]
tumor protein p63 [Source:HGNC Symbol;Acc:15979]
tumor protein p73 [Source:HGNC Symbol;Acc:12003]
TPX2, microtubule-associated, homolog (Xenopus laevis) [Source:HGNC Symbol;Acc:1249]
TNFRSF1A-associated via death domain [Source:HGNC Symbol;Acc:12030]
TNF receptor-associated factor 2 [Source:HGNC Symbol;Acc:12032]
TRAF3 interacting protein 2 [Source:HGNC Symbol;Acc:1343]
TNF receptor-associated factor 6 [Source:HGNC Symbol;Acc:12036]
translocation associated membrane protein 1 [Source:HGNC Symbol;Acc:20568]
tubulin, beta 1 [Source:HGNC Symbol;Acc:16257]
twist homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:12428]
thymidylate synthetase [Source:HGNC Symbol;Acc:12441]
ubiquitin protein ligase E3 component n-recognin 5 [Source:HGNC Symbol;Acc:16806]
uridine-cytidine kinase 2 [Source:HGNC Symbol;Acc:12562]
uridine monophosphate synthetase [Source:HGNC Symbol;Acc:12563]
UPF1 regulator of nonsense transcripts homolog (yeast) [Source:HGNC Symbol;Acc:9962]
ubiquitin specific peptidase 33 [Source:HGNC Symbol;Acc:20059]
ubiquitin specific peptidase 9, X-linked [Source:HGNC Symbol;Acc:12632]
vav 2 guanine nucleotide exchange factor [Source:HGNC Symbol;Acc:12658]
vav 3 guanine nucleotide exchange factor [Source:HGNC Symbol;Acc:12659]
von Hippel-Lindau binding protein 1 [Source:HGNC Symbol;Acc:12662]
vascular endothelial growth factor A [Source:HGNC Symbol;Acc:12680]
vascular endothelial growth factor B [Source:HGNC Symbol;Acc:12681]
vascular endothelial growth factor C [Source:HGNC Symbol;Acc:12682]
WAS protein family, member 2 [Source:HGNC Symbol;Acc:12733]
Wiskott-Aldrich syndrome-like [Source:HGNC Symbol;Acc:12735]
WD repeat domain 75 [Source:HGNC Symbol;Acc:25725]
WNT inhibitory factor 1 [Source:HGNC Symbol;Acc:18081]
WNT1 inducible signaling pathway protein 1 [Source:HGNC Symbol;Acc:12769]
X-linked inhibitor of apoptosis [Source:HGNC Symbol;Acc:592]
xeroderma pigmentosum, complementation group A [Source:HGNC Symbol;Acc:12814]
xeroderma pigmentosum, complementation group C [Source:HGNC Symbol;Acc:12816]
exportin 1 (CRM1 homolog, yeast) [Source:HGNC Symbol;Acc:12825]
X-ray repair complementing defective repair in Chinese hamster cells 1 [Source:HGNC Symbol;Acc:12828]
X-ray repair complementing defective repair in Chinese hamster cells 3 [Source:HGNC Symbol;Acc:12830]
pyruvate dehydrogenase kinase, isozyme 1 [Source:HGNC Symbol;Acc:8809]
ribosomal protein S6 kinase, 90kDa, polypeptide 4 [Source:HGNC Symbol;Acc:10433]
ribosomal protein S6 kinase, 70kDa, polypeptide 2 [Source:HGNC Symbol;Acc:10437]
ribosomal protein S6 kinase, 70kDa, polypeptide 1 [Source:HGNC Symbol;Acc:10436]
proteasome (prosome, macropain) 26S subunit, ATPase, 4 [Source:HGNC Symbol;Acc:9551]
unc-51-like kinase 1 (C. elegans) [Source:HGNC Symbol;Acc:12558]
low density lipoprotein receptor-related protein 2 [Source:HGNC Symbol;Acc:6694]
LRP2 binding protein [Source:HGNC Symbol;Acc:25434]
RAB23, member RAS oncogene family [Source:HGNC Symbol;Acc:14263]

chromosome 11 open reading frame 17 [Source:HGNC Symbol;Acc:1170]
F-box and WD repeat domain containing 11 [Source:HGNC Symbol;Acc:13607]
Zic family member 2 (odd-paired homolog, Drosophila) [Source:HGNC Symbol;Acc:12873]
epidermal growth factor [Source:HGNC Symbol;Acc:3229]
platelet-derived growth factor receptor-like [Source:HGNC Symbol;Acc:8805]
RAP1A, member of RAS oncogene family [Source:HGNC Symbol;Acc:9855]
late endosomal/lysosomal adaptor, MAPK and MTOR activator 3 [Source:HGNC Symbol;Acc:15606]
mitogen-activated protein kinase kinase kinase 14 [Source:HGNC Symbol;Acc:6853]
stathmin 1 [Source:HGNC Symbol;Acc:6510]
serum response factor (c-fos serum response element-binding transcription factor) [Source:HGNC Symbol;Acc:11291]
nerve growth factor (beta polypeptide) [Source:HGNC Symbol;Acc:7808]
brain-derived neurotrophic factor [Source:HGNC Symbol;Acc:1033]
nuclear receptor subfamily 4, group A, member 1 [Source:HGNC Symbol;Acc:7980]
numb homolog (Drosophila) [Source:HGNC Symbol;Acc:8060]
ADAM metallopeptidase domain 17 [Source:HGNC Symbol;Acc:195]
nicastrin [Source:HGNC Symbol;Acc:17091]
SMAD family member 6 [Source:HGNC Symbol;Acc:6772]
SMAD family member 7 [Source:HGNC Symbol;Acc:6773]
SMAD family member 9 [Source:HGNC Symbol;Acc:6774]
peroxisome proliferator-activated receptor delta [Source:HGNC Symbol;Acc:9235]
retinoblastoma binding protein 8 [Source:HGNC Symbol;Acc:9891]
catenin, beta interacting protein 1 [Source:HGNC Symbol;Acc:16913]
cerberus 1, cysteine knot superfamily, homolog (Xenopus laevis) [Source:HGNC Symbol;Acc:1862]
protein C (inactivator of coagulation factors Va and VIIIa) [Source:HGNC Symbol;Acc:9451]
phospholipase C, gamma 1 [Source:HGNC Symbol;Acc:9065]
nitric oxide synthase interacting protein [Source:HGNC Symbol;Acc:17946]
heat shock 27kDa protein 1 [Source:HGNC Symbol;Acc:5246]
symplekin [Source:HGNC Symbol;Acc:22935]
sprouty-related, EVH1 domain containing 1 [Source:HGNC Symbol;Acc:20249]
Cas-Br-M (murine) ecotropic retroviral transforming sequence [Source:HGNC Symbol;Acc:1541]
dishevelled, dsh homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:3084]
B-cell CLL/lymphoma 2 [Source:HGNC Symbol;Acc:990]
magnesium transporter 1 [Source:HGNC Symbol;Acc:28880]
Tumor necrosis factorTumor necrosis factor, membrane formTumor necrosis factor, soluble form [Source:UniProtKB/S
interleukin 1 receptor, type I [Source:HGNC Symbol;Acc:5993]
interleukin 1, beta [Source:HGNC Symbol;Acc:5992]
interleukin 1, alpha [Source:HGNC Symbol;Acc:5991]
interleukin 3 (colony-stimulating factor, multiple) [Source:HGNC Symbol;Acc:6011]
interleukin 3 receptor, alpha (low affinity) [Source:HGNC Symbol;Acc:6012]
MAX dimerization protein 1 [Source:HGNC Symbol;Acc:6761]
MAX interactor 1 [Source:HGNC Symbol;Acc:7534]
extra spindle pole bodies homolog 1 (S. cerevisiae) [Source:HGNC Symbol;Acc:16856]
myelin transcription factor 1 [Source:HGNC Symbol;Acc:7622]
DBF4 homolog (S. cerevisiae) [Source:HGNC Symbol;Acc:17364]
Death domain-associated protein 6 [Source:UniProtKB/Swiss-Prot;Acc:Q9UER7]
ribosomal protein S6 kinase, 90kDa, polypeptide 5 [Source:HGNC Symbol;Acc:10434]
MYC associated factor X [Source:HGNC Symbol;Acc:6913]
DNA-damage-inducible transcript 3 [Source:HGNC Symbol;Acc:2726]
glucokinase (hexokinase 4) [Source:HGNC Symbol;Acc:4195]
macrophage stimulating 1 (hepatocyte growth factor-like) [Source:HGNC Symbol;Acc:7380]

mitogen-activated protein kinase 8 interacting protein 1 [Source:HGNC Symbol;Acc:6882]
mitogen-activated protein kinase 8 interacting protein 2 [Source:HGNC Symbol;Acc:6883]
mitogen-activated protein kinase 8 interacting protein 3 [Source:HGNC Symbol;Acc:6884]
nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 1 [Source:HGNC Symbol;Acc:7775]
nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 3 [Source:HGNC Symbol;Acc:7777]
jun D proto-oncogene [Source:HGNC Symbol;Acc:6206]
v-crk sarcoma virus CT10 oncogene homolog (avian) [Source:HGNC Symbol;Acc:2362]
latent transforming growth factor beta binding protein 1 [Source:HGNC Symbol;Acc:6714]
ras homolog gene family, member A [Source:HGNC Symbol;Acc:667]
cullin 1 [Source:HGNC Symbol;Acc:2551]
dishevelled associated activator of morphogenesis 1 [Source:HGNC Symbol;Acc:18142]
vang-like 2 (van gogh, Drosophila) [Source:HGNC Symbol;Acc:15511]
seven in absentia homolog 1 (Drosophila) [Source:HGNC Symbol;Acc:10857]
zinc finger E-box binding homeobox 2 [Source:HGNC Symbol;Acc:14881]
chemokine (C-C motif) receptor 7 [Source:HGNC Symbol;Acc:1608]
interferon regulatory factor 3 [Source:HGNC Symbol;Acc:6118]
nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha [Source:HGNC Symbol;Acc:7797]

remarks

ource:HGNC Symbol;Acc:3430]

no longer in current database
cc:20794]

: Symbol;Acc:3763]

no longer in current database

::6147]

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ıse sequence) [Source:HGNC Symbol;Acc:3433]
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oup B complementing) [Source:HGNC Symbol;Acc:3435]
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ɔl;Acc:8800]

ɔ604]
ɔ605]

ɔl;Acc:9646]

mbol;Acc:11103]

;wiss-Prot;Acc:P01375]

Acc:11907]

;wiss-Prot;Acc:P01375]

Supplemental Table-3

chr	pos	type	known	ensembl_id	gene_name	coding
2	69746298	SNP	novel	ENSG00000115977	AAK1	exonic
2	69734636	SNP	known	ENSG00000115977	AAK1	exonic
2	69736561	SNP	known	ENSG00000115977	AAK1	exonic
2	69741854	SNP	known	ENSG00000115977	AAK1	exonic
2	69746296	SNP	novel	ENSG00000115977	AAK1	exonic
2	69741801	SNP	novel	ENSG00000115977	AAK1	exonic
2	69736449	SNP	novel	ENSG00000115977	AAK1	exonic
2	69708367	SNP	known	ENSG00000115977	AAK1	exonic
2	69758927	SNP	known	ENSG00000115977	AAK1	exonic
2	69758989	SNP	known	ENSG00000115977	AAK1	exonic
2	69771484	SNP	known	ENSG00000115977	AAK1	exonic
2	69709919	SNP	known	ENSG00000115977	AAK1	exonic
9	107589246	SNP	known	ENSG00000165029	ABCA1	exonic
9	107562804	SNP	known	ENSG00000165029	ABCA1	exonic
9	107579632	SNP	known	ENSG00000165029	ABCA1	exonic
9	107620867	SNP	known	ENSG00000165029	ABCA1	exonic
9	107588033	SNP	known	ENSG00000165029	ABCA1	exonic
9	107586753	SNP	known	ENSG00000165029	ABCA1	exonic
9	107690402	SNP	novel	ENSG00000165029	ABCA1	exonic
9	107690262	SNP	novel	ENSG00000165029	ABCA1	exonic
9	107690450	SNP	known	ENSG00000165029	ABCA1	exonic
9	107591272	SNP	known	ENSG00000165029	ABCA1	exonic
9	107602678	SNP	known	ENSG00000165029	ABCA1	exonic
9	107545903	SNP	known	ENSG00000165029	ABCA1	exonic
9	107624029	SNP	known	ENSG00000165029	ABCA1	exonic
9	107602666	SNP	known	ENSG00000165029	ABCA1	exonic
9	107623750	SNP	known	ENSG00000165029	ABCA1	exonic
9	107566930	SNP	known	ENSG00000165029	ABCA1	exonic
9	107665978	SNP	known	ENSG00000165029	ABCA1	exonic
9	107544285	SNP	known	ENSG00000165029	ABCA1	exonic
9	133760106	SNP	known	ENSG00000097007	ABL1	exonic
9	133760945	SNP	novel	ENSG00000097007	ABL1	exonic
9	133762826	SNP	known	ENSG00000097007	ABL1	exonic
9	133760029	SNP	known	ENSG00000097007	ABL1	exonic
9	133762590	SNP	known	ENSG00000097007	ABL1	exonic
9	133761001	SNP	known	ENSG00000097007	ABL1	exonic

9	133760617	SNP	known	ENSG00000097007	ABL1	exonic
9	133762553	SNP	known	ENSG00000097007	ABL1	exonic
9	133761992	SNP	known	ENSG00000097007	ABL1	exonic
9	133761883	SNP	known	ENSG00000097007	ABL1	exonic
9	133755528	SNP	known	ENSG00000097007	ABL1	exonic
9	133762433	SNP	known	ENSG00000097007	ABL1	exonic
1	179112145	SNP	known	ENSG00000143322	ABL2	exonic
1	179068703	SNP	novel	ENSG00000143322	ABL2	exonic
1	179068608	SNP	novel	ENSG00000143322	ABL2	exonic
1	179198527	SNP	novel	ENSG00000143322	ABL2	exonic
1	179069557	SNP	novel	ENSG00000143322	ABL2	exonic
1	179071756	SNP	known	ENSG00000143322	ABL2	exonic
1	179068851	SNP	known	ENSG00000143322	ABL2	exonic
1	179072728	SNP	known	ENSG00000143322	ABL2	exonic
1	179071865	SNP	known	ENSG00000143322	ABL2	exonic
1	179070120	SNP	known	ENSG00000143322	ABL2	exonic
1	179075755	SNP	known	ENSG00000143322	ABL2	exonic
1	179069429	SNP	known	ENSG00000143322	ABL2	exonic
1	179074869	SNP	known	ENSG00000143322	ABL2	exonic
1	179084080	SNP	known	ENSG00000143322	ABL2	exonic
1	179071918	SNP	known	ENSG00000143322	ABL2	exonic
1	179071037	SNP	known	ENSG00000143322	ABL2	exonic
1	179070334	SNP	known	ENSG00000143322	ABL2	exonic
1	179069452	SNP	known	ENSG00000143322	ABL2	exonic
1	179076672	SNP	known	ENSG00000143322	ABL2	exonic
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14	50863941	SNP	novel	ENSG00000100490	CDKL1	exonic
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10	44881638	SNP	known	ENSG00000107562	CXCL12	exonic
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12	57910666	SNP	novel	ENSG00000175197	DDIT3	exonic
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10	395302	SNP	known	ENSG00000151240	DIP2C	exonic
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16	14045399	SNP	known	ENSG00000175595	ERCC4	exonic
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6	109002042	SNP	known	ENSG00000118689	FOXO3	exonic
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6	152466582	SNP	known	ENSG00000131018	SYNE1	exonic
6	152465616	SNP	known	ENSG00000131018	SYNE1	exonic
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9	32632860	SNP	novel	ENSG00000122728	TAF1L	exonic
9	32634467	SNP	novel	ENSG00000122728	TAF1L	exonic
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17	27870929	SNP	novel	ENSG00000160551	TAOK1	exonic
17	27869968	SNP	known	ENSG00000160551	TAOK1	exonic
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19	1632059	SNP	novel	ENSG00000071564	TCF3	exonic
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18	52892713	SNP	novel	ENSG00000196628	TCF4	exonic
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9	35609578	SNP	known	ENSG00000107140	TESK1	exonic
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1	45810865	SNP	known	ENSG00000070759	TESK2	exonic
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17	56636854	SNP	known	ENSG00000121101	TEX14	exonic
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3	100462527	SNP	known	ENSG00000114354	TFG	exonic
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3	100463268	SNP	known	ENSG00000114354	TFG	exonic
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9	101912471	SNP	known	ENSG00000106799	TGFBR1	exonic
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9	101916076	SNP	known	ENSG00000106799	TGFBR1	exonic
9	101911947	SNP	novel	ENSG00000106799	TGFBR1	exonic
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9	101914873	SNP	known	ENSG00000106799	TGFBR1	exonic
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3	30713737	SNP	novel	ENSG00000163513	TGFBR2	exonic
3	30735156	SNP	known	ENSG00000163513	TGFBR2	exonic
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20	2297790	SNP	known	ENSG00000125780	TGM3	exonic
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20	2321363	SNP	known	ENSG00000125780	TGM3	exonic
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9	84302311	SNP	novel	ENSG00000196781	TLE1	exonic
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8	22972207	SNP	known	ENSG00000173535	TNFRSF10C	exonic
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12	6442643	SNP	known	ENSG00000067182	TNFRSF1A	exonic
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3	172223982	SNP	known	ENSG00000121858	TNFSF10	exonic
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22	22116467	SNP	known	ENSG00000100038	TOP3B	exonic
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6	43747378	SNP	known	ENSG00000112715	VEGFA	exonic
6	43742419	SNP	known	ENSG00000112715	VEGFA	exonic
6	43747962	SNP	known	ENSG00000112715	VEGFA	exonic
6	43748434	SNP	known	ENSG00000112715	VEGFA	exonic
6	43750551	SNP	known	ENSG00000112715	VEGFA	exonic
6	43751359	SNP	known	ENSG00000112715	VEGFA	exonic
6	43746169	SNP	known	ENSG00000112715	VEGFA	exonic
6	43750556	SNP	known	ENSG00000112715	VEGFA	exonic
6	43750587	SNP	known	ENSG00000112715	VEGFA	exonic
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6	43748795	SNP	known	ENSG00000112715	VEGFA	exonic
6	43738977	SNP	known	ENSG00000112715	VEGFA	exonic
6	43749230	SNP	known	ENSG00000112715	VEGFA	exonic
6	43753325	SNP	known	ENSG00000112715	VEGFA	exonic
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6	43753722	SNP	known	ENSG00000112715	VEGFA	exonic
6	43749524	SNP	novel	ENSG00000112715	VEGFA	exonic
6	43745577	SNP	known	ENSG00000112715	VEGFA	exonic
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6	43750763	SNP	novel	ENSG00000112715	VEGFA	exonic
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6	43747577	SNP	known	ENSG00000112715	VEGFA	exonic
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6	43742626	SNP	known	ENSG00000112715	VEGFA	exonic
6	43738350	SNP	known	ENSG00000112715	VEGFA	exonic
6	43746949	SNP	known	ENSG00000112715	VEGFA	exonic
6	43753051	SNP	known	ENSG00000112715	VEGFA	exonic
6	43753212	SNP	known	ENSG00000112715	VEGFA	exonic
3	10191605	SNP	known	ENSG00000134086	VHL	exonic
3	10191507	SNP	known	ENSG00000134086	VHL	exonic
3	10183605	SNP	known	ENSG00000134086	VHL	exonic
3	10183337	SNP	known	ENSG00000134086	VHL	exonic
3	10191943	SNP	known	ENSG00000134086	VHL	exonic
20	2840773	SNP	known	ENSG00000215305	VPS16	exonic
20	2844679	SNP	known	ENSG00000215305	VPS16	exonic
14	97299853	SNP	known	ENSG00000100749	VRK1	exonic
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2	58316814	SNP	known	ENSG00000028116	VRK2	exonic
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1	27731396	SNP	known	ENSG00000158195	WASF2	exonic
1	27733916	SNP	known	ENSG00000158195	WASF2	exonic
1	27731414	SNP	known	ENSG00000158195	WASF2	exonic
1	27731651	SNP	known	ENSG00000158195	WASF2	exonic
1	27732910	SNP	known	ENSG00000158195	WASF2	exonic
7	123389093	SNP	known	ENSG00000106299	WASL	exonic
7	123323124	SNP	novel	ENSG00000106299	WASL	exonic
7	123322061	SNP	novel	ENSG00000106299	WASL	exonic
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9	127619922	SNP	known	ENSG00000136918	WDR38	exonic
9	127616537	SNP	known	ENSG00000136918	WDR38	exonic
9	127620141	SNP	known	ENSG00000136918	WDR38	exonic
9	127618776	SNP	known	ENSG00000136918	WDR38	exonic
2	190323530	SNP	known	ENSG00000115368	WDR75	exonic
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2	190331262	SNP	known	ENSG00000115368	WDR75	exonic
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12	65462623	SNP	known	ENSG00000156076	WIF1	exonic
12	65514266	SNP	known	ENSG00000156076	WIF1	exonic
8	134241137	SNP	known	ENSG00000104415	WISP1	exonic
8	134240923	SNP	known	ENSG00000104415	WISP1	exonic
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12	862989	SNP	known	ENSG00000060237	WNK1	exonic
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9	96030072	SNP	novel	ENSG00000165238	WNK2	exonic
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17	40947871	SNP	novel	ENSG00000126562	WNK4	exonic
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12	49365423	SNP	known	ENSG00000169884	WNT10B	exonic
12	49364391	SNP	known	ENSG00000169884	WNT10B	exonic
12	49359587	SNP	known	ENSG00000169884	WNT10B	exonic

7	120979089	SNP	known	ENSG00000002745	WNT16	exonic
7	120979244	SNP	novel	ENSG00000002745	WNT16	exonic
7	120969769	SNP	known	ENSG00000002745	WNT16	exonic
7	120969412	SNP	known	ENSG00000002745	WNT16	exonic
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1	113065166	SNP	known	ENSG00000134245	WNT2B	exonic
1	113063771	SNP	known	ENSG00000134245	WNT2B	exonic
1	113051781	SNP	novel	ENSG00000134245	WNT2B	exonic
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1	22453842	SNP	known	ENSG00000162552	WNT4	exonic
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3	55500700	SNP	known	ENSG00000114251	WNT5A	exonic
3	55503522	SNP	known	ENSG00000114251	WNT5A	exonic
3	55499781	SNP	known	ENSG00000114251	WNT5A	exonic
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12	1755654	SNP	known	ENSG00000111186	WNT5B	exonic
2	219736472	SNP	known	ENSG00000115596	WNT6	exonic
3	13859027	SNP	known	ENSG00000154764	WNT7A	exonic
3	13859332	SNP	known	ENSG00000154764	WNT7A	exonic
3	13858093	SNP	known	ENSG00000154764	WNT7A	exonic
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3	13858232	SNP	known	ENSG00000154764	WNT7A	exonic

3	13857892	SNP	known	ENSG00000154764	WNT7A	exonic
3	13858241	SNP	known	ENSG00000154764	WNT7A	exonic
22	46316424	SNP	known	ENSG00000188064	WNT7B	exonic
22	46318934	SNP	novel	ENSG00000188064	WNT7B	exonic
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22	46316863	SNP	known	ENSG00000188064	WNT7B	exonic
22	46318178	SNP	known	ENSG00000188064	WNT7B	exonic
22	46316805	SNP	known	ENSG00000188064	WNT7B	exonic
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22	46317314	SNP	novel	ENSG00000188064	WNT7B	exonic
5	137426447	SNP	known	ENSG00000061492	WNT8A	exonic
5	137419728	SNP	known	ENSG00000061492	WNT8A	exonic
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17	44953856	SNP	known	ENSG00000158955	WNT9B	exonic
9	100459578	SNP	known	ENSG00000136936	XPA	exonic
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3	14190237	SNP	known	ENSG00000154767	XPC	intronic
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2	61719275	SNP	known	ENSG00000082898	XPO1	exonic
2	61705663	SNP	known	ENSG00000082898	XPO1	exonic
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2	61764098	SNP	known	ENSG00000082898	XPO1	exonic
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2	61711440	SNP	novel	ENSG00000082898	XPO1	exonic
2	61764140	SNP	known	ENSG00000082898	XPO1	exonic
2	61763351	SNP	novel	ENSG00000082898	XPO1	exonic
2	61763459	SNP	novel	ENSG00000082898	XPO1	exonic
2	61705437	SNP	novel	ENSG00000082898	XPO1	exonic
2	61725856	SNP	known	ENSG00000082898	XPO1	exonic
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19	44047550	SNP	known	ENSG00000073050	XRCC1	exonic
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18	722118	SNP	known	ENSG00000176105	YES1	exonic
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18	724612	SNP	known	ENSG00000176105	YES1	exonic
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2	145185368	SNP	novel	ENSG00000169554	ZEB2	exonic
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2	145271250	SNP	novel	ENSG00000169554	ZEB2	exonic
2	145274065	SNP	known	ENSG00000169554	ZEB2	exonic
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13	100638193	SNP	known	ENSG00000043355	ZIC2	exonic
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7	143088085	SNP	known	ENSG00000159840	ZYX	exonic
7	143087956	SNP	known	ENSG00000159840	ZYX	exonic
7	33102814	SNP	known	not in gene		
17	20640777	SNP	known	not in gene		
17	20641139	SNP	known	not in gene		

2	242449146	SNP	known	not in gene
2	107084845	SNP	known	not in gene
1	20301927	SNP	known	not in gene
16	2731157	SNP	novel	not in gene
16	2729950	SNP	known	not in gene
16	2729934	SNP	known	not in gene
16	2730221	SNP	known	not in gene
16	2730127	SNP	known	not in gene
16	2729933	SNP	novel	not in gene
3	186544198	SNP	known	not in gene
14	36989419	SNP	known	not in gene
4	76502748	SNP	known	not in gene
4	76502561	SNP	novel	not in gene
4	76502146	SNP	known	not in gene
5	114725250	SNP	known	not in gene

ensembl prediction	polyphen2 pred	pp2 probability
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	probably damaging	0.983
NON_SYNONYMOUS_CODING	benign	0.03
NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.998

NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.334

NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	probably damaging	0.924
NON_SYNONYMOUS_CODING	possibly damaging	0.6
NON_SYNONYMOUS_CODING	possibly damaging	0.307
NON_SYNONYMOUS_CODING	possibly damaging	0.306
NON_SYNONYMOUS_CODING	possibly damaging	0.206
NON_SYNONYMOUS_CODING		
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NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.991
NON_SYNONYMOUS_CODING	probably damaging	0.967
NON_SYNONYMOUS_CODING		
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NON_SYNONYMOUS_CODING		
STOP_GAINED		
NON_SYNONYMOUS_CODING		
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NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING STOP_GAINED	benign	0.008
SPLICE_SITE		
NON_SYNONYMOUS_CODING		
	benign	0

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.979
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.19

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.722
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING SPLICE_SITE	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING STOP_GAINED		
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.243
NON_SYNONYMOUS_CODING	benign	0.013

NON_SYNONYMOUS_CODING	possibly damaging	0.849
NON_SYNONYMOUS_CODING	possibly damaging	0.695
NON_SYNONYMOUS_CODING	possibly damaging	0.508
NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.014
NON_SYNONYMOUS_CODING	possibly damaging	0.246
NON_SYNONYMOUS_CODING	benign	0.148
NON_SYNONYMOUS_CODING	benign	0.04
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.983
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.916
NON_SYNONYMOUS_CODING	possibly damaging	0.283
NON_SYNONYMOUS_CODING	possibly damaging	0.243
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.025
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	probably damaging	0.94
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.846

NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	possibly damaging	0.825

NON_SYNONYMOUS_CODING

NON_SYNONYMOUS_CODING	benign	0.123
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

STOP_GAINED

NON_SYNONYMOUS_CODING

NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	probably damaging	0.858
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	probably damaging	0.966
NON_SYNONYMOUS_CODING	probably damaging	0.923
NON_SYNONYMOUS_CODING	possibly damaging	0.486
NON_SYNONYMOUS_CODING	possibly damaging	0.45
NON_SYNONYMOUS_CODING	possibly damaging	0.293
NON_SYNONYMOUS_CODING	possibly damaging	0.215
NON_SYNONYMOUS_CODING	benign	0.183
NON_SYNONYMOUS_CODING	benign	0.092
NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.961
NON_SYNONYMOUS_CODING	probably damaging	0.957
NON_SYNONYMOUS_CODING	possibly damaging	0.436
NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	probably damaging	0.968
NON_SYNONYMOUS_CODING	probably damaging	0.878
NON_SYNONYMOUS_CODING	benign	0.061
NON_SYNONYMOUS_CODING	benign	0.015
SPLICE_SITE		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.048
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.977
STOP_GAINED NON_SYNONYMOUS_CODING	benign	0
STOP_GAINED		
NON_SYNONYMOUS_CODING	possibly damaging	0.249
FRAMESHIFT_CODING		

NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0.035
STOP_GAINED ESSENTIAL_SPLICE_SITE NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	benign	0.059
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.969
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.976
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.021
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		

NON_SYNONYMOUS_CODING	possibly damaging	0.293
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.956
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.998

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	possibly damaging	0.534
NON_SYNONYMOUS_CODING	benign	0.054
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING STOP_GAINED		
NON_SYNONYMOUS_CODING	possibly damaging	0.698
NON_SYNONYMOUS_CODING	probably damaging	0.958
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.263
NON_SYNONYMOUS_CODING		
SPLICE_SITE		

NON_SYNONYMOUS_CODING	***probably damaging***	***0.999***
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.314
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.184
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING FRAMESHIFT_CODING		
NON_SYNONYMOUS_CODING STOP_GAINED	possibly damaging	0.492
NON_SYNONYMOUS_CODING	benign	0.101
NON_SYNONYMOUS_CODING	benign	0.014
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.168
NON_SYNONYMOUS_CODING	probably damaging	0.891
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.07
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.889
NON_SYNONYMOUS_CODING	benign	0.147
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0

STOP_GAINED

SPLICE_SITE

NON_SYNONYMOUS_CODING
NON_SYNONYMOUS_CODING benign 0

SPLICE_SITE

NON_SYNONYMOUS_CODING	probably damaging	0.989

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
ESSENTIAL_SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.251
NON_SYNONYMOUS_CODING	benign	0.187
NON_SYNONYMOUS_CODING	benign	0.015

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.14
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.027
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0.17
NON_SYNONYMOUS_CODING	benign	0.053
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING		
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.003

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.963

NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	possibly damaging	0.778
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.933
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.095
NON_SYNONYMOUS_CODING	benign	0.01

SPLICE_SITE

NON_SYNONYMOUS_CODING	benign	0.024
NON_SYNONYMOUS_CODING	possibly damaging	0.795
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0.147

NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.994
NON_SYNONYMOUS_CODING	benign	0.009

NON_SYNONYMOUS_CODING	unknown	?
STOP_GAINED		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	possibly damaging	0.33
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.021
NON_SYNONYMOUS_CODING	probably damaging	0.899
NON_SYNONYMOUS_CODING	possibly damaging	0.47
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.994
NON_SYNONYMOUS_CODING	possibly damaging	0.241
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.463
NON_SYNONYMOUS_CODING	possibly damaging	0.24
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.522
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.972
NON_SYNONYMOUS_CODING	possibly damaging	0.722
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.88

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.937
NON_SYNONYMOUS_CODING	benign	0.035
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.221

NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	probably damaging	0.96
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.137
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.911

STOP_GAINED

NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?

NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	possibly damaging	0.334
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.027
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.946
NON_SYNONYMOUS_CODING	possibly damaging	0.275
NON_SYNONYMOUS_CODING	benign	0.026
NON_SYNONYMOUS_CODING	probably damaging	0.922

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.001

NON_SYNONYMOUS_CODING	probably damaging	0.983
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0.002

FRAMESHIFT_CODING

SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.887
NON_SYNONYMOUS_CODING	possibly damaging	0.588
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.994
NON_SYNONYMOUS_CODING	possibly damaging	0.849
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	probably damaging	0.949
NON_SYNONYMOUS_CODING	probably damaging	0.993

NON_SYNONYMOUS_CODING	probably damaging	0.98
NON_SYNONYMOUS_CODING	benign	0.129
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	possibly damaging	0.637
NON_SYNONYMOUS_CODING	possibly damaging	0.567
NON_SYNONYMOUS_CODING	probably damaging	1

NON_SYNONYMOUS_CODING	probably damaging	0.903
NON_SYNONYMOUS_CODING	probably damaging	0.871
NON_SYNONYMOUS_CODING	possibly damaging	0.47
NON_SYNONYMOUS_CODING	benign	0.036
NON_SYNONYMOUS_CODING	benign	0.017
STOP_GAINED		
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	probably damaging	0.987
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	probably damaging	0.975
NON_SYNONYMOUS_CODING	probably damaging	0.959

NON_SYNONYMOUS_CODING	possibly damaging	0.253
NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.516
NON_SYNONYMOUS_CODING	possibly damaging	0.283
NON_SYNONYMOUS_CODING	benign	0.129
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.318
NON_SYNONYMOUS_CODING	possibly damaging	0.75
NON_SYNONYMOUS_CODING	possibly damaging	0.727
NON_SYNONYMOUS_CODING	possibly damaging	0.243
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.312
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.977
NON_SYNONYMOUS_CODING	possibly damaging	0.551
NON_SYNONYMOUS_CODING	benign	0.127
NON_SYNONYMOUS_CODING	probably damaging	0.92
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING

NON_SYNONYMOUS_CODING	***benign***	***0***

NON_SYNONYMOUS_CODING	possibly damaging	0.84

NON_SYNONYMOUS_CODING	possibly damaging	0.509
NON_SYNONYMOUS_CODING	probably damaging	0.974
NON_SYNONYMOUS_CODING	probably damaging	0.974
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.923
NON_SYNONYMOUS_CODING	possibly damaging	0.762

NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0.019
NON_SYNONYMOUS_CODING	probably damaging	0.86
NON_SYNONYMOUS_CODING	benign	0.017

NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	possibly damaging	0.747
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.306

NON_SYNONYMOUS_CODING	benign	0.08
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.025
NON_SYNONYMOUS_CODING	probably damaging	0.948
NON_SYNONYMOUS_CODING	probably damaging	0.992

NON_SYNONYMOUS_CODING		
STOP_GAINED		
NON_SYNONYMOUS_CODING	possibly damaging	0.453
NON_SYNONYMOUS_CODING	probably damaging	0.978
NON_SYNONYMOUS_CODING	benign	0.092
NON_SYNONYMOUS_CODING	benign	0.028
FRAMESHIFT_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.96
NON_SYNONYMOUS_CODING	probably damaging	0.945
NON_SYNONYMOUS_CODING	benign	0.091
NON_SYNONYMOUS_CODING	benign	0.032
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.933
NON_SYNONYMOUS_CODING	benign	0.024

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	probably damaging	0.97
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.088
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	probably damaging	0.854
NON_SYNONYMOUS_CODING	benign	0.015
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
SPLICE_SITE		

SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	1

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.928
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.481
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.47
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	benign	0.001
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.358
NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	possibly damaging	0.849

NON_SYNONYMOUS_CODING	possibly damaging	0.725
NON_SYNONYMOUS_CODING	possibly damaging	0.627
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.91
NON_SYNONYMOUS_CODING	probably damaging	0.993

NON_SYNONYMOUS_CODING	possibly damaging	0.387
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	possibly damaging	0.587
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.982

NON_SYNONYMOUS_CODING	possibly damaging	0.807
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.137
NON_SYNONYMOUS_CODING	benign	0.03
NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	probably damaging	0.916
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	probably damaging	0.973
NON_SYNONYMOUS_CODING	benign	0.042
NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	probably damaging	0.974
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	possibly damaging	0.837
NON_SYNONYMOUS_CODING	benign	0.035
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.076
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	possibly damaging	0.809
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0.174

SPLICE_SITE

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	probably damaging	0.97

NON_SYNONYMOUS_CODING

NON_SYNONYMOUS_CODING	benign	0.048
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.891

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.895
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0.074
NON_SYNONYMOUS_CODING	benign	0.053
NON_SYNONYMOUS_CODING SPLICE_SITE	benign	0.052

NON_SYNONYMOUS_CODING	benign	0.017
NON_SYNONYMOUS_CODING	benign	0.016

NON_SYNONYMOUS_CODING	unknown	?

SPLICE_SITE

NON_SYNONYMOUS_CODING	probably damaging	0.898
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.024
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.994
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.305
NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	possibly damaging	0.761
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.2
NON_SYNONYMOUS_CODING	benign	0.029
NON_SYNONYMOUS_CODING	benign	0.001

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.129
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0.022
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	1

NON_SYNONYMOUS_CODING	benign	0.077
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.934
NON_SYNONYMOUS_CODING	benign	0.068
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.003
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.982
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.899
NON_SYNONYMOUS_CODING	possibly damaging	0.836
NON_SYNONYMOUS_CODING	probably damaging	0.988
NON_SYNONYMOUS_CODING	probably damaging	0.991
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	possibly damaging	0.292
NON_SYNONYMOUS_CODING	benign	0.101
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.032

NON_SYNONYMOUS_CODING	benign	0.015
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	***probably damaging***	***0.999***
NON_SYNONYMOUS_CODING	***probably damaging***	***0.97***
NON_SYNONYMOUS_CODING	***benign***	***0***
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	possibly damaging	0.289
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0.043
NON_SYNONYMOUS_CODING	possibly damaging	0.784
NON_SYNONYMOUS_CODING	possibly damaging	0.47
NON_SYNONYMOUS_CODING	***probably damaging***	***0.994***
NON_SYNONYMOUS_CODING	***probably damaging***	***0.969***
NON_SYNONYMOUS_CODING	***possibly damaging***	***0.585***
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.001

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	benign	0.001
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.616

NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.992

NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.937
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.017
NON_SYNONYMOUS_CODING	benign	0.007
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.913
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.981
NON_SYNONYMOUS_CODING	possibly damaging	0.247
NON_SYNONYMOUS_CODING	benign	0.015
NON_SYNONYMOUS_CODING	benign	0.01
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.877
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

SPLICE_SITE

NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.09

NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	benign	0.125
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.998

NON_SYNONYMOUS_CODING	probably damaging	0.998

SPLICE_SITE

SPLICE_SITE

NON_SYNONYMOUS_CODING	possibly damaging	0.338
NON_SYNONYMOUS_CODING	benign	0.013

STOP_GAINED

SPLICE_SITE

NON_SYNONYMOUS_CODING	probably damaging	0.968
NON_SYNONYMOUS_CODING	benign	0.002

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.958
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.006

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0.024
NON_SYNONYMOUS_CODING	possibly damaging	0.694
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		

SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.469
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	possibly damaging	0.45
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0.014
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	possibly damaging	0.491
NON_SYNONYMOUS_CODING	possibly damaging	0.354
NON_SYNONYMOUS_CODING	possibly damaging	0.293
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.105
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0.036
NON_SYNONYMOUS_CODING	benign	0.033
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		

NON_SYNONYMOUS_CODING	benign	0.038
NON_SYNONYMOUS_CODING	probably damaging	0.882
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.854
NON_SYNONYMOUS_CODING	possibly damaging	0.588
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.027
NON_SYNONYMOUS_CODING	benign	0.011
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	possibly damaging	0.584
NON_SYNONYMOUS_CODING	benign	0.014
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.967

NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.112
NON_SYNONYMOUS_CODING	benign	0.067
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.991
NON_SYNONYMOUS_CODING	benign	0.012
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	possibly damaging	0.593

NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0.07
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.551
NON_SYNONYMOUS_CODING	benign	0.024
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	possibly damaging	0.77
NON_SYNONYMOUS_CODING	possibly damaging	0.293
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

SPLICE_SITE

NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	benign	0.004

NON_SYNONYMOUS_CODING	benign	0
STOP_GAINED NON_SYNONYMOUS_CODING	probably damaging	0.974
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.065
NON_SYNONYMOUS_CODING NON_SYNONYMOUS_CODING	benign	0.01
STOP_GAINED		
NON_SYNONYMOUS_CODING	possibly damaging	0.243
NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	possibly damaging	0.488
NON_SYNONYMOUS_CODING	possibly damaging	0.44
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING SPLICE_SITE	benign	0.125
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	possibly damaging	0.802

NON_SYNONYMOUS_CODING	benign	0.063
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.061
NON_SYNONYMOUS_CODING	benign	0.022
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	1

NON_SYNONYMOUS_CODING	possibly damaging	0.674
NON_SYNONYMOUS_CODING	probably damaging	0.98
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.007
NON_SYNONYMOUS_CODING	probably damaging	0.954
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	probably damaging	0.989
NON_SYNONYMOUS_CODING	possibly damaging	0.293
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	possibly damaging	0.314
NON_SYNONYMOUS_CODING	probably damaging	0.998

NON_SYNONYMOUS_CODING	probably damaging	0.98
NON_SYNONYMOUS_CODING	possibly damaging	0.305
NON_SYNONYMOUS_CODING	possibly damaging	0.788
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.874
NON_SYNONYMOUS_CODING	possibly damaging	0.844
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

FRAMESHIFT_CODING

NON_SYNONYMOUS_CODING

NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	probably damaging	0.961
NON_SYNONYMOUS_CODING	probably damaging	0.952
NON_SYNONYMOUS_CODING	benign	0.063
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.98
NON_SYNONYMOUS_CODING	probably damaging	0.889
NON_SYNONYMOUS_CODING	possibly damaging	0.465

NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	possibly damaging	0.575
NON_SYNONYMOUS_CODING	probably damaging	0.899
NON_SYNONYMOUS_CODING	benign	0.067
NON_SYNONYMOUS_CODING	benign	0.04

NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.98

NON_SYNONYMOUS_CODING	possibly damaging	0.742
NON_SYNONYMOUS_CODING	probably damaging	0.865
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	probably damaging	0.999
STOP_GAINED		
NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	probably damaging	0.969
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	1

NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	probably damaging	0.968
NON_SYNONYMOUS_CODING	possibly damaging	0.749
NON_SYNONYMOUS_CODING	benign	0.075
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	possibly damaging	0.805
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.922
NON_SYNONYMOUS_CODING	possibly damaging	0.728
NON_SYNONYMOUS_CODING	possibly damaging	0.563
NON_SYNONYMOUS_CODING	benign	0.015
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.01
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	benign	0.06
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.048
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.131
NON_SYNONYMOUS_CODING	benign	0.094

NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	probably damaging	0.937
NON_SYNONYMOUS_CODING	probably damaging	0.895
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.676
NON_SYNONYMOUS_CODING	benign	0.116
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.689
NON_SYNONYMOUS_CODING	benign	0.2
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	probably damaging	0.952
NON_SYNONYMOUS_CODING	benign	0.101
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0

SPLICE_SITE

NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	possibly damaging	0.458
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0.017

SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.792
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.873
PARTIAL_CODON		
NON_SYNONYMOUS_CODING	benign	0.021

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.003

NON_SYNONYMOUS_CODING	probably damaging	0.886
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	possibly damaging	0.277
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.902
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.669
NON_SYNONYMOUS_CODING	possibly damaging	0.293
NON_SYNONYMOUS_CODING	benign	0.16
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.019
SPLICE_SITE		
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	probably damaging	0.941

NON_SYNONYMOUS_CODING	benign	0.008
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.673
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.002
ESSENTIAL_SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.129
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	benign	0.074
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	possibly damaging	0.466
NON_SYNONYMOUS_CODING	possibly damaging	0.676
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.918

SPLICE_SITE

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.143
NON_SYNONYMOUS_CODING	benign	0.127

NON_SYNONYMOUS_CODING NON_SYNONYMOUS_CODING	possibly damaging	0.438
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	benign	0.106
NON_SYNONYMOUS_CODING SPLICE_SITE	benign	0
NON_SYNONYMOUS_CODING	benign	0.007
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.09
NON_SYNONYMOUS_CODING NON_SYNONYMOUS_CODING SPLICE_SITE	possibly damaging	0.374
NON_SYNONYMOUS_CODING NON_SYNONYMOUS_CODING STOP_GAINED NON_SYNONYMOUS_CODING	benign probably damaging	0 0.998

NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	possibly damaging	0.535
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.677
NON_SYNONYMOUS_CODING	possibly damaging	0.536
NON_SYNONYMOUS_CODING	probably damaging	0.989

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.802
NON_SYNONYMOUS_CODING	possibly damaging	0.514
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.974
NON_SYNONYMOUS_CODING	possibly damaging	0.799

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.576
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	possibly damaging	0.757
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.497

NON_SYNONYMOUS_CODING SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0.012
NON_SYNONYMOUS_CODING	probably damaging	1
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.996
NON_SYNONYMOUS_CODING	possibly damaging	0.707
STOP_GAINED		
NON_SYNONYMOUS_CODING	benign	0.14
NON_SYNONYMOUS_CODING	possibly damaging	0.709
NON_SYNONYMOUS_CODING	unknown	?

NON_SYNONYMOUS_CODING	benign	0.063
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING STOP_GAINED		
NON_SYNONYMOUS_CODING	possibly damaging	0.373

NON_SYNONYMOUS_CODING	probably damaging	0.98
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	probably damaging	0.964
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.334
NON_SYNONYMOUS_CODING	possibly damaging	0.31
NON_SYNONYMOUS_CODING	benign	0.154
NON_SYNONYMOUS_CODING	benign	0.026
NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	benign	0.006
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.11
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.983
NON_SYNONYMOUS_CODING	probably damaging	0.975
NON_SYNONYMOUS_CODING	possibly damaging	0.284
NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.957
NON_SYNONYMOUS_CODING	probably damaging	0.891
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.002

NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING STOP_GAINED	benign	0.017
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.024
NON_SYNONYMOUS_CODING	probably damaging	0.941
NON_SYNONYMOUS_CODING	probably damaging	0.871
NON_SYNONYMOUS_CODING	possibly damaging	0.686
NON_SYNONYMOUS_CODING	possibly damaging	0.25
NON_SYNONYMOUS_CODING	benign	0.028
NON_SYNONYMOUS_CODING	benign	0.026
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.123
NON_SYNONYMOUS_CODING	probably damaging	0.982
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.599
NON_SYNONYMOUS_CODING	benign	0.024
NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING STOP_GAINED	possibly damaging	0.207
NON_SYNONYMOUS_CODING	benign	0.013
NON_SYNONYMOUS_CODING	benign	0.002

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.03
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.453
STOP_GAINED		
NON_SYNONYMOUS_CODING	possibly damaging	0.295
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.28
NON_SYNONYMOUS_CODING	benign	0.127

NON_SYNONYMOUS_CODING	benign	0.113
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	possibly damaging	0.385
NON_SYNONYMOUS_CODING	benign	0.007
NON_SYNONYMOUS_CODING	probably damaging	0.965
NON_SYNONYMOUS_CODING	possibly damaging	0.6
NON_SYNONYMOUS_CODING	possibly damaging	0.486
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	possibly damaging	0.342

NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.877
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	possibly damaging	0.442
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.919
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.198

NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.135
SPLICE_SITE NON_SYNONYMOUS_CODING	benign	0.02
NON_SYNONYMOUS_CODING	possibly damaging	0.248
NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0.031

NON_SYNONYMOUS_CODING	benign	0.01
FRAMESHIFT_CODING NON_SYNONYMOUS_CODING	probably damaging	0.978
NON_SYNONYMOUS_CODING	possibly damaging	0.741
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	probably damaging	0.941
NON_SYNONYMOUS_CODING	possibly damaging	0.237
NON_SYNONYMOUS_CODING	benign	0.159
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
SPLICE_SITE		
NON_SYNONYMOUS_CODING		
FRAMESHIFT_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.028

NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.892
NON_SYNONYMOUS_CODING	benign	0.124
NON_SYNONYMOUS_CODING	benign	0.061
NON_SYNONYMOUS_CODING	benign	0.019
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	possibly damaging	0.673
NON_SYNONYMOUS_CODING	benign	0.006

NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	benign	0.005
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING SPLICE_SITE	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	possibly damaging	0.276
NON_SYNONYMOUS_CODING	benign	0
STOP_GAINED NON_SYNONYMOUS_CODING	probably damaging	0.993
NON_SYNONYMOUS_CODING	possibly damaging	0.648
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	possibly damaging	0.747

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.059
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.309
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		

NON_SYNONYMOUS_CODING	possibly damaging	0.441
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.974
NON_SYNONYMOUS_CODING	probably damaging	0.923
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	probably damaging	0.976
NON_SYNONYMOUS_CODING	possibly damaging	0.677
NON_SYNONYMOUS_CODING STOP_GAINED	benign	0.025
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING SPLICE_SITE	benign	0.003
NON_SYNONYMOUS_CODING	benign	0.001
NON_SYNONYMOUS_CODING	probably damaging	0.984
NON_SYNONYMOUS_CODING	probably damaging	0.958
NON_SYNONYMOUS_CODING	benign	0.037
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.995
NON_SYNONYMOUS_CODING	probably damaging	0.992

NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	benign	0.148
NON_SYNONYMOUS_CODING	probably damaging	0.986
SPLICE_SITE		
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.048
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	benign	0.028
NON_SYNONYMOUS_CODING	benign	0.001
ESSENTIAL_SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.567

NON_SYNONYMOUS_CODING	benign	0.137
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.818
NON_SYNONYMOUS_CODING	probably damaging	1

NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	possibly damaging	0.415
STOP_GAINED		
NON_SYNONYMOUS_CODING	benign	0.044
NON_SYNONYMOUS_CODING	probably damaging	0.985
NON_SYNONYMOUS_CODING	benign	0.014
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.949
NON_SYNONYMOUS_CODING	benign	0.006

NON_SYNONYMOUS_CODING	benign	0.06
NON_SYNONYMOUS_CODING	probably damaging	0.99
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

ESSENTIAL_SPLICE_SITE

NON_SYNONYMOUS_CODING	possibly damaging	0.26
SPLICE_SITE		
STOP_GAINED		
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	possibly damaging	0.813
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	0.992
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.408
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
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NON_SYNONYMOUS_CODING	unknown	?
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NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
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NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?

NON_SYNONYMOUS_CODING	unknown	?
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NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	probably damaging	0.98
NON_SYNONYMOUS_CODING	benign	0.002
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	probably damaging	0.998
NON_SYNONYMOUS_CODING	benign	0.011
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	probably damaging	0.994
NON_SYNONYMOUS_CODING	benign	0.17

NON_SYNONYMOUS_CODING	benign	0.004
STOP_GAINED		
NON_SYNONYMOUS_CODING	benign	0.004
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	possibly damaging	0.205

NON_SYNONYMOUS_CODING	benign	0.009
NON_SYNONYMOUS_CODING	benign	0.045
NON_SYNONYMOUS_CODING	benign	0.008
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	possibly damaging	0.793
NON_SYNONYMOUS_CODING	benign	0.023
SPLICE_SITE NON_SYNONYMOUS_CODING	probably damaging	0.944
NON_SYNONYMOUS_CODING	benign	0

	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING	possibly damaging	0.235
NON_SYNONYMOUS_CODING	benign	0.063
NON_SYNONYMOUS_CODING	unknown	?
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING		
NON_SYNONYMOUS_CODING	probably damaging	0.997
NON_SYNONYMOUS_CODING	probably damaging	0.999
NON_SYNONYMOUS_CODING	benign	0.075
NON_SYNONYMOUS_CODING	possibly damaging	0.418

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING		

NON_SYNONYMOUS_CODING	probably damaging	0.995

NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.003
NON_SYNONYMOUS_CODING	benign	0
SPLICE_SITE		
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0

NON_SYNONYMOUS_CODING	probably damaging	1
NON_SYNONYMOUS_CODING	benign	0
NON_SYNONYMOUS_CODING	benign	0.036
SPLICE_SITE		

* Marks the presence of the alleles, but at lower levels than the str

snp_id	alleles	pt1_livermeta	pt1_primary_CRC_tumor	pt2_livermeta	pt2_primary_crc	pt3_control	pt3_livermeta	pt3_primary_crc	pt4_livermeta	pt4_primary	pt5_livermeta	pt5_primary_crc	pt6_livermeta
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs55889248	G/A	-	-	R*	R	-	-	-	-	-	-	R*	-
rs56038532	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6715776	T/G	K*	K*	G*	G*	G*	K*	G*	G*	K*	G*	K*	K*
	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
	G/T	-	-	-	K*	-	-	-	-	K*	-	-	D*
rs6546523	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs1985342	C/T	Y	Y	Y*	-	Y	Y	Y	-	Y*	Y	Y	-
rs2276688	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs3771544	C/T	Y	Y	-	-	Y	Y	Y*	-	Y*	Y	Y	Y
rs6721259	A/G	-	W*	-	-	R	R	R	-	R*	-	-	-
rs35819696	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2230808	T/C	C*	Y	NP	NP	low_cov	Y	Y*	-	Y*	-	-	NP
rs33918808	C/G	-	-	-	-	-	-	-	-	-	S*	S*	-
rs2230806	C/T	-	Y*	Y	Y	-	Y*	-	Y	Y	Y	Y	-
rs2066715	C/T	Y	Y*	-	-	-	-	-	Y	Y	-	-	Y
rs2066714	T/C	Y*	Y	-	-	-	-	-	C	Y	Y*	Y*	Y
	G/C	S	S	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	R*	R	-
rs1800977	G/A	R	R	-	R	-	R*	-	-	-	-	-	R*
rs2853579	G/T	K	K	-	K*	-	-	-	K	K	K	K	D*
rs2274873	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs4149338	G/A	R	R	R	R	R*	R*	-	R	R	-	-	R
rs2230805	C/T	-	Y*	Y	Y	-	Y*	-	Y	Y	Y	Y	-
rs2246841	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2487059	T/G	-	-	K*	K	-	-	-	G	K*	K	K*	-
rs41277763	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1800978	C/G	S	S*	S*	S*	-	S	S*	-	S*	-	-	-
rs4149341	T/C	Y	Y	Y*	Y*	-	-	-	Y*	Y*	-	-	NP
rs2229071	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7457	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs2229070	C/G	S	S	-	-	-	M*	-	-	-	-	-	-
rs1056209	G/A	R	R*	-	-	-	-	-	R*	R	-	-	-
rs1056171	A/G	R	R	-	-	R	R	R*	R	R	-	-	-

rs11558834	C/T	Y	Y	-	Y*	-	-	-	-	Y*	-	-	-
rs9762	A/G	-	R*	-	-	-	R	R*	-	R*	-	-	-
rs3088011	G/C	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	-
rs3088012	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs2227985	A/G	R	R*	-	-	-	-	-	R*	G	-	-	-
rs3739515	G/A	-	-	-	-	R*	R	R	-	-	-	-	-
rs1318056	C/G	-	-	-	-	-	-	-	S	S	-	-	-
	T/C	Y*	Y*	-	-	-	Y*	-	-	-	Y*	-	Y*
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1325195	G/A	R	R	R*	A*	-	-	-	R	R	A*	R*	R
rs9662858	A/G	R	R	R*	R	R*	-	R*	R*	R*	R*	R*	R
rs3829794	T/C	Y	Y	Y*	Y	Y*	K*	-	Y*	Y*	Y*	Y	Y
rs4651012	G/A	R	R	R*	R	-	-	-	R	R	R	R*	R
rs3813642	C/T	Y	Y	Y	Y*	-	Y*	-	Y	Y	Y	Y*	Y
rs1490311	A/G	R	R	R*	R*	G*	R*	R*	R	R	R*	G*	G
rs3210839	C/T	Y	Y	Y*	Y*	-	Y*	Y*	Y	Y	Y*	Y*	Y
rs10913692	T/G	K	K	K	G*	-	K*	-	-	K*	K*	G	K*
rs2274230	T/G	-	-	-	-	K	K	K	-	-	-	-	-
rs1325194	G/T	K*	K*	NP	NP	-	K*	K*	K*	K*	T	T	NP
rs17361990	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs3813643	C/G	S	S	S	S	S*	-	-	S	S	G	S*	S
rs1044952	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs28913894	G/A	-	-	-	-	-	-	-	-	-	-	-	S*
rs9606030	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	low_cov	-	-	-	-	-	-	R
rs13447189	T/C	-	-	-	-	Y*	Y*	Y	-	-	-	-	Y
rs8136840	C/G	G	S	-	-	S*	S	S*	S*	S	-	-	S
rs2073761	G/A	R*	A	-	-	A	R*	A	R	A	-	-	A*
rs5748232	T/C	Y	Y	-	-	C*	Y	Y*	Y	Y	-	-	Y
rs56302559	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y*
	G/A	-	-	-	-	-	R*	-	-	R*	R	R	-
rs1047833	G/C	S*	S	C*	S*	C*	S*	C*	C*	S	C*	C*	S*
rs11574836	A/G	-	-	-	-	-	M*	-	-	-	-	-	-
rs1047841	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs11574837	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs708563	G/A	R	R*	A*	R*	R	R	R*	R*	R	R	R	R*
rs17690965	C/G	G	G	G	G	S	S	S	S*	S	B*	S*	G
rs1468216	T/C	C*	C*	C*	C*	C*	Y*	C*	Y*	Y*	Y*	Y*	C
	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	H*
rs73100934	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2237435	A/C	M*	M*	M*	M*	C*	M*	M*	M*	M	M*	C*	M
rs73100929	A/G	-	-	-	-	-	-	-	-	R*	-	-	-
rs2241056	C/T	-	-	Y	Y*	Y	Y*	Y	Y	Y	Y	Y*	Y*
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs14384	T/C	-	-	-	-	low_cov	Y	-	-	-	NP	NP	-
rs7354	C/A	M*	M*	-	-	low_cov	-	-	M*	M*	NP	NP	-

rs7255265	T/C	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	C*	C*	Y
rs10415014	C/A	M*	M*	-	M*	-	-	-	NP	NP	-	-	-
rs8120	A/C	-	-	-	-	-	M	M*	-	M*	M	M*	M*
rs1046673	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs67670181	CC/AG	S*	S*	-	S*	-	-	-	-	-	-	-	-
rs2292151	G/A	R*	R*	-	-	R	R*	R	-	R*	R*	R*	R
	T/A	-	-	-	-	-	W*	-	-	-	W*	W	-
rs56247345	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs75766753	A/C	M	M	M*	-	M*	M	M*	-	M	-	M*	M
rs2547547	A/G	-	-	-	-	-	-	-	-	-	R	R*	R
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y*
rs26840	C/T	Y*	Y*	T	Y*	-	Y	Y*	Y*	Y	Y*	Y	-
rs1129185	C/G	-	S*	-	-	-	-	-	-	-	-	-	B*
rs3160	T/C	Y*	Y*	C*	Y*	Y	Y	Y	Y	Y	-	-	-
rs72677233	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3829747	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs744426	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs9808377	A/G	R	R	-	-	-	-	-	-	-	R	R	R*
rs36043230	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2303838	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs55842557	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2278196	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs72677232	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs16866378	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3829746	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	Y*
rs16866406	G/A	A	R	-	-	-	-	-	-	-	-	-	-
rs56324595	C/T	-	-	-	-	Y*	Y*	-	-	-	Y*	-	-
rs1001238	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y*	Y*
rs56308529	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs55762754	C/G	-	-	-	-	-	-	-	-	-	Y*	-	-
rs2042996	G/A	R	R	-	-	-	R*	-	-	-	R	R	-
rs16866380	G/A	-	-	R*	-	-	-	-	-	-	-	-	-
rs3731746	G/T/A	R	R	-	-	-	R*	-	-	-	-	-	R*
rs55837610	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs62621206	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	Y*	-	-	-	-	-	-	-	-	-	Y*
	G/A	R	R*	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	S*
	A/G	-	-	-	-	-	-	-	-	-	-	-	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs3829748	G/A	R	R	-	-	-	-	-	-	-	-	-	R*
rs13021201	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs3731749	C/T	Y	Y	-	-	-	-	-	-	Y*	-	-	Y*
	G/C	-	-	-	-	-	R*	-	-	-	-	-	-
rs747122	C/T	-	Y*	-	-	-	-	-	-	-	Y	Y	-
rs55742743	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55980498	G/A	-	-	-	-	R	R	R	-	R*	-	-	-

rs10497517	A/G	-	-	-	-	-	-	-	-	-	R	R*	-
rs10164753	C/T	-	-	-	-	-	Y*	-	-	-	Y	Y	-
rs62621236	A/G	-	-	R*	-	-	R*	-	-	-	R	R	-
rs56345408	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4894028	C/T	-	-	-	H*	-	M*	Y*	-	Y*	Y	Y	-
rs3731744	A/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55634791	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs56307213	C/G	-	-	-	-	-	-	-	-	-	-	-	Y*
	C/T	-	-	-	-	-	-	-	-	-	Y	Y	S*
rs3731752	C/A	-	Y*	-	-	-	-	-	-	-	-	-	-
rs56375087	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs62178963	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2163009	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	Y*
rs72646827	C/T	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs3731748	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs11694623	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3813250	T/C	Y	Y	-	-	-	Y*	-	-	-	Y	Y	-
rs11897366	A/C	-	-	-	-	-	-	-	-	-	M	M	-
rs9808036	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs56207956	C/G	-	-	-	-	-	-	-	S*	S	-	-	-
rs2366751	A/G	R	R	-	-	-	W*	M*	-	R*	R	R	R*
rs72648258	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs72648212	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4894029	T/C	Y	Y	-	-	-	-	-	-	Y*	Y	Y	-
rs1560221	A/G	R	R	-	-	-	-	-	-	-	R	R	R*
rs3829749	G/A	-	-	-	-	-	-	R*	-	-	-	-	-
rs2857265	G/A	R	R	-	-	-	-	-	-	-	-	-	R*
rs6732060	T/G	-	K*	-	-	-	-	-	-	K*	K	K	K*
rs12463674	A/G	-	-	R	R	R*	R	R	-	R*	R	R	R
rs35833641	A/G	-	R*	R*	R*	R*	R*	R	-	R*	R	R	V*
rs12464787	G/A	R*	R*	R	R*	R	R	R	R*	R*	R	R	R
rs35608243	T/C	Y*	-	Y*	-	-	Y*	-	-	Y*	Y	Y	Y*
	A/T	-	-	-	-	-	-	-	W	W	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10497401	T/G	K	K	-	-	K*	K*	K	-	K*	-	-	NP
rs11887008	T/C	-	Y*	NP	NP	low_cov	Y*	Y*	NP	NP	NP	NP	NP
rs4146109	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs8446	T/C	Y	Y	Y*	C*	C	Y	Y	Y*	C	Y*	C	-
rs4972399	A/G	R	R	-	-	R*	R	R	-	R*	-	-	-
rs10930579	T/C	Y	Y	C*	C	Y	Y	Y	Y*	Y	C*	C*	Y*
rs10202480	A/G	-	-	-	-	R*	R*	R	R	R*	-	-	-
rs62175800	A/G	R*	R*	G*	R*	R*	R*	R*	R*	R*	G*	R*	R*
rs16861363	C/T	-	-	-	-	-	-	-	T	-	-	-	NP
rs16861406	A/G	-	-	-	-	-	M*	-	-	-	-	-	-
rs79195395	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1866631	G/A	-	R*	NP	NP	low_cov	R*	R*	-	-	NP	NP	NP
rs79923447	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs74417392	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	-

rs62174360	T/C	-	-	-	-	Y*	Y*	Y*	-	-	-	-	NP
rs2028382	A/C	M	M	C	C*	M*	M	M	-	M	C*	C*	NP
rs6731949	G/A	-	-	-	-	-	-	-	R*	R*	-	-	-
rs16861466	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3769148	C/T	-	Y*	Y	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y
	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs1065341	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs28914814	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs8403	G/T	K	K	-	-	-	-	-	-	D*	-	-	K*
rs11554208	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs33946455	C/T	Y	Y	-	-	-	Y*	-	Y	Y	-	-	Y*
rs56980156	C/G	S	S*	NP	NP	-	-	-	S*	S	NP	NP	-
rs17847528	T/C	-	-	-	-	Y	Y	Y	Y	Y*	-	-	-
rs1058166	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1016990	G/C	S*	-	-	-	-	S*	-	S	S	R*	-	S
rs2689	T/A	W	W*	W*	W*	-	-	W*	-	W*	W	W*	W
rs45558533	G/A	-	-	-	-	-	R*	-	-	-	-	-	R*
rs9906451	C/G	S*	-	S	S	S	S	S	S	S	-	-	-
rs3744763	G/A	R	R	R	R	R	R*	R*	R*	R	A*	R*	R
rs2229295	G/T	-	-	-	-	-	-	-	-	R*	-	-	-
rs2688	G/T	T	T*	NP	NP	-	-	-	-	-	NP	NP	K*
rs1800929	C/T	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	T*	Y*	Y*
rs7177338	G/A	R	R	A*	A*	R*	R	R	A*	R	A*	A*	R*
rs2071383	T/C	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs7183988	T/G	K	K*	K*	G*	K*	K*	K	K*	K*	G*	G*	-
rs72755383	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11638635	C/G	S	S	G*	S	S	S	S	G*	S	G*	S*	S*
rs11539637	C/T	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	-
rs12909124	G/A	A	A	NP	NP	low_cov	R*	R*	A*	A*	NP	NP	-
rs2277382	C/T	-	-	-	-	Y	Y*	Y	-	Y*	Y*	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
	A/G	R*	-	-	-	-	R*	-	-	R*	-	-	-
rs706819	T/C	Y*	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y*
rs61914025	G/A	-	-	-	-	-	V*	-	-	-	-	-	-
rs2714	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2293092	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs706818	T/C	-	-	Y	Y	Y*	Y*	Y	-	Y*	-	-	-
rs61915172	C/T	-	Y*	-	-	-	-	-	-	-	Y	Y	-
rs2701124	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs7316491	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs73102793	C/T	Y	Y*	-	-	-	-	-	-	-	-	-	-
rs79245486	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2854464	A/G	-	R*	R*	R	R*	R*	R*	R	R	R*	R*	R
rs11831802	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	-
rs34570151	A/G	R	R	-	-	-	R*	-	R	R*	-	-	-
rs2293094	T/C	-	-	Y*	Y	-	Y*	-	-	-	-	-	-
rs11169974	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2252518	C/A	-	-	M*	M	-	-	-	M	M	M*	M*	M*
rs7804542	A/G	-	-	R	R	-	-	-	-	-	-	-	R*

rs7804416	A/G	-	-	-	-	-	-	-	-	-	R*	R	-
rs11974014	T/C	-	-	-	-	-	-	-	-	Y*	Y	Y	-
rs1055479	A/G	R	R	-	-	-	-	-	NP	NP	G	R	G*
rs17055200	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1042992	C/T	-	-	-	-	-	-	-	-	-	Y*	T*	-
rs17310286	C/T	-	-	-	-	-	Y*	-	-	-	Y*	T*	-
rs10503786	C/T	Y	Y	-	-	-	-	-	-	Y*	-	-	Y
rs12165	C/T	T*	T*	-	-	-	-	-	T*	Y	Y	Y	NP
rs2232158	C/G	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	S
rs3750145	T/C	-	-	Y	Y	-	-	-	-	-	-	-	-
rs3744032	C/T	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-
rs3760132	C/T	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs79677613	C/T	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
rs2608880	C/T	-	-	Y	Y*	Y	Y	Y	T*	Y	Y	Y	-
rs1135531	T/G	K*	G	K*	K*	G	B*	K*	K*	G	B*	-	K*
rs3682	A/G	R*	-	R	R*	R*	R*	R	G	R	R*	R	-
rs71382188	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3643	T/C	-	-	-	-	-	-	-	-	Y	-	-	-
rs2069528	G/A	R*	R	R*	R	R	R	R*	R*	R	R	R*	R*
rs7214723	T/C	C*	C*	C*	C*	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs2288684	G/A	R	R	R	R	R	R	R	-	R*	R*	-	-
rs2915546	T/G	K	K	K	K	K*	K	K*	-	K*	-	-	K*
rs2532947	A/G	R	R	R*	R	G*	G	G	-	-	-	-	-
rs9135	T/C	Y*	Y*	Y	Y	Y*	Y*	Y*	-	Y*	Y	Y	-
rs1801282	C/G	S	S	-	-	S*	S	S	-	S*	S	S	-
rs17036170	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3856806	C/T	-	Y*	-	Y*	Y	Y*	Y	-	Y*	-	Y*	-
rs2228001	G/T	K*	K*	K*	K*	K*	K	K	K	K	T*	K*	-
rs2229090	G/C	S	S	NP	NP	low_cov	S	S*	S*	S	S*	S	-
rs1126547	C/G	NP	NP	NP	NP	S*	S	S*	NP	NP	NP	NP	NP
rs2257984	A/G	R*	R*	G	G*	R	R	R	R*	R	G*	G*	-
rs2607749	A/G	R*	R*	-	-	R	R*	R	R	R	R*	R	-
rs2470352	A/T/-	NP	NP	-	-	low_cov	W	-	-	W*	-	-	NP
rs56365279	C/T	-	-	-	Y*	-	-	-	-	-	Y*	-	-
rs3765065	T/A	W*	W*	W	W	-	-	-	W*	W	W	W	W*
	T/C	-	-	-	-	-	-	-	Y	Y	-	-	Y
rs72675448	G/A	-	-	-	-	-	-	-	R*	R*	-	-	R
rs2230587	G/A	-	-	-	-	-	-	R*	-	-	R	R	-
rs3737139	G/C	-	-	-	-	-	-	-	S*	S	-	-	S
rs2230588	T/C	-	-	-	-	Y*	-	-	Y	Y	Y	Y	Y*
rs12129819	C/T	-	-	-	-	-	-	-	Y*	Y	Y*	Y	-
rs12353950	A/C	-	-	-	-	-	-	-	M	M	M	M*	-
rs41285408	G/A	-	-	R*	-	-	-	-	-	-	-	-	-
rs2230586	G/A	-	-	-	-	-	R*	-	R*	R*	-	-	R
rs6460261	T/C	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*
	C/A	A*	A*	A*	A	M*	M	M	M	M	A*	A*	A*
	A/T	-	-	-	-	-	-	-	T	-	-	-	-
rs2736098	C/T	Y*	T	-	-	-	Y*	-	-	Y*	-	-	Y*

rs6420019	A/C	V*	M*	M*	M*	M*	M*	C	M*	M*	M*	M*	C
rs2853690	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs35033501	C/T	-	Y*	Y	Y	-	-	-	Y	Y	-	-	-
rs35888851	T/C	Y	Y*	Y*	Y*	-	N*	Y*	Y*	Y	-	-	N*
rs9309428	C/T	Y	Y	T*	Y*	-	Y*	M*	Y*	Y	T	Y	Y*
rs7581876	A/G	R	R	NP	NP	R*	R*	R*	R	R*	R	R	NP
rs7608459	C/G	S	S	NP	NP	S*	S*	S*	S	S*	S*	S*	S
rs77961083	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs76651100	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs4441525	C/T	Y	Y	T*	T*	-	-	-	T	Y*	-	-	T
	G/T	R*	-	K	K	-	-	-	-	-	-	-	-
rs17243515	C/A	-	-	NP	NP	-	-	-	NP	NP	-	-	-
rs72752600	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs13176855	C/T	Y	Y	-	-	Y	Y	Y	Y	Y	Y*	Y*	Y
rs17302931	A/C	-	-	NP	NP	-	-	-	C*	M*	-	-	-
rs34221642	A/C	M	M	-	-	M*	M*	-	-	M*	M	M	M*
	C/A	-	-	-	-	-	-	-	-	M*	-	-	-
rs4969391	A/G	-	-	-	-	-	-	-	-	R*	-	-	-
rs2589156	G/A	-	-	NP	NP	-	-	-	-	-	-	-	R*
rs8080815	C/T	-	-	Y*	Y	-	-	-	-	Y*	Y*	Y*	Y
	C/A	-	-	NP	NP	low_cov	M*	-	-	M*	NP	NP	M*
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	M*
	C/T	-	-	-	-	-	-	-	-	-	Y*	Y	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs12949063	A/G	-	-	-	-	-	R*	R*	-	R*	R	R*	W*
rs2289759	A/G	-	-	NP	NP	-	-	-	R	R*	-	R*	-
	C/G	-	-	-	-	-	Y*	-	-	-	NP	NP	-
rs3751945	C/T	Y*	Y*	Y*	Y	T*	T*	T*	T*	Y	Y	-	-
rs12944344	G/A	-	-	-	-	R*	R	R*	-	-	R*	R*	-
rs72854167	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
	G/A	R*	R*	R*	R*	R	R*	R*	R	R	R*	R*	R*
rs1567962	C/T	Y	Y	Y*	Y*	-	-	-	Y*	Y*	Y*	Y*	-
rs61750765	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs4969231	C/T	T	T	-	-	T	Y*	T*	-	Y	-	-	Y
rs9899178	C/T	Y*	-	T*	T*	-	Y*	Y*	Y*	Y*	T*	T*	-
rs17848685	C/G	S	S	-	-	S*	S	S	-	S	-	-	S
rs8068528	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs62073016	C/T	-	-	NP	NP	Y*	-	-	-	-	-	Y*	Y*
rs8071392	G/T	K*	K*	K*	K*	T	K*	K*	K*	K*	T*	K*	K*
rs1127508	G/T	-	-	-	-	-	K*	-	-	-	-	-	K*
rs3751934	C/A	M	M	A*	A	-	-	-	A	A	A	M*	M
rs3751936	G/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs3751932	C/T	Y	Y	T*	Y*	T*	Y*	Y*	Y	Y	Y*	Y*	Y*
rs12602885	G/A	-	-	-	-	R*	R	R	R	R	-	-	-
rs4072588	T/G	-	-	K*	K	K*	K*	K	K*	K	G*	G*	K
rs11871062	T/C	-	-	NP	NP	-	-	-	-	-	Y*	C	-
rs2289764	T/C	Y	Y	-	-	-	-	-	-	-	-	-	Y
rs11664	G/A	-	R*	R*	R*	-	-	-	-	R*	R*	R*	R
rs11547301	C/T	-	Y*	Y	Y	-	Y*	-	-	Y*	Y	Y*	Y
rs6565535	C/A	M	M*	A*	A*	A	M*	M*	M	M*	A*	M*	M*

rs1062935	T/C	Y	Y	C*	Y*	C*	Y*	Y*	C	Y*	C*	Y*	Y
rs1801833	T/C	Y*	C*	C*	C*	Y	Y*	C*	C	Y	C*	C*	C*
	C/T	-	Y*	-	-	-	-	-	-	-	-	-	Y
	C/T	-	-	-	-	-	Y*	-	-	-	Y	Y*	Y*
rs3744516	A/G	R*	R*	NP	NP	-	R	R*	R*	R	NP	NP	NP
rs3744517	G/A	R*	R*	NP	NP	-	-	-	-	-	R*	R*	R
	G/A	-	R*	-	-	-	-	-	R*	-	-	-	D*
	T/C	-	-	NP	NP	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	R*	-	R	R	-	-	-
	G/C	-	-	-	-	-	-	-	S*	S	-	-	-
rs28933	C/T	-	Y*	Y	Y	Y	Y	Y	-	H*	-	-	Y
rs9890913	G/A	R	R	NP	NP	-	-	-	-	-	-	-	-
rs9893935	A/G	R*	R	R	R	R	G	G	R	R	-	-	R
rs7214382	G/C	C	C*	NP	NP	low_cov	S	C*	S*	S*	NP	NP	NP
rs9906918	T/C	C	C	NP	NP	NP	NP	NP	Y*	Y*	-	-	Y*
rs28935	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2228989	C/G	-	-	-	-	-	-	-	S	S	-	-	-
rs28936	T/C	-	-	-	Y*	-	Y*	Y*	-	-	-	-	-
rs28932	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3736946	A/G	R	R	-	-	R*	R	R	-	R*	R	R	R*
	G/A	-	R*	R	R	-	-	-	R*	R*	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	Y*	-	T
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs11195943	C/T	Y	Y	Y*	-	Y	Y	Y	-	Y*	Y	Y	Y*
rs3184349	T/C	Y	Y	-	-	Y*	Y	Y	-	Y*	Y	Y	Y
rs11195955	C/T	Y	Y	-	M*	Y	Y	Y	Y*	Y*	Y*	Y	-
rs8624	T/C	-	-	Y	Y	Y	Y	Y	Y	Y	-	-	NP
rs11195956	T/A	W	W	-	-	W*	A	W	-	W*	W	W	W*
rs2419621	C/T	-	-	-	-	Y	Y*	Y	Y	Y	-	Y*	-
rs2234767	G/A	R*	R*	-	-	-	-	-	R	R*	-	-	-
rs7079111	T/G	K*	K*	G*	K*	G*	G*	K*	G*	G	K	K*	K*
rs12775501	C/T	-	-	-	-	Y*	Y*	T*	Y*	Y*	-	-	Y*
	C/T	Y*	Y*	Y*	Y	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
	G/A	R	R	R*	R*	A*	A	R*	R*	R*	R	R	R*
	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2228948	C/T	-	Y*	Y	Y	Y*	Y	Y	Y	Y	-	-	-
rs6719906	G/A	R	R	R*	A	A	R*	R*	R*	R*	R	R	R
rs6719924	G/A	A	A	A*	A*	R*	A*	R*	A*	A*	R*	R	R*
rs79598188	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs55920843	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs7594480	T/C	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs4556933	G/A	R	A	R	R	-	R*	-	R*	R	R*	A*	A
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs62239937	G/T	-	-	-	-	K	K	K	K	K	-	-	-
rs2268760	G/A	-	-	NP	NP	-	R	-	NP	NP	-	-	-
rs1046048	C/T	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*
rs762318	C/A/G	M*	M*	A	M	M	M*	A*	A*	M*	A*	M*	M
rs13079145	T/G	-	K*	K*	K	K*	K*	K	K	K	K*	K*	K
rs13078966	T/G	-	K*	K*	K	G	K*	G*	G*	K*	G*	G*	G*
rs13098946	C/G	-	-	S*	S*	S*	S*	G*	G*	G*	G*	S*	S*

rs2070489	A/G	-	R*	G	R	R*	G*	G*	G*	R*	G*	G*	R*
rs2268762	A/G	-	R*	G	R	R*	R*	R*	R*	R*	R*	R*	R*
rs35744046	T/C	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
rs10495563	G/A	R	R*	R*	-	R*	R	R*	-	R	R*	R*	NP
rs55790676	G/T	K*	K	K*	K*	-	-	-	-	-	-	-	-
rs12692386	A/G	R*	R	R*	R*	-	R*	R*	R*	R*	R	R*	G
rs56237316	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs4254747	A/G	R	R	NP	NP	R	R	R	R	R	R	R	-
rs731446	T/C	C	C	NP	NP	C	C	Y*	C*	C	-	-	Y
rs3743749	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35478105	G/T	K	K	K*	K	K	K	K	T*	K	K	K	K*
rs61749042	C/T	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
rs11640912	A/T	-	-	W*	W	W	W	W	-	W*	W	W	-
rs12935394	C/A	M	M	-	-	-	-	-	-	-	M	M	-
rs9930984	G/T	K*	K	K*	K*	K*	K*	K*	-	K*	K*	K	-
	C/A	-	-	Y	-	-	-	-	-	-	-	-	-
rs889706	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs3743754	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs8059275	A/G	R*	R*	R*	G*	R*	R	R*	G*	G	G*	G*	G
rs3743753	T/C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
rs889707	G/A	R*	-	-	-	-	-	-	-	R*	-	-	S*
rs889705	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs12935229	C/T	Y	Y	-	-	-	-	-	-	Y*	Y	Y	-
	G/A	R	R	-	-	-	R*	-	-	-	R	R	-
rs1137647	C/G	S*	S	-	S*	G	S*	S*	G*	S	S*	-	S*
rs34371402	C/T	Y	Y	-	-	-	-	-	-	-	Y	Y	-
rs11643211	A/G	-	-	-	-	R	R	R	M*	R*	-	-	R*
rs2277849	C/T	-	-	T	T	Y	Y*	T	-	Y*	-	-	-
rs4483821	A/G	-	-	G	G	R	R	R	-	R	-	-	R*
rs34047645	G/C	-	-	NP	NP	S*	-	S*	-	-	-	-	-
rs4842838	G/T	K*	T	T*	K*	K*	K	K*	-	K*	K*	K	T*
rs4144691	C/G	S	S	G*	S*	G*	S*	G*	G*	G	S	S	S*
	C/T	-	-	NP	NP	NP	NP	NP	-	-	-	-	-
rs12439867	G/A	R	R	-	-	-	R*	-	-	-	R	R*	R*
rs7176737	T/C	Y	Y	Y	C*	C	Y*	C*	C*	Y	Y	Y	Y*
rs8031704	C/A	-	M*	A	M*	M	M	M	M*	M	M	M*	M*
rs2135551	A/G	-	-	-	-	-	-	-	-	-	R	R*	G
rs4842923	T/C	Y	Y	Y	Y	Y*	Y	Y	Y*	Y*	Y	Y	Y
rs2302944	T/C	-	-	Y*	Y*	-	-	-	Y*	-	Y	C	-
rs34272020	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35636358	G/T	-	-	-	-	-	-	-	NP	NP	-	-	-
rs3087972	T/C	Y*	Y	-	-	-	Y*	-	Y	Y	Y	Y	Y
rs1046515	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs1140034	T/C	-	-	Y	Y	-	-	-	-	-	-	-	-
rs11538384	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3865452	T/C	Y	Y	C	C*	Y*	Y	Y*	Y*	Y	-	-	Y*
rs11538385	C/T	Y*	Y*	-	-	Y*	Y	Y*	Y*	Y	Y*	Y*	-
rs4803357	G/A	R	R	-	-	low_cov	-	-	-	-	-	-	-
rs6599528	A/C	-	-	-	-	-	-	-	-	-	NP	NP	-

	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10920570	A/G	R*	R*	NP	NP	low_cov	R*	R*	-	-	-	-	G
rs41264027	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10920568	T/G	G	K	K*	G	K*	K	K	-	K*	-	-	K
rs16851030	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y*	-	Y
rs12744240	G/T	-	-	-	-	-	-	-	-	-	-	-	K
rs6427994	A/C	M	M	C	M*	M*	M	M*	M	M	M*	M*	C
rs41264025	C/T	-	-	-	-	Y*	Y*	-	-	Y*	-	-	Y*
rs2071007	G/A	A*	A*	NP	NP	low_cov	A*	A*	R*	A*	A*	A*	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
	A/G	R*	R*	-	-	G*	R*	G*	G*	G*	NP	NP	NP
rs2271694	C/T	-	-	Y*	Y	-	S*	-	-	-	-	-	Y*
	G/A	-	-	-	-	R	R	R	-	R*	R	R	-
rs41277976	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/C	-	-	M	M	-	-	-	-	-	-	-	-
	G/A	R*	-	R	R	-	-	-	-	-	-	-	R
	G/A	-	-	R*	R	-	-	-	-	-	-	-	R*
rs41277974	T/C	-	-	-	-	Y	-	Y	-	-	-	-	-
	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y
rs7908957	G/A	R*	-	R	R	R*	R	R	-	R*	R	R	R
rs7893137	T/A	-	-	W*	W*	W*	W	W	-	-	W*	W*	-
rs41277972	A/C	-	-	-	-	M*	-	M	-	-	-	-	NP
rs2394655	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs16927320	C/T	-	-	NP	NP	-	-	-	-	-	-	-	T
rs10823484	G/T	-	-	K*	-	-	T	K*	-	-	K*	K*	-
rs2297970	G/A	R*	R*	-	-	-	-	-	R*	R*	-	-	-
rs3747787	T/C	Y	Y	Y*	Y	Y	Y	Y	-	Y*	-	-	-
rs77011491	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs783396	A/C	C*	M*	C*	C*	M*	M*	M	C*	M	M*	M*	M
rs1159148	A/C	M	M*	M*	M	-	-	-	M	M	-	-	-
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1340623	C/G	G*	G*	NP	NP	low_cov	G*	S*	NP	NP	NP	NP	NP
rs11152999	G/A	-	-	-	-	-	-	-	R	R	R	R	R
rs41312800	T/C	-	-	-	-	Y*	-	-	-	-	-	-	-
rs13319	G/A	-	-	-	-	R	R	R	-	R*	-	-	R
rs4946759	A/G	G*	G*	NP	NP	low_cov	-	-	NP	NP	NP	NP	R*
rs1057433	C/T	Y	Y	-	Y	-	Y*	-	Y	Y	-	Y*	-
rs11537704	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1799693	A/G	R*	R*	R*	R*	R*	V*	R	R*	R	R*	R*	R
rs783420	G/C	-	-	NP	NP	low_cov	S*	-	NP	NP	NP	NP	-
rs41302047	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs8013	A/C	-	-	-	-	M	M	M	-	-	-	-	M*
rs3747790	T/C	-	-	-	-	Y*	C	Y	-	Y*	Y*	Y*	Y*
rs1062372	C/A	M	M	M	M	-	M*	-	-	M*	-	-	M*
rs2009115	G/A	R*	R	R*	R*	-	-	-	-	-	-	-	-
rs3801030	T/C	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	-
rs3801032	T/G	K*	K*	G*	K	K	K	K	K*	K	G*	K*	K
rs4560	C/T	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y	Y	Y*	Y*
rs7781199	C/A	M	M	M	M	-	-	-	-	M*	-	-	M

rs4930199	A/G	R*	R*	G*	R*	low_cov	R*	G*	G*	R*	NP	NP	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1130214	C/A	M	M	-	-	M*	-	-	-	-	-	-	M*
rs1130233	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs41307094	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1130245	C/T	-	-	NP	NP	low_cov	-	-	-	-	-	-	-
rs10138227	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
	C/A	-	-	M	M	-	B*	-	-	-	-	S*	-
rs11083985	T/C	-	-	Y	Y	Y*	Y	Y	Y	Y	-	-	Y
rs79983202	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs731826	T/G	-	-	K	K	K*	K*	K	K	K	-	-	G
rs4802634	C/T	-	-	T*	T*	-	Y*	T	Y*	T	-	-	T*
	C/G	S	S*	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2353005	G/A	-	R*	R	R*	-	-	-	R	V*	-	-	R*
rs75272647	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3810268	C/T	-	Y*	Y	Y	Y*	Y	Y	Y*	Y	-	-	Y*
rs33933140	A/G	G	R*	R*	G*	G	G	R*	R*	G	R*	R*	G
	C/T	-	Y*	-	-	-	-	-	Y	Y	-	-	-
rs74457111	G/A	-	-	R*	R*	-	R*	-	-	R*	-	-	R
rs3730259	C/G	S*	-	-	-	-	N*	-	-	-	-	-	S*
rs4574034	T/C	Y*	Y*	C*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs41311971	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs34067570	G/T	-	-	K*	K	-	-	-	-	-	-	-	K
rs11880261	T/C	C*	C*	NP	NP	low_cov	C*	C*	C*	C	C*	C*	C
rs79275829	G/A	R*	R*	-	R*	R*	N*	R*	-	R*	R*	R	D*
rs2304189	T/C	Y*	Y*	C*	C*	C*	H*	C*	C*	Y*	C*	C*	Y*
rs35588791	G/A	-	-	-	-	-	K*	-	-	-	-	-	-
rs41275748	A/C	M	M*	-	-	-	-	-	-	-	-	-	M
rs41275750	C/G	-	-	-	-	-	-	-	-	-	-	-	S*
rs78266304	G/T	-	-	-	-	-	K*	-	-	-	K	K	-
rs2304186	G/T	K*	K*	K*	K*	K	K	K*	K*	K	K*	K*	K
rs67027895	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	Y*
rs45498504	T/C	-	-	Y	Y	-	-	-	Y	Y	-	-	-
rs20551	A/G	-	-	-	-	-	-	-	-	R*	R*	R*	G*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs20552	T/A	W	W	W*	W*	W	W	W	W	W	W	W	W*
rs71200668	ACACACACACACACACA	-	-	-	-	-	-	-	-	-	-	-	-
rs5956583	A/C	-	-	M*	M*	M*	M*	M	-	-	-	-	NP
rs17330644	C/T	Y*	Y*	-	-	-	-	-	-	-	-	-	-
rs9856	C/T	Y*	Y	Y*	-	Y	Y*	Y*	-	-	-	-	NP
rs17334746	T/C	Y*	Y	-	-	-	-	-	-	Y*	-	-	-
rs17330637	A/C	M*	M	-	-	-	-	-	-	-	-	-	-
rs8371	C/T	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs11539496	A/G	R*	R	-	-	-	-	-	R	R	-	-	-
rs9789	T/C	Y	Y	-	-	-	-	-	Y	Y	-	-	Y*
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y*
rs8009219	G/C	C*	C	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs7857	C/T	Y*	Y*	NP	NP	low_cov	-	-	Y	Y*	T	T*	NP
rs4708	T/C	Y	Y	-	-	Y	Y*	Y	Y	Y*	Y	Y	-

rs35565630	C/T	-	-	-	-	Y*	Y	Y	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs6026562	T/C	-	-	Y*	C	-	-	-	-	-	-	-	NP
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs79335353	T/G	-	-	G*	G*	low_cov	-	-	-	-	-	-	NP
	G/A	V*	V*	R*	V*	-	V*	-	S*	V*	S*	-	-
rs919196	T/C	Y*	Y*	Y	Y	-	-	-	Y	Y	Y*	-	Y
rs61558260	C/G	V*	V*	S	S	-	S*	-	-	V*	-	M*	S
	G/C	-	-	-	-	-	-	-	-	-	-	-	S
rs1800902	C/T	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
rs1800900	A/G	D*	N*	D*	D*	R*	R	R	D*	D*	R	D*	R
rs7121	C/T	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y
rs3787497	A/G	D*	N*	R*	R*	R*	N*	R	R*	R	R	R*	R
rs13831	A/G	R*	R*	R*	R*	R	R*	R*	R*	R*	R	R	G*
rs8125112	T/C	Y	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	-	Y
rs55995056	A/G	R	R	-	-	-	-	-	R*	R	-	-	-
rs6026578	C/G	S	S	S*	S*	S*	S	S*	S*	S	S*	S*	S
rs10485828	G/C	-	R*	-	-	-	R*	-	S*	S	-	-	S*
rs2295583	A/T	W	W*	W*	W	-	-	-	-	-	-	-	W
rs2453056	C/A	-	-	-	-	-	Y*	-	-	M*	-	-	NP
rs699779	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs835575	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3795666	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6685892	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7527186	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1043964	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs835576	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs699780	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1800672	T/C	-	Y*	Y	Y*	-	-	-	Y*	Y	-	-	Y
rs16846644	G/T	-	K*	T*	K*	-	-	-	K*	T	-	-	K
	T/C	-	Y*	-	-	-	-	-	Y*	Y	Y	Y	Y
rs1881421	G/C	S*	S*	S*	S	S*	S*	-	S*	S	S	S*	S
	A/G	-	-	-	-	-	-	-	-	-	R	R*	-
rs1569156	C/T	Y*	T	T*	T*	low_cov	Y*	T*	Y*	Y*	T*	T*	NP
rs4358080	G/C	S*	C*	NP	NP	C*	C*	C*	NP	NP	C*	C*	S*
rs1534545	G/T	-	-	-	-	-	-	-	-	K	K*	K	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2246745	A/T	W*	W*	T*	T*	W*	W*	W*	W*	W*	W*	W*	W*
	T/C	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y*
rs1728828	G/A	R*	R*	A*	R*	A*	R*	R*	R*	R*	A	A*	A
rs77565142	T/C	-	-	-	-	Y*	Y	Y*	-	-	-	-	-
	G/A	-	-	R*	R	-	-	-	-	-	R	R	-
	A/G	-	-	G	R	G*	G	R*	R*	R	R*	R*	R
rs34815402	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs11726117	T/C	Y	Y*	C*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y
rs2074379	G/A	R*	R*	R	R	A*	R*	A	R	R*	R*	R	NP
rs2074388	G/A	R*	R*	A	A*	A*	R*	A*	R	R	R	R	R*
rs35519493	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs13148353	A/G	R*	R*	G*	R*	R	G*	G*	R	R	R	R	R

rs231247	A/G	R*	R*	G*	G*	R	R	G*	R	R	R*	G*	R
rs17044681	C/T	-	-	-	-	-	-	-	-	-	Y	Y	NP
rs35129721	G/A	-	-	-	-	-	R*	-	-	-	-	-	R
rs61747381	G/A	-	-	-	-	R	R	R	R	R	-	-	-
rs3809977	T/G	G	G*	NP	NP	G	K*	G*	-	K*	G*	G*	-
rs4940404	A/T	W*	W	T*	W	-	-	-	-	-	W*	W*	NP
rs79863383	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs3809982	G/A	R	R	R*	R*	-	-	-	R*	R*	R*	R*	-
	T/G	G	G	NP	NP	-	K*	-	-	K*	K	G*	-
	C/T	Y	Y	Y*	Y	-	-	-	Y*	Y*	Y*	Y*	-
rs3809975	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3809976	A/C	C*	C*	C*	C*	C*	C*	C*	M*	M*	C*	C*	M*
rs10867	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs9958735	T/C	Y	Y	-	Y*	Y*	Y*	Y*	-	Y*	Y	Y	Y*
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs12103986	A/C	C*	M*	M*	M*	-	-	-	-	M*	M*	M*	-
rs7240355	C/T	-	-	-	-	-	-	-	Y	Y	-	-	Y
rs33910491	T/C	-	-	-	-	-	Y*	-	Y	Y	-	-	Y*
rs3809983	C/A	A*	M	A*	M	-	-	-	M*	M*	A*	A*	M*
rs7234999	G/A	-	-	-	-	-	-	-	R	R*	-	-	NP
rs9960620	T/C	C	C	-	-	Y	Y*	Y	C*	C	C*	Y*	-
rs3744867	A/G	R	R*	-	R*	R	R	R	-	R*	-	-	R
rs3809979	A/G	G*	R*	R*	G	G*	R*	R*	R*	R	R*	R*	-
rs3809980	G/C	S*	C*	C	C	C*	S	S*	S*	S	S*	C*	S*
rs56145533	T/C	-	-	-	-	-	-	-	Y*	Y*	-	-	-
	T/C	Y*	Y	-	Y*	C*	Y*	Y*	Y	Y	Y	Y	C
rs9944810	C/A	M	M	M*	-	M	A*	M*	-	M*	M	M*	A*
rs6566987	T/G	G*	G*	NP	NP	low_cov	G*	G*	NP	NP	K*	K*	NP
rs3809972	C/G	G	S	NP	NP	-	S*	-	-	-	S	G*	-
	G/A	R*	R*	R*	A*	A*	R*	R*	R*	A*	R*	R*	NP
rs3809981	C/T	Y	Y	Y*	Y	Y*	-	-	Y*	Y*	Y*	Y*	-
	C/T	Y	Y	Y	Y	-	-	-	-	-	Y	Y*	-
rs3809978	G/T	T*	K*	NP	NP	T*	K	K*	-	K*	K*	T	-
rs12963422	T/G	-	-	-	-	K	G	K	K	K	-	-	K*
rs13016	G/C	-	S*	-	-	S*	S	S	-	S*	-	-	NP
rs1129928	A/G	-	R*	-	-	G*	R*	G	-	R*	R	R	NP
rs12606191	T/C	Y	Y	-	Y*	Y	Y	Y	-	Y*	Y	Y	H*
rs3826594	A/T	T*	T*	W*	W*	T*	D*	W*	W*	W	W*	T*	-
rs9956630	A/G	R	R	-	-	R	R*	R*	M*	R	R	V*	R*
rs3803405	G/A	-	-	-	R*	-	-	-	-	-	R	-	NP
rs187316	T/C	-	-	NP	NP	Y	C	Y	Y*	Y*	Y*	Y*	-
rs3803403	C/G	-	-	-	-	-	-	-	-	-	S	S*	-
rs34775428	C/A	-	-	NP	NP	-	A	M*	-	-	-	-	NP
rs72753071	T/C	-	-	-	-	-	-	-	-	-	-	-	Y
rs306197	C/T	-	Y*	NP	NP	low_cov	T	Y*	-	Y*	Y*	Y*	NP
rs7172412	A/G	R*	R*	G*	R*	R	R*	R*	R*	R*	R	R*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11857356	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
rs881733	C/T	T*	T	NP	NP	low_cov	T*	T*	NP	NP	NP	NP	-
rs3748377	C/T	Y*	Y*	T*	T	Y*	T	Y	-	Y*	-	-	-

rs893162	A/G	-	-	-	-	-	-	-	-	R*	-	-	NP
rs8040247	A/C	M*	M*	C*	C*	C	C	M*	M*	C	M	M	-
rs3803406	G/A	A	R*	-	-	low_cov	A	R*	A*	A	R	R*	-
rs12324363	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17602074	A/C	M*	C	NP	NP	low_cov	-	-	M*	-	-	-	NP
rs1437033	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs55736017	A/C	-	-	-	-	M	M	M	M*	M*	-	-	-
rs167379	T/C	C	Y	NP	NP	low_cov	Y*	Y*	Y*	Y*	Y*	-	-
rs35931910	C/T	Y	T	-	-	-	-	-	Y	Y*	-	-	NP
rs1044250	C/T	-	-	Y*	Y*	-	Y*	-	-	-	Y*	Y	-
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs35137994	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11672433	G/A	-	-	-	-	A*	R*	A*	R	R	-	-	-
	G/A	-	-	-	R*	-	-	-	-	R*	-	R*	-
	G/T	-	K*	-	K*	K	K	K	-	-	-	-	-
	C/T	Y	Y*	-	-	-	S*	-	-	-	-	-	B*
rs515071	A/G	R*	G*	G*	R*	G*	R*	G*	G*	R*	R*	G*	R*
	C/T	Y*	-	-	-	-	-	-	-	-	-	-	Y*
rs34265667	G/A	-	-	-	-	-	-	-	-	-	R	R	R*
rs2304871	G/A	-	R*	-	-	R*	R	R*	R	R*	-	-	R*
rs72638944	A/G	R*	R*	-	R*	-	R*	-	-	R*	-	-	R*
rs516946	T/C	Y*	Y*	C*	C*	C*	C	C*	C*	Y*	C*	C*	C*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs504574	C/G	S	S	NP	NP	S*	S	S*	S*	S	-	-	S
rs1137177	G/A	-	-	NP	NP	low_cov	-	-	-	-	-	-	-
rs2304880	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
	C/A	M	M	-	-	-	-	-	-	-	-	-	-
rs35446871	C/T	Y*	Y	-	-	-	-	-	-	Y*	-	-	Y*
rs3733615	A/G	-	-	-	-	-	-	-	-	-	R*	R*	-
rs33966911	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs2293324	T/C	-	-	-	-	-	-	-	-	-	Y	C	-
rs11550170	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs10013743	A/G	-	-	-	-	-	-	-	-	R*	R	R	-
rs7118900	G/A	-	-	-	-	R	R	R*	-	-	-	-	-
rs2734849	A/G	R*	R*	G*	R*	-	-	-	R*	R	-	-	-
rs1800497	G/A	-	-	NP	NP	R*	-	R*	-	-	NP	NP	-
rs4938013	A/C	M*	M*	C*	M*	M*	M	M	H*	M	M	M*	M*
rs4938016	G/C	S*	S*	S*	S*	S*	S	S	C*	S	S*	-	S*
rs17115439	T/C	Y*	Y*	C*	Y*	C	Y*	Y	Y*	Y	Y	Y	Y*
rs2734848	C/T	Y*	Y*	T*	Y*	Y*	T	Y*	T*	Y	T	Y*	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1052369	T/A	W	W	-	-	W	W*	W	W	W	W*	W	A*
rs1652364	A/G	G*	R*	R*	G*	G*	R*	R*	R	R	R*	G*	G*
rs17202807	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs2155081	G/A	R	A	-	-	-	-	-	-	-	R*	R*	-
rs2155080	G/A	R	R	-	-	-	-	-	-	-	R*	R*	-
rs15684	A/G	G*	R*	NP	NP	R*	R*	R*	R*	R*	R*	R*	R*
rs549691	C/G	G*	S	NP	NP	S*	S	S	G*	S	G*	G*	S*

	G/C	-	-	-	-	-	-	-	-	-	S	S*	-
rs16897117	G/A	-	-	R	R*	-	S*	-	R*	R*	-	-	R*
rs10955176	C/T	-	-	-	-	-	T	-	-	Y*	-	Y*	NP
	G/A	-	-	R*	R	-	R*	-	-	-	-	-	R
rs1145207	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs2118852	G/T	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP
	C/A	-	-	M	M	-	-	-	-	-	-	-	-
CM023011	HGMD_MUTATION	-	-	-	-	-	-	-	-	Y	-	-	-
rs78429131	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2229994	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs42427	G/A	R	R	-	R*	A	R*	R	-	R*	A*	A*	R
rs351771	G/A	R*	R	-	-	low_cov	R*	R*	-	-	NP	NP	-
rs465899	G/A	R	R	-	-	R	R*	R	-	-	A*	A*	NP
rs67622085	T/A	-	-	-	-	W*	-	-	-	-	-	-	-
rs397768	G/A	R*	R	NP	NP	low_cov	-	R*	-	-	NP	NP	NP
rs448475	C/G	S	S	NP	NP	-	S*	S*	-	-	G*	G*	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs459552	T/A	W*	W	-	-	W*	-	W*	-	W*	A*	A	NP
rs866006	T/G	K	K	-	K*	K*	K*	K	-	-	K*	G	G*
rs2229992	T/C	Y	Y	-	-	Y*	Y	Y	-	Y*	Y*	C*	Y
	G/T	-	-	-	-	-	-	-	-	-	-	-	K
rs41115	G/A	R	R	-	R*	R	R	R	-	R*	R	R	R
rs80142793	G/A	-	-	NP	NP	-	-	-	-	-	NP	NP	NP
rs265274	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs265276	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs265273	A/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs11544593	A/G	R	R	-	-	-	-	-	-	-	-	-	R
rs3204124	A/G	R*	R*	-	-	R*	R*	R*	R*	R	R*	G*	NP
rs1533272	T/C	-	Y*	-	-	Y	Y	Y	Y	Y	C	Y*	Y*
rs3087684	T/C	Y	Y	-	-	Y	C	Y	Y	Y	C*	C*	C*
rs2071776	C/T	Y	Y	Y*	Y*	Y*	Y*	Y	-	Y*	-	-	NP
rs56322617	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs2257818	T/-/C	Y*	Y*	Y	Y	Y*	Y	Y	Y*	Y*	Y*	-	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1295810	G/A	-	-	A	A	R*	R	R	-	R*	-	-	-
rs1048665	T/G	-	K*	K	K	K*	K	K	-	K*	-	-	-
rs1291209	T/C	-	Y*	C	C	Y*	Y	Y*	-	Y*	-	-	-
rs1291208	T/C	Y	Y*	Y*	C*	Y	C	C	Y*	Y	Y*	Y*	Y
	T/C	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs4857294	G/C	S*	S*	S*	C*	S*	S*	S*	S*	C	S*	S*	-
rs2228099	C/G	S	S	S	S*	-	Y*	Y*	S	S	-	S*	S*
rs10847	C/T	-	-	-	-	-	-	-	Y	Y*	-	Y	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11552229	T/C	Y	Y	C*	Y	-	K*	-	Y	Y	Y*	-	-
rs41279102	G/A	R	R*	-	-	-	-	-	-	-	-	-	R*
rs76226633	C/G	S	S*	-	-	-	-	-	-	-	-	-	NP

rs17050593	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3806667	G/T	K*	K*	K	K	K	K*	K	K	K	K*	K*	K*
rs3806671	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	Y*
rs9827444	G/A	A*	R*	R*	-	-	R*	-	R*	R	A	A*	NP
rs3806668	T/G	-	-	-	-	-	-	-	-	-	-	-	K*
	C/T	-	Y*	-	-	-	Y*	-	-	-	-	-	-
rs78069404	A/C	-	-	-	-	-	-	-	-	-	M	M	-
rs3806670	G/T	K*	K*	K*	K*	-	R*	-	K*	K*	K*	T	K*
rs3806672	C/G	S*	S	S	S	S*	Y*	-	S	S	S*	S*	S
rs62247461	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs3806666	T/C	B*	N*	Y	Y	Y	Y*	Y	Y	Y	Y	Y*	Y*
rs3732527	C/T	Y*	Y*	T*	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*
rs12032504	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2254972	A/G	-	-	R	G	R	R	R	R*	R	R	R*	G
rs17488675	C/T	-	Y*	T	Y*	Y*	-	-	Y	Y	Y	Y	Y
rs6698036	A/G	-	-	-	-	-	W*	-	-	-	-	-	-
rs2231241	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6671085	G/A	-	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs6673809	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2231240	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11755	A/G	R*	R*	R	R*	R	R	R	R*	R	R	R	R*
rs966185	T/C	-	-	C	Y*	Y*	Y	Y*	-	Y	C*	C	Y
rs4236749	C/T	-	-	Y	Y	-	M*	-	Y*	H*	Y	Y	H*
rs74370122	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs41282258	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs76731640	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11558719	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11000217	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs12218638	T/C	-	-	-	-	-	-	-	-	-	Y	Y	Y
rs61758723	C/G	-	-	-	-	-	-	-	S*	-	-	-	S
rs12357642	A/C	-	-	M*	M*	-	-	-	M	M	-	-	-
rs3312	A/G	R	R	-	-	R	R	R	-	R*	R	R	R
rs8074498	T/A	W*	A*	NP	NP	low_cov	W*	W*	W*	A	W*	-	A*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12253113	T/C	NP	NP	NP	NP	low_cov	C*	C*	NP	NP	NP	NP	NP
rs2230674	C/G	S	S	-	-	-	-	-	S	S	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	M*
rs11169571	T/C	-	-	-	-	Y*	Y	Y	Y	Y	C*	C*	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs17448447	A/G	R	R	-	-	-	-	-	-	R	R	G	-
rs4535042	T/G	-	-	-	-	-	-	-	-	K*	K*	G	-
rs28366035	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs28366034	C/T	Y*	Y*	-	-	-	Y*	-	-	Y*	-	-	-
rs2372536	C/G	S	S	-	-	-	-	-	S*	S	S*	G*	-
rs56399857	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1800889	C/T	Y	T	-	-	Y*	Y	Y	-	-	-	-	-
rs9323183	G/C	-	-	-	-	-	-	-	-	-	S	S*	-

	T/C	-	-	Y*	Y	-	W*	-	-	-	-	-	-
rs11570887	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1968274	T/C	NP	NP	NP	NP	Y*	Y*	Y*	-	-	NP	NP	NP
rs12968116	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs4940950	C/A/T	NP	NP	NP	NP	M*	M*	M	NP	NP	NP	NP	NP
rs34719006	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs319438	A/G	NP	NP	NP	NP	low_cov	G	G*	NP	NP	NP	NP	NP
rs2227928	A/G	R*	R	-	-	R	R	R	R*	R	R	R*	NP
rs2227929	A/G	-	-	-	-	R	R	R	R	R	-	-	-
rs1802904	C/T	T*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	-
rs2227930	A/T	W	W	-	-	W	W	W*	W*	W	W*	W*	-
rs2229032	C/T	Y	Y	-	-	-	-	-	-	-	Y	Y	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs45472092	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3088074	G/C	S	S	S	S	S	S	S	C*	S	S*	-	S*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	V*	-	-	-	-	-	-
rs41515548	G/C	S	B*	S*	S	S*	S	S*	-	S*	-	-	S*
rs6099127	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs732417	G/C	-	-	-	S*	-	S*	-	-	-	-	-	-
rs34361943	T/G	-	-	K	K	K	K	K	-	K*	-	-	K*
rs34189236	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2273535	A/T	W	W	-	W*	W	W*	W	-	W*	-	-	-
rs1047972	T/C	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y
rs1059476	A/G	G*	R*	G*	G*	R	R*	R	R*	R	R*	R*	G*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2241909	G/A	R	R	NP	NP	R*	R*	R*	A	R	-	R*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35582299	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11084490	G/C	S	S	-	S*	C*	S	C*	S*	S*	C*	C*	-
rs3735260	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs56388246	G/A	R	R	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	W*	-	-	-	-	-	R*	-	-	-
rs6960495	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs12698938	C/T	-	-	-	-	-	-	-	-	-	-	-	-
GA006404	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
	A/G	-	-	-	-	-	-	-	-	-	R	G	-
rs73170214	T/A	W	W	-	-	-	-	-	-	-	W	W	W*
rs76634756	G/A	-	-	-	-	-	R*	-	R*	R	-	-	-
rs13234635	G/C	-	R*	-	-	-	-	R*	-	-	-	-	R*
rs214252	A/G	-	R*	-	-	-	R*	-	R*	R	-	-	-
	G/A	R*	R*	-	R*	-	R*	-	-	R*	R*	-	R*
rs12926617	G/A	-	-	R*	R*	R*	R	R	-	R*	-	-	R
	G/A	R*	-	-	-	-	-	-	-	-	-	-	-
rs45530432	A/G	-	-	-	-	-	-	-	-	R*	-	-	-
	G/A	R*	-	-	-	-	-	-	-	-	-	R*	-
GA012759	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs45528942	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2685119	T/C	-	-	Y*	Y	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y

	G/A	-	-	-	-	R*	R	R	-	R*	-	-	-
rs2858002	C/T	-	-	-	-	-	H*	-	Y*	Y	Y	Y*	Y*
rs34665498	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs394128	T/C	-	Y*	-	-	-	Y*	-	Y*	Y*	-	-	-
rs12921107	T/C	-	-	C	Y	Y*	Y	Y	-	Y*	-	-	Y
rs12925669	G/A	-	-	R*	R	-	R	R*	-	R*	-	-	R
rs12928131	C/T	Y*	-	Y*	Y	Y*	Y*	Y	-	Y*	-	-	Y*
rs59899616	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs2685120	C/G	-	-	S*	S	S	S	S	S*	S	S	S*	S
rs34966529	C/T	-	-	-	Y*	low_cov	Y	-	-	-	-	-	NP
	C/T	-	Y*	-	-	low_cov	-	-	Y*	Y	Y	-	-
rs9939865	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs34567568	G/A	-	-	A*	R	R*	R	R	-	R*	-	-	R
rs758033	G/T	-	-	-	-	K*	K	K	-	K*	-	-	K
rs412243	T/C	-	-	Y*	-	-	Y*	Y*	Y*	Y	Y*	Y*	-
rs2858003	A/G	-	-	R	R	R	R	R	R	R	R	R*	R
rs393521	T/G	K*	-	-	-	-	K*	-	K	K	-	-	K*
rs77895497	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs80220623	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12930733	G/A	-	-	R*	R*	-	R	R*	-	-	-	-	R
rs12926629	G/A	-	-	R*	R	R	R	R	-	R*	-	-	R
rs395545	C/G	S*	S*	G*	S*	low_cov	S*	S*	S*	S	S*	S*	S*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1805105	A/G	R*	R*	-	R*	R	R	R	R	R	R	R	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	M*	M*	-	M*	-	M*	M*	M*	M*	M*	M*	M*
rs35415678	G/A	-	-	-	-	R*	R	R	-	-	-	-	-
rs1133683	G/A	R*	A*	R*	R*	R*	R	R*	-	R	A*	A*	R*
	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs7591	A/T	W*	W	W	W	-	W*	-	W*	W	W	W*	W
rs10438779	G/T	-	-	NP	NP	-	-	-	-	-	-	-	K*
rs9915936	T/C	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*
	G/A	R	R	-	-	R	R	R	R*	R	R	R	R
rs4924987	G/A	R	R	R*	R*	A	A	R*	R	R	A*	R	R
	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs34882006	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs2070096	C/G	S*	-	-	-	S*	B*	-	-	S*	Y*	-	-
rs2229571	C/G	S*	S*	S*	S*	S	G	G*	S*	S	S*	S*	S*
rs1048108	G/A	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs1979028	T/A	W	W	NP	NP	W	A*	A*	A	W	W*	W*	NP
rs7585356	G/A	R*	R	-	R*	R	R*	R*	R	R	R*	R	R
rs78238082	T/C	-	-	NP	NP	-	-	-	-	-	Y*	-	NP
rs5020511	T/C	C*	Y*	NP	NP	Y	C*	C*	C*	C*	C*	C*	C
rs74772705	T/C	-	W*	-	-	-	W*	W*	-	-	Y	Y	W*
rs2070094	C/T	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y
rs16852600	C/T	Y*	Y*	Y*	Y*	T*	T*	Y*	Y	-	Y*	Y*	NP
rs280622	G/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs1129804	C/G	S*	S	NP	NP	S*	S	S	S*	S	S	S	S

rs280621	C/T	T*	Y*	Y*	Y	T*	T*	Y*	Y	Y	Y	Y	NP
rs34732883	C/T	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs1048171	G/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs2070093	A/G	R*	R*	R	R	R	R*	R	R	R	R	R*	R
rs17489363	A/G	R*	R	G*	G	R*	R*	R	R*	R	R	R	R
rs4645900	C/T	Y*	Y	-	-	Y*	-	-	-	-	-	-	-
rs704243	G/A	A*	A*	NP	NP	A*	A*	A*	A*	A*	NP	NP	NP
rs2862236	T/C	-	-	Y*	-	Y*	H*	Y*	-	Y*	C*	C*	Y*
rs45474992	C/T	-	Y*	-	-	Y	Y*	Y	-	Y*	-	-	-
rs4784677	C/T	T*	Y*	T*	Y*	T*	Y*	T*	Y*	Y*	Y	Y	T*
	T/C	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs12446354	A/G	R*	R*	NP	NP	NP	NP	NP	G*	R*	G*	R*	NP
rs12914333	T/C	Y*	Y*	Y*	C*	Y*	Y*	C*	C*	C*	Y*	C*	C*
rs56368716	C/T	T*	T	-	-	NP	NP	NP	NP	NP	NP	NP	-
rs2277598	T/C	C*	C	NP	NP	low_cov	Y	Y*	NP	NP	NP	NP	NP
rs12898814	G/T	-	-	-	-	-	-	-	-	-	K*	K	-
	A/G	-	-	R	R	R*	-	-	-	-	-	-	-
rs1879466	G/C	S	S	S*	S*	S	B*	S*	S*	S*	S*	S*	S*
rs12692911	T/C	Y*	Y	NP	NP	C	C*	C	C*	C*	Y*	C*	NP
CM044580	HGMD_MUTATION	-	-	-	-	-	-	-	-	-	-	-	NP
rs2353187	C/A	M	M	A	A*	M*	M	M	A	A	-	-	NP
rs2271176	G/C	-	-	NP	NP	NP	NP	NP	NP	NP	S	-	NP
rs3217753	A/G	R*	R	R	R	R*	R	R	R	R	R	R	-
rs11773504	G/A	-	-	-	-	-	-	-	-	R*	R*	R	R
rs1050721	C/T	Y	Y	Y*	Y*	-	-	-	Y	Y	Y*	Y*	-
rs1050719	T/C	Y	Y*	Y*	Y*	-	-	-	Y	Y*	Y	Y*	-
rs78449122	C/T	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs3750123	C/G	S*	S*	-	-	-	B*	-	-	S*	S	S*	S
rs73095326	G/A	R*	R*	R*	-	R	R	R	-	R*	-	-	-
rs14235	G/A	-	-	R*	-	-	D*	-	R	R	R*	R*	R*
rs2279115	G/T	K*	K*	-	-	T	K*	K*	K*	K	K	K	-
rs4987852	T/C	-	-	-	-	Y*	Y	Y	-	Y*	-	-	NP
rs4987855	C/T	Y*	Y	NP	NP	-	Y	Y	-	-	-	-	-
rs1801018	T/C	Y*	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y*
rs4987843	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs4987856	C/T	Y	Y	-	-	Y*	Y*	Y	-	-	-	-	-
rs1564483	C/T	-	Y*	Y*	Y	-	-	-	Y*	Y	Y*	Y	-
rs4987845	C/T	Y	Y	-	-	Y*	H*	Y	-	-	-	-	NP
rs4987859	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4987853	T/C	Y	Y	-	-	Y	Y*	Y	-	-	-	-	-
rs1016860	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6750142	A/T	-	-	-	W*	-	-	-	-	-	W	W*	-
rs724710	T/C	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	Y	Y*	Y	Y*
rs6753785	T/G	K*	K*	Y*	K*	-	-	-	K	K	K	K*	K
rs9308731	G/A	R*	R*	-	R*	-	-	-	R	R	A*	A	A*
rs72837819	A/G	-	-	R	R	-	-	-	-	-	R	R	-
rs56952027	C/T	-	Y*	Y*	Y*	-	-	-	T	Y*	Y*	Y*	Y*
rs71457129	A/G	-	-	-	-	-	R	R	R	R	-	-	-

rs61739220	A/T	-	-	-	-	-	-	-	-	W*	-	-	-
rs1012672	G/A	-	-	-	-	R	R	R	R	R	-	-	-
rs12296239	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs71457130	C/T	-	-	-	-	-	Y*	Y	Y*	Y	-	-	NP
rs1797647	T/G	-	K*	-	-	-	-	-	-	-	-	-	-
rs879732	C/T	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y	-	-	-
rs10845469	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y	Y	Y
rs12314259	C/G	-	-	-	-	S	S	S	S	S	-	-	-
rs2302685	C/T	Y*	Y*	Y*	-	T*	T	Y*	Y	Y*	T*	T*	T*
rs1641716	G/A	R*	R*	R*	R*	A	R	R	A	A	R	R	R
rs2416987	A/G	-	R	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs10082834	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2287154	C/T	M*	M*	-	-	Y	H*	Y	-	Y*	Y*	Y	Y
rs1641721	C/G	G*	G*	S	-	-	S*	S*	G	G	S*	S*	-
rs11054697	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs35025692	T/C	-	-	-	-	Y*	Y	Y	Y	Y	-	-	NP
rs11054683	T/C	Y	Y	Y	Y*	-	-	-	C	Y	Y*	-	-
rs11054682	A/G	R	R	R	R*	-	-	-	R*	R	-	-	-
rs11054696	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2909000	G/C	S	S	C*	C*	C*	S*	S*	S*	S*	S*	C*	NP
rs2160525	A/G	R*	R*	-	-	G*	R*	R*	R	R	G	R*	R
rs2909001	T/C	Y	Y	Y*	Y*	Y*	Y*	C*	Y*	Y*	C*	Y*	Y*
rs1535094	C/G	G*	S*	S*	S*	S*	S*	S*	S*	S	S	S	S*
rs2231302	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3210043	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2231301	G/A	-	-	A*	R*	A*	R*	R*	NP	NP	-	-	A*
rs1950252	A/G	G*	G*	G*	G*	G*	G	R*	G*	R	R	R*	R*
	C/T	-	-	-	-	-	Y	-	-	-	-	Y*	-
rs3774304	C/G	S	S	S*	S	S*	S*	-	S	S	-	-	S
rs9827569	G/T	-	-	K	K	-	-	-	-	-	-	-	-
rs867270	A/G	R	R	G*	R*	G*	R*	R*	R*	R*	R*	R*	R*
rs946903	T/C	-	-	-	-	Y*	-	-	Y	Y*	Y	Y	-
rs77650336	C/T	Y	Y	-	-	-	-	-	-	-	-	-	Y*
rs3820129	C/T	Y	Y	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y	-
rs10900376	A/G	R	R	R*	R	R*	R	R	R	R	R*	R*	-
rs3766512	C/T	Y	Y	T*	T*	T*	Y*	T*	T*	Y*	Y*	T*	Y*
rs5759683	C/A	-	-	-	-	-	-	-	-	-	M	-	M
rs2227939	T/C	Y*	-	-	-	-	-	-	-	Y*	Y*	Y	Y
rs140506	G/A	R*	A*	A*	A*	A*	R*	A*	A*	A*	A*	A*	A*
rs6003601	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1042660	G/A	-	-	NP	NP	R*	R*	R*	-	-	-	R	-
rs78755527	A/C	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	K*	K	-	-	-	-	-	-	-	-
rs8139664	G/A	-	-	-	-	-	R*	-	-	R*	R*	R*	R
rs9608101	G/C	-	-	-	-	-	-	-	-	-	S	S*	S
rs11912682	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y
rs7364231	G/T	-	-	-	-	-	-	-	-	K*	-	-	K
rs5751602	C/A	M*	M*	-	M*	M*	M*	M	-	M*	M*	M*	-
rs131677	C/A	M*	M*	M	A	-	-	-	M	M*	M	M*	M

rs35727393	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
rs73878677	C/A	-	-	-	-	-	-	-	-	-	-	-	M
rs73388594	C/T	Y*	Y*	-	S*	-	B*	-	-	Y*	-	S*	Y
rs2071436	C/T	Y*	Y	-	-	Y	Y	Y	-	-	Y	Y	-
rs34646520	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs180816	G/A	R*	R	NP	NP	NP	NP	NP	R	R*	NP	NP	-
	C/A	-	-	-	M	-	-	-	-	-	-	-	-
rs16802	A/G	-	-	-	-	-	-	-	-	R*	R	R	R
rs4822378	T/G	G*	G*	G*	G*	G	K*	G*	G*	K*	G*	K*	K*
rs140504	A/G	G*	G	G*	G*	G*	G*	G*	R	R	G*	G	G
rs180817	G/A	R	R	NP	NP	R*	R	R*	R	R	A*	R*	-
rs56073544	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	Y*	-	-	K*	K	K*	-	-	-	-	-
rs9608100	A/G	-	-	-	-	-	R*	-	-	-	R	R*	R
rs11912657	C/T	Y*	-	-	-	-	Y*	-	-	Y*	Y	Y	Y
rs79279169	C/A	-	-	-	-	-	-	-	-	-	-	-	Y*
rs56164415	G/A	-	-	NP	NP	-	R	-	-	-	R	R*	NP
rs28383487	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7124442	C/T	T*	T*	Y	Y	T*	Y*	T	-	Y*	Y	Y	Y*
rs2353512	T/C	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
rs11030099	C/A	M*	M	-	-	M*	M	M	-	-	-	-	-
rs41282916	G/A	-	-	R*	R*	-	-	-	-	-	-	-	-
rs11030100	G/T	K	K	-	-	K*	K*	K	-	D*	-	-	-
rs6265	C/T	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs181392	T/C	Y*	C*	NP	NP	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs2305001	T/C	K*	-	-	K*	-	K*	K*	K*	B*	-	-	-
	A/C	-	-	-	-	M	M	M	-	M*	-	-	-
	G/A	K*	-	-	D*	-	N*	-	-	R*	-	R*	-
rs11538	A/G	R*	R*	-	-	-	-	-	-	-	-	-	-
rs8190315	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	Y*	-	-	Y*	-	-	Y
rs181390	A/G	G	G	-	-	R*	R*	R	R*	R	R*	R*	R*
	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs181391	G/A	R*	R	NP	NP	R*	R	R	R*	R	-	-	R*
rs2072392	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1042489	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs2239680	T/C	Y*	Y	C	Y	Y	Y	Y	-	Y	Y	Y	-
rs1042542	T/C	Y	Y	Y*	Y	C*	Y	C*	Y*	Y*	Y	Y	Y*
rs2071214	G/A	R*	R*	R*	R*	A*	R*	R*	R*	A*	R*	R*	R*
rs9904341	G/C	-	-	NP	NP	low_cov	S*	-	C	S*	S*	S*	S*
rs17882360	A/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs1042541	A/G	R	R*	R*	R	R*	R*	R*	-	R	R	R	-
rs4789560	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs2661694	C/A	M*	M*	M*	M	M	M	M	M*	M	M	M	Y*
rs1042689	C/T	T*	T	NP	NP	NP	NP	NP	-	-	Y*	Y*	NP
rs3816668	T/C	Y	-	NP	NP	Y*	Y*	Y	C	Y	Y	Y	Y*
rs1042701	G/A	-	-	NP	NP	low_cov	-	R*	NP	NP	NP	NP	NP
rs2306234	T/C	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*
rs2250788	A/G	R	R	R*	R	R	R*	R*	R*	G	R*	R*	G

rs922483	C/T	Y	Y	-	-	Y*	Y	Y	Y*	Y	-	-	Y
rs7001	T/C	-	-	NP	NP	-	Y*	-	Y*	Y*	-	-	C
rs79619458	G/A	-	-	-	-	-	D*	-	-	-	-	-	-
rs80055120	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2229777	T/C	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
rs77242743	C/A	M*	M*	M*	-	M	M	M	-	M*	-	-	M*
	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
rs17563	A/G	R	R*	R*	R	G*	R*	R*	-	R	-	-	R*
rs74054236	G/A	-	-	-	-	-	R*	-	-	-	R	R	-
rs1061157	G/A	R	R*	-	-	R*	R*	R	-	-	R	R	-
rs1048829	T/G	-	-	K*	K	K	G	K	K	G*	-	-	G*
rs17199249	T/G	K	K	-	-	-	-	-	-	-	K	K*	-
rs55722784	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs12987781	C/T	Y	Y	-	-	-	-	-	-	-	Y*	Y*	-
	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs3731696	A/G	R	R	-	-	-	R*	R*	-	-	R	R	NP
rs17199242	T/G	K*	K	NP	NP	-	-	-	NP	NP	NP	NP	NP
	C/T	M*	-	-	-	-	M*	-	M*	M*	M*	-	-
rs6435156	C/T	T*	Y	-	-	Y	Y*	Y	-	Y*	T	Y	NP
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2228545	G/A	-	-	R	R	-	-	-	-	-	R*	-	-
rs7600694	G/A	R*	R	-	-	-	-	-	-	-	R*	R*	NP
rs12631733	C/T	Y	Y	Y	Y	Y*	Y*	-	Y	Y	-	-	Y
rs3814398	C/T	Y	Y	Y	Y	-	Y*	-	-	Y*	-	-	Y
rs7622601	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs9823770	C/T	-	-	-	-	-	-	-	-	Y*	Y	Y	Y*
rs3814405	G/T	-	-	-	-	K*	K	K	-	K*	-	-	-
rs9819129	C/T	Y*	Y*	-	-	-	-	-	-	Y*	Y	Y	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3930154	C/G	S*	S	G	S	S*	S*	-	G	S	S	S	S*
rs4682130	C/G	S*	S*	G	S*	S*	S*	S*	S*	S	S*	S*	S*
	C/T	Y*	Y*	-	Y*	-	B*	-	-	Y*	-	Y*	Y*
rs9843707	T/C	-	Y*	Y*	Y	-	-	-	Y*	Y*	Y	Y*	Y*
rs2036282	A/G	R	R*	R	R	-	R*	-	R	R	-	-	R
GA003496	C/T	-	-	-	-	Y	Y*	Y	-	Y*	-	Y*	S*
	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs775222	G/C	S	S*	S*	S*	-	-	-	S*	S*	-	-	NP
rs3995908	G/A	-	-	-	-	-	-	-	-	-	R	R	R*
rs2649878	A/G	R	R*	R*	R*	R*	R*	R*	R*	R	R*	R*	R*
rs2650100	G/A	-	-	R*	R	-	-	-	-	R*	R	R*	-
rs9822391	G/C	-	-	S*	S*	-	R*	-	-	-	-	-	-
rs11710894	C/T	Y	Y	Y	Y	Y*	Y*	-	Y	Y	-	-	Y
rs35902417	C/T	Y	Y	-	-	-	-	-	Y	Y	Y*	-	-
rs16860758	C/G	S	S*	S	S	-	S*	-	S	S	S*	-	S
rs13094203	G/A	-	-	-	R*	-	-	-	-	-	R*	R	-
rs9849714	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
rs9874603	C/T	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
rs12492273	C/A	M	M	M	M*	-	-	-	M	M	-	-	M
	G/T	-	-	-	-	-	-	-	-	-	-	-	-

rs12233575	A/C	M	M	-	-	M*	M	M*	-	-	-	-	-
rs775228	A/G	R	R*	R*	R*	R	R	R	R	R	R*	R*	R
rs9648696	***T/C***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	T/C	**-**	**-**	***Y****	***Y***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
rs3829814	***A/G***	***R***	***R***	**-**	**-**	***R***	***R***	***G****	**-**	***R****	***R***	***R****	**-**
rs1799967	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs16940	A/G	R	R	-	-	R*	R*	-	R	R	R*	-	-
rs16941	T/C	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs1800744	C/A	-	-	-	-	-	-	-	-	M*	-	-	-
rs799916	T/G	K*	K	-	-	-	-	-	K	K*	-	-	-
rs1060915	A/G	R	R	-	-	-	-	-	R	R	-	-	-
rs4986852	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs12516	G/A	R*	R	-	-	-	-	-	R	R*	-	-	-
rs8176318	C/A	M	M	-	-	-	M*	-	M	M	-	-	-
rs1799950	T/C/-	-	-	W*	-	-	Y*	-	-	Y*	-	-	Y
rs799917	G/A	R	R	-	-	-	-	-	R	R	-	-	-
rs1799949	G/A	R*	R*	-	-	R*	D*	R*	R	R	R*	-	R*
rs1799966	T/A	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs80357956	TT/-	Y	Y	-	-	-	Y*	-	Y	Y	-	-	-
rs15869	A/C	-	M*	-	-	M	M	M*	M*	M*	-	-	M
rs1799943	G/A	A*	R	-	-	R*	R*	R*	-	-	-	-	NP
rs1799955	A/G	R*	R	-	-	R	R	R	R	R	-	-	R*
rs28897749	G/C	-	-	R	R	-	-	-	-	R*	R	R	-
rs11571833	A/T	-	-	-	-	-	-	-	-	-	W	W*	NP
rs169547	T/C	Y*	Y*	C*	C*	C*	Y*	C*	Y*	Y*	C*	C*	C*
rs1799954	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs144848	A/C	-	M*	M*	C*	M	M	M	-	M*	C*	C*	-
rs4987117	C/T	T	Y	-	-	-	-	-	-	-	-	-	-
rs1801406	A/G	R	R	-	-	R*	R	R	R	R	-	-	R*
rs4986764	A/G	R*	R*	R	R	R*	-	-	R	R	R	R	R
rs4986765	T/C	Y*	Y	Y	Y	-	Y*	-	C	Y	Y	Y	C
rs7213430	G/A	A	A*	NP	NP	R*	-	-	A*	R*	-	R*	-
rs4986763	A/G	G*	G	R*	-	-	-	-	G	R*	NP	NP	NP
rs12973169	G/A	-	-	-	-	R*	R	R	-	R*	-	-	K*
rs61868960	T/C	-	-	NP	NP	-	-	-	C	Y	NP	NP	Y*
rs4072884	C/T	Y	Y	Y*	Y	-	-	-	T*	Y	T*	Y*	-
rs6578412	T/C	Y*	Y*	C*	C*	Y*	Y*	Y	C*	Y	Y*	Y*	C*
rs1574122	T/C	Y	Y*	-	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y
	G/A	-	-	-	-	-	K*	-	-	-	-	-	-
rs1881505	T/C	C*	C*	NP	NP	NP	NP	NP	C*	C	NP	NP	NP
rs61867659	C/G	-	-	-	-	-	-	-	-	-	S*	G*	-
rs1135363	G/A	-	-	R	R	R*	R	R	-	-	-	-	-
rs700	T/G	K*	K*	K*	K*	K	K*	K	K	K	K	K	K
rs1057403	C/T	-	-	Y	Y	Y*	Y	Y	-	Y*	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11596007	A/C/G	-	-	-	M*	-	M*	-	-	M*	-	-	M*
rs1045324	A/G	R*	R*	R	R	G*	R*	R*	R	R	R	R	R*
rs4919551	C/G	-	-	-	-	-	-	-	-	-	S*	S	-
rs11595968	A/G	R	R	-	-	R	R*	R	R	R	-	-	-
rs4151060	G/T	-	-	-	-	K	K	K	-	K*	-	-	-

rs4919552	G/A	R	R	R*	-	R	R*	R	R	R	R	R	-
rs1045232	C/T	Y*	Y	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*
rs3127242	C/T	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y	-
rs1801376	G/A	A*	A	-	-	R*	R*	R	A*	A	R*	R*	A*
rs2277559	A/G	V*	R*	-	R*	R	R	R	R*	R	R	R*	R*
	A/G	-	-	-	R*	R	R*	D*	-	-	-	-	-
rs1801389	G/A	-	-	-	-	R	R*	R	-	R*	R	R*	NP
rs1047130	G/A	R*	R*	-	-	-	-	-	R*	R*	-	-	-
rs7897156	C/T	Y	Y*	-	-	-	-	-	-	-	-	-	-
rs7095154	C/T	-	Y*	-	-	-	-	-	-	-	-	-	NP
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs9767113	T/C	Y*	Y*	NP	NP	-	Y*	Y*	-	-	NP	NP	-
rs4870509	C/G	S*	S*	-	S*	S*	G	S	-	S*	G	G*	NP
rs12174349	G/A	R*	R*	NP	NP	NP	NP	NP	-	-	A*	A*	-
rs56246065	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs9800736	A/G	R	R	-	-	-	G	R	-	R*	G	G*	NP
rs3924871	G/A	R	R	R*	R	R	R	R	-	R*	R*	R*	-
rs3798761	A/G	R	R	-	R	R	R	R	R*	R*	R	R*	R*
	A/G	-	V*	-	-	-	-	-	-	-	-	M*	R*
rs2296833	C/T	Y	Y	-	-	Y*	-	Y	-	-	Y*	Y	NP
rs17153510	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17153494	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs2016844	C/T	Y*	Y*	-	-	Y	Y	Y	-	Y*	-	-	-
rs1133833	G/A	R*	R*	-	-	R*	R	R	-	R*	-	-	-
rs35131475	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3784246	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1563102	G/C	S*	S*	-	-	-	-	-	-	-	S*	S	S
	C/T	-	-	-	-	Y*	Y	Y*	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35870568	T/C	-	-	-	W*	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs36032407	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
rs60574723	C/T	Y	Y	-	-	-	M*	-	-	Y*	-	-	Y*
rs3742950	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs12902295	T/C	-	-	-	-	-	-	-	-	Y*	-	-	-
rs12905237	C/G	-	Y*	-	-	-	S*	-	-	-	-	-	-
rs12902137	T/C	-	Y*	-	-	-	-	-	-	-	-	-	Y*
rs2602618	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1046058	A/G	-	-	-	-	R	R*	R	R*	R	-	-	-
rs1056021	A/G	R*	R	-	-	-	-	-	-	R*	R	R	R
rs1046927	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs10184179	C/T	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*
rs8243	C/A	M*	A	-	-	-	-	-	M	M	M	M*	NP
rs2160395	C/T	Y	Y	-	-	-	Y*	-	Y*	Y	Y	Y	Y
rs6472285	A/G	R*	-	-	-	-	-	-	-	-	-	-	-
rs2071676	G/A	R*	R*	-	-	-	R*	-	-	R*	R*	R	R*
rs12553173	T/C	-	-	Y*	Y	-	-	-	Y	Y	Y	Y	-
rs2071675	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3829078	A/G	-	R*	R	R	-	R*	-	R	R	R	R	-

rs55790626	A/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11555189	G/A	-	-	-	-	R*	R	R	-	R*	R	R	-
rs7566851	T/G	K	K	-	-	-	-	Y*	Y*	-	-	-	K
rs7596575	A/G	-	-	-	-	-	R*	R*	-	-	-	-	R*
rs10006	T/C	Y	Y	-	-	-	-	-	-	-	-	-	NP
rs8159	G/A	-	-	-	-	R	R*	R	R	R	R	R	R
	C/T	-	-	-	-	-	-	-	-	-	Y	-	-
rs3738725	T/C	Y	Y*	-	-	Y*	H*	-	-	Y*	Y	Y	Y*
rs2256060	T/C	-	-	-	-	Y*	Y	-	-	-	-	-	Y
rs10482	G/A	R*	-	-	-	R	R*	R	-	R*	-	-	-
rs12593	C/T	Y	Y	-	-	-	Y*	-	-	-	Y*	Y	S*
	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs11549708	G/A	R*	R*	-	-	-	-	-	-	R*	R	R	-
rs7593448	C/G	S	S	S*	S*	-	-	-	-	-	-	-	S
	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs2304684	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3739092	C/T	Y	Y	Y*	Y	-	Y*	-	-	Y*	-	-	Y*
rs1141313	A/G	R	R	R*	R	-	-	-	-	R*	-	-	R
rs61741874	T/C	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2431635	G/T	K	K	K*	T	-	-	-	-	-	-	-	-
rs2431637	G/A	R	R	-	-	-	R*	-	A	R	R*	R	R
rs1047721	T/C	B*	Y	C*	C	-	-	-	C	Y	Y*	Y	Y*
rs1757063	G/A	R*	R	-	-	-	-	-	R*	R	R*	R	R
rs1757051	C/G	S	S*	-	-	S*	S*	S*	S*	S	S*	G*	S*
rs1644394	C/T	Y*	Y	-	-	-	Y*	-	Y	Y	Y*	Y	Y
rs1757064	T/G	K	K	K	K	-	-	-	-	-	-	-	-
rs2431622	C/A/-	M	M*	M	A	-	S*	-	A*	M	M*	M*	M
rs2431623	A/G	R*	R	G	R*	-	R*	-	G*	R*	R*	R*	R*
rs2431636	G/A	R	R	R	A	-	R*	-	-	-	-	-	-
rs2431634	A/G	D*	R	R	G	R*	-	-	G	R	R*	R*	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs756002	G/T	K	K	T	T*	-	-	-	-	-	R*	-	-
rs1644395	A/G	R	R	-	-	-	R*	-	R	R	R*	R	R
rs2431621	T/G	K	K	K*	K*	-	B*	-	G	K	K	K	K
rs7067652	G/T	K*	-	-	-	K	K*	K	-	-	-	-	-
rs2482073	A/G	R*	R	-	-	-	-	-	R*	R	R*	R	R
rs1757065	A/G	R	R	R*	R	-	-	-	-	-	-	-	-
rs1644397	G/A	R	R	R*	R	-	-	-	-	-	-	-	-
rs1644399	T/C	Y	Y	Y	Y*	-	-	-	-	-	-	-	-
rs1644398	T/C	Y	Y	Y	Y*	-	-	-	-	-	-	-	-
rs15980	G/A	R	R	-	-	-	R*	-	R	R	R*	R	R
rs7500	C/T	Y*	Y*	-	-	-	-	-	T	Y	NP	NP	NP
rs11119314	A/G	R*	R	R*	R*	R*	R	R	-	R*	R	R	R
rs11119315	G/A	S*	S*	R*	R	R*	-	R*	-	-	S*	R*	-
rs76080856	T/G	-	-	-	-	-	K*	-	-	K*	-	-	K
rs2206107	C/T	-	-	Y*	T	-	Y*	-	-	Y*	-	-	T*
rs2163766	A/G	G*	G	G*	G*	G*	G*	G*	G*	G*	NP	NP	R*
rs72837583	C/T	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	-
rs55976097	T/C	-	-	-	-	Y*	Y*	Y*	C	Y*	-	Y*	C

rs873592	G/A	R*	-	-	R*	-	-	-	A*	R	-	-	-
rs957709	T/C	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*
rs10038918	G/A	-	-	-	-	-	D*	-	-	-	-	-	-
rs2241694	A/G	R*	R*	G*	R*	G	R*	R*	R*	R*	R*	G	R
rs873593	C/T	Y*	-	-	-	-	Y*	-	Y*	Y	-	-	-
rs6869490	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
rs6882623	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs34266615	G/A	A	R	R*	R*	R*	R	R	R	R	R	R	-
rs7732895	A/G	R*	R*	G*	G*	R*	R	G*	G*	R*	G*	G*	D*
rs13173132	C/T/-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	C/T	Y	Y	-	-	-	-	-	Y*	Y	-	-	-
rs917791	A/G	R	R	-	-	R*	R	R*	R	R	-	-	R*
	A/G	R*	R	-	-	R*	R*	R*	R	R	R*	-	R
rs1127065	C/T/A/G	Y	Y	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y
	A/G	R*	R*	-	-	R*	R*	R*	R*	R*	R*	-	D*
rs2075069	A/G	R	R	-	-	R	R	R	R	R	R*	R*	R*
	G/A	R	R	R*	R*	R*	R	R*	R*	R	R	R	R
rs17046072	C/T	-	-	-	-	-	-	-	-	-	Y*	Y*	NP
rs8175	A/G	R	R	R	R	-	-	-	-	R*	-	-	R
rs9929	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	NP
rs6833561	T/C	C	Y*	NP	NP	-	-	-	-	-	Y*	-	Y*
rs12511604	C/T	Y	Y	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	T*
	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs9812	A/T	-	-	-	-	-	-	-	-	-	W	W	-
rs2306327	A/T	-	-	-	-	-	W	W	-	W*	-	-	W
rs2675671	C/T	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	-	-	Y
rs55640406	G/A	-	-	-	-	-	R*	-	-	R*	-	-	-
rs35257352	T/C	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs3843939	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	Y
rs7080350	G/A	R	R	R	R	R*	R*	R	R*	R	-	-	R
rs1044612	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs27881	G/C	-	-	-	-	S*	S	S*	C	C	-	-	S*
rs442361	C/T	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs31619	G/T	K*	K*	-	-	T	D*	T*	-	K*	-	-	NP
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11958465	T/C	Y	Y	-	-	Y*	Y	Y	-	-	-	-	Y*
rs42670	A/G	-	-	NP	NP	R*	R	R*	R	R	-	-	R*
	G/C	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs1063843	T/C	Y*	C*	C*	Y*	Y*	Y	Y*	C	Y	C*	Y*	Y*
rs1653587	A/G	R	R*	-	-	-	-	-	-	-	-	-	-
rs1653590	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs7296196	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2686367	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	Y*	Y	Y	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11065502	G/C	R*	R*	R*	R*	-	-	R*	R*	R*	R*	R*	R*

rs7965129	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1653586	G/T	K	K	-	-	-	-	-	-	-	-	-	-
rs2567982	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs1653589	C/T	Y	Y	-	-	-	S*	-	-	-	-	-	-
rs1653588	T/A	W	W	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	K	K*	-	-	-	-	-	-	-	-	-	-
rs3817190	T/A	W	W	W*	W*	A	A*	A*	-	W	A	A*	-
rs62260755	C/G	S	S	-	-	S*	S*	S	-	-	-	-	-
rs6797500	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3796386	G/A	R*	R	R*	R*	D*	R	R*	R*	R*	R*	R*	R*
	A/G	R*	G	R*	-	G*	R*	G	R*	R*	G	R*	NP
rs74685087	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2229668	C/T	S*	-	Y	Y	Y*	Y*	S*	S*	Y*	-	S*	B*
rs6885	T/G	K*	K*	K	K	K*	K*	-	-	K*	-	-	-
	A/G	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs62162752	A/C	M*	M*	-	-	-	-	-	-	-	M*	M*	C
rs2229669	C/T	-	H*	Y*	Y	Y*	Y*	-	-	Y*	-	-	-
rs11687035	T/G	K*	K	-	-	-	-	-	-	-	K*	K*	K
	T/C	Y	Y	Y*	Y	Y*	Y*	-	-	Y*	Y	Y*	Y*
rs72831546	G/C	-	-	-	-	-	-	-	-	-	R*	-	-
	C/T	-	-	Y*	-	-	-	-	-	-	-	-	-
rs1135314	A/G	R	R	-	R	low_cov	V*	M*	-	V*	V*	M*	R*
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs59902911	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3812555	C/T	Y	Y	Y	Y*	-	Y*	-	-	-	-	-	-
rs10781499	G/A	R	R	R	R	R*	R*	-	R*	R*	-	-	R*
	C/G	S	S	M*	M*	M*	M*	M*	M*	M*	M*	-	M*
rs3812556	A/G	-	-	-	-	-	R*	-	-	-	-	-	-
rs4073153	A/G	R	R	R	R	R*	R*	-	-	R*	-	-	R*
rs9411205	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11145750	A/G	R	R	R*	R	-	-	-	-	-	-	-	R*
rs4077515	C/T	Y	Y	Y*	Y	-	Y*	-	-	Y*	-	-	-
rs7481584	G/A	R*	R*	R*	R*	R	R	R	R	R	R*	R*	R*
rs729662	G/A	R*	R*	-	-	R	R	R	R*	R	R*	R*	R
	G/T	-	-	-	-	K	K	K	-	K*	-	-	R*
rs434114	A/G	-	-	-	-	R*	R	R*	G	R	R	R	R*
rs80872	G/T	-	-	-	-	K	K	K	K*	K	K*	K*	K*
rs399565	C/T	-	-	NP	NP	low_cov	Y	Y*	T*	Y	NP	NP	T*
rs12363575	A/G	R	R	R	R	-	-	-	-	-	-	-	-
rs7950766	A/G	R*	R	NP	NP	R*	R*	R*	R*	R*	R*	R*	R
	G/A	-	R*	-	-	R	R	R	-	R*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs13006529	T/A	W	W	W*	W*	W	W	W	W*	D*	W	W	W
rs17860405	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs41369551	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3900115	A/G	R	G	R*	R*	R*	R	R	G	R	R	G	R*
rs16836789	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs13010627	G/A	-	-	R	R	R	R	R	R*	R	-	-	-

rs4647288	G/A	-	R*	-	-	-	-	-	-	-	-	-	-
rs4647342	T/A	-	-	-	-	W*	W	W*	-	W*	-	-	NP
rs3212147	T/G	-	-	-	-	-	-	-	-	-	-	-	G
rs4647322	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4647297	G/C	-	-	-	-	S	S	S	-	S*	-	-	-
rs3212149	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1880651	T/A	W*	W*	A*	W*	W	W*	W*	W	W	W*	W*	W*
rs4647321	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs72689236	T/C	-	-	NP	NP	NP	NP	NP	-	-	-	-	NP
rs1049253	A/G	R	R	-	-	R*	R*	R	-	R*	-	-	NP
rs4647603	C/T	-	-	-	-	Y*	Y*	Y	-	Y*	-	-	-
rs6948	G/T	K	K	-	-	K*	K	K	K	K	-	-	-
rs1049216	A/G	-	-	-	-	-	-	-	R	R	-	-	NP
rs72978981	G/C/A	-	S*	-	S*	-	-	-	-	-	-	-	-
	A/G	-	-	R*	R	-	-	-	-	-	-	-	R*
	T/C	B*	Y*	Y	Y	B*	C*	Y*	Y*	B*	Y*	Y*	Y*
rs56226603	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	NP
rs1801319	C/T	Y*	-	Y	Y*	-	-	-	-	-	-	-	-
rs55634858	C/G	-	S*	S*	-	-	-	-	-	-	-	-	NP
rs45483102	T/A	-	-	-	-	-	-	-	-	W*	-	-	W
rs45464699	C/T	-	-	Y	Y	-	-	-	-	-	-	Y*	-
rs507879	T/C	-	Y*	NP	NP	Y*	Y	Y*	-	Y*	Y*	Y*	NP
rs45619739	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs523104	G/C	S*	S*	S*	S*	S	S*	S	S	S	S	S	S
rs1042891	A/G	-	R*	R*	-	-	-	-	G	G*	G*	R*	NP
rs10787498	T/G	K	K	K	K	-	Y*	-	-	-	-	-	K*
rs28411397	G/C	S*	-	-	-	S*	V*	-	S	S	S	S	S
rs2227309	G/A	R*	-	-	-	R*	R*	-	R*	R	R*	R	R
rs7921977	C/T	Y	Y	T*	T*	-	Y*	-	T*	T	Y*	Y	Y*
rs11593766	T/G	-	-	-	-	-	-	-	-	-	-	-	K
rs11196448	C/T	-	-	Y	Y	-	Y*	-	Y	Y	-	-	-
rs4353229	T/C	Y*	Y*	-	Y*	-	Y*	-	Y	Y	Y	Y	Y
rs2227310	C/G	S*	S*	-	-	S*	S*	-	S*	S	S*	S	S*
rs1045494	T/C	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs3769823	A/G	R*	R	R*	R*	R*	R	R*	R*	R	R	R	R*
rs7568770	A/G	G*	R*	R*	G*	G*	R*	G*	R*	G*	G*	G*	G*
rs3769824	T/C	Y	Y	-	-	-	K*	-	-	-	-	-	-
rs17860422	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs1861269	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs1045487	G/A	-	-	-	-	R	R*	R	-	R*	-	-	-
rs4381764	T/C	-	-	-	-	-	-	-	-	-	-	-	Y
rs1052571	G/A	R	R	-	-	R	R	R*	R	R	R*	R*	-
rs4593819	C/G	S	S	-	-	G*	S	S*	S*	S	S*	G*	S*
rs4645983	G/A	R	R	-	-	R*	R	R	-	R*	-	-	-
rs884363	C/A	A	M	-	-	A*	M*	A*	M*	M	A*	M*	-
rs4646100	C/T	-	-	-	-	Y*	Y	Y	Y*	Y	T	T*	-
rs4646103	T/A	W	W	NP	NP	W*	W*	W	-	-	-	-	-
rs2308941	G/A	-	R*	-	-	-	-	-	R	R	R	R	R*
rs1052576	T/C	Y	Y	NP	NP	C*	Y*	Y*	Y	Y	Y*	Y*	-

	A/G	R	R	R*	R*	R*	R*	R*	R	R*	R	R*	-
rs1052121	C/G	S*	S*	-	-	-	-	-	-	-	-	-	S
rs11604328	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1918	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2509671	C/A	M*	M*	-	-	-	-	-	-	-	-	-	M
	A/G	-	-	-	-	-	-	-	-	-	-	-	R
rs75850647	T/G	K	K*	-	-	-	-	-	-	-	-	-	K*
	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs11217234	A/G	R*	R	-	-	-	-	-	-	-	-	-	R
rs2511844	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1047417	A/G	R	R	-	-	-	-	-	-	-	-	-	R
rs9954602	A/C	M*	M	NP	NP	M*	M*	M	-	-	-	-	NP
rs7985423	C/G	S	S	-	-	NP	NP	NP	S*	S	-	-	-
rs769242	T/C	C*	C*	Y*	Y*	C*	Y*	C*	C*	C*	C*	C*	C*
rs769238	G/A	R	R	R*	R	-	R	R	R*	R	R	R*	R*
rs164390	G/T	K	K	-	K*	K	K	K	K	K	K	K	K
rs3212896	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs678653	C/G	S	S	S*	S*	S	V*	S	S*	S	S	S	S*
rs7177	C/A	M	M	M*	M	M*	M*	M*	M*	M	-	-	M*
rs3862792	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3217926	T/C	-	-	-	-	Y	Y*	Y*	Y	Y	-	-	Y
rs1049612	A/G	-	-	-	-	low_cov	G	R	R*	R*	NP	NP	-
rs3217786	T/C	Y*	C*	NP	NP	low_cov	Y*	Y*	Y*	Y*	C	C*	NP
rs3217925	C/T	Y	Y	Y*	Y	-	-	-	Y	Y	Y	Y	-
rs3217805	C/G	S*	S*	G*	G*	-	-	-	-	-	S*	S*	G
rs3217933	T/C	Y	Y	-	-	-	Y*	-	-	Y*	-	-	Y
rs1049606	C/T	Y	Y	-	-	Y	Y	Y*	-	Y*	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs9529	T/C	Y	Y	-	-	Y	Y	Y	Y*	Y	Y	Y	Y*
rs1051130	A/C	M	M	-	-	M	M*	M	M	M	M	M	M*
	T/G	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs1406	C/A	-	-	-	-	M	M	M	-	M*	-	-	M
rs3218045	T/C	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs7257694	C/T	Y*	Y	-	-	Y	Y	Y	Y	Y	Y	Y	-
rs2266692	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2230641	A/G	-	-	-	-	G	R*	G*	-	R*	R*	R*	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2271992	C/T	Y	Y	-	-	-	-	-	-	-	Y	Y	-
rs576555	G/C	S	S	S*	S*	S	S	S*	S*	S*	S*	S*	S*
rs665983	C/T	Y	Y	T	Y*	Y	Y	T	Y*	Y*	T	T	Y*
rs1167	T/C	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y	Y	Y*	Y*	Y
rs28364958	G/A	-	-	R*	R	-	R*	-	-	-	-	-	-
rs73464513	G/A	R*	R	-	-	low_cov	-	-	-	-	-	-	NP
rs35466124	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2351528	A/G	R	R*	-	-	G*	R	R	R*	R*	R	R*	NP
rs3751645	T/G	-	-	-	-	K	K	K	K	K	G*	G*	-

rs3012519	A/G	R*	R*	NP	NP	G*	R*	G*	G	G*	R*	G*	G*
rs6907830	A/G	-	-	-	-	-	V*	-	-	R*	-	R*	R
rs2917887	T/G	K*	K*	G*	K*	G	K*	K*	K*	K*	G*	K*	K*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs5023688	G/A	R	R	-	-	R*	R	R*	R*	R	A	A	-
rs41266753	C/T	-	-	Y	Y	Y*	Y	Y	-	Y*	-	-	Y*
rs72959386	T/A	-	-	NP	NP	W*	W	W	-	W*	-	-	NP
rs75719906	C/G	-	-	-	-	-	-	-	-	-	-	-	S
rs1437576	G/A	-	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs3012518	A/G	R	R	R	R	R	R	R	R	R	-	-	R
rs3741368	G/A	-	-	-	-	R*	R*	R*	R*	R*	R*	-	NP
rs74818906	C/T	-	-	-	Y*	-	-	-	-	-	-	-	-
rs3741367	T/C	-	-	-	-	Y	Y*	Y	Y	Y	Y	Y	Y
	T/G	-	-	-	-	-	-	-	-	-	-	-	K
rs55770907	G/C	-	-	-	-	S*	S	S	-	-	-	-	NP
rs11715122	A/C	-	-	-	-	-	-	-	M	M	-	-	M
	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs3206652	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs2271054	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs4974386	G/C	S	S*	-	-	-	S*	-	-	-	S	S	-
rs78567403	C/T	-	-	-	-	-	M*	-	-	-	-	-	-
rs9855486	T/A	W	W	-	-	-	K*	-	-	-	W	-	-
rs9879947	G/A	R	R	R*	R*	R	R*	R*	R*	R*	R	R	R*
rs4755266	T/C	Y*	C*	C*	C*	C*	Y*	Y*	C*	Y*	C*	C*	Y*
rs74375347	G/A	-	-	NP	NP	-	R*	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs883752	C/T	Y*	Y	NP	NP	Y*	Y	Y	-	Y*	Y*	Y*	Y*
rs594529	T/C	Y*	Y*	C*	C*	C*	Y*	Y*	C*	Y*	Y*	Y*	NP
rs7516109	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs1063302	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs61752469	G/A	-	-	-	-	-	-	-	R	R*	-	R*	-
rs2270694	G/A	-	-	-	-	-	-	-	-	-	R	R*	NP
rs527644	A/T	W*	W*	NP	NP	low_cov	W*	T	T*	W*	T*	T*	W*
rs529224	G/C	S*	S*	-	-	S	S	S	-	S*	-	-	S*
rs10820739	A/G	R	R	R	R*	-	R*	-	-	R*	-	-	R
rs10991367	T/C	Y	Y	Y*	Y	-	-	-	-	Y*	-	-	Y
rs3802443	A/G	R	R	R*	R*	-	-	-	-	-	-	-	R
	C/T	-	-	-	-	-	Y*	-	-	-	Y	Y	-
rs7867618	A/G	R	R	R*	R	-	-	-	-	R*	-	-	R
rs13286011	C/T	-	-	-	-	-	-	-	-	-	-	-	V*
rs1051097	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs839763	T/C	-	Y*	-	-	-	-	-	Y	Y	Y	Y	-
rs3731487	C/T	-	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs3731494	G/A	-	-	-	-	R*	R	R	-	-	-	-	-
rs11087605	C/T	-	-	-	-	Y	H*	Y	-	-	-	Y*	-
rs11087604	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs11087603	C/T	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs8156	G/C	-	-	-	-	S	S*	S	-	S*	-	-	-
rs2228464	C/T	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-

	A/C	-	-	NP	NP	M*	M	M	-	-	-	-	-
rs6116042	T/A	W*	W*	-	W*	W*	W*	W*	W*	W*	W*	W*	-
rs1056720	C/T	Y*	Y*	Y	Y	-	Y*	-	Y*	Y*	Y	Y	-
rs3734166	G/A	-	-	-	-	R*	R*	R*	-	-	-	-	-
rs1042124	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6861656	T/C	Y*	C*	-	Y*	Y*	C	Y	C	C	C	C	Y*
rs41276777	G/A	-	-	-	-	-	R*	-	-	-	R	R*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17538328	A/G	-	-	R	R*	-	-	-	R*	R	-	-	-
rs3801238	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3735135	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs9487532	T/C	-	-	C*	C	-	-	-	-	-	-	-	NP
rs2691197	C/T	Y*	Y*	-	-	-	-	-	Y*	Y*	Y	Y	NP
rs1279578	T/G	-	-	-	-	-	-	-	K	K	K*	K*	-
rs1543991	T/C	Y*	Y	-	-	-	-	-	Y*	Y	Y*	Y*	NP
rs9487533	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs13220055	G/A	R*	R	-	-	-	-	-	-	-	-	-	NP
	T/A	-	-	-	-	-	-	-	W	W	-	-	-
rs74912293	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs16846933	A/C	-	-	-	-	-	M	M*	-	-	NP	NP	NP
rs12128753	A/C	-	-	-	-	-	-	-	-	-	W*	-	-
	C/G	S	S*	-	-	-	-	-	-	-	S*	S*	-
rs1045247	A/G	R*	R*	R	R	R*	R*	R*	R	R	R*	R*	R
rs3795446	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	Y*
rs1045252	A/G	D*	R*	-	-	-	-	-	-	-	R*	R*	-
rs2458521	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y*	Y*	-
rs1801783	T/C	Y	Y*	-	-	Y*	Y*	-	-	Y*	Y	Y	Y*
rs1929861	T/C	Y	Y	-	-	Y*	Y	Y	-	Y*	Y	Y*	-
rs1045286	G/T	K	K	-	-	-	-	-	-	-	K	K*	-
rs77722489	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35017425	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs1045287	T/C	Y	Y	-	-	-	-	-	-	-	Y*	Y*	-
rs3795451	C/T	Y	Y	-	M*	Y*	H*	-	M*	H*	H*	H*	N*
rs2297418	A/C	M	M	-	-	-	-	-	-	-	M	M*	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	R	R	-	-	-	-	-	R*	-	-
rs3795445	A/C	M	M	-	-	M*	-	-	-	-	M	M	-
rs2989946	G/A	R	R	R*	-	A	R*	R*	R*	R	R	R	R*
rs11585910	A/G	-	-	R*	R*	-	-	-	R	R	-	-	R
rs3768425	A/G	R	R	-	-	-	R*	-	-	-	R	R	-
	C/T	Y	Y	-	-	Y*	Y	Y	-	Y*	-	-	-
rs1045285	G/A	R	R	-	-	-	-	-	-	-	R*	R*	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1045290	A/G	R	R	-	-	-	-	-	-	-	R*	R	-
rs1186	A/T	W	W	-	-	-	M*	-	-	-	W	W	-
rs3768431	C/T	-	Y*	Y*	Y	-	-	-	Y	Y	-	-	Y
rs72632822	G/A	-	-	-	-	R*	R*	R*	-	R*	-	-	-
rs56311356	T/C	-	-	Y	Y*	-	-	-	-	Y*	-	-	-
rs3818694	C/T	-	-	-	-	Y*	Y	Y	Y	Y	Y	Y	T
rs3795449	T/G	K	K	-	-	K*	K*	-	-	K*	K	K	K*

rs11804613	T/C	Y*	Y*	-	-	Y	Y	Y	-	Y*	K*	-	Y*
rs2997438	T/C	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs2802269	G/A	R	R	R	R	R*	R*	R*	R*	R*	R*	R*	R*
	G/T	-	-	T*	K*	low_cov	-	-	T	K	-	-	-
rs653343	C/T	-	-	NP	NP	Y*	Y	Y	-	-	-	-	-
rs670358	G/A	-	-	-	-	R	R*	R	-	R*	-	-	-
rs71539681	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs3825015	T/C	-	-	C	C	-	Y*	-	C	Y	-	Y*	-
rs11231887	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
	T/C	Y*	C	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y
rs13706	G/A	-	-	-	-	R	R*	R*	-	-	-	-	R
rs4135010	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs1046622	A/G	-	-	R	R	-	-	-	-	-	-	-	NP
rs13447454	G/A	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	R
rs13447455	A/G	R	R	NP	NP	-	-	-	G*	R	R*	-	-
rs483532	A/G	G	G	G*	R	G	R*	R*	G	R*	R*	G*	NP
rs12125947	T/C	NP	NP	NP	NP	-	-	-	C	Y	NP	NP	NP
rs2306625	C/T	-	Y*	-	Y*	Y*	Y*	-	-	Y*	-	-	Y*
rs72659465	G/A	-	-	-	-	-	-	-	-	-	-	R*	-
rs11558851	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	-	-
rs3748680	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs7822	T/C	Y	Y	-	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*
rs559707	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs7526362	G/T	-	-	-	K*	-	K*	-	-	K*	-	-	K*
rs557897	G/T	K	K	-	K*	K	K	K	K*	K	-	K*	K*
rs33969373	C/T	Y	Y	-	-	-	-	-	-	Y*	-	-	-
	C/T	-	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	-
	T/C	-	-	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	-
rs1801552	T/C	Y	Y*	Y*	H*	Y*	C	H*	C	C	Y	Y	Y*
rs35187787	G/A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34813787	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2296405	T/C	Y*	Y*	C*	C	Y	Y	Y	Y	Y	Y*	C*	Y
rs8049247	C/A	M	M*	M	M*	-	M*	-	-	M*	M	M	Y*
rs1886699	G/T	T*	K*	T	T*	K*	K	K	T*	K*	K*	T*	NP
rs2296409	G/A	R*	R*	A*	A*	R	R*	R	R*	R	A*	A*	R
rs1126933	G/C	-	-	-	-	S	S	S	C	S	S	S*	S
rs17715450	C/A	M*	M*	A	M	M*	M	M	M*	M	M*	A*	M*
rs11644435	A/G	R*	R	R*	R*	-	R*	R*	-	-	R*	G	-
rs2296408	C/A	M*	M*	A*	M*	M	M	M	A	M	A*	M*	M
rs3213017	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1060373	G/A	R*	R	-	-	-	-	-	-	-	-	-	-
rs1871446	A/G	G*	G*	G*	G*	G*	G*	G*	G*	G*	R*	R*	NP
rs10711	T/G	K	K	-	-	-	-	-	K	K	K	K	K*
rs2261327	G/A	R*	A	R	R	R	R*	R*	R*	R	R	R	R
rs1946482	T/C	Y	N*	-	-	Y*	Y*	-	-	Y*	-	-	K*
rs8404	T/C	-	-	-	-	Y*	-	-	-	Y*	-	-	Y*
rs56242003	G/A	-	K*	-	-	-	-	-	-	-	-	-	-
rs465507	C/G	S	S	-	-	-	-	-	S	S*	S*	S*	-
rs460057	T/C	Y	Y	Y*	B*	Y	Y*	Y*	Y	Y	Y	Y*	Y
rs2162943	C/T	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y	-	-	Y

rs2115400	G/A	-	-	R	-	low_cov	A*	A	-	R	-	-	R*
rs12595968	G/T	-	-	K	K	-	-	-	-	-	-	-	-
rs11488591	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs9329573	G/C	S*	C	S*	C*	S*	S*	S*	S*	S*	S*	S*	S*
rs874516	T/C	Y	Y	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y*
rs72909014	T/C	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y
rs28649027	G/C	C	S*	S*	S*	-	-	-	S*	S*	S*	S*	-
rs9661285	G/A	R	A	R*	R*	A	R*	R*	-	R*	-	-	R*
rs79113395	G/A	-	-	R*	-	-	-	-	A*	R	R*	A	-
rs2179381	C/T	H*	H*	Y*	Y*	-	H*	-	Y	Y	Y	Y	-
rs2076329	T/C	Y*	C	NP	NP	-	-	-	Y*	Y*	-	Y	-
rs1059831	G/T/C/A	R	R	R	R	R	R	R	R	R	R	R	R*
rs72901775	T/C	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y
	G/A	R	R*	-	-	-	-	R*	-	D*	-	-	D*
rs1059830	A/G	R*	R*	G*	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs1137003	T/C	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y
rs72909028	C/G	S	S*	S*	S*	S	S	S	S	S	S*	S	S
rs72909030	A/G	R	R	R*	R*	R	R	R	R*	R	R	R*	R*
rs1137004	T/C	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
	T/C	Y*	Y*	-	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs35751611	C/A	NP	NP	M*	-	M*	M	M	M*	M*	-	-	NP
	C/T	-	Y*	-	-	Y*	Y	Y	Y	Y	-	-	-
rs11108452	T/C	-	Y*	Y*	Y*	low_cov	Y*	C	Y*	Y*	NP	NP	-
rs2069414	C/A	-	-	-	-	-	-	-	-	-	M*	M	-
rs2069398	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1045435	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2069441	C/T	-	-	-	-	-	M*	-	-	-	-	-	-
rs9278	C/T	Y*	Y*	-	Y*	low_cov	Y*	T	-	-	-	-	NP
rs2069442	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2069443	T/G	-	-	-	-	-	-	-	-	-	-	-	K*
rs2069450	A/G	R	R	-	-	-	-	-	-	-	R	R	-
rs2069454	C/G	S	S	-	-	-	-	-	-	-	S*	S	-
rs42035	A/G	-	-	-	-	-	-	-	R*	R*	-	-	-
rs3731373	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs42032	G/A	-	-	-	-	-	-	-	R*	R*	-	-	-
rs8179	T/C	C*	C*	C*	C*	C*	C*	Y*	Y*	Y	NP	NP	C*
rs4272	A/G	-	-	-	-	-	-	-	-	R*	-	-	NP
rs42030	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs42377	G/A	-	-	-	-	-	-	-	R*	-	-	-	NP
rs42038	C/T	-	-	-	-	low_cov	-	-	Y*	Y*	-	-	NP
rs2285332	G/C	S	S	S*	S*	-	-	-	-	-	-	-	-
rs42036	C/G	-	-	-	-	-	-	-	S*	S	-	-	S
rs42034	A/G	-	-	-	-	low_cov	-	-	-	-	-	-	NP
rs42031	A/T	-	W*	-	-	-	-	-	W*	W	-	-	-
rs42033	A/T	-	-	-	-	-	-	-	W*	W	-	-	-
rs74980371	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs42039	C/T	Y*	-	-	-	-	-	-	Y	Y	-	-	Y
rs2301556	G/A	R	R	-	-	-	-	-	-	-	R	R	-
rs998692	G/A	A*	R*	A*	A*	A*	R*	A*	R*	R*	A*	A*	A*

rs3217750	A/G	-	-	-	-	R	R	R	-	R*	-	-	R*
	G/A	R*	R*	-	-	-	R*	-	-	R*	R	R	R*
rs8083	G/A	R	R	R	R	R	R	R	-	R*	-	-	V*
rs3217751	A/G	R*	R	R	R	R	R	R	-	R*	-	-	R
rs7148292	A/G	R	R	-	-	R*	R*	R	-	R*	R	R	R*
rs11157737	G/A	-	-	R*	-	low_cov	A*	A*	NP	NP	R*	R*	NP
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs7148089	A/C	M	M*	-	-	M*	M*	M*	-	M*	M*	M*	M*
	C/A	-	-	M*	M	-	-	-	-	-	-	-	-
	A/C	V*	V*	M*	V*	-	M	M*	-	M*	M*	M*	V*
rs62320975	A/C	C*	C*	-	-	M*	C	M*	-	-	-	M*	NP
rs7668530	C/A	A*	M	-	-	M	M*	M	-	-	M	M	M
rs17280791	G/A	R	R	-	-	R	R	R*	-	R*	R	R	R*
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs17023372	G/C	-	-	-	-	-	-	-	S*	S*	-	-	NP
rs6457937	T/-/C	Y*	Y*	Y*	C*	C*	C	Y*	Y*	Y*	Y*	Y*	Y*
rs41272172	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs11550973	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs762624	A/C	M	M*	M	M*	-	-	-	M	M	M	M	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs1801270	C/A	-	-	-	-	-	-	-	-	M*	-	-	-
rs3176334	T/C	Y	C	Y*	Y*	-	K*	-	Y*	Y*	NP	NP	-
rs2395655	A/G	G	R	R*	R*	-	R*	R*	R	R	R	R*	R*
rs1059234	C/T	S*	-	-	-	-	-	-	-	Y*	-	-	-
rs7330	C/A	M*	M*	NP	NP	A*	M*	M*	A	M	M	M*	M*
rs2066827	T/G	-	-	K*	K*	-	K*	-	K	K	K	K	-
rs34330	T/C	Y*	C*	Y*	C*	Y	Y	Y	Y*	Y	C	Y*	Y*
rs41285700	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	NP	NP	-	-	-	-	-	-	-	NP
	G/A	-	R*	-	-	-	-	-	R	R	-	-	-
rs1043141	C/T	-	-	Y	Y	-	Y*	-	Y	Y	-	-	Y
rs12855	C/T	-	-	NP	NP	-	-	-	Y*	Y*	-	-	NP
rs3176447	T/A	-	-	NP	NP	-	-	-	-	W	-	-	-
	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	R*	-	-	-	-	-	R*
rs1047070	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs684535	A/T	W*	W*	W*	W*	W	W	W	W*	T	W*	W*	W
rs11220285	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3737336	T/C	-	-	NP	NP	Y*	C	Y*	NP	NP	NP	NP	NP
rs35884952	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2186754	A/G	-	R*	R	R	R	R	R	G*	R	G*	G*	R
rs12274923	G/A	R	R*	-	-	-	-	-	-	-	-	-	R*
rs61917811	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs564214	A/G	R*	R*	-	-	-	-	-	-	-	-	-	R
rs73019370	A/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	Y	Y*	-
rs2509616	T/C	-	-	Y	Y*	Y*	Y	Y	B*	B*	Y*	Y*	Y*
rs3740909	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs516664	C/T	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*
rs3740904	C/T	-	Y*	Y*	Y*	low_cov	-	Y*	Y	T	Y*	T*	T

rs3740912	C/T	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	Y
rs73019367	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs73628538	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2276061	G/A	-	R*	R	R	R	R	R	R*	R	R*	R*	R
rs684805	G/A	R*	R*	-	-	-	-	-	-	R*	-	-	R*
rs3039	G/A	-	-	R	R	R*	R	R	A*	R	A*	A*	-
rs1065398	T/C	-	-	Y*	Y	Y*	Y	Y	Y*	Y	Y*	Y*	Y
rs13424	A/C	-	M*	M*	M	M*	M	M	M*	M	M*	M*	M
rs3743548	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs572275	C/G	S	S	-	-	S*	S	S	S*	S	G	G	S*
rs3218730	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs507329	T/C	C*	Y*	NP	NP	NP	NP	NP	NP	NP	Y*	C*	NP
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1834065	A/G	-	R*	-	-	-	-	-	-	-	-	-	-
rs15829	C/T	Y	Y	-	-	Y*	Y*	Y*	-	Y	Y*	Y*	Y*
rs510862	T/C	C*	Y*	NP	NP	low_cov	C*	C*	-	Y*	C*	C*	C
rs480727	A/G	R	R	-	-	R*	R*	R	R*	R	R*	R	R
rs17860287	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs17860317	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7138439	C/T	Y*	Y*	-	-	Y	Y	Y	Y*	Y	-	-	NP
rs17860300	T/C	-	-	C*	C*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y
rs17860299	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs7556116	A/G	R*	G*	NP	NP	G*	R*	G*	G*	R*	G*	G*	R*
rs10927791	C/T	Y*	Y*	NP	NP	Y	Y	Y	T*	Y	T*	T*	NP
rs28451126	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6429746	G/A	-	-	-	-	R*	V*	R*	R*	R*	R*	R*	-
rs6710941	C/T	T*	Y*	Y*	T*	T	Y*	Y*	T*	Y*	Y*	T*	NP
rs2243682	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs1381657	C/G	S*	S	-	-	-	-	-	S*	S*	S	S*	-
rs2468255	T/C	C*	C*	NP	NP	Y*	-	Y*	Y*	Y	Y*	C*	C*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs74434454	A/G	-	-	-	-	R*	R*	R*	R*	R*	NP	NP	NP
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs3747532	G/C	-	-	S	S*	S*	S*	S	S*	S	S	S	NP
rs9427662	T/C	Y*	-	Y*	-	-	-	-	-	-	Y	Y	-
rs10922153	T/G	NP	NP	NP	NP	G	low_cov	G*	NP	NP	NP	NP	NP
rs4621	G/T/C/A	R*	R*	R*	-	R*	R	R*	R	R	R	R	R
rs7573256	A/G	-	-	-	-	-	-	-	-	-	-	-	R
rs7560613	T/C	Y*	Y*	-	-	-	Y*	-	-	-	-	-	Y
rs33914895	G/A	-	-	-	-	-	-	-	-	R*	-	R*	-
rs10931931	C/T	Y*	Y*	-	-	-	B*	-	-	Y*	-	-	Y
rs1594	A/G	R	R	G*	R*	R	R	R	R*	R	R	R	R*
rs3810993	G/A	R*	R*	-	-	R	R	R	R	R	R	R	R*
rs11587	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y*
	A/G	R*	R*	R*	R*	R	G	R*	R	R	R	R	-
rs17436816	G/A	R*	R*	R	R	R	R	R	-	R*	-	R*	-
rs9434711	G/A	R	R	-	R*	R*	R	R	R	R	-	-	-
rs12037962	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12074369	C/G	S	S	NP	NP	-	-	-	S*	S	-	-	-

rs3827728	A/G	-	-	-	R*	R	R*	G	-	R*	R*	G	-
	C/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2273032	G/A/T/C	-	-	-	R*	-	-	-	-	-	-	-	-
rs3888071	C/G	G	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs3810991	C/T	-	-	-	-	-	-	-	-	Y*	-	Y*	-
	A/G	R*	G*	NP	NP	G*	G*	G*	G*	R*	R*	-	-
rs12567407	G/A	R*	-	-	R*	-	K*	-	-	-	-	-	-
rs45512194	G/C	-	-	-	-	S*	S	S	-	-	-	-	-
rs12565328	T/C	Y	Y*	-	Y*	-	Y	Y	Y*	Y	-	-	-
rs3810989	C/T	-	-	-	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*
rs17029184	C/A/T/G	-	-	-	Y*	-	-	-	-	-	-	-	Y*
rs2092507	G/A	-	-	-	-	R	R*	R	-	-	R	R	-
rs41307856	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55832961	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*
rs1883768	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1064281	C/T	Y*	-	-	Y*	-	-	-	-	Y*	-	-	Y*
	T/C	Y	Y	-	-	Y*	Y*	-	-	-	-	-	-
rs3731395	G/A	-	-	-	-	R	R*	R	-	-	-	-	-
rs76045215	C/G	-	-	-	-	S*	S*	S*	-	-	-	-	-
rs558351	C/T	Y*	Y	Y	Y	Y	Y	Y	-	Y*	Y	Y	Y
rs1057733	T/C/CC	-	-	Y*	Y*	-	-	-	Y	Y	Y	Y	-
rs77183579	A/G	-	-	-	-	R*	R*	R	-	-	-	-	-
rs506504	A/G	R*	D*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs2236141	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs16986640	A/C	-	-	M*	M*	-	-	-	M*	-	-	-	-
rs2236142	G/C	-	-	C	S*	S	S*	S*	S*	S	S*	S*	S
	C/G	-	-	-	-	-	-	-	-	-	-	-	S
rs1805129	T/C	-	-	-	-	Y*	-	-	-	-	-	-	-
rs5752776	A/G	G	R*	R*	R*	R*	G	R	G*	G	G*	G*	R*
rs77749553	C/A	-	-	M	M*	-	-	-	-	M*	M	M	-
rs625589	A/T	-	-	NP	NP	-	-	-	W*	-	T	T*	NP
rs4685394	C/G	S	-	NP	NP	low_cov	-	-	S*	S*	NP	NP	-
rs2387183	T/C	C*	C*	NP	NP	NP	NP	NP	C*	C	C*	Y*	NP
	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	A	R*	-
rs13060847	A/G	G*	G*	G*	G*	G*	R*	R*	G*	R*	G*	R*	NP
rs6442827	A/G	R*	R*	G*	R*	G*	R*	R*	G*	R*	G*	R*	G*
rs3864046	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs2272522	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17006552	A/G	-	-	-	-	-	-	-	R*	R	-	-	-
rs2067480	G/A	R*	R*	-	-	-	-	-	-	-	-	-	-
rs2067478	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2067477	G/T	K*	K*	-	-	-	-	-	-	-	-	-	-
rs2067479	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs11190421	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11597086	A/C	C*	M	-	-	-	-	-	M	M	M*	M	M*
rs34774030	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2230804	C/T	T*	T	-	-	-	-	-	-	Y*	Y*	-	NP
rs7358099	A/T	-	-	-	-	-	-	-	-	-	NP	NP	NP

rs17880383	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10456	G/A	R*	R	R	R	R	R	R*	-	R*	-	-	R*
rs10774512	C/T	-	-	-	-	-	-	-	Y	Y	Y	Y	Y*
rs278123	G/A	-	R*	-	-	-	-	-	R	R	R	R	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs2240309	G/A	A*	R	R*	R	R*	R*	R	-	-	-	-	-
rs36054900	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs56167781	A/T	-	-	-	-	-	-	-	-	-	-	-	NP
	A/G	-	-	-	-	R*	R	R*	-	-	-	-	-
rs440299	A/G	R*	R	R*	R	R*	R	R	-	R*	-	-	-
rs2240310	C/T	Y*	Y*	Y*	Y	Y*	Y	Y	-	-	-	-	-
rs278102	G/A	-	-	-	-	-	R*	-	R	R	R	R	-
rs278109	T/C	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y*
rs385959	C/T	Y	Y	Y	Y	Y	Y	Y	-	Y*	-	-	Y*
rs17429833	C/G	S	S	NP	NP	low_cov	-	-	-	-	-	-	-
rs1364722	C/T	T*	T*	T*	T	-	-	-	Y	Y	Y*	T*	Y*
rs3172404	C/T	Y*	Y	-	-	-	-	-	Y*	Y*	Y*	Y*	NP
rs8798	A/G	R*	R	G	G*	-	R*	-	R	R	G*	R*	R
rs8298	T/C	C*	Y*	NP	NP	low_cov	-	-	NP	NP	C*	C*	NP
rs1895708	T/C	C	Y*	NP	NP	-	-	-	Y*	Y*	C	Y*	-
rs72466472	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs12696600	C/A	A*	A*	NP	NP	M*	M*	-	M*	M*	A*	A*	-
rs1060680	G/T	D*	K	K*	K*	-	D*	D*	K*	D*	K	K	D*
rs9869263	A/G	R*	R	R*	G*	R	R*	R	R*	R*	R*	R*	R*
rs17883517	A/G	-	-	-	-	R*	R	R*	-	R*	-	-	R
rs1129167	G/C	-	-	C	S*	S*	S*	S*	C*	C*	C*	C*	NP
rs1803290	T/C	Y*	C*	Y*	Y	Y*	Y	Y	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61751002	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs35490896	G/A	-	-	-	-	R	R*	R	-	R*	-	-	-
	C/T	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs41280774	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs8078623	A/G	R	R	G*	G*	G*	R*	G*	G*	G*	R	R	G*
rs1358535	C/A	M	M	A*	A*	A*	A*	A*	A*	A	M	M*	NP
rs7221815	G/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs1554846	T/C	Y*	Y	C*	C	C	C*	C*	C*	C	Y	Y	C*
rs79384355	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs34672214	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2301762	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs9790	C/T	-	Y*	Y*	Y*	Y	Y	Y	-	Y*	Y	Y	-
rs1056019	C/T	T*	T*	-	-	T	T*	T*	T*	T	T*	T*	NP
rs444927	G/A	A*	A*	-	-	A*	R*	R*	R*	A	A	A*	NP
rs935105	T/C	-	-	-	-	-	-	-	Y	Y	Y	Y	-
rs339287	A/G	-	-	-	-	R*	R*	R	-	-	-	-	-
rs163352	G/C	S*	C	C	S*	C	B*	S*	C*	S	S*	C*	NP
rs1554198	A/G	R*	R*	R*	R*	R*	R*	R*	R*	R*	G	R*	R*
rs6803232	A/G	R	R	G*	R*	G	R*	R*	R	R	R*	R*	R*

	G/A	-	R*	-	-	R*	R	R	-	R*	-	-	-
	T/C	-	-	NP	NP	-	-	-	-	-	NP	NP	NP
rs10888	T/A	-	W	-	-	A	A*	A*	A	W	A	A*	NP
rs17657874	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3749363	T/G	-	-	-	-	-	K	K	K	K	-	-	NP
rs6802588	A/T	W	W	W	W	W*	-	R*	W	W	W	W	W*
rs60587976	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4685575	G/A	R	R	A	A	-	-	-	A*	R	R*	A*	A*
rs7629924	A/G	-	-	-	-	R	R	R	R*	R	-	-	-
rs6790908	C/T	Y	Y	T	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*
rs2729046	G/A	-	-	NP	NP	R	R*	R*	R*	R	R*	-	A*
rs7639977	G/A	-	-	-	-	R*	R	R	R*	R	-	-	-
rs17600202	A/G	-	-	R*	R*	-	-	-	-	-	-	-	-
rs339286	C/T	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs339285	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs2291101	G/A	R	R	R	R*	R	R	R	R	R	R	R	R*
rs6800052	G/T	K	K	-	-	K*	K	K	K*	K	K	K	-
rs6807118	C/A	M	M*	-	-	-	-	-	-	-	-	-	-
rs13326014	A/G	R	R	R*	R	-	-	-	-	R*	-	-	-
rs4684146	C/T	Y	Y	Y*	Y*	Y*	-	-	-	-	-	-	-
rs2013828	T/C	Y	Y	C	Y*	-	-	-	Y*	Y*	Y	Y*	C
rs2291100	T/G	-	-	K*	K*	-	-	-	K	K*	-	-	NP
rs56294284	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs13029936	C/T	-	-	Y	Y*	-	-	-	-	Y	Y	Y	-
rs1045780	A/G	R*	G	R*	R*	G*	R*	R*	G*	R*	R*	R*	NP
rs56291091	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2551928	A/G	G*	G*	R*	R*	G	G*	G*	G	R	R	R*	NP
rs3730276	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2464976	G/T/C	-	-	NP	NP	-	-	-	-	K*	K*	K*	-
rs2709359	A/G	G*	G*	NP	NP	G*	G*	G*	G*	G*	NP	NP	NP
rs6785	A/G	G*	R*	R*	R*	G*	R*	G*	R	R	R	R*	G
	A/C	-	-	-	-	-	-	-	M*	M	-	-	-
rs56122646	A/G	-	-	-	-	-	-	-	-	-	G	R*	-
rs3735020	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3735021	T/C	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs7783145	C/G	G	S*	G	S*	S	S*	V*	G*	S	S*	S*	-
rs6959012	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs6976928	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3735019	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	K*	B*	-	K*	K*	K*	K*	-	K*	-	-	K*
	C/T	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
rs9757	C/G	S*	S*	S	S	S	S*	G*	G*	S	S*	G*	S*
rs273957	C/T	Y	Y	Y*	Y*	Y	T	Y	T	Y	-	-	Y
	G/A	-	-	NP	NP	low_cov	-	-	-	-	R*	A	R*
	G/C	-	-	-	-	-	-	-	-	-	-	-	K*
	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
GA031042	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs9392	G/A	-	R*	-	-	-	-	-	-	R*	R*	R	R

	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs3025702	A/T/C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1083	A/G	-	-	R*	R*	-	-	-	-	-	-	-	NP
rs61762271	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs61762276	T/C	Y*	Y*	-	-	Y	Y	Y	-	Y*	-	-	-
rs15948	T/C	-	Y*	-	-	Y*	Y	Y	-	Y*	-	-	NP
	T/G	K*	G	-	K*	K*	K	K	-	-	-	-	-
rs56158954	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	Y*	-	Y*	-	-	-
rs1054488	A/G	R	R	R*	G	R*	R*	R*	R	R	R	R*	R*
rs3828609	T/C	Y	Y	-	-	-	-	-	Y*	Y*	-	-	NP
rs3829986	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35308019	TG/GA	R*	R*	NP	NP	R*	R*	R	R	R*	R*	R*	R*
rs41497048	G/T	K	K	-	-	-	-	-	-	-	-	-	-
rs13117	A/G	R*	R*	-	-	R	R	R	-	R*	R	R	R*
rs2066934	T/G	K*	K*	G*	G*	K*	K*	K*	G*	K	K*	K	R*
	T/G	-	-	-	-	K*	K	K*	-	-	NP	NP	-
	A/G	R*	R*	G*	R*	-	R*	-	R	R	R*	-	R*
rs6000495	G/A	-	N*	-	-	-	R*	-	R*	R	-	-	-
rs1801122	C/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs1801116	G/A	-	-	R*	R	-	-	-	-	R*	-	-	-
rs131840	A/G	R*	R*	G*	G	R*	R*	R*	G	R*	-	-	R*
rs1803	C/T	Y	Y	Y*	Y	-	-	-	-	-	Y	B*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs16845	G/C	S*	S*	S*	S	-	-	-	-	-	-	-	-
rs131842	A/G	R	R*	R*	R	R	R*	R	-	R*	R	R	R*
rs1801117	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
	C/T	-	-	-	T	-	-	-	-	-	-	-	Y*
rs33991421	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7085	T/C	Y*	Y*	C	Y*	Y*	Y*	C*	-	Y	Y*	Y*	Y*
rs7001344	C/G	S*	S	-	-	-	-	-	-	-	S*	S*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1592624	T/G	K*	K	NP	NP	G*	G*	G	G*	G*	K*	K*	NP
rs1904218	G/A	NP	NP	R*	-	low_cov	R*	-	-	-	NP	NP	A*
rs1904217	G/A	A*	R*	R*	-	-	R*	R*	R*	R*	-	-	NP
rs11778209	A/G	-	-	R	R*	R*	R*	R	R	R	-	-	-
rs10505180	T/C	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*
rs7843856	A/G	G*	G	NP	NP	R*	R*	G*	R*	-	NP	NP	NP
rs4876458	C/T	-	-	-	-	-	-	-	-	Y*	Y*	-	Y
rs12155677	C/T	NP	NP	-	Y*	low_cov	-	-	-	-	-	-	NP
rs73344124	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs12334397	A/G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2219898	T/C	-	Y*	Y	Y	Y	Y	Y	-	Y*	Y	Y	-
rs61753737	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs1895013	T/A	-	W	-	-	-	A	W*	-	-	W	W	-
rs17629268	A/G	-	-	-	-	-	R	R*	-	-	-	-	-
rs945632	G/A	-	R*	R*	R*	-	-	-	-	-	-	-	R*
rs17773251	C/G	-	-	-	-	-	-	-	-	-	-	-	N*
rs1336754	T/G	-	K*	K	K	-	K*	-	-	-	-	-	-
rs9576176	G/C	S*	S*	S	S	-	S*	-	-	S*	-	-	S*

rs1856028	C/T	Y*	Y*	Y	Y	-	-	-	-	-	-	-	-
rs9576175	G/T	D*	K*	K*	K	-	K*	-	-	K*	-	-	K*
rs17849769	G/A	-	-	-	-	R	R*	R	-	R*	-	-	-
rs56181605	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
rs12484542	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs5757022	T/A	A	W*	W*	W	W*	W*	W	A	W	W*	W*	W*
	T/G	K	K	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3890379	A/G	-	-	-	-	-	R*	-	-	-	R	R	-
rs3743110	A/G	-	-	-	-	R*	R	R	-	-	-	-	-
rs62024254	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	NP
rs1059684	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1059259	G/A	R*	R*	NP	NP	R*	R	R*	R	R	R*	R*	NP
rs17150513	T/C	-	-	-	-	Y	Y*	Y	-	Y*	-	-	-
	G/A	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs3797534	G/C	S	S	-	-	-	-	-	C	S	S*	S	S*
	C/T	Y	Y	-	-	-	Y*	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41279418	A/T	-	-	-	-	-	R*	-	-	R*	-	-	-
rs459710	T/C	-	-	-	-	-	-	-	-	Y*	-	-	Y
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs74570593	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs459012	T/C	-	-	-	-	-	-	-	-	-	-	-	Y*
	C/T	Y*	-	-	-	-	-	-	-	Y*	-	-	-
rs37357	C/T	Y*	Y*	Y*	Y*	Y*	Y*	B*	T*	Y*	Y*	Y*	Y*
rs11552054	A/C	-	-	-	-	-	-	-	M	M	-	-	-
rs17031	T/A	-	-	A	W	-	-	-	W	W*	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1059110	G/A	-	-	A	A	-	-	-	R	R	-	-	NP
rs11552052	C/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs269538	C/T	T*	Y*	NP	NP	T*	Y*	T*	T*	Y*	Y*	Y*	Y*
rs2953	T/G	K	K	K*	K	K	K	K	K	K	G*	K*	K
rs4135386	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs2293300	T/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs2293301	A/C	-	-	-	-	-	-	-	-	-	-	-	NP
	C/T	-	Y*	-	-	-	-	-	Y	Y	-	-	-
rs3864004	G/A	R*	R	R*	-	low_cov	R	R	R	R	A	R*	A
rs935072	A/T	-	-	-	-	-	-	-	-	-	W*	W*	W
rs1220394	G/A	-	-	-	-	-	-	-	-	-	-	R	R
rs72633900	T/C	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
rs7225	C/T	-	-	NP	NP	-	M*	-	-	-	Y*	Y*	Y
	G/A	R*	-	-	-	-	R*	-	-	-	-	-	-
rs243551	C/G	S	S	S	S	S*	G	S	-	S*	-	-	-
	C/T	-	-	Y	Y*	-	-	-	-	-	-	-	-
rs13225743	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4244993	A/G	-	-	-	-	R*	R	R*	-	-	NP	NP	NP
rs11545108	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1131510	C/T	-	-	-	-	-	-	-	-	-	-	-	-

rs1029153	A/G	-	-	-	-	-	-	-	-	-	-	R*	NP
rs266092	T/A	-	-	-	-	W	W	W	-	W*	-	-	-
rs78342136	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
rs2839685	A/G	R	R	R*	R*	G*	G	G	R*	R*	G*	G*	R*
rs2839686	G/A	R	R	-	R*	R*	R	R	R*	R	R*	R	R
rs266093	C/G	S	S	S	S	S	S	S	S	S	S	S	S
rs17881575	G/A	R	R	R*	R	-	-	-	R	R	-	-	-
rs3740085	C/G	-	M*	-	-	-	-	-	-	-	S*	S	-
rs17883887	T/C	W*	H*	-	-	Y	Y	Y	-	Y*	Y	Y	Y
rs1801157	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs2839695	A/G	-	-	-	-	R	R	R	-	R*	R	R	R
rs17885289	C/T	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	-	Y
rs2228014	G/A	R*	R*	-	R*	-	-	-	R*	R*	R	R	R*
rs1045879	C/T	Y	Y	-	-	-	-	-	-	-	-	-	Y
rs61048017	G/T	K	K	-	-	K	K	K*	-	K*	K*	K	K
rs3554	T/C	Y	Y*	-	-	-	-	-	-	-	Y	Y*	Y
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4475153	T/C	-	Y*	NP	NP	low_cov	low_cov	-	NP	NP	-	-	NP
	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
	C/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2298731	A/C	NP	NP	M*	M*	NP	NP	NP	NP	NP	NP	NP	NP
rs17314948	G/A	R	R	-	-	-	R*	-	-	-	-	-	R
rs72786623	G/C	-	-	-	-	low_cov	-	-	S*	S*	-	-	S
rs6717452	C/A	M	A	M*	A	M*	M	M*	-	-	M*	M*	-
	A/T	-	-	-	-	-	R*	-	-	-	-	-	D*
rs74416754	C/G	-	-	-	-	-	S*	-	S	S	-	-	-
rs10208406	T/C	C*	C	C*	Y*	C*	C*	C*	C	Y	Y*	Y*	NP
rs15380	T/A	A*	A*	W*	A*	A*	A*	A*	A*	A	NP	NP	A*
rs45476291	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs28927674	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs3742647	A/C	M*	C	M*	C	M*	M*	M	-	-	-	-	NP
rs941884	A/G	G*	G*	NP	NP	R*	R*	R*	NP	NP	NP	NP	NP
rs8022614	G/A	R	R	-	-	R	R*	R	-	R*	-	-	A
rs17833769	C/A	-	-	-	-	M*	M	M	-	M*	-	-	M
rs1056719	G/A	R	R	R	R	R	R	R*	R	R	R*	R	R
	C/A	-	-	-	-	-	-	-	-	-	-	-	Y*
rs36207428	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs13283425	A/G	-	-	-	-	-	-	-	R	R	-	-	W*
rs36213350	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3818584	C/T	Y*	B*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y
rs3118863	C/T	Y	Y	Y*	M*	Y	Y	Y	-	Y	Y*	Y	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3745981	G/A	R*	R*	R*	R	R*	R	R	R	R	-	-	R*
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3745982	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	NP	NP	-	-	-	-	-	NP	NP	S
rs10419272	G/C	S*	-	-	-	-	S*	-	-	-	-	-	-
rs3027013	C/T	-	-	Y*	Y*	-	-	-	-	-	-	-	-
rs13962	G/-/A	R*	R*	R*	-	-	R*	R*	-	D*	R*	R*	R*

rs6676002	C/T	-	-	T*	-	-	-	-	-	-	-	-	Y
rs3027016	A/G	R	R	R*	R*	-	-	-	-	-	-	-	-
rs34599082	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3027012	C/T	Y*	Y*	Y	Y	-	Y*	-	-	Y*	-	-	Y
rs17851570	C/T	-	-	-	Y*	Y	Y	Y	-	Y*	-	-	-
rs12075	G/A	R	R	R	R*	R*	R*	R*	R	R	R*	R*	R
rs10255051	G/A	-	-	-	-	-	-	R*	-	R*	-	-	R
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6977687	G/A	-	-	R*	R	R*	R	R	-	-	-	-	R*
rs16956878	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs13381333	G/A	-	-	-	-	-	-	-	R*	R*	-	-	-
rs2270951	C/T	T*	Y	NP	NP	Y*	Y*	Y	T*	Y*	Y*	Y*	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs2229080	C/G	S	S	-	-	-	S*	-	S*	S*	S	S	-
	T/C	-	-	Y	Y	-	-	-	-	-	-	-	-
rs2270954	A/C	C*	C*	NP	NP	C*	C*	C*	C*	C*	C*	C*	NP
rs2322807	G/T	K	K	-	-	K*	K	K	-	-	-	-	K
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35734430	A/G	-	-	-	R*	-	R*	-	-	-	-	-	-
rs9574551	T/C	Y*	Y*	Y*	Y	Y	Y	Y	-	Y*	C*	C*	Y*
rs9574543	C/T/G	G*	G	NP	NP	low_cov	Y*	-	-	-	-	-	NP
rs9531012	T/C	-	-	-	Y*	Y*	Y	Y	Y*	Y	-	-	Y
rs7981115	C/T	-	-	NP	NP	-	Y	Y*	-	-	-	-	NP
rs1045696	C/T	Y	Y	-	-	Y*	Y*	-	-	-	-	-	-
rs3764062	T/C	-	Y*	Y*	Y	-	Y*	-	Y*	Y*	Y	Y*	Y*
	C/T	-	-	-	-	-	M*	-	-	-	-	-	M*
rs17052996	A/G	-	R*	R	R	R*	R	R	R	R	R	R	-
rs1926464	T/G	K*	K*	K	K	G*	K*	G*	K*	K*	G*	G*	G*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs9531016	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3803279	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs7328055	T/G	-	-	K*	K*	-	K	K*	K*	K	K*	K	K*
rs9574542	G/C	C	S	-	-	-	-	-	-	-	-	-	-
rs3748308	T/C	-	Y*	Y	Y	-	-	-	Y	Y*	-	-	K*
rs12499251	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs56070233	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs74571015	C/A	-	-	M	M	-	-	-	-	-	-	-	NP
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6803280	A/G	R*	R*	R*	R*	R*	R*	R*	G	R*	R	R*	NP
rs35704209	C/A	-	Y*	-	-	M	M	M	-	M*	-	-	-
rs13434080	A/T	W	W	W*	W*	W	W	W*	T	W	T	T	-
rs3796187	G/A	R	R	R	R	R	R	R	R	R	R	R	R*
rs1050244	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	Y*	-
	T/G	-	-	-	-	K*	K	K	-	-	-	-	-
rs697221	G/A	-	-	-	-	R	R	R	R	R	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs8316	C/T	-	-	T	Y	-	-	-	Y*	Y	Y	T	Y*

rs13618	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs55700783	C/T	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs1053639	T/A	W*	W*	W	W*	W*	W*	W*	W	W	W*	W*	W
rs56351141	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3795641	G/A	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
rs34722354	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs17487682	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2298258	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	Y*	C	Y	-	-	-	-	NP
rs1141070	G/A	R	R*	-	-	-	R	R*	-	R*	A	R*	NP
rs12723005	T/C	-	-	-	-	Y*	Y*	Y*	-	Y*	-	-	Y*
rs12738235	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs34891610	A/G	-	-	-	-	R*	R*	R*	-	R*	-	-	R*
rs3205087	A/G	R	R	-	R*	R	R*	R	R*	R*	R*	-	R
rs2285858	C/A	-	-	-	-	M	M*	M	-	M*	-	-	Y*
rs1052756	C/T	-	-	-	-	Y	Y*	Y*	-	-	-	-	-
rs3747050	T/C	-	-	-	-	Y	Y*	C*	-	Y*	-	-	-
rs1052763	C/T	-	-	-	-	Y*	Y*	T*	-	Y*	-	-	-
	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1052773	G/A	-	R*	NP	NP	R	R	A	-	R*	-	-	-
rs45604134	C/T	-	-	-	-	Y	Y*	Y	-	-	-	-	-
rs2285857	T/C	-	-	-	-	Y	C*	Y	-	-	-	-	-
rs2240111	C/T	-	-	NP	NP	Y*	T*	Y*	-	-	NP	NP	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs712965	G/A	-	-	-	-	-	R*	-	-	-	-	-	K*
	G/T	-	-	-	-	-	K*	-	-	-	-	-	-
rs7963565	C/T	-	-	Y	Y	-	-	-	-	-	Y	Y	-
rs60995900	T/A	-	-	W*	W*	-	-	-	-	-	W	W*	-
rs12870	T/C	Y	Y	Y*	Y*	-	Y*	-	-	-	Y	Y	-
rs2288681	T/C	-	-	-	-	-	Y*	-	-	-	-	-	Y
rs45485096	G/A	-	-	-	-	R*	R	R	-	-	-	-	-
rs10904083	G/A	-	-	R*	R	-	-	-	-	R*	R*	R*	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	R*	-	-	-	-	-	-	-	-	-	-
rs10903832	A/G	-	-	-	-	-	-	-	-	-	-	-	R
rs41288725	C/T	-	Y*	-	-	-	Y*	-	-	-	-	-	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4881274	G/A	-	-	R*	R*	-	R*	-	-	-	R*	R*	R
rs3740304	A/G	R*	R*	-	R*	R	R	R	R*	R*	R	R	R
rs7916867	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41285617	C/T	-	-	-	-	-	S*	-	-	-	-	-	-
rs7501	G/T	K	K	-	-	-	R*	-	-	-	K*	K*	-
rs1802710	T/C	Y	Y	Y*	Y	-	Y*	-	-	Y*	Y*	Y*	Y
	G/C	-	R*	-	-	-	-	-	-	R*	-	-	D*
	C/T	-	-	-	-	Y*	Y	Y*	-	-	-	-	-
rs527221	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs35865357	G/A	-	-	-	-	-	-	-	R	R	-	-	-

rs12700325	A/G	-	-	NP	NP	low_cov	G	R*	R*	R*	NP	NP	R*
rs6965750	G/A	R	R	R	R	-	-	-	R	R	-	-	R
rs4615458	A/G	R*	R	R	R	R	R*	R	R	R	-	-	R
rs1109806	C/T	-	-	-	-	T*	Y*	Y*	Y*	Y	Y*	T*	Y
rs17144835	A/G	-	-	R	R	-	M*	-	-	R*	-	-	V*
rs4722067	T/C	Y*	Y*	C*	Y*	C*	Y*	C*	Y*	Y*	Y*	C*	Y*
rs62441683	C/G	G*	S*	-	-	S*	S*	-	S*	S*	-	-	S*
	G/A	-	-	-	-	-	R	-	-	-	-	-	-
rs72657303	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4374884	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs68023059	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3827657	G/A	A*	A*	NP	NP	A*	R*	A*	A*	A	R	R*	R
rs2285943	G/T	K*	K	-	-	NP	NP	NP	NP	NP	NP	NP	K*
rs56029521	T/C	Y	Y	-	-	Y*	Y	Y	C	Y	Y	Y*	-
rs17145720	T/C	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs10950854	C/T	T	Y*	Y*	Y*	low_cov	Y*	-	Y*	Y*	-	-	NP
rs12536928	C/T	-	-	Y*	Y*	-	Y	Y*	Y*	Y*	T*	T*	Y*
rs56333627	C/A	M	M	M*	-	M*	M*	M*	M	M	M*	M*	-
rs12670130	A/G	R*	R	-	-	R*	R	R	R*	R	-	-	R
	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs7971	A/G	R*	R*	-	-	-	-	-	R	R	G*	R	R
rs77448980	A/G	-	-	-	-	-	-	-	-	R*	-	-	R
rs17144747	A/G	-	-	R	R	-	-	-	-	-	-	-	-
rs11768670	G/A	-	-	R*	R*	R*	R*	R	-	-	-	-	-
rs9639393	A/G	-	-	-	-	low_cov	R*	R*	R*	R	R*	R*	R*
rs12666072	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2072220	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs55666134	G/A	R	R	-	-	-	-	-	A*	R	R	R	-
rs12537531	C/T	-	-	NP	NP	-	Y*	Y*	-	Y*	-	-	Y
rs2214326	G/A	-	-	-	-	R	R*	R	R	R	-	-	-
rs4722064	G/T	T*	K*	K	K	K	K*	K*	K	K	T*	T*	K*
	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs72658825	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs2285942	C/T	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs10224537	A/G	R*	R*	G	R*	R*	R*	R*	R*	R	R	R	R
rs10269582	T/C	-	Y*	-	Y*	Y	Y*	Y	Y	Y	-	-	-
rs2072221	G/A	R	R*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
	C/T	-	-	Y	Y	-	-	-	-	Y*	-	-	Y
rs6554812	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	R	-	-	-	-	-	-	-	-	-
	T/C	-	-	Y*	-	Y*	Y	Y	Y*	Y*	Y*	Y*	C*
rs17263496	G/A	-	-	-	-	R*	R	R	-	R*	R	R	-
rs3213936	A/G	R	R	R*	R	R*	R	R*	-	-	R	R*	R*
rs1348689	G/A	-	-	A	R*	low_cov	R*	A*	R*	R*	A*	A*	NP
rs3734111	T/C	Y*	Y	Y*	Y*	-	Y*	Y*	-	-	Y*	Y*	NP
rs10041113	G/A	-	-	R*	R*	A	A*	A*	R*	R*	A*	A	R*
rs2896111	T/C	NP	NP	Y*	-	NP	NP	NP	NP	NP	NP	NP	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10078391	T/C	-	-	Y	Y*	C*	C*	Y*	-	-	C*	C*	Y*
rs2277046	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-

	T/C	Y*	Y	-	-	Y*	Y*	Y*	NP	NP	NP	NP	NP
rs30169	T/G	K*	K	K*	K	K	K	K	-	K*	-	-	K
rs1445823	A/G	R*	R	R	R*	R*	R	R	R*	R*	-	R*	NP
rs10513155	C/A	-	-	M*	M	-	-	-	M	M	-	-	M
rs4701997	T/A	W	W	W	W	A	W	W	W	W	W	W	W*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs339445	A/C	C*	C*	NP	NP	C*	C*	C*	C*	C*	C*	C*	NP
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs30168	G/A	R	R	R	R	R	R	R	-	R*	-	-	R*
rs1530496	C/T	-	-	Y*	Y*	low_cov	Y	Y	-	-	Y*	-	NP
rs6554827	C/A	M*	-	M*	M*	M*	M	M*	M*	M*	M*	M*	A
rs1990236	G/A	-	R*	R	R	R*	R	R	-	R*	-	-	-
rs3744581	A/G	-	-	-	-	R*	R*	R*	R*	G	-	-	-
rs3760435	A/G	G*	R	-	-	-	-	-	R*	R	-	-	R*
rs11078022	C/T	-	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	NP
rs3744578	C/T	Y*	Y*	T*	Y*	Y	T	Y	T	Y	T*	Y*	Y*
rs72815424	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs61744697	G/T	-	-	-	-	-	-	-	-	-	K	K	-
rs12449553	C/G	S	S	S	S	S	S	S	S	S	-	-	G
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs61743635	G/A	-	R*	-	-	-	R*	-	-	-	R*	-	-
rs2286303	A/G	-	-	-	-	-	R*	-	R	R	-	-	R
rs8070256	T/C	Y*	Y*	-	-	-	-	-	Y	Y	-	-	-
rs17599639	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs34595876	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs9895535	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs11793196	G/A	-	-	R*	A	R*	R*	R	-	R*	R	R*	-
rs3812552	C/G	-	-	-	-	-	-	-	S*	S*	-	-	-
	G/A	-	-	-	-	R	R*	R*	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3812553	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1791686	G/A	R	R	R*	R*	-	-	-	-	-	-	-	-
rs2305535	G/A	-	-	-	R*	R*	R*	R*	-	R*	A	A*	R*
rs11550299	G/T	-	-	NP	NP	K*	K	K	-	-	T*	T*	K
rs1671063	A/G	R	R	R*	R	G*	G*	G*	G*	R	G*	G*	R*
rs2298806	G/A	-	R*	R	R*	R*	R	R	-	R*	A*	A*	R
rs3816492	C/T	-	-	Y*	Y	Y*	Y*	Y	-	Y*	Y*	Y*	Y
rs41302425	G/C	-	-	-	-	-	R*	-	-	-	-	-	-
rs3741360	A/G	-	-	-	R	R	R*	R	-	R*	R	R*	R
rs8432	A/G	R	R	R*	R*	G*	R*	G*	R*	R	R*	G	R*
rs41268649	C/T	Y*	Y*	Y	Y	-	Y*	-	-	-	-	-	-
rs2284870	T/C	Y	C	-	Y	Y	Y	Y	C	Y	Y	Y	C
rs12617336	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs17574	A/G	R*	R*	R	R	R	R*	R	R*	R	R	R	-
rs2302872	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2253440	G/A	R*	A*	NP	NP	-	-	-	A*	A	-	-	R*
	C/T	-	-	Y*	-	-	-	-	NP	NP	NP	NP	NP
rs34573317	T/C	Y	Y	-	-	-	Y*	-	-	-	-	-	-
	T/C	-	-	Y*	C*	Y*	Y	Y*	-	-	Y*	C*	Y
rs76347292	T/C	-	-	Y*	Y	-	-	-	-	-	-	-	-

rs34138305	G/A	R	R	-	-	-	-	-	R*	-	R	R*	-
rs2276340	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
	A/G	-	-	R*	R	-	-	-	V*	R*	R	R	R
	G/T	T*	T*	K*	K*	-	-	-	-	-	-	-	-
	G/A	-	S*	-	-	-	-	-	-	-	-	-	-
rs79993851	G/A	R*	R*	-	-	-	-	-	-	-	R*	R*	-
rs11240369	G/A	R	R	R*	R	R	R	R*	R	R	R	R	R
rs2836	A/C	M	M	M*	M	M	M	M*	M	M	M	M	M
rs1061132	C/A	-	-	M	M	-	M*	-	-	M*	-	-	M
rs3795556	T/C	-	-	Y*	Y	-	-	-	-	Y*	-	-	Y
rs12037322	A/C	M*	M	-	-	-	-	-	-	-	M*	M*	-
rs77626160	G/T	-	-	-	-	-	-	-	-	-	-	-	R*
rs11367	A/T	W	W*	-	-	-	-	-	-	-	W	W*	-
rs10900452	C/T	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	-
rs12048743	C/G	S	S	S	S*	-	S*	-	-	S*	S	S	S
rs3851294	A/G	R*	R	R*	R*	G*	G*	R*	-	R*	G*	R*	G*
rs78212113	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2431663	G/T	K	K	T*	T*	T*	K*	T*	K*	K*	T*	T*	K*
	G/A	R	-	NP	NP	-	-	-	-	-	-	-	-
rs307362	T/C	C	Y*	NP	NP	S*	C*	C*	C*	C	C*	C*	NP
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs307373	A/G	G*	R*	NP	NP	G*	R*	G*	R	R	G*	G*	G*
rs3213177	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	R*	-	-	R*
rs35385772	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs12026768	G/T	T	K*	-	-	low_cov	K*	K*	NP	NP	NP	NP	NP
rs2075995	C/A	M	M	M*	M*	M	M	M	M*	M	A*	M*	-
rs56128752	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3218211	A/G	R	R	-	-	R*	R*	R	G*	R	R*	R*	-
rs3820028	G/A	R	R	-	R*	R	R	R	R	R	A*	A*	R*
	G/C	-	-	NP	NP	-	-	-	-	-	S*	S	-
rs2075993	A/G	R*	R	-	-	R*	R*	R	G*	R*	G*	G*	-
rs9932087	T/C	-	-	-	-	-	-	-	-	-	-	-	Y*
	C/T	Y*	M*	NP	NP	-	Y*	-	-	Y*	-	-	-
rs11700	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs2279575	G/A	-	-	R	R*	A	A*	A*	R*	R	-	-	A
rs310791	A/G	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs7958377	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2242384	T/C	-	-	-	-	C*	C*	Y*	-	Y*	Y*	Y*	Y*
rs2279576	G/T	-	-	K*	K*	K*	K*	K*	K	K	K*	-	K*
rs310830	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs12273001	C/G	S*	-	-	-	-	-	-	-	-	-	-	S
rs793278	T/C	-	-	C*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
	G/T	-	-	-	-	-	-	-	K	K	-	-	-
rs2290829	C/A	-	-	-	M*	M	M*	M	-	M*	-	-	M
rs2303186	C/A	M	M	-	-	M	M	M	-	M*	M	M	M
rs17841292	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4783453	A/G	R*	R*	R*	R*	G*	R*	R*	R*	R*	R*	R*	R*

rs2230423	C/T	-	-	-	-	-	Y*	-	-	-	T*	T	-
	C/G	-	-	-	-	low_cov	-	-	NP	NP	NP	NP	NP
	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs41275060	C/T	H*	Y*	H*	Y*	-	H*	Y*	H*	H*	H*	H*	N*
	G/A	-	-	-	R*	-	R*	-	-	-	-	-	R*
rs9520087	G/A	R*	R*	-	R*	-	R*	-	S*	V*	-	-	R
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
rs56077446	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4444903	A/G	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs3733625	T/C	-	-	-	-	Y*	Y*	Y	-	-	-	-	NP
rs11569017	A/T	-	-	-	-	W	W	W	-	-	-	-	T
rs11568937	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs2237051	G/A	-	-	R*	R*	R*	R	R	A*	R	R	R*	R
rs11568993	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs4698803	A/T	T*	W*	NP	NP	low_cov	T*	T*	T*	T*	T*	T*	-
rs4830872	C/A	M	M	M*	A*	-	M*	-	A*	M	-	-	NP
rs5978653	C/T	-	-	-	-	-	-	-	-	-	NP	NP	NP
	C/T	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***Y****
rs884420	***C/T***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs2072454	***C/T***	***Y***	***Y***	***Y***	***Y***	***Y***	***Y****	***Y***	***Y***	***Y***	***Y***	***Y***	***Y****
rs11238352	***T/C***	***C****	***Y****	***C****	***C****	***Y****	***Y****	***C***	***C****	***Y****	***C****	***C****	***C****
rs940810	***C/T***	***Y***	***Y***	***Y****	***Y****	***Y****	***-***	***-***	***-***	***-***	***T****	***T***	***-***
rs2280653	***A/G***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
	C/G	***-***	***-***	***-***	***-***	***-***	***S****	***-***	***-***	***-***	***-***	***-***	***H****
rs1140475	***T/C***	***Y***	***Y****	***C***	***C****	***C****	***Y****	***C****	***Y****	***Y***	***Y****	***C***	***Y****
rs10277413	***T/G***	***-***	***K****	***K***	***K***	***K***	***K****	***K***	***K***	***K***	***K****	***-***	***K****
rs2293347	***C/T***	***-***	***-***	***Y****	***-***	***-***	***-***	***-***	***-***	***Y****	***-***	***-***	***-***
rs1050171	***G/A***	***R***	***R***	***R****	***R****	***R****	***R****	***R****	***R****	***R****	***R****	***R****	***D****
rs7334	***C/A***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs17290785	***C/T***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs884419	***G/A***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs77018704	***G/A***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***R***	***R****	***-***
rs76138885	***T/C***	***-***	***-***	***-***	***-***	***-***	***H****	***-***	***Y***	***Y***	***-***	***-***	***-***
rs884225	***T/C***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs940811	***A/G***	***R***	***R***	***G****	***R****	***G***	***R****	***R****	***R****	***R****	***R****	***G****	***R****
rs17290225	***G/A/T***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***R***
rs17290169	***C/T***	***-***	***-***	***-***	***-***	***-***	***H****	***-***	***-***	***Y****	***-***	***-***	***Y***
rs10258429	***C/T***	***-***	***-***	***-***	***-***	***-***	***H****	***-***	***-***	***-***	***-***	***-***	***-***
rs10228436	***G/A***	***-***	***-***	***R***	***R***	***R***	***R***	***R***	***R***	***R***	***-***	***-***	***R****
rs3800826	***C/G***	***-***	***S****	***S***	***S***	***S***	***S****	***G***	***S***	***S***	***-***	***-***	***S***
rs12667668	***C/A***	***-***	***-***	***M****	***M****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs884904	***G/A***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs2227983	***G/A***	***-***	***-***	***R****	***R***	***R****	***R****	***R****	***R****	***R****	***-***	***-***	***R****
rs7544596	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs2153364	A/G	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs41310557	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs12406290	A/G	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs61750991	C/G	-	-	NP	NP	-	-	-	-	-	-	-	-
rs3733829	A/G	-	-	R	R	-	-	-	R	R	R	R	R*

rs11547373	G/A	-	-	R*	R*	-	-	-	R*	A	R*	R*	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	R	-	-	-	-	-	-	-	-
rs76443752	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs10416308	G/A	-	-	R	R	R	R	R	-	-	-	-	-
rs61750953	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	Y*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1652948	C/G	-	-	S	G	S*	S	S	G*	S	S	S	S
rs11156819	C/T	Y*	Y*	-	-	Y*	-	Y	-	-	-	-	NP
rs6914	T/C	-	-	-	-	-	-	-	-	Y*	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs28365161	C/T	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs41282676	C/G	-	-	-	-	-	-	-	-	-	Y*	-	-
rs12657	G/A	-	-	-	S*	-	V*	-	-	-	-	S*	-
	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs2307472	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2307466	G/C	-	-	-	-	-	-	-	S	S	R*	-	-
rs2254958	G/A	R*	-	-	-	-	R*	-	-	R*	R	R	R
rs17020213	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y
	T/C	-	-	-	-	Y*	Y	Y	-	Y*	Y	Y	Y
rs867529	G/C	-	S*	-	-	S	S*	S	S*	S	-	-	-
rs71414432	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7571971	T/C	C*	C*	C	C*	Y*	Y	Y	C*	Y*	C*	C*	C*
	T/C	Y*	Y*	-	-	Y	Y	Y	C	Y	Y	Y	Y*
rs35602605	G/T	-	-	-	-	-	T	K	-	-	-	-	-
rs566792	T/C	C	C	C*	Y*	C*	Y*	Y*	Y*	Y	Y*	C*	H*
rs3207297	C/T	T	Y	-	-	Y*	Y*	Y	-	-	Y*	Y	Y
rs9881589	G/A	A	R	-	-	R	R	R	-	R*	-	-	R
rs9862375	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4072650	C/A	M*	M	-	-	M	M	M	-	M*	-	-	M
rs13069661	A/G	R	R*	-	-	R*	R*	R*	-	R*	-	-	-
rs62622379	G/A	R	R	-	-	-	-	-	-	-	-	-	R*
rs1138510	T/C	Y	Y	-	-	Y*	Y	Y	-	Y*	-	-	Y*
rs7652597	T/C	C*	C*	NP	NP	-	Y*	Y*	-	-	-	-	C
rs4072651	C/T	Y*	T	-	-	Y*	Y*	Y*	-	-	-	-	Y*
rs11719912	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2230596	C/T	Y	Y	-	-	Y*	Y	Y*	-	Y*	-	-	Y
rs71634227	CCA/TCG	R*	R*	-	-	R*	R*	R*	-	-	-	-	R*
	A/G	R	R	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	Y	C	-
	T/C	-	-	-	-	C*	Y*	Y	-	-	-	-	-
rs1426810	G/A	R*	R*	R*	R*	R*	R*	R*	A	A	R	R*	R*
rs17299991	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs57904146	T/C	-	Y*	Y	Y	-	Y*	-	-	Y*	-	-	Y
rs3816112	C/T	-	S*	-	-	-	M*	-	-	Y*	-	-	-
rs12630327	A/C	-	-	M	M*	-	-	-	-	-	-	-	M*
rs1354091	T/G	K	K	-	-	K*	Y*	-	-	K*	K	K	K*

rs266718	T/C	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	-	Y
rs10876394	C/T	T*	T*	NP	NP	T*	T*	T*	T*	T*	T*	T*	T*
rs11723037	A/G	R	R	-	R*	-	R	R*	R*	R	R*	R*	R*
rs4699688	G/C	S	S	-	-	S*	S	S	S*	S*	S*	-	NP
rs10433890	G/A	R*	R*	R*	-	R*	R	R*	R*	R*	R*	-	NP
rs10920305	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs55666208	G/C	S*	S*	-	-	-	-	-	S	S*	S	S	S
rs1130193	G/A	A	A*	NP	NP	R*	R*	R	A	R	R*	-	-
rs2819362	T/C	Y*	Y*	NP	NP	Y*	Y*	Y*	C	Y*	Y*	Y*	C
rs56310296	T/C	Y*	Y	-	-	-	-	-	Y*	Y*	Y	Y	Y
rs11543979	C/G	S	S*	S*	-	S*	B*	S*	S	S	S	S	N*
rs2819361	C/G	S	S	S	S	S*	S	S	G*	S	S	S	G
rs74136712	G/A	-	-	-	-	-	-	-	R	R	-	-	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3788848	T/C	-	-	-	-	Y	Y*	Y	-	Y*	Y	Y	-
	C/T	Y*	-	-	-	-	Y*	Y*	-	-	Y*	Y*	Y*
rs3788847	C/T	-	-	-	-	Y	Y*	Y	-	Y*	Y	Y	-
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3788845	C/G	S*	S	S	S	S*	-	-	-	-	-	-	-
rs2227997	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34644316	C/T	-	-	NP	NP	low_cov	T	Y*	-	-	Y*	-	NP
rs35332676	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11240540	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs79614693	A/G	-	-	-	-	-	-	-	R*	R	-	-	NP
rs6677586	A/G	-	-	NP	NP	-	-	-	-	-	-	-	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs77636349	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
	A/C	-	-	M*	M*	-	-	-	-	-	-	-	NP
	T/C	-	-	-	-	-	-	-	Y	Y*	-	-	NP
	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
	G/C	S	S	-	-	-	-	-	-	-	-	-	-
rs13006131	C/G	S*	S*	G	S	S	S*	G*	S	S	G*	S*	S
rs35606117	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs35145595	C/A	A*	M	M*	M	A*	A*	A*	M	M*	A*	A*	M
rs11539645	A/G	-	M*	-	-	R	R	R	-	R*	-	-	M*
rs75984373	C/T	-	-	Y*	Y*	-	Y*	-	Y*	Y*	-	-	Y*
	T/A	-	Y*	Y*	B*	-	B*	-	-	Y*	Y*	Y*	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	Y*	Y*	Y	-	-	-	-	-
	C/A	-	-	S*	-	M*	M*	M*	S*	S*	-	-	S*
rs72797432	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1132553	G/A	R*	R	R*	R*	R*	R	R*	R*	R*	-	-	R*
rs17236975	A/T	-	W*	W	W	-	W*	-	-	W*	W	W*	W
rs2598116	A/C	M*	M	-	-	M*	M*	M	-	-	-	-	-
rs1132552	C/T	Y*	Y	Y*	Y*	Y*	Y	Y*	-	-	T*	T*	Y*
rs71546610	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs1052969	A/G	-	-	R*	R*	-	-	-	-	-	G	G*	-
rs61761894	G/A	-	-	-	-	-	-	-	-	-	R	R*	-

rs1802073	G/T	K	K	K	K	K	K*	K	K*	K*	K*	K*	K*
rs1802074	C/T	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y
rs11557813	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs62446002	G/A	-	-	-	R*	-	-	-	-	-	-	-	-
	A/G	R*	R*	-	-	-	R*	-	-	-	-	-	R*
rs1131885	T/C	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y	-	-	Y*
rs45497499	A/G	R	R*	NP	NP	R*	R*	-	-	R*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
	A/G	R*	R*	R*	R*	R*	G*	R*	R*	R*	R*	R*	R*
	G/A	R*	R*	R	R	R*	D*	R*	R*	R*	R*	R*	V*
rs73154208	C/G	S	S	-	S*	-	-	-	-	-	G	G*	G
rs1131883	C/T	-	S*	-	Y	-	-	-	-	Y*	Y	Y*	Y
	T/C	Y*	Y*	C*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs4653328	A/T	-	-	NP	NP	NP	NP	NP	-	W*	NP	NP	W*
rs3754334	G/A	-	-	-	-	R	A	R*	-	R*	-	-	R*
rs35903225	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs6678616	C/T	-	-	-	-	Y*	Y*	Y*	-	Y*	-	-	Y*
rs56043737	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1803527	C/T	Y*	Y*	T*	Y*	Y*	Y*	T*	T*	Y*	Y*	T*	T*
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs6678618	C/T	-	-	-	-	Y	Y*	T	-	Y*	-	-	Y*
rs1054750	T/C	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
rs17801309	G/A	-	-	R	R	R*	R	R	-	R*	-	-	-
rs3762717	T/C	-	-	NP	NP	-	-	-	-	-	Y*	Y*	NP
rs76905803	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs7650466	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y*
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7650184	C/A	-	-	M*	M*	-	A	M	-	-	M	M	NP
rs28623022	T/A	-	-	-	-	low_cov	-	-	-	-	W*	W*	NP
rs73139148	G/A	-	-	-	-	-	-	-	-	-	R	R	R
rs73139147	G/A	-	-	-	-	-	-	-	-	-	R	R	R*
rs1398197	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs35124509	T/C	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*
	C/T	Y*	-	-	-	-	Y*	-	-	Y*	-	-	Y
rs3770207	G/C	S	S	-	S*	S	S	S	-	S*	S	S	S
rs957466	C/T	Y	Y	-	-	Y	Y*	Y	-	Y*	Y	Y	Y
rs2303897	C/T	-	-	-	-	Y*	T	T	NP	NP	-	-	-
rs62178658	G/A	-	-	-	-	A*	A*	A	R	R	-	-	-
rs62178659	A/C	-	-	-	-	M*	M*	M*	C	M	-	-	NP
rs17370971	C/T	Y	Y	-	-	-	-	-	-	Y*	Y	Y	Y
rs8508	G/T	K	K	-	-	K*	-	K*	-	-	K*	K*	NP
rs10196918	T/G	-	-	-	-	K*	K*	K	-	-	-	-	NP
rs13385757	G/C	C	S	-	S*	S*	-	S*	-	V*	S	S	S
rs3087584	T/C	Y	Y	-	Y*	Y	Y	Y	-	Y*	Y	Y	Y
rs957465	C/T	Y	Y	-	-	Y	Y*	Y	-	Y*	Y	Y	Y
rs3770208	C/T	Y	Y	-	Y*	Y	Y*	Y	-	Y*	Y	Y	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55784741	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs4860649	T/C	-	-	Y*	-	-	-	-	Y*	Y*	-	-	NP
rs1451184	G/C	-	-	-	-	-	-	-	-	-	-	-	-

	T/C	-	-	-	-	-	-	-	-	-	Y	Y	Y*
rs34509814	C/T	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-
rs56390132	G/A	-	-	-	-	R*	-	-	-	-	-	-	-
	C/T	T	Y	Y*	Y	Y*	Y	Y	-	Y*	Y	T	Y*
rs16838751	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs56147502	G/A	-	R*	-	-	-	R*	-	-	R*	R	R	-
rs345730	C/T	B*	Y	Y	B*	-	-	-	Y*	Y*	B*	Y	Y
rs345713	A/G	G*	G*	G*	G*	R*	G	R	G*	R	R*	R	R
rs474809	G/A	-	-	R*	R*	-	R*	R*	A	A	R*	R*	NP
rs660217	A/G	-	-	NP	NP	R*	R*	R*	G	R	NP	NP	NP
rs164544	C/T	-	-	T	Y*	T*	T*	T*	Y	Y	T*	T*	NP
rs41266041	C/T	-	-	NP	NP	-	-	-	Y*	Y	-	-	-
rs56044578	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
rs41266037	A/G	-	-	NP	NP	-	-	-	R	R	-	-	-
rs999765	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs209696	C/T	-	-	NP	NP	-	-	-	Y*	T*	NP	NP	-
rs56218493	C/T	-	-	-	-	-	Y*	-	Y*	Y	Y	Y	-
rs606002	T/C	Y	Y	NP	NP	-	-	-	Y*	Y	NP	NP	-
rs209699	A/G	-	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	-
rs56157621	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs41266039	C/T	-	Y*	-	-	Y*	-	-	Y	Y	-	-	-
	C/A	-	-	A*	M	-	-	-	-	-	-	-	-
rs6439521	G/C	S	S*	NP	NP	low_cov	S*	S*	C*	S*	S*	S*	S*
rs2138212	C/T	Y	Y	Y*	Y	T*	T	Y*	Y	Y	Y	Y	T
rs6786165	T/C	Y*	Y*	C*	C*	Y*	Y*	C*	C*	C*	Y*	C*	C*
rs7621491	G/A	A*	V*	R*	R*	A*	R*	A*	A*	R*	A*	R*	A*
rs4955534	T/A	W	W	W*	W	W*	W	W	W*	W	W	W	W
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs62272388	C/A	M*	M*	NP	NP	-	M*	-	-	-	M*	M	-
rs13071253	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	Y*	-
rs13075174	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3732566	C/T	Y*	Y*	Y*	Y	Y	Y	Y	-	Y*	Y	Y	-
	A/T	-	-	-	-	-	-	-	-	W	-	-	-
rs3182239	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs7644369	C/T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	-	Y*
rs9857995	G/C	S	S	C	S*	S	S	S	S	S	S	S	S
rs309472	T/C	Y*	Y*	NP	NP	C*	Y*	Y*	C*	C	Y*	C*	Y*
rs36069879	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs10917325	C/T	Y*	Y*	-	-	Y*	Y*	-	Y*	Y	Y	Y	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	R	R	R*	R	R*	R*	R	R*	R	R*	A	-
rs59735023	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs56326327	G/C	S*	S*	-	-	-	-	-	S	S	-	-	-
	A/G	V*	R	-	-	R*	-	-	R*	R	-	-	-
rs314312	G/C	-	-	NP	NP	low_cov	C	S*	NP	NP	NP	NP	S
	A/G	R	R	R*	R	R*	R	R	R	R	R	R	R
rs314310	T/G	K	K	K*	K*	K*	K	K	K*	K	K*	K*	K
cnvi0114599	CNV_PROBE	Y	Y	C*	Y	Y*	Y	Y	Y	Y	Y	Y	Y
rs2250818	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
	C/T	-	-	-	-	-	-	-	Y*	-	Y	Y*	-

rs8177149	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs56087487	C/T	Y	Y	-	M*	-	-	-	-	-	-	-	-
rs8177156	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6950043	G/C	-	-	S	S	-	-	-	-	-	-	-	-
rs8177134	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs732518	G/A	-	-	A	A*	R*	-	-	-	-	-	-	-
rs8177158	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs8177155	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs8664	T/C	-	-	Y	Y*	-	-	-	-	-	-	-	NP
rs78763451	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55943169	C/A	-	-	-	-	-	-	-	M	M*	-	-	-
rs55928971	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1136201	A/G	-	-	-	-	R*	R	R*	R	R	R	R*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1058808	C/-/G	G*	S*	S*	S*	G*	S*	G*	S	S	S	S*	S*
rs773123	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2271189	G/A	-	-	-	-	R	R	R	R*	R	-	-	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs3748962	T/C	-	-	Y*	Y*	low_cov	-	-	-	Y*	Y	Y*	C
rs16845990	T/C	Y	Y	Y*	Y*	Y*	Y	Y	C	Y	-	-	-
rs62626349	G/C	-	-	S*	S*	-	S*	-	-	-	-	-	-
rs1836724	G/A	R	R	R*	R*	R*	A	R	R	R	R	R*	A
rs10932374	G/A	R*	R*	-	-	R*	R	R	-	R*	-	-	-
rs6723461	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1595064	G/C	S	S*	S	S*	S*	S	S	S*	S	-	-	-
rs4672612	A/G	R	R	G*	G*	R*	R	R	G	R	R	R	G*
rs12471583	T/C	Y	Y	Y*	Y*	Y	Y	Y	C	Y	-	-	-
rs1595065	G/A	R*	R*	R*	A*	R*	R	R	A*	R	R*	R*	NP
rs3748960	C/T	T*	T*	NP	NP	T*	T*	T*	T*	T*	T*	T*	NP
rs1972820	G/A	R*	R*	NP	NP	-	R*	-	R*	R*	NP	NP	NP
rs11895168	A/C	M	M	C	M*	M*	M	M*	M*	C	M*	M*	NP
rs35497618	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
	T/A	-	-	W*	W	-	-	-	-	-	-	-	-
rs12467225	C/T	Y	Y	Y	Y*	Y	Y	Y	T	Y	-	-	-
rs75898504	T/A	-	-	NP	NP	-	-	-	-	-	NP	NP	NP
rs3796232	G/A/C	S	S	S*	R*	-	S*	-	S	S	S	S	S
rs6764295	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs9311598	C/G	S	S	G	G*	-	-	-	S	S	S	S	-
	G/A	-	-	-	-	-	-	-	-	-	R	R	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs41540513	G/A	R*	R	-	-	-	-	-	-	-	-	-	-
rs11615	A/G	-	-	R*	R*	R*	R*	R	-	-	-	-	R
rs238406	T/G	K*	K*	K*	K*	-	-	-	K*	K*	K*	K*	K*
rs1799793	C/T	Y*	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP
rs1052555	G/A	R	R	R	R*	R*	R*	-	-	R*	R	R	R
rs13181	T/G	K	K	K	K	-	-	-	-	K*	K	K*	K*
rs41269831	C/A	-	-	-	-	M*	M	M	-	-	-	-	-
rs3738948	A/G	R*	R*	R*	R	R	R	R	R*	R	-	-	R*
rs4150515	T/C	Y	Y	Y*	Y*	-	-	-	-	-	Y	Y	-

rs4150402	T/C	C	C	Y*	Y*	Y*	Y*	C*	C*	C	Y*	Y*	Y*
rs1566823	A/G	-	-	-	-	R*	R	R	G	R	R*	R	G
	G/A	-	-	-	-	-	-	-	-	R	-	-	S*
rs1799801	T/C	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y
rs9925509	A/G	-	-	-	-	-	R	R*	-	-	-	-	NP
rs3136042	C/T	-	-	NP	NP	-	-	-	-	-	Y	Y	-
rs2276464	G/C	S	S	-	-	S*	C	S	S	S	S*	S*	NP
rs11075223	C/A	A	M*	-	-	A*	A*	A*	-	M*	M*	-	NP
rs76447723	G/T	-	-	-	-	-	K	K*	-	-	-	-	-
rs3136225	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs1800067	G/A	-	-	-	-	R	R	R	-	R*	-	-	R
rs79560972	T/C	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-
rs16963255	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs4781563	G/A	R	R	-	-	-	R	R*	-	-	-	-	R*
rs56012340	C/A/-	M	M	-	-	M*	M	M	-	M*	M*	M*	M*
rs3743538	G/T	K*	K*	-	-	K	K*	K*	-	K*	K*	K	B*
rs751402	A/G	R*	R	R*	R	-	R*	R*	R	R	R*	R	R
rs9514066	G/C	S*	S*	S*	S*	S*	S*	B*	S*	S*	S*	B*	S*
rs2296147	T/C	Y	Y	C*	Y	-	Y*	-	Y	Y	Y	Y	Y*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4150332	T/C	Y*	Y*	Y*	C*	C*	Y*	Y*	C*	Y*	Y*	C	Y*
rs4150314	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs4771437	A/G	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*	G*
rs1047769	A/G	-	R*	R	R	-	-	-	-	R*	-	-	-
rs4150342	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs873601	G/A	R*	R*	A*	R*	A*	R*	A	R*	R*	R*	R*	A*
rs1047768	T/C	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*
rs17655	G/C	S*	S*	-	-	-	-	-	S	S	S	S	S*
	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	-	-
rs2228524	G/C	S	S	S	S	S	S*	S	S	S	C*	S*	S*
rs4253005	C/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2229760	G/A	-	-	R*	R*	-	-	-	R	R*	A*	A*	R
rs2367707	A/G	R*	R*	R*	R*	R	R	R	R*	R	R*	R*	R*
rs6836436	T/G	-	-	-	-	-	K*	-	-	-	-	-	-
rs11700250	C/T	-	-	Y	Y	-	-	-	-	Y*	-	-	-
rs6060456	T/C	W*	-	-	Y*	Y	Y	Y	Y	H*	-	-	-
rs8825	A/G	-	-	-	-	R*	R*	R	R*	R*	-	-	R*
rs12481365	C/T	-	-	T	Y	-	-	-	-	Y*	-	-	-
rs73283830	T/G	-	K*	K	K*	-	-	-	-	K*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	S	S*	-	-	S*	B*	S*	S*	S*	S*	S	-
rs2271263	A/G	G*	R*	NP	NP	low_cov	G*	G*	NP	NP	G*	G*	-
	G/A	R	R	A	R*	R	R*	R	R*	R*	R*	R*	-
rs196911	C/T	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs55653398	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs196909	A/G	R*	R*	G*	R*	R*	G	R*	R*	R*	R*	G*	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
	A/G	R*	R*	R*	R*	R*	R*	G	R*	R*	R*	G	R*
	A/G	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*

rs16947383	C/T	-	-	-	-	Y	Y	Y	-	Y	-	-	-
	T/C	Y*	Y*	C*	Y*	Y*	Y*	Y	Y	Y	Y*	C*	Y*
rs196910	A/G	G*	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*	R*
	G/A	R	R	-	-	R*	R	R	-	R*	-	-	R
rs26764	C/G	S	S	-	-	-	S*	-	G	S	-	-	-
rs3809682	G/A	R	R	R*	R*	R	R*	R	R*	R	R*	R*	R*
rs8013756	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/A	-	-	-	-	-	-	-	-	-	-	-	NP
rs62498042	G/A	R*	R*	NP	NP	R*	R*	R*	NP	NP	-	R*	NP
rs4732748	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	R	R	-
GA010818	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1110719	A/T	T	T	W*	W*	W*	W*	T	W*	W*	W*	W*	T
rs1318648	C/A	-	M*	M*	A	M	M	A*	M	M	M	M	M*
rs3214023	C/T	Y*	Y*	T	Y	Y	Y	Y*	Y	Y	T*	T	Y*
rs56358776	G/A	A*	A	NP	NP	-	-	-	R*	R	R*	R*	-
rs2250122	G/T	K*	K*	-	-	-	D*	-	-	K*	-	-	K*
rs2295190	G/T	K*	K*	-	K*	K	K	K	-	K*	-	-	K
rs2295192	C/T	-	-	-	-	-	Y*	-	Y	Y	-	-	Y*
rs12681	C/T	Y	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y*	Y*	-
rs62030245	C/G	-	-	-	-	S*	-	S*	S*	S*	-	-	NP
rs35831705	C/T	Y*	-	-	-	Y*	Y*	Y	T	Y	-	-	Y*
rs62030246	G/A	R*	R*	-	-	R	R*	R	R	R	-	-	R
rs12913096	G/A	-	-	NP	NP	R	R	R	-	R*	R	R*	-
rs3206354	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R	R	-	-	-	-	-	-	-	-	-	NP
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs9613855	A/G	-	-	R	R*	R	R	R	R	R	-	-	-
rs76540899	T/A	W	W	-	-	-	-	-	-	-	-	-	-
rs11703595	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs79684534	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs3735047	G/A	R*	R*	R*	R*	A	R*	R	R*	R	R	A	A*
rs6953296	G/A	V*	R	-	-	V*	V*	R	V*	V*	V*	V*	V*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3735046	G/A	R*	R*	R	R	R	R*	A*	R	R	A*	R*	R*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs56138358	G/T	-	R*	-	-	K*	K*	K*	-	-	-	-	T
	A/G	R	R	-	-	-	-	-	-	-	-	-	NP
rs2042456	G/A	R	R	-	-	R	R*	R	R*	R*	R	R	R
rs10282007	C/T	Y*	Y*	Y	Y*	Y*	Y*	T*	Y	Y	Y*	Y*	T*
rs10282224	G/A	A*	A*	R	R	A	A*	A	R	R	A*	A*	A*
rs13437786	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1132683	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3735048	C/G	S*	S*	G	S	G	S*	G*	S	S	S*	G	S*
rs17439693	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs11546829	G/A	R	R	R*	R	R*	R	R	R*	R*	-	-	R
rs10113582	T/C	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	-
rs6983422	G/A	R	R*	-	-	-	-	-	R*	R*	R	R	-
rs6988932	G/A	R*	R*	-	-	low_cov	-	-	-	-	R*	-	NP
rs7837891	C/T	Y*	Y*	Y	Y	Y*	Y*	Y	-	Y*	Y	Y	-

rs4876389	C/T	Y*	Y	T*	T*	T	Y	Y	T*	Y	T*	T*	T*
rs11785084	C/T	-	-	T	-	-	-	-	-	-	-	-	-
rs76555305	G/A	-	-	-	-	A	R	R	-	-	-	-	-
rs4876390	T/C	Y*	Y*	NP	NP	Y*	Y	Y*	C*	C	C*	C*	NP
	T/C	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs11778935	A/G	-	-	R*	R*	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10458911	T/C	-	-	NP	NP	NP	NP	NP	Y*	Y*	-	-	-
rs3923808	G/A	R*	A	-	-	-	R*	A*	R*	R*	-	R*	-
	G/C	-	-	-	-	-	-	-	S	S*	-	-	-
rs9483586	A/G	R*	R*	R*	R	R	R	R	R*	R*	R	R	R
rs2184784	C/A	-	-	-	-	-	-	-	-	-	M	M	-
rs17053540	C/T	-	-	NP	NP	Y*	Y	Y*	-	-	Y*	Y	NP
rs17053542	A/T	NP	NP	NP	NP	W*	W*	-	NP	NP	NP	NP	NP
rs12201595	G/A	-	-	-	-	-	R*	-	-	-	R	R	-
rs3734279	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	NP
rs9483585	T/A	A*	A*	A*	A*	A*	W*	A*	A*	W*	A*	A*	A*
rs9493627	G/A	-	-	R	R*	R	R	R	R	R	R	R	-
rs41286208	G/A	-	-	-	-	-	R*	-	-	R*	-	-	-
rs2072407	A/G	R	R	G*	G*	G	G	G*	R	R	G*	R*	G
rs2302427	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs17551792	G/A	R*	-	R*	R	R*	-	-	-	R*	R	R	-
rs1131715	C/T	NP	NP	NP	NP	-	-	-	T*	T	-	-	NP
rs2297046	C/T	Y	Y	NP	NP	-	Y*	-	-	-	-	-	Y*
rs36139924	A/G	R	R	-	-	R*	R	R	R*	R	R	R	R
rs62644536	C/T	Y	Y	-	M*	-	-	-	Y	Y	-	-	Y
rs6951112	T/C	Y*	Y*	C*	Y*	C*	Y*	Y*	C*	Y*	Y*	Y*	Y*
rs36170987	G/T	K*	K	-	R*	K*	K	K*	K*	K*	K	K*	K
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	Y*	-	-	-	-	-	-	-	-	Y*	-	Y*
rs6945992	A/G	-	-	-	-	-	-	-	-	-	R*	R	-
	T/A	-	-	-	-	low_cov	-	-	-	-	W*	W	-
rs62428649	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs36138803	C/G	G*	G*	-	-	low_cov	S*	S*	NP	NP	NP	NP	NP
rs11546479	G/A	R	R	-	-	-	-	-	R	R	R	R	R
	C/T	-	-	-	-	Y*	Y*	-	Y	Y	-	-	Y
rs4916935	G/A	R*	R*	-	-	low_cov	R*	A*	A*	R*	A*	R*	R*
rs1134015	T/C	Y	Y	-	-	-	Y*	-	Y	Y*	Y*	Y*	-
rs12261	T/C	Y	Y*	Y*	Y*	Y*	-	Y*	Y	Y	Y	Y	Y*
rs4584	G/C	S*	V*	S*	V*	S	S	S	S*	S*	S*	S	S*
rs9168	C/A	-	H*	-	-	M	M	M	-	M*	M*	M	M*
rs1792	G/A	-	-	-	-	-	-	-	-	R*	R	R	-
rs9584850	G/C	S*	S*	S*	-	S	S	S	-	S*	V*	S	S*
rs45469897	A/G	R*	R*	-	-	-	R*	-	-	R*	R	R	-
rs11556829	T/C	-	-	-	-	-	Y*	Y	Y*	Y*	-	-	-
rs600644	C/T	-	Y*	Y	Y	Y*	-	Y*	-	Y*	-	-	-
rs1998535	C/T	-	-	-	-	-	-	-	-	-	Y*	Y	-
rs7318267	C/T	-	Y*	Y	Y	Y	Y	Y	-	Y*	-	-	Y
rs2282048	A/G	R*	-	R*	R	R	R	R	-	R*	-	-	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs4075818	T/C	-	-	Y*	Y	Y	Y	Y*	-	Y*	-	-	Y*
rs2271030	G/C	S	S	S	S*	S*	S	S	S*	S	-	-	S*
rs35804074	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2018761	A/G	R*	R*	G*	R*	G*	G	R*	R*	R	R	R	R*
rs1468063	C/T	Y	Y*	-	-	-	-	-	Y	Y*	-	-	-
rs1051070	A/T	-	-	T*	W*	-	-	-	-	-	-	-	NP
rs2234978	T/C	Y*	C	-	-	NP	NP	NP	Y*	Y*	-	-	NP
rs2229521	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4064	G/C	S*	S*	S*	C*	-	-	-	-	S*	S*	S*	S*
rs3740286	A/G	-	R*	-	-	G	R	R	R	R	-	-	R*
rs7262	A/-/T	T*	W*	W	W	W*	W*	W	W*	W	-	-	-
	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs35466364	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	R*	R	-	-	-	-
rs76079654	A/G	-	-	-	-	-	-	-	R	-	R*	R*	NP
rs919771	T/C	NP	NP	NP	NP	low_cov	Y	-	-	-	NP	NP	NP
rs75320879	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2229085	A/G	-	-	-	-	R	R	R	-	-	-	-	-
rs11738705	A/G	-	-	R*	R	-	-	-	R	R	R*	-	G
rs78916550	A/G	G*	G*	-	-	R	G	R	-	R*	-	-	NP
rs80333111	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs75156476	G/A	R*	R	-	-	R	R	R*	-	-	-	-	-
rs4365877	G/A	R*	R*	R	R*	-	R*	-	A	R	R*	-	R
rs11956354	G/A	-	-	-	-	R*	R	R	-	-	-	-	NP
rs79900565	G/A	R	R	-	-	R	R	R	-	R*	-	-	-
rs75728410	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76831711	A/C	M	M	-	-	M*	M	M	-	M*	-	-	-
rs76266412	T/C	C*	C*	NP	NP	low_cov	Y	Y	-	-	-	-	NP
rs78677189	A/C	M*	M	-	-	M*	M	M	-	-	-	-	-
rs76213925	A/T	W*	T	-	-	W	W	W	-	-	-	-	NP
rs75911198	T/C	Y	Y*	-	-	Y	Y	Y	-	Y*	-	-	-
rs79318843	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs6594351	C/G	G*	S*	G	S	G*	S*	S*	S*	G	S*	S*	S*
rs80069450	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs75259937	A/G	R	R	-	-	R*	R	R	-	-	-	-	-
rs77682662	A/G	R*	R	-	-	R*	R	R*	-	-	-	-	-
rs35815221	T/C	-	-	C	Y	-	-	-	-	-	-	-	-
rs78091619	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs76885502	A/C	C*	M	-	-	low_cov	M	M	-	-	-	-	NP
rs34347344	G/A	-	-	-	-	-	-	-	-	-	R*	R*	R
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs35420992	C/T	Y*	Y*	Y*	Y	-	-	-	-	-	-	-	-
rs3740639	C/T	Y	T	-	-	T	Y*	T*	-	Y*	Y*	Y	-
rs3925	G/A	R	R*	-	-	R	R*	R	R*	R*	R*	-	R*
	A/G	-	-	-	-	low_cov	-	-	-	-	-	-	NP
rs13317	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs3213849	G/A	-	-	NP	NP	low_cov	R*	-	-	-	NP	NP	-
rs17175898	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs2304000	C/G	S	S	-	-	S	S	S	-	S*	-	-	-
	G/A	R*	-	-	-	-	-	-	-	-	-	-	R*
rs2981437	T/C	Y*	Y*	C*	C*	C*	Y*	Y*	C*	Y*	C*	Y*	Y*
rs1801043	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs1047057	G/A	R	R	R	R*	R	R*	R	R	R	R*	V*	V*
rs1047100	T/C	C*	C*	Y*	Y	Y	Y*	Y*	C*	Y	C*	C*	Y*
rs1047111	C/G/T	N*	B*	Y*	Y*	B*	N*	B*	Y	B*	Y*	B*	N*
rs1047101	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2234909	T/C	Y	Y	-	-	-	-	-	-	Y*	-	-	Y
rs61735104	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3135904	C/T	Y*	Y*	T*	Y*	T*	Y*	Y*	Y*	Y*	T*	T*	T*
rs3135900	A/G	-	-	-	-	-	-	-	R	R	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3135890	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	-
rs3135902	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3135867	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1966265	G/A	R*	-	-	-	R	R	R	R*	R*	-	-	R*
rs422421	T/C	Y	Y	Y*	C*	C*	Y*	Y*	Y	Y	Y*	C*	Y
rs452885	C/T	Y	Y	Y*	Y*	T*	Y*	T*	Y	Y	T*	Y*	Y*
rs446382	T/G	K	K*	G*	K*	G*	G	G*	K	K	G*	K*	K*
rs442856	A/G	R	R	R*	R*	R*	R*	R*	R	R	R*	R*	R
rs387598	G/A	R	R*	R*	A	R*	R*	R*	R	R	NP	NP	R*
rs351855	G/A	-	-	-	-	-	-	-	R*	R*	-	-	-
rs376618	C/T	Y	Y	Y*	Y*	T	Y*	Y*	Y	T	Y*	Y*	Y
rs9489	G/C	S	S	S*	C*	S	S	S	-	S*	C*	C*	S
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs2229307	T/C	-	-	-	Y*	Y*	Y	Y*	-	-	-	-	Y*
rs36035373	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs2228230	C/T	-	-	Y*	Y	Y	Y	Y	-	Y*	Y	Y*	Y*
rs35529982	G/A	-	-	-	-	-	-	-	R*	R*	-	R*	-
rs3194383	C/T	Y	T	NP	NP	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
rs1014056	T/C	Y*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*	Y
rs7685117	T/C	Y*	Y*	C*	C*	C*	Y*	C*	Y*	Y*	Y*	Y*	Y*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10028020	G/A	-	-	-	R*	R*	R	R*	-	-	-	-	R*
rs1132998	T/C	C*	C*	NP	NP	low_cov	Y*	Y*	Y*	Y*	Y*	Y*	C
rs35597368	T/C	-	-	Y	Y	Y*	Y	Y	-	Y*	-	-	Y*
	C/T	-	-	Y*	Y	-	-	-	-	Y*	-	-	-
rs7222600	G/T	-	-	K*	K	-	-	-	-	-	-	-	NP
rs1736212	G/C	S*	S*	C	C*	S*	S*	S	C	S	S	S	S*
rs7218795	A/G	NP	NP	NP	NP	R*	low_cov	G*	NP	NP	NP	NP	NP
rs1708617	A/G	R*	R*	R*	R	R*	R*	R	R*	R	R*	R*	NP
rs41323249	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs2292527	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs1708629	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	R*	R*	-
rs1736219	G/A	R*	R*	R*	R	R	R*	R	R	R	R	R	R*
rs1708618	T/C	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	-
rs3803761	A/G	R*	R*	R*	R	R	R*	R	R	R	R	R	R

	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2070822	A/G	-	-	-	-	-	-	-	-	-	-	-	R
	A/C	-	-	-	-	-	-	-	M	M	-	-	-
rs1131356	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs8640	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs66869903	C/G	S	S	S	S	S	S	S	S	S	-	-	G
rs2140104	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	Y*
rs12632456	G/A	R*	-	-	-	-	R*	-	-	-	-	-	-
rs1522384	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs9870243	C/G	S	S*	G	S	S	S*	S	S	S	B*	-	S*
rs9884098	G/A	R	R*	NP	NP	R*	-	R*	-	R*	R*	R*	NP
rs4681795	T/C	Y	Y	Y*	C*	Y*	Y*	Y	Y*	Y	Y*	Y	Y
rs12632362	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	W*	-	-	-	-	-	-
rs2362903	A/G	R	R	G*	G*	R	R*	R	R	R	R	R	R*
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs73075944	G/C	S	S	S	S	S	S*	S	S	S	-	-	S*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2362899	A/G	G*	R*	R*	G*	G*	G*	G*	G*	G*	NP	NP	NP
rs1131264	G/C	S	S	S	S	S	S*	S	S	S	S	S	S
rs3209052	***T/C***	***Y****	***Y****	***Y****	***-***	***Y****	***Y****	***Y***	***Y***	***Y***	***-***	***Y****	***Y****
rs55875014	***G/C***	***-***	***-***	***-***	***S****	***-***	***S****	***S****	***-***	***S****	***-***	***-***	***-***
rs56314249	***C/T***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***M****
	C/T	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***Y***	***T***	***-***
rs7326277	***T/C***	***-***	***-***	***-***	***-***	***Y***	***Y****	***Y***	***Y****	***Y***	***-***	***-***	***-***
	A/G	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***R***	***R***	***-***	***-***	***-***
rs9554314	***A/C***	***-***	***-***	***-***	***-***	***M****	***M***	***M***	***M***	***M***	***-***	***-***	***-***
rs1933437	G/A	-	-	-	R*	-	-	-	R	R	-	-	R
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34374211	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3829382	G/T	K*	K*	-	K	K	K	K	K*	K*	K*	K*	K*
	G/A	R*	R*	-	R*	R*	R*	R*	R*	R	R	R	R*
rs2491231	A/G	G*	G*	G*	R*	-	-	-	G*	R*	R*	R*	R*
	A/G	R*	R	R*	R	G*	R*	R*	-	R*	R*	R	R*
rs34221241	T/C	-	-	-	Y*	-	-	-	-	Y*	-	-	-
rs1130378	G/A	-	-	R	R	-	-	-	-	-	-	R*	R
rs307822	T/C	C*	Y*	C*	C*	C*	Y*	C*	Y*	Y	C*	C*	C*
rs72816989	G/A	-	-	-	-	R	R	R	-	-	-	-	-
rs72816990	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs78447148	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2279622	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs307826	T/C	Y*	-	-	-	Y	Y	Y	-	Y*	-	-	-
	C/T	Y*	Y	NP	NP	low_cov	-	-	-	-	-	-	-
rs3736062	G/A	-	-	-	-	R*	R	R*	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2242214	C/T	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	Y
rs307821	C/A	-	-	-	-	M*	-	M*	-	-	-	-	-
rs1250259	T/A	-	W*	A*	W*	W*	W*	W	W*	W	-	-	W*
rs34923683	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10804242	T/C	-	-	NP	NP	Y*	Y*	Y*	C*	C	-	-	NP

rs75933553	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1968510	A/G	G*	G*	NP	NP	low_cov	R	R*	G*	R	G*	G*	NP
rs1264	G/T	-	-	NP	NP	-	-	-	K*	K*	-	-	NP
rs11651	A/G	R	R	-	-	R*	R*	-	R*	R	R*	R*	-
	T/C	-	Y*	-	-	-	-	-	-	-	-	-	-
rs75072930	T/C	Y*	Y	-	-	Y	Y	Y	-	-	-	-	-
rs7608342	A/G	G*	R	NP	NP	R*	R	R	R*	R	R	G*	NP
rs11883812	T/C	-	-	-	-	-	-	-	-	Y*	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs7596677	A/T	-	-	NP	NP	-	-	-	-	-	NP	NP	NP
rs6709607	T/C	-	-	NP	NP	Y*	Y*	C	C*	Y*	NP	NP	NP
rs1132741	T/A	-	-	-	-	-	W*	-	-	W*	-	-	-
rs17516906	A/G	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs13652	C/T	T*	T*	T*	T*	Y*	Y	Y	T*	Y	Y*	T*	Y
rs2289202	G/A	R*	R*	R	R	-	R*	-	R	R	R	R	R*
rs79439906	G/A	-	-	-	-	-	-	-	-	R*	R	V*	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs80095429	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2577302	T/G	K*	K*	G*	G*	K	K	K	K*	G	K*	K*	G*
rs7588830	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2289198	T/A	-	-	-	-	-	-	-	-	-	-	-	NP
rs7568287	C/T	-	-	Y*	Y	-	-	-	Y	Y*	-	-	Y
rs1263	A/G	R	R	NP	NP	-	-	-	R*	R*	R*	G	NP
rs2692230	C/A	A*	A*	NP	NP	low_cov	M	-	NP	NP	NP	NP	NP
rs7589580	T/G	K*	K	-	-	K	K	K*	K*	K	K*	K*	-
rs1053238	T/G	K	K	-	-	K	K	K	K*	K	K*	K*	-
rs2239615	T/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	W*
rs1046117	C/T	Y*	Y	Y*	Y*	Y*	Y*	Y	T	Y*	Y*	T*	Y
rs7101	C/T	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y*	Y*	Y
rs984253	A/T	NP	NP	NP	NP	low_cov	W*	T*	NP	NP	NP	NP	NP
	C/A	-	-	M*	M	-	-	-	-	-	-	-	NP
rs2072360	T/C	Y*	-	-	-	Y	Y	Y	-	Y*	-	-	Y
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs3751437	A/G/C	NP	NP	R	G*	low_cov	-	-	R*	R*	-	-	NP
rs9532558	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	S*	-	-
rs4945816	C/T	T	T	Y*	Y*	Y*	Y	Y*	T	Y	T	T	Y*
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs4946936	T/C	Y*	Y*	Y	Y	Y	Y	Y	Y*	C	Y*	Y*	Y*
rs9400241	C/A	M*	M*	M*	M*	M*	M*	M*	M*	A	M*	M*	M*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs580396	T/C	C*	C*	C*	Y	C*	Y*	C*	C*	C	C*	C*	Y
rs73042128	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7775	G/C	-	-	R*	-	-	-	-	-	-	-	-	-
rs4666865	A/G	R	R	R*	R*	low_cov	R*	R*	R	R*	R*	R*	-
rs6863066	T/C	Y	Y	C*	Y*	Y*	Y	Y	C*	Y	Y*	Y*	C
rs2161612	A/G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs12910	G/T	-	-	NP	NP	-	-	-	K*	K*	K*	K*	K*
rs6916861	A/C	M	M	-	-	-	-	-	-	-	-	-	-

rs1022647	C/T	Y*	Y*	-	-	-	-	-	-	-	Y	Y	-
	G/A	-	-	-	-	-	R	-	-	R*	-	-	-
rs9487717	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs1022646	G/A	R	R	-	-	-	-	-	-	-	R	R	-
rs56085810	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs61751357	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs1046890	C/T	-	-	-	-	Y*	Y*	Y*	-	-	-	-	Y*
rs1046895	G/A	-	R*	-	-	-	-	-	R*	R	-	-	-
rs10848026	G/C	S*	-	-	-	-	S*	S*	S*	S	-	-	-
rs4760085	C/G	S*	S*	S*	G*	S*	S*	S*	S*	S*	S*	S*	S*
rs3741568	C/T	-	Y*	-	-	Y	Y*	Y	-	-	-	-	Y
rs1046893	G/C	-	-	-	-	S	S*	S*	S	S	-	-	S
rs10898563	A/G	R*	R*	-	R*	G	R*	G*	-	R*	R	G*	R
rs713065	A/G	R*	R*	R*	R	R	R*	G*	R*	R	R*	R*	R
rs11234890	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61749246	C/A	-	-	-	Y*	-	-	-	-	-	-	-	-
rs3802892	G/A	R*	R*	A*	A*	R	A*	A*	-	R*	A*	A*	R
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	S	S	-	-	-	-	-	-	-	-	-	-
rs6724297	T/A	-	-	-	-	-	-	-	W*	W	-	-	W
rs35994626	G/A	-	-	R*	R	R*	R	R	-	R*	-	-	R*
rs10932208	G/A	-	R*	A*	A*	A*	R*	R*	A*	R*	A*	A*	NP
rs3731568	A/C	NP	NP	NP	NP	low_cov	M*	M*	NP	NP	NP	NP	NP
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs55717133	C/T	Y*	Y*	-	-	low_cov	Y	Y*	Y	Y*	-	-	NP
rs74471859	A/T	-	-	W	W	W*	W*	W	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6435388	C/G	S*	S*	S*	S*	V*	S*	S*	S*	S*	S*	S*	S*
rs2934725	A/G	R*	R*	R*	G*	G*	R*	G*	R	R	R*	R*	R*
rs1053917	G/A	R	R*	R	R	A*	R	R*	R	R	R*	R*	R
rs3808554	A/G	G	R	R	R*	low_cov	R*	G	R	R	G	R	R
rs3808553	A/C	M	M	M*	M	V*	V*	V*	M	M	M*	V*	M
rs827528	A/G	-	-	-	-	-	R*	-	-	R*	-	-	R
rs3736047	A/G	R*	R	R	R*	G*	G*	R*	R	R	R*	G*	G
rs61753730	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4673222	G/A	-	-	R	R*	-	-	-	-	-	-	-	-
rs13034206	C/T	Y	Y	Y	Y	-	-	Y*	Y	Y	Y	Y	-
rs13034579	G/T	K	K	K	K	-	R*	-	K	K	K	K	-
rs1352	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs74989785	G/A	-	-	-	-	-	-	-	-	-	-	R*	-
rs73134914	A/C	-	-	-	-	-	-	-	-	-	M*	M	-
rs61749862	G/A	-	-	-	-	-	-	R*	-	R*	-	-	R
rs61749861	G/C	-	-	-	-	NP	NP	NP	NP	NP	-	-	-
rs3783466	C/T	-	-	NP	NP	-	Y*	-	-	-	-	-	-
rs3138503	C/T	Y	Y	NP	NP	-	-	-	-	-	Y*	Y	Y*
	G/A	-	-	R*	A	-	-	-	-	-	-	-	NP
rs75072999	G/A	-	-	-	-	R*	R	R	-	-	-	-	R
rs6964	G/A	R*	R	R*	R	R*	R	R	A*	R	-	-	-
rs1134921	C/T	-	Y*	NP	NP	-	-	-	-	-	Y	Y	S*
rs7693026	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-

	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2303271	C/T	Y	Y*	NP	NP	Y*	Y*	Y	-	T	Y*	Y*	Y*
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs34745339	G/C	-	-	-	R*	-	-	-	-	-	-	-	-
rs11076715	C/T	Y	Y	-	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y
rs2303269	C/A	-	-	S*	-	M*	M	M	-	-	-	-	-
rs1064315	G/A	R	R	-	-	-	R*	-	R*	R	R	R	R
rs12342165	T/C	-	-	NP	NP	-	-	-	-	-	-	-	Y
rs887688	G/T	K*	K*	-	-	K*	K	K*	-	K*	K*	-	K
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs13306391	G/C	-	-	-	-	-	S	S	-	V*	S	S*	-
rs13306388	C/T	B*	Y	-	N*	Y*	N*	Y*	-	H*	Y*	Y*	N*
rs17379771	C/A	M*	M	A	M*	M	M	M	-	M*	M	M	M
rs2973033	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	Y*
rs11111	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
	C/T	-	-	-	-	Y	Y	Y*	-	-	-	-	-
rs62360370	G/A	R	R	-	-	-	-	-	-	R*	-	-	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3749692	A/G	R	R	R*	R*	R	R	R	-	R*	G	R*	R*
rs2973051	C/T	T*	Y*	Y*	T	T	T*	Y*	-	Y*	Y	Y*	NP
rs1050616	T/C	C*	C*	C*	C*	C*	Y*	C*	-	Y*	C	C*	NP
rs2250208	T/C	Y	Y	C*	C*	Y	C*	C*	-	Y	C*	Y*	Y
rs17036	T/C	C*	Y*	C*	C*	C*	C	Y*	Y	Y	C*	Y*	Y*
rs2170363	G/A/C	-	-	-	-	S	S	S	-	S*	S*	S	S
rs2623167	A/C	M*	M*	M*	-	-	-	-	-	-	-	-	NP
rs1050627	A/G	R	R	G*	G	R*	G	R*	-	R*	-	-	-
rs2228225	G/A	A*	A*	A*	A*	R*	R	R	R*	R	R	R*	A*
rs2228224	G/A	R*	R*	R*	R*	R	R	R	R*	R*	R	R	R*
rs2228226	G/C	C*	S*	S	C	S	S	S	S*	S	S	S	S
rs474058	A/C	M*	C	NP	NP	low_cov	-	M*	M*	M*	M*	M*	M*
	G/A	-	-	K*	-	-	R*	-	-	-	-	-	-
	G/A	-	-	-	-	-	R*	-	-	-	-	-	R*
	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs3738880	G/T	K*	K	K*	K	K*	K	K	K*	K	K*	K*	K*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2278741	G/C	C	S	S	S	S*	S	S	C*	S	S*	C*	S*
	A/G	-	-	NP	NP	-	R*	-	-	-	-	-	-
rs75544832	T/A	-	-	-	-	-	-	-	-	-	-	-	W*
rs11681136	G/A	R*	A*	A*	R*	A*	R*	R*	A*	R*	R	R	R*
rs12711538	G/A	R	R	-	R*	R*	R*	R	R*	R*	R	R*	-
rs10167980	A/G	R	R	-	R*	R*	R*	R	R*	R	R*	R*	-
rs35364414	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs35961850	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2286291	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	K	K	K	-	K*	-	-	-

CM990705	HGMD_MUTATION	-	-	-	-	-	-	-	-	-	-	-	N*
	G/A	-	-	-	-	-	R*	-	-	R*	-	-	R*
rs3823720	G/A	-	-	-	-	R	R	R	-	R*	-	-	R
rs2051935	G/A	R	R	-	-	R	R	R	R	R	-	-	R
rs34089404	G/A	-	R*	-	-	R	R*	R	-	R*	-	R*	R*
rs76023240	T/A	-	-	-	-	W*	W	W*	-	-	-	-	NP
rs35280470	C/T	-	Y*	-	-	T	Y	Y	-	Y*	-	-	-
	C/A	-	-	M	-	-	S*	-	-	-	-	-	-
rs3898405	G/A	-	-	-	-	-	-	-	R*	R*	-	-	K*
	T/C	-	-	Y	Y	-	-	-	-	-	-	-	-
rs34020684	G/A	-	-	-	-	R*	R	R*	-	R*	-	-	-
rs77576461	T/G	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP
rs78794712	A/T	-	-	-	-	W*	W	W*	-	-	-	-	-
rs77886553	C/A	-	-	-	-	M	M	M	-	M*	-	-	-
rs3735361	C/T	Y	Y	-	-	Y	Y	Y	-	Y*	-	Y*	Y*
	T/C	-	-	-	-	Y*	Y*	Y	-	Y*	-	-	-
rs35139358	G/A	-	-	-	-	R*	R	R	-	R*	-	-	-
rs62443803	T/C	-	Y*	Y	Y	-	Y*	-	Y	Y	Y*	-	Y
rs2286293	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs77197280	T/C	-	-	-	-	Y	N*	Y	-	Y*	-	-	K*
rs846266	T/C	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41304433	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs137979	G/A	-	-	-	-	-	-	-	-	-	R	R*	R
rs137992	A/G	R*	-	-	-	-	D*	-	-	R*	R	R	R
rs138011	T/C	Y*	Y	Y*	Y*	C	Y	Y*	Y	Y	Y	Y	C
rs55838499	C/A	M	M	-	-	-	-	-	-	-	-	-	-
rs2267423	A/G	-	R*	-	-	R	R	R*	-	-	-	-	-
rs138012	G/A	R	R*	R*	R*	R*	R*	R	-	R*	R*	R*	R*
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7219	C/T	Y*	Y*	Y*	Y*	low_cov	Y*	T*	-	Y*	Y*	-	NP
rs9796035	A/G	-	-	G*	R	R*	R*	R*	-	R	G*	G	R*
	A/G	-	R*	-	R*	-	-	-	R*	R*	-	-	R*
	T/C	-	-	-	-	-	-	-	C	Y*	-	-	-
	C/T	-	-	-	Y*	-	-	-	Y*	Y*	-	-	-
rs10021191	G/A	-	R*	R*	R*	R*	R	R	R*	R	R	R	-
rs2515941	T/C	-	-	NP	NP	Y	C	Y	Y*	Y	C*	Y*	NP
rs79252276	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs1801058	T/C	C*	Y	NP	NP	-	Y*	Y*	Y*	Y	-	-	C*
rs16843684	C/T	-	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	-
rs1024323	C/T	-	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	-
rs2960306	G/T	-	-	K*	K	K	K	K	K	K	K*	K	-
rs2230349	G/A	R*	A	-	-	-	-	-	-	-	-	-	-
rs17098707	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1130857	G/C	-	-	NP	NP	-	S*	-	C*	C	C*	C*	S*
rs35805003	C/A	-	-	-	-	-	M*	-	M	M	M	M	M*
rs1533501	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs33928105	C/A	-	-	-	-	-	-	-	-	-	M	M*	-
rs55824414	G/C	-	-	-	-	-	-	-	-	-	-	-	-

rs68194015	C/T	Y	Y	-	-	-	-	-	-	-	-	-	NP
rs55910624	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3732361	A/G	R*	R	NP	NP	low_cov	G*	G*	R	R*	G*	G*	NP
	C/G	-	-	-	-	-	-	-	-	-	-	-	Y*
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs2037547	T/C	-	Y*	NP	NP	C*	C*	Y*	NP	NP	C*	C*	NP
rs73175828	G/T	K	K	-	-	-	-	-	-	-	-	-	-
rs34690080	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7094103	T/C	-	Y*	Y	Y	Y	Y*	Y	-	Y*	Y	Y*	Y
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6477493	C/T	Y*	Y*	Y*	Y	-	-	-	-	Y*	-	-	Y
	G/A	-	-	-	-	-	R*	-	-	R*	-	-	-
rs72772959	G/A	-	-	-	R*	-	-	-	-	-	R	R	-
rs1345420	C/T	Y	Y	T*	Y	Y*	Y	Y	Y*	Y	Y*	-	Y*
rs7706851	C/T	Y	Y	T	Y	Y*	Y	Y*	Y*	Y	-	Y*	NP
	T/C	-	-	NP	NP	Y*	C	Y*	-	-	-	-	NP
rs2242128	C/G	S	S	S	S	S	S	S	S	S	S*	S*	S
rs6684395	A/T	W	W*	W	W	W	W*	W*	T	W	-	-	W
rs6674775	C/T	Y	Y*	-	Y	T*	Y*	Y*	Y*	Y	-	-	-
rs11102099	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs6698159	G/A	R	R	-	-	-	R*	-	R	R	-	R*	R*
rs6671673	C/T	Y	Y*	Y	Y	Y	Y*	H*	Y	Y	Y*	Y*	Y*
rs1161	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35836705	A/C	M	M	-	-	-	-	-	M	M	-	-	M*
rs55722810	A/T	-	-	-	W*	-	-	-	-	-	-	-	-
rs56029200	G/A	R*	R*	-	R*	R*	R*	-	-	R*	R*	-	V*
rs909688	A/G	R*	G	R*	R	G*	R*	R*	R*	R	-	-	NP
rs13058062	T/C	Y*	Y	C*	C	C	C	Y*	Y*	Y	-	-	Y
	G/C	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs34402301	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y
rs1555048	A/G	R*	R*	G	R	G	G*	R*	R*	R	-	-	R
	G/A	R*	R*	-	-	-	R*	R*	R*	R*	-	R*	R*
rs9854695	G/A	-	-	R*	R	R*	R	R	-	-	-	-	-
rs17038240	C/T	-	Y*	Y	Y	Y	Y	Y	-	Y*	Y*	-	-
rs73815731	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	-
rs3757016	T/C	Y*	Y	NP	NP	Y*	Y*	Y*	Y*	Y*	-	-	NP
	C/T	Y*	-	NP	NP	Y*	-	-	-	-	-	-	-
rs17792118	T/A	W*	W	-	-	W*	W*	W	-	-	-	-	NP
rs11391	A/C	-	-	M*	-	-	-	-	M*	M*	-	-	NP
rs2530223	T/C	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
	C/A	-	-	M	M	-	-	-	-	-	-	-	M*
rs75508401	A/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2279272	A/G	R*	R*	-	R*	R*	R	R	R	R	R	R	R*
rs4852010	C/T	Y	Y*	Y*	Y*	-	-	-	Y	Y	-	-	-
rs895808	A/C	M	M*	M*	M*	-	-	-	M	M*	-	-	-
rs79199572	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs74759164	T/A	-	-	W	W	W*	-	-	W	W	-	-	-

rs61754648	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs62189551	A/G	-	-	-	-	-	R*	-	G	R*	-	-	-
rs61752234	T/C	-	-	-	-	-	Y*	-	-	-	-	-	-
	C/T	-	-	Y	Y	-	-	-	-	-	-	-	-
rs74738248	A/G	-	-	-	R*	-	-	-	-	-	-	-	-
rs1055333	G/C	S	S	-	-	-	-	-	-	S*	-	-	-
rs13383500	G/T	-	-	K*	K	-	K*	-	K	K*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs62189548	T/G	-	-	K*	K	-	-	-	-	-	-	-	-
rs13393217	C/A	-	-	M	M	-	M*	-	M	M*	-	-	-
rs10174562	C/T	Y	Y	-	-	Y*	Y*	Y	-	-	-	-	Y
rs79925675	T/C	-	-	Y	Y	-	-	-	C	Y	-	-	-
rs1709852	C/T	-	Y*	NP	NP	-	Y	Y	T*	Y*	Y	T	-
rs61754649	G/A	-	-	-	-	-	-	-	R*	R*	-	-	R*
rs79566888	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3791378	C/G	S*	G	-	-	S	S*	S	-	-	S	S	-
rs3791503	G/A	A	R*	NP	NP	A*	R*	A*	R*	R*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1063639	G/A	R	R	-	-	R	R*	R	R*	R	R	R	A
rs399427	G/T	K*	K*	T	T*	K*	K*	T	T*	T*	T*	K*	K*
rs454192	T/C	Y	Y	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*
rs3088347	C/T	Y	Y	T*	T*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*
rs375171	A/G	-	-	-	-	R	R	R	-	-	R	R*	R
rs228757	G/C	S	S	S*	C*	S*	S*	S*	S*	C	S*	S*	S*
rs72822657	G/A	A	R	-	-	R*	A	R*	-	R*	R*	R	R*
	C/T	-	-	Y	Y*	-	-	-	-	-	-	-	-
rs73209760	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs61735967	G/A	R	R	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs41312114	G/A	-	R*	-	-	-	-	-	-	-	-	-	-
rs2075840	G/A	-	-	R*	-	R	R	R	-	R*	-	-	-
rs7418	C/T	-	-	Y	Y*	Y*	Y	Y	T*	T*	T*	T*	T*
rs3815131	C/T	-	Y*	-	Y	Y*	Y	Y	Y	Y	Y	Y	Y
rs1006477	T/G	-	-	-	-	-	-	-	K*	K*	K	K	K*
rs7972177	A/G	-	-	-	-	-	R*	-	R	R	R	R	R
rs74085224	A/G	R	R	-	-	-	-	-	-	-	-	-	NP
rs61917649	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs73107965	G/A	R	R*	-	-	-	-	-	R*	R	R	R	R*
rs3815130	C/T	-	-	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y
rs9859	T/G	-	K*	K	K	K*	K	K	K*	K	K	K	K
rs757342	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3815137	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs74085225	A/G	R	R	-	-	-	-	-	-	-	-	-	-
	G/A	-	R*	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	Y	Y*	-	-	-	-	-	-	-	-	-	-
rs2525041	A/G	R	R	R*	R	G	R*	R*	R	R	R	R	R*
rs4760624	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3815133	C/G	-	-	S*	S*	S*	S	S	G*	S	S*	S*	S*
rs1006476	C/T	-	-	-	-	Y*	-	-	Y	Y	Y	Y	Y

rs3192737	A/G	-	-	-	R	R*	R	R	R*	R	R*	G*	G
rs13632	A/G	R*	R*	R	R	R	R	R	R*	R*	R*	R*	R*
rs7307046	A/G	-	-	-	-	-	R*	-	R*	R	R	G	R*
rs3815134	C/T	-	-	-	Y*	Y*	Y	Y	Y*	Y	Y*	Y*	Y
rs77190323	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs7307367	G/A	-	-	-	-	-	-	-	R	R	R	R	R
rs6580637	T/C	-	-	-	-	-	-	-	C*	Y	C*	Y	Y
rs73107964	C/T	-	-	-	-	-	-	-	Y	Y	Y	Y	Y
rs3815138	T/C	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	C*	Y*	Y*
rs2240107	G/C	C	S	-	-	-	S*	-	-	-	-	-	-
rs11168236	T/C	-	-	NP	NP	-	-	-	-	-	-	-	-
rs7306788	C/T	-	-	-	-	-	Y*	-	Y	Y	Y	Y	Y*
rs3815132	C/T	-	-	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*
rs3815136	C/A	-	-	M*	M*	low_cov	M	M*	M	M	M	A	M*
rs73107967	G/T	K	K	-	-	K	K*	K	K	K	K	K	K*
rs11831883	C/T	-	-	NP	NP	-	Y*	-	Y*	Y	Y	Y	Y
rs2408874	A/G	R*	R*	R	R	R	R	R	R*	R	R*	R*	R*
rs660392	G/C	S*	S*	S*	S*	S*	C	C*	C*	S*	S*	-	S*
	A/T	W	W	-	-	-	-	-	-	-	-	-	NP
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2526630	T/C	Y*	Y*	-	-	Y	C	Y	Y	Y	Y*	Y	-
rs2074633	T/C	-	-	-	-	-	Y*	-	Y	Y	-	-	Y
rs75873915	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1178127	A/G	R	R	R	R	R	R*	R	-	R*	-	-	R*
rs2023938	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35614472	A/T	-	-	-	-	-	W*	-	-	-	-	-	-
rs7812296	T/C	-	-	Y	C	Y	Y*	Y	Y	Y	-	-	Y
rs4732402	C/G	G*	G	NP	NP	low_cov	G*	G*	-	S*	NP	NP	NP
rs5745678	A/G	G*	G*	NP	NP	low_cov	R*	G*	R*	-	G*	G*	R
rs5745646	C/T	T*	T*	Y*	T*	T*	Y*	T*	Y	Y*	T*	T*	-
rs1743	A/T	W*	W*	W*	T	W*	W*	W*	W*	W	W*	W*	W*
rs5745653	C/T	T*	T*	NP	NP	T*	T*	T*	T*	T*	T*	T*	T*
rs5745676	A/G	R*	R*	R*	R*	R*	R*	R*	R	R	R*	G*	R
	C/A	-	-	-	-	-	-	-	-	-	M	M*	-
rs34005929	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs2057482	T/C	C*	Y*	Y*	C*	C	C*	Y*	C*	C*	Y*	C*	NP
rs11549465	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs75780010	G/T	-	-	NP	NP	-	K	K*	NP	NP	NP	NP	K*
rs2295778	C/G	S*	S	S*	S*	-	S*	-	S	S	-	-	-
rs3750633	G/A	-	-	-	-	R	R	R	-	R*	A	R*	R
rs10883512	A/G	-	-	-	-	R	R	R	-	R*	R	G	R
rs11816840	G/C	S*	S*	-	-	S	S	S	-	S*	S	S*	S
rs4803932	A/G	R*	R*	G*	G*	R*	R*	R*	G*	G*	R*	R*	R*
rs2311054	A/G	R	R	G*	G*	G*	R*	G*	NP	NP	G*	G*	G
rs3764610	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs66668057	TATT/-	M	M	NP	NP	M*	M*	M*	M*	M*	NP	NP	M*
rs61750957	C/T	-	Y*	-	-	Y*	Y	Y	-	Y*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs8101480	T/C	Y	Y	Y*	Y*	C	Y*	Y*	C	Y*	Y*	Y*	C

rs11667354	T/C	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*
rs74499708	C/T	-	Y*	Y	Y	-	-	-	-	Y*	-	Y*	Y*
rs76868440	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3764609	A/G	-	-	R*	R*	-	-	-	-	-	R	R	-
rs61750958	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs12136789	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11485101	A/G	-	-	R*	R	-	-	-	-	-	R	R	R
rs10732635	T/G	K	K	K	K	K	K	K	K*	K*	K	D*	K
rs10108	C/T	-	Y*	-	-	-	-	-	Y	Y	-	-	-
rs17852555	G/A	R*	R*	-	-	R*	-	-	R	R	-	-	R*
rs2358996	G/A	R	R	R*	R	R	R	R	-	R*	R*	R*	R
rs11975457	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4074826	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs74544392	C/T	-	Y*	Y*	Y*	Y	Y	Y*	-	Y*	-	Y*	Y
rs28579164	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs73485512	G/A	-	-	-	-	-	-	-	-	R*	R	R	R*
rs17261727	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs73485515	G/A	-	-	-	-	-	-	-	-	-	R*	R*	-
rs73156835	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs7456421	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs7801135	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs28488198	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs73485518	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1638195	T/C	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	B*
rs4755571	A/G	-	R*	-	-	-	-	-	-	-	R*	R*	R*
	T/G	-	-	-	-	-	-	-	K	K	-	-	-
rs10600	A/G	-	R*	R	R*	G	G*	G*	G*	G*	R*	R*	NP
	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	-
rs11670988	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs79330270	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34144478	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs17763089	G/A	-	-	NP	NP	NP	NP	NP	-	R	NP	NP	NP
	G/A	-	-	-	-	low_cov	R*	-	-	-	R*	-	R*
	G/A	-	-	-	-	-	R	R*	-	R*	-	-	-
rs16868094	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2464196	G/A	R*	R*	R*	R	-	R*	-	-	R*	-	-	-
rs55834942	G/A	R	R	R*	R	R	R	R*	R*	R	-	-	-
CM981894	HGMD_MUTATION	-	-	-	-	-	-	-	-	-	-	-	-
rs2259820	C/T	Y*	Y*	Y*	Y	-	Y*	-	-	Y*	-	-	H*
rs2259816	G/T	K*	K*	K	K	K*	K*	K*	K	K	K	K	K*
rs1169288	A/C	-	-	M	M	-	-	-	-	M*	-	-	M*
rs2464195	G/A	R*	R*	A	R	R*	-	-	R	R	R	R	R*
rs56348580	G/C	S*	C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs1169309	G/T	-	-	K*	K	-	-	-	K	K*	K	K	-
rs11065390	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs1800574	C/T	-	-	-	Y*	-	-	-	-	-	-	-	-
rs1169305	A/G	R*	R*	G*	G*	G*	G*	G*	G*	G*	NP	NP	R*
rs41279096	G/A	R	R	-	-	-	-	-	-	-	R*	R	-
rs1169289	C/G	-	Y*	S*	S*	S*	S	S	S*	S	S*	S	S*
rs1169310	G/A	-	-	R	R	R*	R*	-	R	R	R	R	-
rs55919842	A/G	-	-	-	-	-	R*	-	R	R	R	R	-
rs3027574	C/T	-	-	Y*	Y	Y	Y	Y	-	Y*	-	-	-
rs7938775	G/C	-	-	C*	C*	S*	S	S*	-	S*	S*	S*	-
rs12628	A/G	-	-	R	R*	R*	R	R	-	R*	R	R	R*
rs41285492	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs8005905	T/A	W*	W*	A	W*	W	W	W	W*	W	A*	W*	W*
rs1059623	G/A	R*	R*	A	A	R*	R	R	R*	R	R	R	R*
rs1059629	A/G	R*	G*	R*	R*	G*	R*	R*	G*	R*	G*	G*	NP
	G/A	R*	R*	R*	A*	A	A	R	R*	R*	R	R*	R*
rs1058078	A/G	-	-	-	-	R*	R	R*	-	-	-	-	NP
rs34124063	A/T	W*	W*	W*	W*	-	W*	W*	-	W*	W*	W*	-
rs13296	A/G	G	R*	NP	NP	G*	G*	G*	R*	R*	NP	NP	R*
rs34789835	G/C	B*	S*	S*	S*	-	S*	B*	-	B*	S*	S*	-
	C/T	Y	Y	-	-	-	-	-	-	H*	Y*	-	M*
rs11538984	G/C	-	-	S	S	-	-	-	-	-	-	-	-
	C/T	Y*	H*	M*	M*	-	Y*	H*	-	H*	M*	-	H*
rs34451930	A/G	V*	V*	V*	V*	M*	V*	V*	M*	V*	M*	V*	M*
rs35074133	T/A	-	-	-	-	-	W*	-	-	-	-	-	-
rs6615	C/T	-	-	Y*	Y*	-	-	-	-	-	-	-	-
rs2070908	C/G	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	-
rs17797090	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1058872	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs77586767	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs11038	A/G	-	-	R	R*	R	R	R	R	R	-	-	R
rs1133026	G/A	-	-	R	-	R*	R	R*	-	-	-	-	R*
rs3787694	G/C	S	S	C*	C	S	C	S*	C*	C	C*	S*	-
rs9305483	T/C	Y	Y*	NP	NP	C	C	Y*	Y*	Y	Y*	Y*	-
rs2070372	T/G	G*	G*	G*	G	G	K*	G*	G*	G*	G*	G*	K
rs71323311	G/A	R	R*	-	-	-	-	-	-	-	-	-	R
rs73193458	G/A	-	R*	-	-	-	-	-	R	R	R	R	-
rs71323310	T/C	Y	Y	-	-	-	-	-	-	-	-	-	Y
rs3576	G/A	-	-	-	-	R	R	A	R*	R*	-	-	-
rs28491893	G/A	R	R	-	-	R*	-	-	-	-	-	-	R*
rs8127140	C/G	S*	S*	NP	NP	S*	S*	G*	G*	S*	G*	G*	S
rs2833598	C/T	-	-	-	-	Y	Y*	T	Y	Y	-	-	-
rs2070373	G/A	R	R	A*	A	R*	D*	R*	R*	R	R*	D*	-
rs3578	C/T	Y	Y	Y*	Y	T	Y	T*	T*	Y	T*	T*	-
rs16988745	A/T	W	W*	W*	W*	-	-	-	-	-	W*	W*	-
rs2833603	A/G	R	R	G*	R*	G*	R*	R*	G*	G	G*	G*	-
rs76834263	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs2833600	C/T	T*	T*	NP	NP	T*	T*	Y*	T*	T*	T*	T*	NP
	C/G	-	-	-	-	-	-	-	S	-	-	-	-
rs8127132	C/T	Y*	Y*	NP	NP	Y*	Y*	Y*	Y*	Y	T*	Y*	-
rs2833601	C/A	M	M	M	M	-	M*	-	-	-	M	M*	-
rs2073360	C/T	Y	Y	Y	Y	-	-	-	-	-	Y	Y	-

rs28438002	A/G	R*	R	-	-	-	-	-	-	-	-	-	NP
rs11701516	C/T	-	-	-	-	Y	Y	Y*	Y	Y	-	-	-
rs78570444	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs56296571	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2833602	C/A	M	M	A*	A	A*	M*	A*	A*	M	A*	A*	M*
rs2070371	T/C	Y*	Y*	C	C	Y*	C*	Y*	Y*	Y*	C*	Y*	Y
rs80302584	G/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs3787697	A/C	M	M	C*	M	M	M*	M*	C*	M	C*	C*	M*
rs2248975	T/C	Y	Y	C*	C	Y	C*	C*	Y*	C	C*	C*	-
rs71320225	AA/GT	T*	T*	T*	T	T*	T*	T*	T*	W	T*	T	NP
rs3746854	A/G	R	R	R	R	-	W*	-	-	W*	G	R	-
rs10775648	C/T	-	-	-	-	Y	Y*	Y	Y	Y	-	-	-
rs3746856	T/C	Y	Y	Y*	Y	Y*	Y	Y*	Y*	Y	Y*	Y*	Y*
rs1048610	A/G	R	R*	R*	R	R*	R	R	R*	R	R	R	R
rs1130094	T/C	-	Y*	Y*	Y*	Y*	Y*	Y	-	Y*	NP	NP	NP
rs6705408	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y	-	Y	Y*	Y*	Y*
rs55796712	G/A	S*	S*	-	-	R*	R	R*	-	V*	S*	-	S*
rs33936662	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs2297211	T/C	Y	Y	-	-	Y*	Y	Y	-	-	-	-	-
rs8116155	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6060263	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs11574	T/C	Y*	Y	Y*	Y	C	Y*	Y	-	Y*	-	-	Y*
rs2920	T/C	-	-	Y	Y	Y	Y	Y	-	Y*	-	-	Y
rs16828576	C/T	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1050096	G/A	A	R	A*	R	R	R*	A*	-	R*	-	-	R
rs6831280	G/A	-	R*	-	-	R*	-	-	-	-	-	-	-
rs6830825	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3755954	C/T	-	-	-	Y	-	-	-	-	-	NP	NP	-
rs6815946	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2799	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	R*	NP	NP	-	-	-	-	R	-	-	-
rs2921	A/G	-	-	R*	R	-	-	-	R	R	G*	R	G*
rs7125	A/G	R	R	R	R	R*	R*	R*	R	R	G*	G*	R*
rs1045747	T/C	-	-	Y*	Y	-	-	-	Y	C	C	Y*	NP
rs2241089	G/T	K*	-	K*	K	-	-	-	K	K	K*	K*	K
rs11554159	G/A	R	R	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	Y*	Y	Y	-	Y*	Y	Y	-
	T/G	-	-	-	-	-	B*	-	-	K*	-	-	K
rs56076827	A/T	W	W	W	W	W*	W*	-	-	W*	-	-	W*
rs61743977	G/C	-	-	S*	S	-	-	-	-	-	-	-	-
rs57535746	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2035	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs428321	T/C	Y	Y	C*	C*	C*	Y*	C*	C*	Y	Y*	Y*	-
rs62264146	G/C	-	-	-	-	-	S*	-	-	-	-	-	-
rs17828926	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs17055251	G/A	-	-	-	-	-	-	-	-	-	R*	R*	-

	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs6220	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs6219	C/T	-	-	-	-	-	-	Y*	Y	Y	-	-	-
rs6214	C/T	Y	Y	Y*	Y	Y	Y*	Y	Y*	Y*	T*	T*	-
rs3730192	T/C	-	-	-	-	Y*	Y	Y*	-	Y*	-	-	NP
rs2684785	C/T	Y	Y	-	-	Y*	Y*	Y	-	Y*	Y	Y	Y
rs2654980	C/T	Y	Y	-	-	Y*	Y*	Y	-	Y*	Y	Y*	Y
rs2229765	G/A	R	R	-	-	A*	A*	A*	R	R	R	R	A
rs45506098	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2684786	C/T	Y	Y	-	-	Y	Y*	Y	-	Y*	Y	Y	Y
rs2016347	G/T	K*	K	T	K*	-	K*	-	K*	K	K	K	B*
rs3743262	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2684788	C/T	Y	Y	-	Y*	Y	Y*	Y	-	Y*	Y	Y	Y
rs13379905	C/T	Y*	-	NP	NP	-	-	-	-	Y*	-	-	-
rs2684787	C/T	Y	Y	-	-	Y	Y*	Y	-	Y*	Y	Y	Y
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3743249	G/T	-	-	-	K*	low_cov	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y*
rs1815009	C/T	Y*	Y*	Y*	T	Y*	Y*	Y*	T*	Y*	Y*	Y*	T
	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs17847203	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2654981	C/G	G	S	-	S*	S	S*	S	-	-	S	S	S*
	C/T	-	-	-	-	-	-	-	Y	-	-	-	-
rs10770125	A/G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs10743144	T/C	C*	C*	NP	NP	C*	C*	C*	C*	C*	C*	C*	C*
rs11564732	C/T	-	-	-	Y*	-	-	-	-	Y*	Y	Y	-
rs79275529	G/A	-	R*	-	-	-	-	-	-	R*	-	-	-
rs680	T/C	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y
rs1065687	C/T	-	-	-	-	Y	Y*	Y	Y*	Y*	-	-	-
rs2230949	G/A	R*	R*	-	-	-	R*	-	-	-	S*	-	R
rs3802971	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	R*	-	R*	R	-	-	-
rs3168310	C/G	S*	S*	S	G*	S*	S*	S*	S*	S	S	S	S*
rs2585	T/C	Y	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y
	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs998075	A/G	R	R*	R	R	-	-	-	-	R*	R	R*	R
	G/A	-	-	-	-	R	R*	R	-	-	-	-	-
rs8191890	A/C	-	-	-	-	-	-	-	-	M*	M*	M	M
rs1050015	C/A	M*	M*	M*	M*	low_cov	-	-	M*	M*	A	M*	-
rs614754	C/G	S*	S*	S*	S*	S	B*	S	G	S	S*	S*	S*
rs1803989	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs8191754	C/G	-	-	NP	NP	low_cov	S*	-	-	S*	-	-	-
rs629849	A/G	R*	R*	R*	G*	-	R*	-	R*	R	R*	G*	R*
rs894817	G/A	-	-	-	-	R*	-	-	R	R*	-	-	R
rs1805075	A/G	-	-	-	-	-	-	-	-	-	-	-	R
rs1050026	T/A	W*	W	W*	W	-	-	-	W	W	W	W	W*
rs76130099	G/A	R	A	-	-	-	-	-	-	-	-	-	-
rs12127258	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs76641692	G/C	-	-	-	-	S*	S*	S	-	S*	-	-	-
rs75376900	G/C	-	-	-	-	S*	S*	S	-	-	-	-	-

	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs13052	C/T	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y*	Y*	-
rs3747615	A/G	R	R	-	-	-	W*	-	R	R	R	G*	-
rs12140093	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs77570237	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	M	M	-	-	-	-	-	-	-	-	-	-
rs2153209	T/C	-	-	-	-	Y	Y*	Y	-	Y*	-	-	-
rs3747617	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34790966	C/T	-	-	NP	NP	-	-	-	-	-	-	-	M*
rs72702746	C/T	-	-	-	-	Y	Y*	Y	-	Y*	-	-	-
rs12139175	C/G	S	S*	Y*	-	-	S*	-	S	S	S	S	-
rs75494729	T/C	-	-	-	-	Y*	Y*	Y	-	Y*	-	-	-
rs1320566	C/T	T*	Y	-	-	-	-	-	T*	Y*	Y*	Y*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35702833	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs3827531	T/C	Y	C	-	-	Y	H*	Y	C*	Y	C	C	-
rs1316275	G/A	R*	A	R*	R	A	R*	R*	A*	R	R	R	R*
rs7543462	A/G	R	R	-	-	R	R*	R	G*	R	G*	G	M*
rs61749202	A/C	-	-	-	-	-	-	-	-	-	-	-	M
rs1538660	G/A	R	R	R	R*	-	-	-	-	-	-	-	-
rs2230793	T/G	K	K	K*	K	-	-	-	-	K*	-	-	-
rs2275640	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2230786	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2275641	G/C	-	-	NP	NP	low_cov	S*	S*	-	-	NP	NP	C
rs838827	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3204145	A/T	W	W	W*	W*	-	-	-	-	-	-	-	-
rs1063110	C/G	-	-	S	S*	S	S	S	S	S	S*	S*	S
rs10979605	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10979577	T/C	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs2230791	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35054425	A/C	M*	M	-	-	-	-	-	-	-	-	-	-
rs1057741	A/G	R*	R*	G*	G*	R*	R*	G*	G*	R*	G*	R*	R*
rs56230731	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10836	G/C	-	-	S*	S*	-	-	-	-	-	C	S*	S
rs2297545	G/A	-	-	-	-	low_cov	A*	A	R*	R	-	-	R*
rs1059704	G/A	-	-	R*	R*	R*	R*	A	R*	R	R*	R*	R*
rs1539243	T/C	Y	Y	Y*	Y*	C*	Y*	Y*	Y*	Y*	C	C*	Y*
rs41303986	C/T	-	-	NP	NP	-	-	-	-	-	Y*	T	-
rs15672	G/A	-	R*	R	R	-	R*	-	-	R*	R*	R*	R
rs3748022	C/T	-	-	-	-	Y*	Y	Y	Y	Y	-	-	-
rs41296034	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs41262144	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1042505	C/T	Y*	Y*	-	-	Y*	Y	Y	Y*	Y*	Y*	Y*	-
	C/T	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP
rs11086087	C/T/G	-	-	-	S*	-	-	-	-	-	-	-	-
rs17852635	G/A	R	R	R*	R*	-	-	-	-	-	-	-	-
rs436857	G/A	R	R	-	-	-	-	-	-	-	-	-	R*
rs11575926	C/T/A/G	Y	Y	-	-	-	-	-	-	-	-	-	-
rs401502	C/G	S	S	S*	S*	-	S*	-	-	-	-	-	S*

rs375947	A/T/C/G	R	R	R*	R	-	R*	-	-	-	-	-	R*
	T/G	K	K	-	Y*	N*	N*	Y*	-	Y*	Y*	W*	N*
rs949324	G/C	S*	S*	S*	S*	C*	S*	S*	S*	S	S*	C	S*
rs949323	T/G	K*	G*	G*	G*	G*	K*	G*	G*	G	G*	G*	K*
rs2845860	C/T	Y*	Y*	Y*	T*	T*	Y*	T*	T*	Y*	Y*	Y*	Y
rs1541304	T/C	C*	C*	C*	C*	C*	C*	C*	C*	Y*	C*	C*	Y
rs2298455	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs55992367	G/A	R*	K*	-	K*	-	R*	-	-	-	K*	-	-
rs3783531	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs41294736	G/C	-	-	-	-	-	K*	-	-	-	-	-	R*
rs1304037	T/C	-	-	Y*	-	Y*	Y*	Y*	Y*	Y	Y	Y	-
rs2856836	A/G	-	-	NP	NP	G*	R*	G*	NP	NP	R*	R*	NP
rs17561	C/A	-	-	-	-	A	A*	A*	M*	M	M	M*	-
rs1143627	G/A	-	R*	-	-	A	R*	R*	R*	R	R	R	-
rs1143639	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	NP
rs1143634	G/A	R*	R*	-	-	R*	-	-	-	R*	R	R	R*
rs16062	G/A	R*	R*	-	-	-	-	R*	-	-	R	R	D*
rs1071676	C/G	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs3917322	A/G	-	-	-	-	R	R	R	-	R*	-	-	R
rs3917326	C/T	-	Y*	-	-	Y	Y	Y	-	Y*	Y*	-	Y
rs12613301	A/T	-	W*	NP	NP	W*	W*	-	T*	W*	W*	W*	W*
rs12618222	G/T	-	-	-	-	-	-	-	-	-	K	K*	-
rs3771202	C/G	G*	G*	NP	NP	G*	G*	G*	G*	G*	G*	G*	G*
rs2110726	G/A	R*	R*	R*	R*	R	R*	R*	A	R	-	-	R*
rs3917328	C/T	-	-	-	-	-	M*	-	Y*	-	-	-	-
rs2234650	C/T	-	-	-	-	-	Y*	-	-	-	Y	Y	-
rs2234651	C/T	-	-	-	-	-	Y*	-	-	-	Y	Y	-
rs9677150	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3917329	G/T	K*	K*	-	-	-	-	-	-	-	K	K	-
rs3917320	A/C	-	-	-	-	-	W*	-	-	-	W*	-	-
rs75664449	G/A	-	-	-	-	-	-	-	-	R*	R	R	R*
rs3917325	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3917318	A/G	-	-	-	-	-	-	-	-	-	R*	R*	-
rs1019296	T/C	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	-	-	Y
	T/G	-	-	-	-	K	K	K	-	K*	-	-	NP
rs31480	C/T	-	-	T*	T	-	-	-	Y	Y*	-	-	-
rs40401	C/T	-	-	Y	Y	-	-	-	Y	Y	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17883366	G/C	S	S	-	-	-	-	-	-	-	-	-	NP
	A/T	-	-	-	-	M*	-	-	-	-	-	-	M*
rs17879004	A/C	-	-	-	-	-	-	-	M	M	-	-	-
rs7471052	T/C	Y	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y	B*	Y*
rs2066992	G/T	-	-	-	-	-	-	-	-	-	K	K	-
rs1524107	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1474347	C/A	M*	M*	M*	M	M	-	M	A*	M	M*	M*	-
rs2069845	G/A	A	A	R*	R*	low_cov	low_cov	R*	NP	NP	NP	NP	R
rs62363866	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs77610838	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2228044	C/G	-	-	-	-	-	-	-	S*	S	S*	-	-

rs2228043	G/C	-	-	-	-	-	-	-	S	S	S	S	S*
rs10471960	A/G	-	-	-	-	-	-	-	R	R	R	R	-
rs1043390	G/A	-	-	-	R*	A	R	R*	R	R	R	R	R
rs1043388	C/T	-	-	-	-	T	Y	Y	Y	Y	Y	Y	T
rs2292195	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17378995	T/C	-	-	NP	NP	-	-	-	-	-	Y*	Y*	-
rs7539653	A/G	-	-	NP	NP	-	-	-	-	-	NP	NP	NP
rs1047739	C/T	-	-	-	-	Y*	Y*	Y*	-	-	Y	Y*	-
GA009803	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y
rs1047738	C/G	S	S	-	S*	S*	-	S*	S	S	-	-	S
	G/A	-	R*	R	R	-	R*	-	R*	R	-	-	R
rs1675126	T/C	C*	C*	C	Y*	C*	C*	C*	-	Y	C*	C	Y
rs2277283	T/C	-	-	-	-	Y*	-	Y	Y*	-	C*	Y	-
rs1675133	C/T	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y*
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs1675131	A/G	G	G	-	R*	G	R	R*	R*	R*	G*	G*	R*
rs7129085	G/T	K	K	K*	K	K	K	K	K	K	K*	K*	K
rs1135173	G/A	R*	R	R*	R	R	R	A	R*	R	R	R	A
rs7346	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs1135727	A/G	-	-	R*	R	-	R	R*	G	R*	-	-	G*
rs7569837	T/C	-	-	-	-	-	-	-	-	-	Y	Y	Y
rs4073603	C/T	Y*	Y*	Y*	Y*	low_cov	-	Y*	T	Y*	Y*	Y*	-
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs10754947	G/A	A*	R	R	R*	R	R	R*	R*	R	R	R	-
rs10803668	G/T	-	-	K	K	K	K	K	K	K	-	-	-
rs61752227	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs9247	C/T	-	-	Y	Y	-	Y*	-	Y	Y	-	-	-
rs1141328	G/A	R	R*	NP	NP	low_cov	R	R*	-	-	-	-	-
rs1057258	C/T	-	-	-	-	-	Y*	-	T	Y	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs70940824	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	M*	-
rs17750642	G/T	R*	-	-	-	-	-	-	-	-	K	K	-
rs1003887	C/T	Y	Y	-	-	Y	Y	Y	Y*	Y	-	-	Y
rs1051651	G/C	-	-	-	-	S	S	S*	-	S*	-	-	S
	G/A	-	-	-	-	A	R*	R	-	R*	R	R	R*
rs1799815	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs891087	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12642	C/A	-	-	-	-	-	-	-	-	-	-	-	A*
rs6413501	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs16994192	G/A/T/C	-	-	-	-	-	R*	-	-	-	-	-	-
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	R	-	-	R*	-	-	-
	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs1799817	G/T/A/C	R	R*	-	-	R*	R*	R*	-	R*	-	-	R*
rs1051690	T/C	Y*	Y*	Y	Y	Y*	Y*	C*	Y	Y	Y	Y	C
rs2229430	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2229434	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs1052371	G/A	-	-	-	-	-	-	-	-	-	-	-	NP

rs3745550	C/T	-	-	Y	Y	Y	Y	Y*	-	Y*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2059806	C/T/A/G	Y	Y	-	-	Y*	Y	Y	Y*	Y	Y*	Y	-
rs1864193	C/A	-	-	-	-	-	M*	-	-	M*	-	-	A
rs2963	G/T/A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3745551	C/T	Y	Y	-	-	Y	Y	Y	Y	Y	T*	T*	-
rs7024375	T/G	-	-	-	-	-	K*	K*	-	K*	-	-	K*
rs2787374	T/C	Y	Y	C	Y	Y*	Y	Y	Y*	Y	C*	Y*	Y
rs2181579	C/A	M*	M	NP	NP	M*	M*	M*	-	M*	-	-	M*
	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs62577237	C/T	-	-	NP	NP	-	Y	Y*	-	-	-	-	-
rs2787361	C/T	Y*	T	T	Y*	Y*	T	T	-	-	Y*	Y*	NP
rs76868679	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	NP	NP	-	Y*	-	NP	NP	-	-	Y*
rs464494	C/T	NP	NP	NP	NP	low_cov	Y*	Y*	NP	NP	-	-	NP
rs2069700	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2069693	G/T	K	K	-	-	K	K	K	K	K	K	K	K
rs1122654	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1047529	A/C	M	M	-	M*	M	M	M	M	M	M	M	M
rs961536	A/G	R	R	-	-	R	R	R	G*	R	R	R	R*
	A/T	-	-	-	-	-	-	-	W	W	-	-	-
rs1047530	T/C	Y	Y	-	-	Y	Y	Y	Y	Y	C	C	Y*
rs2455230	G/C	S	S	-	-	S*	S*	C	S*	S	-	-	S*
rs2431363	A/G	R	R*	NP	NP	R	K*	G*	-	R*	R*	R*	R*
rs2431352	T/G	G*	K*	NP	NP	low_cov	K*	K*	K*	G*	K*	G*	NP
rs2910819	C/T	Y*	Y*	-	-	low_cov	T*	T	-	Y*	-	-	NP
rs1059701	G/A	R*	R*	A*	A	A*	R*	R*	R*	R*	NP	NP	A
rs1059702	A/G	R*	R*	G*	G*	G*	G*	R*	R*	R*	G*	G*	G*
rs41269339	C/G	-	S*	-	-	-	-	-	-	-	-	-	-
rs6908105	A/G	G*	G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs79733388	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11465864	C/A	M	M	-	-	-	-	-	-	-	-	-	-
rs3844283	C/G	-	-	S*	G	-	-	-	-	S*	S*	S*	S*
rs35060588	C/G	-	-	-	-	-	-	-	-	-	-	-	S
rs708035	T/A	-	W*	A*	A*	W*	W	W	W	W	A*	A*	W
rs56154338	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11465990	G/C	-	-	-	-	S	S	S	-	S*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	Y*	-
rs11176099	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs1058222	T/A	-	-	NP	NP	low_cov	W*	W*	A*	W*	W*	W*	NP
rs35239505	A/G	-	-	-	-	R*	R	R	-	-	-	-	NP
	A/G	-	-	-	-	-	R*	-	-	-	-	-	-
rs7972963	G/T	-	-	-	-	-	-	-	K	K	-	-	-
rs10878395	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs4251545	G/A	-	-	-	-	R*	R	R*	R*	R	-	-	NP
rs2304204	T/C	-	-	-	-	Y*	Y	Y	Y	Y	-	-	C*
rs3204440	A/G	-	-	-	-	-	-	-	-	-	-	-	-

rs2304206	G/A	R*	-	-	-	R	R	R	R	R	-	-	R
rs2304205	A/C	-	-	-	-	M	M*	M	M	M	M*	-	M
	G/A	-	-	R	R	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs7251	C/G	-	-	-	-	S	S*	S	S	S	-	-	-
rs41265094	C/G	-	-	-	-	S*	S	S	-	-	-	-	-
	T/C	-	-	-	Y	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	T	T	Y	-	Y*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
	T/G	-	-	-	K*	K*	K*	K*	K	K	K*	K*	K
rs12853546	G/A	R	R	-	R*	R*	A	R*	-	-	-	-	-
rs4773092	A/G	R*	R*	R*	R	R*	R	R	R*	R	G*	G*	R*
rs1044364	T/C	-	-	-	-	low_cov	Y*	-	-	-	-	-	Y
rs3742210	G/A	-	-	R*	R*	low_cov	-	-	R*	A	R*	-	V*
rs1865434	C/T	Y*	-	Y*	Y	T*	Y*	Y*	T*	Y*	T*	Y*	Y*
rs2289047	C/T/A	-	M*	A*	M	M	M*	M*	M	M	A	A	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	T
rs2289046	T/C	-	-	C	Y*	Y	Y*	Y	Y	Y	C	C*	Y*
rs3746455	G/A	R	R	R	R*	R	R	R	R*	R*	A*	A*	R*
rs6088512	G/A	R*	-	-	-	R*	R*	-	R*	R	R*	R*	NP
rs77883048	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	-
	A/G	-	-	-	-	-	-	-	-	-	R	R	-
	G/A	A*	A*	A*	R*	A*	A*	A*	A*	A*	A*	A*	NP
	C/T	Y*	Y*	Y	Y*	Y*	Y*	Y	NP	NP	T*	T*	T*
rs3744679	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	R*	-	-	-	-	NP	NP	G	G*	-
rs220462	G/A	A	R	R	R	R*	A	R	R*	R*	-	-	-
rs170208	A/G	G	R	R	R	R	R	R	G	R	R*	R*	-
	A/G	R	R	-	-	R	R	R	-	-	-	-	-
	T/C	Y*	Y*	Y*	-	Y*	Y*	Y*	C*	C	Y*	Y*	Y*
rs220461	T/C	C	Y	Y	Y	Y	Y	Y	-	Y*	-	-	-
rs3809806	T/C	Y*	Y	Y	Y	Y*	Y*	Y	C*	Y	C*	C*	NP
rs27988	A/G	R*	R*	G*	R*	R*	R*	R*	R	R	R*	R*	R*
rs3892245	C/A	Y*	-	-	-	-	-	-	-	-	-	-	-
rs79112977	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
rs75760314	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs10429491	C/T	Y*	Y	T	T*	-	-	-	Y*	Y*	-	-	NP
rs2274472	T/C	-	-	NP	NP	low_cov	Y*	-	-	-	-	-	-
rs2230724	G/A	R*	R*	R*	A*	R*	R	R	R*	R	R	R	A
rs35458530	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs73014967	G/A	-	-	R*	R	-	-	-	R*	R	-	-	-
rs11688	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs2811894	T/G	K*	K*	K*	K*	K*	D*	K*	K*	K*	K*	K*	K*
rs4647018	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs2229510	C/A	-	-	NP	NP	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	Y*	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4968597	G/A	R*	A	NP	NP	-	-	-	-	-	NP	NP	NP
rs76291702	T/C	-	H*	-	-	-	H*	-	H*	N*	Y	N*	-

	C/A	-	-	M*	M	-	-	-	-	-	-	-	M*
rs77562968	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs75141369	C/T	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-
rs13380863	G/A	R	R	-	-	R*	S*	-	-	-	-	-	R*
rs10455270	T/C	Y	Y	-	-	-	-	-	Y*	Y*	-	-	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs12215980	A/G	R	R	-	-	-	R*	-	-	R*	-	-	R
rs61743058	C/T	-	Y*	-	-	Y*	-	-	Y	Y*	Y*	-	Y*
rs35522191	A/G	R	R	-	-	-	-	-	R	R	-	-	R
rs10943079	A/C	M*	M*	-	-	-	M*	-	-	-	-	-	M*
rs79667015	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3798463	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs71762971	ACACACACAC/-	-	-	-	-	-	-	-	-	M	-	-	-
rs77880297	C/A	-	-	NP	NP	low_cov	M	A*	-	-	-	-	M*
rs34231037	***A/G***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
rs7667298	***T/C***	***Y***	***Y***	***C****	***Y****	**-**	***Y****	**-**	***Y***	***Y***	***Y****	***Y***	***Y***
rs2305948	***C/T***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
rs1870377	***T/A***	**-**	**-**	***NP***	***NP***	***W****	***A***	***W****	***NP***	***NP***	***NP***	***NP***	***NP***
	G/A	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
rs61992606	G/A	-	-	R*	R*	R	A	R	-	R*	R*	-	R*
rs28420706	G/A	R*	R	R*	R*	-	-	-	NP	NP	R	R*	R
rs28670114	T/C	-	-	-	-	-	-	-	-	Y	-	-	-
rs11628949	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
rs1951716	C/T	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y*
rs4905081	G/A	R*	R*	R	R	R*	R	R	A	R	R	R	R
rs76973270	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	R	R*	R	-	R*	-	-	-
rs34058914	G/C	S	S	-	-	-	-	-	-	-	-	-	-
rs3804583	C/A	M	M	M*	M	M	M*	M	-	M*	M	M	M
rs76526953	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs11710339	A/T	-	-	-	W*	-	-	-	W	W	W	W	-
rs7645364	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs76971569	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3748580	C/T	-	-	-	Y*	Y	Y*	Y	-	-	-	-	-
rs12402052	C/G	G*	S*	NP	NP	S	S*	G*	-	S*	G*	S*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76694630	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs78490707	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs41274458	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs72640311	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11121529	C/G	-	-	-	-	-	-	-	-	-	-	-	S*
rs1002076	G/A	R	R	-	R*	A	R*	R*	-	R*	R*	A	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1536262	C/T	Y	Y	-	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y
rs12566610	C/G	S	S	S*	S	-	-	-	-	-	S*	S	S*
rs3820586	T/C	Y	Y	Y*	Y	K*	B*	-	-	Y*	Y	Y*	Y*
rs3795713	A/T	T	W	W*	W*	-	W*	-	-	W*	W*	W*	W*
rs1140279	G/A	R	R	R	R	-	R*	-	-	R*	R	R	R*

rs4342887	A/C	M	M	-	M*	-	-	-	-	-	M*	M*	M*
rs62206867	A/T	W	W	-	-	-	-	-	-	-	-	-	-
rs1029116	A/G	R	R	-	-	R*	R	R	R*	R	R*	-	-
rs2151437	A/C	M	M	M*	-	M*	-	-	-	-	M	M	-
rs13111	G/A	-	-	R*	-	R	R	R	-	R*	K*	-	-
rs62206868	T/C	Y	H*	-	-	-	-	-	-	W*	-	-	-
	C/T	Y*	H*	Y*	Y*	-	H*	Y*	Y*	H*	Y*	Y*	H*
rs3813921	A/G	-	R*	-	-	R	R	R	R	R	-	R*	-
rs41289846	G/A	-	-	-	-	R*	-	-	-	-	R	R	R*
rs14353	C/T	Y	Y	Y*	-	Y*	B*	-	-	Y*	Y	Y	Y*
rs4519	T/A	A*	W*	A*	A*	-	-	-	W	W	A	A*	A*
	C/T	-	-	NP	NP	-	-	-	-	-	Y	Y*	-
rs3924587	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17084733	G/A	-	-	-	-	-	-	-	R	R	-	-	NP
rs8022	G/T	K	K	-	R*	-	-	-	K	K	-	-	-
rs55789615	C/T	-	-	-	-	-	Y	Y*	-	-	Y*	Y*	-
rs3822214	A/C/G	-	-	-	-	-	-	-	M*	M*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1061981	T/C	C	C*	Y*	-	-	-	-	Y*	Y*	C	Y*	NP
rs11104905	C/G	-	-	S	S	S*	S	S	S	S	-	-	-
rs73199405	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs995030	A/G	R*	R	R	R	-	-	-	R	R	R*	R*	R*
rs1907699	A/T	T*	W*	T*	W*	-	-	-	W	W	W*	W*	NP
rs11104904	G/T	-	-	NP	NP	K*	K	K*	K*	K*	-	-	NP
rs3916896	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3916898	A/C	-	-	-	-	-	M*	-	-	-	-	-	-
rs61764367	***G/C***	***S***	***S***	***S****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***NP***
	C/T	***-***	***-***	***-***	***-***		***-***	***-***	***-***	***-***	***-***	***-***	***-***
rs13096	***T/C***	***-***	***-***	***NP***	***NP***	***-***	***-***	***-***	***Y****	***Y****	***C****	***Y****	***NP***
rs7973450	***A/G***	***R****	***R***	***-***	***-***	***R***	***G****	***G****	***R****	***R****	***G***	***R****	***NP***
rs61763590	***C/A***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***M****
rs61764372	***A/T***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***W***	***W***	***-***	***-***	***-***
	A/G	***R****	***R****	***-***	***-***	***low_cov***	***R****	***R****	***R****	***R****	***R****	***-***	***NP***
	C/A	***-***	***-***	***M****	***-***	***-***	***-***	***-***	***-***	***-***	***M****	***M***	***-***
rs7960917	***T/C***	***Y***	***Y***	***Y****	***-***	***Y***	***Y***	***Y****	***Y***	***Y***	***Y***	***Y***	***-***
	C/G	***-***	***-***	***-***	***-***		***-***	***-***	***-***	***S***	***-***	***-***	***-***
rs9266	***A/G***	***-***	***R****	***R****	***R***	***R****	***-***	***-***	***R***	***R***	***R***	***R***	***R***
rs712	***A/C***	***-***	***-***	***M****	***M****	***-***	***-***	***-***	***M***	***M***	***M****	***M***	***C****
rs35612970	G/A	R*	R*	R*	R	-	-	R*	-	R*	-	-	-
rs12170250	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs78460344	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs734950	G/A	R	R	-	-	-	R	R*	-	-	-	-	-
rs74423676	G/A	-	-	R*	R*	-	-	-	-	R*	-	-	-
rs12485095	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs34920087	C/G	-	S*	S	S	-	-	-	-	S*	-	-	Y*
rs6006029	G/A	R*	R*	R*	R	-	-	-	-	R*	-	-	-
rs713924	T/C	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y
rs713728	T/C	-	-	Y	Y	-	B*	-	-	Y*	-	-	Y*

rs132280	C/T	-	S*	T*	Y	Y*	Y*	Y	Y	Y	Y	Y	B*
rs1076231	G/C	-	-	S*	S	-	R*	-	-	-	-	-	-
rs7203326	G/A	-	-	R	R*	-	-	-	-	-	-	-	-
rs2524310	A/C	C*	M*	M	M	-	-	-	-	-	M*	C*	NP
rs75091657	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	-
rs3169914	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs7212483	C/T	-	-	-	-	-	-	-	Y*	T	-	-	-
rs17567558	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs7302968	G/A	R*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs4803	A/G	R	R	R	R	-	-	-	-	-	-	-	R*
rs749529	C/G	-	-	S	S	S	S	S	-	S*	-	-	-
rs34914492	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1807183	G/A	-	-	A	A	low_cov	A	A	-	R*	-	-	-
rs2293181	G/T	K*	K*	K*	K*	K*	K	K	-	K*	K*	T*	K
rs16966363	C/T	Y*	Y*	Y*	Y	Y*	Y	Y	-	Y*	-	Y*	-
rs62057823	A/G	-	-	NP	NP	-	-	-	-	-	NP	NP	-
rs16966365	C/T	-	-	Y	Y	Y	Y	Y	-	Y*	-	-	-
rs2241906	C/T	-	-	T*	Y	Y	Y	Y	-	Y*	-	-	Y*
rs1075952	G/A	-	-	R	R	R	R	R	-	R*	-	-	-
rs2948519	A/G	R	G	R*	R	R	R	R	-	R*	R*	G	R
	G/A	A	R	-	-	-	-	-	-	-	-	-	-
rs62057822	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11867724	G/A	-	-	R*	R	R*	R*	R	-	R*	-	-	-
rs2293180	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs76334561	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	S*	-	-	S*	-	-	-
rs11068499	G/A	-	-	R*	R	-	-	-	-	-	R*	R	-
rs12813801	G/A	-	-	-	-	-	-	-	-	-	R*	R*	-
rs1093297	T/C	C*	C*	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*
rs11068503	T/C	Y	Y	Y	Y	-	Y*	-	Y	Y	Y	Y	Y*
rs73208202	T/C	Y	Y	-	-	-	-	-	Y*	Y	NP	NP	NP
rs12813784	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11613545	C/T	-	-	Y	Y	-	-	-	-	Y*	Y	Y	NP
rs7955803	C/T	-	-	-	-	Y*	Y*	-	-	-	Y	Y	-
rs73208195	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs11068551	G/A	R*	R	R*	R*	-	R*	-	R*	R*	R*	R*	-
rs816284	T/C	C*	Y*	C*	C*	C*	Y*	Y*	C*	C*	C*	C*	C*
rs61071715	C/T	-	-	Y*	Y	-	-	-	-	-	Y*	Y*	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11068501	C/T	-	-	Y	Y*	-	-	-	-	-	Y	Y	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs617641	C/G	S*	S*	S*	S*	S*	S*	S*	G*	G*	S	S	S*
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3746528	T/C	Y*	Y*	-	-	-	-	-	-	-	-	-	-
rs2285185	C/T	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*
rs11696808	G/A	-	-	R*	R*	-	-	-	-	R*	R	R	R
rs4812718	G/A	R*	-	-	-	-	R*	-	-	-	-	-	-
rs916411	G/A	R*	R*	R*	R*	R	R*	A*	R*	R*	R*	A*	R*
	C/T	-	-	-	-	-	Y	-	-	-	-	-	-

rs6030947	G/T	-	-	S*	B*	-	R*	-	S*	B*	B*	K	K*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2071969	G/A	-	-	-	-	R	R*	R	-	-	-	-	-
rs6017106	G/CA/A	-	-	-	-	-	-	R*	-	-	R	R	R
rs41279270	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	NP
rs3205	T/C	-	-	-	-	Y*	Y*	Y	-	Y*	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs2269623	T/C	-	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y
rs55754827	G/A	-	R*	-	-	-	-	-	R*	R	R*	-	R*
rs2269622	G/C	-	S*	-	-	S*	S	S	S*	S	S	S	S
rs2269621	C/G/T	-	-	-	-	-	-	-	-	-	Y	Y	Y
rs558614	G/A	-	R*	A	A*	R*	R	R*	A*	R*	R*	R	R*
rs535233	T/C	Y*	-	Y	Y	Y	Y	Y	-	Y*	-	-	Y
rs507186	A/G	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R	R*
rs2770928	C/T	T*	Y*	Y*	Y*	Y	Y	Y*	T*	Y*	Y*	Y*	Y*
rs9552315	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y
rs1042546	A/G	R*	R*	-	-	R*	R*	-	-	R*	R	R	R*
	T/G	-	-	-	-	-	-	-	Y*	-	-	-	-
rs4245927	A/G	R*	R*	R	R*	R*	G	R	R	R	R	R	R
rs788792	C/A	M*	M*	A	M*	M*	H*	M*	M*	M	M	M	M*
rs788793	T/C	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y*
rs75658797	G/A	R*	R*	R*	R	-	R*	-	-	R*	-	-	V*
rs56234832	C/T	Y*	-	Y	Y	-	-	Y*	-	Y*	-	-	S*
rs788794	G/A	R*	R*	R*	R	-	R*	-	A	R	R	R*	R*
rs788795	T/C	Y	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*
rs12123010	C/T	Y*	Y*	Y	Y	-	Y*	-	-	Y*	-	-	Y*
rs896551	C/T	Y*	T	Y*	Y	-	Y*	-	Y	Y	Y	Y	Y*
rs72746693	A/G	-	-	R	R	-	-	-	R	R	-	-	-
rs3811463	T/C	-	-	Y	C*	C	Y*	Y*	-	Y*	Y	Y	NP
rs4659441	T/C	Y*	Y*	C	Y*	Y	Y*	Y*	-	Y*	C	Y*	C
rs2291748	C/T	-	-	-	-	-	-	-	Y*	Y*	T	-	-
rs4318996	A/G	G*	R*	G*	G*	low_cov	G	G*	G*	G*	G*	G*	G*
rs59826024	C/G	-	-	-	-	S	S*	S	-	S*	-	-	S
rs1532380	A/G	R	R	-	-	R	R	R	-	-	-	-	-
rs3735254	A/G	-	-	-	-	R*	R*	R	-	R*	-	-	R*
rs2291749	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11765552	T/A	W	W	A	W	-	-	-	W	W	W	W	W
rs4509254	T/C	Y*	Y*	C*	Y*	C	C*	Y*	C*	Y*	C*	Y*	Y*
rs58880085	T/C	-	-	-	-	Y*	Y*	Y	-	Y*	-	-	Y
rs3801296	G/A	-	-	-	-	R*	R*	R	-	-	-	-	R
rs3801294	G/A	R	R	A	R	-	R*	-	R	R	R	R	R
rs10268268	A/G	-	-	-	-	R	R*	R	-	R*	-	-	R
rs56204700	T/C	-	-	-	-	Y*	Y*	Y	-	Y*	-	-	Y
	G/T	-	-	K*	K	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	R*	R	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	T
rs1800449	C/T	Y*	Y	-	Y*	Y*	Y*	Y	-	Y*	Y*	-	-

rs79052831	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4667591	T/G	K*	K	K*	K*	G	K*	K*	-	K*	-	-	K*
rs2229265	C/T	-	-	Y	Y	Y*	Y	Y	-	Y*	-	-	-
	T/C	Y*	Y	Y*	Y*	-	-	-	Y	Y*	-	-	Y
rs2075249	G/T	T	K	K*	K*	-	K*	-	T	K	-	-	T
rs2229263	T/C	-	-	Y	Y	-	Y*	-	Y*	Y	Y	Y	-
rs2241190	T/C	Y*	Y	Y	Y	-	-	-	Y	Y	-	-	Y
rs2229268	A/G	R	R	-	-	R	R*	R	-	R*	-	-	R
	A/G	R	R	-	-	-	-	-	R	R	-	-	R
rs34693334	C/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs34104660	G/T	-	-	-	-	K*	K*	K*	-	-	K	K	-
rs2229266	G/A	-	-	-	-	R	R	R	-	-	R	R	A
rs830994	G/A	R*	R*	R	R	A*	R*	A*	R	R	R	R	R*
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2228171	C/T	-	Y*	T*	Y	Y*	Y	Y*	T	Y	Y	Y	-
rs34915742	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2075252	T/C	C*	C*	NP	NP	low_cov	C*	C*	-	Y*	NP	NP	C*
	G/A	-	-	-	-	-	-	-	-	R*	-	R*	R
rs831043	T/C	Y	Y	Y	Y	-	Y*	-	Y*	Y	-	-	Y
	C/T	-	-	-	-	Y*	Y	Y	T*	Y	-	-	-
rs73029530	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs1048329	G/A	-	-	-	-	R	R	R	A	R	-	-	-
rs3797032	A/G	-	-	-	-	R	R*	R	R	R	-	-	-
rs2030802	A/G	NP	NP	NP	NP	low_cov	R	R*	G*	R*	NP	NP	NP
rs1288548	G/A	-	-	-	-	R	R	R	R*	R	-	-	-
rs1288549	A/C	-	-	-	-	M	M	M	H*	M	-	-	-
rs2277268	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
rs4988321	G/C/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs545382	T/C	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs41494349	A/G	-	-	-	-	-	-	-	-	R*	-	-	R
rs11574426	C/T	-	-	NP	NP	-	-	-	-	-	Y	Y*	-
rs2306862	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs556442	G/A	R*	R*	A*	R*	A*	R*	A*	R*	R	A*	R*	R
rs3736228	C/T	-	-	-	-	NP	NP	NP	-	-	-	-	Y*
rs1056611	A/C	M	M	-	-	-	-	-	-	-	-	-	M
rs9972733	G/C	-	S*	-	-	-	-	-	-	-	-	-	S
	C/G	-	-	S	S	-	S*	-	-	S*	Y*	-	S*
rs2288023	G/C	-	-	-	-	C	C	S*	-	S	S	S	-
rs2288020	T/C	-	Y*	-	-	C	Y*	Y*	Y*	Y	C	Y*	-
rs8692	C/T	-	Y*	-	-	Y	Y*	T	-	Y	Y*	Y*	Y*
rs2288021	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs17856705	A/G	R*	-	R	R	R	R	R*	R*	R*	R	R	-
rs2288022	T/C	-	-	-	-	Y	Y	Y	Y*	Y	Y	-	-
rs1056616	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
	C/A	-	M*	M*	A	-	-	-	-	-	-	-	-
rs2288019	C/G	-	-	-	-	S	S	G	-	S	S*	S*	S
rs11644164	C/T	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*	NP
rs2288024	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2288025	A/C	-	-	-	-	-	-	-	-	-	-	-	M

rs3208968	A/C	-	M*	-	-	M	C	M	-	M	M	M*	M*
rs13281184	C/T	-	-	-	-	-	-	-	Y*	-	-	-	Y
rs9297853	A/G	-	-	-	-	-	R*	-	-	R*	-	-	R
rs2293979	G/A	R	R	R*	-	R*	R	R	R*	R	R	R	R
rs41478246	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11630691	T/C	Y*	-	-	-	-	-	-	C	Y	-	-	Y
	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs11853661	C/T	Y*	Y*	-	Y*	Y*	Y*	Y	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
rs11857803	G/A	-	-	-	-	low_cov	R*	R	-	-	-	-	-
rs3764739	C/T	-	-	-	Y*	-	-	-	-	-	Y	Y	-
rs56193104	C/A	-	-	-	-	-	M	M*	-	M*	M*	M*	A*
rs55739947	C/A	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs2924835	G/A	-	-	-	-	-	A	R*	-	R*	R*	R*	A*
rs1048327	G/A	R	R	R	R	-	-	-	R	R	-	-	-
rs1048326	C/T	Y	Y	Y	Y	-	-	-	Y	Y	-	-	-
rs41372244	G/A	-	-	-	R*	-	-	-	-	-	R	R	-
rs7137160	T/C	Y*	Y	Y*	Y*	-	-	-	Y*	Y	Y*	Y*	NP
rs12426362	T/A	W*	W*	NP	NP	low_cov	-	-	W*	-	W*	W*	NP
rs11175964	G/A	R	R	-	-	low_cov	-	-	-	-	R	R	-
rs33958906	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10878441	A/C	M	M	M*	M*	-	-	-	M	M	M	M*	-
rs1427263	C/A	M*	M	M	-	low_cov	-	-	M*	M*	M*	M*	NP
rs33995883	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs10784548	T/C	Y	Y	Y	Y	Y*	Y*	-	Y	Y	Y	Y	Y
rs3761863	T/C	Y*	Y	NP	NP	-	-	-	Y*	Y*	-	Y*	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs33962975	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3886747	C/T	Y	Y	Y*	Y*	-	-	-	Y	Y	Y	Y	NP
rs10878371	T/C	Y	Y	Y*	-	-	-	-	Y*	Y*	Y*	Y	NP
rs1352878	C/T	T*	T*	Y*	T*	T*	Y*	T*	T*	T*	T	T*	T*
rs7302503	G/A	R	R	R*	R*	-	-	-	R	R	R	R	R*
rs11564148	T/A	-	-	-	-	low_cov	low_cov	-	W*	W*	-	-	NP
rs10878307	A/G	-	-	-	-	R	R	R	-	R*	R	R	-
	T/G	-	-	-	-	K	K*	K	-	K*	-	-	-
rs2290448	C/T	-	-	Y*	-	Y*	Y*	Y	-	Y*	-	-	Y*
rs77938757	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1065324	G/A	R*	R*	R	R	R	R	R	R*	R	-	-	R*
rs12468099	G/A	-	-	R	R*	-	-	-	-	R*	-	-	R*
rs1804505	G/A	-	-	R*	R*	-	-	-	-	R*	-	-	-
rs3731572	A/G	-	-	R	R	-	M*	-	-	R*	-	-	-
rs6706620	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs76868907	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	R*	R*	-	-	R*	R*	-	-	-	-	-	-
rs2290427	C/A	-	-	-	-	-	-	-	M	M*	-	-	-
rs8970	A/G	R	R	-	-	R*	R*	-	R	R	R	R	R*
	G/A	R*	R*	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4422143	T/C	Y*	Y*	Y*	Y*	Y*	Y	Y*	N*	Y*	Y*	Y*	B*

rs622716	A/G	R*	R*	R	R	R*	R*	R*	R*	R	R*	R*	R
rs1058840	G/A	-	R*	R*	R	R	R	R	R*	R	R*	R*	R
rs316617	T/C	-	-	-	-	Y*	C	Y	C	Y	Y*	Y*	Y
rs2305030	C/T	-	-	NP	NP	Y*	T	-	NP	NP	NP	NP	Y
rs4924549	C/T	Y*	Y*	-	-	-	-	-	-	-	-	-	-
rs1050855	G/A	A*	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*
rs8720	T/C	-	-	NP	NP	low_cov	-	-	Y*	Y*	NP	NP	NP
rs12587	T/G	-	-	K*	G*	-	-	-	K	K	K*	K*	NP
rs12245	A/T	-	-	W*	W*	-	W*	-	W*	W	W	-	T
rs55646950	C/T	Y	Y	Y	Y*	-	Y*	-	Y*	Y	Y	Y*	Y
rs750866	A/G	R	R*	R*	R	-	-	-	R*	G	R	R	R
rs701834	C/T	Y*	Y	Y*	Y	-	-	-	Y	Y	Y*	Y	Y
rs79377069	G/T	-	K*	-	-	K	K	K	-	K*	-	-	K*
rs807024	A/G	R	R*	R*	R	-	-	-	R*	R	R*	R*	R*
rs3740491	C/G	S	S	G*	G*	G*	S*	G*	G*	G*	G*	G*	S
rs41291478	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs701835	A/G	R*	R	R	R	-	-	-	R*	R	R*	R	R
rs701836	C/A	M	M	M	M*	-	M*	-	M*	M	M*	M	M*
rs14177	C/G	S	S	S	S	-	V*	-	S*	S	B*	S	S*
rs752974	C/T	-	-	Y	Y	Y*	Y*	Y	-	Y*	T	Y	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11190787	G/T	K	K	K	K	K*	K*	K*	K*	K	K	K	K
	G/A	-	-	-	R*	-	-	-	-	-	-	-	-
rs11594686	A/C	C	M*	NP	NP	M*	M	M*	C*	C	M*	-	M*
rs3735615	C/G	S*	S*	G*	S*	S	S*	S*	S*	S	S	S	S*
rs4721888	G/C	S*	S*	-	-	S*	S	S*	S*	S*	S*	S*	S*
rs975263	G/A	R	R	R	R*	R	R	R*	R	R	R	R*	R
	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs4721407	A/G	R*	R*	G	R*	G	G	R*	-	R*	-	-	G
rs3800924	C/T	T*	Y*	Y*	Y	low_cov	Y	Y*	-	Y*	-	-	Y*
rs35935754	T/C	-	-	Y*	-	-	-	-	C*	Y	C*	C*	Y*
rs7680	G/A	R*	D*	-	R*	-	D*	R*	-	R*	R	R	D*
rs73038477	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs10950456	G/A	-	-	R*	R	-	-	-	A*	R	A*	A*	-
	C/T	-	-	NP	NP	NP	NP	NP	-	-	-	-	-
rs10242757	T/C	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs62442503	C/A	-	-	-	-	-	M	-	-	-	-	-	-
rs73051857	T/C	-	-	-	-	-	-	-	-	-	-	-	Y
rs11976342	C/T	Y	Y	-	-	Y*	Y	Y	Y	Y	-	-	Y
rs11557347	G/A	R*	R*	R*	R*	A*	R*	A*	-	R*	-	-	R*
rs2159783	A/G	-	-	-	-	-	-	-	-	-	-	-	R
rs1801368	C/T	Y*	Y	Y*	Y	T*	Y*	T	-	Y*	-	-	Y*
rs1801550	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs1639909	A/C	M*	C	-	-	NP	NP	NP	-	M	-	-	M*
rs12112306	C/T	Y*	Y	-	-	Y*	Y	Y	Y	Y	-	-	Y
rs61751744	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs6951493	G/A	R*	R	R*	R	R*	R	R	R*	R	-	-	R
rs61752609	T/C	Y	Y	-	-	-	-	-	-	-	-	-	NP

rs61752608	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2908990	T/C	C	C	Y*	-	-	-	-	-	-	-	-	NP
rs903147	G/T	K	D*	K*	K	-	K*	-	-	-	K	K	-
	C/A	-	-	-	-	-	M*	M	-	-	-	-	-
rs35249206	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7106	C/T	Y*	Y	Y	Y*	Y*	Y*	Y	-	Y*	-	Y*	-
rs3768833	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35927101	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs75843462	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	NP
rs16843614	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs76792277	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs16843618	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6720659	C/T	-	-	Y*	-	-	-	-	-	-	-	-	-
rs2271252	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2239672	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs14303	C/A	M	M	M	M	-	M*	M	-	M*	-	-	-
rs45542131	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs45523634	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6629	G/A	R	R	NP	NP	-	R*	-	-	R*	-	-	-
rs350908	C/T	Y*	Y*	T*	T*	low_cov	Y*	T*	Y*	Y*	NP	NP	Y*
rs11539506	G/A	-	-	-	R	-	-	-	R*	R*	-	-	-
rs17851657	G/A/T/C	-	-	-	-	-	-	-	-	R*	R	R	-
rs2289858	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs350916	G/A	R	R	R*	R	A	R*	R*	R*	R	R*	R	R
rs6630	G/T/C	K*	-	-	-	K	K	K	-	-	-	-	-
rs8157	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs2230436	C/T	Y	Y	Y*	Y*	-	-	-	-	Y*	Y*	Y*	Y
rs2363369	G/C	S	S	S	S*	S*	S*	S	S	S	S*	S*	S*
rs2230435	T/C	B*	Y*	Y*	Y*	Y	N*	Y	Y	Y	Y*	Y*	Y*
rs73982795	G/A	A	R	R	R*	R	R*	R	R	R	R	R*	R
rs2363195	C/T	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y	Y*
rs7502445	G/A	R	R	R*	R*	R*	R*	R	R*	R*	R*	R	R*
rs62057721	C/T	Y	Y*	Y*	Y*	Y*	Y*	Y*	T	Y	Y	T	Y*
rs73311539	T/C	Y*	Y*	Y*	-	Y*	-	Y*	Y*	Y	Y	Y*	Y*
rs62057673	C/T	Y	Y	Y*	Y*	Y*	B*	Y*	Y*	Y*	Y*	Y*	Y*
rs2363197	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
rs35026048	G/A	R*	R*	R*	R*	R*	R*	R*	R*	R	-	R*	-
rs2363370	T/C	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y*	Y	Y*
rs2363194	C/T	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*
rs74575904	T/G	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
rs2363375	C/T	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-
rs35804189	A/T	W	W*	-	W*	W*	W*	W*	-	-	-	W*	W*
rs62057672	G/A	R	R	R*	R*	R*	R	R	R*	R	R*	R*	R
rs4021723	A/G	R	R	R	R*	R	R	R	R	R	R	R	R
rs56216806	C/T	Y	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs2217956	G/A	R	R	R*	R*	R	R*	R*	R*	R	R*	R*	R*

rs2363374	G/T	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
rs56067280	G/T	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
rs9909362	C/T	-	-	Y*	Y*	Y*	Y*	Y	Y	Y	-	-	-
rs76111309	G/A	V*	R*	R*	R*	R*	D*	D*	D*	R*	R*	R*	R*
rs55736474	C/A	M	M	M*	M*	M	M	M	M	M	M*	M	M
rs55935757	C/T	B*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y
rs2885719	G/A	R	R	R*	R*	R*	R	R*	R	R	R*	R*	R*
rs2363373	C/G	S	S*	S*	S*	S*	S	S	S	S*	S	S	S*
rs3896627	G/C	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S
rs4021724	C/T	Y	Y*	Y*	Y*	Y	Y	B*	Y	Y*	Y	Y	Y*
rs56369732	C/T	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
rs2363196	C/T	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
rs2885718	G/A	R	R	R	R	R	R	R	R	R	R	R	R
rs56166328	G/A	R*	D*	R*	R*	R*	D*	R*	R	R*	R*	R*	D*
rs5025581	C/T	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*
rs62055363	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	-	Y*	Y*
rs62055368	G/T	K*	K	K*	-	-	K	K	K*	K	K*	-	K*
rs8076154	T/C	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y
rs1657695	C/T	Y	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y
rs4021726	C/T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
rs4021725	G/A	R	R	R	R*	R	R	R	R	R	R	R	R
rs4416071	C/T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
rs56254869	A/T	W	W*	W	W*	W*	W	W	W	W*	W	W	W*
rs62055360	G/A	R	R	R	R*	R	R	R	R	R	R	R	R
rs73982796	G/A	R	R	R	R*	R	R*	R*	R	R	R	R	R
rs35206134	G/A	R*	R	R*	R*	R	R*	R*	R*	R*	R*	R*	R*
rs34105301	T/C	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	H*
rs56125869	G/C	S	S	S*	S*	S	S	S	S	S	S*	S	S
rs2925940	C/T	Y	T	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	**Y**
rs55796947	C/T	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
rs62055361	G/A	R	R	R	R*	R	R	R	R	R	R	R	R
rs2363191	T/A	W	W	W	W*	W	W	W	W	W	W	W	W*
rs35027510	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4792219	G/A	R	R	R*	R	-	-	-	-	R*	-	-	-
rs3743354	T/C	-	-	-	-	-	Y	Y*	-	-	-	-	-
rs11550176	A/G	-	-	-	-	-	-	-	-	R*	-	-	R*
rs3743353	T/C	Y*	Y*	-	-	Y	Y	Y	-	Y*	Y*	-	Y*
	G/A	R*	R*	-	R*	-	V*	-	R*	R*	R*	-	R*
rs7247283	C/T	-	-	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*
rs41284494	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11879199	A/C	-	-	M*	M	M*	M*	M	M	M	C	M*	-
rs2303701	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs832549	C/T	T*	T*	NP	NP	T*	T*	T*	Y	Y*	T*	T*	NP
rs190413	G/A	R*	R*	A*	A*	R*	R*	R*	A*	A*	A*	A*	A*
rs702689	G/A	A*	R*	A	R*	R*	R*	R*	R	R	A*	A*	R*
rs45556841	C/G	-	-	G	S	-	-	-	-	-	-	-	-
rs3822625	A/G	-	-	-	-	-	-	-	R*	R*	R*	R	-
rs832583	A/C	C*	C*	C*	C*	C*	C*	C*	M	M	C*	C*	C*
rs832547	C/G	S*	S*	NP	NP	G*	S*	G*	S	S*	G*	G*	NP

rs56069227	A/G	-	-	-	-	-	-	-	R*	R	-	-	-
rs3817119	T/G	-	-	-	-	-	-	-	-	-	-	-	K*
rs832582	G/A	A*	A*	A*	A*	A*	R*	A*	R	R	A*	A*	A*
rs1129156	T/C	Y	C*	NP	NP	NP	NP	NP	C*	Y	NP	NP	Y*
rs948577	T/C	-	-	C	C	-	Y*	-	Y	Y	Y	Y	-
	G/A	-	-	-	-	R*	R	R	A*	A	R*	A	R
rs1054843	A/G	R*	R*	G	G*	-	-	-	G*	R	G*	R*	R*
rs2276738	G/C	S*	S*	S*	C*	-	S*	S*	S*	S	C*	C*	S*
rs11917456	T/A	-	-	-	-	W	W	W	-	-	-	-	-
rs9863304	T/C	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*
	T/C	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs3732577	C/T	Y*	H*	Y*	B*	Y*	N*	Y*	Y*	Y*	Y	Y	Y*
rs3755647	A/C	-	M*	M*	M*	M*	-	M*	M*	M	M*	M*	M*
rs13091808	C/T	-	-	-	-	Y	B*	Y	-	Y*	-	-	V*
rs56240945	T/C	-	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs11712864	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2293206	T/C	-	-	NP	NP	low_cov	Y*	Y*	C*	C*	C*	C*	NP
rs55740287	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs72845960	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1129121	G/A	R	R	R*	R*	-	-	-	-	-	R*	R*	-
rs62157546	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs13431911	C/T	Y	Y	Y*	Y*	-	-	-	-	-	Y	Y*	NP
rs3732209	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4233584	C/T	-	-	-	-	Y*	Y	Y	Y	Y	Y	Y	Y
rs4497825	A/G	-	-	-	-	G	R	R	R	R	R*	R*	R
rs7581386	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs72845958	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3088374	T/C	C	Y	Y	Y	Y*	Y	Y	C*	Y	C*	Y*	NP
rs35533223	A/C	-	-	-	-	-	-	-	M*	-	-	-	-
rs55704622	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4559074	G/A	R*	R*	NP	NP	A*	R*	R*	R*	R*	R*	A*	NP
rs1488	G/A	R	R*	R*	R	R*	R*	R*	R	R	R*	R*	R
rs2076260	T/C	-	-	NP	NP	Y*	Y*	Y	Y*	Y*	-	-	NP
rs45599539	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11138	A/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs55666429	G/A/-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	R
rs41291098	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	A	A*	NP	NP	-	-	-	-	-	-	-	A
	G/A	R	R	-	-	-	-	-	-	R*	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs157704	G/A	R*	R	A	R*	-	-	-	R*	R	R*	R*	NP
rs9345020	C/T	Y*	Y*	-	Y*	-	-	-	Y*	Y*	Y*	Y	Y
rs157688	T/C	Y*	Y	Y*	C	-	-	-	C	Y	Y*	Y*	C*
rs10894	C/T	Y*	Y	T	T	-	-	-	Y	Y	Y*	Y*	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	D*	D*	K*	D*	K*	D*	K*	K*	D*	K*	D*	K*
rs9362746	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2172710	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs157705	C/T	Y	Y	-	Y*	-	-	-	Y	Y	Y	Y*	Y*

rs3034	G/A	R*	R	R	R	R	R*	R*	R	R	R	R*	R
rs1042058	T/C	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	-	Y
rs2907	A/G	-	R*	R	R	R	R*	R	R	R	-	-	R
	C/T	Y	Y*	-	-	Y	Y*	Y*	-	Y*	NP	NP	Y*
	G/A	R	R	-	-	R	R*	R	-	R*	R	R	R
rs2286053	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35423612	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs3755176	T/A	-	-	A*	A*	NP	NP	NP	NP	NP	NP	NP	NP
	G/A	R*	R	NP	NP	-	-	-	-	-	-	-	-
rs7422651	A/G	R	R	R*	R*	R*	R*	R*	G	R	R	R	R*
rs10865149	C/G	S*	S	G*	G*	G*	G*	S*	G	S*	S	S*	G*
rs6544214	T/C	-	Y*	Y*	C*	C*	C*	C*	C	Y	Y	Y*	Y*
rs1139583	A/G	-	-	-	-	R	R	R	R	R	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6761844	A/G	R*	R*	-	-	-	D*	-	-	-	-	-	-
rs62153660	G/A	-	-	NP	NP	R*	R	R*	NP	NP	-	-	NP
rs56378209	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17745869	T/G	-	-	K*	-	K*	K	K*	-	K	-	-	K*
rs6705975	G/A	R*	R*	R	R	R	R*	R*	R*	R	R*	R*	R
	C/T	-	-	-	-	low_cov	-	-	-	-	Y*	Y*	-
rs1202	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/G	Y*	-	-	-	-	-	-	-	-	-	-	-
rs17417318	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs958	C/T	Y	Y	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y*
rs2589515	G/C	S*	S*	S	C	S	S	S	S	S	S	S	NP
rs7682129	T/G	NP	NP	NP	NP	low_cov	G*	G	K*	K*	-	K*	NP
rs1201	A/G	R*	R	R*	R*	-	-	-	R*	R*	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2076139	T/C	C*	C*	NP	NP	C	C*	C*	-	Y*	C*	C*	C*
rs2272857	A/G	R*	R*	NP	NP	R*	R*	R*	-	R*	G	R*	R*
rs1129880	A/G	R*	R	R	G	R*	R	R*	R*	R	-	-	R*
rs6010218	A/G	R	R*	-	-	R*	R*	R*	R*	R*	-	R*	R*
rs13433665	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	Y*	S*
rs5771276	G/A	D*	R*	D*	R*	D*	R*	R*	D*	D*	-	-	A
rs2341111	G/C	C	S	S*	C	C*	S	S*	C*	S	-	-	S
rs5771281	A/G	R*	R	G	G	R*	R*	R*	R*	R	-	-	R
rs5771284	A/C	M*	M*	M*	M*	M	M	M*	M*	M	-	-	M*
rs5771282	C/T	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	-	-	H*
rs3817818	C/G	S	G	S*	-	S	S*	S	-	-	S*	S	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs5771280	A/T	W*	T	W	W	T	W*	W*	W*	W	-	-	W
rs62239358	A/T	-	-	-	W*	-	-	-	-	-	-	-	-
rs2272855	C/T	Y*	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2066773	G/A	-	-	R*	A*	-	-	-	R*	R	NP	NP	NP
rs76251763	G/A	R*	R*	-	-	R*	R*	-	R*	R*	-	-	-
rs6010220	A/G	R	R	R*	R*	R	R	R*	R	R	-	-	R*

rs12191295	T/C	Y*	Y*	NP	NP	low_cov	Y*	Y*	-	Y*	Y*	Y*	NP
rs2071863	G/A	R*	R	R	R	R*	R*	R*	-	R*	-	-	R*
rs1059227	A/C	M*	M	M	C	M*	-	-	M	M	-	-	M
	G/A	-	R*	-	-	R*	R	R	-	R*	-	-	R*
rs8510	C/T	Y	Y	Y	Y	-	Y*	-	-	Y*	-	-	Y*
rs56156688	A/G	R	R	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6457878	C/T	Y	Y	-	-	-	Y*	-	-	Y*	-	Y*	Y*
rs3804451	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs7745082	A/C	C	M*	-	-	-	-	-	-	-	-	-	NP
rs3804452	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs851006	T/C	C*	Y	NP	NP	-	Y	Y*	-	Y*	Y*	-	NP
rs851007	G/A	-	-	-	-	-	R*	R*	R*	R*	R*	-	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12678428	C/T	Y*	Y	Y	Y	T*	Y*	Y	Y*	Y*	Y*	-	Y*
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs56186625	C/T	Y*	-	Y	Y*	-	Y*	-	-	-	-	-	-
rs56288074	C/G	-	Y*	-	-	-	-	-	-	S*	-	-	S
rs11783357	C/T	H*	H*	T*	Y	Y*	Y	Y*	Y*	Y*	-	Y*	H*
rs62524242	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs35834318	G/A	R*	R*	-	R*	R*	R*	R*	-	R*	R*	-	R*
rs35986760	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs7542	G/C	V*	S*	S*	S*	S*	S*	S*	-	S*	S*	S*	-
	G/A	-	-	-	-	-	-	-	-	-	-	R*	K*
rs7698	G/A	R*	R*	-	-	-	R*	-	-	-	R	R	-
rs3288	T/C	-	-	-	-	Y*	-	-	-	-	-	-	-
rs3752087	G/A	-	-	-	R*	R*	R	R	-	R*	R	R*	R
rs3752085	T/G	K*	K*	G*	G	G*	G	K*	K*	K	K	K	NP
rs71357248	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs74860287	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11550439	C/T	-	-	-	-	Y*	Y*	Y*	-	-	-	-	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2233072	T/G	K	K	K*	K	G*	K*	G*	K	K	K*	K*	K*
rs11598320	T/A	-	-	-	-	W*	W	W	W	W	W*	W*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs41281989	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs8428	T/C	-	-	C	C	Y	Y	Y	Y*	Y	Y*	C*	Y*
rs9284	T/-/G	K*	K*	K*	K	K*	K*	K	W*	K*	-	-	K*
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs41282359	C/A	-	-	-	-	-	-	-	-	-	M	M	-
rs14136	G/A	-	-	NP	NP	-	A	R*	-	-	-	-	-
rs3219201	G/A	R	R	R*	R*	A	A	R*	A*	R	R	R	R*
rs56314791	C/T	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	-
rs2269380	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2294616	G/C	S*	-	-	-	-	-	-	S*	-	-	-	-
rs71376597	AA/TG	V*	R*	G*	G*	G*	V*	R*	R*	R*	R*	G	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2294618	T/C	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs2076432	A/T	W*	W*	T*	T*	W*	W*	W*	W*	W*	W*	W*	W*
	G/T	D*	D*	NP	NP	low_cov	D*	-	K*	D*	-	-	R*

rs12448520	T/C	Y*	Y	Y*	Y*	-	Y	Y*	C	Y	Y	Y	Y*
	C/T	-	Y*	-	-	-	-	-	-	Y*	-	-	Y
rs2575329	G/A	A	A	-	-	-	A	R*	R*	R*	NP	NP	-
rs1127575	A/G	R*	R*	R*	-	-	R*	-	-	-	R	R	-
rs6703	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4481314	T/C	Y*	Y	-	-	-	-	-	-	-	Y	Y	-
rs9605	G/A	R	V*	-	R*	-	S*	S*	-	V*	R	R	R*
rs1127580	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y*
rs35691219	A/G	R*	R*	-	-	-	-	-	-	-	R	R*	NP
rs13435	C/T	-	-	Y*	T	Y*	Y	Y	T	Y	Y*	Y*	Y
rs4634313	C/A	-	M*	A	A	M	M	M	M*	M	M*	M*	M
rs4073250	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11130254	A/C	-	-	-	-	-	-	-	-	-	M	M*	NP
rs414171	A/T	W	W	T*	W*	T*	W*	W*	W*	W	W*	T*	W*
rs1385025	G/A	R*	N*	R*	V*	R*	N*	A	R*	R*	R*	R*	A
rs2298735	A/C	M	M	M*	M	-	-	-	-	-	M*	M*	-
rs242538	C/T	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y
rs2070090	C/T	Y*	Y*	-	Y*	Y*	-	-	Y*	Y	Y	Y	-
rs3754733	A/G	R*	G	G	G*	R*	R*	R	-	R	G*	G*	R
rs10137161	T/C	C*	C*	Y*	C*	C*	Y*	Y*	C*	C*	Y*	Y*	Y*
rs11627567	C/T	Y	Y	NP	NP	low_cov	-	-	NP	NP	-	-	Y
rs13987	A/G	-	R*	G	G*	R	R	R	-	R*	-	-	R*
rs2756130	T/C	Y*	Y*	C*	C*	C*	Y*	Y*	C*	Y*	Y*	C	Y*
rs2395	A/G	R*	R*	G*	G*	R*	R*	G*	G*	G	G	R*	R*
rs344797	T/G	K	K	K*	K	K	K	K	K	K	K	K	G
rs173179	T/C	C*	Y*	NP	NP	low_cov	Y*	C*	NP	NP	C*	C*	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	S*
rs56158216	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2290688	T/C	Y*	Y	-	Y*	Y*	Y*	Y*	-	-	-	-	-
rs35952311	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs11085822	A/G	R	R	R*	R*	R*	R*	R*	-	-	-	-	-
rs1052610	A/G	-	R*	-	-	-	R*	-	-	R*	-	-	-
rs3737737	G/C	-	-	-	-	S*	S*	S	-	-	-	-	-
rs17855317	T/C	Y	Y	-	-	-	Y*	-	Y*	Y	Y*	-	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs33931638	G/A	-	-	-	-	-	-	-	-	-	-	-	NP
rs41286710	C/T	-	-	-	-	-	-	-	-	-	Y	-	-
rs7531911	A/G	-	-	-	-	R	G	R	-	R*	R	R*	-
	C/T	Y*	Y*	-	-	-	Y*	-	-	Y*	-	-	-
rs1052607	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3795318	G/A	R	R	-	-	-	-	-	R	R	-	-	-
rs6702764	T/C	-	-	NP	NP	C*	C*	C*	-	Y*	C*	C*	Y*
rs1622208	A/G	R*	R*	G*	R*	R*	G	R	R*	G	R*	R*	G*
rs36097855	C/T	-	Y*	Y	Y	Y	Y*	Y	Y*	Y*	-	-	-
rs34070850	A/G	-	R*	-	-	-	-	-	-	R*	-	-	R*
rs1707336	T/G	-	K*	K*	K	K*	-	K*	-	-	K*	K*	NP
rs11211247	T/G	K*	K*	K*	K*	G*	K*	K*	K*	K	K*	K*	K
rs925524	A/G	R*	R*	R*	R*	R*	R*	R	G*	R	R	R	R*

rs740691	C/T	Y*	-	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	NP
rs2072490	C/T	Y*	Y*	Y*	Y*	T	T	T	Y*	Y	T	Y	-
rs2270623	C/T	Y*	Y*	Y*	Y*	low_cov	T*	T	Y*	Y*	Y*	T	-
	G/A	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	-
rs541225	T/C	Y*	Y*	C*	Y*	C*	Y*	C*	Y*	C	Y	Y*	Y
rs8108738	G/A	R*	R*	R*	R	A*	R*	A*	R*	R	-	R	NP
rs55927942	C/T	M*	M*	-	-	-	-	-	Y	Y	-	-	-
rs16896336	T/C	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs80243092	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs56118404	A/T	-	-	-	-	-	W*	-	W	W	-	-	-
rs55882716	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs55970008	T/C	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs36138	G/A	-	-	A*	R*	-	-	-	R*	R	-	-	-
rs73102407	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs56337909	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs1705399	G/C	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*
rs4700137	C/T	T	Y*	NP	NP	T*	Y	T*	Y*	Y	NP	NP	-
rs60245780	G/A	-	-	-	-	-	-	-	R	R	-	-	NP
rs4099838	T/C	Y	Y	-	-	-	-	-	-	-	-	-	Y*
rs10764686	T/C	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y*
rs41282228	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs7907981	T/C	Y*	Y	NP	NP	low_cov	C	Y*	-	Y*	C*	Y*	Y*
rs3802526	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs1981296	C/T	Y	Y	Y*	Y*	T*	Y*	Y*	Y	Y	Y	Y*	Y*
rs7907988	T/G	K*	K*	G*	K*	K*	G	K*	K*	K	K*	K*	K*
rs7919803	C/A	M	M	NP	NP	low_cov	M*	A*	-	M*	M*	-	M*
rs1338	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs10764687	A/G	-	-	-	-	-	-	-	-	R*	R	R	NP
rs3824593	G/A	R	R	NP	NP	low_cov	R*	A*	R*	R*	R*	R*	R
rs10741130	T/C	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y
rs11670591	A/C	M*	M	NP	NP	NP	NP	NP	NP	NP	M*	M*	M*
rs11671451	T/C	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	Y*
rs4807509	T/G	K*	K*	K*	G*	K*	K*	G*	G*	K*	G*	K*	G*
rs11670641	A/G	R	R*	NP	NP	low_cov	R*	G*	NP	NP	R*	R*	R*
rs4902358	A/G	R	R	R	R	R*	V*	-	R*	R	R*	-	R*
rs4902357	C/G	S	S	S	S	-	S*	S*	S*	S	-	-	S*
	G/C	-	-	-	-	-	-	-	-	-	S	S*	-
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1957949	C/T	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
rs762810	C/A	M	M	M	M	-	M*	-	M*	M	-	-	-
rs1957948	C/T	Y	Y	Y	Y*	-	-	-	Y*	Y*	-	-	-
rs4902359	G/A	R	R	R	R	-	-	-	R*	R*	-	-	-
rs7159443	T/A	W	W	W	W	-	-	-	W*	W	-	-	-
rs45604339	C/T	Y*	Y	Y*	Y*	-	-	-	-	Y*	-	-	-
rs4900833	T/C	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*
rs2899849	A/T	T*	W*	T*	W*	T*	W*	W*	T*	T*	W*	T*	W*
rs11558802	G/A	A*	R*	NP	NP	A*	A*	R*	A*	A*	A*	A*	A*
rs3168891	T/G	K*	G*	G*	K*	G*	K*	K*	K*	K*	K*	K*	K*
rs2112452	G/A	A*	R*	-	R*	A	R*	A*	R*	R	R	A*	R
rs3185733	A/G/C	M*	M	NP	NP	C*	C*	C*	-	-	C*	C*	NP

rs1549181	G/A	R	R	-	R*	R*	R*	R*	R	R	A*	R*	R*
rs3209874	C/T	Y	Y*	-	-	-	-	-	Y	Y*	-	-	Y*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs9122	T/C	-	Y	NP	NP	low_cov	C	C*	Y	Y	C*	C*	NP
rs348941	G/C	S*	S	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*
rs1422222	C/T	Y	Y	-	-	-	-	-	Y*	Y	-	-	Y
rs6594664	G/A	A*	A*	NP	NP	NP	NP	NP	A*	A*	A*	A*	A*
	G/A	R	R	-	R*	A*	R*	R*	A*	R	R*	R*	R
rs348943	C/T	Y*	Y*	NP	NP	-	-	-	-	-	T*	Y*	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs56023848	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2227948	G/A	R	R	-	-	A	A*	A*	R*	R	R*	A*	R*
rs56265422	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7033	T/C	Y	Y*	-	-	-	-	-	Y*	Y*	-	-	NP
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs2227950	G/A	R	R	R	R	-	-	-	-	R*	-	-	R
rs6869100	A/G	R*	R	-	-	R	R*	G*	R	R	G*	R	R*
rs6890140	T/C	Y*	C*	C*	Y*	C*	Y*	C*	C*	Y*	C	C*	C*
rs2089587	C/A	M	M*	-	-	-	-	-	-	-	M	M	-
rs6443859	T/G	G*	K*	G	G*	K	K	K	G*	K	G*	G*	NP
	G/A	-	-	-	-	-	R*	-	-	-	R*	-	-
	A/T	-	-	-	-	W*	W	W	-	W*	-	-	-
rs870176	A/G	R	R	-	-	V*	W*	R*	-	-	R	R	R*
rs6775890	G/A	R*	R	-	-	-	-	-	-	-	R*	R	-
rs13065908	C/T	Y	Y	Y	Y	Y	Y*	Y	-	Y*	-	-	-
rs6777106	C/G	-	-	NP	NP	-	S*	S*	NP	NP	S*	S*	S
rs2314347	A/G	R	R	-	-	-	-	-	-	-	R	R	-
rs11719987	T/G	-	-	K	K	-	Y*	-	-	-	K	K	-
rs35070271	A/G	-	-	-	-	-	R*	-	-	R*	R	R	R*
rs639690	C/T	T	Y*	NP	NP	Y	Y*	T	-	Y*	Y*	Y*	Y*
rs74903905	C/T	Y*	Y*	-	-	-	-	-	-	-	Y	Y	Y*
rs2089589	A/G	R	R	-	-	-	-	-	-	-	R	R	-
rs11915194	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs9819356	C/T	T*	Y*	T	T*	Y	Y*	Y	T*	Y	T*	T*	Y*
rs9815371	C/G	S*	S*	G	S	-	-	-	G	S	S*	S*	S*
rs12489712	T/C	Y*	Y*	Y	Y	Y*	Y*	-	Y*	Y	C*	Y*	Y*
rs6804951	T/C	Y*	Y*	C*	C*	Y	Y*	Y	C*	Y	C*	Y*	Y*
rs7639705	T/G	K	K	-	-	-	-	-	-	-	-	-	-
rs57447492	A/G	R	R	-	-	R*	-	-	-	-	R	R	-
rs619424	G/T	K*	T	K*	T*	T*	K*	T*	-	K*	K*	K*	K*
rs12635655	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6800146	A/G	R	R	-	-	-	-	-	-	-	R*	R	-
rs2314348	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	-
rs4859115	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs4859159	C/T	T*	T*	NP	NP	Y*	Y*	-	NP	NP	T*	T	NP
rs4859176	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6803121	A/G	G*	R*	G*	R*	R	R*	R	G*	R	R*	R*	G*
rs10937128	T/C	-	-	-	-	-	-	-	-	-	-	-	-

rs12638707	G/A	R	R	R	R*	R*	R*	R	-	-	-	-	-
rs13066057	C/T	Y	Y	Y*	Y	Y*	Y	Y	-	Y*	-	-	-
rs16837903	G/A	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs878471	G/A	R	R	R*	R*	R	R*	A	R	R	R*	R*	R
rs35392872	G/A	-	-	-	-	R*	R	R	-	R*	-	-	NP
rs893293	C/T	Y*	H*	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	Y	Y
	C/T	-	-	-	-	-	-	-	-	-	-	Y*	Y*
	G/A	R*	R	-	-	-	-	-	-	-	-	-	R*
rs2230240	C/T	Y	Y	H*	-	Y*	H*	Y*	Y*	H*	Y	Y	Y*
rs2307323	C/T	-	-	-	-	-	-	-	-	Y*	-	-	S*
rs61753601	G/A	-	-	-	-	-	-	-	-	-	NP	NP	-
rs2307331	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs762679	T/A	W*	W	A*	W*	A*	W*	A*	A*	A*	A*	A*	A
rs17334535	C/A	-	-	M*	M*	-	S*	-	-	-	M	M	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2307340	C/G	-	-	-	-	S*	-	-	-	S*	-	-	S
rs2071744	C/T	-	-	T*	T*	Y*	-	-	T*	Y	-	-	-
rs133431	C/A	-	M*	NP	NP	-	-	-	A*	M	M*	M*	-
rs4645776	T/C	-	-	-	-	-	-	-	-	-	-	-	Y
rs4645824	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs133417	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1057031	G/A	-	-	-	-	-	R*	-	R	R	-	-	R
rs3087350	C/T	-	-	-	-	-	-	-	-	Y	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs73159721	C/A	-	-	-	-	-	-	-	-	-	-	-	Y*
rs1534310	A/T	-	-	-	-	-	-	-	T*	W	-	-	W
rs12267	G/A	R	R	R*	R	R*	R*	R	-	-	-	-	R
rs4319008	G/A	-	-	R*	-	-	-	-	-	-	-	-	R*
rs2070215	T/C	H*	H*	H*	W*	H*	N*	H*	Y	Y	H*	W*	N*
rs3730492	T/G	-	-	-	-	-	-	-	-	-	-	-	K
rs937283	A/G	R*	R	R	R	-	R*	-	R*	R	R	R	-
rs1690916	G/A	A	R	R*	R*	-	-	-	R*	R	R	R*	NP
rs769412	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs35270244	A/C	C	M*	M*	M*	M*	M*	M*	M*	M	M	M*	M
rs11810177	C/G	-	-	-	-	-	-	-	S	S	-	-	-
rs4252697	C/T	Y	Y	-	-	-	-	-	-	-	Y	Y	-
rs10900596	T/C	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y
	G/A	-	-	-	K*	-	-	-	-	-	-	-	R
rs61749329	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2045624	G/C	C*	C	-	-	S*	S*	S*	C*	C	C	C*	S*
rs72753810	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs77241163	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10900597	C/T	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y	T*	T	Y
rs4245739	C/A	NP	NP	NP	NP	low_cov	M*	M*	NP	NP	NP	NP	NP
rs12032618	C/T	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	T	Y*	Y*	T
rs4245738	C/T	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	-
rs4951406	A/G	R	R*	R*	R	R	R*	R	R*	R	R	R*	R*
rs3851379	G/A	R*	R	NP	NP	A*	A*	A*	NP	NP	A*	A*	A
rs1420476	T/A	A	A*	A	A*	low_cov	W*	A*	NP	NP	A*	A*	NP
rs11721038	T/C	-	-	-	-	-	-	-	-	-	-	-	-

rs1048604	C/A	M*	M	M*	M*	A	M*	A	A*	M	M*	M*	M*
rs34896995	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs7633965	A/C	C*	M*	M*	C*	low_cov	C	M*	C*	M*	M*	M*	C*
rs16853191	A/G	-	-	-	-	low_cov	-	-	NP	NP	-	-	R*
rs17466625	C/T	T	Y	Y*	Y*	-	-	-	-	-	-	-	-
rs10936575	C/T	Y	Y	-	-	Y*	Y*	Y	Y	Y	Y*	Y*	Y
rs35594969	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs10935849	G/T	-	-	K	K	low_cov	K*	K*	-	-	-	-	-
rs6795918	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1220995	G/A	-	-	-	-	-	-	-	-	-	-	-	K*
rs12635196	T/G	NP	NP	NP	NP	low_cov	low_cov	G*	NP	NP	NP	NP	NP
rs3975345	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3821668	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6771502	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2172250	T/C	Y*	Y*	C*	Y*	C*	Y*	C*	C*	C*	C*	C*	C*
rs74574665	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7611956	C/A	A*	M*	A*	A*	A	M*	M*	A*	A*	A*	A*	A*
	T/G	-	K*	-	-	K	K	K	-	K*	K*	-	-
rs73159941	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs3732768	G/A	R	R	R	R	-	R*	R*	-	R*	R*	R*	-
rs3732765	G/A	R*	R*	R	R	R	R	R	R	R	-	-	R*
rs4353657	C/A	-	-	NP	NP	-	-	-	A*	A*	NP	NP	NP
rs34072093	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7604639	G/A	R*	R*	R	R*	R*	V*	R*	R*	R	R	R	V*
rs2230515	A/G	R*	R*	G	G*	R*	R*	-	R*	R	R	R	R*
rs1131244	A/G	R*	R*	R*	G	R*	-	-	R	R	R	R	R
rs13027171	G/A	-	R*	-	-	-	-	-	R*	R	-	-	R
rs3811634	C/T	Y*	Y*	Y*	-	Y*	Y*	-	Y*	Y	-	-	Y
rs2230517	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs13402707	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs41738	A/G	R	R	R	-	R	-	R	R*	R	-	-	G
rs6566	G/A	R*	R*	R	R*	R*	R*	R*	R*	R*	-	-	NP
rs11762213	G/A	-	-	-	R*	R	R	R	R*	R*	-	-	-
rs13223756	A/G	R*	R*	-	-	-	-	-	-	-	R*	R*	-
rs41736	C/T	Y	Y	T	Y	Y	Y*	Y	Y*	Y	-	-	Y*
rs41739	A/G	R	R	R*	R*	R*	R*	R	R	R	-	-	G*
rs2023748	G/A	R	R	R	R	R	R*	R	R	R	-	-	R
rs41737	G/A	R	R	R	R*	R	R*	R	R	R	-	-	R
rs1621	G/A	R*	R	R*	R	R	R*	R	R	R	R	R*	R
rs4951014	A/G	-	-	R*	-	-	-	-	-	-	-	-	NP
rs12092624	C/T	Y	Y*	Y	Y	-	-	-	Y	Y*	Y	Y	-
rs74931401	G/C	-	-	-	-	-	-	-	S	S	-	-	-
rs16855989	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs12081859	G/A	-	-	-	-	R	R	R	R	R	-	-	R*
rs41308411	G/A	-	-	-	-	-	-	-	R	R	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7529077	C/T	-	-	-	-	Y*	N*	Y*	Y*	Y	-	-	Y
rs2282449	C/T	Y*	-	Y*	Y	-	-	-	-	-	-	-	-
rs7515820	A/C	M*	M	M*	-	M*	M*	M*	C	M*	-	-	M*

	G/A	-	-	-	-	R	R	R	-	R*	R	R	-
rs3818970	T/C	-	-	Y*	Y	-	-	-	-	-	Y*	-	-
rs7526132	G/C	S*	S*	S*	S*	S*	S*	S*	S*	S*	-	-	B*
rs75091163	T/G	-	-	K*	K	-	-	-	-	-	-	-	-
rs2308327	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs693300	T/C	-	-	Y*	Y	Y*	-	-	Y*	Y	Y*	Y*	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1803965	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs41544714	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs41548018	C/T	-	-	-	-	Y	Y*	Y	-	-	-	-	-
rs12917	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs540992	A/T	-	-	W*	T	-	-	-	W*	W*	W	W*	W*
rs7896488	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs80178746	G/T	K*	-	K*	K*	-	-	-	-	-	-	-	-
rs12763287	T/G	G	K	NP	NP	low_cov	-	-	NP	NP	-	-	G*
rs1042669	T/G	-	-	-	-	-	-	-	K	K*	-	-	NP
rs2302319	G/A	-	-	-	-	R*	-	R	NP	NP	-	-	R
rs6502827	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs75987362	G/A	-	-	NP	NP	R*	-	R*	NP	NP	NP	NP	R*
rs2131025	T/C	Y	Y*	-	-	-	-	-	-	-	Y	Y*	C*
rs9863910	T/C	Y	Y	-	-	-	-	-	-	Y*	Y	Y	Y
rs576	C/T	-	-	-	-	-	-	-	-	Y*	Y	Y	-
rs62250968	C/T	Y	Y*	NP	NP	low_cov	Y*	Y*	-	Y*	Y*	Y*	NP
	G/A	-	-	-	-	-	-	-	-	-	-	R*	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs704246	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
	C/T	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
	A/T	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	-
rs1545	C/A	-	-	-	-	-	-	-	M	M	Y*	-	-
	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs16991547	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
rs1547	G/A	-	-	-	-	-	-	-	R	R	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs55664133	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs12080601	G/T	-	-	K*	K	-	-	-	-	-	-	-	-
rs10890405	G/C	-	-	-	-	-	-	-	S	S	-	-	S
	G/A	-	-	-	-	-	-	-	-	R*	R*	R	-
rs1060478	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs77314888	A/C	M	M	NP	NP	-	-	-	-	-	-	-	-
rs2287002	G/A	-	-	-	-	-	K*	-	-	-	R	R*	R
rs72981418	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3746101	G/T	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs34475638	C/T	T	Y	-	-	low_cov	-	-	-	-	-	-	-
rs1064543	A/C	M*	M	NP	NP	M*	M	M	M	M	M	M	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	A
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2239669	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-

	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35184412	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2302313	G/A	-	-	-	-	-	R*	-	-	R*	R*	-	-
rs1799977	A/C/G	R	R	G*	R*	-	-	-	-	R*	R*	R*	R*
rs1800734	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs108621	T/C	Y	Y	Y	Y	Y*	Y*	Y	C	Y	Y	Y	Y*
rs108622	A/G	-	R*	NP	NP	-	-	R*	R*	R*	R*	R	NP
rs398896	C/A	M*	M*	M*	M*	M*	M*	M*	M	M	M*	M	M*
rs175049	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	Y	Y	T	Y
rs28756981	T/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs175080	G/A	R	R	R	R*	R*	R*	R	R	R	R	R	NP
rs175081	T/C	C*	Y*	Y	Y*	C*	Y*	Y*	C*	Y*	C*	C	C*
rs424120	G/T	K*	K*	K*	K*	-	K*	K*	K	K	K	K	K*
rs13712	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	Y*	Y*	-
rs28756982	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4888274	A/T	T*	W	-	-	W	W	W	-	W*	W	W*	-
rs35589326	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35430251	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34515646	C/T	-	-	-	-	Y	Y*	Y	-	-	-	-	Y
rs9783779	T/C	-	-	Y	Y	Y	Y	Y	Y	Y	-	-	Y
rs77659434	T/A	H*	W	H*	W	W*	N*	H*	H*	H*	W*	W*	W
	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y	Y	-
rs2537264	G/T	K*	D*	K*	K*	K	K*	K*	K*	K*	K*	K*	K*
rs62481498	T/C	Y*	Y*	Y	-	Y	Y	Y	Y	Y	Y	Y	Y*
	T/G	-	-	-	-	-	-	-	-	-	K	K*	K*
	G/C	-	R*	-	-	-	-	-	-	-	-	-	S
	G/A	-	R*	-	-	R	A	R	-	R*	R	R*	-
rs3896406	G/C	S	S	S	S	S*	V*	S*	S	S	S*	S*	B*
	T/G	K*	K*	-	K*	K*	K*	K*	K*	K*	K*	K*	K*
rs10454320	T/A	H*	H*	H*	H*	W	N*	W*	W*	H*	W	W	H*
	T/G	-	-	-	-	-	-	-	-	K*	-	-	K
rs77652527	T/C	Y*	-	-	-	-	-	-	Y	Y	-	-	Y*
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2537263	C/T	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	Y*	Y	Y*	Y*
rs13231116	G/T	-	-	-	-	-	R*	-	-	-	-	-	-
	G/C	-	S*	S*	-	S	S	S	-	S*	S	S	-
rs74483926	G/A	-	-	R	R	R	R*	R	-	R*	-	-	R
rs73161892	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs75705858	T/C	Y*	Y*	Y	-	Y	Y	Y*	Y	Y*	Y*	Y*	Y*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1132896	G/C	S	S	S*	S	-	-	-	-	-	S	S*	S
rs243849	T/C	Y*	Y*	Y*	C	Y*	Y	Y*	Y	C	C*	Y*	C*
rs11541998	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2287074	G/A	R	R	R*	R*	R*	-	-	-	R*	R	R*	R*
rs243834	A/G	R*	R	R*	R*	low_cov	R*	G*	R*	R*	R*	R*	NP
rs7201	A/C	M	M	M*	M	-	M*	-	M	M	M	M	M*
rs14070	C/T	Y	Y	-	-	-	-	-	Y	Y*	Y*	Y*	T
rs20544	C/T	Y*	Y*	Y	Y	Y*	Y*	-	Y	Y	Y	Y	Y
rs17577	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs17576	A/G	-	-	-	-	R*	R*	R	R*	R*	R	-	-

rs2250889	G/C	C*	S*	C*	S*	C*	C*	C*	C*	S*	C*	S*	C*
rs13925	G/A	-	-	-	-	R*	R*	-	-	R*	R	R	-
rs55969078	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35392772	C/A	-	-	-	-	-	-	-	M*	M*	-	-	-
rs2155209	T/C	C	C	Y*	Y*	-	-	-	Y*	Y	Y	-	NP
rs2972388	C/T	Y*	Y*	NP	NP	low_cov	Y	-	NP	NP	Y*	Y*	NP
	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs2303425	T/C	-	-	-	-	-	-	-	-	-	-	-	K*
rs4987188	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs2303424	A/G	R	R*	R	R	R*	R*	R	-	-	R	R	-
rs2020908	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs1800935	T/C	Y	Y	-	-	-	Y*	-	Y	Y	-	-	Y*
rs3136230	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs1800932	A/G	R*	R*	-	-	-	-	-	R	R*	-	-	-
	A/G	R*	R*	-	-	R*	R*	R*	R*	R	R*	R*	R
	T/C	Y*	Y*	-	-	-	-	-	-	-	-	-	-
rs13085791	C/A	-	-	-	M	-	-	-	-	-	-	-	-
rs72936035	T/C	Y*	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*
rs2087730	A/G	G	R*	G*	R*	G*	R*	G*	G*	R*	G*	G*	R*
	G/A	-	-	-	-	low_cov	R	R*	-	-	-	-	-
	C/T	Y*	Y*	NP	NP	low_cov	Y	Y*	Y*	Y*	Y	-	-
	C/T	Y*	-	-	-	-	Y*	-	-	-	-	-	-
rs1062633	T/C	Y*	Y	-	-	Y	Y*	Y*	-	Y*	Y	Y*	Y*
	T/C	Y*	C*	-	-	C	C	C	-	Y*	C*	Y*	NP
rs1063192	G/A	NP	NP	NP	NP	low_cov	R*	A*	R*	R*	-	-	NP
rs3217992	C/T	NP	NP	T*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	NP
rs3217986	T/G	-	-	-	-	K	K	K	-	K*	-	-	-
	C/T	Y*	T	-	-	Y*	Y*	Y	Y*	T	Y*	T*	Y*
rs3088440	G/A	-	-	-	-	R	R*	R	-	R*	-	-	-
rs3731249	C/T	Y*	-	Y	Y	-	-	-	-	Y*	Y*	-	-
rs3731198	T/C	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs2811711	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs11515	C/G	S*	V*	S*	S*	G*	S*	S*	S*	S	S*	S*	S
rs12139042	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs1057079	C/T	Y*	Y*	T	Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y
rs28991014	A/G	G*	R	NP	NP	-	-	-	-	-	-	-	NP
rs28991009	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1417131	T/C	-	-	-	-	Y*	Y*	Y	Y*	Y*	-	-	-
rs12732063	G/A	-	-	-	-	-	K*	-	-	-	-	-	-
rs1135172	A/G	R*	G	NP	NP	low_cov	R	R*	R	G	R*	R*	G*
rs2076658	T/C	-	-	-	-	-	-	-	-	Y*	-	W*	Y
rs1064261	G/A	R*	R*	A*	R	R	R	R	R	R	A*	A*	R
rs2275527	G/A	R*	-	-	-	R	R	R	R*	R	-	-	R*
rs11121691	C/T	-	-	NP	NP	Y*	Y*	Y	Y*	Y	Y*	-	NP
	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs11465205	C/T	Y*	Y*	-	Y*	-	Y*	-	Y*	Y*	Y	Y	-
rs4072037	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y	Y	Y	Y*
	G/C	-	V*	S*	S	-	R*	S*	-	S*	-	V*	-
rs41279051	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y

rs10980531	G/A	-	-	-	-	R*	R*	R*	-	-	-	-	R*
	G/A	-	-	-	-	-	R*	-	-	R*	-	-	-
rs35142681	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55963442	A/G	R	R	-	-	-	-	-	-	-	R*	-	R*
rs2766999	T/C	Y*	Y	-	-	-	-	-	Y	Y	Y	Y	-
rs3739711	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs2274419	G/A	R	R	-	-	R	R	R	-	R*	R	R	R
rs35176182	A/G	-	-	-	-	-	R*	-	-	-	R	R*	R*
rs3219487	T/C	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*
rs3219489	C/G	S*	S*	-	S*	S	S	S	-	S*	S	S	S*
rs3219468	G/C	S*	C*	C*	C*	C*	S*	C	C*	C*	C*	S*	S*
rs3219466	G/A/T	-	-	-	-	-	-	-	-	-	-	-	-
GA031311	C/A	-	-	-	-	M*	M	M	-	-	-	-	-
rs7349311	G/A	-	R*	-	R*	R	R	R	-	R*	R	R	R
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs12475412	C/T	-	-	Y*	-	Y*	T*	T*	-	Y*	Y*	Y*	Y
rs28441198	T/-/C	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	Y*
rs11126250	T/G	-	K*	K*	K	G	K*	G*	K*	K	K	K	D*
rs76313351	G/C	-	-	-	S*	-	-	-	-	S*	-	-	-
	C/G	-	-	-	-	-	Y*	-	-	S*	-	-	-
rs61745504	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs35741140	G/C	S	S	S*	S*	-	-	-	-	-	S	S*	S
rs14401	C/T	-	-	Y*	Y*	Y	T	Y*	Y*	T	Y*	Y*	-
rs17658	T/C	Y	Y	Y*	C*	C	Y*	Y*	C*	C*	C*	Y*	Y*
rs1133195	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs77480185	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41291900	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1803997	G/T	-	-	-	-	K*	K*	K*	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4645949	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2070583	A/G	-	-	-	-	-	-	-	-	-	-	-	R
rs4645946	G/A	-	-	-	-	low_cov	-	-	-	-	NP	NP	-
rs4645948	C/T	-	-	-	-	-	M*	-	-	Y*	M*	-	Y
rs3824120	G/T	K	K*	K	K	K*	K	K	-	K*	-	-	-
	C/G	S	S*	-	-	-	-	-	-	-	-	-	-
rs922	C/T	-	-	-	-	Y*	-	-	Y	Y	-	Y*	Y
	G/T	-	-	-	-	-	K*	-	-	-	-	-	-
rs4988457	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs7744	A/G	R	R	-	R*	R	G	R	R	R	-	-	R
rs6853	A/G	-	-	R*	R*	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	Y*	-	-	-	-	-	-	-	-
rs5996988	G/A	R*	R*	-	-	R	R	R*	A*	R	R	R*	-
rs4820658	G/A	-	R*	-	-	A	R	R*	R	R	R	R	-
rs5761170	T/C	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y
rs738642	C/G	G	S*	-	S*	NP	NP	NP	NP	NP	NP	NP	S*
rs35578357	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-

rs13058434	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs58609797	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6004901	G/C	S	S	-	-	-	-	-	-	-	-	-	-
rs5761268	C/A	M*	M*	NP	NP	low_cov	M*	A*	NP	NP	-	M*	M*
rs7284177	G/A	R	R	-	R*	-	-	-	-	-	-	-	-
rs2236005	A/G	R	R	-	-	-	R*	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs738643	T/C	C	Y*	NP	NP	low_cov	Y*	-	NP	NP	NP	NP	Y*
rs3859866	G/C	C*	S*	C*	S*	C*	C*	S*	C*	C*	C*	C*	S*
rs916425	C/T	-	-	-	-	low_cov	-	-	Y*	Y*	-	-	Y*
rs3740231	A/T	-	W*	NP	NP	W	W*	T	-	-	NP	NP	-
rs3817420	G/A	R*	R*	R	R*	-	R*	R*	R*	R*	R*	R*	R
rs34151474	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35379457	C/T	Y*	-	Y*	-	-	Y*	Y*	Y*	Y*	-	-	Y
rs17666079	A/C	M	M	-	-	M	C*	M*	M	M	-	-	M
rs56210104	G/A	R*	-	-	-	R	R	R	-	R*	R*	-	-
rs35010955	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	Y*	-
rs34067308	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	Y*	-
rs1999240	C/A	M	M	M*	M	M	M*	M*	M	M	A*	A	M
rs3758449	G/A	R	R	R	R*	R*	R*	R*	R*	R	-	-	R
rs3824699	A/G	R*	R*	G*	G*	G*	R*	G*	G	R*	G*	G*	NP
rs72787376	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs7077072	T/C	Y	Y*	C*	C*	C*	Y*	C*	Y	Y	C*	C*	C
rs17666095	A/C	-	-	M*	M*	-	M	M	-	-	-	-	M*
rs3740232	G/A	R	R*	-	-	R	R	R	R	R	-	-	R*
rs10497370	A/C	-	-	-	-	M*	M*	M	-	-	M*	M*	NP
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6751520	T/C	Y*	Y*	Y*	C	Y	Y	Y	Y	Y	Y	Y	Y
rs17497636	G/A	R*	R*	-	-	R	R	R	-	R	-	-	-
	T/A	-	-	W*	A	-	-	-	-	-	-	-	-
rs33962844	A/G	R	R	-	-	R*	R	R	R	R	R*	R	R
rs6736609	G/A	A*	A*	A*	A*	R	R	R	A*	R	R*	R	A
rs11894020	A/G	-	-	NP	NP	-	R*	R	-	-	NP	NP	NP
rs13385825	T/C	-	-	Y*	Y*	Y*	Y*	-	Y	Y	Y	Y	Y*
rs78800296	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs11893936	A/G	-	-	-	-	R*	R	R	-	-	R	R	-
rs10185178	G/A	A*	R*	R*	A*	A*	R*	R*	A*	R*	A	R*	R*
rs13382220	G/A	-	-	-	-	-	-	-	-	R*	-	-	R*
rs10211281	G/C	S*	C	S*	C	S*	B*	S*	C	S*	S*	B*	-
rs2161916	G/A	-	-	A	R*	-	-	-	A	R	R*	R*	-
rs6761297	A/G	G	G*	G*	R*	G*	R*	R*	G*	R*	R*	R*	G*
rs4668246	A/G	G	R	G	G*	R*	R	R	R	R	R	R	-
rs2983433	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2427625	A/C	M*	M	-	M*	M	M*	M*	M*	M	M	M	M
rs41309379	C/T	Y*	Y	-	-	Y	Y	Y	-	Y*	Y*	Y*	Y*
rs41279352	C/T	Y	Y	-	-	-	-	-	-	-	Y	Y	Y*
rs11699386	A/T	-	-	-	-	-	-	-	W*	W	-	-	-
rs34316071	G/T	-	-	-	-	-	-	-	K	K	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	Y	Y	-
rs41279348	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-

rs62219718	G/A	R	R	-	-	-	-	-	-	-	R	R	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61746505	G/C	S*	S*	-	-	-	R*	-	-	-	-	-	-
rs41309381	A/C	-	-	-	-	M*	M*	M	M	M	-	-	-
rs3003149	C/T	-	-	-	-	-	-	-	Y*	T	-	-	-
	T/G	K	B*	K*	K	K*	K	K*	K*	K*	K*	K*	B*
rs6664627	C/T	-	Y*	-	-	Y*	Y	Y	-	-	-	-	-
rs12239747	A/G	-	-	-	-	R	R	R	-	R*	-	R*	-
rs12456560	G/T	-	-	-	-	-	-	-	NP	NP	-	-	-
rs45501198	C/A	-	-	-	-	-	Y*	-	-	-	-	-	-
rs16871239	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs45518235	T/A	-	-	-	-	-	-	-	W	W	-	-	NP
rs45449792	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs13212	T/C	C*	C	-	-	low_cov	-	-	-	-	Y*	-	NP
rs7655924	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1129694	A/G	G*	R*	-	-	-	-	-	-	-	R	G*	NP
rs55958314	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs73036929	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs574955	T/C	Y	Y	-	-	Y*	Y	Y	Y	Y	-	-	-
rs34641383	G/A	-	-	-	-	-	-	-	R*	R	-	-	NP
rs11129270	A/G	R*	G*	NP	NP	R*	G*	G*	G*	G	R	R*	NP
rs7628297	A/G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs10510594	A/G	R*	R*	-	-	R*	R	G	NP	NP	-	R*	NP
	G/C	-	-	-	-	S*	S	S*	-	-	-	-	-
rs3213930	G/C	C*	S*	NP	NP	S*	C*	C*	NP	NP	S*	S*	NP
rs10510592	A/G	R	R	-	-	R*	R	R	-	-	R	G	NP
rs17680166	G/C	S*	S	NP	NP	low_cov	S	S*	-	-	S	S*	NP
rs1445112	A/G	-	R	-	-	R*	R	R*	-	-	R	-	NP
rs11719339	C/G	S	S	-	-	S	S	S	-	S*	S	S	S*
rs62255209	C/T	Y*	Y	-	-	-	-	-	-	-	-	-	NP
rs62255589	A/G	R	R	-	-	R	R	R	-	R*	R	R	R
rs9834868	C/T	Y*	Y*	NP	NP	Y*	Y	Y*	T*	Y	T*	Y*	NP
rs674303	T/C	Y	Y	-	-	Y	Y*	Y	Y	Y	-	-	-
rs17854381	G/A	R	R	R*	R	R	R	R	R*	R*	R	R	A
rs62255210	C/T	Y	Y	Y*	Y	Y	Y	Y	-	Y*	Y	Y	Y
rs16836266	T/C	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs12637848	C/T	-	-	Y	Y*	-	-	-	-	-	-	-	-
rs3738000	A/T	W*	W*	-	-	W*	W*	W*	T*	W*	W*	W*	T*
rs7639697	C/T	-	-	Y*	Y	Y*	Y	Y	Y*	Y*	-	-	-
rs2230489	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	-
rs701929	A/G	R*	R	NP	NP	-	-	-	R*	-	R*	R*	-
rs697004	A/C	M*	C*	C	C*	-	-	-	M	M*	M*	C	NP
rs55635245	A/C	-	-	-	M	-	-	-	-	-	-	-	-
rs12031285	T/C	Y	Y	Y*	Y*	low_cov	-	-	-	-	Y	Y	-
rs3368	C/G	S*	S*	S*	S	G	S*	S*	S	S	S	S	S*
rs2296351	A/C	M*	M*	M*	-	C*	M*	M*	M	M	M	M	M*
rs41292806	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs17482764	T/A	-	-	Y*	-	-	-	-	-	-	-	-	-
	A/C	M	M	-	-	M	V*	M	-	M*	-	-	M*
rs34986855	A/G	-	-	-	-	-	-	-	-	-	R	R	-

	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs1886544	T/G	-	K*	R*	K*	G*	G*	G*	G*	G	-	K	G*
rs35465612	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
	T/G	K	K	-	-	-	-	-	-	-	-	-	-
rs1886543	T/C	-	-	NP	NP	low_cov	Y*	Y*	NP	NP	-	-	C
rs55715265	G/A	-	-	-	-	R*	-	-	R	R*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2416	A/G	R*	R*	R	R	R	R*	R*	R*	R	R*	R*	R*
rs10760354	C/T	Y*	Y*	Y*	Y*	T*	Y	Y*	T	Y*	Y*	Y*	Y*
rs12555646	C/T/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs41274372	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1139949	G/C	-	-	-	-	-	-	-	S	S*	-	-	-
rs6679100	A/G	R*	R*	-	-	R	R	R	R	R	-	-	-
rs3809797	T/C	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-
	C/G	-	-	-	-	S*	S	S	-	-	-	-	-
rs11159116	G/T	K	K	-	-	K	K	K	-	K*	K*	K*	K*
rs34648344	C/T	NP	NP	NP	NP	low_cov	-	-	NP	NP	-	-	NP
rs175487	C/T	Y	Y*	Y*	Y*	T*	Y*	Y*	Y*	T	Y*	Y*	Y*
rs175449	A/T	W	W	W	W	W	W*	W	T*	W	W	W	W
	G/A	R*	R	-	-	R*	A	R*	-	-	R*	-	-
rs1043674	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	Y	Y*	Y*
	C/T	Y	Y	-	-	Y	Y	Y	-	Y*	Y*	Y*	-
	T/A	-	-	NP	NP	low_cov	W	W*	-	-	NP	NP	NP
rs9303642	T/C	Y	Y	C	C*	-	-	-	Y	Y*	Y*	Y*	Y
rs1048317	T/C	Y	Y	-	-	Y	Y*	C	Y*	Y*	Y	Y	Y
rs1800845	C/G	S	S	G	G	-	Y*	-	S*	S	S	S*	S
rs17885309	C/T	-	-	-	-	-	-	-	T	Y*	-	-	NP
rs7220483	G/A	R*	R*	NP	NP	-	-	-	A	-	R*	-	NP
rs7406983	G/A	R	R	A	A	-	-	-	A	R	R*	-	NP
rs1801052	G/A	R*	R*	-	-	A*	A*	A*	-	R*	R*	R*	R*
rs2905880	T/C	Y	Y	-	-	Y*	Y*	Y*	-	Y	Y	Y	Y
rs11090576	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs1034880	C/G	S*	S*	-	-	S	S*	S*	-	S*	G*	S*	V*
rs17462054	G/A	-	-	-	-	-	-	-	R	-	-	-	-
rs41278851	G/A	-	-	-	-	-	R*	-	-	-	A	A*	-
rs73390944	A/G	-	R*	-	-	-	-	-	R	R*	-	-	-
rs2530680	C/T	Y	Y	-	-	-	-	-	Y*	Y*	-	-	-
rs1800539	C/A	-	M*	A	A	-	M*	-	M*	M	-	-	M
rs1008515	T/C	Y	Y	-	-	-	-	-	Y	Y*	-	-	-
rs1800540	G/C	C*	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs8140096	C/T	-	Y*	-	-	Y	Y	Y	-	Y*	-	-	Y
rs7291645	T/C	Y*	Y*	-	-	C	Y*	Y*	-	-	Y*	Y*	Y*
rs62096862	C/T	NP	NP	NP	NP	low_cov	Y*	Y*	NP	NP	NP	NP	NP
rs11661539	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7227107	A/G	-	-	-	R*	-	-	-	-	-	-	-	-
	G/A	NP	NP	NP	NP	low_cov	R*	R*	NP	NP	NP	NP	NP
rs7233684	C/T	-	-	-	-	-	V*	-	-	-	-	-	M*
rs9966033	T/C	Y	Y	-	-	-	-	-	-	-	-	-	NP
rs55668001	C/T	-	-	Y*	Y	-	-	-	-	Y*	-	-	-
rs754093	T/G	K	K	G*	G	K	K*	K*	G*	K	K	G	K*

rs25657	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs9518	T/C	Y*	Y	Y*	Y*	-	-	-	-	-	-	-	-
rs55941236	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs62096875	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
rs1052025	A/G	-	-	-	-	-	R*	-	-	-	-	-	-
rs2230112	T/G	G*	G*	G*	G*	K	K	K	G	K	K	K	K*
rs1051978	C/A	M*	M*	-	M*	-	M*	-	-	-	-	-	-
rs12598	G/A	-	R*	R*	-	R	R	R	-	R*	R	R	R*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs41275743	G/A	-	-	-	-	-	-	-	R	R	R*	-	-
rs72696119	C/G	S*	S*	S*	S*	S*	S	S*	G	G*	S	-	S
rs1609993	T/C	Y*	Y*	C*	C*	C*	Y*	Y*	Y*	C*	C*	Y*	B*
rs696	C/T	-	Y*	-	Y*	Y	T	Y	-	Y*	Y*	T*	Y*
rs8904	G/A	-	-	-	-	-	R*	R	-	-	A*	A*	-
rs1957106	G/A	-	R*	-	-	A	R*	R	R*	R	R	R*	-
rs1567669	A/G	-	-	NP	NP	-	-	-	R*	R*	G*	G*	NP
rs4872176	C/T	-	-	NP	NP	-	-	-	-	-	T	T*	T*
rs2228013	G/A	-	-	-	-	-	-	-	NP	NP	-	-	-
rs4872177	A/G	R*	R	NP	NP	-	-	-	R	R	G*	R*	G*
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3182380	C/T	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs2566514	C/G	S	S	-	-	G*	S	G*	-	-	-	-	-
	G/A	R*	-	-	-	-	R*	-	-	R*	-	-	-
rs1549758	T/C	Y*	Y	NP	NP	C	C	C	-	Y*	Y*	Y	Y
rs1799983	T/G	K*	G*	NP	NP	G*	K*	G*	-	K*	K*	-	K*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4489420	A/G	R	R*	R*	R	R	R	R	R	R	R	R	R*
rs6563	A/G	R*	R	R*	R*	R*	R	R	-	-	R	R	-
rs10521	G/A	R	R	-	-	R*	R	R	-	R*	R	R	-
rs61751543	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2229975	C/T	-	-	Y*	Y*	Y*	Y	T*	Y	Y	-	-	Y
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2229971	A/G	R	R	-	-	-	-	-	R	R	R	R	R
rs61751542	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs11574889	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs61751489	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
rs2229974	G/A	R	R*	-	-	A*	R*	A*	A	R*	R	R	R*
rs35980907	C/A	-	-	-	-	-	-	-	M*	M	-	-	-
rs61751546	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs79247096	C/G	S*	S*	S*	S*	-	S*	S*	S*	S*	S*	S	S*
rs80242635	C/T	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*
rs4021006	G/-/A/GG	R*	R*	-	R*	A	R	R*	R*	R*	R	R	R*
rs72073586	ATATATACAC/-	Y	Y	NP	NP	-	Y*	-	-	-	NP	NP	NP
rs1852039	C/G	S*	S	S*	-	-	B*	S*	S*	-	S*	-	S*
rs55899574	C/A	V*	M	M*	M*	M*	M	M*	V*	M*	M*	M*	M*
	T/G	K*	K*	NP	NP	-	-	-	-	-	-	-	K*
rs2124109	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs7412780	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs28620609	G/C	S	S	S	S*	S	S	S	S	S	S*	S	S

rs3927729	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*
rs61813225	T/C	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*
rs61814567	G/A	R	R	R*	R*	R*	R*	R	R*	R*	R*	R*	-
rs12120756	C/A	M*	M*	M*	M*	M*	H*	M*	M*	M	M	H*	H*
rs75586173	C/T	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	-
rs58051220	G/A	R	R*	R*	-	R*	R*	R	R*	R*	-	R*	R*
rs1772525	G/A	-	-	-	-	R*	R*	R*	-	-	-	-	-
rs61814566	G/C	S*	S*	S*	S*	S*	S*	S*	S	S*	S	S*	-
rs10909218	A/G	-	W*	R*	R*	R*	R	R*	R*	R*	-	-	W*
rs28576333	C/A	M*	M*	M*	M*	-	M*	M*	M*	M*	M	M*	M*
rs75987820	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*
rs79434913	G/A	R	A	-	R*	R	R*	R	R*	R*	R*	R*	R*
rs3789736	G/C	S	S	-	-	S	S*	S	S*	S	S*	S*	S*
rs1567366	G/A	A	R	-	-	R*	R	R	A	R	A*	A*	NP
rs13403558	A/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs3789735	G/A	R	R*	R*	-	R	R	R	R*	R	A*	R*	-
	A/G	-	-	-	-	-	-	-	-	R*	-	-	-
rs11675767	C/T	Y	Y	-	-	Y*	Y*	Y	Y*	Y	Y	Y*	-
rs11925495	A/G	-	-	R*	R*	-	-	-	-	-	-	-	-
rs13099099	T/C	-	Y*	NP	NP	-	Y*	Y*	-	-	-	Y*	C
	A/G	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP
	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y*	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6792074	G/A	-	-	R*	-	R*	R	R	-	-	-	-	NP
rs11708200	C/T	-	Y*	-	-	-	-	-	-	Y*	-	-	-
rs11718115	C/T	-	-	NP	NP	low_cov	Y*	Y	-	-	-	-	NP
rs6794496	C/T	-	-	-	-	Y*	Y	Y	-	Y*	-	-	NP
rs12117328	T/C	-	-	-	-	-	-	-	-	-	-	-	Y*
rs905469	A/G	R	R	-	-	-	-	-	-	R*	-	-	R
rs11121682	G/A	-	R*	-	D*	R*	R	R	-	R*	R*	A	R*
rs17884657	C/G	-	-	-	S*	S*	S*	S	-	S*	S	S	-
rs17472401	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs11121915	T/G	-	K*	G*	G*	G*	G*	G*	G	K*	K	K	K*
rs1287634	G/A	R	R	-	-	R	R	R	-	R*	A*	A	R
rs72630607	G/A	R*	-	NP	NP	-	-	-	R*	R	-	-	-
rs555164	T/C	Y*	C	NP	NP	Y*	C	Y	-	Y*	Y*	Y*	Y*
rs72630603	C/G	-	-	-	S	-	-	-	S*	S*	-	-	NP
rs905468	C/T	Y	Y	-	-	-	Y*	-	-	Y*	Y	Y	Y
	G/A	-	-	-	-	-	-	-	-	-	R	R	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs10746504	T/C	Y*	Y*	C*	Y*	C*	Y*	Y*	C*	Y	Y	Y*	Y*
rs35641267	A/T	-	-	-	-	-	-	-	-	W*	-	-	-
rs12120967	C/T	-	Y*	Y*	Y*	Y	Y	Y	-	Y*	Y	Y*	-
rs56293443	G/A	R*	R*	-	R*	-	-	-	R	R	-	-	R*
rs1287625	A/G	G	G	G	R*	G*	R*	G	R*	R*	R*	R	R*
rs1622955	T/C	Y*	Y*	Y*	C*	C*	Y*	C*	Y*	Y	Y	Y	Y*
rs571655	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs4845828	T/C	-	-	NP	NP	low_cov	Y*	C*	NP	NP	-	-	Y*
rs12142270	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs17472436	G/A	-	-	-	-	R*	R	R	-	R*	R	R	-
rs70977990	CTTACCCAGCCATCTCTC	W	W	-	-	-	-	-	-	W*	-	-	W
rs72630606	G/A	-	R*	A	A	-	-	-	R	R	-	-	-
rs12122894	G/A	-	R*	-	R*	R	R	R	-	R*	R	R	-
rs12737596	T/C	-	Y*	-	-	-	-	-	-	-	-	-	-
rs78598342	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs3747992	G/A	R*	R*	-	-	R	R	R	R	R	-	-	R*
rs1287635	T/C	Y	Y	-	Y*	Y	Y*	Y	-	Y*	Y	Y*	Y
rs489933	C/T	Y	Y	-	Y	Y	Y	Y	-	Y*	T*	T*	Y
	A/C	-	-	-	-	-	-	-	-	-	M	M*	-
rs11121956	C/T	-	-	-	-	Y*	Y*	Y	Y*	Y*	-	-	Y*
	C/G	-	-	-	S	-	-	-	-	-	-	-	-
rs3747990	C/T	Y*	Y*	-	Y*	Y*	Y	Y	-	Y*	Y	Y	Y*
rs34248917	C/T	-	-	-	-	-	-	-	-	-	Y*	T	-
	C/A	-	-	NP	NP	-	Y*	-	-	-	-	-	-
rs12079601	A/G	R*	R*	R	R	R	R*	R	R	R	-	-	-
rs11121648	T/G	K*	K	K*	K*	K	K	K	K	K	K	K*	K
	C/T	-	Y*	-	-	Y*	Y*	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs14804	G/A	-	-	A*	R*	R*	R	R*	-	-	NP	NP	NP
rs77005271	C/T	-	-	Y*	Y*	-	-	-	-	-	-	-	Y
rs2303370	C/T	Y	Y	NP	NP	NP	NP	NP	NP	NP	NP	NP	T*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1260341	T/A	W	W	W	W*	W*	W*	-	-	W*	-	-	W
rs780102	T/C	Y	Y	Y	Y	-	Y*	-	-	Y*	-	-	Y
rs780100	G/T	K	K	K*	K	-	R*	-	-	K*	-	-	K*
rs1260342	G/T	K	K	K	K	-	-	-	-	K*	-	-	K*
rs72693365	G/A	-	R*	-	-	R	R	R	-	R	-	-	R
rs7465214	G/A	R*	R	R*	R	R*	V*	R*	R	R*	R*	A	R
rs209109	A/G	-	-	R	R	-	-	-	-	R*	-	-	-
rs12129392	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1007211	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs74118779	T/C	-	-	-	-	-	-	-	-	-	Y*	Y	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs55785914	G/C	-	-	S*	S*	S*	S*	S*	S	S	S*	S*	-
rs6339	G/T	-	-	NP	NP	-	-	-	K*	K*	K*	K*	-
rs56252149	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6337	C/T	Y*	Y*	Y*	Y*	-	Y	Y*	Y*	Y	Y*	Y*	Y*
rs6334	G/A	-	-	-	-	R*	R	R*	R*	R	R	R	R*
rs6559833	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3739570	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
rs1624327	A/G	R	R	R*	-	R	R*	R*	R*	R*	G	R*	R*
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2013566	A/G	-	-	R*	R*	-	-	-	-	-	-	-	-
rs7047042	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs1221	C/T	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs1187325	C/G	G	S	S*	S	G	S	G	S	S	G	G	G
rs1627784	C/T	Y*	Y*	Y*	Y*	Y	Y*	H*	Y*	Y*	H*	Y*	Y*
rs10780691	C/T	-	-	-	-	-	Y	Y	Y*	Y	Y	Y*	Y*

rs45596934	G/A	R	R	-	-	-	-	-	-	-	-	-	R*
rs7038236	C/A	M	M	-	-	-	-	-	-	-	-	-	-
rs2289657	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11140793	A/C	M*	M	-	-	-	-	-	-	-	-	-	-
rs1047896	G/A	R	R	R	R*	R	R*	A	A*	A	A	A*	NP
rs77542010	A/G	R*	-	-	-	-	-	-	-	R*	-	-	R*
rs16940946	T/C	-	-	NP	NP	-	-	-	NP	NP	NP	NP	NP
rs12443467	G/T	-	-	NP	NP	K*	K*	K*	-	K*	T*	T*	K*
rs6496449	G/A	R	R	R*	R*	R	R*	R	R*	R*	R*	A*	A*
rs1369416	G/A	-	-	NP	NP	R*	D*	R*	-	R*	A*	A	NP
rs4404039	T/A	A	A	A*	A	W*	W*	W	-	W*	A*	A*	NP
rs1560976	G/A	-	-	A*	A*	R	R	R	R*	R*	R*	R*	A
rs1369417	T/C	C	Y	C*	C*	Y*	Y*	Y	-	Y*	C*	C	NP
	G/A	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP
rs7162062	C/T	T	Y	T*	T	Y*	Y*	Y	-	Y*	T	T*	T*
rs55703281	G/C	S*	S*	-	S*	S	B*	S	-	S*	S*	S*	S
	G/A	R	R	-	-	-	R*	-	R*	R*	-	-	R*
rs1560977	C/T	-	Y*	Y	T*	Y	Y*	Y	-	Y*	Y	T*	T
rs6496451	A/G	G	R	R*	R*	R	R	R	-	R*	G	G	R*
rs78056294	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11073750	C/T	Y	Y	T*	T*	Y	Y*	Y	Y*	Y*	T*	Y*	NP
rs7176429	T/G	K*	K*	K*	K*	K	K	K	K	K	K	K*	K*
rs1159325	G/T	S	S	-	-	-	-	-	-	-	-	-	-
rs9635402	C/T	Y	Y	T*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*
	G/T	-	-	K	K	-	-	-	-	-	-	-	-
rs16940941	G/C	C	S*	-	-	-	-	-	-	-	-	-	NP
rs28521337	C/G	S	S	NP	NP	G*	G*	G	-	S*	S	S	NP
rs1017413	C/T	T	Y	Y*	T	Y*	Y*	Y	-	Y*	T	T	Y*
rs16940934	C/A	M	M	A*	A*	M	M*	M	M*	M*	A*	A*	NP
rs3743165	G/A	-	-	A*	A*	R*	R*	R*	-	-	NP	NP	NP
rs12440682	A/T	W	W	NP	NP	-	W*	-	-	-	NP	NP	NP
rs1435393	A/T	W*	W*	W*	T	W	W*	W*	-	-	T	W*	NP
rs72481813	A/T	-	-	-	-	-	-	-	-	-	W	W	-
rs11073751	C/T	NP	NP	NP	NP	low_cov	-	Y*	NP	NP	NP	NP	NP
rs1017412	G/A	R	R	A	R*	R*	-	R	R*	R*	A*	R*	NP
rs3803409	G/A	-	R*	A	A*	R	R*	R	R*	R*	R*	A*	R*
rs6496450	A/G	G*	G	G	G*	G	-	R*	-	-	NP	NP	NP
rs16852612	A/C	-	-	-	-	-	-	-	-	-	M*	-	NP
rs1509022	A/T	T*	T*	W	W	T*	T*	T*	W*	W	W*	W*	-
rs11625196	G/C	-	R*	-	-	-	S*	-	-	S*	-	-	S
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61751339	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs34446357	C/T	-	Y*	Y	Y	-	-	-	-	Y*	-	-	-
rs35803045	C/T	-	-	-	-	-	-	Y*	-	Y*	-	-	-
rs34135902	A/G	-	-	-	W*	-	M*	-	-	-	-	-	R*
rs1875	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
	G/T	-	-	-	-	-	-	-	-	-	K	K	-
rs35493115	A/C	-	-	M*	M	-	-	-	-	-	-	-	-

rs35404087	G/C	-	-	-	-	-	-	-	-	S*	-	-	-
rs35488940	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs658731	C/A	-	-	-	-	M*	M	M*	-	M*	-	-	NP
rs2302614	A/C	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	R*	R*	-	-	-	-	-	-	-	-	-	R*
rs2285635	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs56411692	T/C	-	-	-	-	-	-	-	Y*	Y	-	-	NP
rs1052133	C/G	-	-	-	-	S*	S*	-	-	S*	-	-	S
rs293795	A/G	R*	R*	-	-	R	R*	R	-	R*	-	-	R*
rs1505578	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2236258	C/T	T*	Y*	Y*	Y	Y*	Y*	-	Y	Y	Y	Y*	Y*
rs17085108	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2236259	T/C	Y*	Y*	-	Y*	Y*	-	-	Y	Y	Y	C	Y*
rs562859	C/T	Y*	Y	T*	Y	-	-	-	Y*	Y*	Y	Y	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6916787	G/A	-	-	-	-	-	-	-	-	-	-	-	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2236256	C/A	M*	M*	M*	M	M*	-	-	M	M	M*	A	M
rs56089459	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs671531	A/G	R*	R*	G*	G*	-	-	-	-	-	G*	G	G*
rs9322448	C/G	S*	S	B*	S	S*	S*	S*	S	S	S*	S*	S*
rs540825	A/T	W	H*	W*	T	-	-	-	T	W	T	W*	W
rs6902403	T/C	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y
rs62638690	G/T	-	-	-	-	-	-	-	-	-	-	S*	-
rs675026	A/G	R	R	G*	R	-	-	-	R*	R*	G*	G*	R
rs623956	A/G	-	-	-	-	low_cov	R*	G	-	-	NP	NP	NP
rs41292888	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs34427887	C/T	-	-	Y	Y	M*	-	-	-	Y*	-	-	-
rs2236257	G/C	S	S	-	-	-	-	-	S	S	S	S*	-
rs17085103	T/G	-	-	-	-	-	-	-	-	-	-	Y*	-
rs1505579	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6902795	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs17277929	T/C	Y	Y	-	Y	-	-	-	-	-	-	-	-
	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs9479767	T/C	Y*	Y	-	Y	Y*	-	-	Y	Y	Y*	C*	Y
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1799971	A/G	-	-	R*	R	-	-	-	-	-	-	-	R*
rs35184807	C/T	-	-	-	-	Y*	-	-	-	-	-	-	S*
rs61748204	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10941413	A/G	-	-	-	-	-	-	-	R	R*	-	-	-
rs1975089	T/C	C*	Y*	C*	C*	C*	Y*	C*	C*	Y*	Y*	C*	NP
rs16867885	G/A	-	-	-	-	low_cov	-	-	NP	NP	NP	NP	NP
rs9877018	G/A	-	-	-	-	-	-	-	-	-	R*	R	-
rs2270801	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs56245927	G/A	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2011	G/A	-	-	-	-	-	-	-	R*	R*	-	-	NP
rs34969268	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs9839010	T/C	-	-	-	-	-	Y*	-	Y	Y	-	-	-
rs28360457	G/A	-	-	-	-	-	-	-	R*	R*	-	-	-

	T/C	Y	Y*	-	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*
rs3751143	A/C	-	-	M*	M	M	M	M*	-	M*	M	M	-
rs2230912	A/G	-	-	-	-	-	-	-	-	-	-	-	R*
rs7958311	G/A	-	-	-	-	-	-	-	R*	R	-	-	R*
rs1169737	C/T	-	-	-	Y*	-	-	-	-	-	-	-	-
rs17525809	T/C	-	-	-	-	Y*	-	-	Y	Y	-	-	Y*
rs1718119	G/A	R	R	-	-	-	-	-	R	R	-	-	R
rs1621388	G/A	R	R	NP	NP	-	-	-	R*	R	-	-	A*
rs1653624	A/T	W*	W*	T*	T*	T*	T*	T*	T*	W*	T*	T*	W*
rs2293476	G/C	-	-	-	-	S	S	S*	-	S*	-	-	-
rs12127094	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61781366	T/C	-	-	-	-	-	-	-	-	-	-	-	-
GA018889	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs4660293	A/G	-	-	-	-	R	R	R*	-	R*	-	-	-
rs72663531	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	K	K	-	-	-
	T/C	-	-	-	-	Y	Y*	Y	-	Y*	-	-	-
rs2729762	A/G	R	R	-	-	-	-	-	R	R	-	-	-
rs2844337	A/C	M	M	-	-	-	-	-	M	M	-	-	-
rs1129168	T/C	Y	Y*	NP	NP	Y*	Y*	Y*	C*	Y*	Y*	Y*	NP
rs1046745	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs9109	G/A	-	R*	R*	R*	R*	R*	-	A*	R	R	R*	R
rs15614	A/G	-	-	-	-	R*	R*	R	-	-	-	-	-
rs75759102	A/G	R*	R*	R*	-	R*	R	R	R*	R*	-	-	NP
rs9222	G/A	-	-	A*	R	R	R*	R	-	R*	R	R*	R*
rs79726945	C/T	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*
rs76714248	C/G	S	S*	S	S	S*	S*	S*	S*	S*	S*	S*	S*
rs4803206	T/C	-	-	C*	C*	-	-	-	Y*	Y*	-	-	Y
rs4803205	G/A	-	-	R*	A	-	-	-	R*	R	-	-	R
rs75108621	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs2242120	A/T	-	-	-	-	-	-	-	W	W	-	-	-
rs3743137	C/T	-	-	-	-	-	-	-	-	-	NP	NP	-
rs3743135	A/G	-	-	-	-	low_cov	R	R*	-	-	-	-	-
rs11635121	C/T	-	-	Y	Y	-	-	-	-	-	-	-	-
rs2412504	A/G	-	-	-	-	R*	G	R	-	-	-	-	-
rs2242119	C/A	M	M	M*	A*	-	M*	-	-	-	-	-	NP
rs11636097	A/G	-	-	G*	G*	G*	R*	G	-	R*	R	R	-
rs6133723	G/A	-	-	-	-	R*	R	R	-	R*	R*	A*	-
rs11700112	C/G	-	-	-	-	S*	S*	S*	-	-	-	-	-
rs2297345	C/T	Y*	Y	Y*	Y*	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
rs12329540	G/A	-	R*	R	R	K*	-	-	-	-	K*	-	R*
rs2423432	C/T	T	Y	NP	NP	Y*	Y*	Y*	-	Y*	-	-	Y*
rs3185693	G/T	-	K	-	-	-	-	-	-	-	-	-	-
rs12415499	T/C	-	-	NP	NP	-	Y	Y*	-	-	-	-	-
rs12768477	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs3004925	C/T	Y*	Y*	T*	Y*	T*	Y*	Y*	T*	T*	T*	T*	Y*
rs17472557	G/A	-	-	-	-	-	-	-	-	R*	-	-	NP
rs61735565	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	Y*	Y	Y*	Y*	Y	-	-	C*

	C/T	Y	Y	-	-	-	-	-	Y	Y	Y	Y*	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs75629094	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y*
rs35356834	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	R	R	R	-	-	-	-	-
rs8474	C/G	S	S	S	S*	G*	G*	G*	-	S	G*	G*	G*
	C/T	Y*	Y*	-	Y*	-	H*	Y*	Y*	Y*	Y*	Y*	H*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs1801474	C/T	-	Y*	-	-	Y*	Y*	Y	-	-	-	-	-
rs1801582	C/G	-	-	S	-	-	-	-	-	-	-	-	-
rs71653629	G/A	-	-	-	-	-	-	-	-	R*	R	R*	NP
rs3734464	T/C	Y*	Y*	-	Y*	-	Y*	-	Y	Y	-	-	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs71653628	G/T	-	-	-	-	-	-	-	-	-	K	K	-
rs17523802	G/A	R	R	-	-	R*	R*	-	-	-	D*	R*	R*
rs71653619	G/A	R*	-	-	-	-	-	-	-	-	-	-	-
rs71653620	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs226249	T/C	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y
rs8679	A/G	R*	R	-	-	-	-	-	R*	R*	R*	-	NP
rs2271347	G/A	-	-	-	-	-	-	-	R*	R	R*	R	-
rs1805404	G/A/T/C	R	R	R	R	-	-	-	-	-	-	-	-
rs1136410	A/G/T/C	R	R	R*	G	R*	R*	-	-	-	-	-	R*
rs3219125	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1805415	T/A/G/C	Y*	Y	NP	NP	C*	Y*	Y*	NP	NP	C*	C*	Y*
rs1805407	T/C	-	Y*	-	-	C	Y	C	-	Y*	-	-	-
rs2666428	C/T	Y*	Y*	Y	Y*	Y	Y	Y	-	Y*	-	-	-
rs907187	C/G	S	S	S	S	-	S*	-	-	S*	-	-	-
	A/G	R	R	G	G	G	G	R*	-	R*	-	-	R*
rs11136343	A/G	R*	R*	-	R*	G*	G	R*	-	R*	G*	G*	R*
rs11544989	A/G	R	R	R*	R*	G	R	G*	R	R	G*	G	R
rs76806097	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	-
rs11136344	T/C	Y	Y	Y	Y*	C*	Y*	Y*	Y	Y	C*	C*	Y
rs11136345	G/A	R*	R*	-	-	low_cov	A	R*	R	R	NP	NP	R
rs11062839	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs758799	G/T	K	K*	NP	NP	K*	K*	K*	-	K*	NP	NP	NP
rs34564865	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6943771	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	NP
	G/A	R*	-	-	-	-	-	-	R	R	-	R*	-
rs2269996	G/A	D*	R*	-	-	-	R*	-	-	R*	-	-	R*
rs1044718	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs79429880	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs35456446	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	M*	-	-	A	A	-	-	-
	C/G	-	-	NP	NP	low_cov	-	-	-	-	-	-	-
rs3735352	C/T	S*	S*	B*	N*	-	S*	M*	S	S	B*	B*	N*
rs79917840	G/C	-	-	-	-	-	-	-	-	-	-	-	S
rs67203649	C/A	-	-	-	-	-	-	-	M*	M*	-	-	-

rs2286195	A/C	-	-	M	M*	-	-	-	-	M*	M	M	M
	T/C	-	-	-	-	-	K*	-	Y	Y	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs79041645	C/A	-	-	-	-	-	-	-	-	-	-	Y*	Y*
rs73734181	C/T	-	-	Y	Y*	-	-	-	-	-	Y*	Y	-
rs13760	A/G	-	-	R	R	-	-	-	R	R	R	R	G
rs1044703	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	-
rs2286196	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs17212030	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/C	M*	M*	C	C*	-	-	-	M	M*	M	C*	NP
rs61732765	C/T	-	-	Y*	Y	-	-	-	-	-	-	Y*	-
rs7645033	T/C	Y	Y*	C*	C*	Y	Y*	C*	Y*	Y*	C*	Y*	Y*
rs13093808	C/A	M	A	-	-	M	M	M	-	M*	-	-	-
rs7632072	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	A/C	-	-	-	-	-	M*	-	-	M*	M*	-	M
	T/G	K*	B*	-	N*	-	B*	K*	-	K*	K*	K*	K*
	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	-	-
rs11719086	G/A	R	R	-	-	R	R	R	-	R*	-	-	R
rs61754895	C/T	Y*	-	-	-	Y	Y	Y	-	Y*	-	-	Y*
rs7632426	G/A	-	-	NP	NP	-	-	-	R*	R	-	-	-
rs1875272	G/A	-	-	NP	NP	-	-	-	-	-	-	-	R*
rs12489170	G/A	R	R	-	-	R	R	R	R	R	R*	R*	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35782160	T/G	K*	K	NP	NP	-	-	-	-	-	-	-	-
rs2668335	C/T	-	-	-	-	Y*	Y	-	-	-	-	-	NP
rs2304896	C/T	-	Y*	Y*	-	-	-	-	-	Y*	Y	T*	Y
rs1057254	G/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2700	A/C	-	-	M*	M*	-	-	-	-	-	M	M*	NP
rs3093930	T/C	NP	NP	-	-	low_cov	C*	C*	NP	NP	NP	NP	NP
rs3093921	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3093926	G/A	-	-	-	-	-	-	-	R*	R*	-	-	-
rs2297616	G/A	-	-	R*	R*	-	-	-	-	-	R*	-	R
rs4687792	G/A	R*	R*	-	-	-	-	-	R	R*	R*	R*	-
rs4112696	A/G	-	-	G	R*	G	R*	G*	-	R*	-	-	R
	G/C	-	-	-	-	-	-	-	-	-	S	S	-
rs17080489	T/C	-	-	NP	NP	-	-	-	-	Y*	-	-	Y*
rs13163802	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs27243	A/T	T*	T*	NP	NP	W*	W*	W*	T*	W*	W*	W*	NP
rs285529	A/G	-	-	-	-	-	M*	-	R	R*	R*	R	R*
rs2270859	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs34006803	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs28372690	G/A	-	-	R*	R*	-	-	-	-	R	-	-	-
rs28365795	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs9851180	T/C	-	-	Y	Y	Y*	Y*	Y	Y	Y	Y*	-	Y
rs6780181	C/A	-	-	NP	NP	M*	M*	M	M*	M	-	-	A
rs73192127	G/C	-	-	-	-	S	S*	S	-	S*	-	-	S*
rs35040036	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs16833168	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3817040	G/A	-	-	R*	R*	-	-	-	R*	R	-	-	-
rs41266953	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs7596642	G/A	R	R	-	-	R	R*	R*	-	R*	-	-	R
rs16843303	G/A	-	-	-	-	R	V*	R	S*	R*	-	-	-
rs6437241	A/C	M	M	-	-	M	M*	M*	-	M*	-	-	C
	T/C	Y*	Y	-	-	Y*	Y	C*	-	-	-	-	C
rs1056916	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs3815305	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R	R	-	-	-	-	-	-	-	-	-	-
	G/A	-	R*	-	-	-	-	-	-	-	R*	R*	-
rs35129131	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
rs7603083	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10187363	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
	G/A	-	-	-	-	R	R	R	-	R*	-	-	R*
rs17382723	C/G	-	-	-	-	S*	S	S	-	S*	Y*	-	-
rs2240550	T/C	C	C	-	-	Y*	Y*	C	-	-	-	-	Y*
rs13389065	C/G	-	-	-	-	-	M*	-	-	-	-	-	-
rs60698130	A/G	-	-	-	W*	-	-	-	-	-	-	-	-
	T/C	-	-	Y*	-	Y	Y	Y*	-	Y*	Y*	-	-
rs758068	A/C	M	M	-	-	C*	M*	C	-	M*	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	Y*	-	-	-	-	-	-	-	NP
rs77995541	G/A	-	-	R*	R	-	R*	-	R*	R	R*	-	K*
rs2286325	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	Y*	Y	-	-	T	Y*	T*	-	B*	-	-	Y*
rs3771355	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs2240541	A/G	-	-	-	-	R*	R*	R	-	R*	-	-	-
rs1444998	T/C	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-
rs3275	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1056915	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs6437242	T/A	W	W	-	-	A*	A	A	-	W*	-	-	W*
rs7584799	A/G	R	R	-	-	R	R	R	-	R*	-	-	R
	G/A	R	R	-	-	-	K*	-	-	-	-	-	-
	A/C	-	-	-	-	-	M*	-	-	M*	M	M	-
rs2871579	G/CT/A/-	-	-	-	-	R	R	R	-	R*	-	R*	-
rs1052873	C/T	-	-	Y	Y*	-	-	-	NP	NP	Y	Y	NP
rs11539582	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs2294092	C/G	-	S*	G*	G	S*	S*	S	S*	S*	S	S	-
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1544154	A/G	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	D*
rs11240507	T/C	Y*	Y*	-	Y*	Y	B*	Y	Y*	Y	-	-	N*
rs74142375	T/A	W*	W*	-	-	-	-	-	-	-	W	W	-
rs1042832	A/G	R	R	R	R	R	R	R	-	R*	R	R	R
rs8027	A/G	R	R	R*	R*	R*	R*	R	-	R*	R*	R*	R
rs41308381	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs14028	A/G	R	R	R*	R	R	R	R	-	R*	R	R	R
rs3820377	T/C	Y	Y	Y*	Y*	-	-	-	Y*	Y*	C	C	B*
rs12748821	T/C	-	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	-	Y*
rs7529442	A/G	G*	G*	NP	NP	low_cov	G*	G*	G*	G*	G*	G*	NP
rs3795547	C/T	-	-	-	-	-	-	-	-	Y*	Y	Y	Y*

rs6668356	C/G	-	-	-	-	S*	S*	S*	S	S	S*	S	S
rs41264891	G/A	-	-	-	-	-	R	R*	-	-	-	-	-
rs12035825	G/A	-	-	-	-	R	R	R	-	-	-	-	R*
rs41264895	C/T	-	-	-	-	Y*	Y	Y	Y	Y	-	-	Y
	C/G	-	Y*	S*	S	-	-	-	-	Y*	-	-	-
rs4623769	G/A	-	-	-	-	R	R	R	-	-	-	-	-
rs10075508	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs829259	T/A	A*	A*	NP	NP	A*	A*	W	-	W*	A*	A*	A
rs17719258	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs702531	A/C	M*	M*	C	M	C*	M*	C*	-	M	C*	C*	C*
rs10035437	A/G	-	-	NP	NP	-	-	-	R*	R	-	-	NP
rs702530	C/T	T	T	NP	NP	T	T*	T*	-	Y*	NP	NP	NP
rs7736186	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs10071088	C/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs10034498	T/G	G	K*	G*	G*	G*	G	G*	G*	K	G*	G*	K
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2228440	G/A	-	-	NP	NP	R	R	R*	-	-	-	-	-
rs246388	T/C	Y	Y	-	-	Y*	Y*	Y*	Y*	Y	Y	Y	Y*
rs246395	T/C	Y*	Y*	NP	NP	-	-	-	Y*	Y	Y*	Y*	Y*
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2229562	T/C	Y*	Y	NP	NP	low_cov	-	Y*	Y*	Y*	C	Y*	Y*
rs41287110	C/T	Y*	-	-	-	-	-	-	-	Y*	-	-	Y*
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17110944	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs57883901	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3817664	G/T	K	K*	NP	NP	T	T*	K*	K*	K	K	K*	K
rs17633132	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2517221	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	NP
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs4705	T/C	C	Y	Y*	Y	Y*	C	Y*	Y	Y	Y	Y	Y*
rs12693005	T/C	Y*	Y*	Y	Y	-	Y*	-	Y*	Y	Y*	Y*	Y*
rs1530865	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs70937084	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76291069	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs71386677	G/T	-	-	-	-	-	R*	-	K	K	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	S*
rs10866	C/T	-	Y*	NP	NP	-	-	-	-	-	-	-	-
rs7782773	T/C	C	Y*	Y*	Y*	low_cov	Y	C	Y*	Y*	Y*	C	Y*
rs75278656	C/A	-	-	-	-	M	M*	M*	-	M*	-	-	-
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs12534311	A/G	R*	R*	R*	R*	R*	R	R*	R*	R	R*	R*	R
rs11767691	C/T	-	-	-	-	-	Y*	-	Y	Y*	-	-	Y*
rs10274344	C/G	-	-	-	-	S	S*	S	S	S	-	-	Y*
rs12538034	C/T	-	Y*	Y*	Y*	Y*	Y	Y	Y*	Y	-	-	-
rs79425377	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs802394	T/G	-	K*	K	K	K	K*	K*	K	K	G*	G*	K

rs3814098	G/C	S	S*	S*	C*	C	S*	S*	C*	S*	S*	C*	S
rs3814097	G/A	R	A	R*	-	-	-	-	-	-	-	-	-
rs17648	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	Y*
rs11771034	G/A	-	-	-	-	-	-	-	-	R*	R	R*	R*
rs193602	A/T	W	W	-	-	-	-	-	-	-	-	-	-
rs2192672	C/G	S	N*	M*	M*	V*	N*	H*	S	S	-	M*	M*
rs17385479	G/A	-	-	R	R	-	-	-	R*	R	-	-	-
rs55702519	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs73989605	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs34851370	C/T	-	-	-	-	-	-	-	Y	Y	-	-	B*
rs2303694	C/T	Y	Y*	NP	NP	-	Y*	Y*	-	Y*	-	-	-
rs1043327	A/G	R	R	-	R*	R*	R	R	R	R	R*	R*	R
rs7742431	A/G	-	-	NP	NP	-	-	-	R	R	R	R*	-
rs1984195	G/A	-	-	-	-	-	-	-	R*	R	R*	R*	NP
rs11547228	G/A	-	-	A*	R*	-	-	-	-	-	-	-	R*
rs7747479	A/C	M*	M*	M	M*	M	M	M	M*	M	M	M	C
	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs2275291	A/T	W*	W*	NP	NP	low_cov	W	W*	-	-	-	-	NP
rs9350797	A/G	R	R	-	R	R	R	R	-	R*	-	-	R*
rs12209235	T/C	-	-	NP	NP	Y*	Y	Y	-	Y*	-	-	-
rs2275290	G/A	A*	A	NP	NP	low_cov	R	R*	-	-	-	-	NP
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs13238521	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12538444	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-
rs12491508	A/G	-	-	R*	G	-	-	-	R*	R	-	-	R
rs13077	T/C	C	Y	-	-	-	-	-	-	-	Y*	Y	-
rs3749305	A/G	-	-	R*	R*	R*	R	R	-	-	-	-	R
rs3749301	A/C	-	-	M*	M*	M*	M	M	-	-	-	-	NP
rs17428388	A/G	R*	R*	R	R	R	R	R	-	R*	-	-	R
rs3749303	A/T/-	-	-	NP	NP	low_cov	T	W*	-	-	-	-	NP
rs6763390	G/A	-	R*	R	R*	A	R	R	-	R*	R*	-	A
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3749300	A/T	-	-	W*	W*	W*	W	W	-	-	-	-	NP
rs3749302	C/T	-	-	Y*	-	Y*	Y*	Y	-	-	-	-	NP
rs73228506	G/A	-	-	-	-	R	R	R	-	-	-	-	R*
rs1282944	G/A	-	-	NP	NP	-	-	-	R*	R*	-	-	NP
rs78431011	C/G	-	-	-	-	-	-	-	-	S	S*	S	-
rs774854	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs1283007	G/C	NP	NP	C*	C*	C	C*	C*	C*	C*	NP	NP	NP
rs3177104	T/C	-	-	Y*	Y	Y	Y	Y	-	Y*	-	-	NP
rs3749298	C/T	Y	Y	Y	Y	-	Y*	-	-	Y*	Y	Y	Y*
rs1282946	G/A	R	R	R*	A*	A	R*	A*	A*	R*	A*	R*	A*
rs968825	A/G	-	R*	R*	R*	-	R*	R*	R*	R	R*	R*	G
rs1282945	A/T	W	W	T*	T*	W	W	W	W	W	T*	T*	T*
rs13063198	C/T	T*	Y*	T*	T*	T*	T*	Y*	Y	Y	Y	Y	T
rs3749297	A/G	-	-	NP	NP	-	-	-	NP	NP	-	-	NP
rs1282947	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs78091609	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1046221	A/C	M	M	M	M	M	M	M	M*	M	-	-	M
rs1046198	G/A	R	R	R*	R*	R*	R	R	R*	R	-	-	R*

rs7084287	G/A	R	R	R*	R	R	A	R	R	R	-	-	R
rs1046249	A/G	R	R	G	R	R*	R	R	R*	R	-	-	R
rs7915721	T/C	Y	Y	Y	Y	-	-	-	-	-	-	-	-
rs11189321	G/T	-	-	-	-	low_cov	T	K*	K*	K*	-	-	K
rs10882983	C/T	Y	Y	-	-	-	Y	Y	Y	Y	-	-	Y*
rs1046237	A/G	R	R*	R*	R*	-	D*	R	G	R	-	-	R*
rs1052212	C/T	-	-	Y	Y	-	-	-	Y	Y	-	-	-
rs313567	C/T	-	-	T*	T*	Y*	Y	Y	T*	Y	T*	T*	NP
rs6834255	G/A	A*	R*	-	-	low_cov	-	R*	-	-	-	-	NP
rs1058552	C/T	-	-	-	-	Y	Y*	Y*	-	-	-	-	-
rs35646566	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs165730	G/A	R	R	-	-	-	-	-	R	R	R*	R	R*
rs78656	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs55796662	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4675	T/C	Y	Y	-	-	-	Y*	-	Y	Y	Y	Y	Y
rs165854	G/A	A*	R*	-	-	-	-	-	R*	A	R*	R*	R*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-
rs61752248	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	R*	-	-	A	A	R*	R	R	-	-	R*
	A/C	M*	H*	M*	M*	M*	N*	H*	M*	M*	M*	M*	M*
	A/G	-	-	R*	R*	R*	R	R	G*	R	R*	R	NP
	T/C	Y*	Y*	C*	Y*	C*	Y*	Y*	Y*	Y*	C*	Y*	C*
rs10832733	A/G	R	R	G	R	R	R	R	-	R*	R	R	R
rs16853773	G/A	R*	A	R*	R	-	R*	-	-	-	-	-	NP
rs1124777	C/T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
	G/A	R	R	R*	R	-	-	-	-	-	-	-	-
rs1553921	G/T	K*	K*	T*	K*	K	D*	K*	K*	K*	K*	K*	N*
rs45492196	G/A	-	-	R*	R*	R*	R	R*	-	-	-	-	-
rs11044004	C/T	-	-	-	-	Y*	Y*	Y*	NP	NP	-	-	NP
rs17847788	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34205132	T/C	-	-	-	-	-	-	K*	-	-	-	-	-
	A/C	-	-	-	-	M	M	M*	-	M*	-	-	-
rs6443626	***T/C***	***Y****	***Y***	***-***	***-***	***Y****	***Y****	***Y****	***Y****	***Y****	***-***	***-***	***-***
	G/A	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***R***
rs3976507	***C/T***	***Y****	***Y***	***-***	***-***	***-***	***Y****	***Y****	***Y****	***Y****	***-***	***-***	***Y****
rs361084	T/-/C	C*	C	NP	NP	Y*	Y	Y*	NP	NP	-	-	NP
	T/C	-	K*	-	-	-	K*	-	-	-	K*	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs17548850	G/T	-	-	K*	T*	K	K	K	K*	K*	K	K	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41476649	C/T	-	-	-	Y*	-	-	-	-	-	-	-	-
rs61755420	C/G	-	-	NP	NP	S*	S	S*	-	-	-	-	-
rs1135426	T/C	C*	C*	C*	C*	C*	C	C*	C*	Y*	Y*	Y*	C*
rs1135427	G/T	K	T	NP	NP	K	K	K	K*	K	K	K*	K
rs3729673	C/T	Y*	-	Y*	Y	-	-	-	-	-	-	-	-
rs849390	T/C	Y*	B*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	C
rs2230460	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3173908	C/T	-	-	-	Y*	Y	Y*	Y*	Y*	Y	-	-	-

rs12667819	G/A	R*	R*	-	-	R*	-	-	-	R*	R	R*	R
rs849410	T/G	-	-	K*	K	-	-	-	K	K	-	-	-
rs1129293	C/T	-	-	-	-	T*	Y*	T	-	Y	-	-	-
rs849389	A/G	V*	R	R*	R	R*	R*	R*	R*	R	R	R*	G
rs17847825	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3756668	G/A	R*	R*	-	R*	R*	R*	-	-	R*	R	R	R
rs3730089	G/A	-	-	-	-	-	-	-	-	R*	-	-	-
rs76752856	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs66666989	C/T	-	-	-	Y*	-	-	-	-	Y*	-	-	-
rs79873509	G/A	-	-	-	-	R*	R	R	-	R*	-	-	-
	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	NP
rs61749601	T/C	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs706713	C/T	T	Y	-	-	-	-	-	-	-	-	-	NP
rs2888323	A/G	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*
rs1043526	A/G	-	-	-	-	-	-	-	-	-	R	R	R*
rs1011320	T/C	C*	C*	NP	NP	C*	C*	C*	C*	Y	Y*	Y*	Y*
rs273269	T/C	Y	Y	Y	Y*	Y	Y	C	Y*	Y	Y*	Y*	Y*
	A/G	R*	R*	-	-	low_cov	-	-	NP	NP	NP	NP	NP
rs2293179	A/C	M*	M	NP	NP	-	-	-	M*	M	-	-	M*
GA032083	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	NP	NP	R*	A	R*	NP	NP	NP	NP	-
	T/C	-	-	NP	NP	Y*	Y	Y	-	-	C	C	-
	A/G	-	-	R*	G*	R	G	R	-	R*	G	G	-
	G/A	-	-	A*	V*	R*	R	R	-	-	A	R	-
	G/A	-	-	-	-	R*	R*	R*	R*	R*	NP	NP	-
	T/C	-	Y*	-	-	-	-	-	-	-	-	-	W*
rs262936	C/G	-	-	-	-	low_cov	S	G*	S*	S*	-	-	-
rs12197850	C/A	-	M*	-	-	-	-	-	-	-	M	M	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs10507	C/T	-	Y*	-	-	Y	Y	Y*	Y	Y	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs11541025	C/A	M*	M*	M*	M*	M*	M*	M*	M	M	A	M*	M*
rs4077129	T/C	Y	Y*	NP	NP	-	Y*	Y*	Y*	Y*	Y*	-	-
rs1801645	C/T	Y	Y	T*	Y*	Y*	Y	Y	Y*	Y	Y*	Y	Y*
rs13811	C/T	Y*	Y*	T*	T*	low_cov	Y*	Y*	T*	Y	Y*	Y*	Y*
rs41298504	C/T	-	-	-	-	Y*	S*	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs7058353	C/A	M*	M*	A*	A*	A*	A*	M*	A*	M*	A*	A*	NP
rs6625979	G/A	R	R	-	-	R	R	R	-	-	-	-	-
rs3012627	G/C	S	V*	V*	S	C	V*	C	S*	V*	C	C	S*
rs11415	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6525591	T/C	Y	Y	-	-	Y*	Y	Y	-	-	-	-	-
rs6525589	G/A	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	NP
rs3121680	G/A	R	R	A	A	A*	R*	R*	R	R	-	-	R
rs1043424	A/C	M*	M*	-	M*	-	M*	-	M	M	M	M*	M
rs513414	C/G	V*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*
rs512550	G/T	T	K	K*	K*	-	B*	K*	K*	B*	-	-	B*
rs3131713	G/A	R*	R*	R*	A*	R*	R*	R*	A*	R*	R*	A*	R*
rs45530340	C/T	-	-	NP	NP	low_cov	Y*	T*	NP	NP	NP	NP	-
rs3738133	T/C	-	Y*	-	-	-	-	-	Y*	Y	C*	C*	Y

	G/A	-	-	NP	NP	-	-	-	-	R	-	-	-
rs3738136	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1043443	T/C	Y*	Y*	-	Y*	-	-	-	Y	Y*	Y*	C	Y
rs2078073	T/C	Y*	Y	-	-	Y*	-	-	Y	Y	Y	Y	Y
rs931161	A/G	G	R	-	-	-	-	-	R	R	-	-	NP
rs8064	C/G	-	S*	S	S	S	S	S*	-	S*	-	-	S*
rs686658	A/T	W*	W*	T*	T*	W	W	W	W*	W	W*	W*	W*
rs1043502	T/G	K*	K	-	K*	K*	K*	-	K	K	K	K	K
rs931162	A/C	M	M	-	-	-	-	-	M	M	-	-	-
rs12408590	A/T	-	W*	NP	NP	-	-	-	W*	W	W*	T*	NP
rs71653623	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3121679	T/C	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
rs3209986	G/A	S*	-	NP	NP	-	R*	-	-	S*	-	S*	-
rs77566834	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs28610092	A/C	-	-	-	-	-	-	-	-	M*	-	-	M*
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3087632	T/C	-	-	-	-	-	Y*	-	Y*	Y	-	-	-
rs79899502	G/A	-	-	-	-	-	R*	-	-	-	-	-	R*
rs34197769	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs7203729	A/G	-	-	-	-	-	-	-	R*	R	-	-	-
CM022654	HGMD_MUTATION	-	-	-	-	-	R*	-	-	-	-	-	-
	T/G	K	K*	NP	NP	low_cov	-	-	-	-	-	-	-
rs3087631	A/T	-	-	-	-	-	W*	-	W*	W	-	-	-
	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs10960	T/C	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs71385734	T/G	-	-	NP	NP	-	-	-	-	K*	-	-	-
rs79884128	C/T	-	-	NP	NP	Y*	Y*	Y*	-	Y*	Y*	Y	Y
rs10965	G/A	R*	R	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs11897440	T/C	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs1044305	T/C	-	-	-	-	Y*	-	-	-	-	-	-	-
rs13401037	A/T	-	-	-	-	W*	W	W	W	W	W	W	W
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs2424	T/A	-	-	-	-	W	W*	W	W	W*	-	-	W*
rs72794538	G/T	-	-	-	-	K*	K*	K*	K*	K*	-	-	T
rs7439	A/G	R*	R*	-	-	R	R*	R	R	R*	R	R	R
rs76572975	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4715227	T/C	Y*	Y	-	-	C*	C*	C*	Y	Y	C*	C*	NP
rs9474143	G/A	R	R	-	-	R	R	R	R	R	-	-	R
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs78518523	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs765525	C/T	Y	Y	Y*	Y	-	-	-	Y*	Y*	Y	Y	Y
rs12210295	C/T	Y	Y*	T*	T*	T	Y*	Y*	Y	Y	Y	Y	Y*
rs6901799	G/A	R	R	R*	-	-	-	-	-	-	-	-	-
rs9370096	G/A	-	-	R*	A*	low_cov	R*	R*	R*	A	A*	A*	-
rs45451196	C/T	-	-	Y*	-	-	Y	Y*	-	-	-	-	-
rs9349593	G/A	R	R	R*	R*	R*	R	R*	R*	R*	R	R	R
rs9349603	T/C	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	NP
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs9296669	G/A	-	R*	A*	R*	R*	R	R	R*	R	A*	A*	-
rs4715271	T/G	K	K*	-	-	-	-	-	-	-	-	-	-

rs9689306	C/G	-	-	S	S	-	-	-	-	-	S	S	-
rs2661488	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11552907	G/T	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	K
rs7189958	C/T	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y*	Y*	-
rs35149676	G/C	-	-	-	-	-	S*	-	-	-	-	-	-
rs10846	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1042728	A/G	R	D*	-	-	-	W*	-	-	-	-	W*	D*
rs8598	C/T	-	-	NP	NP	low_cov	Y	Y*	-	-	-	-	-
rs8107892	A/G	R*	R*	NP	NP	G*	R*	G*	G*	R*	G*	G*	G
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/T	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs786906	T/C	C*	C*	NP	NP	Y	Y*	Y*	Y*	Y	NP	NP	NP
rs786912	C/T/G	NP	NP	NP	NP	low_cov	Y*	-	-	-	Y*	Y*	NP
rs430600	T/C	C*	Y*	C	Y*	Y	Y	Y	Y*	Y*	Y	Y	NP
rs10739729	T/C	C*	Y*	C*	C*	C*	Y*	Y*	C*	C*	C*	C*	C*
rs1572915	A/G	G*	G*	NP	NP	low_cov	G*	G*	NP	NP	NP	NP	G*
rs234738	A/G	-	-	-	-	-	-	-	-	-	R	R*	-
rs3737434	A/G	R*	R*	R*	-	R	R	R	R*	R	R	R	R*
rs378528	T/C	Y*	Y*	C*	Y	C	Y*	Y*	Y	Y	Y*	C*	Y*
rs234739	C/A	-	-	-	-	M*	-	-	-	-	M	M*	-
rs2839629	G/A	R*	R*	-	-	R	R*	A	R	R	R	R	R*
rs2839628	C/G	S*	G	NP	NP	S*	S	S	S*	S*	S*	S*	NP
rs234740	G/C	-	-	-	-	-	-	-	-	-	S	S*	-
rs234737	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs451776	A/G	R*	R*	G*	G	G	R*	R*	R*	R*	R*	R*	R*
rs7936	G/C	-	-	-	-	-	-	-	-	-	S	S	R*
rs234735	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs2236772	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
rs4744	G/A	-	R*	R	R	R*	R	R	R	R	R	R	R*
rs2307246	G/A	R*	R*	A*	R	R	R	R	R	R	R	R	R*
rs11677	G/A	-	R*	-	-	-	R*	-	-	R*	-	-	-
rs10732279	C/T	T	T	NP	NP	Y*	Y	Y	Y	Y	Y	T	T*
rs2236769	A/G	R	R	-	-	-	-	-	-	-	R	R*	-
rs2236771	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	M*	-	-	-	-	Y*	-	-	-	-	-	-
rs34454281	C/T	-	Y*	-	-	-	-	-	-	Y*	-	Y*	Y*
rs6124323	G/A	R*	R*	R*	R*	A	R	A*	A	R*	R*	-	-
rs56128153	C/G	-	-	-	-	low_cov	S	-	-	-	-	-	-
rs33943601	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
rs2228246	A/G	R*	R*	R*	-	R	R	R	-	R*	-	-	-
rs753381	T/C	Y*	Y	Y*	Y*	C	Y	Y	Y*	Y	Y*	-	-
rs33917926	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34012203	C/T	-	-	Y	Y	-	-	-	-	-	-	-	-
rs11556996	G/A	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	Y*	-	-	-
	G/T	-	K*	-	-	K*	K*	-	-	K*	-	-	-
rs11019	C/T	-	-	-	-	-	-	-	R	R	-	-	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs9785927	T/C	C*	Y*	Y	C	Y*	Y	Y	-	Y*	Y	C	Y
rs75191116	A/G	-	-	-	-	R	R	R	-	R*	-	-	-

	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11744499	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs320615	A/C	-	-	R*	-	M	M	M	-	M*	-	-	-
rs76501501	C/T	Y	Y	B*	Y*	-	-	-	-	-	-	-	Y*
	G/A	-	-	-	-	-	S*	-	-	-	-	R*	NP
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs7701760	G/A	-	-	R*	-	-	-	-	-	-	-	-	-
rs1373639	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs9908205	G/C	S*	S*	S*	C*	S	S*	S	S	S	S	S	-
rs14003	C/T	-	Y*	T	Y*	Y	Y*	Y*	Y	Y	Y*	Y	Y*
rs4985749	G/A	-	R*	R	R*	R	R*	R	R	R	R	R	R
rs27770	A/G	R	R	-	-	-	-	-	R*	R	-	-	-
rs32613	A/C	M*	H*	C*	M*	M*	C	M*	M*	M*	M	M	M*
rs1042994	A/G	-	-	-	-	-	-	-	-	-	-	-	R
	C/T	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y
rs702722	A/G	-	-	-	-	R*	R	R	-	-	-	-	-
rs697141	T/C	-	-	NP	NP	-	-	Y*	-	-	-	-	Y*
rs15009	C/G	-	S*	G	S	S	S	S	S	S	S	S	S
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17710502	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y*
rs697133	G/A	-	-	A*	A*	A*	A*	A*	R*	R	NP	NP	A
rs15915	C/T	Y	Y*	NP	NP	low_cov	-	-	Y	Y	-	-	-
rs963615	C/T	Y	Y*	-	Y*	-	-	-	Y	Y	-	-	-
rs17767072	A/G	-	-	-	-	-	-	-	-	-	-	-	R*
rs33921924	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs17886354	A/G	-	-	R	R	R*	R*	R	-	-	R	R	-
rs11211036	G/C	S*	S	S*	S*	-	-	-	-	-	S*	S*	S*
rs56043017	G/C	-	-	-	-	-	-	-	S*	S	-	-	-
rs3811740	T/A	A	W*	W	W*	W*	W	W	A*	W	A*	A	-
rs17012739	G/T	K*	K*	T	K	K	K	K	T*	K	T*	T*	K*
rs34966902	G/A	R*	R*	NP	NP	low_cov	R*	A*	NP	NP	NP	NP	NP
rs1041978	G/T	-	K*	K*	K*	K	K	K	-	K*	K	K	-
rs78800940	G/A	-	-	NP	NP	-	-	-	-	R*	-	-	R*
rs72970003	A/G	-	-	-	-	-	-	-	R	R	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1805319	G/C	S	S	S*	C*	S*	S	S*	C*	S	S*	C*	S
rs2228007	T/C	-	-	-	-	-	Y*	-	-	Y*	-	-	-
rs1805323	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1805321	G/A	-	R*	R*	R*	R	R*	R	R	R	R*	R*	-
rs5987127	G/A	D*	K*	-	K*	D*	D*	-	R*	R	-	K*	K*
	C/T	Y*	-	-	-	-	-	-	-	-	-	-	-
rs5987128	C/T	-	-	-	-	-	Y*	-	T	Y	-	-	Y*
rs3761533	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs7077538	T/G	K*	K*	-	-	low_cov	K	K*	-	-	K*	K*	-
rs13787	C/G	G*	G	NP	NP	low_cov	S*	-	NP	NP	NP	NP	NP
rs17035642	G/A	-	-	-	-	NP	NP	NP	NP	NP	-	-	-
rs1053046	G/A	-	-	R	R*	-	-	-	-	-	-	-	-
rs3734254	C/T	Y	Y	-	-	Y*	Y	Y	T*	Y*	T*	T*	Y

rs1883323	G/A	A*	R*	A*	R*	A*	A*	A*	A*	R*	R	R	R*
rs9794	G/C/A	S*	S*	S*	S*	S*	S	S	C*	C*	C*	S*	S*
rs2016520	C/T	Y*	Y	-	-	-	Y	Y*	Y*	Y	T	Y	NP
rs1053049	C/T	Y*	Y*	NP	NP	Y*	Y	Y*	Y*	Y	T*	Y*	Y*
rs2076167	C/T	Y	Y	Y*	-	Y*	Y	Y	Y*	Y	Y*	Y*	Y
rs9658134	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs9658172	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	Y*	-	-	Y	Y*	Y	-	Y*	-	-	-
rs17292804	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10019	T/A	-	-	NP	NP	-	-	-	W*	W*	NP	NP	NP
rs14123	T/C	Y*	Y*	Y*	Y*	-	-	-	Y	Y	Y*	Y*	-
rs1056985	T/G	K*	K	K	K	-	-	-	K	K	K	K	-
rs67232843	C/T	-	-	T*	T	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	R*
rs1741144	G/A/-	-	-	-	-	R*	A	R	-	R*	-	-	R
rs3742424	G/C	-	-	-	-	S*	S*	S	S	S	-	-	-
rs1058327	C/G	-	-	-	-	G	G	G	-	S*	-	-	G
rs1741143	G/A	-	R*	-	-	R	R	R	-	R*	-	-	R
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs61735777	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11264542	C/T	-	-	Y*	Y	-	Y*	-	-	-	-	-	Y
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11264554	C/A	A	M	-	-	-	-	-	-	-	-	-	NP
rs1045739	C/T	Y	Y	Y*	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y
	C/T	-	Y*	-	-	-	Y*	-	-	-	-	-	-
rs17306603	A/G	R*	R*	R*	R*	R	R*	R*	-	R*	R*	G*	NP
rs1045741	C/G	-	-	-	-	-	-	-	S	S	-	-	S
rs1045749	T/C	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
rs857148	A/C	C	M	-	-	M*	C	M*	C*	M	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
rs41285010	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs706466	A/G	G*	R	NP	NP	low_cov	R*	G*	R*	R*	NP	NP	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76132728	C/G	-	-	NP	NP	-	-	-	-	-	NP	NP	-
rs1057738	A/C	NP	NP	NP	NP	-	-	-	-	M*	-	-	NP
rs600674	T/C	C*	Y*	Y*	Y	Y*	Y*	-	Y	Y	-	-	Y*
rs3812538	G/C	-	-	NP	NP	-	-	-	-	-	-	-	C
rs12345886	G/T	-	-	K*	K*	K	K	K	-	-	-	-	-
rs3730386	G/C	S	S	S*	S	-	-	-	-	S*	S	S	-
rs28529822	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs7342847	C/T	-	-	-	-	Y*	Y	Y*	-	Y	-	-	Y*
rs56095570	G/A	R	R	-	R*	-	-	-	-	-	-	-	R*
rs7342969	G/A	R*	R	-	-	R*	R	R	A	R	-	-	R*
rs2228945	G/A	-	-	R	R	R*	R	R	-	R*	-	-	-
rs9900321	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs74199615	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs72652887	T/G	K	K	-	-	-	K*	-	-	-	-	-	-
rs7220996	G/A	R	R	-	-	-	-	-	-	-	-	-	-

rs80068092	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs57197682	C/T	Y	Y	-	-	-	Y*	-	Y	Y*	-	-	-
rs6504459	G/A	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	R*
rs12947438	A/G	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	R*
rs55651832	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs2286674	A/G	R	R	R	R	R	R*	R	-	R*	-	-	-
rs8464	C/A	M	M	Y*	-	-	-	-	-	-	-	-	-
rs2239340	G/A	-	-	A	-	-	-	-	A	R	-	-	NP
	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs3729896	C/T	Y	Y	-	-	Y*	-	-	Y	Y	-	-	-
rs3380	T/A	-	-	-	-	-	W*	-	-	-	-	-	-
rs3785380	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	T	K	-	-	-	-	-	-	-	-
rs41303763	C/T	-	-	Y*	Y*	-	-	-	Y*	Y*	-	-	Y
rs198145	A/G	R*	R*	R	R*	-	R*	-	R*	R	R*	-	R
rs75964872	C/A	Y*	-	-	-	-	Y*	-	-	-	-	-	Y*
	C/T	-	Y*	-	-	-	-	-	-	-	-	-	Y
rs411103	T/A	W	W	A*	A	W	W	W	A*	W	W	W*	W
rs2239339	G/C	S	S	S	S	S	S	S	-	S*	S	S	-
rs3729908	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs28605861	A/-/C	M*	M	-	C	M*	M	-	C	M	-	-	M*
rs3729904	C/T	-	-	Y	Y	-	-	Y*	Y	Y	-	-	Y
rs2021847	G/C	-	-	NP	NP	low_cov	-	-	-	S*	NP	NP	NP
rs198146	T/A	-	W*	W	W*	-	-	-	W	W	-	-	-
rs2239338	G/A	R	R	-	-	R	R	R	-	R*	R	R	R
rs41311260	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs432998	T/C	-	Y*	C*	Y*	-	-	-	Y*	Y	-	-	Y*
rs56687328	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	Y
rs2306574	C/T	-	-	T	Y	Y*	Y*	Y	Y*	Y	Y*	T*	Y*
rs2230494	G/A	R*	R*	NP	NP	R	R	R	R	R	R*	R	-
rs7630325	G/A	R*	R	R*	R	-	-	-	-	-	R*	-	-
rs900495	T/C	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs11130350	A/C	M	M	M*	M*	C	M*	M*	M*	M*	M*	M	M*
rs2230493	T/C	-	-	-	-	Y*	Y	Y	Y	Y	-	-	-
rs7581914	A/G	R	R	-	-	R	R	R	R*	R	R	R	R
rs14138	G/A	R	R*	-	-	low_cov	-	-	-	-	-	-	-
rs2595210	A/C	-	M*	-	-	-	M*	-	-	M	-	-	M*
rs3738895	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs34077350	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs2278773	C/G	-	-	-	-	-	-	-	-	-	-	Y*	S
rs41281467	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs563601	G/A	-	-	R*	R*	R	A	R	-	R*	-	-	R
rs687914	G/T	-	-	K*	K*	K*	T	K*	-	K*	K*	K*	-
rs12464563	C/T	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y
rs563763	C/T	-	-	Y*	Y*	-	-	-	-	-	-	-	-
rs77978744	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs61730655	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1143692	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs77923448	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs61448574	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs77928557	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2547362	C/T	T*	T*	NP	NP	T*	Y*	Y*	T*	T	Y*	Y*	T*
rs12460152	C/T	-	-	NP	NP	-	-	-	-	-	-	-	NP
	G/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs77550964	G/A	-	R*	-	-	R	R	R	-	R*	R	R	-
rs3745406	T/C	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y
rs3813410	G/A	-	-	R*	-	R*	R*	R	R	R	-	-	-
rs1088680	C/T	Y*	T	Y*	Y*	-	Y*	-	Y*	Y	Y	Y*	-
rs14095	A/G	R*	R	-	-	R*	-	R*	R*	-	-	-	NP
rs71277158	T/G	K*	K	K*	K	-	-	-	-	-	-	-	K
	T/G	-	-	K*	K	-	K*	-	-	-	-	-	-
	C/T	-	-	-	-	Y*	Y	Y	-	-	-	-	-
rs56257047	C/T	Y	Y	Y	Y	-	-	-	-	Y*	-	-	Y
	A/G	-	-	-	-	R*	R	R*	-	-	-	-	-
rs11540060	G/A	-	-	-	-	R*	R	R	-	R*	-	-	-
rs41273585	C/T	-	-	NP	NP	-	T	-	-	-	-	-	NP
rs55683301	A/G	-	-	-	-	R*	R	R	-	R*	-	-	-
rs2650220	A/G	R*	R	-	-	R*	R	R	-	R*	R	R*	-
rs17301189	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs582052	G/T	K	K	K*	-	K*	K	K*	T*	K	K*	K*	NP
rs4750439	C/T	Y	Y	Y	Y	-	Y*	-	Y	Y	-	-	-
rs17555072	T/C	-	-	Y	Y	-	-	-	-	-	-	-	-
rs11258943	G/A	-	-	-	-	-	-	-	R	R*	R	R*	R
rs2453	C/T	Y	Y	Y	Y	-	-	-	Y	Y	-	-	-
rs11258747	G/T	-	K*	-	-	-	-	-	K*	K*	K*	K*	K*
rs2236379	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
rs2236380	A/G	R	R	R*	R*	R	R	R	R	R	R	R	R
	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
rs3128293	A/G	R*	R*	NP	NP	-	-	-	-	-	NP	NP	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2678943	T/C	Y	Y	NP	NP	Y*	Y	Y*	C*	Y	Y*	Y*	Y*
rs2678942	T/C	-	Y*	-	-	Y	Y	Y	-	Y*	Y*	-	Y
rs12184	T/C	-	-	NP	NP	Y*	C	Y*	-	-	-	-	Y*
rs10797413	G/A	R*	R	R*	R*	R*	R*	-	R	R	R*	R*	R
rs2271797	T/C	-	-	-	-	Y*	Y	Y	-	-	Y*	-	-
rs45582934	T/C	Y	Y	-	-	-	Y*	-	-	-	-	-	-
	A/G	R	R	R*	G	-	-	-	-	R*	R*	R*	R
rs12974048	G/A	-	-	-	-	-	-	-	-	-	-	R*	-
rs56034494	A/G	-	-	-	-	R*	R*	R	-	-	-	-	R
rs10460527	T/G	-	-	-	-	-	K*	-	G	K	-	-	-
rs10177176	G/C	S	S	-	-	S*	S*	-	-	S*	S	S	S
rs2300887	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs12712530	A/G	R*	R*	-	-	-	-	-	R	R*	R	R*	R
rs2372991	C/G	S*	S*	G	G	-	-	-	G*	S	G	S*	S
rs3770761	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs55698418	A/G	-	R*	-	-	-	-	-	-	-	-	-	-
rs3902740	T/C	Y*	Y*	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP
rs1160516	C/T	-	-	-	-	-	-	-	Y	Y*	-	-	NP
rs11124573	C/T	-	-	-	-	-	B*	-	Y	Y*	-	-	-

rs8178225	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs8178046	G/A	-	-	-	-	R*	A	R*	-	-	-	-	-
rs1056388	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10871864	G/A	R*	R*	R	R*	R*	R*	R*	D*	R	R*	R*	R*
rs41302619	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1056373	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6567569	T/C	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y	Y*
rs5936	G/T	-	-	-	-	K*	K	K	K	K*	K*	K	T*
rs1158867	C/T	Y*	Y*	Y	Y	Y	Y	Y	-	Y*	Y	Y	Y*
rs2069928	G/T	K*	K*	K	K	K*	K	K	-	K*	-	-	K*
rs1799810	A/T	W	W	W	W	W	W*	W	W*	W	W	W	W*
	G/A	-	-	-	-	-	R	-	-	-	-	-	-
rs11789755	G/A	-	-	-	-	-	R*	-	-	R*	R*	R*	A*
rs17763934	A/G	-	-	-	-	-	-	-	-	R*	R	R	R*
rs3810919	C/T	-	-	-	-	-	Y*	-	-	Y*	Y	Y	Y*
rs2418249	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11552582	A/G	-	-	-	-	-	-	-	-	R*	R*	R*	G
rs860477	A/G	R*	R*	NP	NP	R*	R	R*	R*	R*	R	R*	G
rs41301865	C/T	-	-	-	-	-	-	-	Y	Y	-	Y	-
rs17733807	A/G	-	-	-	-	-	-	-	R	R*	R*	R	-
rs853405	T/C	Y*	C*	NP	NP	Y*	Y	Y*	-	Y	C	Y	NP
rs853411	G/A	R*	R*	R*	A*	R	R*	R	R	R	R	R	A
rs853407	C/T	NP	NP	NP	NP	Y*	Y*	Y*	-	Y*	Y*	Y*	NP
rs9503893	A/G	R*	R*	G*	G	R	R	R	R	R	R*	R	R*
rs12195092	G/A	R*	-	-	-	-	R*	-	-	V*	-	-	R*
rs35085092	A/G	-	-	-	-	-	-	-	R	R	R*	R	-
rs853396	G/T	K*	T	K*	T	K*	K*	K	K*	K	K	K	K*
rs853397	A/G	G*	R*	NP	NP	R*	R*	R	G	G	G	G*	G*
rs853406	T/G	G*	K*	D*	G*	K	K	K	K	K	K	K	K*
rs1800844	G/C	-	-	-	-	S*	C	S	-	S*	-	-	S*
rs362385	T/C	Y	Y*	-	-	-	Y*	-	Y	Y*	-	-	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7523	G/A	R	R	-	-	-	-	-	R	R	-	-	R*
rs362384	C/A	M	M	-	-	-	-	-	-	-	-	-	-
rs3802225	A/G	-	-	-	-	R*	R*	R	-	-	-	-	R
rs6998760	C/A	-	-	-	-	M	M	M	-	M*	-	-	M
rs35555615	T/C	-	-	-	-	-	-	-	-	K*	-	-	-
rs13030	C/T	-	-	-	-	-	-	-	-	Y*	T	T	-
rs41414452	C/T	Y	Y	-	-	-	-	-	-	Y*	Y*	Y*	Y*
rs75497420	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs74445297	T/A	-	-	-	-	-	Y*	-	-	-	-	-	-
rs35136814	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs77534057	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs73343757	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	R*	R*	R*	R*	-	-	-	R	R	R*
rs28475503	A/T	-	-	W*	W*	-	-	-	W*	W*	W*	W*	-
	T/A	-	-	-	-	-	-	-	W	W	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs16909865	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-

	G/A	R	R	NP	NP	A	A*	R*	-	R*	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs28485160	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1805153	G/A	-	-	-	-	-	-	R*	R	R	-	-	-
rs473354	***C/T***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
rs41284074	***A/G***	**-**	**-**	***NP***	***NP***	***NP***	***NP***	***NP***	**-**	**-**	***NP***	***NP***	***NP***
	T/C	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***
rs701848	***T/C***	**-**	**-**	***C****	***C****	***NP***	***NP***	***NP***	***Y****	***Y****	**-**	**-**	***NP***
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3842787	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs1236913	T/C	Y*	Y*	C*	Y*	C	Y*	Y*	Y	Y	C	Y*	Y*
rs5788	C/A	-	-	-	-	M	M*	M	-	-	-	-	-
rs2206593	A/G	G*	G*	G*	G*	G*	G*	G*	G*	G*	R	R	G*
	G/A	-	-	-	-	-	-	R*	-	-	-	-	-
rs6253	C/T	Y	Y	Y	Y	-	-	-	Y	Y	Y*	-	Y
rs6245	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2796	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6244	G/A	-	R*	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7460	A/T	T*	W*	W*	W*	W	W*	W*	-	W*	-	-	-
rs61738530	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1045512	A/G	G	R	G*	R	-	-	-	-	R*	-	-	R*
rs3735758	A/G	G*	G*	R*	G*	R*	G	G*	R*	R*	R*	R*	R*
rs1045510	T/C	Y	Y	NP	NP	-	-	-	-	-	-	-	-
rs1879184	T/C	Y*	C*	C*	C*	C*	Y*	Y*	Y*	Y	Y*	C*	C*
rs956152	T/C	C*	C*	C*	C*	C*	Y*	C*	Y*	Y	C*	C*	C*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2241649	A/G	R	R	NP	NP	-	-	-	-	-	-	-	-
rs2271920	G/A	R*	R*	NP	NP	R*	R*	R*	-	-	A	R	A*
rs891393	T/C	C*	C*	C*	C*	C*	Y*	Y*	-	Y*	Y*	Y*	C*
rs1045511	G/A	R*	R*	R*	A	-	-	-	-	-	-	-	NP
rs1030526	G/A	-	-	-	R*	R*	A*	A*	R*	R*	R*	R*	R
rs1879181	A/G	G*	G*	G*	G*	G*	R*	G*	R*	R	G*	G*	G*
rs1879182	A/G	G*	G*	G*	G*	G*	G*	G*	-	R*	G*	G*	G
rs1106359	T/C	Y*	Y*	C*	C*	C	C*	Y*	Y*	Y*	Y	Y	C
rs6988218	A/T	-	-	T	W*	T	T	H*	W*	W*	W	W	T
rs34021075	A/T	W	W	-	-	-	-	-	-	-	-	-	-
rs78422682	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs77224088	G/C	K*	-	-	K*	-	-	-	-	-	B*	B*	B*
rs7759437	C/T	Y	Y	-	-	Y*	Y*	Y	-	Y*	Y	Y	Y*
rs1051709	T/C	Y*	-	-	-	-	-	-	-	Y*	-	-	Y*
rs6905948	G/A	R	R	R	R	R	R	R	-	R*	R	R	-
rs45604140	C/G	-	-	-	-	-	-	-	-	-	Y*	Y*	-
rs73736708	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6933124	T/G	-	-	-	-	-	K*	-	-	K*	-	-	-
rs34764696	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs76982592	T/G	K*	K	K*	-	K*	K*	K*	-	K*	K*	K*	-
rs61730641	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs56178389	A/C	M	M	NP	NP	M*	M*	M*	-	-	-	-	M

rs61757789	G/C	-	-	-	-	-	-	-	-	-	S	S	S*
rs12500797	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs10033029	T/G	-	-	K*	K*	-	Y*	-	-	-	-	Y*	-
rs61730646	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs989902	T/G	-	-	K*	K*	K*	K*	K*	-	K*	K*	K*	G
rs710832	A/G	-	-	R*	R*	R*	R*	R*	G*	G	G*	R*	R*
rs6698434	C/A	M	M*	-	-	-	-	-	-	-	-	-	-
rs2291831	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs74432616	T/C	Y	Y	-	-	Y*	-	-	-	-	-	-	-
rs6665957	A/C	M	M	-	-	-	M*	-	M	M*	-	-	-
rs7550799	T/C	C*	C	NP	NP	low_cov	C*	C*	NP	NP	NP	NP	Y*
rs10864100	C/T	Y*	Y	Y	Y*	Y*	Y*	-	Y	Y*	Y	Y*	Y
rs3002307	G/A	A*	A*	A*	A*	A*	A*	A*	A*	R*	A*	A*	NP
	C/G	S	-	-	-	-	-	-	-	-	-	-	-
rs41307662	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs75290267	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs57009338	G/T	K*	K*	-	-	-	-	-	-	-	-	-	-
rs3806315	G/A	R	R	A*	A*	-	-	-	R	R	A*	A*	R*
rs1135352	T/C	C*	Y*	Y	C	Y*	C*	Y*	Y*	Y	Y*	C*	NP
rs7553102	T/C	Y	Y	Y*	Y*	-	-	-	Y*	Y	Y*	Y*	Y*
rs10979871	A/G	R	R	-	-	R	R*	G	R	R	R*	R	-
rs35285139	C/T	-	-	-	-	low_cov	Y	Y*	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs10979874	T/C	Y*	Y	-	-	Y	Y*	Y*	Y	Y	C*	Y*	-
rs34302609	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10979872	T/G	K	K	K*	-	G	G*	K*	K	K	K*	G	-
rs10979873	G/A	R	R	-	-	A	R*	A	R	R	R*	A*	-
	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y	Y	-
rs10979870	G/A	R	R	-	-	A	A	R*	R*	R	A*	R	-
rs10979875	C/T	Y*	Y*	-	Y*	Y	Y*	Y	Y*	Y*	Y	Y	-
rs2301262	T/C	C*	C*	NP	NP	NP	NP	NP	C*	C*	NP	NP	NP
rs2110072	T/C	B*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	Y*	Y	Y*
rs1178027	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
	T/C	-	Y*	Y	Y	-	-	-	-	Y*	C	Y	-
rs2279776	C/G	S	S	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	R	R	-	-	-	-	-	R	R	R*
rs35777094	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs28554480	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs9886850	G/A	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP
	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
	A/G	R	R	-	-	R	R*	R*	-	R*	R	R	R
rs641365	T/C	Y*	Y*	Y	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs1065771	C/T	Y*	Y*	-	-	Y	Y*	Y	Y	Y	-	-	Y*
rs568639	T/C	Y*	Y*	Y*	Y	Y*	C*	Y*	Y*	Y*	C*	C*	Y*
rs641351	G/A	R*	R*	A	R*	R*	R	A*	R	R*	A*	R*	R*
rs688627	T/C	-	-	NP	NP	low_cov	Y*	Y*	Y*	C	Y*	Y*	-
rs631248	G/A	R*	R	NP	NP	low_cov	A	A*	NP	NP	NP	NP	R*
rs12069454	C/T	Y*	-	-	-	-	Y	Y*	T	Y	-	-	-
rs72673097	G/A	K*	-	-	-	-	-	-	-	-	R*	-	-

rs1143702	C/T	Y	T	-	Y*	-	Y*	T	Y*	Y*	Y*	Y*	Y*
rs1143701	C/T	T*	T*	Y*	Y*	T	Y*	T*	Y*	T*	T*	Y*	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs17849103	A/G	R*	R*	R*	R	R	R	R	R*	R	R	R	-
rs752963	A/G	-	-	R*	R	-	-	-	-	-	R	R	-
rs1065772	C/T	Y*	Y*	-	-	Y	Y	Y	Y	Y	-	-	Y
rs10890266	C/T	Y*	Y*	-	-	Y	Y	Y	Y	Y	Y*	-	Y
rs62620047	T/C	-	Y*	-	-	Y*	Y	Y	-	Y*	-	-	-
rs2242352	A/G	R	R	R	R*	-	-	-	R	R	G	G	-
	T/C	-	-	-	-	-	Y*	-	Y	Y	-	-	-
rs72878154	G/T	-	-	-	-	-	-	-	K	K	K	K*	-
rs28627971	T/C	Y*	Y	NP	NP	C	Y*	Y	-	Y*	Y*	Y*	Y*
rs665974	C/A	M	M	M	A	A*	M*	A*	-	M*	A*	A*	A*
rs56241921	A/G	-	-	-	-	-	-	-	-	-	R	R	NP
rs73093079	G/A	R	R	-	-	-	-	-	-	-	-	-	R*
rs1130497	C/T	-	-	T*	T*	Y*	Y	Y*	Y*	Y	Y	Y	-
rs221254	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*
rs1130500	A/G	-	-	-	-	-	R*	R*	R*	R	-	-	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17853260	G/A	-	-	NP	NP	R*	R*	-	-	-	R*	R*	-
rs10246889	G/A	R*	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*
rs221252	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*
rs3800859	A/G	R	R*	NP	NP	NP	NP	NP	NP	NP	R*	G*	-
rs1130496	C/T	-	-	T*	T*	Y	Y	-	Y*	Y*	Y	Y*	-
rs221253	T/C	Y*	Y*	Y*	Y*	Y	Y*	C*	Y*	Y*	Y*	Y*	Y*
rs10271485	G/A	R	R	NP	NP	R*	R*	-	R	R	R*	R*	-
rs3800855	C/G	G	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*
rs1130495	A/G	R*	R*	R*	R*	G*	G	G*	G*	R*	R	R	G
	G/C	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs1122307	G/A	-	-	R*	R*	-	-	-	R	R	-	-	-
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs1129626	C/T	Y*	Y*	Y*	-	Y	Y	Y	T	B*	T	Y*	T*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	Y*	Y	Y
	G/A	-	-	R*	R	-	R*	-	-	R*	R	R	R
rs1141371	T/G	K*	K	-	-	K*	K*	K	-	K*	-	K*	K*
rs1143699	G/T/A/C	R*	-	-	-	-	-	-	-	R*	R	R	R
rs61749998	A/T	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs4346309	T/A	-	-	W*	W*	-	-	-	-	-	-	-	W*
rs57021647	G/C	-	-	-	-	-	-	-	-	-	S	S	NP
rs1143700	A/G	R*	R*	R*	R	R	R	R	R*	R	R*	R*	R*
rs41279252	G/A	-	-	-	-	-	R*	-	-	R*	-	-	R
rs6065432	C/T	-	-	-	-	-	Y	Y*	-	Y*	Y*	Y*	Y*
rs3787281	T/C	Y	Y	-	Y*	Y	N*	Y	Y	Y	Y	Y	Y*
rs2596	G/A	A*	A*	A*	A*	A*	A	A*	A*	A*	A*	A*	A*
rs6102662	G/C	-	-	-	-	S	C	C	-	S*	S	S	S
rs2664587	G/A	-	R*	R*	R*	R*	R	R	-	R*	R	R	R
rs17219643	C/T	Y*	Y*	-	-	-	-	-	-	-	-	-	Y
	T/C	-	-	-	-	Y	Y*	Y	-	-	-	-	-

rs61753667	C/T	-	Y*	S*	-	-	-	-	Y	-	-	-	B*
rs41279258	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs55683344	C/T	-	-	-	-	Y*	Y	Y	-	-	Y*	Y	Y
rs2016647	G/A	-	-	-	-	R*	R	R*	-	R*	R*	R*	R*
rs45474194	A/G	-	-	-	-	R	R	R	-	R*	R	R	R
rs67506870	G/A	-	-	R*	-	R*	R	R	-	R*	R	R	R
rs3746539	G/A	-	R*	R*	R*	R	R*	R*	-	R*	R	R	R
rs2866943	C/T	-	-	-	-	Y*	Y	Y*	-	-	Y*	Y*	Y*
rs41279254	T/G	-	-	-	-	-	-	-	-	-	-	-	K
rs6130027	A/G	R*	R	-	-	-	R*	-	R*	R	-	-	NP
rs7263976	T/C	C	Y*	-	-	-	-	-	Y	Y	-	-	Y
	C/T	Y*	Y*	-	-	-	-	-	-	-	-	-	-
rs73271408	A/G	-	-	R*	G	R*	R*	R*	-	-	-	-	-
rs41279250	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	Y
rs41278140	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2425516	A/G	R*	R*	-	R*	R*	R*	R	-	R*	R	R	R
rs6102663	G/A	R*	R*	R	R	R	R*	R	R	R	-	-	R
rs2144011	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y	Y	Y*
rs1062921	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs68078224	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2235937	A/G	-	-	-	-	R*	R*	R*	-	R*	R	R*	-
rs2295061	C/T	-	-	-	-	Y*	Y	-	-	-	-	-	-
rs1045453	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10915252	T/C	-	-	-	-	Y	Y*	Y*	Y*	Y*	-	-	-
rs3191903	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	Y
rs13071688	G/A	R	R	-	-	-	-	-	R	R	-	-	-
rs56384862	A/G	R*	R	-	-	-	-	-	-	R*	NP	NP	NP
rs71311853	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs76887010	C/T	-	Y*	Y*	Y	-	Y*	-	-	Y*	-	-	Y*
rs4075403	G/C	S	S	-	-	-	-	-	S	S	-	-	-
rs74377825	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
rs71311854	G/A	-	R*	-	-	-	-	-	R*	R	-	-	-
rs34579268	C/T	Y	Y	-	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*
rs4075404	C/T	Y	Y	-	-	-	-	-	Y	Y*	-	-	-
rs13071422	A/G	G*	R*	G*	R	R	R*	R	G*	R*	G*	G*	G*
rs71311869	C/T	Y	Y*	-	-	-	-	-	Y	Y	-	-	-
rs11615220	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4767884	T/C	-	Y*	C*	C*	C*	Y	Y*	Y*	Y	C*	Y*	Y
rs34236994	G/C	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-
	G/A	-	-	-	-	R*	R	R*	-	-	-	-	-
rs7953949	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3742039	C/T	-	-	Y*	Y*	Y*	Y	Y*	T	Y*	Y*	Y*	-
rs11398	T/C	Y*	Y	Y	Y*	-	-	-	-	-	-	-	-
rs1040461	C/T/A/G	Y	Y	Y*	Y*	Y	Y	Y	-	Y*	T	Y*	Y*
rs6967221	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs836478	C/T	T	Y	NP	NP	-	-	-	T	Y*	-	-	Y
rs9374	G/A	R*	R	A	R	-	B*	K*	A	R*	K*	K*	NP
rs12977	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6954996	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-

	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1801320	G/C	S*	S*	-	-	-	-	-	-	-	-	-	-
rs45507396	A/G	-	-	NP	NP	-	-	-	NP	NP	NP	NP	NP
rs12593359	T/G	G	K	G*	K	K	K*	K	G	K	K*	K*	K*
rs11855560	T/C	C*	C*	NP	NP	Y*	C	Y*	NP	NP	-	-	NP
rs7310449	G/A	-	-	R*	R*	-	-	-	-	R*	-	-	R*
rs1051669	C/T	Y	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y*
rs7301931	T/C	Y*	Y*	Y*	Y*	-	Y*	-	-	Y*	-	-	Y
rs11571475	A/G	R*	R*	-	-	R*	R*	-	-	R*	R	R	R
rs7487683	C/T	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs3748522	A/C	M*	M*	C*	C*	low_cov	C*	C*	M*	M*	M*	-	M*
rs11571443	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/A	-	-	-	-	W	W*	W	-	-	-	-	-
rs1048771	C/T	-	Y*	Y	Y	Y	Y	Y*	-	Y*	-	-	-
rs17884201	G/A	-	-	-	-	-	-	-	-	-	-	-	NP
rs6925151	C/T	-	-	-	Y	Y*	Y	Y	-	Y*	Y	Y	Y*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	Y*	-	Y	Y	-	-	Y*	-	Y*	Y	Y	Y*
	G/A	-	R*	-	-	-	-	-	-	-	-	-	-
	T/C	Y*	-	-	Y	Y	Y	Y	-	Y*	Y	Y	Y*
rs9371533	G/A	-	R*	R*	R	R*	R	R	-	R*	R*	R*	R*
rs9371539	C/T	-	-	Y	Y*	-	-	-	-	Y*	Y	Y*	Y*
rs9383921	C/T	-	Y*	T*	T	Y*	Y	Y	Y*	Y*	Y	Y*	Y*
rs2342767	C/G	S*	S*	S	S	S	S	S	-	S*	G	V*	S*
rs2151910	A/T	W	W	T*	T*	W	W*	W*	T*	W*	W*	W*	W*
rs561467	C/T	Y	Y*	NP	NP	NP	NP	NP	-	-	NP	NP	NP
rs2290159	G/C	S	S	-	-	S*	V*	S	-	-	-	-	-
rs2596828	C/T	Y*	Y	NP	NP	-	-	-	NP	NP	NP	NP	T*
rs1051208	G/A	-	R*	-	-	-	-	-	R	R	-	-	-
rs2596830	A/G	R*	R*	NP	NP	R*	R*	R*	-	-	G*	G*	NP
	T/G	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs8022651	T/C	-	-	-	-	Y	Y	C*	Y	Y	-	-	-
rs2236493	T/C	-	-	NP	NP	low_cov	C	C*	NP	NP	NP	NP	NP
rs1052780	G/A	-	-	-	-	R*	R	R	-	-	-	-	-
rs35867116	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1049553	C/T	-	-	-	-	Y*	Y*	Y	Y*	Y	Y	Y*	-
rs826556	C/T	-	Y*	Y*	Y*	-	-	-	-	Y*	Y	Y*	Y
	T/G	K*	K*	K*	K*	K*	K*	K*	K*	B*	K*	K*	K*
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs76461420	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs61748149	A/G	-	-	R	R*	-	-	-	-	-	R*	R	-
rs11102325	T/C	-	-	-	-	-	Y*	-	Y	Y	-	-	NP
rs552802	G/T	K*	T	K*	T	K*	T	K*	-	-	-	-	NP
rs6573	C/A	-	A	M*	-	-	-	-	-	-	-	-	NP
rs12038204	A/G	R*	R*	-	-	R*	-	-	R	R	R	R	-
rs61775976	C/T	-	-	-	-	Y*	Y	Y	-	Y*	Y*	Y	-
rs2275365	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs2275360	G/A	R	R	R*	R*	R*	-	-	-	-	-	-	-
rs3817041	T/G	K	K	K	K	-	-	-	-	-	-	-	-

rs41307882	C/T	-	-	NP	NP	-	-	-	Y	Y	-	-	-
rs2275363	C/T	Y*	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y
rs861212	G/T	K*	K*	-	K*	K	K	K	T	K	-	R*	K
rs12130950	G/A	-	-	-	-	-	-	-	-	R*	-	-	R*
rs1049396	C/G	-	-	-	-	S*	S*	S	S*	G	S*	S	-
	C/G	-	-	-	-	-	-	-	S	S	-	-	-
rs1135004	C/T	-	-	-	Y	-	-	-	Y*	Y	Y*	Y*	Y
rs61748171	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs11168220	G/A	R	R*	-	-	-	-	-	-	-	-	-	-
rs78616585	G/A	-	-	-	R*	R	R	R	-	R*	-	-	-
	G/A	R	R*	-	-	-	-	-	-	-	R*	-	-
	A/G	R	R	-	M*	R*	R	R	-	-	R	R	R*
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2074533	T/C	C*	Y*	NP	NP	low_cov	Y*	Y*	-	-	Y*	Y*	NP
	C/T	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs2074534	A/G	R*	G	NP	NP	low_cov	R*	G	-	-	R*	R*	R
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2240080	G/T	K	K	-	-	K*	K	K*	-	K*	K	K*	K*
rs11168223	T/C	-	-	-	-	-	-	-	Y	Y	Y	Y	-
rs2016123	T/C	Y	Y	NP	NP	C*	Y*	Y	Y*	Y*	Y*	Y	NP
	G/A	-	-	-	-	-	-	-	-	-	R*	R	-
rs11168214	A/G	R	R	-	-	R	R	R	-	R*	R	R	R*
rs757282	C/T	Y*	Y*	T	Y	T	Y*	Y*	Y	Y	Y*	Y	Y*
	G/A	-	-	-	-	-	-	-	-	-	R*	-	-
rs2238144	C/T	Y	Y	Y	Y	Y	Y	Y	-	Y*	-	-	-
rs61917617	A/G	R	R	-	-	R*	R	R	-	R*	R	R	R*
rs11168230	C/G	S	S	S	S*	S*	S	S	-	S*	-	-	V*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs61917616	A/G	R	R*	-	-	R*	R	R*	-	-	R	R*	R*
rs75424057	G/A	R*	K*	-	D*	-	K*	-	-	R*	K*	-	K*
rs2238143	G/A	-	-	-	-	-	-	-	R	R	-	-	R
rs11168215	A/C	M	M	-	-	M*	C	M	-	-	M	M	M
rs7977774	G/A	R*	R*	A	R	R*	R*	R*	R	R	A	R*	R*
rs74468203	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs16861098	C/T	Y	Y	-	-	Y*	Y*	Y	Y	Y	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6717529	C/T	-	-	Y	-	-	-	-	-	-	-	-	-
rs35253091	A/C	-	-	M	C*	-	-	-	-	M*	M	M	-
rs35107898	A/T	W*	W*	W	W	W	W	W	W*	W	W*	W*	W*
rs2290378	G/A	K*	-	R*	-	-	-	-	-	-	K*	-	-
rs78996903	A/T	-	-	W	W	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2258180	G/T	K	K	K	K	K	K*	T*	K*	K	K	K*	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2172471	G/A	A*	A	NP	NP	-	-	-	-	-	R*	R*	NP
rs1709	T/C	-	-	-	-	-	C	Y*	Y*	Y*	-	-	NP
rs295323	G/A	A	R	R*	R	-	-	-	-	-	R	R	R*
rs61749934	G/A	R*	R*	-	-	-	-	-	R	R*	-	-	-
rs11147333	G/A	-	R*	-	-	-	V*	R*	-	-	R	R	-

	T/C	-	-	-	-	-	Y*	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2274717	A/G	R	R	-	R*	G	R	G*	G	R	R*	R	R*
rs76680734	G/C	S*	S*	-	-	-	-	-	S	S	-	-	-
rs11552971	C/T	-	-	T	Y	-	-	-	-	-	Y*	Y*	-
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs11672	C/T	-	Y*	-	-	Y	Y	Y	-	-	Y	Y	-
rs11552972	A/G	R*	R*	R	R	-	R*	R*	-	R*	R*	R	R*
rs3088173	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs17294418	C/G	-	-	NP	NP	-	S	S*	G*	S*	-	-	NP
rs10942942	T/C	-	-	C*	C*	low_cov	Y*	Y*	-	Y*	-	-	NP
rs2897389	T/A	-	-	-	-	W	W	W	W	W	W*	W*	W*
rs34193571	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1556561	A/T	W*	W*	-	W*	W*	W*	-	W	W	T*	W	-
rs41285402	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2780889	A/T	-	W*	W*	W*	-	W*	-	W	W	W*	W*	W
rs1048007	A/G	R*	R*	-	-	-	-	-	R	R	R*	R*	R*
rs928510	G/A	R*	R*	NP	NP	-	-	-	R	R*	-	-	NP
	G/A	-	-	-	-	R*	R	R	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs13269	C/T	-	-	-	Y*	-	-	-	-	-	-	-	-
rs1443	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	-	Y
	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs7227168	C/T	Y	Y*	-	-	-	-	-	Y*	Y*	-	-	Y*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs153556	T/C	Y	Y	C*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-
rs67574266	G/A	R	R	-	-	-	R*	-	R*	R	-	-	-
rs2742241	G/A	R*	R*	R*	R*	R*	R	R*	R*	R*	A*	R*	R*
rs1800858	A/G	R*	R	-	R*	-	-	-	R*	R*	NP	NP	G*
rs17028	C/T	-	Y*	-	-	Y	Y	Y	-	Y*	-	-	Y
rs2075912	T/C	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*
rs1800861	G/T	K	K*	NP	NP	K*	K	K*	-	K*	T*	K	T*
rs1800863	C/G	S*	-	-	-	-	-	-	S*	S*	-	-	-
rs1799939	G/A	-	-	-	-	-	R*	-	R	R	-	-	-
rs1800860	A/G	R	R	R*	R*	R*	R*	R*	R*	R	R*	G	R
rs2075913	T/A	W	W	W	W*	W*	W	W*	W*	W	A*	A*	NP
rs3026782	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
rs2435355	T/C	-	-	-	-	Y	Y	Y	-	Y*	Y	Y	Y
rs2066782	A/G	G	R	R*	R*	-	-	-	-	-	-	-	-
rs17754	G/C	-	-	-	-	C	S*	S*	S	S	S*	S*	S*
rs1057807	A/G	G*	R	G	R*	-	-	-	R	R	-	-	NP
rs73154850	T/A	-	-	-	-	W	W	W	-	W*	-	-	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs67117953	C/G	-	-	-	Y*	-	-	-	-	-	-	-	-
rs875588	C/T	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y	Y*	Y*	Y
rs76288565	C/T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2855558	A/G	-	-	-	-	R*	G	R	-	-	-	-	-
rs2071093	C/A	-	-	-	-	-	M	M	-	-	-	-	-
rs7984	A/G	-	-	-	-	low_cov	R*	R	-	R*	-	-	-

rs15932	T/C	-	-	-	-	-	-	-	-	-	-	-	-	
rs3448	T/C	Y	Y	Y	Y*	Y	Y	Y	C*	Y*	Y*	Y*	Y*	
rs34731458	G/A	-	-	-	S*	-	N*	S*	-	S*	S*	S*	-	
rs954679	A/G	G	R	-	-	G	R*	R*	R	R	-	-	R	
rs12144044	C/A	M*	M*	M	M	M*	-	-	M*	M*	M*	A*	-	
rs937053	T/A	W*	W	-	-	low_cov	W*	W*	W*	W*	-	-	NP	
rs2115949	G/A	R*	R	R*	R*	R*	R*	R*	A	R*	A	R*	NP	
	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-	
rs2272990	T/C	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	
rs12203636	A/G	R*	G	NP	NP	low_cov	-	-	NP	NP	NP	NP	G	
rs17548629	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-	
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP	
rs2230801	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-	
rs16900627	A/G	-	-	-	-	-	-	-	-	-	-	-	NP	
rs2293809	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-	
	G/A	-	-	-	-	R*	R*	R	-	-	-	-	R*	
	A/G	-	-	-	-	R	-	R	-	-	-	-	-	
	C/T	Y	Y	-	-	-	-	-	Y	Y*	-	-	Y*	
rs3746891	T/C	Y*	Y*	-	Y*	Y	Y	Y	Y*	Y	Y	C*	Y*	
rs3746893	C/T	Y	Y	-	-	-	H*	-	Y	Y	-	-	Y*	
rs3746890	T/C	Y	Y	-	-	-	-	-	Y	Y	-	-	C	
rs2277789	C/A	M	M	-	-	-	-	-	M*	M	-	-	M	
rs6586232	A/G	R*	R	-	R*	R	R*	R	R	R	R*	R*	R	
rs6586238	C/T	Y*	Y	NP	NP	-	-	-	-	-	NP	NP	-	
	A/T	-	-	-	-	-	-	-	-	-	-	-	-	
rs3171532	C/T	Y*	-	-	Y*	-	Y*	-	Y	Y	-	-	Y	
	G/A	R	R	-	-	-	R*	-	R	R*	-	-	A	
rs13049286	T/G	K	K	-	K*	K	K	K	-	K*	K*	K	-	
rs73216989	C/A	-	-	-	-	-	-	-	-	-	M	M	-	
rs2277791	A/G	R	D*	-	R*	R	R	R	-	R*	R	R*	-	
rs2838114	C/T/G	NP	NP	NP	NP	NP	NP	NP	-	-	-	S*	NP	
rs2838113	G/A	R*	R	R*	R*	R	R	R	R	R	R*	R*	R*	
CM020300	HGMD_MUTATION	-	-	-	-	-	-	-	-	-	-	-	-	
rs56250729	T/G	-	-	-	-	-	-	-	-	-	-	-	-	
rs1048260	G/C	-	-	S*	S*	-	-	-	S	S	-	-	-	
CM031342	HGMD_MUTATION	-	Y*	-	-	-	-	-	-	-	-	-	-	
rs486907	C/T	Y	Y	-	-	Y	Y	Y	-	Y*	Y	Y*	Y	
rs627928	A/C	M	M	M*	M*	M	M	M	-	-	M	M*	NP	
rs36053738	C/T	-	Y*	-	-	-	Y*	-	-	Y*	-	-	-	
rs3738579	A/G	R	R	-	-	R	R	R	-	R*	R	R	R	
rs10782008	G/A	R*	R	A*	R*	A*	R	R*	R*	R	R	R	-	
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-	
rs9892846	C/T	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	-	
rs9913636	G/C	S	S	C	S*	S	S	S*	S*	S*	S	S	S*	
rs8074015	A/G	R*	R*	R*	R*	G*	R*	R*	R*	R	R	R	R*	
rs72849841	C/T	-	-	-	-	-	-	-	-	-	-	-	-	
rs7215243	A/G	R*	R*	G	G*	low_cov	-	-	-	-	R*	R*	R*	
rs8082521	C/A	M	M*	A*	A*	A*	A	M*	-	M*	-	M*	-	
rs17853714	G/A	R	R	A*	A*	-	-	-	-	-	R*	R*	-	
rs55996424	A/T	-	-	-	-	-	-	-	-	-	-	-	-	

rs17853713	G/A	R*	R	NP	NP	-	-	-	-	-	R*	R*	-
rs9908287	C/G	S*	S*	G*	S*	G*	S	S*	S*	S	S	S	S*
rs17853989	T/C	Y*	Y	NP	NP	-	-	-	-	-	Y*	Y	-
rs6565674	A/G	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs11874761	G/A	-	-	NP	NP	-	-	-	NP	NP	-	-	-
	C/T	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs17366517	A/G	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs978906	T/C	Y	Y	C	C*	Y	Y	Y	Y*	Y	Y	Y	Y*
rs11587715	A/G	-	R*	-	-	-	-	-	-	R*	R*	G*	-
rs6668545	A/G	R*	R	R*	R*	R*	R*	R*	-	R	R*	D*	R
rs11208364	G/A	-	R*	-	-	-	-	-	-	-	R	R*	NP
rs41302752	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7527017	C/T	Y	Y	T*	Y	Y	Y*	T*	-	Y*	T*	Y*	-
rs2762833	G/T	T	K*	K*	K*	T	T	T	K*	T	K*	T	NP
rs11208365	A/G	R*	R*	-	-	-	-	-	-	R*	G*	R	-
rs1772626	C/T	Y*	Y*	Y*	T	Y	T	Y	Y*	Y	T*	Y*	Y*
rs10820900	T/C	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y
rs10761129	C/T	Y*	T*	NP	NP	T*	T	T*	T*	T	T*	T*	Y*
rs2230578	C/T	Y*	Y*	Y*	Y*	T*	Y*	Y*	T*	Y*	T*	Y*	-
rs923771	G/C	C*	C	NP	NP	low_cov	S*	C*	C*	C	C*	S*	S
rs2230577	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs1135150	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1135169	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs10992063	G/A	R*	R*	A*	A*	R	R	R	R	R	A*	A*	R*
rs41277837	C/T	Y*	Y*	-	-	Y	Y	Y	Y	Y	Y*	-	Y*
rs3750440	T/A/G	W*	-	-	-	W*	W	W	-	-	D*	R*	K*
rs2243380	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34203286	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2229078	T/C	-	-	-	-	-	-	-	Y	Y	Y	Y	-
rs45533035	A/T	W	W	-	-	W	W*	W	-	-	-	-	-
	G/A	R	R	-	-	R	R*	R	-	R*	-	-	-
rs2778	A/G	R	R	-	R	R	R	R	-	R*	R	R	-
rs2243378	T/A	W*	W	NP	NP	low_cov	A*	A*	A*	A	NP	NP	-
	T/C	-	Y*	-	-	-	Y*	-	-	-	Y*	-	-
	G/A	-	-	NP	NP	-	-	-	-	-	R	R*	-
rs529038	C/G/T	-	-	-	Y*	Y*	Y	Y*	T*	Y	-	-	Y*
rs619203	G/C	-	-	-	-	NP	NP	NP	NP	NP	-	-	NP
rs2228527	T/C	Y	Y	-	-	-	-	-	-	-	-	-	Y
rs4253211	C/G	-	-	-	-	S	S	S*	S	S	-	-	-
rs2228529	T/C	Y	Y	-	-	-	Y*	-	-	-	-	-	Y
rs2228526	T/C	Y	Y	-	-	-	-	-	-	-	-	-	Y*
rs11537746	G/A	R*	R*	R*	R*	R	R*	R	-	R*	R	R	R*
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61752081	C/A	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2229362	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	H*
	G/A	-	S*	-	-	-	-	-	R*	R*	-	-	R
rs1056932	G/A	R*	R*	R*	R	R*	R*	-	R*	R	R	R	R
rs1474326	C/A	M	M*	M*	M*	low_cov	-	-	M*	M*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs4870111	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
	A/G	-	-	-	R*	R	R*	R*	R*	R*	R*	R*	-
rs9383944	T/C	-	-	NP	NP	-	-	-	-	-	Y	Y	Y*
rs17079029	C/T	-	-	Y*	Y	-	-	-	-	Y*	Y	Y	Y
rs1057278	G/A	R*	R*	-	-	R	R*	R	-	R*	-	-	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1057281	G/A	-	-	-	-	R*	R*	R	-	R*	-	-	-
rs2290303	G/A	R	R	R	R	R*	R*	R*	R	R	R*	R*	R
rs2290305	T/G	N*	B*	K*	K	K	K	K	K*	K	B*	B*	K*
rs60669872	C/T	-	-	NP	NP	low_cov	-	-	Y*	Y	Y*	-	NP
rs352143	T/C	Y*	Y*	-	-	Y*	Y	Y*	-	Y*	C*	C*	-
rs34038856	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76198885	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs9427715	G/T	-	-	K*	K*	K*	K	K*	K*	K*	K	K*	K*
rs2819360	T/C	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
rs8602	C/A	-	-	-	-	-	-	-	M	M	-	-	NP
rs55791614	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4421048	A/G	G*	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*
rs35961234	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs73172125	A/G	R	R	-	-	-	-	-	R*	R	R*	R*	R*
rs79107024	G/T	-	-	K	K	K	K	K	-	K*	K*	-	K
	A/G	R*	R*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G
	C/T	Y*	Y*	Y	Y	Y	Y	Y	T	Y	Y	Y	Y*
	C/T	Y*	Y*	Y*	Y	low_cov	Y*	T*	-	Y*	Y*	Y*	Y*
rs7571	C/G	-	S*	-	-	-	-	-	S*	S	-	S*	-
rs13428	C/G	-	-	-	-	-	-	-	G	S	S	S*	-
rs9578751	C/T	Y	Y	-	-	low_cov	Y	Y*	-	-	-	-	Y
rs1130941	T/A	W	A*	-	-	-	W*	-	-	W*	-	-	NP
	C/T	Y	Y	Y*	Y*	T	Y*	Y*	-	Y*	Y*	Y*	Y
	C/T	Y	Y	-	Y*	Y*	Y	Y	Y*	Y*	Y	H*	Y
	A/G	G	R	G*	G*	G	R*	G*	R	R	R	G*	G
rs3783078	T/C	C*	C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs9318600	A/T	W	W	-	-	W*	W	W*	-	-	-	-	-
	A/G	G	G	-	-	low_cov	R*	R*	-	-	NP	NP	-
	A/G	R*	R*	R*	R	R*	R	R*	R*	R*	G	R	NP
	A/G	G*	G*	G*	R*	G*	G*	G	G*	G*	G*	G*	G*
rs62292779	G/A	R	R	-	R*	R*	R	R*	-	-	R*	R*	-
rs266769	A/G	R	R*	G	R*	R*	R	R*	R*	R*	R*	R*	R*
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs11971165	A/C	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R	R	R*	R	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3817192	A/C	M	M	NP	NP	-	M*	-	-	-	-	-	-
rs4951373	G/A	R	R	R*	R	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2271421	A/G	R	R	-	-	-	W*	-	-	-	-	W*	W*
rs66538320	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs6941633	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-

rs9381994	T/C	Y*	Y*	-	-	C*	C*	Y*	Y	Y	Y*	Y*	Y*
rs76762827	G/A	-	-	-	-	-	-	-	-	-	R	R*	-
rs3734212	C/G	S*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*
rs11153297	T/C	Y	Y	NP	NP	-	-	-	Y*	Y*	Y*	Y*	NP
rs34659678	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	Y
rs1570372	G/A	R	R	R*	R*	R*	R	R	R	R	R*	R	R*
rs1911	A/G	R*	R	-	-	-	-	-	-	R*	-	-	G
rs3798734	C/T	-	-	Y	Y*	-	-	-	-	-	Y*	Y	-
rs1803710	C/A	NP	NP	NP	NP	low_cov	M*	M*	NP	NP	NP	NP	NP
rs1908	C/T	-	-	Y	Y*	-	-	-	-	-	Y*	Y	-
rs1044417	C/T	Y	Y	Y	-	Y*	Y	Y	Y*	Y*	-	Y*	NP
rs941982	A/G	R*	R*	R*	R*	R*	R*	G	R*	R*	R*	R*	R
rs3798733	C/G	-	-	S	-	-	-	-	-	-	S*	S	-
rs12211539	C/T	-	-	Y	Y	-	-	-	-	-	Y*	Y	-
rs16871074	G/A	R*	R	-	R*	-	-	-	-	R*	-	-	R
rs3734404	T/C	Y	Y	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y	Y
rs1050775	G/A	R*	R*	R	R	R	R	R	R	R	R*	R	R
rs6330	G/A	R	R	-	-	R	R	R	R*	R	R*	R*	-
rs6670599	C/T	T	Y*	-	-	-	-	-	-	-	-	-	-
rs900676	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs35909785	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12121777	G/A	-	-	NP	NP	R*	A	R*	-	R*	-	-	-
rs579908	A/G	R	R*	NP	NP	R*	R*	R*	-	R	-	-	-
rs6671088	C/T	-	-	-	-	Y*	Y	Y*	Y*	Y*	-	-	-
rs2279347	A/G	-	-	NP	NP	-	-	-	-	-	-	-	-
rs12405650	C/T	Y	Y	-	-	-	Y*	-	-	-	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	Y
rs12726343	C/G	G	S*	-	-	-	-	-	-	-	-	-	-
rs610213	C/G	-	-	-	-	S*	G	S*	S*	S*	-	-	-
rs76466607	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs17511304	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs502776	T/A	W	W	NP	NP	W	W	W	W*	W	-	-	-
rs17464871	C/T	Y	Y	-	-	-	-	-	-	-	-	-	S*
rs11583463	C/T	-	-	-	Y*	-	-	-	-	-	Y*	-	-
rs510121	C/T	Y	Y	NP	NP	Y	Y*	Y	Y	Y	-	-	-
rs504518	G/T	K	K	-	-	K*	K	K	K*	K	-	-	-
rs2170809	G/A	R	R	-	-	R*	-	-	-	-	-	-	-
rs3795374	G/T	K	K	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	K
rs56052041	C/T	-	-	-	-	-	-	-	-	-	Y*	Y*	NP
rs12568697	G/A	-	R*	R	R	R	R	R	A*	R	R	R	-
rs1402815	G/A	-	-	R*	R*	R*	R	R	A*	R	R	R	R
rs1294228	T/-/G	-	K*	K*	K	K	K	K	G*	K	K	K	K*
rs3795375	G/A	R	R	-	-	-	-	-	-	R*	-	-	-
rs963982	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs35225245	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs1294236	G/A	-	R*	R*	R*	R*	R	R	A	R	R	R	R
rs34794284	C/T	Y	Y	-	-	-	M*	-	-	-	-	-	-
rs1294232	A/G	-	-	R*	R	R*	R	R	R*	R	R	R	R
rs1294231	C/T	Y	Y	Y*	-	Y*	Y	Y	T*	Y	Y	Y	Y*

rs963981	T/G	K*	K	-	-	-	-	-	-	-	-	-	-
rs1294229	A/G	-	R*	R	R	R	R	R	R*	R	R	R	R
rs1294230	C/T	-	-	Y*	-	-	Y*	-	T*	Y	NP	NP	NP
rs1294233	C/T	-	-	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	-
rs1294235	T/C	-	-	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
rs10737197	G/A	-	-	R*	-	R	R	R	R*	R	R	R*	-
rs6967301	A/G	G*	G*	R*	R	R*	R	R*	G	R	R	R*	-
rs5030755	A/G	-	R*	-	-	-	-	-	-	-	R	R	-
rs1051318	A/T	W	W*	-	-	-	-	-	-	-	-	-	-
rs3744768	G/A	-	-	R*	R*	R*	R*	R*	R*	R	-	-	NP
rs5030749	A/G	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*
rs9082	T/C	-	-	-	Y*	C*	C*	Y*	C*	Y*	NP	NP	NP
rs5030989	(C)9/(C)8	-	-	S*	S*	G	G	S*	G	S	-	-	NP
rs17292622	G/A	-	-	R	R	A	R	R*	A	R	-	-	-
rs3744766	C/G	-	-	S*	S*	S	S*	S	S*	S*	-	-	-
rs1131636	C/T	Y*	Y*	Y	Y	-	Y*	-	-	Y	Y*	Y*	Y*
rs2230931	T/C	-	-	Y*	Y*	Y	Y	Y	-	-	-	-	-
rs2230930	C/T	-	-	Y*	Y	-	-	-	-	Y*	Y*	Y*	-
rs12727	G/C	S	S	-	-	-	-	-	-	-	-	-	NP
rs9914073	A/G	-	-	R	R	R	G*	R*	R	R	-	-	-
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs17339382	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs5030741	G/A	R	R	-	-	-	-	-	-	-	-	-	NP
rs3744767	T/C	-	-	Y	Y*	Y	Y*	Y*	Y*	Y	-	-	-
rs5030740	C/T	Y*	Y	T*	T*	T*	Y*	T*	T*	Y*	T*	T*	Y*
rs17734	C/T	Y*	Y*	Y	Y	Y*	-	-	Y*	Y*	T*	T*	T*
rs1051315	G/T	K	K*	-	-	-	-	-	-	-	-	-	-
rs17339395	G/A	-	-	R	R*	A	R	R	-	R	-	-	-
rs9322965	G/A	-	-	R*	R	R	R	R	-	R*	R	R	-
rs10151259	G/T	-	-	K	K*	K	K	K	-	K*	K	K*	-
rs6571751	A/G	-	-	R*	R*	R*	R*	R	-	-	R*	R*	R*
rs3748357	G/A	A*	A	R*	R*	-	-	-	-	R*	NP	NP	NP
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4784319	A/T	W	W	W*	W	W	W	W	-	W*	W	W	W*
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs1946155	C/T	Y	Y	Y	Y	Y*	Y	Y	-	Y*	Y	Y	Y
rs11542299	T/C	Y*	Y*	Y	Y	Y*	Y	Y	-	Y*	C*	C*	Y
rs1051424	A/G	-	-	-	-	-	-	-	-	R*	NP	NP	NP
rs180515	A/G	R	R	-	-	-	-	-	-	R*	R	R	-
rs10274	G/A	R	R*	-	-	low_cov	R*	A	-	-	A*	A*	R*
rs4930427	C/T	Y*	Y*	-	-	T*	Y*	T*	-	Y*	T	T*	Y*
rs917570	C/G	S	S	-	-	S*	G	S*	-	S*	G*	S*	S*
rs13859	C/T	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs4652964	A/G	V*	V*	R	R*	R	N*	R	R*	R*	R	R	V*
	T/G	G	K	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs72164566	TGTG/-	-	-	S	S	S	S*	S	S	S	-	-	S
rs1128977	G/A	-	R*	R*	R*	R*	R	R*	-	R*	R*	R*	R*

rs113471	T/C	Y	Y	-	-	-	-	-	Y	Y	-	-	K*
rs166899	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs41419946	A/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2134095	G/A/T/C	-	-	A*	A*	R*	R*	R*	R*	R*	NP	NP	A*
rs77875554	T/G	-	-	-	-	K*	K	K	-	K*	-	-	-
rs79627842	T/C	-	-	NP	NP	Y*	Y*	Y*	-	-	-	-	NP
rs77182452	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs78168539	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs10935102	C/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs1131262	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs75023501	T/C	-	-	-	-	-	-	-	Y	-	NP	NP	NP
rs7432230	G/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs57895968	G/T	K	K	NP	NP	K	T	K	T*	T	T	K*	K*
rs66541105	CTCTCTCTCTCCCTCTCTC	K*	K	NP	NP	-	K*	-	-	K*	-	-	-
rs2650492	G/A	R*	R*	R	R	R	R	R	-	R*	R	R	R*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
	G/A	R*	-	-	-	-	-	-	-	-	-	-	-
rs678047	C/T	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	T*	Y*	Y*
rs9600898	A/G	G*	G*	-	-	low_cov	G*	G*	NP	NP	NP	NP	-
rs1053985	A/G	R*	R*	-	-	R*	R	R	R*	R	R*	R*	R*
rs41288256	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2813739	C/T	-	-	Y	Y*	-	-	-	-	-	-	-	-
rs1275085	G/A	-	-	A*	A*	R*	R*	R	-	R*	-	-	-
rs72552174	G/A	R	A	-	-	-	-	-	-	-	-	-	-
rs41497645	A/G	-	-	-	-	-	-	-	-	-	-	-	R*
rs12286568	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs72552176	C/T	-	-	T	Y	-	-	-	-	-	-	-	-
rs12420563	C/T	-	-	NP	NP	-	-	-	-	-	Y*	Y*	-
rs7483687	C/G	-	-	NP	NP	-	S*	-	-	-	NP	NP	NP
rs238547	T/C	Y*	Y*	C	Y	Y	Y	Y	C*	Y	Y	C	Y
rs9922851	T/C	Y*	C	Y*	Y*	-	-	-	Y*	Y*	-	-	C
rs5727	G/A	-	-	R*	R*	-	-	-	-	-	-	-	-
rs5723	C/G	-	-	S	S	-	-	-	-	-	-	-	-
rs5734	T/C	Y*	Y	-	-	-	-	-	Y*	Y*	-	-	Y*
rs5729	T/A	-	-	W*	W*	-	-	-	-	-	-	-	-
rs5732	A/G	R	R	-	-	-	-	-	-	-	-	-	R*
rs5735	T/C	Y	Y	-	-	-	-	-	Y	Y	-	-	Y
rs5726	C/T	-	-	Y*	Y*	-	-	-	-	-	-	-	-
rs3026	T/G	-	-	K*	K	-	-	-	-	-	-	-	-
rs5728	A/G	R	R	R*	R*	-	-	-	R	R	-	-	R
rs5737	C/T/G	-	-	-	-	-	Y*	-	Y	Y*	-	-	-
rs5739	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55662663	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10860580	C/T	T	Y*	-	-	-	-	-	Y*	Y*	-	-	-
rs10860577	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs33968174	C/T	-	-	T	Y*	-	-	-	-	-	-	-	Y*
rs4656197	T/C	Y	Y	C	Y*	Y*	Y*	-	Y	Y	Y	Y	Y*

rs12143301	C/G	-	S*	-	S*	S	S	S*	S	S	-	-	S*
rs75851226	A/C	-	-	-	-	low_cov	M	M	M*	M	-	-	-
rs76519675	G/T	-	-	-	-	T*	K*	T	K*	K	-	-	-
rs17602701	G/A	-	-	-	-	R	R*	R*	R*	R	-	-	-
rs1062976	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	Y
rs12132384	A/G	-	-	-	-	R	R*	R*	R*	R	-	-	-
rs1048621	G/A	R*	-	-	R*	R*	R*	-	-	R*	R*	-	R
	G/T	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs2273959	C/T	Y*	Y*	-	-	-	Y*	-	Y*	Y	Y	Y	Y
rs1048628	G/C	S*	S*	C*	C*	C*	S*	C*	S*	S*	S*	S	S*
rs8123274	T/C	-	-	-	-	Y	Y*	Y	-	Y*	-	-	Y
rs17718334	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11449	G/A	R	R	R	R	A	A	R*	R*	R*	-	-	R
rs7466	G/C	S*	B*	S*	S*	S	B*	S*	S*	B*	S*	B*	B*
rs2273958	C/T	T	Y	T*	T*	Y	Y	T*	Y*	Y*	Y	Y	Y
rs10143621	A/G	G*	R*	D*	R*	G*	R*	R*	R*	G*	R*	R*	G*
rs33927012	A/G	-	-	-	-	-	-	-	-	-	-	-	R
	C/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs10887990	T/C	-	-	C*	C*	Y	Y	Y	Y*	Y	C*	C*	Y
	T/C	Y	Y	Y*	C*	Y*	Y	Y*	Y*	Y*	C*	C*	Y*
rs4693525	A/C	C*	M*	C*	C*	C*	C*	C*	M*	C	C	C*	NP
rs11541628	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2305876	A/G	R	R	-	-	R	R	R	-	-	-	-	R*
rs895600	A/C	M	M	NP	NP	C*	M*	C*	M*	M*	C*	C*	M*
rs4863654	C/A	A*	A*	NP	NP	M*	-	M*	A*	M*	NP	NP	NP
rs4863655	G/T	T*	K*	NP	NP	K*	K*	K*	T*	K*	NP	NP	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17050790	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1881	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
rs2592969	T/C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs1026049	C/G	S*	S	-	-	-	-	-	S	S	S*	-	-
rs1026048	C/T	Y	Y	-	-	-	-	-	Y	Y*	-	-	-
rs11555201	A/G	R*	-	R	R	R	R*	R	R	R	-	-	-
rs12914	T/C	Y*	Y*	Y	Y*	Y*	Y	Y*	C*	Y*	NP	NP	NP
rs10088390	C/G	-	-	-	-	-	-	-	NP	NP	NP	NP	NP
rs3242	G/A	-	-	-	-	R*	R	R*	A	R*	-	-	-
rs1127379	T/C	-	-	Y*	Y	C*	Y*	C*	C*	Y	-	-	-
	A/G	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP
	C/A	-	-	-	-	M	M*	M	-	-	-	-	-
rs2039826	G/A	R	R	R*	R	-	-	-	R	R	R*	A*	R*
rs7478323	C/T	Y	Y	Y*	Y	Y*	-	-	Y	Y	T	T*	-
rs41290468	G/C	-	-	NP	NP	C	C*	C*	S*	S*	-	-	NP
rs61733949	G/A	-	R*	R*	-	-	-	R*	-	-	R	R	-
rs12264	T/C	Y	Y	C	Y	Y*	Y	Y	Y*	Y	-	-	Y
rs2235611	T/C	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*
rs13989	A/G	R*	R	R*	R	-	-	-	R*	R*	R*	R*	R*
rs225163	G/A	R*	R	NP	NP	low_cov	-	-	R*	R*	R*	R*	NP
rs170424	A/C	C*	C*	M*	C*	M*	M	M	C*	C	M	M*	NP
rs225165	T/A	W*	W	NP	NP	-	-	-	A	W*	W	W*	NP
rs1743966	A/G	R	R	R*	G	-	-	-	R	R	-	-	R*

rs17063587	G/C	-	R*	-	-	-	-	-	-	-	-	-	-
rs1057293	G/A	R	R	-	R	-	-	-	-	-	-	-	R*
rs33969356	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41310823	G/C	-	-	-	-	-	R*	-	-	-	-	-	-
rs3827067	C/G	-	-	G	S	S*	S*	S*	S	S	-	-	-
rs6065627	A/G	-	-	-	-	-	-	-	-	-	R*	R	-
rs1055334	A/G	R*	R*	-	-	G*	R*	G	R	R	R	R*	R*
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs3787273	T/C	-	-	-	-	-	Y*	-	-	-	-	-	-
	A/T	-	-	T	W	-	-	-	-	-	-	-	-
	A/G	-	-	NP	NP	NP	NP	NP	-	-	-	-	-
rs61729306	T/A	W	W	W	W	W	W*	W	-	W*	-	-	-
rs1052930	A/G	R*	R*	R*	G*	G	G*	R*	R	R	R	R	-
	C/G	S*	S	-	-	-	-	-	-	-	-	-	-
rs17532665	A/G	R	R*	-	-	-	-	-	R	R*	G	G*	NP
rs12052989	T/C	Y	Y	C*	C*	C*	Y*	Y*	C*	C	C*	C*	Y*
rs17448235	A/G	R	R*	-	-	-	-	-	G	R*	NP	NP	NP
rs6761600	G/A	-	-	-	-	low_cov	-	-	-	-	-	-	-
rs35987478	C/A	-	-	M*	-	-	-	-	-	-	-	-	-
rs17532679	A/G	-	-	R*	G*	low_cov	G	R*	-	-	-	-	NP
rs1036533	G/A	R	R	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	low_cov	-	-	-	-	NP	NP	-
rs926103	T/C	C	Y	Y*	-	Y*	-	-	-	-	Y*	Y	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	M*	-	-	-	Y*	-	-
rs1800601	G/A	R*	R*	R*	R*	-	R*	-	-	R*	R	R	A
rs11552300	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs8191979	T/C	-	-	-	-	low_cov	Y	-	-	-	-	-	-
rs61751623	C/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs15971	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	K	K	-	-	-	-	-	-	-	K	K	-
rs3893730	C/T	Y*	Y*	-	-	T*	Y*	T*	T*	Y*	Y*	T	NP
rs1046822	C/T	T*	T*	-	-	T*	T	T*	T*	T*	T*	T*	Y
rs13867	A/C	M*	M*	-	-	C*	M	M*	M*	M*	C*	M*	M
rs61749990	C/T	-	Y*	-	-	-	-	-	Y*	Y	-	-	-
rs7341387	C/T	Y	Y	-	T	-	Y*	-	-	-	T*	T	Y*
rs78670506	G/C	-	-	-	-	-	K*	-	-	S*	S	S	-
rs3801293	G/A	-	-	-	-	-	-	-	-	R*	A*	A*	-
rs6465507	A/G	R	R	R*	-	-	-	-	G	R	R	R	R*
rs6465531	A/G	R	R	R	R	-	-	-	-	R*	R*	R*	R
rs4733	C/T	-	-	-	-	Y*	Y*	-	-	-	-	-	-
rs4342521	T/G	K*	K	G*	G*	low_cov	-	K*	NP	NP	NP	NP	G*
rs1233555	C/T	Y*	Y*	NP	NP	low_cov	Y	Y*	Y*	Y*	NP	NP	-
rs1233571	T/C	Y*	Y*	Y	Y	C*	Y*	Y*	Y	Y	C	Y*	Y*
rs9333594	C/T	-	-	NP	NP	-	-	-	NP	NP	-	-	-
rs9333645	G/A	-	-	S*	S*	R	R*	R	-	-	S*	-	-
rs9333643	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-

rs1233560	G/A	R	R	-	-	R	R	R	-	R*	R	R	-
rs476861	A/G	R*	R*	G*	G*	G*	R*	R*	G*	R*	G*	R*	R*
rs17004546	G/A	-	-	NP	NP	-	R*	-	-	-	R	R*	-
rs587087	G/A	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
rs72146735	CA/-	-	-	-	-	-	-	-	-	-	-	-	-
rs56265008	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3366	G/A	A*	R*	A*	A*	A*	A*	A*	A*	A*	A*	A*	NP
	G/A	-	-	R	R*	-	-	-	-	-	-	-	-
rs3746951	C/T	-	-	T	Y	Y*	Y	Y	-	Y*	Y*	Y	Y*
rs229343	C/T	Y	Y	Y	Y	Y*	T	Y	-	Y*	Y*	Y*	T
rs10340	G/A/-/T/C	A*	A*	NP	NP	A*	A*	A*	-	R*	R*	A*	NP
	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs648033	A/G	R*	R*	G*	G*	G*	R*	G*	G*	R*	G*	R*	R*
rs605923	G/C	S*	S*	S*	C*	S	S	S	S*	S	S*	S*	C*
	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs585149	A/G	-	-	-	-	-	R*	-	-	R*	R	R	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1047400	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11216164	G/A	R*	R	-	-	R*	R*	-	R	R	-	-	R
rs625145	A/T	M*	-	-	-	-	M*	-	-	M*	-	-	M*
rs75385236	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y*	-	-	-	-	-	-	-	-	-	-	B*
rs17120099	A/C	-	-	M*	M	-	-	-	-	M*	-	-	M
rs11216162	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61907564	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs55730930	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs12225230	G/C	S*	S*	-	-	S*	S*	R*	-	S*	-	-	S*
	T/G	-	-	K*	G*	K	K*	K	G*	G	G*	K*	-
rs72722230	T/A	W	W	-	-	-	-	-	-	-	-	-	W
rs8017327	A/G	G*	G*	NP	NP	low_cov	G*	G*	NP	NP	NP	NP	NP
rs2180830	T/C	Y*	Y*	C*	C*	C	C*	C*	C*	Y*	C*	C*	C*
rs2110585	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11538030	G/T	-	-	-	-	-	-	-	K	K	-	-	R*
rs61755301	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs27733	A/G	G*	R*	R*	R*	G*	R*	G*	G*	R*	G*	G*	G*
rs6952943	C/A	M*	-	-	-	-	M*	-	-	M*	-	-	M
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs66872347	C/T	-	-	-	-	low_cov	-	-	-	-	Y	Y*	-
	G/A	-	-	R*	-	-	-	-	-	R*	-	-	-
rs3124	A/C	-	-	M	M*	-	-	-	M	M*	-	-	NP
rs10883960	A/G	R*	R	-	-	-	R	R	R*	R	R*	R*	NP
rs3740469	C/T	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y*	Y*
rs45559432	A/G	-	-	-	-	-	-	-	R	R	-	-	R
rs805657	G/A	R*	R*	R	R	-	R*	-	R	R	-	-	R
rs805662	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs56400929	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6787	C/T	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y*	Y*
rs809303	G/A	A*	A*	NP	NP	A*	A*	A*	A*	A*	A*	A*	NP

rs34326537	T/C	-	-	C	Y*	-	-	-	-	-	-	-	NP
rs809821	A/G	R*	R*	R	R	-	R*	-	R	R	-	-	R
rs8085335	A/G	-	R*	-	-	R	R*	R	R*	R*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs72912348	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs8098413	C/T	-	Y*	-	-	Y*	Y*	Y	Y*	Y*	-	-	NP
rs1792679	T/C	-	Y*	NP	NP	Y*	Y*	Y*	Y*	Y	NP	NP	NP
rs1981	A/G	-	R*	R*	R*	R*	R*	R	G	R	-	-	NP
rs1792666	A/T	-	-	W	T	-	-	-	T	W	-	-	T
rs16958485	A/G	-	-	R	R	-	-	-	-	R*	-	-	-
rs76658932	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
rs8031627	G/A	A	A	A	R	-	-	-	-	-	-	-	-
rs12595334	C/T	Y	Y	T	Y	-	-	-	-	-	-	-	-
rs1065080	A/G	R*	R*	-	R*	R*	R	G*	G*	R	R	R	G*
rs3743342	C/T	Y	Y	Y*	T	-	-	-	-	Y*	-	-	-
rs11638476	G/A	-	-	-	-	-	-	R*	A*	R*	R*	R*	NP
rs12900401	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs55970514	G/A	-	-	R*	R*	-	-	R*	-	-	-	-	-
rs8025774	C/T	Y	Y	Y	Y	-	-	-	-	-	-	-	-
rs3743343	T/C	-	-	-	-	-	-	-	-	-	Y*	Y	C
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs8031440	G/A	A	R	A	A	-	-	-	-	R*	-	-	-
rs11556090	A/G	R*	R*	-	R*	R*	G	R*	R*	R	R	R	R*
	C/T	-	-	-	-	-	S*	-	-	-	-	-	-
rs2282544	G/C	-	-	S	S	-	-	-	-	-	-	-	-
rs12456284	A/G	-	-	-	-	-	-	-	-	-	G	R*	R*
rs3819122	A/C	-	-	-	-	M*	M	M*	M*	M*	C	M*	M*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs62005619	C/T	Y*	Y*	-	-	low_cov	-	T	Y*	Y*	-	-	-
	C/T	T*	Y	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs4776822	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-
	C/T	-	-	NP	NP	-	Y*	-	-	-	-	-	NP
	G/T	K*	K	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	K*
rs4943430	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2070456	G/C	-	-	S*	S*	S*	S	S	-	-	-	-	NP
rs2073391	G/A	-	-	R*	R*	A*	A	A*	NP	NP	-	-	NP
rs11090285	C/T	-	-	-	Y	-	-	-	-	Y*	-	-	-
rs2073392	A/G	G*	R*	G*	G*	G*	R*	G*	G*	G*	G*	G*	NP
rs2229354	G/A	A	A	R*	R	-	-	-	R*	R	R	R	R
rs2070457	C/A	-	-	Y*	-	M	M	M	M	M	M	M	-
rs9608192	A/G	R	G*	R*	R	-	-	-	R	R*	R	R*	R
rs3747240	G/A	R*	R*	R*	A*	A*	A*	R*	R*	A*	A*	A*	NP
rs3747239	A/C	-	-	C*	C*	M	M*	M	-	M*	M	M	NP
	A/G	G*	G	-	-	-	-	-	NP	NP	-	R*	-
rs6007010	T/C	-	-	NP	NP	C	C*	C*	-	Y*	C	Y*	NP
rs3747238	C/T	T*	T*	-	-	Y	T	Y	Y*	Y	Y	Y	Y*
	G/T	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	-
rs3824	C/G	S	S	-	-	S	S	S	-	S*	-	-	-

rs1061280	A/G	R	R	-	-	R*	R	R	-	R*	-	-	-
rs2228617	G/C	S	S	S*	S*	S	V*	S	S*	S	S*	S*	S*
rs1061285	C/A	M	M	-	-	M	M	M	-	M*	-	-	-
rs1061282	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs9607	A/G	R	R	R*	R*	R	R*	R	R*	R	G*	R*	R*
rs1061283	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1061275	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2075780	C/T	Y	Y	-	-	Y*	Y	Y	-	Y*	-	-	-
rs2703098	T/C	Y*	Y*	Y*	Y*	Y*	B*	Y*	Y*	Y*	Y*	Y*	Y*
rs35678076	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	Y	-	-	-	Y*	Y*	-	-	-
rs2270704	T/C	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	C
rs870117	T/C	Y*	H*	Y	Y	Y	Y*	Y	-	Y*	-	-	Y*
rs17022608	A/C	-	-	-	-	M*	M	M*	-	-	M*	M*	M*
rs6419474	T/C	Y*	Y*	C*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*
rs56403982	G/A	-	-	R*	R	-	R*	-	-	-	R	R*	R*
rs41277178	C/G	-	-	-	-	-	-	-	S	S*	-	-	-
rs1134647	G/A	R*	R*	R*	A*	R	R*	A*	R*	R*	R*	A*	R*
rs870118	G/C	-	-	S	S	-	S*	-	-	-	S	S	S*
rs35345210	A/G	R	R	-	-	-	-	-	R	R*	-	-	-
rs1874804	C/T	Y	Y	Y*	Y	Y	Y	Y	-	Y*	-	-	-
rs904321	G/C	-	-	-	-	S*	S	S	-	S*	S	S	S
rs4647954	T/C	Y*	Y	-	-	low_cov	Y	Y	-	Y*	Y*	Y	-
rs1063211	A/C	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	NP
rs1543442	A/G	R*	R*	R*	R*	G	R*	R*	R*	G	R	R	R
rs4647958	T/C	C	Y	-	-	-	-	-	-	-	-	-	-
rs1063210	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs4647955	G/C	S*	S	-	-	-	S*	-	-	-	-	-	-
	C/A	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	NP
rs4647959	T/C	Y	Y*	-	-	-	-	-	-	-	-	-	-
rs1047920	C/T	-	Y*	-	-	Y	Y	Y*	-	Y*	Y	Y	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6704656	A/T	W*	W*	W*	T	T	W*	W*	T	W	T*	T*	NP
rs1043793	A/G	R*	R*	G*	G*	G	G*	G*	R	R	G*	G*	R*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs79270739	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11124658	A/G	-	-	R*	R*	-	-	-	-	-	-	-	-
rs10166395	T/C	Y*	Y*	NP	NP	Y*	B*	B*	C	Y*	Y*	C*	C*
rs1059310	T/C	Y*	Y*	Y*	C*	C	Y*	Y*	Y	Y	Y*	Y*	-
rs1037495	A/G	R*	R*	R*	G*	G	R*	R*	R	R	G*	G*	G*
rs35396088	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
	C/T	Y	Y	-	-	-	-	-	-	Y*	Y	Y	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs2229869	G/A	-	R*	-	-	R*	R*	R*	A	R	R	R	R*
rs17695156	C/T	-	-	-	-	-	Y*	-	-	Y*	Y	Y	-
rs3741651	A/G	-	-	-	-	R	R	R*	-	R*	-	-	R*
rs11557092	T/C	Y*	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*
rs10402592	T/C	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	C*	Y*	Y*
	C/T	Y	Y*	-	-	-	-	-	-	-	-	-	-
rs2163839	G/A	R	R	R*	R*	A	R*	R*	R*	R	R*	R*	R*

rs8039150	G/A	R	R	R	R	R	A	R	R	R	-	-	-
rs35490364	G/A	R*	R*	R	R	R*	R*	R*	R	R*	-	-	-
rs3751526	T/C	C*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	C*	Y*
rs7182445	G/A	A*	R*	A*	A*	A*	R*	A*	A*	A*	A*	A*	A*
rs506028	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs4930388	T/C	Y*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*
rs34775878	G/A	R*	R*	-	-	-	-	-	-	-	-	-	-
rs56234938	A/G	R*	R*	-	-	-	R*	-	-	R*	-	-	-
rs17785475	C/T	Y*	Y*	-	-	-	Y*	-	-	Y*	Y	Y*	-
rs6018257	T/C	-	W*	-	-	-	W*	-	-	-	Y	Y	W*
rs10854173	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs56273506	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs7275012	G/A	-	R*	R*	R*	-	-	-	R*	R*	R	R*	R*
rs41282798	T/C	-	-	-	-	-	K*	-	-	Y*	-	-	Y*
rs1885257	G/C	V*	B*	S*	S*	S	N*	S*	S*	N*	B*	S	S*
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11863277	T/C	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	Y*
rs9395	G/C	-	-	-	K*	-	-	-	-	-	-	-	-
rs2545167	G/T	-	K	-	-	-	K*	K*	K*	-	NP	NP	NP
rs9011	G/A	R*	-	NP	NP	R	R*	R*	NP	NP	R*	A*	NP
rs2545166	C/G	S	S	-	-	S	S	S	S	S	S*	S*	S
	A/C	M*	M	NP	NP	-	-	-	NP	NP	NP	NP	NP
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3317	G/A	R	R	-	-	R	R*	R	R	R	A*	A*	R
rs34083474	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1049649	C/A	-	-	M	M	M	M	M	-	M*	M	M	-
	G/A	-	S*	-	-	-	-	-	-	-	-	-	-
rs6968355	T/C	-	Y*	Y	Y	Y*	-	Y*	-	Y*	Y	Y	-
rs762651	G/A	-	-	-	-	-	-	-	A	R	-	-	-
rs4898444	A/G	R*	R*	-	-	low_cov	-	-	R*	R*	NP	NP	NP
rs916001	T/C	Y	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	C/G	-	-	-	-	-	S*	-	M*	S*	-	-	-
	G/A	R	R	-	-	-	-	-	-	-	-	-	NP
rs762652	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs762650	A/G	R*	R	R*	G*	R*	R*	R*	R*	R	G*	R*	-
rs1802092	G/A	-	S*	-	-	-	-	-	A*	R	-	-	-
	T/C	Y	Y	C*	Y*	-	Y*	-	Y*	Y	-	-	-
	C/G	S*	S	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76235294	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3809789	G/A	R*	R*	R*	R	R	R	R	-	R*	R	R	R
rs3809790	C/T	Y*	Y*	Y*	Y	Y	Y	Y	-	Y*	Y	Y	Y*
	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs11654523	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs12221	T/C	Y	Y	-	-	Y	Y	Y	Y	Y	Y*	-	-
rs1061162	G/A	-	-	-	-	-	-	-	-	-	R*	R	-
rs45579031	G/A	R*	R*	-	-	R*	R*	-	-	R*	-	-	R*
rs17141457	C/T	-	Y*	-	M*	-	H*	-	-	Y*	-	-	-
rs1053005	T/C	Y*	Y*	-	-	Y	Y	Y	Y	Y	-	-	Y
rs1053023	T/C	-	-	-	-	Y	Y	Y	Y	Y	-	-	Y

	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1053004	G/A	R*	A	A*	A*	-	R	R*	R*	R	R*	R	NP
rs3744483	T/C	Y*	Y*	-	-	Y	Y	Y	Y	Y	-	-	Y
rs3198502	G/T	-	-	-	-	K	K	K	K	K	-	-	K
rs1135669	C/T	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	-	T
	G/T	K	K	-	-	-	-	-	-	-	-	-	-
	C/G	-	-	-	-	-	-	-	S	S	-	-	-
rs61749920	G/T	K	K	K	K	-	-	-	-	-	-	-	-
rs1059513	T/C	Y*	-	-	-	-	-	-	-	-	-	-	-
rs12371273	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs4559	C/T	Y	Y	Y	Y	Y	Y*	Y	Y	Y	T*	T*	Y
rs324015	T/C	Y	Y	Y	Y	C	C*	C	Y	Y	C*	C*	C*
rs703817	C/T	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	T*	Y
rs15963	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs10155597	A/G	R*	-	G*	R	R*	R	R	R*	R*	R*	R*	R*
rs2306961	T/C	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs2306962	C/T	Y	Y	T*	T*	T*	T*	T*	T*	T*	T*	T*	Y
rs56066852	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R*	R*	-	-	-	-	-	-	-	-	-	-
rs885854	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
rs7601549	T/-/G	K	B*	K*	K*	K*	B*	B*	B*	K	B*	B*	B*
rs17849638	C/T	-	-	-	-	-	M*	-	M*	-	-	-	-
rs8447	G/A	R	R*	R	R	R*	R*	R*	R*	R	R*	R*	R*
rs1044220	T/C	-	-	NP	NP	low_cov	-	-	Y	Y*	NP	NP	NP
rs10251937	T/C	Y	Y	-	-	-	-	-	Y	Y	Y	Y*	-
rs28367397	G/A	-	R*	-	-	-	-	-	R	R*	A*	A	R*
rs699509	G/T	-	K*	K	K	K	K	K	K	K	-	-	K
rs11555026	C/T	-	-	Y*	-	-	-	-	T	Y*	Y	Y*	Y
rs1044141	A/G	R	R	R*	G	R	R*	R	R*	R	R*	G*	R*
rs1044217	C/T	-	-	Y*	T*	Y*	Y	Y*	T*	Y	T*	T*	NP
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs15866	T/C	-	-	C	C	Y*	Y	Y	Y	Y	-	-	NP
rs2108411	A/G	-	-	R	R*	R*	R	R	R*	R	R	R*	R
rs10233697	A/G	-	-	-	-	-	R*	-	R	R	R	R	R
rs7778665	C/T	-	-	Y	Y	Y	Y*	Y	Y	Y	-	-	Y
rs6760556	T/A	-	-	A*	W*	low_cov	W	W*	-	W*	W*	W*	A*
	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs1054537	A/G	-	-	R*	R*	R*	R*	R	-	R*	G*	G*	NP
rs7581626	G/A	-	-	R	R*	R	R*	R	-	R*	R	R*	R*
rs6741307	C/T	-	-	NP	NP	NP	NP	NP	-	Y	NP	NP	NP
rs10931726	T/C	-	-	Y	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y
rs8481	G/A	-	-	-	-	R*	R*	R*	-	-	R*	R*	-
rs9517312	G/A	R	R	-	R*	-	-	-	-	-	-	-	-
rs2031237	C/A/T	Y	Y	-	Y*	M*	M	M	-	M*	M*	M	-
rs3742134	C/T	Y	Y	-	Y	-	-	-	-	-	-	-	Y*
	C/T	-	Y*	-	-	-	V*	-	-	-	-	Y*	-
	C/T	Y*	-	-	-	-	-	-	-	-	-	-	Y*
rs7983438	T/C	Y*	Y*	-	-	Y*	Y	Y	-	Y*	Y*	Y	-
rs12463	G/A	D*	R*	R*	V*	R*	R	R	-	R*	R*	R*	N*

rs72652256	A/C	-	-	C	M	-	-	-	M*	M	-	-	-
rs6956	T/C	Y	Y	-	Y	-	Y*	-	-	Y*	-	-	Y
rs75762925	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3742136	C/T	-	-	-	-	Y*	Y	Y*	-	-	-	Y*	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs41279124	G/A	R	R	R*	R	-	R*	-	-	-	-	-	-
rs7988959	T/C	Y*	-	-	-	Y	Y	Y	Y*	Y*	Y	Y	Y*
rs13013693	G/A	R	R	R*	R*	-	R*	-	R*	R	-	-	R*
rs7618	A/G	R	R*	-	-	R*	R*	-	-	R*	R	R	R*
rs9052	G/T	-	-	K	K	K	K	K	-	-	-	-	K*
rs35393467	C/T	-	Y*	Y*	Y*	-	B*	-	Y	Y*	-	-	Y*
rs2279846	G/A	R	R	A*	A*	R	R	R	R*	R	R*	-	R
rs35496488	G/A	-	-	R	R	R	R*	R	-	-	-	-	R*
rs10263079	T/G	-	-	-	-	-	-	-	-	K*	-	-	-
rs10264967	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs950934	C/T	-	Y*	Y	Y	-	-	-	-	Y*	-	-	Y*
rs55860134	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs10247878	G/T	-	-	-	-	-	-	-	-	K*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs10264952	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6945306	G/C	-	S*	-	-	C	S*	C*	-	S*	-	-	-
rs4722266	G/A	-	-	-	-	-	R*	-	R	R	R	R	-
rs3807888	G/T	-	-	K*	K	-	K*	-	-	K*	-	-	K
rs35517396	A/G	-	-	R	R	-	-	-	-	-	-	-	R*
rs4705132	G/C	S	S	C	S	C	C*	C*	-	S*	S	C	-
rs16837029	G/A	-	-	-	-	-	S*	-	-	-	-	-	-
rs3733182	A/G	-	-	-	R	-	-	-	-	-	-	-	-
rs12413251	C/T	Y*	Y*	-	-	-	Y*	-	-	Y*	Y	Y	-
rs13882	T/C	Y*	Y*	-	Y*	C	Y	Y*	-	Y*	Y*	Y*	Y*
rs1052281	C/T	Y	Y	Y	Y	T	Y	Y*	Y*	Y*	Y	Y	Y
rs1132165	G/T	-	K*	K*	K*	K*	T	T*	-	K*	K	K*	NP
rs12784321	G/T	K	K*	K*	K*	T	K*	K*	-	K*	K	K*	K*
rs2818413	C/A	V*	V*	M	M	M	M	A	M	M	M	V*	V*
rs7914257	T/C	-	Y*	Y	Y	Y	H*	Y*	-	Y*	Y	Y	Y
rs12778987	C/A	-	H*	M*	M	M	M	M*	-	M*	M	M	M*
rs2818401	A/G	R*	R	R*	D*	R	R*	R*	R*	R	R	R	R*
rs7100410	G/A	R*	R*	R*	-	R	R*	A*	-	R*	R*	R*	R*
rs11146329	G/A	-	-	R	R	-	-	-	-	R*	-	-	R*
rs79220014	G/A	-	-	-	-	-	R*	-	-	-	-	-	R
rs1046577	T/C	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs45527342	G/C	S*	S	-	-	-	-	-	S*	S*	-	-	-
rs12784130	G/T	K	K	K*	K	K	K	K*	-	K*	K	K	K
rs71472740	GC/TT	-	Y*	Y*	Y*	Y*	Y*	T*	-	Y*	Y	Y*	NP
rs11146335	A/G	-	-	R*	R*	-	R*	-	-	-	-	-	R
rs7934876	G/C	-	-	S*	S	-	-	-	S	S	-	-	S*
rs11041943	C/T	Y*	-	-	-	-	-	-	-	-	-	-	NP
rs77081450	G/A	-	-	R	R	-	-	-	R	R	-	-	-
rs3751096	A/C	M	M*	-	-	M*	M*	M*	-	M*	M*	M*	-
rs1446464	C/A	A*	M*	M	M	M	M	M	-	M*	M	M	M
rs2289921	G/C	-	-	R*	-	S*	S	S	S*	S	S*	S	S*

rs3751095	C/T	Y	Y	-	-	Y*	B*	Y*	-	Y*	Y*	Y*	-
rs749263	T/C	Y	C	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y
rs2289923	G/A	-	R*	R	R	R	R	R	R	R	R	R	R
rs11087326	C/T	-	-	-	-	-	Y*	-	-	Y*	-	-	Y*
rs6035685	A/G	-	-	-	-	-	-	-	R*	R*	-	-	R
rs2153739	A/G	R*	-	G*	R*	R	R	R	R*	R*	R	R	R
rs2153743	A/C	-	-	M*	C	C	M	M	M*	M*	C	M*	M
rs1891227	T/C	-	-	-	-	Y*	-	-	-	-	-	-	-
rs2185675	G/C	-	S*	S*	S*	S	S	S	S*	S	S	S	S
rs2153742	T/C	NP	NP	NP	NP	-	C	Y*	NP	NP	Y*	Y*	NP
rs73074252	C/G	-	-	-	-	-	-	-	-	-	-	-	S
rs6112998	C/T	-	Y*	-	Y*	-	Y*	-	Y*	Y	-	-	Y
rs3748512	C/T	Y*	-	-	Y*	-	Y*	-	Y	Y*	-	Y*	Y
rs2153740	A/G	-	-	R*	G	R*	R	R	R*	R*	R	R	R
rs6047011	A/G	R*	R*	-	-	-	-	-	R*	R*	-	-	R
rs2153741	A/G	-	-	R*	G	R	R	R	R*	R*	R	R	R
rs16859180	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs1344642	G/A	R	R	R	R	-	R*	-	R	R*	-	-	R
rs12993599	G/A	-	R*	-	-	-	-	-	R	R	-	-	-
rs1863704	G/A	R	R	R	R	-	R*	-	-	R*	-	-	R
rs1863703	A/G	-	-	-	-	-	-	-	R	R	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4598	G/A	-	-	R*	A	-	-	-	R	R	-	-	NP
rs2071809	C/T	-	-	-	-	Y*	-	-	-	-	-	-	-
rs12315813	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs16931877	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs10842902	A/G	R	R	R	R	R	R	R	-	R*	R	R	R*
rs76179989	T/G	-	K*	NP	NP	-	-	-	G*	K*	K*	-	-
rs6073629	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2267856	G/A	-	-	-	-	-	-	-	-	-	-	-	NP
rs6073627	C/G	-	-	-	-	-	B*	-	-	-	-	-	S
	C/G	-	-	-	-	S*	B*	-	-	-	-	-	-
rs910671	G/A/T	K*	K*	-	-	low_cov	-	-	T*	K	-	K*	NP
rs6017452	C/T	Y*	Y*	-	-	-	-	-	T	Y	Y	Y*	Y*
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs6073582	A/C	M	M*	-	-	-	-	-	M	M	M	M	-
rs17420378	G/A	R*	R*	-	-	-	-	-	R	R	R	R	-
rs3795498	C/T	-	-	-	Y*	Y*	Y	Y	T*	Y	Y	Y*	-
rs11263875	G/A	-	-	-	-	R*	R*	-	-	R*	-	-	-
rs7331403	G/A	-	-	R	R*	R*	R*	R*	-	R*	-	-	-
rs6563658	G/T	-	D*	K*	K	K	K	K	-	K*	-	-	-
rs7990956	C/T	-	Y*	Y	Y	Y*	Y	Y	-	Y*	-	-	Y*
rs9532314	G/A	R	R	-	-	-	-	-	-	R*	R	R	-
rs41286135	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs41286137	G/C	-	S*	S	S	S	S*	S	-	S*	S*	S*	-
rs2953278	A/G	G*	R*	NP	NP	low_cov	G	G*	NP	NP	NP	NP	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs10743911	A/G	G	R	-	-	-	-	-	R*	R	-	-	-
rs2290717	A/G	-	R*	R	R	-	-	-	G	R	R	R	-

rs3759259	T/C	C*	Y*	NP	NP	C*	C*	C*	-	Y*	Y*	Y	C*
rs4763567	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs2298278	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs11594179	C/T	Y*	Y	-	-	-	B*	-	-	Y*	-	-	Y
rs11818043	A/G	-	-	R	R	-	-	-	-	-	-	-	-
rs35095897	T/C	C	Y	-	-	Y*	Y	Y	Y	Y	Y	Y	Y
rs7091457	T/C	B*	Y*	C*	Y*	C*	Y*	Y*	Y*	Y*	Y	Y*	Y*
rs17114803	T/C	-	-	Y*	Y*	low_cov	-	-	-	-	-	-	NP
rs41287466	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs17114810	C/T	-	-	Y*	Y	-	-	-	-	Y*	-	-	-
rs11191355	T/C	-	-	Y	Y	Y*	Y*	-	-	-	-	-	-
rs17114808	C/T	-	-	Y	Y*	Y*	-	-	-	Y*	-	-	Y*
	C/G	-	-	-	-	-	-	-	S	S	-	-	-
rs4917980	T/G	K	K	NP	NP	K*	K	G	K	K	G	K	K*
rs11596235	C/T	Y	Y	-	-	Y*	Y*	-	-	Y*	-	Y*	Y*
rs10786696	A/G	-	R*	R*	G	R	R*	R	-	R*	R	R	-
rs13377078	A/G	-	-	-	-	-	-	-	-	-	-	-	R*
rs17353856	C/T	-	-	-	-	-	-	-	Y*	Y	-	-	-
rs2306042	T/C	-	-	Y	Y	-	-	-	-	-	-	-	-
rs35758162	G/A	-	R*	R*	R	R	R	R*	-	R*	R	R	-
rs158687	A/G	G*	R	-	-	-	-	-	G	R	-	-	-
rs2290890	C/T	Y	Y	-	-	-	Y*	-	-	-	Y	Y	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs12344755	T/C	-	-	Y	Y*	-	-	-	-	-	-	-	C
rs2290887	G/A	R*	R*	-	-	-	-	-	-	R*	R*	R	-
rs13559	T/C	Y*	Y	Y	Y*	Y	Y	Y	C*	Y*	Y*	Y*	Y*
rs2306040	T/C	C*	Y	-	-	-	-	-	-	-	-	-	-
rs10217275	G/C	-	-	-	-	-	S*	S	-	-	-	-	-
rs2306041	C/T	Y*	Y	-	-	-	-	-	-	-	Y	Y	-
rs158688	A/G	R*	R	R	R	-	-	-	G*	R	R	R	-
rs41313849	G/A	-	-	R*	R*	-	-	-	-	-	R	R*	-
rs1049164	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs2290888	G/C	S	S	-	-	-	-	-	-	-	S	S	S*
rs8773	A/C	-	M*	M*	M	-	-	-	M	M	M	M	-
rs14979	G/A	-	-	R*	R*	-	-	-	-	-	R*	R	-
GA034762	G/A	-	-	-	-	-	-	-	R*	R	-	-	-
rs7251942	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs35490979	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11670130	C/A	-	-	-	-	-	-	-	M	M	M	M	-
	C/T	-	-	-	-	-	-	-	Y	Y	Y	Y	-
rs2303014	A/G	-	-	-	-	-	-	-	R*	R*	R*	R*	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs9397509	T/C	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs214976	A/G	R*	R*	R	R	-	R*	-	-	R*	R*	R*	R*
rs2256135	A/G	R	R	-	R	R	R	R	R	R	-	-	-
rs17082709	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2813490	C/T	Y	Y	-	-	-	-	-	Y	Y	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	K*
rs7775637	C/T	T*	Y*	T*	T*	T	Y*	T*	T*	Y*	T*	T*	T*
rs71575926	G/A	-	-	-	-	-	-	-	-	-	-	-	-

rs13211987	G/A	-	-	NP	NP	low_cov	R	R*	NP	NP	-	-	NP
rs4645434	C/A	A*	M*	A*	M*	A*	M*	M*	A*	M*	A*	M*	A
rs2747665	T/C	C	C	-	-	-	-	-	Y	Y*	-	-	-
rs13210127	T/G	-	-	-	-	-	W*	-	-	-	-	-	-
rs4407724	G/T	K*	K*	T*	T*	T*	K	T*	T*	K*	T*	T*	K
rs2813491	A/T	T	W	-	-	-	W*	-	W	W	-	-	-
rs2252837	C/T	Y	Y*	-	-	-	Y*	-	Y	Y	-	-	-
rs35591210	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs6913579	T/C	C*	Y*	C*	C*	Y*	C*	Y*	C*	Y*	Y*	Y*	NP
	C/A	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2252755	C/G	S	S	-	-	-	-	-	S	S	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	K	K*	-	-	-
rs214950	G/A	R	R	R	R	-	-	-	-	R*	R	R	R
rs215006	C/T	Y*	Y	T*	Y	-	Y*	-	-	-	Y*	Y*	Y
rs910415	T/C	Y	Y	-	-	-	-	-	-	Y*	-	-	-
rs9478345	G/A	R*	A	NP	NP	R*	R*	R*	R*	R*	A	A	R
rs2306914	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs1538	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs2252748	C/T	Y	Y	-	-	Y*	Y*	-	Y	Y	-	-	-
rs73633307	T/G	K	K	-	-	-	-	-	-	-	-	-	NP
rs214967	G/A	A*	R*	R*	R*	-	-	-	-	R*	A*	R*	R
rs6911096	A/T	W	W	T	W*	W*	W*	W*	W*	W*	W	W*	W
rs9383987	G/C	-	-	-	-	-	-	-	S	S	-	-	-
rs2306916	A/T	W	W	W	W	T	W*	W*	W*	W	W	W	W
rs214968	G/A	R*	R	A	R*	-	-	-	-	-	R*	R*	NP
rs9371241	G/C	-	-	-	S	S	S	S	-	S*	-	-	-
rs2147377	A/C	M	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*
rs9397102	A/G	R*	R*	G*	G*	G*	R*	G*	G*	R*	R*	R*	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
rs2813485	C/T	Y*	Y	NP	NP	-	-	-	-	Y*	-	-	-
rs12206761	G/A	-	-	-	-	R	R*	R	-	-	-	-	-
rs34905593	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3798756	G/A	R*	R*	-	R*	R*	R*	-	-	R*	R	R	V*
rs9478310	T/C	Y	Y	-	-	low_cov	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs9479297	T/C	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*
rs9371592	G/A	A*	A*	A*	A*	A*	A*	A*	A	R*	NP	NP	NP
rs214955	C/T	-	-	-	-	-	-	-	-	-	Y*	Y*	-
rs2813487	A/G	R	R	-	-	-	N*	-	R	R	-	-	-
rs2747661	A/T	W	W*	D*	-	D*	D*	-	W*	W*	D*	-	-
rs1873176	G/A	R*	R*	A*	A*	R	R*	A*	A*	A*	R	R	R
	T/G	K*	K	-	-	-	-	-	-	-	-	-	-
rs12664753	G/A	-	-	-	R	A*	A	R	R	R	-	-	R
rs17082236	C/A	M*	M	-	-	-	-	-	-	-	-	-	NP
rs6914571	T/A	W*	W	A*	A*	A*	A*	W*	A*	A*	W	W*	NP
rs2747662	T/C	C	C	-	-	-	-	-	Y*	Y	-	-	-
rs2813486	A/G	G	R*	NP	NP	-	W*	-	R*	R*	-	-	-
rs998147	T/C	Y	Y	Y*	Y	Y	Y*	Y	C	Y	Y*	Y*	Y*
	A/G	R	R	-	-	-	-	-	-	-	-	-	-

	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y	Y	-	-	W*	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	Y*	-	-	-	H*	-	-	Y*	Y	Y	-
rs508706	C/T	T*	T*	T*	T*	T*	Y*	T*	Y*	Y*	Y	Y*	T*
rs56387760	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs75790207	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs17766675	A/G	-	-	-	-	R*	R	R	-	R*	R	R	R
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs507577	G/A	-	R*	-	-	R	R*	R*	A	R*	R	R	R
rs11864149	G/A	-	-	NP	NP	-	-	-	-	-	-	R*	-
rs3814883	C/T	-	-	NP	NP	Y*	Y*	T	Y*	Y*	-	-	-
rs10445105	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs9924686	G/A	-	-	R*	R*	low_cov	A*	A*	R	R	-	-	-
rs56357942	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs4077410	A/G	-	R*	R	R	R	R	R*	R	R	R*	R*	R*
rs428073	C/T	Y*	Y*	NP	NP	Y*	-	Y*	Y*	T	Y*	Y*	Y*
	A/G	R*	R	R*	R*	low_cov	-	-	-	-	R*	R*	NP
rs14733	T/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34244923	G/A	-	-	R*	-	-	-	-	R	R	-	-	-
rs1045017	G/A	-	-	A	R	R	R	R	R*	R	-	-	-
rs2076345	C/T	Y	Y	NP	NP	Y*	Y	Y	Y*	Y	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs8103100	C/T	Y	Y	T	Y*	-	-	-	-	-	Y	Y	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs2240590	G/A	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
rs1052918	T/C	Y	Y	Y*	Y*	-	-	-	-	W*	Y	Y	-
rs8766	T/C	Y*	Y*	-	-	-	Y*	-	-	Y*	Y	Y	-
rs1261084	A/G	-	R*	NP	NP	-	-	-	-	-	R	R*	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
	A/G	-	-	-	-	-	-	-	R	R	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1261085	T/C	-	Y*	-	-	-	-	-	Y*	Y*	-	-	NP
rs3793883	G/C	R*	R*	-	-	-	R*	-	-	S*	R*	-	R*
rs56386996	T/C	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP
rs7099964	G/C	S	S	-	-	-	B*	-	-	-	-	-	S
rs28365054	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs9488	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3825663	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs3805184	A/G	R	R	G*	G*	R	R	R	R	R	R*	G*	G*
rs1008277	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2155369	C/G/T	-	-	-	-	-	-	-	-	Y*	Y	Y	Y
rs536069	A/G	R*	R*	-	-	R*	G	R*	R*	R	R*	-	R*
rs12275038	G/A	R	R	-	-	-	-	-	R*	R	-	-	-
rs7130952	C/T	Y	Y	-	-	-	-	-	Y*	Y*	-	-	-
rs520805	T/C	Y*	-	-	-	Y	Y	Y*	-	Y*	-	-	-
rs10502247	C/T	-	-	-	-	-	-	-	Y	Y	Y	Y	Y

rs612969	A/G	R*	R	-	-	G*	R	R*	R	R	-	-	-
rs586473	T/C	Y*	Y	-	-	Y	Y	Y*	Y	Y	Y	Y*	Y
rs618523	C/T	Y*	Y	-	-	-	Y*	-	Y	Y	Y	Y	Y*
rs7037246	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs35030851	G/T	K	K	K*	K	-	-	-	-	-	-	-	-
rs45505400	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs55789591	G/C	S*	S	-	-	-	-	-	-	-	-	-	-
rs45563539	G/A	R	R	R*	R	-	-	-	-	-	-	-	-
rs639225	A/G	R	R	R	R	R	R	R	R	R	R*	R	R*
rs9987817	G/A	-	-	A	R*	R	R	R	-	R*	R	R	-
rs857	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs2273719	G/A	-	-	R	R*	R	R	R	-	R*	R	R*	-
rs35357088	T/C	-	-	-	-	-	-	-	Y	Y	Y	Y	-
rs41272851	T/A	-	-	NP	NP	-	-	-	W*	W*	-	-	NP
rs542913	G/A	R	R	-	-	-	-	-	-	-	R*	-	R*
rs682632	A/C	C*	C*	C*	C*	C*	C*	C*	C*	M*	C*	M*	C*
rs2275422	G/A	R*	R*	-	-	-	R*	-	R	R	R	R	R*
rs55673450	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs6429567	C/A	M*	M*	A*	A*	M*	M*	A*	-	M	M*	A*	M
rs9429072	A/G	R*	R*	-	-	R	R	R	-	R*	R	R	R*
rs3893383	G/A	-	R*	-	-	R	R	R	-	R*	-	S*	-
rs55654750	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs78798665	T/A	-	-	-	-	-	-	-	-	W*	-	-	-
rs17853159	G/A	-	-	-	-	-	-	-	R	R	-	-	R
rs6503870	C/T	T*	Y*	NP	NP	-	-	-	T	Y*	T	T*	Y*
rs389389	T/C	Y	Y	-	-	-	-	-	Y	Y	-	-	-
rs7225128	T/C	Y	Y	NP	NP	C*	Y*	C*	Y*	Y	C*	C*	NP
rs3027472	T/C	Y	Y	Y	B*	Y	Y	Y	K*	Y*	C	C	Y*
rs11353	T/C	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y	C*	Y*	Y*
rs1059503	G/A	R*	R	-	R*	-	-	-	-	R*	-	-	-
rs7297	A/T	W*	W*	W*	W*	W	W	W	-	W*	W	W	-
rs2126540	A/C	M*	M*	C	C*	-	V*	M	-	-	C	M*	C*
	A/G	-	-	-	-	-	-	-	G*	R	-	-	-
rs1059363	G/C	C*	C*	NP	NP	low_cov	-	-	-	-	NP	NP	NP
rs2293030	A/C	-	-	M	M*	-	-	-	-	-	M	M	M
rs1800472	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1800470	G/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R
rs868	A/G	R	R	R	R	-	-	-	-	-	-	-	-
rs1590	T/G	K	K	K	K	-	K*	-	-	K*	-	-	Y*
rs334348	A/G	R	R	R*	-	-	-	-	-	-	-	-	-
rs79641064	G/A	-	-	R	R	-	-	-	-	-	-	-	-
rs7850895	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs334349	G/A	R	R	N*	R*	-	-	-	-	-	-	-	-
rs420549	G/C	S	S	S	S	-	-	-	-	-	-	-	-
rs11466512	T/A	-	-	-	-	-	-	-	W*	W*	W	W	-
	C/T	-	Y*	-	-	-	M*	-	-	-	-	M*	-
rs11466536	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs11466531	C/G	-	-	S*	S	-	-	-	-	-	-	-	NP
	G/A	R*	R*	-	-	-	-	-	-	-	R	R	-

	G/A	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*
rs214832	T/C	C*	C	C*	C	-	Y*	-	-	Y*	Y	Y	Y
rs214830	G/C	S	S	C*	C*	S*	S*	S	S	S*	S	S	S*
rs214814	G/A	-	-	-	-	-	-	-	-	-	-	R*	-
rs214803	C/A	M	M*	M*	M*	M	M	M*	M*	M	M*	M*	M*
rs214831	A/G	R	R	NP	NP	-	R*	-	-	R*	R	R	R*
rs3120276	T/C	C	Y	Y	Y*	Y*	Y	Y*	Y	Y	Y*	-	C
rs1098182	G/C	S*	S*	C*	S*	S*	S*	S*	S*	S*	C*	S*	S*
rs1199039	A/G	-	R*	-	R*	R*	R*	-	R	R	R*	R	-
	G/A	-	-	NP	NP	low_cov	-	-	-	-	-	-	-
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs6441095	T/C	C*	Y*	NP	NP	low_cov	C*	C	C*	Y*	Y*	C*	Y*
	C/T	-	-	-	-	-	-	-	-	-	Y	Y	H*
rs8177371	C/T	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	-
rs8177399	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs7932766	C/T	Y*	Y*	Y*	Y*	-	H*	-	Y	Y	Y	Y	Y
rs625413	T/C	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y
rs611953	A/G	R*	R*	G	R	R*	R*	R*	R	R	R	R	V*
rs8177374	C/T	Y*	Y*	-	-	Y	Y*	Y	-	Y*	-	-	Y*
rs3802813	G/A	R*	V*	-	-	R*	D*	-	-	R*	-	-	S*
rs8177376	T/G	-	K*	-	K*	-	-	-	K	K	K	K	K
rs3802814	G/A	R*	R*	-	-	R	R	R	-	R*	-	-	R*
	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
	C/G	-	-	S*	S*	S*	S*	S*	-	-	Y*	-	-
rs7039820	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	R	R	NP	NP	-	-	-	-	-	-	-	-
	G/A	-	S*	R	R	R*	R	R	-	R*	-	S*	R
	T/C	Y*	Y*	C	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*
rs7603340	C/T	Y*	Y	-	-	Y*	Y	Y	-	Y*	-	-	NP
rs1045327	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	-
	C/T	Y	Y	-	-	Y*	Y	Y*	-	-	-	-	-
rs16859081	G/C	S	S	-	-	S*	S	S	-	S	-	-	-
rs2291822	A/G	R*	-	-	-	-	-	-	-	-	-	-	R
rs2279723	C/A	M*	M	M	A	-	-	-	-	-	A*	A*	A
rs1497949	A/G	R*	R	G	G*	-	-	-	-	R*	G*	G*	R*
rs2654492	G/A	A*	A*	R*	R*	A*	R*	R*	R*	R*	R*	R*	R*
rs1460071	C/T	Y	Y	-	-	-	-	-	Y	Y*	-	-	-
rs17047232	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1460072	T/C	Y	Y	NP	NP	-	-	-	Y	Y	-	-	-
rs79989394	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	-	-	C	S	-	-	-	-	-	-	-	-
rs1909083	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1353681	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	Y*	Y*	Y	-	-	-	-	NP
rs41311400	G/A	-	-	-	-	R*	-	-	-	-	-	-	-
rs5743611	C/G	G*	S	-	-	-	-	-	-	-	-	-	NP
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs5743818	A/C	M	M	M*	M	-	M*	-	-	-	-	-	-

rs5743596	G/A	R*	R*	A	-	-	-	-	R*	R*	R	R	NP
rs5743565	T/C	-	Y*	Y*	-	-	-	-	Y*	Y*	Y	Y*	NP
rs3821985	G/C	S	S	S*	S	-	-	-	-	S*	-	-	-
rs4833095	T/C	-	Y*	-	Y*	Y*	Y	Y	Y*	Y	Y	Y	NP
rs5743810	A/G	R*	R*	R	R*	R	R	R	R*	R	R	R	G
rs3775073	T/C	H*	Y	Y	Y	Y*	-	-	-	W*	-	-	Y*
rs5743566	G/C	-	S*	NP	NP	low_cov	-	-	S*	S*	S*	S*	C
rs3804099	T/C	Y	Y	Y*	Y	-	-	-	Y	Y*	Y	-	Y
rs5743702	T/C	-	-	-	-	-	-	-	Y*	Y	-	-	-
rs3775290	C/T	Y	Y*	-	Y*	low_cov	low_cov	Y*	-	Y*	Y*	Y*	NP
rs3775291	C/T	Y	Y	-	-	-	-	-	Y	Y	Y*	-	NP
rs5030711	C/A	-	-	-	-	-	-	-	M	M*	-	-	-
rs5030716	C/A/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs4986791	C/T	-	-	-	-	Y	Y	Y	-	Y*	Y*	-	-
rs11536889	G/C	-	-	-	-	-	R*	-	-	-	-	-	S
rs4986790	A/G	-	-	-	-	R*	R	R	-	R*	-	-	-
rs5744168	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y	Y	Y	Y	-	-	-	Y	Y	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	R*	-	-	-	-	-	-
	T/C	Y*	Y	Y*	Y*	-	-	-	-	Y*	Y*	Y*	NP
rs5744174	A/G/T/C	R*	D*	R*	-	R	R	R	R	R	R	R	R
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs5743848	C/G	S	S	-	-	-	-	-	-	-	-	-	-
rs352140	C/T	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs501948	G/T	K*	T*	NP	NP	T*	K*	T*	T*	T	K*	T*	K*
rs526495	G/A	V*	V*	V*	A	R	R*	R*	R*	R	R*	R*	R
	A/G	R	R*	R*	R*	R*	R	R*	R*	R	R*	G	R
rs55950618	G/A	-	-	-	-	R*	R	R	-	R*	-	-	-
rs79544660	A/G	-	R	-	-	-	-	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3134031	A/G	R	R	-	-	R	R	R	R*	R*	G*	G*	R
rs3097427	C/T	Y*	Y*	-	-	-	Y	Y*	-	Y*	NP	NP	NP
rs35793208	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4872077	T/C	-	-	NP	NP	-	-	-	NP	NP	Y*	Y	NP
	C/T	-	-	T*	Y*	Y	Y*	Y	Y	Y	Y	Y	Y*
rs20576	T/G	K	K	-	-	K	K	K	K*	-	-	-	-
rs6557634	T/C	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C
rs77334826	G/C	-	-	-	-	-	-	-	S	S	-	-	-
rs13265018	A/C/G	G	G*	R*	R*	R*	R*	R*	G*	R*	R*	R*	R*
rs1047275	G/C	S	S	C*	S*	S	C	S*	S*	C	B*	S*	S*
rs11135695	G/A	R*	R*	A*	R	R	R	D*	R	R	R	D*	R
rs1129424	G/A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs74480765	G/A	-	-	-	-	-	-	-	A*	R	-	-	-
rs35763670	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs7957	T/C	-	-	-	Y*	-	-	-	Y*	Y*	Y	Y	-
rs1133782	A/G	G*	R	-	-	G*	G*	R	R	R	-	-	R*
rs12679849	C/G	-	-	-	S*	-	-	-	S*	S*	S	S	-
rs78341389	C/T	Y	Y	-	-	Y	T	Y	-	-	-	-	-
	G/A	R	R	-	-	-	R	R	NP	NP	-	-	R*

rs6557617	T/C	C	Y	-	Y*	Y*	Y*	Y*	C*	Y	Y	Y	-
rs55636833	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs767455	T/A/C/G	-	-	NP	NP	low_cov	Y	-	-	-	-	-	-
rs4149584	C/T	-	-	-	-	-	-	-	-	Y*	-	-	-
rs1061624	A/G	-	-	NP	NP	R*	R*	R*	R	R*	R*	R*	R*
rs1061631	G/A	R	R	R	R	R	D*	R	R	R	R	R	R*
rs1800621	A/G	-	-	-	-	-	-	-	-	R*	-	-	-
rs5030792	T/G	G	K	NP	NP	-	-	-	-	-	-	-	-
rs3397	C/T	T*	Y*	NP	NP	Y*	-	-	T*	Y	T*	Y*	M*
rs1061622	T/G	-	-	-	-	K	K	K	K	K	-	-	-
rs5746065	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1061642	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1061628	C/T	T*	T	NP	NP	Y*	Y	Y	T*	Y	Y*	Y*	-
rs2230622	C/T	Y	Y	-	-	Y*	Y*	-	-	Y*	Y	Y*	Y
rs11569949	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11569957	G/C	R*	-	-	R*	S*	S	S	-	V*	-	R*	-
rs476488	T/C	-	-	-	-	-	-	-	-	-	Y*	Y	-
rs1763642	C/T	Y*	Y*	T*	B*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs1131535	C/T	-	-	Y	Y	Y*	Y	Y	Y	Y	T*	Y	Y*
rs17600346	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs56119116	A/G	-	-	-	-	-	H*	-	-	-	-	M*	-
rs1131542	T/G	K	K	G*	G*	K	K*	K*	K	K	K*	K*	K
rs1131532	A/G	R	R	R*	R*	G	R*	R*	R	R*	R*	R*	R*
rs80208847	T/C	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs12942687	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs3803800	A/G	G*	G*	NP	NP	low_cov	R*	R	R*	R*	R	G*	G*
rs11552708	G/A	-	-	-	-	R	R	R	R*	R*	-	-	R*
rs6608	C/T	-	-	-	-	Y	Y	Y	Y*	Y*	-	-	-
	G/A	-	-	NP	NP	R*	R	R*	NP	NP	-	-	-
rs6763184	A/G	R	R	-	-	R	R	R	-	-	-	-	-
rs6781167	C/A	-	-	-	-	-	-	-	-	-	M*	M*	M*
rs16855789	G/A	-	-	-	-	-	R*	-	-	R*	R	R	R*
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	low_cov	A*	A*	NP	NP	R*	R*	-
rs12493632	T/C	-	-	-	-	-	-	-	-	Y*	Y	Y	Y*
	C/A	-	-	-	-	-	S*	-	-	-	M	M	M*
rs6444960	C/G	G*	S*	G*	G*	G*	G*	S*	G	G*	G*	G*	S*
rs17857452	C/T/G	-	-	-	-	-	Y*	-	-	-	Y*	Y*	Y*
rs12489279	G/A	-	-	-	-	-	-	-	-	-	R	R*	R*
rs55899038	C/T	Y	Y	-	-	-	Y*	-	-	-	-	-	-
rs12489253	G/A	-	-	-	-	-	-	-	-	-	R*	R	NP
rs12497854	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y
rs2749	C/T	-	-	-	-	-	-	-	-	-	-	Y*	Y*
rs2075759	A/G	R*	G*	G*	R*	G*	G*	R*	G*	R*	G*	G*	G*
rs7220814	A/G	G*	R	-	-	-	-	-	-	-	-	-	NP
rs1554948	T/A	W*	W*	W*	W*	W*	-	W	-	-	-	-	W*
rs6503018	G/A	A*	A*	A*	A*	A*	R*	A*	A*	A*	A*	A*	NP
rs2075760	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1554947	C/T	Y	Y	-	-	Y	T	Y	Y*	Y	T*	Y*	T
rs1056726	G/A	-	-	-	-	-	-	-	-	-	-	-	-

	C/T	-	-	-	-	-	-	Y*	-	-	-	-	-
rs75037234	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs62283330	G/A	-	-	NP	NP	R	R	R*	-	R*	A*	A*	-
rs78292793	C/T	Y*	-	-	-	-	-	-	Y	Y	-	-	-
	G/A	-	-	-	-	-	-	-	R	R	R*	-	-
	G/A	-	-	-	-	-	K*	-	-	R*	-	-	-
rs6773526	A/G	R*	R*	NP	NP	-	R*	-	R*	R	G*	R*	R*
	C/A	-	M*	-	-	-	M*	-	-	-	Y*	-	-
rs7516	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
	G/A	-	R*	NP	NP	-	-	-	R*	R	R	R	R
rs3747672	T/C	-	-	C	Y	Y*	Y*	Y	C*	Y	C	C*	Y*
	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs2278034	T/C	Y	Y	Y	Y	Y	C	Y*	Y	Y	Y*	Y*	Y*
	C/T	-	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y
rs34049168	G/A	-	R*	-	-	-	-	-	-	R*	R	R	R
rs13087251	A/G	R*	R	R	R	R	R	R	G*	R	-	-	R*
rs3747669	A/G	R*	R*	R	R	R	R	R	R	R	R*	R*	R*
rs13084875	C/T	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y	T	Y*	Y
rs33945943	G/A	A	R	NP	NP	R*	R	R	R*	-	-	-	NP
rs17734024	G/A	-	-	-	-	-	R*	-	-	-	R*	R*	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs33985989	T/C	-	-	-	-	-	Y*	-	-	-	-	-	C
rs33944167	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs7006985	A/G	-	-	R*	G	R*	-	R*	G	R*	R	R*	NP
rs74384847	A/G	-	R*	-	-	-	-	-	NP	NP	-	-	-
rs6601360	T/C	Y*	Y*	C*	C*	C*	Y*	Y*	Y*	C*	Y*	Y*	C
rs1055328	C/G	G*	S	S*	-	S*	S	S	-	-	-	-	-
rs35052906	C/A	-	M*	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs13265931	G/A	A	R	A*	A	R*	R	R	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2258946	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1539042	C/G	S*	S*	S	S*	low_cov	S	S	S*	S	S	S*	-
rs41286942	A/G	R*	R	-	-	-	-	-	-	-	-	-	NP
rs12141619	C/T	-	-	NP	NP	-	-	-	-	-	-	-	Y*
rs489941	C/A	-	-	-	-	low_cov	M*	M	M*	M*	-	-	NP
rs792310	G/A	R*	R*	R*	-	A	R	R	R*	R	-	-	R
rs1341574	A/T	W*	W*	NP	NP	T*	W*	W*	W*	W*	W	W*	NP
rs491623	G/A	-	-	-	-	R*	R*	R*	R*	R*	-	-	NP
rs1341575	A/G	G*	G	NP	NP	G*	G*	R*	G*	G*	NP	NP	NP
rs7513825	G/A	-	-	-	-	-	-	-	-	R*	R	R*	-
rs571848	A/G	NP	NP	NP	NP	low_cov	G*	R*	R*	G*	NP	NP	NP
rs12135120	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs12046751	A/G	R	R	R	R	-	-	-	-	-	R	R	-
rs9429157	G/A	K*	-	R*	-	-	-	R*	-	K*	R	R*	-
rs34282819	C/A	-	-	NP	NP	low_cov	-	-	-	-	-	-	-
rs73121298	T/C	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs13695	C/T	Y*	Y	Y	Y*	-	S*	-	-	-	Y*	Y*	-
rs17680289	A/C	-	-	-	-	-	-	-	-	-	-	-	-
rs61749876	G/A	R*	R	-	-	-	-	-	-	-	-	-	NP

rs3810610	T/C	Y*	Y	C	Y	-	-	-	Y	Y*	-	-	Y*
rs78900285	G/A	-	-	R*	R	-	R*	-	-	R*	-	-	-
rs3810609	C/T	Y	T	Y	Y*	-	Y*	-	Y*	Y*	-	-	Y*
rs1063311	C/T	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	-	-	Y*
rs13058	A/C	-	-	M*	M	-	-	-	-	-	-	-	-
rs61757984	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61757987	G/A/C	S	S	-	-	-	-	-	-	-	-	-	K*
rs9340	G/A	A*	A	R*	R*	R*	-	-	R	R*	-	-	A
rs61757982	A/G	R	R	-	-	-	-	-	-	-	-	-	R
rs76356652	A/G	-	-	R*	R	-	-	-	-	-	-	-	-
rs41282607	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs2276006	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs61387590	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs76772470	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6928	C/G	S*	S	S	S	-	Y*	-	S	B*	-	-	S
rs2276005	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs3810608	G/A	R*	-	R*	R*	-	-	-	R*	R*	-	-	R
rs61757991	G/C	-	-	-	S	-	-	-	-	-	-	-	-
rs9610271	T/C	C	Y	Y*	Y*	-	-	-	-	-	-	-	Y
rs13515	C/T	Y	Y	-	-	-	-	-	-	-	-	-	Y*
rs8139376	C/A	M*	M	M	M	M*	M*	-	M	M*	-	-	M*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs8138075	T/C	C*	Y*	Y*	Y	-	-	-	Y*	Y*	-	-	NP
rs13943	C/G	G*	G*	S*	S	-	-	-	-	S*	-	-	NP
rs11540652	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs28934578	C/T	Y	Y	-	-	-	-	-	-	Y	-	-	-
CM951226	HGMD_MUTATION	-	-	-	-	-	-	-	-	-	-	-	R
rs28934575	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs28934576	C/T	-	-	-	-	-	-	-	Y*	-	Y	T	-
CM951233	HGMD_MUTATION	-	-	-	-	-	-	-	-	-	-	-	-
CM951227	HGMD_MUTATION	-	-	-	-	-	Y	-	-	Y*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs1042522	G/C	S*	C*	C*	C*	C*	C*	C*	C*	S*	C*	C*	NP
rs28903076	G/A	-	-	R*	-	-	-	-	-	-	-	-	-
rs45470395	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs690367	A/G	R	R	R	R	R*	R	R	-	R*	-	-	-
rs28903075	A/T	-	-	-	-	-	-	-	-	-	-	-	-
rs16957715	T/G	K	K	K*	K	-	-	-	-	-	-	-	-
rs2230451	A/T	W	W*	W*	W*	-	-	-	-	-	-	-	-
rs689647	C/T	-	-	-	-	-	T	Y	-	-	-	-	-
rs560191	G/C	C*	C*	C*	S*	S*	C	S*	-	S*	-	-	-
rs2602141	T/G	K*	K	K	G	K*	K	K	-	K*	-	-	-
rs17739	C/T	Y*	Y	Y*	-	-	-	-	-	-	Y*	Y*	Y*
rs34683843	G/T	-	-	K*	K	-	-	-	-	-	K*	K*	-
rs1153933	C/T	Y*	Y*	-	-	-	-	-	-	-	-	-	-
rs61749335	C/T	-	-	-	-	-	M*	M*	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
rs1153936	G/C	S*	S*	-	-	-	-	-	-	-	-	-	-
rs76208122	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs77933928	G/A	-	-	-	-	R*	R*	R*	-	R*	-	-	-

	T/C	W*	W*	H*	Y	-	Y*	-	W*	W*	-	-	Y*
rs72485816	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs2664574	C/G	-	-	-	Y*	-	-	-	-	-	-	-	-
rs77388546	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs9844653	G/T	K*	K*	K	K*	T*	T	T*	T*	K*	T*	K*	K
rs34057105	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs35592567	C/T	-	-	-	-	Y	Y	Y	Y	Y	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	R	R	R	R*	-	R*	-	-	-	R	R	-
rs9840360	G/A	-	-	-	-	D*	D*	D*	D*	D*	-	-	R*
rs78233713	C/T	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	NP
rs35032687	G/T	-	-	-	R*	-	-	-	-	-	-	-	-
rs79179675	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs33979049	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs9840359	G/C	-	-	-	-	S	S*	S	S*	S	S	S	S*
rs9882348	A/C	-	-	-	-	low_cov	C	C*	M*	M*	M*	-	-
rs1181869	C/T	T*	T	NP	NP	Y*	Y	Y*	T*	Y*	T*	T*	T
rs1047928	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1181868	G/T	T*	T*	NP	NP	K*	K	K	T*	K	T*	T*	K*
rs1801174	C/T	Y*	Y*	-	-	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*
rs9662633	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs61735051	G/A	R*	R*	-	-	-	R*	-	-	-	-	-	R*
rs1181867	A/G	R	R*	-	-	R*	R	R	R*	R	G	R*	R
rs74489056	C/A	-	-	NP	NP	M	M	M	-	-	-	-	-
rs9659688	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs12562437	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	NP	NP	-	-	-	-	-	-	-	-
rs3203770	A/G	-	-	-	-	-	-	-	-	-	R*	R*	-
rs1062794	G/C	K*	-	-	-	S	S	S*	-	S*	S*	S	K*
rs13312727	T/G	D*	W*	W*	W*	W*	D*	W*	-	D*	H*	D*	N*
rs79616223	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs17250680	A/G	R	R*	-	-	-	-	-	-	-	-	-	-
rs10870140	T/C	Y	Y	Y*	Y*	low_cov	C*	C*	C*	Y	C*	C*	C*
rs7852970	G/A	R	R	R*	R*	R*	R	R	R*	R	A*	A*	R*
rs10781523	T/C	Y	Y	Y*	Y*	-	-	-	-	-	Y	Y*	Y*
rs10870141	G/A	R	R	-	R	A*	R*	R*	A*	R	A*	A*	R*
rs3739942	C/T	Y	Y	Y*	Y	T*	Y*	T*	T*	Y*	T*	Y*	Y*
rs33980500	C/T	-	-	-	-	-	-	-	Y	Y	-	-	Y
rs76228616	G/C	-	-	NP	NP	low_cov	-	-	-	-	-	-	-
rs13190932	G/A	-	R*	-	-	-	-	-	R	R	-	-	R
rs1043730	G/T	K	K	T*	K*	-	-	-	T*	K	K*	K*	T*
rs268566	G/C	S*	S*	NP	NP	low_cov	C*	C*	NP	NP	NP	NP	NP
rs6051637	T/C	-	-	NP	NP	C*	Y*	C*	-	Y*	Y*	Y*	-
rs7260693	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs11537607	C/T	-	-	-	-	-	-	-	-	-	Y	Y	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs6115830	C/T	-	-	-	-	T	T	Y*	Y	Y	Y	Y	Y*
rs7799818	T/C	-	-	NP	NP	low_cov	Y*	Y*	-	Y*	Y	-	Y*
rs1673205	T/A	A*	A*	A*	A*	W	W*	W*	A	W	W	W	A*
rs1673203	G/A	-	-	-	-	R*	R	R*	-	R*	R*	R*	-

rs1673204	T/C	Y	Y	NP	NP	low_cov	C*	C*	-	Y*	Y*	Y*	NP
rs2305120	G/A	R	R*	-	-	R*	R*	R	-	-	-	-	-
rs3816328	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs35834438	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs41296188	A/G	-	-	-	-	low_cov	-	-	NP	NP	-	-	NP
rs6537825	A/G	G*	R*	R*	G*	G*	G*	R*	G*	R*	G*	G*	R*
rs1230795	G/A	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	NP
rs219815	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs41633	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs56290902	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs219816	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs34964388	G/A	-	-	-	-	R*	R	R*	-	R*	-	-	-
rs35310331	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs55702649	G/C	-	-	-	-	-	-	-	S*	S	-	-	-
rs73145606	G/A	-	-	-	-	-	-	-	-	-	-	R*	-
	C/T	-	-	-	-	-	Y*	-	-	-	Y*	-	-
rs739441	C/T	NP	NP	NP	NP	low_cov	Y*	Y*	Y*	T	NP	NP	Y*
	A/G	-	-	-	-	-	R*	-	-	-	-	-	-
rs2809244	A/C	M*	M*	M	M	M*	M*	M*	M*	M	M	M	M
rs17149898	C/T	-	-	-	-	-	-	-	-	-	-	-	M*
rs1073123	A/G	R*	R*	-	-	R	R*	R	R	R	-	M*	R
rs58612431	A/C	-	-	-	-	-	-	-	M	M	-	-	-
	C/A	-	-	-	-	-	H*	-	-	-	-	-	-
rs10491534	T/C	-	-	-	-	Y*	Y	Y	-	-	-	-	Y
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1050700	C/T	Y*	Y*	Y*	Y	Y*	Y*	T*	Y*	Y	Y	Y	Y
rs739442	G/A	R	A*	R	-	R*	R*	R	R*	R	R*	R*	-
	G/A	-	-	-	-	-	-	-	R	R	-	-	-
rs11553763	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	R	R	R	R	R	R*	R	R	R	R	R	R*
rs45517185	C/T	-	-	Y*	Y	-	-	-	-	Y*	-	-	-
rs79357051	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs45477195	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs79518513	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs34012042	C/T	-	-	Y*	Y	-	-	-	-	Y*	-	-	-
rs1051771	G/C	S	S	-	D*	S*	S*	-	-	B*	-	-	K*
rs13337626	T/C	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs1748	T/C	Y	Y	-	-	-	Y*	-	Y	Y	-	-	-
rs1800720	C/T	-	-	NP	NP	-	-	-	Y*	Y	-	-	NP
rs17135764	T/C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3800297	A/G	R	R*	NP	NP	low_cov	-	-	-	-	-	-	NP
rs45515398	C/T	Y*	Y*	-	-	Y*	Y	Y	-	Y*	-	-	-
rs3800298	T/C	Y	Y	-	-	low_cov	Y*	-	-	-	NP	NP	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs3800294	G/C	S*	S*	NP	NP	NP	NP	NP	-	-	-	-	S*
rs41275944	C/A	-	-	-	-	-	-	-	-	-	-	-	M
rs16957250	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-

rs12437637	C/G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs6493068	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
	A/G	-	-	-	-	R	R*	R	-	-	-	-	-
rs17176133	C/T	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs2230513	C/T	-	-	-	-	low_cov	-	-	-	-	-	-	NP
rs9878419	G/A	R*	R	R	R	R*	R*	-	R	R	R*	R*	R
rs4686377	G/A	-	-	-	-	R*	K*	-	-	R*	-	R*	R*
rs10497520	T/C	Y*	Y*	Y*	C*	C*	Y*	Y*	Y*	Y*	Y	Y	Y
rs36021856	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs17355446	G/A	-	-	-	-	-	R*	-	-	R*	-	-	-
rs72648998	C/T	-	-	-	-	-	-	-	-	-	-	-	Y*
rs12693164	T/C	Y	Y	-	-	-	Y*	-	-	-	-	-	-
rs16866425	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs7585334	C/T	T*	T*	T*	T*	low_cov	T*	T*	T*	T*	Y*	Y	T*
rs72648970	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs12993099	A/G	R	R	-	-	-	-	-	-	-	-	-	-
rs35813871	G/A	R*	-	-	-	R	R	R	-	R*	-	-	-
rs72647851	C/T	Y	Y*	-	-	-	-	Y*	Y	Y	-	-	-
rs2042995	T/C	Y*	Y	-	-	low_cov	-	-	NP	NP	Y*	Y*	NP
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs72650011	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs72650006	T/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	R	R*	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	R	R*	-	-	-	-	-	-	-	-
rs12693166	C/G	S*	S*	-	-	-	-	-	-	-	-	-	-
rs72648904	G/A	R	R*	-	-	-	-	-	A	R*	-	-	-
rs2742347	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs4894043	T/C	Y*	Y*	C*	Y*	C*	Y*	Y*	Y*	Y*	Y*	C*	Y*
rs76771282	A/G	-	-	-	-	R	R	R	-	R*	-	-	-
rs2291310	C/T	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs922985	C/G	S*	S*	NP	NP	low_cov	G*	G*	G*	G*	S*	S*	NP
rs72648927	G/C	-	-	-	-	-	-	-	-	-	-	-	R*
rs72648937	C/T	M*	-	-	-	-	-	-	-	-	-	-	-
rs2306636	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2627037	G/A	-	-	-	-	-	-	-	-	-	R*	R	-
rs922984	T/C	Y*	Y*	C*	C*	C*	C*	C*	C*	C	Y	Y	NP
rs72648909	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4893853	T/C	-	-	-	-	-	-	-	-	-	Y*	Y*	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs72648949	G/C	-	-	-	-	-	-	-	-	-	-	-	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	R*
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs1883085	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs922986	T/C	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	NP
rs2562838	T/C	Y	Y	-	-	-	-	-	-	-	Y	Y	Y*
rs1883084	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs6715406	C/T	Y	Y	Y	Y*	Y	Y	Y	-	Y*	Y	Y	Y
rs17355460	C/T	-	-	-	-	-	-	-	-	-	-	-	-

rs16866465	T/G	K	K	-	-	-	-	-	-	-	-	-	K*
rs72648982	T/C	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs13390491	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs13398235	G/A	-	-	-	-	-	-	-	-	R*	R	R	R*
rs2562836	T/A	W	W	-	-	-	-	-	-	-	W	W	W*
rs2291311	C/T	Y*	Y*	T	Y*	T*	Y*	Y*	Y*	Y*	Y	Y	Y*
	T/A	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*
rs35112591	C/T	Y	Y	-	-	-	-	-	-	-	-	-	Y*
rs16866473	A/G	-	-	-	-	-	-	-	-	-	R	R	-
rs1552280	G/A	A*	A*	A*	A*	low_cov	A*	A*	A*	A*	A*	A*	NP
rs36051007	C/T	-	-	T	Y*	Y*	Y*	-	-	-	Y*	-	NP
	T/C	-	-	-	-	Y	Y	Y	-	-	-	-	-
rs2291306	G/A	R	R	-	-	-	-	-	R	R	-	-	-
	A/G	-	-	-	-	-	-	-	R*	R	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2291312	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs746578	C/T/A	Y	Y	-	-	-	-	-	-	-	-	-	Y*
rs72648907	C/T	-	Y*	-	-	-	-	-	-	-	-	Y*	-
	G/T	-	-	-	-	-	K*	-	-	-	-	-	-
rs2562839	G/A	R	R	-	-	-	-	-	-	-	R	R	R*
rs4894048	C/T	-	Y*	-	Y*	-	N*	-	Y*	Y*	Y	Y	-
	G/A	-	-	-	-	-	-	-	R	R*	-	-	-
	C/T	-	-	-	-	-	Y*	-	Y	Y*	-	-	-
rs164637	G/A	R	R	-	-	-	-	-	-	-	R	R	-
	T/A	-	-	-	-	-	-	-	-	-	-	-	-
rs7658300	C/T	-	-	T*	T*	Y*	Y	Y	Y	Y	Y*	T	T*
rs1507924	T/A	A*	A*	A*	A	A*	A*	A*	A*	A*	A*	A*	A*
rs2230594	G/C	S	S	C*	S*	S*	S*	S*	S*	S	C*	S*	C
rs1567217	G/A	R	R	-	-	R*	R*	R	R	R*	-	-	-
	G/T	-	-	-	-	-	R*	-	-	-	-	-	-
rs12720356	A/C	-	-	-	-	-	-	-	M	M	-	-	-
rs35018800	G/A	-	-	-	-	-	-	-	-	-	R	R	-
rs12720355	G/A	R*	A	-	R*	-	-	-	-	-	-	-	-
rs280523	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2304256	C/A	-	-	-	-	A*	M*	M*	M*	M	A*	A*	NP
rs2304255	C/T	T	Y	Y*	Y*	-	-	-	-	-	-	-	NP
rs12720222	C/T	-	Y*	-	-	-	-	-	-	-	-	-	-
rs2790	A/G	-	R*	-	-	-	-	-	-	-	R	R	NP
rs699517	C/T	Y*	Y	Y*	-	-	Y*	-	T	Y	Y*	Y	Y*
rs62001448	G/T	K	K	K	K	-	K*	-	-	K*	K	K	K
	C/T	-	-	-	B*	-	M*	-	-	Y*	-	-	-
rs2277536	T/C	-	Y*	-	-	-	-	-	-	-	-	-	-
rs12148316	T/A	-	-	W*	W*	-	W*	-	A	W	-	-	-
	C/G	-	-	-	-	S*	S	S*	-	-	-	-	-
rs45590234	A/G	-	-	-	-	-	-	-	R	R	-	-	-
	C/T	-	Y*	-	-	-	-	-	-	-	-	Y*	-
rs45486998	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs16869352	T/C	-	-	-	-	-	-	-	Y*	Y*	-	-	-
rs9650002	T/C	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	Y*	-	-	-
	C/T	-	-	-	-	Y*	Y	Y	-	Y*	-	-	-

rs3748699	G/A	-	-	-	-	R*	R*	R	-	-	-	-	-
rs36046806	C/T	-	-	-	-	-	-	-	-	-	Y*	-	-
rs3790672	T/C	-	-	NP	NP	-	-	-	Y*	Y*	-	-	-
rs526374	T/C	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
rs4656465	G/A	R	R	-	-	R	R	R	R	R	R	R*	A*
rs41268528	C/G	-	-	-	-	-	-	-	-	-	-	-	S*
rs480050	T/C	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
	G/C	-	R*	-	-	-	R*	-	-	-	-	-	-
rs506813	C/T	-	-	Y*	Y	-	Y*	-	-	Y*	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	Y	Y*	-
rs3790671	G/A	-	-	R*	-	-	-	-	R*	R*	-	-	-
rs11553301	G/A	-	-	-	-	R	R	R	-	R*	-	-	-
rs6426943	A/C	M	M	-	-	M	C	C	M	M	M	M*	C
rs536109	A/C	M*	-	M	M	M	M	M	-	M*	M	M	M*
rs1062174	C/T	Y	Y	Y	Y*	-	-	-	Y	Y	Y	Y	-
rs1045901	A/G	R	R	R	R	-	-	-	R*	R	R	R	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs41271979	A/G	G	R*	-	-	-	-	-	-	-	-	-	NP
rs9405	T/G	K	K	K	K*	-	-	-	K*	K	K	K*	NP
rs2342714	C/T	Y*	Y*	Y*	-	-	-	-	Y*	Y	Y*	Y*	-
rs10737484	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs2236581	A/G	R	R	R*	R*	-	-	-	G	R	R*	R*	-
rs41271975	A/C	M	M	-	-	-	-	-	-	-	-	-	-
rs905718	G/A	R	R	R*	R*	-	R*	-	A	R	R	R*	-
rs13284032	G/T	-	-	-	-	-	-	-	-	-	-	-	-
rs16924634	C/A	-	-	-	M*	-	-	-	-	M*	M	M*	-
	C/A	-	-	-	-	-	Y*	-	-	-	-	-	Y*
rs13286720	T/C	-	-	-	-	-	-	-	-	-	-	-	NP
rs3088051	T/C	-	-	-	-	-	-	-	-	-	-	-	Y*
rs11546871	C/T	-	-	-	-	Y	Y*	Y	-	-	-	-	Y
rs11616018	C/T	Y*	Y*	Y*	Y*	T	H*	Y*	Y*	Y*	Y*	T	Y*
rs9481	A/G	NP	NP	NP	NP	NP	NP	NP	G*	G*	NP	NP	R*
rs7138581	G/C	-	S*	S*	S	-	-	-	-	-	-	-	-
	C/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4964914	A/G	R*	R*	G*	G*	G*	R*	R*	G*	R*	G*	G	G*
rs13061943	C/T/-	Y*	Y	NP	NP	-	Y	Y*	NP	NP	T*	T*	NP
rs1139538	A/G	R*	R	G*	R*	R	R	R	G*	R	G*	G*	R*
rs1801019	G/C	-	S*	S*	S	-	S*	S*	S*	S*	S	S	-
rs13146	C/T	Y*	Y*	Y*	Y	-	M*	-	-	Y*	Y	Y	Y*
rs10410987	G/C	C*	C*	S*	S*	C*	C*	C*	C*	S*	S	S*	NP
rs34677724	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs45505499	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs4808161	C/G	S*	G	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	G/A	-	-	R*	R	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs10416469	C/T	-	-	-	-	low_cov	-	-	-	-	-	-	NP
	A/C	-	-	-	-	-	-	-	-	-	M	M	-
rs4850	G/A	-	-	-	R	-	-	-	-	-	-	-	R*

rs5918130	T/C	-	Y	Y*	Y*	-	-	-	-	-	C*	Y*	NP
rs10463	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	T/G	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	R	R*	-	-	-
	G/A	-	-	-	-	-	R*	-	-	-	-	S*	S*
rs17380141	G/A	-	-	R	R	R	R	R	-	R*	R	R	R
rs12086448	A/G	-	-	R	R	G	R	G*	-	R*	R	R	R
rs17380127	A/C	-	-	M	M*	M	M	M*	-	-	M	M	M
rs56100731	C/T	V*	M*	T*	Y*	-	-	-	-	-	-	-	-
rs45448796	G/C	C	S*	NP	NP	-	-	-	-	-	S	S*	S*
rs602990	T/A/C/G	Y*	Y	-	Y	Y*	Y*	C*	Y*	Y*	Y*	Y*	-
rs56233098	G/A	-	-	-	-	-	-	-	-	-	R*	R*	-
rs509590	T/C	Y	Y	-	-	Y*	Y*	Y*	C*	Y	C	Y	Y
rs9722384	G/A	-	R*	-	-	-	K*	-	-	-	-	-	-
rs56296048	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs77378026	C/G	-	-	-	-	-	Y*	-	-	-	-	-	-
rs59679106	C/T	-	-	-	-	-	-	-	-	-	-	-	Y
rs8676	G/A	R	R	A	A*	A	A*	R*	A*	R*	A*	A*	R*
rs62618754	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
rs2769668	T/C	Y	Y	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*
rs12410676	G/A	-	-	-	-	-	-	-	-	-	-	R*	R
rs7528153	T/A	W*	A	-	-	A	A*	W*	W*	W*	W*	W*	NP
rs8458	G/A	R	R	NP	NP	R	A*	A*	A*	A*	A*	R*	NP
rs12403266	C/G	-	-	-	-	-	Y*	-	-	-	-	-	S
rs572013	A/G	G*	R*	G*	G*	G*	R*	G*	R*	R*	G*	G*	G*
rs3599	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs11887	C/T	Y*	Y	-	-	-	S*	-	-	-	-	-	Y
rs3025036	G/C	S*	S*	S*	C*	S*	S	S	S	S	S*	S*	S*
rs3025009	G/A	R	R	R*	A*	R*	R	A*	A*	R*	A*	A*	R
rs833068	G/A	R	R	-	-	-	-	-	-	-	-	-	-
rs3025052	T/C	Y*	Y*	Y*	C*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*
rs3025007	C/T	T	Y	T*	T*	T*	T	T*	T*	T	T*	Y*	-
rs2146323	C/A	-	M*	M	M	M	M	M	M*	M*	M	M*	M*
rs3025039	C/T	Y	Y	Y*	-	Y	Y	Y	-	Y*	S*	-	Y*
rs3025021	T/C	NP	NP	NP	NP	Y*	Y*	Y*	NP	NP	NP	NP	NP
rs3025049	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs865577	G/T/C	S	S	-	-	-	-	-	-	-	-	-	-
rs3025012	A/G	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP
rs3025050	C/T	-	-	-	-	low_cov	-	-	Y*	Y	-	-	-
rs3025028	C/G	S*	G	S*	S*	S*	S*	S*	S	S	S*	S	S*
rs3025035	C/T	-	-	Y	Y*	-	-	-	-	-	-	-	-
rs3025000	C/T	Y	Y	-	-	Y*	Y*	-	-	-	-	Y*	-
rs3025029	G/A	R*	R	-	-	R*	R*	R*	-	-	S*	-	-
rs3025030	G/C	S	S	-	-	S	S	S	-	S*	-	-	-
	G/C	S*	S*	NP	NP	-	-	-	-	-	-	-	-
rs3025018	C/T/G	Y	Y	-	-	-	-	-	S	S	-	-	S*
rs25648	C/T	Y*	Y*	-	-	-	-	-	-	Y*	-	-	Y*
rs3025022	C/T	Y*	Y*	T*	T*	T*	Y*	Y*	Y*	Y	Y*	Y*	NP
rs3025053	G/A	-	-	-	-	-	-	R*	-	R*	-	-	R*
rs3024994	C/T	-	-	-	-	-	-	-	-	-	-	-	Y

rs41282644	G/A	K*	-	-	-	-	-	-	R	D*	-	-	-
	C/T	-	-	Y	Y	-	-	-	-	-	-	-	-
rs3024998	C/T	Y	Y	-	-	-	-	-	-	-	-	-	-
rs3025015	G/A	-	-	R*	R	-	R*	-	-	-	-	-	R
rs3024997	G/A	R	R	-	-	-	-	-	-	R*	-	-	-
	C/G	-	-	-	-	-	S*	-	-	-	-	-	-
rs3025032	T/C	Y*	C	C*	C	Y*	Y	Y	Y	Y	Y*	Y*	Y*
rs833069	T/C	Y	Y	-	-	-	Y*	-	-	-	-	-	-
rs3025006	C/T	Y	Y	-	-	-	-	-	-	-	-	-	Y
rs3025010	T/C	-	-	Y	Y	Y*	Y	Y	-	Y*	Y*	C*	Y*
rs3025033	A/G	R	R	-	-	R*	R	R	-	R*	-	-	-
rs833070	T/C	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y
rs2010963	C/G	S	S	S*	S*	S	V*	V*	S*	S*	S*	V*	V*
rs62401162	T/C	-	Y*	Y	Y	Y	Y	Y	-	Y*	Y*	Y*	Y*
rs3025040	C/T	Y	Y	Y*	-	Y	Y*	Y	Y*	Y*	Y*	-	Y*
rs10434	A/G	R	R*	R*	R*	R	R*	R	R	R	R*	R*	R*
rs28940298	C/T	-	-	-	-	-	M*	-	-	-	-	M*	-
rs5030821	G/A	-	-	-	R*	-	-	R	-	-	R*	-	-
rs35460768	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs779805	G/A	R*	R*	R*	R	R*	R*	R	R*	R	R*	R*	R*
rs1642742	G/A	R*	R*	R*	R*	R	R*	R	R*	R	R	R*	R*
rs3818605	C/T	-	-	-	-	-	Y*	-	Y*	Y*	T*	Y*	Y*
rs61729231	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs2145635	A/G	R*	R	R	G*	R*	R	R	G*	R	-	-	G*
rs11688078	C/T	Y	Y*	NP	NP	low_cov	-	-	-	-	-	-	-
rs1051061	A/G	R*	-	NP	NP	R*	R	-	NP	NP	-	-	NP
rs56647707	G/A	R	R	R*	-	R*	R*	R*	R*	R*	-	-	R*
rs74736305	G/A	R*	R*	R*	-	-	R*	R*	-	R*	-	-	R
rs11548322	T/C	-	-	-	-	-	-	-	-	Y*	-	-	Y
rs74486126	T/C	Y*	Y*	Y*	-	-	Y*	Y*	-	Y*	-	-	Y
rs11548323	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs11548324	C/T	-	-	-	-	-	-	-	-	-	-	-	M*
rs4731119	G/C	S*	-	NP	NP	NP	NP	NP	NP	NP	-	-	S*
	A/G	-	-	-	-	low_cov	-	-	-	-	-	-	-
	T/C	-	-	NP	NP	low_cov	-	-	-	-	NP	NP	NP
rs11550942	C/A	-	-	-	M	low_cov	M*	-	M	M	-	-	-
rs62472101	G/A	R*	R*	A*	R*	R	R*	R	R	R	R*	R*	-
rs944952	T/C	Y*	C*	C*	Y*	Y*	C	S*	C*	Y*	Y*	Y*	Y*
rs12375547	A/G	R	R	R*	G	R*	R	R	R*	R	-	-	-
rs876663	A/G	R	R	R*	R*	low_cov	R	G*	R*	G	-	-	-
rs2274970	A/G	G*	R*	G*	G*	G*	R*	G*	R*	G*	G	G*	G
rs1157910	A/G	R	R	-	-	G*	R*	R*	G*	R	R	R	R*
rs13429203	A/G	-	-	R	R	-	-	-	-	-	-	-	-
	G/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs76703993	A/G	-	-	R	R*	-	-	-	-	-	-	-	-
rs4667281	G/T	K	K	-	-	K	T*	T*	T*	K	K	K	-
rs2289223	T/C	Y	Y	-	-	-	-	-	-	-	-	-	-
rs77997560	C/T	-	-	Y*	Y	-	-	-	-	-	-	-	-
rs10770042	A/G	G*	R*	R*	R*	-	-	-	-	-	-	-	R*

rs34105816	A/G	-	-	-	-	-	-	-	-	-	-	-	-
rs7301320	T/C	-	-	-	-	C	C*	C*	C*	Y	C*	C*	Y*
rs2929970	G/A	R	R	A*	A	R	R*	A*	A*	R	R	R	-
rs12164193	C/T	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y
rs2929969	G/A	R	R	R*	A*	R*	R*	R*	R*	R*	A*	A*	R
rs3739261	T/C	-	-	-	-	-	Y*	-	-	Y*	Y	Y	Y
rs10849577	C/T	Y	Y	-	-	-	H*	-	Y	Y	-	-	-
rs2286006	T/C	-	Y	NP	NP	-	-	-	NP	NP	-	-	-
rs1012729	G/A/C	R	R	R	R	-	-	-	R	R	R	R	R*
rs9804992	G/A	-	R*	-	-	-	R*	-	-	R*	R	R	R
rs3168640	T/C	H*	C	C*	Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*	H*
rs7300444	C/T	-	-	Y	Y	-	-	-	-	Y*	-	-	Y
rs10774466	A/G	G	R	-	R*	-	-	-	R	R	R*	R	G
	C/G	-	-	NP	NP	-	V*	-	G	S	-	-	NP
rs12828016	G/T	K	K*	K*	K*	T*	K*	T*	K*	K	NP	NP	NP
rs956868	A/C	M	M	C*	C*	low_cov	M	C*	M	M	C	C*	C*
rs1060499	T/C	Y*	Y	-	-	-	-	-	Y	Y	-	-	NP
rs4766334	C/T	Y*	T*	T*	T*	T*	T*	T*	T*	T*	NP	NP	T*
rs11554421	G/A	R	R	NP	NP	-	-	-	-	-	-	-	-
rs2286007	C/T	-	-	-	-	Y*	Y	Y	Y	Y	-	-	-
rs4744216	C/G	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	-
rs1463544	G/C	S	S	S*	S*	-	-	-	S*	S*	-	-	S
rs11787888	T/C	-	-	-	-	-	-	-	-	-	Y	Y	-
rs4743913	G/C	S*	S*	C*	S*	C*	B*	S*	C*	S*	C*	C*	S*
rs55981123	G/A	R*	R*	-	-	-	R*	R*	-	R*	R	R	-
rs2169756	A/G	R*	G	NP	NP	G*	R*	R*	G*	R*	R*	R*	R*
rs4743914	A/G	R*	G*	G*	G*	G*	R*	G*	G*	R*	R*	G*	R*
rs10992704	A/G	R	R	R*	R	-	-	-	R*	R	-	-	R
rs7020940	A/G	R*	R*	G*	R*	G	R*	G*	R*	R*	R*	R*	R*
rs4744201	C/T	Y	Y	Y*	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y
rs12000967	G/C	-	-	-	-	-	-	-	-	-	S	S	S*
rs41278286	C/T	Y	Y	-	Y	-	-	-	Y*	Y	-	-	Y
rs36081907	C/T	-	-	-	-	-	-	-	-	-	Y	Y	Y*
rs41296061	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	-	-	-	-	-	-	S*
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs34976687	C/T	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
rs12553462	A/G	-	-	R*	R	-	-	-	R	R*	-	-	-
rs6479474	G/T	-	-	-	-	-	-	-	-	-	K	K	-
rs10761203	G/A	R	R	-	R	R	R	R*	R	R	R	R	R
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
rs56099549	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	S
rs77272502	C/T	-	-	-	-	-	Y	Y*	-	Y*	-	-	-
rs1051886	G/A	R*	R*	R	R	R	R	R	R*	R*	R	R	R*
rs35034312	G/A	-	R*	R	R	-	-	-	-	-	-	-	-
rs833842	A/C	M	M*	M*	M*	M*	M*	-	C*	M	-	M*	M*
rs833843	G/A	R	R	R*	R	R	R	R	A*	R	R	R	-
rs3741627	T/G	K*	K*	K	K	K*	K	K	K*	K*	K	K	K*

rs2707466	C/T	Y*	Y*	M*	-	Y*	Y	Y*	Y*	Y*	Y	T*	-
	G/C	S*	S*	S*	S*	S*	S	S*	S*	S*	S	V*	S
rs2908004	G/A	R	R	-	-	R	R	R	R	R	R	R	R*
rs35391640	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs17143305	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs2024233	G/A	A*	R*	A*	A*	R	A	R*	A	A	R*	R*	NP
rs2228946	C/T	Y	Y	-	-	Y*	Y	Y	-	Y*	-	-	-
rs6972479	G/A	R	R	-	-	R*	R	R*	-	R*	-	-	-
rs4730775	C/T	Y	Y*	Y	Y	Y	Y	Y	T	Y	-	-	Y*
rs11102484	C/G	S	S	NP	NP	S*	S	S*	S*	S	-	-	S
rs6668533	G/A	R	R	A	A	R*	-	-	-	-	A	A	R
rs77398753	G/A	-	-	-	-	-	-	-	-	R*	-	-	R
rs2273368	C/T	-	Y*	-	-	Y	B*	Y	Y	Y	-	-	-
	C/T	-	-	NP	NP	-	-	-	-	-	-	Y*	-
rs910697	A/G	R	R	R*	R*	R	R	R	R	R	R*	G*	R
	G/A	-	-	-	-	-	R*	-	-	-	-	-	-
	T/A	-	-	-	-	-	-	-	-	-	W	W*	-
rs752107	T/C	-	-	NP	NP	C	Y	Y*	Y*	Y	Y	Y	Y
rs41270177	A/G	-	-	R*	R*	R	G*	G*	-	-	-	-	-
rs41270175	C/A	-	-	M*	-	NP	NP	NP	-	-	NP	NP	NP
rs6678992	T/C	-	-	-	-	-	-	-	Y	Y	-	-	-
rs2235528	C/T	-	-	-	-	Y	Y	Y	-	Y*	-	-	-
rs56318008	C/T	Y	Y	Y*	Y*	-	-	-	-	-	-	-	Y
rs41266029	C/T	-	-	-	-	-	-	-	-	-	Y*	Y*	-
rs6676241	T/C	-	-	-	-	-	-	-	Y*	Y	-	-	-
rs55938609	G/C	C	S*	NP	NP	-	-	-	-	-	-	-	S*
	G/A	-	-	-	-	-	R	-	-	R*	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	R*	R	NP
	C/T	-	-	-	-	-	-	-	-	-	-	-	NP
rs1829556	T/C	Y	Y	Y*	Y*	Y	Y	Y	-	Y*	Y	Y	Y*
rs17055392	A/G	-	-	-	-	-	-	-	-	-	-	-	NP
rs3773606	T/A	W	W	W*	W	-	-	-	-	-	-	-	-
rs1047898	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs75309592	A/G	-	-	-	-	-	-	-	R	R	-	-	-
rs10865994	T/A	W	W	W*	W*	W*	W	W	-	W*	W*	W	-
rs11708810	T/A	-	-	NP	NP	-	-	-	-	-	W*	-	NP
rs669889	G/C	S*	S	S*	S	S	S	S*	-	S*	-	S	-
rs3803163	G/A	-	R*	-	R*	-	-	-	R	R	-	-	-
rs3803164	C/T	Y*	Y*	T*	Y*	T*	Y*	Y*	Y	Y	Y*	T*	Y*
rs13417214	G/A	-	-	NP	NP	-	-	-	-	-	-	-	NP
rs3796317	A/C	M	M	-	-	M	M	M	-	M*	-	-	C
rs3796314	C/T	Y	Y	-	-	Y	Y*	Y	-	Y*	-	-	Y
rs12487265	C/G	-	-	-	-	-	S*	-	-	S*	S*	S*	-
rs1124480	T/C	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	-
rs3796316	A/C	M	M	-	-	M	M	M	-	M*	-	-	M
rs77474099	G/A	R	R	NP	NP	-	R*	R*	-	-	-	-	A*
rs3762719	A/G	-	-	-	-	-	R*	-	-	-	-	-	-
	T/C	-	-	-	-	-	-	-	-	-	-	-	-
rs1946620	C/T	Y	Y	-	-	Y	Y*	Y	-	-	-	-	T
rs1549973	G/A	R	R	-	-	R*	-	-	R*	R	-	-	R

rs2163910	C/A	-	M*	-	-	-	M*	-	-	M*	M	M*	-
rs9840635	T/C	Y	Y	-	-	Y	Y	Y	-	Y*	-	-	-
rs78437334	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	Y*	-	-	-	-	-	-
	C/T	-	-	NP	NP	-	-	-	NP	NP	-	-	-
rs9330785	T/G	-	-	K*	-	K*	-	-	-	K*	-	-	K*
rs73175048	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs11544453	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs67976848	G/C	-	-	-	-	-	-	-	-	R*	-	-	R*
rs75343830	T/G	-	-	-	-	-	-	-	-	-	-	-	-
rs9723264	A/G	-	-	-	R*	-	-	-	-	-	-	-	-
	G/A	-	-	NP	NP	-	-	-	-	-	-	-	-
rs6596422	G/A	R*	R*	-	-	R*	R	R	-	R*	-	-	R
rs4574537	T/C	Y*	Y*	-	-	Y	Y*	Y	Y*	Y	Y*	Y*	-
rs12520886	C/T	-	-	-	-	Y*	Y	Y	Y	Y	-	-	-
rs10036244	A/G	-	-	R*	G	-	-	-	-	-	-	-	R*
rs3793772	T/C	-	-	-	-	Y	C	Y	-	Y*	Y*	Y	Y*
rs11190581	T/G	-	-	-	-	K*	K	K	-	K*	K*	G	K
rs3793771	G/C	-	-	-	-	S*	S	S	-	S*	S	S*	S*
rs12725747	G/A	R*	R*	R*	R	R	R	R	-	R*	-	-	R
rs3820623	G/A	-	-	-	-	R	R	R	-	-	R	R*	-
rs3795767	A/G	D*	D*	NP	NP	-	D*	R*	R*	R*	R*	G	D*
rs12726048	G/A	-	-	R	R	R	R*	R	-	R*	-	-	R
rs3820622	G/A	R*	R*	R	R	R	R	R	R	R	R*	R*	R
rs35718701	A/G	-	-	-	R	R*	R*	R*	-	-	-	-	R*
rs12022403	C/T	Y	Y	NP	NP	Y*	Y	Y	Y	Y	T*	Y	Y
rs10916244	C/T	Y*	Y*	Y*	Y*	-	Y*	-	Y	Y	Y*	Y*	Y
rs4266877	G/A	-	-	-	-	R	R*	R	-	-	R	R*	-
rs77625174	G/T	-	-	K*	K*	K	K*	K	-	K*	-	-	K
rs34253719	G/T	-	-	K*	K	K	K*	K	-	K*	-	-	K
rs3856330	T/C	Y*	Y*	Y	Y*	Y*	B*	C*	Y	Y	C*	Y*	B*
rs71764394	CACACACACA/-	Y*	-	-	S*	S	S	S*	-	S*	S*	-	B*
rs12040881	T/C	Y	Y	Y*	Y	Y*	Y*	-	Y	Y	Y	Y	Y
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs4233231	A/G	G*	R*	R	R	R	R	R	R	R	R	R*	R
rs71764394	CACACACACA/-	-	-	-	S*	S	S	S*	-	S*	S*	S*	S*
rs61825078	G/A	-	R*	R	R	-	-	-	-	-	-	-	-
rs3820621	A/G	R*	R*	R*	R	R*	R	R*	R	R*	R	R	R*
rs754474	G/C	-	-	-	-	S*	-	-	-	-	-	-	-
rs1800975	T/C	Y	Y	NP	NP	-	-	-	Y*	Y	Y*	Y*	Y*
rs3731062	G/A	-	-	R	R*	-	-	-	-	-	-	-	NP
rs2227999	C/T	Y	Y*	-	-	-	-	-	Y	Y	-	-	-
rs2227998	C/T	H*	H*	-	M*	-	H*	M*	M*	H*	Y	Y	M*
rs2607775	C/G	G	S*	-	-	S*	S	S*	S*	S*	S	G	-
rs2279017	T/G	K*	G*	G*	G*	G	K	K*	G*	G	G*	G*	K*
rs2228000	G/A	R	R	R	R	R	R	R	R	R	R	R	R*
rs1870134	G/C	-	-	-	-	-	-	-	S*	S	-	-	-
	G/A	-	-	-	-	-	-	-	-	-	-	-	R
	C/T	-	-	-	-	-	-	-	-	-	-	-	-
	G/C	S	S	NP	NP	S*	S*	S*	C	S	-	-	-

rs3816341	T/C	-	-	-	-	-	-	-	-	Y*	-	Y*	-
rs1050567	C/T	-	Y*	-	-	-	-	-	T	Y*	-	-	-
rs11125886	T/C	-	-	-	-	-	K*	-	-	-	-	-	-
rs3771259	A/C	M	M	-	-	-	-	-	-	-	-	-	-
	C/T	-	-	-	-	-	M*	-	-	-	-	-	NP
	G/A	-	-	-	-	-	-	-	A	R*	-	-	-
rs3771258	C/T/A	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	-
	T/C	-	-	Y	Y	low_cov	-	-	-	-	-	-	-
	A/C	-	-	-	-	-	-	-	M	M*	-	-	-
	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs61761631	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs3087898	G/A	R	R	A	R	R	R	R	R	R	R*	-	-
rs3547	T/C	Y	Y	Y*	Y	Y*	Y	Y*	Y*	Y	Y	Y*	Y*
rs915927	T/A/G/C	Y*	Y*	Y*	Y	Y*	Y*	Y*	-	-	Y*	Y	-
rs2307187	G/A	-	-	-	-	-	R*	-	-	-	-	-	R
rs1799782	G/A	-	-	-	-	-	-	-	-	-	-	-	-
rs1061035	A/G	NP	NP	NP	NP	-	-	-	NP	NP	R*	G*	NP
rs17516202	A/G	-	-	NP	NP	-	-	-	-	-	R	G*	NP
rs1060922	T/C	Y*	C	-	-	-	-	-	C	Y*	-	-	NP
rs537141	A/G	G*	R*	NP	NP	R*	R*	R*	G*	G*	R*	R*	R*
rs41282216	G/C	S	S	-	-	-	-	-	-	-	R*	-	-
	T/C	Y*	Y*	Y*	Y*	Y*	B*	Y*	Y*	Y*	Y	Y*	Y*
	C/G	-	-	-	-	-	-	-	-	-	-	-	-
rs2278699	G/C	-	-	-	-	-	-	-	-	S*	-	-	S
rs2276645	C/A	M	M	NP	NP	low_cov	M*	A*	A*	M	M	M	-
rs11678558	G/A	R	R	NP	NP	NP	NP	NP	NP	NP	-	-	NP
rs3192177	G/A	R	R	R*	R*	R	R	R*	A*	R	R	R	R*
	G/A	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	-	-	-
	A/G	-	-	-	-	-	-	-	-	-	R	R*	-
	C/T	Y	Y	-	-	-	-	-	Y	Y*	-	-	-
rs62169235	T/G	-	-	-	-	K	K	K	-	K*	-	-	K*
rs12614546	C/T	T	Y	Y	Y*	Y*	Y	Y	-	Y*	Y	Y	-
rs6740731	G/A	-	-	-	-	R	R	R	-	-	-	-	R*
rs6721820	T/C	-	Y*	C	Y	Y	Y	Y	Y*	Y	Y	Y	-
	C/T	-	-	-	-	-	-	-	-	-	-	Y*	-
rs12996983	G/A	-	-	R*	R*	low_cov	A	R*	A	R*	-	-	-
rs76072181	G/A	R*	R*	-	-	-	-	-	-	R	R	R	-
rs57360067	C/T	Y*	T*	NP	NP	NP	NP	NP	NP	NP	T*	T*	T*
rs1831992	C/T	-	-	-	-	-	-	-	Y	Y	-	-	-
rs72656056	T/G	K*	K*	-	-	-	K*	-	K	K	-	-	K*
rs13542	G/A	-	R*	-	-	R	R	R	R	R	-	-	-
rs72656054	A/T	-	-	-	-	-	-	-	W*	W	-	-	-
rs9585308	T/C	-	-	-	-	-	-	Y*	C*	Y	-	-	Y
	C/T	-	Y*	-	S*	-	-	-	-	Y*	Y	Y	-
rs4859	G/A	-	-	-	-	low_cov	R*	-	R	R	-	-	-
rs11552744	G/A	R*	S*	-	-	-	R*	-	-	R*	R*	-	R*
rs72555715	C/T	-	-	NP	NP	-	Y*	-	-	Y*	-	-	Y
rs1815569	A/G	-	-	-	-	-	-	-	-	-	-	-	G
rs1815571	C/T	-	-	-	-	-	Y*	-	-	-	-	-	Y

rs62191661	G/A	A	R*	-	R*	A	A*	A*	NP	NP	R*	R*	-
rs11893526	G/C	-	-	NP	NP	-	-	-	-	S*	C	C*	S
rs876018	A/T	-	-	-	-	W*	W*	W*	-	W*	-	-	W*
	G/A	-	-	-	-	-	-	-	R	R*	-	-	R*
rs35801822	A/G	R	R	-	-	-	R	R	-	-	R	R	R*
rs73494213	G/C	-	-	-	-	-	-	-	-	-	-	-	-
rs28570606	C/T	-	-	Y*	Y	Y*	Y	Y	-	-	-	-	-
rs34998493	C/G	-	-	-	S*	S*	S*	S*	-	S*	-	-	-
	C/T	-	-	Y	Y	-	-	-	-	-	-	-	-
rs73185687	C/T	-	-	NP	NP	-	-	-	NP	NP	Y*	Y*	-
rs2076751	C/A	M*	M	-	-	-	-	-	-	-	-	-	-
rs1871114	C/T	Y	Y	-	-	Y*	Y	Y	-	Y*	Y	Y*	NP
	T/C	Y*	Y	-	-	-	-	-	-	-	-	-	-
rs7684530	G/C	C	C	-	-	C	S*	S*	-	-	S*	S*	NP
rs13158926	T/C	-	-	NP	NP	Y*	Y	Y*	-	-	-	-	NP

ringent SNP filter criteria. - means no variant detected. NP means not enough data available to make a pair

pt6_primary_CRCtumor	pt7_control	pt7_livermeta	pt7_primary_CRC_tumor	pt8_livermeta	pt8_primary_CRCtumor	pt9_livermeta	pt9_primary_tumor_CRC	pt10_livermeta	pt10_primary	pt11_control	pt11_livermeta	pt11_primary_CRC_tumor	pt12_livermeta	pt12_primary_CRC_tumor	pt13_livermeta	pt13_primary_CRC_tumor	pt14_livermeta	pt14_primary_CRC_tumor
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	G*	K*	G*	K*	K*	K*	K*	G*	G*	K*	G*	K*	G*	NP	NP	K*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	Y*	-	Y*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	K*	-	-	-	-	K*	K*	-	-	-	-	D*	D*	-	R*	D*	D*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	T*	Y	Y*	-	T*	Y	Y*	Y	Y	T	T	Y*	Y	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	T*	Y	-	Y*	Y*	T	-	Y*	Y	Y*	Y	Y	Y*	-	Y*	Y*	Y*
-	R*	-	-	-	-	-	-	-	-	R*	M*	-	R*	-	-	-	-	R*
-	K*	K	K*	-	-	-	-	-	-	-	-	-	K*	-	K*	-	K*	-
NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	low_cov	-	NP	NP	NP	NP	NP	NP
-	Y	Y	Y	Y*	Y*	Y*	Y*	-	Y*	-	Y*	M*	Y*	Y*	Y*	-	Y*	Y*
Y*	Y*	-	Y*	-	Y*	-	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	NP	NP
-	S*	S*	-	-	-	-	-	-	-	-	-	-	V*	S*	S*	S*	V*	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
R	R*	R	R	-	-	-	-	R*	A	R	R	R	R	R*	R*	R*	R	R*
D*	-	-	K*	K*	K*	K*	-	K	K*	-	K*	K*	D*	K*	K*	K*	K*	K*
D*	-	-	R*	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	-	-	R	R	-	-	R	R	R	R*	-	R	R	R*	R
Y*	Y	Y	Y	Y*	Y*	Y	Y*	Y*	-	-	Y*	Y*	Y	-	Y*	Y*	Y	Y*
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-	K*	K	K	-	K*	K*	-	-	-	NP	NP	NP	K*	-	K*	-	-	K*
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NP	NP	NP	NP	NP	NP	Y*	Y*	-	-	Y*	low_cov	C*	NP	NP	-	-	NP	NP
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-	-	-	M*	M*	-	-	-	M*	-	-	-	-	M*	-	-	-	M*	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-
R*	-	-	R*	R	R	-	R*	R*	R	-	R*	R*	R*	R*	R	R*	R*	R*

-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
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-	-	-	S*	-	Y*	-	-	-	-	-	M*	-	B*	S	-	-	-	M*
-	-	Y*	Y*	-	Y*	Y*	-	Y*	Y	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
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NP	low_cov	-	-	-	-	-	-	Y*	T	NP	NP	NP	-	-	NP	NP	-	-
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A	-	-	R	R	A*	R	R	R*	V*	R	R	R	R	R*	R	R	R	R
R	R*	R*	R	G	R*	R*	G	R	R*	R	R	R	R	R	R	R	R	R
Y	Y*	-	Y	Y	Y*	Y	Y*	Y	C	Y	Y	Y	Y	Y	Y	Y	Y	Y
R*	R*	-	R*	A	A	A	R	R	R*	R	R	R*	R	A	R	R*	R	R
Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R*	R*	R*	R*	G*	R*	G*	R	R*	G	G*	R*	R*	R*	R	R*	R	R*	R
Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y
K*	-	-	K*	K*	G	G	G*	K*	G	K	K*	K*	K	K	K	K	K	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K*	-	K*
NP	-	-	K*	NP	NP	NP	NP	NP	NP	NP	NP	NP	K*	K*	NP	NP	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
S*	S*	-	S*	S	S	S	S	S	S*	S*	S*	S	S	S	S	S	S	S
R*	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	R*	R*	R*
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R*	-	-	-	-	-	-	-	-	-	R*	R*	A*	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-
S*	S	S*	S	S	S	S	-	S*	S	-	-	-	S	S*	S	S*	S	S*
R*	R	A*	R	A	R*	R	R*	-	R	R	R*	-	R	A*	-	R*	R	R*
Y*	Y	Y*	C	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y	Y	Y	Y*	C	Y	Y
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
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-	-	-	-	Y	Y	-	-	-	Y*	-	Y*	-	Y	Y*	Y*	Y*	Y*	Y
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
S*	S	S	S	S	S*	S	S*	S*	S*	C*	C	S*	S	S	S	S	S	S*
-	-	-	R*	R	R	R*	R*	-	R*	-	R*	-	R	R*	R*	R*	R*	R
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	R*	R	R	R	R	-	-	-	-	R	R	R*	R	R	R	R*	R	R
G	S	S*	G	S*	G	G	G*	G	G	S*	S*	-	G	G	G	S*	G	G
C*	C*	C*	Y	C*	Y*	NP	NP	Y	Y	C*	C*	C*	Y*	C*	C*	C*	NP	NP
-	-	Y*	H*	-	-	-	-	-	-	-	M*	M*	H*	-	M*	M*	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	Y*
H*	M*	M	M*	-	-	M*	-	M*	M	M*	M	M*	M*	C	M*	M*	M*	M
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B*	-	-	-	Y*	-	Y	Y	Y*	Y*	-	-	Y*	Y*	Y*	S*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	Y*	-	-	-	Y*	Y*	low_cov	-	-	Y	Y	-	-	-	Y*
M*	NP	NP	NP	NP	NP	-	-	-	-	low_cov	M*	-	M*	-	-	M*	M*	M*

Y*	C	Y*	Y*	Y*	Y	Y*	Y*	C*	C*	-	-	-	Y	Y*	C	Y	Y	Y
-	-	M*	M*	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP
M*	M*	M*	M*	M*	M	M*	M	C	M*	-	-	-	M	M*	M*	M*	M*	M
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	-	S*	S*	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP
R*	R	R	R	R	R	R	R	R*	R	-	R*	R*	R	R	D*	R*	R	R
-	-	-	W*	W*	W	-	-	W*	-	-	-	-	W*	W*	W*	W*	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	-	-	-	M	M	M*	M*	C	M	-	-	-	M*	M*	NP	NP	M*	-
R*	-	-	R*	-	-	-	-	R*	-	-	-	-	R*	-	R*	R*	R*	-
-	Y*	Y	Y	-	Y*	-	-	-	-	-	Y*	-	Y*	-	Y*	-	Y*	Y*
-	low_cov	Y*	Y	-	-	Y	-	T*	T	-	-	-	Y	Y	Y	Y*	Y*	Y*
S*	-	-	-	S	S	S*	S*	-	-	-	-	-	S*	S*	S*	S*	S*	S*
Y*	Y	C*	Y	-	-	Y	Y	Y	Y*	-	Y*	Y*	Y	Y	Y*	Y*	Y	Y*
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-	-	-	-	-	Y*	Y	Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	R	R	R*	R*	R	R	R*	R*	-	-	-	-	-
-	-	-	R	R	R	R	R*	R	R	R	R	R	R	R*	R	R*	R	R
-	-	-	-	K	K*	K*	G	-	-	-	-	-	K*	-	K*	K*	K*	K*
-	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	-	-	-	-	-	Y*
-	-	-	-	-	R*	-	-	-	-	R*	R*	R*	-	R*	-	-	-	-
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-	Y*	-	Y*	Y	Y	Y	Y	Y	B*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y
-	-	-	-	-	-	R*	R*	R*	R*	R	R*	R*	-	-	-	-	-	-
-	Y*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	R*	R*	R	R	R*	R*	R*	R	R	R	R*	-	R*	-	R*	R
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-	R*	-	-	-	-	R	R*	R*	R*	R	R	R	R*	-	R*	-	R*	R*
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R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
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-	-	-	R*	R*	-	R	R	R	R*	R	R*	R	R*	R*	R*	-	R*	R*
-	-	-	R*	-	-	-	-	R*	R*	-	R*	-	-	R*	R*	-	R*	R*
Y*	Y*	-	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y	H*	Y*	Y*	Y*	H*	H*
-	-	-	-	-	-	-	-	-	-	S	S*	S	-	-	-	-	R*	-
-	-	-	Y*	Y	Y	-	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
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-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
Y*	-	-	Y*	Y	Y	-	-	Y*	-	-	Y*	H*	Y*	Y*	Y*	Y*	H*	H*
R*	-	-	R*	R	R	-	R*	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	-	M*	M*	-
-	-	-	N*	Y	Y	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
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-	R	R*	R*	V*	R*	-	-	-	S*	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	M*	-	-	-	-	-	-	-	M*	M*	M*	-	M*	-	M*	Y*
-	S*	-	Y*	Y*	Y*	Y*	-	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
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Y*	Y*	-	Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
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-	-	-	-	-	-	R	R	R	R	R	R	R	R*	R*	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*
Y*	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y
M*	-	-	M*	M	M	-	-	-	-	-	-	-	M*	M*	-	-	M*	M*
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-
R*	R*	-	R*	R	R	R	R	R	R	R	R	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	R*	-	-	R*	-	-	-	-	R*	-	R*	-	R*	-
-	-	-	-	-	-	K	K*	-	-	-	-	-	K*	-	-	-	K*	-
-	-	-	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	-	Y*	Y*	Y*	Y
R*	-	-	R*	R	R*	R*	R*	R*	R*	R*	R	R*	R*	-	R*	R*	R*	R*
-	-	R*	R*	-	-	-	-	-	-	-	-	R*	R*	-	R*	-	R*	R*
-	-	-	-	-	-	R	R	R*	R*	R	R	R	-	-	-	-	-	-
-	-	-	K*	K	K	-	-	K*	-	-	K*	K*	K	-	K*	K*	K*	K*
R	R	R	R	-	-	-	-	R*	R	R	R	R	R	-	R*	-	R	R*
R*	R	R	R	R*	R*	R*	-	R	R*	R*	R	R*	R*	R*	R*	R*	R*	R
R	R	R	R	R*	R*	R*	R*	R	R	R	R	R*	R	R*	R	R*	R	R*
-	-	-	Y*	Y*	Y	-	-	Y*	Y*	Y*	Y*	Y*	N*	Y*	Y*	Y*	H*	H*
-	-	-	-	-	-	-	-	W*	-	-	-	-	W*	-	-	-	-	-
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NP	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	C	C*	C*	C	Y	Y	Y*	C	Y*	C*	C*	Y*	C	C*	C	C*	C	C
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	R*
Y*	Y	Y	Y	-	-	Y	Y	C	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	N*	V*	R*	R*	R*	R*	R*	R*	R*	R*	R	N*	R*	D*	N*	R*	N*
NP	Y*	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R*	R	R	R*	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	Y	-	-	Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-	-	-	Y*

NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
NP	NP	NP	NP	-	-	-	M*	M*	-	M	M*	M*	NP	NP	NP	NP	M*	M*
-	R	R*	D*	D*	D*	-	-	R*	D*	R	R*	R*	R*	R*	-	-	D*	R*
-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	-	-	Y	Y*	-	-	Y	Y*	Y	Y*	Y	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	Y*	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	K*	K	K*	K*	K*	K*	-	-	R*	K	K*	K*	-	K*	K
-	low_cov	-	M*	-	-	NP	NP	-	-	M	M*	H*	NP	NP	-	-	M*	M*
-	-	-	Y*	-	Y*	-	-	-	-	Y	Y*	Y*	H*	Y	Y*	-	Y*	Y*
-	S*	S	S	S	S*	-	-	S*	-	-	S*	V*	S	S*	S*	S*	S	S
-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	S*	S	S	S	C	C*	S*	-	S*	-	S	S	S	S*	S	S
W	W*	-	W*	W*	W*	-	W*	-	-	W	W	W	W*	W	W	W	W*	W*
R*	-	-	-	-	-	-	-	-	-	R*	A	R*	-	-	-	-	-	-
S*	S*	S	S*	-	-	-	-	-	-	-	-	S*	S*	S*	S*	S*	S*	S*
R*	R	R	R	-	R*	-	R*	R*	-	A	R	R*	R	R	R	R	R	R*
-	K*	K	K	K	K*	-	-	-	-	-	-	-	K	-	K*	K*	K*	K*
K*	K	-	K*	K*	K	-	-	-	-	K	T*	T*	-	K*	K*	K*	NP	NP
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
-	-	-	R*	R*	A*	R*	R*	A*	R*	-	R*	R*	R	A	R	R	R	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	H*	Y*
K*	-	-	K*	K*	K*	K*	-	G*	G*	-	K*	K*	K	K*	K*	G*	K*	K*
-	-	-	-	-	-	-	-	-	-	S	S	S*	-	-	-	-	-	-
S*	S*	-	S*	S*	S*	S*	S*	S*	V*	S	S*	S	S	S	S	S	S	S
Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y	T
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP	NP	NP
-	Y*	Y	Y	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	-
-	-	-	-	Y	Y	Y*	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R	R	R*	R*	-	-	-	-	-
-	R*	R	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
C*	Y*	Y	Y	C*	C	Y	Y	Y*	Y*	Y	Y	Y	Y	Y*	C	C*	C	Y
-	-	-	-	-	-	R	R	-	-	-	-	-	R*	-	-	-	R*	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-
-	Y	Y	Y*	-	-	-	-	-	-	Y	Y*	-	Y	-	Y*	Y*	Y*	-
-	-	-	Y*	-	-	Y	Y	Y	Y*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	R*	-	-	R	R*	R*	R*	-	R*	-	R*	R*	R*	R*	R*	R*
S*	-	A	A	-	-	-	-	R*	R*	-	R*	-	R*	R*	R*	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R	R	R*	-	R	R	R	R	R*	R	R	R	R
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	Y	Y*	-	-
M*	M	M*	M*	M	M*	M	M	M*	-	M	M	M	M	-	M	M*	M*	M
-	-	-	-	R	R	-	-	R*	R*	-	-	-	R*	-	R*	-	R*	R*

-	-	-	R*	-	-	-	R*	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	Y*	-	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	R	R	R	R*	G	R*	R	R	R*	R	R	R	R*	R*	R	R	R
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y*	-	-	Y*	Y	Y	-	-	Y*	-	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
Y*	-	-	-	-	-	Y	Y*	-	-	-	-	-	Y*	Y	-	-	Y*	Y*
NP	Y*	Y	Y*	Y*	Y	T*	T	NP	NP	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*
G	low_cov	S*	S*	-	-	S*	S*	-	S*	low_cov	S*	S*	S*	-	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y	T	Y	T*	T	-	-	Y	Y*	-	Y	Y*	Y*	-	Y*	T
K*	B*	K*	B*	-	K*	-	-	-	K*	B*	K*	B*	B*	K*	K*	D*	K*	K*
-	R	R	R	R	G*	G*	R	-	-	R*	-	-	R*	R*	R*	-	R*	R
-	S	S	S	-	-	-	-	-	-	S*	S*	-	S*	S*	S*	S	S*	S
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
R	R	R*	R	R*	R*	R*	R*	R	R*	R	R	R	R	R	R	R	R	R
C*	Y*	C*	Y*	C*	Y	NP	NP	NP	NP	-	Y*	Y*	Y*	Y*	-	Y*	NP	NP
-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
-	R	R*	R*	-	-	R	R	R*	-	R	R	R	R*	R*	R*	R*	R*	R*
-	K	K*	K*	-	-	K	G	-	Y*	G	K	K*	K*	-	K*	-	D*	K*
R*	G	-	-	-	-	G	G	-	-	NP	NP	NP	R*	-	-	-	-	-
Y*	Y	-	Y	-	Y*	Y	Y	Y*	-	Y*	C	Y*	Y	Y	Y*	-	Y	Y*
-	-	-	S*	-	S*	-	-	S*	S*	-	-	S*	S*	S*	S*	-	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	R*	-
-	Y*	Y*	Y*	-	Y*	Y*	-	Y	Y	-	H*	Y*	H*	H*	Y*	H*	H*	H*
-	T	K*	K*	K	K*	K*	T	K*	K*	-	-	K*	K	K	K	K	K	K
S*	C	-	S*	S*	S*	-	-	S*	-	-	-	-	S	-	S	S*	S*	S*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R	R*	R*	G*	G*	G*	G*	G*	G	-	-	R*	R	R	R*	R	R	R
R*	R	R*	R	R*	G	-	R*	R	R	-	R	R*	R	R	R	R*	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	-	Y*	-	NP	NP
W*	W	W*	W	W	W	-	W*	-	-	-	W*	W*	W	W	W	W	W	W
Y*	-	-	-	-	-	-	-	Y*	Y*	-	-	H*	Y*	Y	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	-	-	R*	-	-	-	-	R*	R*	R	R	R*	R*	-	-	-	R*	R*
S*	-	-	-	-	-	-	-	-	-	-	S*	-	S*	S	-	-	S*	-
-	Y	Y	Y	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	M*	M	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	R*	R*	-	-	-
C	C*	Y*	Y	Y*	Y*	Y*	Y*	Y	C	C	C	Y*	Y	Y	C	C	Y	C
M*	A	A	M	M*	M	M*	M*	A*	A*	A*	A	A*	M	M*	M*	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	-	Y*	T	-	-	Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*

M*	M*	M	M	V*	M*	M*	C	C	M*	M*	C	M*	M	M*	C	M*	M	C
-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	R*	R*	R*	-
Y*	-	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y*	K*	Y*	B*	Y	Y	B*	Y	C	C	Y	Y	Y	Y	Y	C	Y	Y
Y*	low_cov	-	Y	Y*	Y*	-	-	Y	Y	T	Y	T	Y	Y*	T	Y	T	Y
NP	R*	-	R*	R	R	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	-
G*	-	-	S*	S*	G	-	-	S*	-	S	S*	S*	S*	S*	S*	S*	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	-	-	-	NP	NP	-	-	Y*	-	Y	Y	Y	-	-	Y*	Y*	Y*	T*
-	-	-	K*	-	-	-	-	-	-	-	-	K*	K*	-	-	-	K*	-
-	M*	M*	M*	-	M*	-	-	-	-	-	-	-	M*	M*	-	-	M*	M*
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	-	-
Y*	Y	Y	Y	Y	Y	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	-	M*	M	-	M*	-	-	-	-	-	-	-	M*	-	-	-	M*	M*
M*	M*	-	M*	M*	M*	-	-	M*	M*	-	M*	M*	M*	M*	M*	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	R*	R*	R*	-	-	-	-	-	-
R*	NP	NP	NP	-	R*	A*	R*	NP	NP	NP	NP	NP	R*	-	NP	NP	NP	NP
Y*	Y	Y	Y	-	-	-	-	Y	Y	-	Y*	Y*	Y*	Y*	Y	Y	Y	Y
-	low_cov	-	M	-	-	A*	-	-	M*	NP	NP	NP	M*	-	M*	-	M*	M*
-	-	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	-	-	Y*	-	-
Y*	-	Y*	-	-	-	-	-	-	-	-	Y*	-	Y*	Y	-	-	Y*	Y*
-	-	-	-	-	R*	-	-	-	-	R	R*	-	D*	-	R*	-	R*	-
-	-	-	-	-	-	G*	G*	R*	R*	NP	NP	NP	NP	NP	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	T	Y*	Y	Y*	Y	-	-	Y	Y*	Y	T	T*	Y	Y*	T*	T*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-	-	-	-	-
R*	R	R*	D*	D*	R*	R*	R	A	R*	R*	R	R	R*	R	R*	A	R	R
-	Y*	-	-	-	-	Y	Y	Y	Y	Y*	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	-	-	Y*	Y*	T	Y*	-	-	-	-	-	T	Y*	Y*	Y*	T	Y*
-	Y*	Y*	Y*	-	-	-	-	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	T*	NP	NP
S	S	S	S	S	S	-	-	-	-	-	S*	-	S	G	S*	S*	S	S
-	Y*	-	B*	-	Y*	-	-	-	-	-	B*	-	H*	-	-	-	H*	Y*
Y*	Y*	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	-	Y*	Y*	Y*	-
T*	K	T*	K*	K*	K*	K*	K*	K*	T	K*	K*	K*	K	T	K*	T	K	K
K*	K*	K	K*	-	-	-	-	-	-	-	-	-	K*	-	-	-	-	-
M*	M*	A	M	A*	A*	A*	A*	A*	A*	A*	A	A*	M	M*	M*	-	M*	M*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-
Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	T	Y*	Y	Y
-	-	-	-	D*	R	A	R*	-	-	-	-	-	R*	-	R*	-	-	R*
K*	G	K*	K*	K*	K*	G	G	K*	K*	G*	K*	G*	K	K*	K*	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	R	-	-	-	-	R*	R*	-	R*	-	R*	R*	R	R	R*	R*
T	Y	Y	T	-	-	-	Y*	Y*	Y*	T	T	Y	Y*	Y*	Y*	Y*	Y	Y*
A*	A*	A*	M*	M*	A*	M*	M*	A*	A*	M*	M*	M*	NP	NP	A*	A*	M*	A

Y*	Y*	Y	Y	C	Y	Y*	Y*	Y*	Y*	Y*	C	C	C	C	Y	Y*	Y	Y*
Y*	C	C*	C*	Y*	C*	Y*	-	C*	C*	Y*	Y*	Y*	Y	C	C	C*	Y	Y
-	-	-	-	Y	Y	-	Y*	-	-	-	-	-	Y*	Y*	-	-	Y*	Y*
-	Y	Y	Y*	-	-	-	-	-	-	NP	NP	NP	Y*	-	-	-	Y*	-
NP	G*	G*	G	G*	G	G*	G*	-	-	G	G*	G*	G*	R*	NP	NP	G	R*
A*	-	-	-	A	R	R*	R	-	-	R*	R*	R*	R*	R*	NP	NP	R*	-
-	-	-	-	N*	-	R*	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
-	Y	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	NP	NP	Y*	-
-	-	-	R*	-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
Y*	-	-	Y*	Y	Y	M*	-	Y*	Y	Y	Y	T	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	-	R*	G	R	G	R*	R	R	R	R*	R	R	R	R*	R*
NP	-	-	-	-	-	C*	S*	NP	NP	NP	NP	NP	S*	C	S	S*	-	-
-	-	-	-	-	-	NP	NP	Y*	Y*	NP	NP	NP	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	-	-	-	-
-	-	-	-	-	-	-	-	S*	S	-	-	-	-	-	Y*	-	-	S*
Y*	-	-	-	Y*	-	-	-	-	Y	NP	NP	NP	Y*	Y*	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	R*	-	-	-	R*	-	R*	R	R*	R*	R*	R*
-	-	-	R*	R*	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
Y	-	-	Y*	-	-	-	-	-	M*	-	-	H*	H*	Y*	Y*	-	Y*	Y*
R*	-	-	-	-	-	-	S*	-	-	-	R*	R*	R*	R*	-	-	R*	-
-	Y*	-	Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y	Y*	Y*	H*	H*
Y*	-	-	Y*	-	-	-	K*	-	Y*	-	-	Y*	Y*	Y*	-	-	Y*	-
-	-	-	Y*	-	Y*	-	Y*	M*	-	-	-	-	Y*	Y	-	-	Y*	-
NP	Y*	-	-	-	-	Y	-	Y	Y*	NP	NP	NP	Y*	-	Y*	Y	-	Y*
W*	-	-	W*	W*	W*	-	-	-	-	-	W*	-	W*	W*	W*	-	W*	W*
-	-	-	-	-	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K	K	K	-	K	K*	G*	K*	K*	G	G	K	K	K	K	K	K	K
T	Y	Y	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T*	T*
R*	R*	R	R	A*	R*	R*	R*	R*	A*	R*	R*	R*	R	R	R*	R	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
H*	-	-	Y*	Y	Y	Y	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	R	R	R*	R*	R*	R*	A*	R	R*	R	R	R	A*	NP	NP	R	A
R*	R*	A	A	R*	R*	A*	R*	R*	R*	R	R	R*	A	A*	NP	NP	A	A*
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	K	K	K*	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	R	R	R	R	R	R	-	R*	R*	R	R	R	R	R*	R
-	-	-	-	W*	W	-	-	-	-	W	W	W	W*	-	W*	-	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP
Y*	Y	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y	H*	Y	Y	Y	H*	H*
M*	M	-	M	M	M	M*	-	-	M*	M	M	M	M	M	M	M	M	M
K	K*	-	K*	K	K	-	-	-	K*	K	K*	K	K	K	K	K*	K	K
G*	K	-	K	K	K	-	K*	K*	K*	K	K	K*	K	K	K	K	K	K
S*	S	-	-	NP	NP	S*	-	NP	NP	S*	S*	S*	S*	S*	S*	G*	-	S*

R*	R*	-	R	R*	R	-	-	-	-	R*	R	R	R	R	R	R	R	R
R*	R	-	R*	R*	R	-	R*	R*	-	R	G	R*	R	R*	R*	G*	R	R*
Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	NP	NP	NP	-	-	-	-	-	-
NP	R*	-	-	NP	NP	R*	R*	NP	NP	A*	A	A*	R*	A	A	R*	R*	-
-	K*	-	K*	K	K	K	K*	K*	K*	-	K*	-	K*	T	K*	-	K*	K
R*	R*	R*	R*	R	R	R*	R*	R*	R*	R*	G	R*	R	R*	R*	R*	R	R*
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	S	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	R*	R*	R	G	G	R*	R	R	R	R*	R	R*	R*	R*	R*
Y*	-	-	-	Y*	Y	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*
-	S*	S*	S	S*	S*	-	-	NP	NP	-	-	-	S*	-	S*	-	S*	-
K*	K	K	K	K*	K	K	K	T	K*	-	K*	-	K	K	K*	-	K	K
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
-	W	W	W	T	W	W	W*	W*	W	W	W	W	W*	-	W*	W*	T	T
-	-	-	M*	M	M	M*	M*	-	-	M*	M	M	M	-	M*	M*	M*	M*
-	K*	K*	K	K*	K	K*	K*	K*	K*	T*	T*	K*	K*	-	K*	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	Y	Y*	Y*	NP	NP	-	-	NP	NP	-	-	-	-	-	Y*	Y*	-	-
-	M	M	M*	-	-	-	-	-	-	-	M*	-	M*	M*	M*	M*	M*	M*
R*	R*	G*	G*	G*	G	NP	NP	G*	G*	R*	R*	G	G	G	R*	R*	R*	R*
Y	-	-	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y
-	R	R	N*	R	R	-	-	-	-	-	R*	R*	R*	R*	R	R*	R*	R
-	S*	S	S*	S*	S*	-	-	-	-	-	S*	S*	S*	S*	S*	S*	S*	S*
Y*	-	-	Y*	Y	Y*	Y*	Y*	-	Y*	Y	Y*	Y	Y*	Y*	Y*	-	H*	Y*
-	-	-	R*	R	R	R	-	-	-	R*	R	R*	R*	R*	-	R*	R*	R*
S*	-	-	-	-	-	S*	S*	NP	NP	-	-	S*	-	G	-	-	S*	S*
-	Y*	-	Y*	Y	Y	Y	Y	-	Y*	Y	Y*	Y	H*	-	-	-	Y*	Y*
-	V*	R	R*	-	R*	R*	-	M*	-	R*	R*	R*	V*	R*	R*	R*	V*	R*
-	Y	Y	Y	-	-	Y	Y*	-	-	-	Y*	-	Y	Y	-	-	Y	Y*
R*	R	R	R	-	-	R	R*	R	R*	R	R*	R	R	R	R*	-	R	R*
-	-	S	S*	K*	-	-	S*	-	-	-	-	-	S*	-	NP	NP	S*	-
-	K*	-	-	T*	T*	NP	NP	K*	K*	K*	K*	-	K*	T*	NP	NP	K*	-
G	S	S	S	S*	S*	G*	G*	G	S	G*	G	G	S	G*	S*	S*	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	R*	D*	-	-	-	-	-	R*	-	R	R*	R	R*	R*	R
Y*	Y	Y	Y	Y	Y*	Y	Y*	Y*	C	Y	Y	Y	Y	C	Y*	C	Y	Y
M*	M	M	M	M*	M*	-	M*	M*	M*	M	M	M*	M	M	M	M	M	M*
G*	R	R	R	R*	R*	-	R*	G	R	R	R*	R*	R	-	R	R*	R	-
Y*	-	-	-	Y	Y*	-	-	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y
-	-	-	-	-	Y*	Y*	Y*	-	-	Y*	Y	Y*	-	Y*	Y*	-	-	-
-	-	-	-	-	-	-	Y*	-	-	Y	Y	Y	-	Y*	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	K*	K	K	-	-	-	-	-	-
Y	-	Y*	Y	Y*	Y	Y	Y	-	Y	Y	Y*	Y*	Y	-	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	Y*	-	-	Y*	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
Y*	Y*	C*	C	Y*	Y*	Y	-	C	Y*	Y*	C	C*	Y	Y*	Y	Y*	Y*	Y*
-	-	-	Y*	-	Y*	-	-	NP	NP	-	-	-	-	-	-	Y*	-	-
-	-	-	-	-	-	-	-	R*	R*	low_cov	-	-	NP	NP	-	-	NP	NP
-	C*	C*	M*	C*	M*	M*	M*	-	-	M*	M	M*	M*	M*	-	-	NP	NP

-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	H*	-	-	-	M*	-
-	-	R*	R*	-	-	G*	G*	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	R*	-
K*	K*	K	K*	-	-	K*	K	-	-	K	K*	K*	K*	K*	K	K*	K*	K
Y*	-	-	Y*	-	Y*	-	-	-	-	-	H*	H*	H*	Y*	-	-	H*	Y*
K*	-	-	-	-	-	-	-	-	-	-	K*	K*	-	-	-	-	-	-
M*	M*	M*	M	M	M	C	C	M*	M*	M*	M*	M*	M	M*	C	M*	M	M
Y*	-	-	-	Y	Y	-	Y*	-	Y*	-	H*	Y*	H*	Y	H*	Y*	H*	H*
NP	low_cov	A*	R	A*	A*	A*	A*	R*	A*	low_cov	R*	R*	R*	A	A*	A*	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-
NP	NP	NP	NP	-	-	R*	G*	R*	R*	R*	R*	-	-	G	NP	NP	NP	NP
-	-	S*	-	-	-	-	-	S*	-	-	-	-	B*	-	S*	-	-	Y*
R*	R	R	R	-	-	-	-	R	R	-	R*	R*	R	R	R*	R*	R	R*
-	R*	R	R*	-	-	-	-	NP	NP	-	-	-	R*	-	-	-	-	R*
-	-	-	M*	-	-	-	-	-	-	M*	-	-	M*	-	-	-	M*	-
R*	R*	R	R	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*	R*	V*
R*	R*	R	R	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-
-	-	-	-	-	Y*	-	-	-	-	-	-	Y*	-	-	-	-	Y*	Y*
Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*
R*	R	R	R	R*	-	-	-	R*	R	-	R*	R*	R	R	R*	-	R	R*
-	W*	W*	W*	-	-	-	-	NP	NP	-	-	-	W*	W*	-	-	NP	NP
NP	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	R	-	-	R*	R*
Y*	-	Y	Y*	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	K*	-	-	-	-	T*	T*	-	-	-	-	-	NP	NP	-	T*
-	-	-	-	R*	R*	R*	-	A	R*	-	-	-	R*	-	R	R*	-	-
-	-	-	-	-	-	Y	Y	Y*	Y	Y*	Y*	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	Y*	-	-
M*	M	M	M	C	M*	C*	M*	M*	C*	C*	C*	C*	C	C*	C*	C*	C	M
-	M*	-	M*	M	M*	M	M	M*	M	-	-	-	M	M*	M	M	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	S*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	R*	-	-	-	-	-	-	-	-	-	R*	R	R	R*	R*	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	Y*	-	-	-	Y*
R	R	R	R	-	-	-	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*
R*	NP	NP	NP	R*	R	G*	G*	G*	G*	low_cov	R*	-	R	G*	NP	NP	R*	R*
Y*	-	Y*	Y*	Y	Y*	Y	Y*	Y	Y	-	-	Y*	Y*	Y*	Y	Y	H*	Y*
-	-	-	-	Y	Y	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
R	R	R*	R*	R	R*	G*	R*	R*	G*	R*	R	R*	R*	G	G	G*	R*	R*
-	low_cov	-	-	S	S	-	-	-	-	low_cov	S*	S*	S	-	S*	-	S*	S*
-	-	-	-	S	S	-	-	-	-	-	S*	-	S	S*	S	S*	S	S
M*	M	M*	M*	-	-	-	-	-	-	-	M*	-	-	M*	-	-	M*	M*
Y*	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	M*	Y*	-	-	M	M	M	M*	M*	M*	M*	M*	M*	M*	H*
R*	NP	NP	NP	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
Y*	Y*	-	Y*	Y	Y	-	-	K*	-	-	Y*	Y*	Y	Y	Y	Y	Y*	Y
-	K*	G	K*	K	K	K	G	K	K*	K*	K	G	K	G	K	K	K	K
Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y	H*	Y	N*	H*	H*	Y*	H*	H*
M*	-	-	H*	M*	-	-	-	M*	M	M	M*	M*	M*	M*	Y*	-	M*	M*

R*	NP	NP	NP	R*	G*	NP	NP	G*	R*	G*	R*	R*	R*	G	G*	G*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M	M*	M*	M	M	M	M*	A	M*	M	M*	-	M	M	M*	-	M*	M*
-	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y	Y	Y*	-	-	-	Y*	-	Y	T	Y*	-	Y	Y*
B*	-	-	M*	-	-	-	S*	-	-	-	B*	-	N*	S*	B*	-	V*	H*
Y*	Y*	-	Y*	Y	Y	Y	Y	Y	Y	-	Y*	-	Y*	Y	Y*	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	-	-	K*	K*	K	K*	K	K*	K*	-	-	-	K*	K	K*	-	K*	K
T*	low_cov	-	-	Y	Y	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	R*	-	R*	R	-	R*	R*	R*	-	-	-	R*	R*
S*	-	-	R*	R*	S*	R*	R	R	R*	-	R*	V*	R*	R*	R*	R*	V*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y	Y	Y	Y*	Y*	-	Y*	-	Y*	Y	Y*	Y*	Y*	Y*
R*	R	R	R	R*	R*	R*	R*	G	R*	R	R	R*	R	R	R	R	R	R*
-	-	-	-	Y*	-	-	-	-	-	-	Y*	M*	H*	Y*	H*	M*	H*	H*
R*	-	-	R*	-	R*	-	-	K*	-	-	R*	D*	D*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	C*	Y*	C*	Y*	Y*	C*	C*	Y*	C*	Y*	Y*	Y*	Y*	C*	C*	C*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	Y*	Y*
K*	K*	-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-
C*	low_cov	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
D*	R*	-	R*	R*	R*	-	R*	R*	R*	-	D*	V*	N*	V*	N*	N*	N*	V*
Y*	Y*	Y	Y	C*	C*	Y*	Y*	C*	C*	C	C	C	Y	Y	C	Y	Y*	Y*
-	-	-	-	-	-	R	R	S*	-	-	-	-	R*	R*	-	-	R*	R*
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	K	K	-	-	-	-	-	K*	-	D*	-	K	K	R*	K*
K	K	K*	K	K*	K*	K*	K*	K	K*	K	K	K	K	K	K	K	K	K
Y*	-	-	Y*	-	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	Y*	Y*
-	Y	Y	Y	-	-	Y*	Y	-	-	-	-	-	Y*	Y*	Y*	-	Y	Y
G*	-	-	-	R*	R*	-	-	-	-	-	-	-	R*	-	R*	G*	NP	NP
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
W*	W	W*	W	W	W	W	W	W*	W	W	W*	W	W	A	W*	A	W	W
-	-	-	-	W	W*	-	-	-	-	-	-	-	-	-	-	-	NP	NP
NP	C	C*	C	M*	M*	M*	C*	C	M*	M	M	C	M*	C	M*	M*	M*	M*
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	Y	Y	Y*	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	Y	Y	NP	NP	-	-	-	-	-	-	-	C*	Y*	NP	NP
-	-	-	-	M	M	-	-	-	-	-	-	-	M*	-	M*	M	M*	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	-	Y*
-	R*	G*	R*	R	R	-	-	-	-	-	-	-	R*	-	-	-	NP	NP
-	Y	Y	Y	Y	Y	Y*	-	-	-	-	Y*	-	Y	Y*	Y	-	Y	Y
-	-	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
S*	NP	NP	NP	C*	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	Y*	Y	-	-	NP	NP	-	-	Y*	-	-	NP	NP	-	-	Y*	-
-	Y	Y	Y	-	Y*	-	-	-	-	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y*

-	-	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	Y*	Y*	-	-	-	-	Y*	-	-	-	NP	NP
-	-	K	K*	-	-	-	-	-	-	-	K*	-	K*	-	D*	-	K*	K*
NP	NP	NP	NP	-	-	NP	NP	-	-	low_cov	-	-	-	-	NP	NP	NP	NP
S*	R	R	R	V*	V*	V*	V*	N*	S*	-	V*	R*	N*	R	V*	V*	R	R
Y*	-	Y*	Y*	Y*	Y*	Y	Y	-	Y*	Y	Y*	Y*	Y*	Y	Y*	-	Y*	Y*
S*	-	-	S*	-	-	S*	-	-	-	-	S*	S*	V*	S*	S*	V*	V*	S*
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	Y*	Y*	-	H*	H*	N*	H*	H*	H*	N*	H*
R*	R*	D*	R	D*	D*	N*	R*	R*	D*	R*	R	R	N*	D*	D*	D*	D*	D*
Y	Y	Y*	Y	Y*	Y*	Y	Y	B*	Y*	Y*	Y	Y	H*	Y	Y	Y	H*	H*
V*	R	R	R	N*	D*	N*	D*	D*	R	-	D*	R*	N*	D*	R	R*	R	R
R*	R	R*	R	G	R*	R*	R*	G	R*	-	R*	R*	R	R	R*	R*	R*	G
Y*	Y*	Y*	Y*	-	Y*	-	-	Y*	-	-	Y*	Y*	Y*	-	Y	Y*	Y*	Y*
-	R	R*	R*	-	-	-	-	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*
S	G*	S*	G	S	S*	S*	S*	S*	S*	S*	S*	G	S*	S*	S*	S*	S*	S*
-	S	C*	S	-	-	S*	C	-	-	S*	C	C	S*	S	-	-	-	-
W*	-	-	-	-	-	W*	W	W	W*	-	-	-	-	-	W*	W*	-	W*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	M*	-	-	NP	NP
NP	R*	-	-	-	-	-	R*	-	-	NP	NP	NP	-	-	-	-	-	-
-	K	K*	K*	-	-	K*	K*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	W	-	W*	-	-	W	W*	-	-	-	-	-	W*	-	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	Y	-	-	NP	NP
NP	Y*	-	Y*	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	R	-	-	-	-
Y*	Y*	-	Y*	Y*	-	Y	Y*	-	-	Y	Y	Y	Y*	Y	Y	Y	Y*	-
K*	-	-	K*	-	-	K*	K*	-	-	K	K	K*	K*	K	K*	K*	K*	-
Y*	Y	Y*	B*	-	-	Y*	-	Y*	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*
S	S*	S	S	S	S	S*	S*	S*	S	S	S	S	S	S	S	S*	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	T*	Y*	T*	NP	NP	T*	T*	NP	NP	NP	NP	NP	T*	T*	NP	NP	NP	NP
C*	S*	S*	S	S*	C	C*	C*	C	S*	low_cov	C	S*	S	S	NP	NP	S	S
-	NP	NP	NP	NP	NP	-	-	K*	K	K*	K*	T*	NP	NP	NP	NP	NP	NP
-	Y*	-	Y*	M*	-	Y*	-	Y*	Y	-	-	-	Y*	Y*	-	-	-	Y*
W*	W	W*	W*	W	W	W	W	W*	W*	W	W	W*	T	W	T	T	W	W
Y*	Y*	-	Y*	C	C	B*	Y*	Y*	Y*	Y*	Y	Y	Y	C	Y	Y*	Y	Y
A*	A*	A*	A*	A*	R*	A*	A*	A*	A*	A*	A*	A*	A*	R*	R*	A*	NP	NP
-	C*	Y*	C	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	-	R*	R	R	-	-	-	-	-	-	-	R*	-	-	R*	R*	R*
R	R*	R*	R*	G	R	G*	G*	-	R*	R*	R*	R*	R	R*	G	G	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*
NP	NP	NP	NP	-	-	R*	R*	NP	NP	low_cov	A	R*	NP	NP	R*	R*	-	-
R*	-	R*	R*	-	R	R	R	R	R	R	R	R	R	A	R	R	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	R*	R*	NP	NP	R	R	R	G*	R	R*	R	R	R	R*	-

R*	-	-	R*	-	R*	R	R	R	R*	R	R	R*	R*	G*	R	R*	R*	-
NP	-	-	Y*	Y*	-	Y*	Y*	-	-	NP	NP	NP	Y*	Y*	-	-	Y*	Y*
R*	-	-	-	A	R	-	-	-	-	-	R*	-	R	R*	-	-	R*	-
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	R*	-	-	-	-
-	G*	G*	G	-	-	G	K*	NP	NP	K*	K*	-	K*	K*	-	-	K*	K*
NP	-	W*	-	NP	NP	NP	NP	NP	NP	-	W*	W*	-	W*	-	-	-	-
-	K*	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-
R*	-	-	R*	R*	R*	R*	R*	R*	R*	R	R	R	R*	-	-	-	R*	R*
-	K*	K*	K*	-	-	K*	K*	-	-	K*	K*	K*	K*	K*	-	-	K*	K*
-	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	-	Y	Y
-	-	-	-	-	-	S*	-	-	-	-	-	-	-	S	-	-	-	-
M*	C*	C*	C*	-	M	C*	C*	M*	C	M	C	C*	M	M*	M*	M	M	M
-	-	-	-	-	-	G	S*	S*	S*	S	S*	-	-	S	-	-	S*	S*
C	Y	-	Y	Y*	Y	Y*	C	C	Y*	C	Y	Y	Y	C	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M	M	M*	-	C	M*	M*	M*	M	M	C	M	M*	M*	M*	M	M
-	-	-	-	Y*	Y	-	-	-	-	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
Y*	-	-	-	Y	Y	-	-	-	-	Y*	Y*	Y*	Y	-	Y	Y	Y*	Y*
M*	M*	-	M*	M*	-	M	A	-	-	M	M	M	M*	-	-	-	M*	M*
NP	-	-	-	NP	NP	-	-	-	-	R	R*	-	R*	-	NP	NP	R*	R*
-	Y	-	Y	-	-	C	Y*	Y*	C	-	-	-	Y*	C	Y*	-	Y*	Y*
R*	-	-	R*	R	R	G*	R	-	R*	R	R*	R*	R	R	R*	R*	R	R
R*	R	R*	V*	NP	NP	R	G*	V*	R*	R	G	G	R	R*	R	R*	R*	R
S*	S	C	C*	-	S	S	C*	S*	C	S	S	S	S	-	S*	-	S*	S
-	-	-	-	-	-	Y	C	-	-	-	-	-	Y*	-	-	-	-	-
Y*	Y*	Y*	C	C	Y	C*	C*	Y*	C*	C	Y*	C*	C	C*	C	C*	C	C
A*	M	-	M	-	M*	A	A*	M*	M*	M	A	A	M*	A	-	-	M*	M
NP	NP	NP	NP	-	G*	NP	NP	NP	NP	G	low_cov	G*	NP	NP	NP	NP	NP	NP
-	S	S*	S*	-	-	-	S*	-	-	S*	S*	S*	-	-	-	-	S*	S*
NP	R	R*	R*	A*	R*	R*	A	R*	R*	R	R*	R	R*	R*	R*	A*	R*	R*
Y*	-	Y*	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	-	-	Y	Y*
-	Y	Y	Y	-	Y*	Y	Y	Y*	-	Y	Y	T	Y*	Y*	Y*	-	Y*	Y*
-	T*	T*	T	-	-	K*	K*	NP	NP	K*	K*	K*	K*	K*	-	-	K*	K*
K*	K*	-	K*	NP	NP	K*	-	NP	NP	K*	-	K*	K*	-	G	K	K*	K*
NP	-	-	-	S*	S	S*	-	-	-	NP	NP	NP	S*	-	-	-	-	-
NP	R	G*	R	G*	R	R*	G	R*	R*	R	G	R*	R	G*	G	G*	R	R
Y*	Y	-	Y*	-	-	Y	Y	-	-	Y	Y	Y*	Y*	Y	-	-	Y*	Y*
W*	T	W*	T	W*	W	NP	NP	T*	T*	W	T	T*	W	-	W	W	W	T
R*	R	R*	R	R*	-	R*	R*	R*	G	R*	R	R*	R	R	R*	-	R*	R*
NP	-	R	R	-	-	-	-	-	R*	low_cov	R*	R*	R*	-	R*	R*	-	R*
-	Y*	C	Y*	-	-	C	Y*	NP	NP	Y*	Y*	C	Y	C	C	Y	Y*	-
-	S*	S	S*	-	-	-	S*	S*	S	S*	-	-	S*	-	S	S*	S*	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	K*	Y*	-	-	-	-	-	-
NP	T*	Y*	Y*	Y	Y	T*	T*	T*	T	T*	Y*	Y*	T	T	Y*	Y*	Y	Y
-	G	R*	R*	R*	R*	G*	R*	R*	G	R	R*	R*	R	G*	R*	G*	R	G
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	C	Y*	Y*	Y*	C*	C	Y*	C	Y	Y*	Y	Y*	C	Y*	Y	Y*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	Y*	Y*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	Y	Y	-	-	-	-	-	Y*	Y	-	-	-	Y*

NP	-	-	-	G*	R	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	M*	C	M	M	M*	M*	M*	C*	M*	M	M*	M*	M	M	C	C	M	C*
R*	A*	A*	A	A*	A	-	-	A*	A*	R*	R*	R*	NP	NP	A*	A*	R*	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	Y	Y	-	-	-	Y*	-	-	-	Y*	-	Y*	-	Y*	Y*
-	M	M	M	M	M	-	-	M	M	-	-	-	M	C	M*	-	M	M*
-	Y*	Y*	Y*	Y*	Y*	C	C	Y*	C*	-	-	Y*	Y*	Y*	NP	NP	-	Y*
NP	-	-	-	Y*	Y*	-	-	-	-	low_cov	-	-	Y*	-	Y*	-	Y*	-
-	Y*	Y	Y*	-	-	-	-	-	-	Y	Y	Y*	Y*	Y*	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*
-	-	-	-	R	R	R	R*	R*	R	-	-	-	R*	R	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	K*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	M*	-	-	-	-	-
G*	R*	R*	R	R*	G	R*	R*	R*	G*	R*	G	R*	R*	R*	R	R*	R*	G
-	Y	Y	Y*	Y	Y*	Y*	Y	-	-	-	-	-	Y	Y	Y	Y	Y	Y
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	R*	R	R	-	-	R	R*	R*	-	-	R*	R*	R*	R*	R	R	R*	R*
R*	-	R*	R*	R*	R*	R	R*	R*	-	-	R*	R*	D*	R*	R*	R*	R*	R*
C*	Y	Y*	Y*	Y	Y	-	Y*	C*	Y*	C*	C	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S	-	G*	S	-	-	G*	G	S*	S*	S*	S	S*	S	S*	S	S*
-	-	-	-	R	R	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	R	R	-	-	R*	R*	-	R*	-	NP	NP	R*	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	-	-	Y*	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	-	Y*	-	Y*	-	-	-	Y*	-	-	-	Y*	-	Y*	Y*	Y*	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	R*
-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	A*	R*	-	NP	NP
W*	R*	R*	R	R	R	R*	R*	-	-	R*	R	R	R	R*	R	R	R	R
-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	R*	A	-	-	NP	NP
-	C	M*	M	M	M	M*	C	M*	M	C*	M	C	M	M*	M	C	M	M
S*	C	S*	S	S*	S	S*	S	-	-	C*	S	S	S	C	S	S	S	S
Y*	C	Y*	Y	Y	Y	Y*	C	C	Y	Y*	C	Y*	Y	Y*	C	C	Y	Y
-	T*	Y*	Y	Y*	Y*	Y*	T*	Y*	Y*	T*	T	Y*	Y	T	Y	T	Y	Y
-	-	-	-	-	-	-	-	-	Y*	Y	Y	Y*	-	-	-	-	-	-
W*	W*	-	-	W*	W	A*	A	A*	W	W	A	A*	W*	W*	W	W*	W*	-
G	R*	G*	G*	R*	R*	G*	G*	NP	NP	R*	G*	G	G*	R*	G	G*	G*	G
-	K*	-	-	-	-	-	-	-	-	K	K*	K	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	K*	W*	-	-	-	-	-	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	R*	R*	-	-	-	R*	R*	-	-
R*	-	-	R*	-	-	-	-	R*	-	R	R*	R	-	-	R*	R*	-	-
R*	R*	R*	R*	G	R*	G*	R*	NP	NP	R*	-	R*	NP	NP	NP	NP	NP	NP
S*	S	-	-	S	G*	S*	G*	S*	-	S*	S*	-	G*	G*	NP	NP	NP	NP

-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	Y*	NP	NP	-	-	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	R	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	Y*	-	-	-	-	-	Y*
NP	-	-	-	K*	K	NP	NP	-	-	NP	NP	NP	K*	-	K*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	K*	K*	-	-	K	G	-	-	-	K*	K*	K*	K*	K*	K*
-	-	-	-	-	-	-	-	Y*	T	-	-	-	-	-	-	-	-	-
R*	A*	A*	A*	A*	A*	A*	R	R*	R*	R	R	A	A	A*	A	A	R	A
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	R*	A*	A	A*	A*	A	A*	-	-	R	R	A	A	A	A	A	A	A*
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	A*	A*	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	G	G*	G*	NP	NP	NP	NP	NP	NP	G	G*	G*	G	S*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	W*	A*	A	NP	NP	NP	NP	NP	NP
K*	K*	G*	K	G	G*	G*	G	K*	K*	K	G	G	K*	G	G	K*	G*	G
C*	C	C*	Y*	M*	C*	NP	NP	C*	Y*	Y*	C	C	C*	Y	NP	NP	C*	C*
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	A*	A	A*	R	A*	A	-	-	R*	A*	R*	R	A	R	R	R	A
NP	low_cov	-	-	A	R*	NP	NP	-	R*	low_cov	-	-	R*	-	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP
NP	low_cov	-	M	M*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	G*	G*	G	G*	R*	NP	NP	NP	NP	R	R*	G*	NP	NP	NP	NP	NP	NP
Y*	Y	C	Y	Y	Y	Y*	-	Y*	-	Y	Y	Y	Y	C	Y	Y	Y	Y
Y*	Y	C*	Y	Y	Y*	-	-	-	-	Y	Y	Y*	Y	C*	Y	Y	Y	Y
NP	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
NP	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
K*	-	K*	N*	Y	Y	Y	Y*	-	Y	Y*	B*	B*	N*	Y*	Y*	Y*	N*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-
R*	-	-	R*	R	R	NP	NP	A	R*	R*	R*	-	R	-	R*	-	R*	R*
K*	-	-	K*	K	K	K*	K*	K	K	K*	B*	K	K	K*	K*	K*	K	K
-	-	-	-	Y	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	Y*	-	Y*	-
Y*	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	S*	C*	C*	C*	S*	S*	S*	C*	S*	C	C*	S*	C*	C*	S	S*	S*	S*
-	S*	S*	S	S*	S*	S	S	-	S*	S	S*	S*	V*	S	S	S	V*	S*
-	Y*	Y*	Y*	-	-	-	-	Y	Y*	-	-	-	Y*	Y*	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	R	R*	R	-	-	-	-	-	-
Y*	Y	Y	Y	-	-	Y	Y	Y*	-	Y	Y	Y	Y	Y	Y	Y	Y	Y*
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP

-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	B*	K*	K	K	K*	K*	K*	K*	K*	K*	T	K*	D*	T	K*	K*	D*	T
-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	-	Y*	-	-	-	-	-
NP	R*	-	-	A	A*	-	-	-	-	A*	A*	A*	R	A*	A	A*	R*	R*
-	K*	-	-	-	-	-	-	K*	K*	K*	-	-	K*	K*	-	-	-	-
-	-	-	Y*	-	-	-	-	-	V*	-	M*	-	M*	-	-	-	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	K*	K*	K*	-	-	-	K*	T	K*	T	K*	K*	K*	K*	K*	T
G*	S	-	S	S*	G	S*	-	S*	S*	S	G	G	S	G	S	S	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	Y*	Y*	Y	C	Y*	Y*	H*	Y	Y*	Y*	Y	H*	N*	C	Y	Y*	N*	Y
T*	T*	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	T	T*	T	Y*	Y*	Y*
-	-	-	R*	-	-	-	-	K	K	-	-	-	-	-	-	-	-	-
G*	-	-	R*	-	R*	-	-	R*	R*	G	G*	G	-	-	R	G	-	-
Y	-	-	Y*	Y	Y	-	Y*	-	-	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	R*	R	-	-	M*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	R*
NP	low_cov	-	-	NP	NP	NP	NP	A	A*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	M*	M*	-	-	-	-	M*	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
R	R*	-	R	R	R	-	R*	R	R	R*	R	R	R	R*	R	R	R	R
Y*	Y	C	Y*	-	Y*	NP	NP	NP	NP	-	-	-	C	Y*	NP	NP	NP	NP
Y	Y*	Y	Y	-	M*	-	-	Y*	Y*	-	-	-	Y*	-	H*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	W*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R	R	R	R*	R*	R	R	R	R*	R	R	R	V*	R*
W*	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	W*	W*	W*	W*
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	C	C*	C	-	-	-	-	Y*	Y	Y	Y*	Y*	Y	Y*	Y	Y*	Y*	Y
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-	R*	-	R*
-	R*	R	R*	R*	R	-	-	-	-	R*	R*	R*	R	-	-	R*	R	R*
-	-	-	K*	K	D*	-	K*	-	-	-	K*	K*	D*	D*	K*	K*	D*	D*
-	Y*	Y*	B*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	B*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	H*	H*	Y	Y*	H*	H*	H*
-	S	S	S	S	S	B*	-	-	S*	S*	S	S*	S	-	S*	S*	S	S*
-	K	K	K	-	-	-	-	-	-	-	K*	-	K*	-	K*	-	K*	-
-	-	-	-	-	-	-	-	-	-	R	R*	R	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
-	S*	-	-	-	S	-	-	-	-	S*	S*	S*	S*	-	-	-	S*	-

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-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	M*	low_cov	-	NP	NP	NP	NP	NP	NP
-	Y*	Y*	Y	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	R	-	R*	G	R	-	-	R*	G*	G*	G*	G*	R*	G*	G*	G	NP	NP
-	R	R	R	R*	R	-	-	R*	G	-	-	-	R*	R	G	R	R	G
T	T*	Y*	Y	T	Y	Y*	T	T	Y*	T*	T*	T*	Y	T*	Y	T	Y	Y
W*	W	W*	W	W*	T	-	-	W	-	T*	T*	T	W*	T	T*	T	W*	T
Y*	-	-	Y*	Y*	Y	-	-	Y*	-	T*	T	T	Y*	Y	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
-	S*	-	-	S	S	-	-	S	S	-	S*	S*	S	S	S*	S*	S*	S*
-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	-	-	-	R*	R*	R*	-	R*	R*	R*	D*
-	S*	-	S*	-	-	Y*	-	S*	S*	-	-	Y*	B*	S*	S*	S*	S*	Y*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
S*	-	-	-	S*	S*	-	-	-	-	-	S*	S*	S*	S*	S*	-	V*	S*
K*	-	-	K*	-	-	-	-	-	K*	-	-	-	K*	-	-	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	-	W*	W*	-	-	W*	-	W*	-	-	-	W*	W	-	-	-	W*
B*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
G*	R*	G*	G	G*	G	G*	G	G*	R*	R*	G*	G*	R	G	NP	NP	G	G
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	NP	NP	NP	R*	A	R*	R*	R*	A	NP	NP	NP	R	-	NP	NP	A*	A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S	C	S	S*	S	C	S*	C*	C	C	S	S	S*	S*	-	S	S
-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	W*	-	-	-	-	-	W*	-	W*	-	-	-	-	-	-	W*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
R*	S	S	S	-	R*	R*	-	-	-	S*	S	S	V*	V*	S*	-	V*	S*
-	R	R	R*	R	R	R*	R*	-	-	-	-	-	R*	-	R*	R*	R	R
-	R*	R*	-	R*	R*	-	-	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
R*	-	-	-	R*	R	R*	R*	-	-	-	R*	R*	R*	-	R*	-	R*	R*
R*	-	-	-	R*	R	-	-	-	-	-	-	R*	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	R*	-	-	-	-	R*	R	-	R*	-	R*	-	-	R*	R*	R*
-	Y	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	H*	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
Y*	Y*	Y	Y*	Y	Y	C	C	-	-	-	Y*	Y*	Y	Y*	Y	Y	Y*	Y
Y	-	Y*	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-

-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	Y	Y	Y	Y*	Y	Y	Y	-	-	Y*	-	Y*	Y	Y*	Y	Y*	Y	Y*
Y*	-	-	-	Y	Y	Y	Y	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	Y*	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y
Y*	-	-	-	Y	Y	Y	Y*	-	-	-	-	-	Y*	-	-	Y*	Y*	-
R*	-	-	-	R*	R*	R	R*	-	-	-	-	-	R*	-	-	R*	R*	R*
-	-	-	-	Y*	Y*	Y	Y*	-	-	-	-	-	Y*	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-
S*	S	S	S	S*	S	G*	G*	S*	-	-	S*	S*	S	S*	S	S	S	S
NP	-	-	-	Y*	Y*	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	Y	-	-	Y*	Y*	NP	NP	-	-	-	Y*	-	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	R	R	R	R*	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
K*	K*	K	K*	K	K	T	T	-	-	-	-	-	K*	-	K*	K*	K*	K*
Y*	Y*	-	-	Y	C	C*	Y*	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
R	R	R	R	R*	R	G	R*	R*	R*	-	R*	R*	R	R	R	R	R	R
-	K	K	K	K	D*	K	K	-	-	K*	K*	K*	K	K*	K	K*	K	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	R*	-	-	-	-	-	-
R*	-	-	-	R	R	R	R*	-	-	-	R*	R*	R*	-	R*	-	R*	R*
R*	R*	-	-	R	R	R	R*	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
S*	G*	G*	G*	S*	G*	G*	G*	NP	NP	S*	G*	S*	S	S*	S*	G*	S*	S*
-	-	-	-	K*	-	-	K*	-	-	-	-	K*	D*	-	K*	-	R*	-
R*	R	R	R	R	R	R*	R	R	R	R*	R	R*	R*	R	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
M*	-	M*	Y*	M*	M*	M*	-	M*	M*	-	M*	M*	M*	M*	M*	M*	M*	M*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R*	A	R*	R	A*	R*	R	R	R*	R	R	R	A*	R	R	R	R
R*	-	-	R*	-	-	-	R*	-	-	-	R*	-	R*	-	-	-	R*	R*
W*	W	W	W	W	W	W*	W*	W	W	W*	W	T	W	W	W	W	W	W
T*	-	-	-	T*	T	NP	NP	-	-	low_cov	-	-	K*	-	-	-	-	-
Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
A	R	R	R	R*	R*	R*	-	R*	R*	R*	R	R	R	R*	R	R	R	R*
A*	R	R	R	R*	R*	A	A	A*	R*	R*	A	A*	R	R*	A	R*	R	A
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-
S*	S*	S*	S*	S	S	S	S	S	S	S	S	S*	S	S	S*	S*	S*	S
S	S	S*	S*	S	S	S	S	-	S*	S	S	S	S	S	S	S*	S	S
R*	R*	R*	R*	-	R*	-	R*	D*	R*	R*	R*	R*	N*	R*	V*	V*	N*	V*
NP	NP	NP	NP	-	-	NP	NP	W*	-	W*	A	W*	NP	NP	-	-	NP	NP
R*	R*	R	R*	-	-	-	-	-	-	R*	R*	R*	R*	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP
C	C	C	C	Y	Y*	C	Y*	NP	NP	Y*	Y	C	Y*	-	-	-	C	C
-	Y*	Y	Y	Y	Y	W*	-	W*	-	W*	W*	-	H*	-	H*	-	Y	Y*
Y*	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*
NP	Y*	Y*	-	NP	NP	NP	NP	-	-	Y*	-	Y*	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S*	S*	S*	S	V*	-	S*	S	-	S*	S	S	S	S*	S*	S	S*	V*	V*

NP	Y	Y*	Y*	Y*	Y	T	Y	T	Y	Y*	Y	T*	Y*	Y	Y	Y*	Y*	Y*
Y*	Y	Y*	Y*	-	Y*	Y	Y*	Y*	Y*	Y*	T	Y	H*	Y*	Y*	Y*	H*	H*
NP	-	-	-	-	S*	S*	S*	C*	C	-	S*	-	S*	C	NP	NP	-	S*
R	R*	R*	R*	R*	R	R	R	R	R*	R	R	R*	R*	R	R	R*	R*	R
R*	R	R*	R*	R*	R*	R	R*	R*	R*	R	R*	R	R*	R*	R*	R*	R*	R*
-	Y*	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
NP	NP	NP	NP	A*	A	NP	NP	NP	NP	A*	A*	R*	R	R*	NP	NP	R	A*
Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	B*	C*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	Y*	-	-	-	-	-	Y*	-	-	Y*	H*	-	-	-	Y*	Y*
Y*	T*	Y*	T*	T*	T*	T*	T*	T	T*	T*	T*	T	T	Y*	T*	T*	T*	T*
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	R*	R*	R*	R*	NP	NP	NP	NP	NP	R*	R*	G*	R*
C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	C*	Y*	Y*	C*	C*	C*	C*	Y*	Y*	Y*	C*
-	NP	NP	NP	-	-	NP	NP	-	-	low_cov	-	-	NP	NP	NP	NP	NP	NP
NP	C*	C*	C*	NP	NP	NP	NP	C	C	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	K*	-	-	-	-	-	-	K	B*	K*	-	-	-	-	-	-
-	-	-	W*	-	R*	-	-	R*	R	-	-	-	R*	-	R	R*	R*	R*
S*	S*	S*	S*	S*	S*	B*	S*	S*	S*	S	S	S	N*	S	S*	S*	N*	N*
NP	C*	Y*	Y*	Y*	C*	NP	NP	Y*	Y*	Y*	Y*	Y*	Y	Y	NP	NP	Y	C
NP	-	-	-	-	-	-	-	-	-	-	low_cov	-	NP	NP	-	-	NP	NP
NP	A*	A*	M*	NP	NP	A*	A*	A*	A*	M	M*	M	M*	M*	A*	A	A*	M
NP	-	-	-	-	-	NP	NP	C*	C	NP	NP	NP	NP	NP	-	S*	NP	NP
R*	R*	G	G	G	R*	R*	R*	R*	G	-	R*	R*	G	-	G	G	R*	G
R*	R	R	R	R*	R*	-	-	-	-	-	R*	-	R*	R*	R	R*	R	R
Y*	Y	Y	Y	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	H*	Y	Y*	Y*	H*	Y*
Y*	Y	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	-	H*	Y*
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	NP	NP
S*	S	S*	S	S*	S*	S*	-	-	B*	-	S*	V*	V*	V*	V*	S	V*	V*
-	R*	-	-	R	R	-	-	R*	A	-	R*	R*	R*	R*	R*	R*	R*	R
-	-	-	R*	A	R*	R	R*	R*	R*	R	R*	R	R*	R*	R*	R*	R*	R*
-	K*	T	T	T	T*	T*	T	-	K*	K	K*	K*	T	T	K	T	T	T
NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	Y*	-	-	-	-
C	Y	C	Y	C	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	C	Y	Y	Y	Y
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	S*	G	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	Y*	-	-	-	-
-	Y*	-	Y*	T	Y*	-	-	Y*	Y*	Y*	Y*	-	Y*	-	Y*	-	Y	Y*
NP	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	C*	C	-	-	-	-	-	-	C	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	W*	-	-	W*	W*	W*	-	-	W*	-	-	W*	W*	W*	W*	-
Y*	H*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	C	Y	Y
K*	K	K	K	K*	K*	K	K	-	-	K	K*	K*	K	K	K	K	K	K
R*	R	R	R	-	-	A*	A*	-	-	R	A	R*	R*	R*	A	A	R*	R
-	-	-	R*	-	-	R	R	R*	-	-	-	-	R*	-	R*	R	-	-
Y*	-	-	Y*	-	-	T	T	-	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	R*	R*	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	-	R*	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	K	K	K*	K*	-	-	-	-	W*	-	-	K*	K*
Y*	Y	Y	Y	Y	Y	Y	Y	T	Y*	Y*	-	-	Y	Y	Y	Y	Y	Y
Y	-	-	Y*	Y	Y	Y*	Y	-	-	-	Y*	-	Y	Y	Y*	Y*	Y*	H*
S*	-	-	-	-	-	-	-	-	-	S	S*	S*	S*	S*	-	-	-	-
Y*	Y	Y*	Y*	Y	Y	T*	T*	Y*	Y*	T*	T*	T*	Y*	Y*	T*	Y*	-	Y*
-	A	A	A	R*	R	R	R*	A	R*	A*	A	A*	R	R	R*	R*	R*	A
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	S	-	S*	-	-	-	-	-	-
Y*	-	-	Y*	Y	Y	Y*	Y*	M*	-	-	Y*	-	Y	Y*	Y*	-	Y*	H*
-	NP	NP	NP	NP	NP	S*	S*	NP	NP	NP	NP	NP	NP	NP	G*	G*	NP	NP
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	Y*	Y*	-	Y*
NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	-	-	Y*	-	-	NP	NP
-	-	-	Y*	Y*	Y	-	-	Y*	Y*	-	-	Y*	Y*	Y	Y	Y	Y*	Y
-	-	-	R*	R*	R	-	-	R*	R*	-	R*	R*	R*	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	Y	-	Y*	-	-	-	-	-	-
NP	NP	NP	NP	C*	C	S*	-	S*	S*	NP	NP	NP	NP	NP	C*	C*	C	C*
R*	R	R*	R	R	R	R*	R*	R*	R	G*	R	G	R	R*	R	G	R	R
Y*	C	C*	Y	C	Y*	Y	Y*	Y	Y*	Y*	C*	C*	C	C*	C	C	C	C*
S*	G*	S*	S	G*	S*	S*	G*	G*	S*	G*	S*	S*	S	G*	S	G*	S*	S
-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M	M*	M	M*	-	-	-	M*	M*	-	-	M*	-
A	A	A*	R*	R*	A	NP	NP	NP	NP	low_cov	A*	A*	NP	NP	-	R*	R*	A*
G*	G	G*	R*	G*	R*	R*	G*	G	R*	G	G*	G*	R*	G*	R*	R*	G	G
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
S*	S	S	S	S	S	S	S	S*	-	S	S	S	S	S	S	S	S	S
-	-	-	K*	K	K	-	-	K*	K	K	K	K*	K	-	K*	-	K*	K
R*	R*	R*	R*	R	R	R	G	R*	R*	G*	G*	R*	R*	R*	R*	G*	R*	R
-	Y	Y	Y	-	-	-	-	-	Y*	-	-	-	Y	Y	Y	Y*	Y*	Y*
-	-	-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y
-	R	R*	R	G*	G*	G	R*	R*	R	R	R	G	R	R	R*	G*	G	R
T*	Y*	T	Y*	T	Y	Y	Y*	T*	T*	T*	T*	Y*	T	Y*	Y*	T	T	Y*
M	M	A*	M	M	M	M	M	M*	M*	M*	M*	M	M	M*	M	M	M	M
Y	C	C*	Y*	Y	Y	Y	C	-	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
A*	A*	R*	A*	A*	A*	R	A	A	R	A*	A*	A*	R	R	A	A	A*	A*
-	-	-	-	-	-	W	W*	-	-	-	-	-	-	-	W*	W	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	M	M*	M*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	A	A	A	R	R	-	-	A	R	R*	R*	A	R	R*	R*	R*	R*	R
S	S	S*	S	S	S	-	-	S	S	S	S	S	S	S*	S*	-	S	S
T	Y	Y*	Y	Y	Y	-	-	T	Y	Y	Y*	T	Y	Y*	Y*	Y*	Y	Y*
K*	K*	K	K	K*	K*	-	-	T	K	-	K*	-	K	-	K*	-	K*	K*
-	-	-	-	-	-	M*	A	-	-	M	M*	-	M	-	M	M	M	M
M*	M	A	M	-	-	M	M	M*	M*	M	M*	M	M	M	M	M	M	M

-	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	-	R*	R*	R*	R*
M*	-	-	-	-	-	-	-	-	-	M*	M*	M*	-	-	-	-	M*	-
Y*	-	Y*	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y*	-	-	-	-	Y*	-	Y*	-	Y	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-
-	-	-	-	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	M*	M	-	-	-	-	M*	-	-	-	-
R	R	R*	R	R	R	R	R*	R*	R*	R	R	R	R	R*	R	R	R	R
G*	K*	G*	K*	K*	K*	K*	K*	G	G	K*	K*	G	G	G	G*	K*	G*	G
G*	G	G*	G*	R*	R	R	R*	R*	G	G*	G*	R*	G	R*	G	R*	G*	G*
-	-	-	-	-	-	R	R	-	R*	-	-	-	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R	R	R	R	R*	R	R	R	R	R	R*	R	R	R	R
Y*	Y	Y*	T	Y	Y	-	-	Y*	Y	Y*	Y	Y*	Y	-	Y*	-	Y	Y*
-	-	-	-	-	-	-	-	-	-	M	M*	M*	-	-	-	-	M*	-
NP	R	R	R	R	R	-	-	-	-	-	-	-	R	R*	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
Y*	Y*	-	Y*	-	-	Y*	Y*	-	Y*	T*	T	T	Y*	T*	Y	Y	Y*	Y*
C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y	C	Y*	Y*	Y	C	C
M*	M*	-	M*	-	-	-	M*	-	M*	M*	M*	-	-	-	-	-	-	-
-	-	-	R*	-	R*	R*	-	-	-	-	R*	-	R*	-	-	-	R*	-
K*	K*	-	K*	-	-	-	K*	-	K*	K*	K*	-	-	-	-	-	-	-
-	Y*	-	Y*	-	Y*	-	-	Y*	Y*	Y	Y	Y	Y*	Y*	-	-	H*	Y*
-	C*	C*	Y	Y*	Y*	C*	Y*	Y*	C*	Y*	Y*	-	Y	Y*	Y*	Y*	Y*	Y*
-	K*	-	B*	-	-	Y*	Y*	-	-	-	Y*	K*	Y*	-	-	K*	B*	-
-	-	-	-	-	-	-	-	M*	-	-	-	-	M*	M*	-	-	M*	M*
V*	-	-	R*	-	-	-	-	-	-	-	R*	D*	R*	R	D*	R*	R*	R*
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	R	-	-	-
-	-	-	-	-	-	C	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	Y*	Y*	-	-	-	H*	-
R*	R*	G*	G	R*	R	R*	G*	R*	G	R*	R*	R*	R*	R*	R	R*	G	R*
-	-	Y*	-	-	-	-	-	-	-	-	Y*	-	H*	Y*	-	-	-	-
R	A*	A	R	R*	R	R*	R*	R*	R*	A	R	R*	R	A	R	R	R	R
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	-	-	-	-
-	Y	Y	Y	-	-	-	-	Y*	Y	Y	Y*	-	Y*	-	Y	Y*	Y	Y*
-	-	-	Y*	Y	Y	Y*	-	Y	Y	Y	C	Y*	Y	Y	Y*	-	Y	Y*
Y*	Y	Y	Y	C*	Y	Y*	Y*	Y*	Y	C*	Y	Y	Y	Y	Y	Y	Y	Y
A*	A*	R*	R*	R*	R*	A*	R*	R*	R*	R*	A*	R*	R*	R*	R*	R*	R*	R*
C*	S*	S*	S*	-	-	NP	NP	-	-	NP	NP	NP	S*	-	S*	-	S*	-
-	-	-	-	-	-	-	-	W*	W	W	-	-	-	-	-	-	W*	W*
R*	R	R	R	R	R*	-	-	R	R	R	G	R	R	R	R	G	R	R
-	Y	Y*	Y	Y*	-	-	Y*	Y*	Y*	Y	Y*	-	Y*	-	Y	Y*	Y*	Y*
M*	M*	-	M*	M	M	M*	-	M	M*	M	M	M	M	M	M	M*	M	M
NP	Y*	Y*	T*	-	-	NP	NP	T*	Y*	-	-	-	Y*	-	-	Y*	Y	-
Y*	Y*	Y	Y*	Y*	Y	NP	NP	-	-	Y*	Y*	-	Y	Y	C	Y*	Y	C
NP	low_cov	R*	R*	R*	A*	NP	NP	-	-	low_cov	R*	R*	NP	NP	A	R*	R*	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y*	C	Y*	Y*
R*	R*	R	R	R*	R*	R	G	G	R*	G	R	R*	R	G	R	R*	R	R

Y*	-	-	Y*	-	Y*	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	NP	NP	Y*	Y*	Y*	Y*	Y*	-	Y*	-	-	-	Y*
D*	V*	-	V*	R	D*	-	-	-	R*	-	R*	-	R*	-	-	-	R*	R*
-	-	-	-	G	K	-	-	-	-	-	-	-	K*	-	K*	K*	K*	K*
-	Y*	-	-	Y	Y	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	M*	-	Y*	H*	M*	M*	M*	M*	M*
-	Y*	Y*	-	Y*	Y*	M*	-	Y	Y	-	-	Y*	H*	-	Y*	Y*	Y*	Y*
G	R	R*	R	R*	R*	R	G	-	-	R*	G	R	R*	R	-	-	R	R*
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
G*	G*	K	K	K*	K	K*	-	K*	K*	K	G*	G*	K	G	K*	K*	K	-
-	-	-	K*	-	-	-	-	K*	K*	-	-	-	-	-	K*	-	-	-
-	-	-	-	M*	M*	M	M*	-	-	-	-	-	M*	M*	-	-	M*	M*
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	Y	Y*	-	Y*
R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	R*	R*
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	Y*	-	-	Y	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*
-	M	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	A	R	R*	-	-	R*	-	-	-	-	-	R*	-	-	R*	R*	R*
NP	-	-	-	NP	NP	-	-	-	R*	-	-	-	-	-	-	R*	-	-
Y*	Y	Y	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	-	H*	Y*	H*	H*	H*	Y*	H*	H*
-	-	-	-	-	-	-	-	-	-	R	R	R*	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y*	Y*	H*	Y*	Y*	-	H*	H*
-	-	-	-	-	-	-	K*	-	-	-	R*	-	R*	-	-	-	R*	-
Y*	-	-	Y*	-	Y*	-	Y*	-	Y*	-	H*	Y*	H*	Y*	Y*	H*	H*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	S	S	-	-	-	-	-	-	S*	S*	S*	S*	V*	S*	S*
S*	S	S	S	S	S	S	S	S*	S*	S*	S	S	S	S	S	S*	S	S
S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S	S*	G	S*
-	Y*	Y*	-	Y*	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	B*	-	Y	Y*	Y*	Y*	Y*	Y	B*	Y*	Y*	Y*	H*	Y	Y*	Y*	Y	Y
R*	R	R	R*	-	-	-	-	-	-	R*	R	R*	R*	-	R*	-	R*	R*
-	Y*	-	B*	-	Y*	-	-	-	-	-	H*	Y*	H*	-	Y*	Y*	H*	H*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	S*	S*	S*	-	-	-	-	-	-	S*	S	S*	S*	S*	S*	-	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-
R*	R	R	R	-	R*	-	-	-	-	R*	R*	R	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	R*	R*	-	-	-	R*	R*	R*	-	R*	R*
-	-	-	-	S	S	-	-	-	-	-	-	K*	S*	S*	S*	S*	S*	S*
Y*	Y	Y	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y	Y	H*	Y*	Y*	Y*	Y*	Y*
-	Y*	Y	Y*	-	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
S	S*	S	S*	S*	-	-	-	-	-	S	S	S	V*	S*	S*	S*	S	S*
-	-	-	R*	-	-	-	-	R	R*	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
Y*	Y	Y	Y	-	-	-	-	-	-	Y	Y	Y	Y*	-	Y*	-	Y*	-
-	M	M	M	-	-	-	-	-	-	M	M	M*	M*	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	K*	K	K*	-	-	-	-	-	-

-	-	-	-	-	-	-	-	M*	M	M*	M*	M*	-	-	-	-	-	-
R*	R	R	R	R*	R*	-	-	R	R	R*	R	R	R*	R	R*	R	R*	R
-	**-**	**-**	**-**	***Y***	***Y****	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***Y****	**-**	**-**	**-**	***Y****	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	***R***	***R****	***R***	**-**	***R****	***G***	***G***	***R****	***R***	***R****	***R****	***R****	**-**	**-**	***NP***	***NP***	***R****	***R****
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	R*	R*	R	R*	-	-	-	R	R*	R*	R*	R	R*	R*	R*	R*
-	-	-	-	-	Y*	-	-	-	-	Y	Y*	-	Y*	Y	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	-	-	-	-	K*	-	-	-	K*	K	-	-	-	G	-	-	-	-
R*	-	-	R*	-	R*	-	-	-	-	R	R*	R*	R*	R	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	Y*	Y*	-	-
-	-	-	-	-	R*	-	-	-	-	R*	-	R*	-	A	-	-	-	-
-	-	-	-	-	M*	-	-	-	M*	M	M*	-	M*	M	M*	-	M*	-
Y*	-	Y*	-	-	-	-	-	Y*	Y	-	H*	H*	H*	Y*	Y*	H*	H*	H*
R*	-	-	R*	-	R*	-	-	R*	-	R	-	-	R*	R	R*	-	R*	R*
R*	R*	R*	R*	R*	D*	-	R*	-	-	R	R*	R*	R*	R*	D*	R*	R*	R*
Y*	Y*	-	Y*	-	Y*	-	-	-	-	Y	Y*	Y*	H*	Y	H*	Y*	H*	Y*
-	-	-	Y*	-	Y*	-	-	Y*	-	Y	-	-	Y*	Y	-	Y*	Y*	Y*
M*	-	-	-	-	-	-	-	-	-	-	-	-	M*	C	-	-	-	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
R	-	-	-	R*	R*	R	G	R*	R*	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP
Y*	C*	Y*	C*	Y*	Y*	C*	C*	Y*	Y*	Y*	C*	Y*	C*	C*	Y*	C*	C	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M	M	-	M*	M*	M*	M*	-	M	M	M*	M*	M*	M*	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	R*	R	R	R	G	G	-	-	-	-	-	-	R*	-	R*
R*	R	R	R	R	R	R*	-	R*	-	R	R	R	R	R	R	R	R	R
C	C	Y*	Y	Y*	C	-	-	-	-	Y*	C	C	C	Y	Y	Y	C	Y*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	R*	-	NP	NP
-	-	-	-	R	R	-	-	-	-	-	R*	-	R*	R	R*	-	R*	R*
Y*	C*	C*	C*	-	-	Y*	-	Y*	Y	-	Y*	Y*	Y*	Y*	NP	NP	Y*	Y*
Y*	Y	Y	Y	Y	Y*	Y*	T*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y
Y*	C*	C*	Y*	Y*	Y*	Y*	C*	C	Y*	C*	Y*	C*	Y*	Y*	Y*	C*	Y*	Y*
Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y	Y
-	-	-	S*	-	S*	R	R*	-	-	-	-	-	V*	-	-	-	V*	R*
NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	NP	NP	S*	S*	NP	NP	NP	S*	S*	G*	S*	NP	NP
-	-	-	-	-	-	-	-	R*	-	R	R	R*	-	-	-	-	-	-
K*	-	-	K*	K*	K*	-	-	K	K	-	D*	K*	K*	K	K*	K	K*	K*
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R	R	R	-	-	-	-	-	-
M*	-	M*	-	-	-	-	M*	-	-	-	-	-	-	-	M*	M*	-	-
-	R*	G*	R	-	R	-	-	R*	G*	R*	G	R	R	G	R	R	R	R*
-	-	-	S*	-	-	-	-	S*	-	-	-	-	-	-	-	-	S*	-
-	-	-	R*	-	-	-	-	R*	R*	R	R	R*	-	-	-	-	R*	R*
-	-	-	-	K*	K	-	-	-	-	-	-	-	K*	-	K*	-	K*	-

R*	-	-	R*	-	R*	-	-	R*	-	R	R	R	R*	-	-	-	R*	R*
-	Y*	Y	Y	-	Y*	-	-	Y	Y	Y*	T	T	Y	T	Y	Y*	Y	Y*
-	T	Y*	Y	-	Y*	-	-	Y*	T	T	T	Y	Y	T	Y	Y	Y	-
A*	A*	A*	A	A*	A	A*	A*	A*	A*	R*	A	A*	R*	A*	A	A*	R*	A
R	R*	R*	R	R*	R	R*	R*	R*	R*	R*	R	G	R	R	R	R	R	R
-	-	-	-	-	-	-	-	R*	-	-	-	-	D*	-	R*	R*	W*	R*
NP	-	-	R*	-	-	R*	R*	R*	R*	-	-	-	-	R*	R	R*	-	-
-	R	R	R*	R*	R	R*	R	R	R*	R	A	R	R	R*	R*	-	R*	R
-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	-	-	-
NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	S*	-	C	S	-	-	-	-	-	S*	-	S*	-	S*	-
-	low_cov	Y*	-	Y	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
NP	NP	NP	NP	S*	S*	NP	NP	NP	NP	S*	G	S*	S*	S*	S*	S*	NP	NP
-	R*	R*	R*	R	R*	NP	NP	-	-	R*	R*	R*	R	R*	R*	R*	R*	R*
-	-	-	R*	-	-	R*	-	-	-	-	R*	-	R*	-	-	-	R*	R*
NP	R*	R*	R*	R*	R	NP	NP	-	-	R*	R*	R*	NP	NP	R*	-	R*	R*
R*	R	R*	R	R	R	R*	-	-	-	R	R	R	R	R	R	R	R	R
R*	R	R	R	R	R	R*	R*	R*	R*	R	R	R	R	R	R	R	R	R
-	-	-	-	-	-	-	-	R*	R	-	-	R*	-	-	-	-	R*	-
NP	Y	Y	Y	-	-	-	-	Y*	-	-	-	-	Y*	-	-	Y*	Y*	Y*
-	R*	-	-	-	-	-	-	R	R	-	-	R*	-	-	-	-	R*	R*
-	-	-	Y*	-	Y*	-	-	Y*	Y*	-	Y*	-	Y*	-	Y*	-	Y*	Y*
-	T	Y	Y	Y	Y	Y*	-	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y
-	R	R	R*	R	R	R*	-	R*	R*	A*	R	R	R*	-	R	R	R*	R
-	Y*	Y	Y*	-	-	Y*	Y*	-	-	-	-	-	Y*	-	-	-	Y*	Y*
NP	-	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R	-	R*	-	R*	R*
S*	-	-	-	S	S	-	-	-	S*	S	S	S*	S*	-	S	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-
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-	-	-	-	S*	S	-	-	-	-	-	-	-	-	-	-	-	-	S*
-	-	-	-	-	-	R*	-	R*	R	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y	Y	-	-	Y*	Y*	Y*	Y*	Y*	Y	-	Y*	Y*	Y	Y
-	S	S*	S	S	S	-	-	S*	S*	-	S*	S*	S	S*	S*	S*	S	S*
-	Y	Y*	Y	Y	Y*	-	-	-	-	-	-	-	Y	Y*	Y	-	Y	Y*
-	S	G*	G	S	S	-	-	-	-	-	S*	S*	S	S	S*	S*	S	S
-	Y	Y*	Y	Y	Y	-	-	Y*	Y	-	Y*	Y*	Y	Y*	Y	-	Y	Y
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
R	-	-	R*	R	R	R	R	-	-	-	R*	-	R	R	R*	R	R*	R*
-	-	-	-	-	Y*	-	-	NP	NP	-	-	-	-	-	Y*	Y*	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	-	-	Y*	-	Y*	T	Y*	Y*	Y*	Y*
NP	M	M	M*	A*	M	NP	NP	M*	M*	-	-	-	M*	A	M*	M*	M*	M
Y*	Y	T	Y	T*	Y*	T*	T*	Y*	T	-	-	-	Y	T*	Y	Y*	T	T
-	R	R	R	-	R*	R	R*	-	R*	-	R*	R*	R*	R*	-	-	R*	R
R*	R	R*	R	R*	R	R*	R*	-	-	R*	R	A	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	R	-	-	-	R	-	-	-	-
-	-	-	R*	R*	R*	-	-	R*	-	-	-	R*	R*	R*	R	R*	R*	-

-	-	-	-	M	M	-	-	-	-	-	-	-	M*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R*	R	-	-	-	-	-	-
-	-	-	-	R*	R	R	R	R	R*	-	-	-	R*	R	R*	-	R*	R*
K*	-	-	-	-	-	-	-	K*	K	K	K*	K	K*	K	-	-	K*	K*
R*	-	-	-	-	-	-	-	R*	G*	-	R*	-	-	R*	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	Y*	Y*	Y*	Y*	Y	-	C*	NP	NP	NP	NP
V*	-	-	R*	R	R	-	-	-	R*	-	R*	R*	R	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	H*	Y	Y	Y*	Y*	Y	Y
Y*	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	R	R	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y	H*	Y*	Y	Y*
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
R*	R	R*	R	V*	R*	R	R*	R*	R*	-	R*	R*	R	R	D*	R*	R	R
S*	-	-	-	S*	S	-	-	S*	S*	-	-	-	S*	S*	S	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	-	H*	-	Y*	H*	-	Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*
R	-	-	-	R	R	-	-	R	R	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	Y	Y*	Y*	Y
-	-	-	K*	-	-	-	-	-	-	K	K*	K*	-	-	K*	-	-	K*
A	-	-	R*	R	R	R*	-	R*	R*	-	R*	R*	R	R	R	R*	R*	R
Y	-	-	Y*	Y	Y	-	-	Y	Y	Y	Y	C	Y*	Y	Y*	Y*	Y*	Y
R*	-	-	R*	R	R	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
S*	S*	S*	S	S	S	S	S	NP	NP	S*	S	S	S	S	S	S*	S*	S
Y	-	-	Y*	Y	Y	Y*	Y*	-	-	-	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	K*	K*	K*	K*	D*	K*	-	-	-	K*	-
M	M*	-	M*	M	M	-	-	M	M	M	M	M	M*	M*	M	M	M*	M*
G*	-	-	R*	R	R	-	-	R	R*	R*	R	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	R*	R	R	R	R*	R*	-	-	-	-	-
R*	-	-	R*	D*	R	W*	-	D*	R*	R*	R*	R*	R*	R*	R	R*	R*	R*
-	-	-	-	-	-	-	-	R*	R*	R	R*	R*	-	-	-	-	-	-
-	-	-	K*	-	-	-	-	-	K*	K*	K*	K*	K*	-	-	-	K*	-
R*	-	-	R*	R	R	-	-	R*	R*	-	-	-	R	R	R	R	R*	R*
K*	-	-	K*	K	K	K*	K*	K*	K*	K*	K*	K*	K*	K	K*	K	K	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-	-	K*	-	-
R*	-	-	-	R*	R	-	-	-	-	NP	NP	NP	R*	R*	R*	R*	-	R*
-	R*	-	R*	-	R*	-	-	R*	R	R	R	R*	R*	-	R*	-	R*	R*
-	-	-	R*	-	-	-	-	-	R*	R*	R*	R*	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	Y*	Y	Y	Y*	-	H*	-	Y*	-	Y*	Y*
-	-	-	Y*	-	-	-	-	Y*	Y*	Y	B*	Y*	N*	-	-	-	Y*	Y*
V*	-	-	R*	R	R	-	-	-	R*	-	R*	R*	R*	R	R	R	R*	R*
NP	NP	NP	NP	Y*	Y*	-	-	NP	NP	-	-	-	Y*	Y*	Y*	Y*	NP	NP
R*	R	R	R*	R*	R	-	-	-	-	-	R*	-	R*	R	R*	R*	R*	R*
-	-	-	R*	-	-	-	-	-	-	R*	-	-	S*	-	S*	-	R*	-
K*	-	-	K*	-	-	K*	-	-	-	-	K*	-	K*	-	-	K*	K*	-
Y*	Y*	T*	Y	-	-	-	-	-	-	-	Y*	-	Y	Y*	Y*	Y*	Y*	Y*
-	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*	G*	G*	G*	NP	NP	G*	G*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	C	Y*	NP	NP	NP	NP	Y*	C*	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*

-	-	-	-	R	R	R*	-	R*	R	-	-	-	R	R*	R	R	R*	R
-	Y*	Y*	Y*	-	-	NP	NP	C*	Y	Y*	Y*	-	Y*	Y*	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	G	R*	R*	R*	R	R*	R*	R*	R*	G	R*	R*	R	R*	R*	R*	R	R
-	-	-	Y*	Y	Y	-	-	Y*	Y	-	Y*	-	Y	Y*	Y	Y	Y*	Y
C	Y*	Y*	C*	C*	C*	Y*	C*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	C*
-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	R	-	-	-	-
R*	R	R*	R	A	R	-	-	R*	R*	R*	R*	R*	R*	R	A	R	R	R*
R*	R*	R*	R*	R*	R*	D*	R*	R*	R*	R	R*	R*	R*	R*	R*	G*	G*	G*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	-	-	R	R*	-	-	R*	G	R*	R	R	R	R*	R*	R
R*	low_cov	R	R	R*	R*	R	R	-	-	R*	R	R*	R	R*	R	-	R	R*
Y*	Y*	Y	T	Y	Y	Y*	Y*	Y	Y	Y*	Y	Y	H*	Y	Y*	H*	H*	Y
D*	R*	R	R	R*	-	-	-	-	-	R*	R	R*	D*	R*	R	R*	R	R*
R*	R	R*	R	R*	R*	R	R	R*	R*	R	R	R	R	R*	R	R	R	R
R	R	R	R	R	R	-	R*	R	R	R*	R	R	R	R	R*	R*	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-
R*	-	-	R*	-	-	-	-	R	R*	R	R	R	R*	R	R*	R*	R*	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	Y	C	-	Y*	Y*	-	Y*	Y	-	Y*	Y*	Y	Y*	Y	-	Y	Y*
Y*	Y	Y	T	Y	Y	Y	Y*	-	-	Y	Y	Y*	Y	T*	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	W*	W	W	-	-	-	-	-	W*	W*	W	W*	-	-	W*	-
W*	-	-	-	-	-	-	-	W*	T*	-	-	-	W*	-	W*	W*	W*	-
Y*	Y*	Y*	Y	-	Y*	Y	Y	-	-	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*	R*
-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	-	-	-	-	-	Y	C	-	-	-	-	Y*	Y	Y*	-	-
A	A	R*	R	R	R*	A*	R*	-	R*	R	R	R*	R	A*	R	R*	R	A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
S*	-	-	-	NP	NP	-	-	-	-	S*	-	-	-	S*	S*	-	-	-
-	-	-	-	-	-	-	-	-	-	T	Y	Y*	Y*	Y*	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	A	A*	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
Y*	NP	NP	NP	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-	Y*
G*	NP	NP	NP	-	-	-	-	NP	NP	NP	NP	NP	-	R*	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	-	-	-	-	-	low_cov	-	NP	NP	NP	NP	NP	NP
-	Y*	C*	C*	C*	C*	C*	Y*	NP	NP	NP	NP	NP	Y	Y*	Y*	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	R	R	-	-	R*	R*	-	-	-	R*	R*	R*	R*	R*	R*
R*	S*	R*	V*	-	R*	-	R*	R*	R*	R*	R*	-	R*	R*	-	-	R*	R*

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-	W	A*	A	W	W*	W	W*	W*	W	-	W*	-	W	-	-	W*	W	W*
-	S	S	S	-	-	S	G*	S	S*	-	-	-	S*	S	S*	S*	S*	S*
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R*	R*	R	R	R	R	R	R	R*	D*	R	R	R*	N*	R*
NP	G*	G*	G	-	R*	R	R*	R*	R*	R	R	R*	R*	G	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	M*
S*	Y	Y*	Y*	S*	Y*	S*	-	-	S*	Y	N*	Y	N*	N*	Y*	H*	N*	N*
K*	K	K	K	K	K*	K*	-	-	-	K	K	K	D*	K	D*	D*	K	D*
R*	D*	R*	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	-
-	low_cov	M*	C	C	C	-	-	M*	-	low_cov	M*	C	M*	M*	M*	M*	C	M*
Y*	Y*	-	Y*	Y*	Y*	-	-	-	-	Y	Y*	Y*	H*	Y*	H*	-	Y*	Y*
K*	-	-	-	K*	K*	-	-	-	K*	-	-	K*	K*	K*	K*	-	K*	K*
C	Y*	Y*	Y	Y*	C	Y	Y*	Y*	-	Y*	Y*	Y	H*	C	Y	Y*	Y*	C
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V*	R*	R	R	M*	R*	R*	-	-	-	R	R*	V*	R	R	R*	R*	R	R
-	-	-	-	K	K	-	-	-	-	-	K*	K*	D*	K*	K*	K*	K*	K*
-	-	-	-	Y*	-	-	-	-	Y*	-	-	-	M*	-	-	-	M*	-
-	Y*	Y	Y	-	Y*	Y*	Y*	-	-	Y	Y*	Y*	H*	Y*	Y	Y*	Y*	Y*
R*	R	R	R	R*	R	R*	R*	-	R*	R	R	R	R	R	R	R	R	R
M*	M*	M*	M*	H*	M*	M*	H*	M*	H*	-	-	M*	V*	S*	M*	M*	M*	M*
-	-	-	-	R	G	R	R	-	-	R*	R*	R*	R*	-	R*	R*	R*	R*
R	R	R	R*	R	R	R	R	R*	R*	R	R	R	R*	R	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
-	-	-	-	-	-	-	-	-	-	R	R	R	-	-	-	-	-	-
-	R*	R*	R	G	R	R	R*	-	-	R	G	G	R*	R	R*	R	R*	R*
Y*	Y	Y	Y	Y	Y	Y	Y	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y
R	R	R*	R	R*	R*	-	R*	R*	R*	-	R*	R*	R	R	R*	R*	R	R*
R*	R	R	R	R*	R*	R*	R*	R*	R*	-	R	R*	R	R	R*	R*	R	R*
K*	-	-	K*	-	-	-	-	-	-	-	K*	-	D*	-	-	-	N*	D*
-	R*	-	R*	-	-	R*	-	-	-	-	-	-	R*	R*	-	-	R*	R*
T*	T	K	K	K*	-	K*	-	-	-	-	-	K*	K	K*	-	-	K	-
T*	low_cov	-	-	-	-	Y*	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	R*	-	-	-	-	-	-	-	-	R	R	R*	-	-	R*	R	-	-
R*	low_cov	G	R*	G	R*	R*	R*	V*	R*	R*	R*	R*	R	R*	V*	G*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
W	D*	-	D*	W*	W	W*	D*	W*	W*	W*	D*	W*	W	W	W	D*	W	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	M*	M	-	-	-	-	-	-	-	M*	-	-	-	-	M*
R*	-	-	R*	R*	R	R*	R	G	R*	R*	R*	R	R*	R*	G	G	R*	R
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	R*	-	R*	-	R*	R	R*	R*

-	-	-	-	R	R	-	-	-	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
NP	-	-	-	W*	A	-	-	-	-	-	-	-	W*	-	-	-	-	-
K*	-	-	-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	-	-	M	M	-	-	-	-	-	M*	-	M*	M*	M*	M*	M*	M*
-	-	-	S*	S	S	-	-	-	-	-	-	-	S*	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	W	W	W	W*	W*	W*	W*	W*	W*	W*	W*	A*	W	W*	A	A*	W	W
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
NP	-	-	-	-	-	NP	NP	Y*	Y	NP	NP	NP	-	-	-	Y*	NP	NP
NP	-	-	-	-	-	-	-	R	R*	R	R*	R*	-	-	R	R	R*	R*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	Y*	Y*	-	Y*	Y*	Y*
-	K	-	-	-	-	-	-	K*	K	K	K	K	K*	-	K	K*	K*	K*
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y*	Y*	C*	Y*	C	B*	Y*	C*	C*	C*	C	C*	Y*	C*	Y*	C*	C*	Y*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W*	W	W*	-
Y*	-	-	Y*	-	-	-	-	-	-	-	-	M*	Y*	-	-	Y*	H*	-
NP	Y*	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	C	Y*	-	-
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
S	S	S	S	S	S	S*	S*	S	S*	S	S*	S	S	S	S	S*	S	S
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	G*	NP	NP	NP	NP	NP	NP
-	K	K	K	K*	K*	K	K	K	K	-	K*	D*	D*	K*	K*	K*	K	K*
S*	S*	-	S*	-	S*	-	S*	S	S	S	S	S	V*	S*	S*	S*	V*	V*
R*	R*	-	R*	R	R	R*	-	R*	R	R	R*	R*	R*	R*	R*	R*	R*	R
Y*	Y	Y	Y*	T	T	Y*	T*	Y*	Y*	T*	T	T	Y	Y	Y	Y*	Y	Y
K*	-	-	-	-	-	K*	K*	-	-	-	-	-	K*	-	K	K*	K*	K*
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	Y*
Y	Y*	-	Y	Y*	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y
S*	S*	-	S*	S	S	-	S*	S	S	S	S*	S*	S*	S*	S*	-	V*	S*
-	-	-	Y*	-	-	Y	Y	-	-	-	-	-	-	Y*	-	-	-	-
-	R	R	R	R	G	R	R*	R	R	R*	R	R	R	R	R	G	R	R
G*	G*	G*	G*	R*	G*	R*	G*	G*	R*	R*	G*	G*	G*	G*	G*	G*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	Y*	-
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	-	R	R*	-	-	-	-	-	R*	-	R*	-	-	-
Y*	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	R*	R	R	R*	D*	R*	R	R	R	N*	D*	R	D*	R	R
-	-	-	-	G*	S	S	G*	S*	S	S*	-	S*	S*	-	NP	NP	-	S
-	-	-	-	-	-	R	R	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	A*	M	A*	M*	M*	M	NP	NP	NP	A*	M*	A	A	NP	NP
-	-	-	Y*	T	Y	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	A*	A*	W*	W*	NP	NP	NP	-	-	W*	-	NP	NP
R*	D*	-	R	-	R*	-	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
Y*	low_cov	-	Y*	Y*	Y	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y	Y*	Y	C

R*	R*	R*	R*	R	R	R*	R	R*	R*	R*	R*	R*	R*	-	R	R*	R*	R*
S*	S	S	S	S	S	-	-	S*	S*	S	S	S*	S	S	S	S*	S	S*
-	-	-	-	S	S	-	-	-	-	S	G	S	S*	-	S*	-	S*	S*
-	-	-	-	Y*	Y	-	-	-	-	Y*	Y	Y	Y*	-	Y*	-	Y*	Y*
M*	M	A*	M	A*	M*	-	-	-	-	M*	A*	A	M	M	M*	M*	M	A
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K	K	K	K*	K*	-	-	-	-	-	-	-	K*	K	K*	-	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-
R*	R	R	R	R	R	-	-	-	-	-	-	R*	R	R	R*	-	R	R
-	-	-	-	Y*	Y	-	-	-	-	Y	C*	Y*	-	-	-	-	NP	NP
R	R	R*	R	R	R	-	R*	R*	R*	-	R*	R*	R	R	R*	R*	R	R
NP	M*	C*	C*	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-
-	-	-	-	-	-	S*	S*	-	-	G*	S	S	-	-	S*	S*	S*	S*
C*	NP	NP	NP	C*	C*	C*	C*	C*	C*	C*	C*	C*	NP	NP	C*	C*	NP	NP
A	R	A	R	A*	A	R	R*	-	R	-	R*	R*	R	R*	R	R	R	A
K	K	K	K	K	K	K*	K*	K*	K	K*	K	K	D*	K	K	K	D*	K
-	-	-	-	-	-	-	-	-	-	K*	K*	K	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S*	S*	S	S	S	S	S*	G	S	S*	G	S	S	S	S	S	S	S
M*	M	M*	M	M	M	-	-	M*	M*	M	M*	M	M*	-	M*	M*	M	M
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	-	-	Y*	Y	-	-	-	Y*	-	Y*	Y	-	-	Y*	Y*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	C*	Y*	Y*	C*	Y*	Y*	low_cov	C*	Y*	Y*	Y	Y*	C*	NP	NP
-	-	-	Y*	-	-	-	-	-	-	Y	Y	Y	-	-	Y	Y*	Y*	Y*
S*	S*	G	S*	S*	S*	-	-	S*	S*	NP	NP	NP	S*	-	S*	S*	S*	S*
Y	Y*	Y*	Y*	Y	Y*	Y*	-	Y	Y	Y	Y	Y	H*	Y*	Y*	Y*	Y*	H*
Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	C	Y	Y	Y	Y
M*	M*	M	M*	M*	M*	M	M	M	M*	M*	M*	M*	V*	M	M	M*	M*	M
K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	M	M	M	M	-	M*	M*	M	A	M	M	M*	M*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y	Y	Y	T	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
-	M	M	M	-	-	-	-	-	-	-	M*	-	M*	-	-	-	M*	-
-	-	-	R*	R	R	-	-	R*	-	-	-	-	R	-	-	-	R*	R
-	K	K	K	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-
-	-	-	Y*	-	-	-	-	B*	-	-	-	-	-	Y	-	-	-	-
S	S	S*	S	S*	S*	S	S	S*	S*	S	S	S*	V*	S	S	S	S	S
Y*	T	Y	Y*	Y*	Y	Y	Y*	-	-	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y
Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y*	C	Y	Y	Y	Y	Y	Y	Y	Y
-	R	R	R	-	-	-	-	-	-	R	A	-	R*	R*	R	R	R	R*
NP	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	-	R*	R*	R*	R*	NP	NP	NP	NP	NP	NP
-	K*	K	K	K*	K*	-	-	K*	K*	K	K	K	K	K*	K*	K*	K	K*

R*	R	R*	R*	R*	R*	G*	G*	G	G*	NP	NP	NP	R*	R*	NP	NP	NP	NP
R	R*	-	-	-	R*	-	-	R*	-	-	-	R*	R*	R*	-	-	R*	-
G*	K*	K*	K	K	K	K*	K	K*	K*	K	G	K	K	K	K*	K*	K*	K
-	-	-	-	-	-	G*	R*	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	-	-	-	-	-	-	R*	R*	R*	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y	-	-	-	-	Y*	-
NP	-	-	-	-	-	NP	NP	-	-	W*	W*	W*	-	-	-	-	-	-
S*	-	-	-	-	-	-	-	-	-	-	S*	-	S*	-	-	-	-	-
NP	NP	NP	NP	-	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R	R*	-	R*	R	R	R	G	R*	R	R	R	R*	R	R	R	R	R	R
NP	A*	A*	R*	-	-	R	R*	R*	R*	A	A*	R*	R	R*	A	R*	A	R*
-	Y*	-	Y*	-	-	-	-	-	-	Y*	-	-	Y*	-	M*	-	Y*	-
Y	Y	Y*	Y	-	-	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	M	M	-	-	-	M*	-	M*	M*	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y*	-	Y*	Y	Y*	Y	Y	-	-	Y*	Y*	Y	Y	Y	Y*	Y*
-	R	R	R	R	R	R*	-	R*	-	R*	R*	R*	R	R	R	R	R	R
-	S	S*	S*	S*	S	-	-	-	-	-	S*	-	S*	S*	S*	S*	S*	S*
-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W*	W*	W*	W	-	-	K*	-	-	-	-	W*	W	W*	W*	W*	W*
R*	R*	R*	R	R	R	R	R	R*	A	R*	R*	R*	R	A	R	R	R	R
Y*	C*	Y*	Y*	C*	Y*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	Y*	C
-	-	-	-	R	R	-	-	-	-	-	-	-	R	-	-	-	-	-
-	-	-	-	S	S	-	-	-	-	-	-	-	S*	-	-	-	-	-
Y*	-	-	Y*	Y*	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	-	-	Y*	-
NP	C*	C*	Y*	Y*	Y*	C*	C*	Y*	Y*	C*	C*	C*	Y*	Y*	Y*	Y*	Y*	Y
C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
-	-	-	R*	S*	-	-	-	-	-	K*	R*	R*	R*	-	R*	-	R*	R*
NP	R*	A*	R*	-	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*
W*	W*	W*	W*	W*	W*	NP	NP	T*	W*	low_cov	W*	W*	W	W*	W	W*	W	T
S	S*	S*	S*	S*	S*	S	V*	C	S	S*	S	N*	N*	V*	V*	V*	V*	N*
R	R	R	R*	R*	-	-	-	-	-	-	R*	R*	R*	R*	-	-	R	R
Y*	Y	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	-
R*	R	R	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	Y*	-	-	Y*	-
R*	R	R	R	R*	-	-	-	-	-	-	R*	R*	R	R*	R*	-	R	R
-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	M*
-	-	-	-	-	-	-	-	-	-	Y	T	Y*	-	-	-	-	-	-
-	Y	Y	Y	-	-	-	-	-	-	-	Y*	Y*	H*	Y*	Y*	Y*	H*	Y*
-	Y	Y	Y	Y	Y	Y	Y	-	Y*	-	Y*	-	Y	Y	Y	Y	Y	Y*
NP	low_cov	-	-	Y*	Y	NP	NP	Y*	Y*	low_cov	-	-	Y*	Y*	NP	NP	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y	Y*	-	-	-	-	-	M*	M*	Y*	-	-	Y*	Y*	Y*
-	R*	-	-	R	R*	-	-	-	R*	-	R*	R*	R*	-	R*	R*	R*	R*
-	low_cov	-	-	Y*	Y*	NP	NP	-	-	low_cov	-	-	Y	Y*	-	-	-	Y*
S*	-	-	-	S*	S	R*	-	-	-	-	S*	S*	S*	-	S*	-	S*	S*
-	-	-	Y*	Y*	Y*	-	-	-	Y*	-	-	-	Y*	-	Y*	-	Y*	Y*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	D*	W*	W*	W*	-	-	W	A	-	W*	-	W*	-	W*	-	W*	W*
-	Y*	-	Y*	-	Y*	-	Y*	Y	Y	-	Y*	Y*	H*	Y*	Y*	Y*	Y*	H*
R*	-	-	-	R*	R	-	-	NP	NP	-	-	-	NP	NP	-	-	-	R*
-	M	M	M*	-	-	-	-	-	-	-	M*	-	M*	-	M	M	M*	M*
Y*	Y*	Y*	Y*	-	-	C*	C	C*	C*	Y	-	-	NP	NP	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	R*	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	C*	C*	low_cov	-	-	NP	NP	NP	NP	NP	NP
NP	-	Y*	Y*	-	-	NP	NP	NP	NP	NP	NP	NP	Y*	-	Y*	Y*	T*	Y*
-	K	K*	K*	-	-	-	-	NP	NP	K*	K*	K*	-	-	G	G	NP	NP
NP	NP	NP	NP	-	-	-	-	NP	NP	Y	C*	C*	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y	-	Y*	-	-	Y*	-	-	Y*	Y*	Y	Y*	Y	-	Y	Y*
NP	NP	NP	NP	NP	NP	M*	-	NP	NP	-	-	-	NP	NP	-	-	M*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S	S	-	-	S*	S*	S	S*	S*	S*	S*	S*	S	S*	S*	S*	S*
R	G	G	G	R*	R*	R	R*	R*	R*	G	G	R*	R	R*	R	R*	R	R
Y*	Y	C	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	C	Y	Y*	Y	Y
-	R*	R	R	-	-	R*	R*	R	R*	R	R*	R*	R*	R	R*	R*	R*	R*
-	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	-	-	-	Y*	Y*
-	Y	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y
-	C	Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	Y	C	Y	-	Y	C
-	K*	K	K	-	-	K	K*	K*	K*	K	-	K*	K*	K	K*	D*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K	-	-
-	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	Y	C	Y	-	-	Y*	Y*	NP	NP	Y*	Y*	Y*	Y	C	Y*	Y*	Y*	Y*
Y	Y	H*	Y	N*	H*	Y	Y	Y	Y	Y	Y	Y	N*	Y	N*	N*	N*	N*
-	C	M*	M	-	-	M	M*	C	C	M	M*	M*	M	C	M	M*	M	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	R*	-	-	-	-	R*	-	R*	R*	R*	R*	-	R*	-	R*	R*
M*	M	M*	M	M*	-	M	-	M	M*	M	M	M	M	C	M*	M*	M	M
R*	R*	A*	R	A	R*	R*	R*	A*	A*	R*	R	R*	A	A	R	R	R	R
R*	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	R*	-	-
-	R	R*	R	R*	R*	R	R	R*	G	R	R	R*	R	G	R	R*	R	R
-	-	-	-	Y	Y*	-	-	-	-	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*	-
-	R	R	R	-	-	R	R*	R*	R	R	R*	R*	R*	R	R	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	G	R	-	-	R	-	R*	R*	R	R*	-	R	G	R	R	R	R*
-	T	W*	W	W*	W*	W	W	W	T	W	W	W*	W	W*	W	W	W	W
Y*	-	-	Y*	-	-	Y	Y*	-	-	-	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y*	-	-	-	-	-	-	M*	-	-	-	-	-	-
K*	K	K*	K	K*	K*	K	K	K	K	K	K	K	N*	K	K	K	D*	K

-	-	B*	N*	Y	Y	-	Y*	Y*	-	Y*	H*	W*	N*	Y*	H*	N*	N*	H*
Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y	H*	Y*	Y*	Y	Y*	Y*
R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R	R	R	R*	R*	R*	R*	R*	R*
-	-	-	K*	K*	K	-	-	K*	K*	-	-	-	K	K	K*	K*	K*	K
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	-	Y*	Y	C	-	-	Y	Y	-	-	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
C*	NP	NP	NP	NP	NP	Y*	C	NP	NP	low_cov	C*	Y*	Y*	Y*	Y*	C*	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	R*	R*	R*	R*	R*	G*	R*	R*	-	-	-	R*	-	-	-	R*	-
NP	R*	R*	R*	G	R*	NP	NP	NP	NP	R	-	-	R*	-	R*	R*	R*	R*
NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y	-	-	-	Y	Y	Y	Y	-	-	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	Y*	Y	Y	-	-	Y*	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	C	Y*	C	Y*	C*	Y	Y	H*	Y*
-	-	-	-	-	-	-	-	S*	-	-	-	R*	R*	R	-	-	-	-
-	-	-	-	K	K	K	K*	-	-	-	K*	K*	K	-	K	K	K*	K*
K*	-	-	K*	K	T	K	K*	K*	K*	-	K*	D*	K	T	K	K	K	K*
-	Y	Y	Y	-	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	H*	Y*	Y*	Y*	H*	Y*
-	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*	-	-	-	Y*	-	Y	Y	Y*	Y*
Y*	C	Y*	C	Y*	Y	Y*	Y*	Y*	H*	Y*	Y	Y*	Y	Y	C	C	Y	Y
-	R*	-	-	-	-	-	-	-	-	R	R	R*	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	Y*	-	Y	Y	Y	Y	Y	Y
Y*	M	M	M	M*	M*	-	M*	M*	-	-	M*	M*	M*	M*	M*	-	M	M*
NP	K	K	K	T*	K*	K	K*	K	K*	T*	T	K*	K	T	K	K	K	K
R*	R	R	R	R*	R	R	R*	R*	R	R*	R*	-	R	A*	R	R*	R	R
S*	S*	-	S*	S*	S*	S	S*	S*	S	-	S*	S*	S	C	S	S	S	S*
M*	M*	M	M	M*	M	M	M	M*	M	-	M*	-	M	M	M	M	M	M*
-	R	R*	R*	-	-	R	R*	-	-	R*	-	R*	R*	-	-	-	R*	R*
M	M	M	M	M	M	M	M	M	M	M*	M	M*	M	M	M	M	M	M
-	-	-	-	T	K	-	-	-	-	-	-	-	K*	-	-	-	K*	K*
-	-	-	-	-	R*	-	-	-	-	R*	R*	R*	-	-	-	R*	-	-
NP	G*	G*	G	G*	G*	G*	G*	NP	NP	NP	NP	NP	G*	R*	NP	NP	G	G
K	K	G*	K	-	K*	K	K	K	K	K	K	K	K	-	K	G	K	K
R*	R	R*	R	A	A	R*	R	A	R	R	R*	A*	R	R	A	A	R	R
-	Y*	-	-	-	K*	-	-	-	-	-	W*	W*	N*	W*	K*	W*	W*	W*
Y*	-	-	-	-	-	-	-	Y*	Y	-	Y*	Y*	H*	Y*	H*	-	H*	H*
-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	S*	S*	S	S*	S*	-	S*	S*	-	S*	S*	-	S	G	S*	-
Y*	Y*	Y*	Y*	Y*	Y	Y	C*	Y*	Y	Y*	Y*	B*	Y*	Y*	Y*	Y	Y	Y
Y	Y	Y*	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	T	Y	Y*	Y	Y

-	A	A	A	R*	R	R*	R*	-	-	-	-	-	R	A*	-	-	NP	NP
-	-	-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	H*	-	-	Y*	Y*	-
S*	C*	S*	S*	S*	S	S	-	S*	S*	S*	S*	S*	S	S*	S*	S*	S	S
Y*	Y*	-	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	H*	Y	Y	Y*	Y	Y
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	H*	Y	Y	H*	H*	Y
-	-	-	-	C	C	NP	NP	S*	-	-	S*	-	S*	S	-	V*	S*	S*
R*	R*	R*	R	-	-	R*	-	R*	R*	R*	R*	R*	R	R	R*	-	R	R
-	-	-	-	R*	R*	-	-	R*	-	R*	R	R	R*	R*	R*	R*	R*	-
Y*	Y*	-	Y	H*	T	H*	T	Y*	Y*	-	Y*	Y*	Y	Y*	Y	Y*	Y	Y
-	-	-	-	C*	Y*	NP	NP	-	-	-	-	-	Y	Y	Y*	-	-	Y
R*	R	R*	A	R	R	R	R	R	R	R	R*	R*	R*	R	A	R*	R	R
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	H*	Y	Y	Y*	Y*	Y
R	-	R*	-	R*	-	D*	-	NP	NP	R*	-	R*	R*	-	R*	-	-	-
R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R	R*	R*	R*	R*
Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y*
S	S	S*	S*	S	S	S	S	S*	-	S	S	S*	S	S	S	S*	S*	S*
-	R	G	R	R*	R*	R	R*	R*	R	R	R	R	R	R	R	R*	R	R
Y*	Y*	Y*	Y*	Y*	Y*	-	-	NP	NP	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*
NP	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	-	-	NP	NP	-	-	low_cov	Y*	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y	Y	-	-	-	Y*	-	-	-	-	Y*
NP	low_cov	-	-	-	-	-	-	M*	-	low_cov	-	T*	-	-	-	-	-	-
-	S*	S	S	-	-	S	S*	S	S	-	-	-	S*	-	S*	K*	S*	S*
-	K	K	K	-	-	K	K*	K	K	-	-	-	K*	K*	K*	K*	K*	K*
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	-	Y*	-	-	-	-	S*	S*	S*	S*	S*	-	B*	-
-	R*	R*	-	-	-	R*	R*	-	-	R*	R	R*	-	-	R*	R*	-	R*
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R	-	-	-	R*
-	R	R	R*	R*	R	R	R*	-	-	R	R	R	R	R	R	R*	R*	R*
C*	NP	NP	NP	Y*	C*	C*	Y*	NP	NP	Y	Y*	Y*	NP	NP	Y*	Y	C*	Y*
NP	R*	R*	R*	-	-	R*	R*	-	-	R*	R*	R*	-	-	R*	R*	-	R*
-	R	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	K*	K	-	-	-	-	-	-	-	K*	K	-	-	K*	K*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	S*	S	S	S	S	-	-	S	S*	-	-	-	S	S	S*	-	S*	S*
S*	S*	S*	S*	-	-	S	S*	-	-	G	G	S*	-	-	S*	S*	S*	S*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	G	G*	NP	NP	NP	NP	NP	NP
-	W	W*	W*	-	-	W	W*	-	-	W	W	W*	W*	W*	W	W*	W*	W
-	W	W*	W*	-	-	W*	W*	-	-	W*	W*	W*	-	-	W*	-	-	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
Y	Y*	Y	Y*	Y*	-	Y	Y*	-	-	Y	Y	Y	Y	Y*	Y	Y	Y*	Y
-	-	-	R*	R	R	-	-	R*	R*	-	R*	-	R*	R	-	-	R*	R*
A*	A*	R*	R*	A*	A*	A*	A*	A*	A*	A*	R*	A*	R	R	A*	A*	A*	A*

R*	-	-	-	R*	R*	-	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
R*	-	-	R*	-	R*	R*	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
R	R	R	R	R*	R*	R	R	R*	-	R	R	R	R	R	R	R	R	R
D*	R	R	R	-	R*	R*	G	-	R*	R	R	R	R	R	R	R	R*	R
R*	R*	R	R*	R*	R*	G	G*	-	R*	-	R*	-	R	G	R*	R*	R	R
NP	R*	R*	R*	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	S*	-	-	S*	-	S*	-	-	-	-	-	-	-	-	-	-
M*	M*	M*	M*	M*	M*	M*	M	-	-	-	-	-	M*	M	M	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	R*	V*	V*	V*	V*	V*	-	V*	V*	V*	V*	M*	V*	M*	V*	M*	-	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
M*	-	-	M*	-	-	-	-	M	M	M	M	M*	-	-	-	-	M*	H*
R*	R*	-	-	-	-	-	-	R*	R	R	R*	R*	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	S	S	S*	-	-	-	-	-	-
Y*	Y*	C	Y*	Y*	Y	Y*	Y*	C	C	Y*	C	Y*	Y	C	Y*	C	Y	C
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	M*	M	-	M*	-	M*	C*	M*	M	M*	-	M	M*	M*	M*
A*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	M*	M*	-	H*
-	-	-	-	-	-	-	-	-	Y*	low_cov	Y*	Y	-	-	-	Y*	Y*	Y*
R*	R*	-	R*	R*	R	R*	R*	R	R	R	G	G	R*	R*	G	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	B*	-	-
M*	NP	NP	NP	NP	NP	M	-	A*	M*	A*	low_cov	A*	-	-	M*	-	NP	NP
-	-	-	K*	-	-	-	-	K*	K	K*	K*	K*	K*	K*	K*	-	K*	K*
Y	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	C	Y*	Y*	Y	Y	Y*	Y*	Y	Y
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	Y*
NP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
Y*	Y*	-	Y*	Y	Y	Y*	Y*	-	-	-	Y*	-	Y	Y*	Y*	Y*	Y*	Y
NP	-	-	-	-	Y*	NP	NP	-	-	-	-	-	-	-	-	-	-	Y*
W*	-	-	-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R	R*	-	-
W*	T	W	W	W*	-	W	W	W*	W	W*	W	T	W*	T	W	W	W*	W*
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R	-	-	R	R	-	-	R	R	R*	R	-	R*	R	R*	-
R*	-	-	-	R	R	R	R*	R	A	R	R	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	R	R	R	R	G	R*	R	R	R	R	R	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	W	W*	W*	-	-	-	-	-	-
-	-	-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y*
Y*	Y	Y*	Y*	Y*	-	-	-	-	Y*	Y*	Y*	C*	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	Y*	Y*	NP	NP	Y*	T*	Y*	Y*	Y*	Y*	-	NP	NP
Y*	T	T	Y*	Y*	-	-	-	NP	NP	-	Y*	-	NP	NP	NP	NP	NP	NP

Y*	Y	Y*	Y	Y	Y	Y	Y*	-	-	Y*	Y*	-	Y	Y	Y	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	M*	M	M*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R*	R*	-	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R	R*
R*	-	-	-	R*	R*	R*	A*	R*	R*	R	R*	R*	R*	R*	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	-	-	C	C	-	-	Y	Y*	Y*	Y*	-	Y*	Y*	Y	Y*
C*	M	M*	M	-	-	-	M*	M*	-	M*	M*	M	M*	M*	M*	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S*	S	S	S	S	S	S	S	S	G	S	G	S	S	S	S	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	low_cov	C*	C*	C*	C*	C*	C*	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y	Y	Y*	Y	Y*	-	-	-	Y	Y	Y	Y	-	Y*	Y*	Y	Y*
Y	C*	Y*	C*	Y*	C*	Y*	-	Y*	Y*	low_cov	Y*	C	C*	C*	NP	NP	NP	NP
R*	R*	R	R	R	R*	R	R	R*	R	R	R	R*	R*	R	R	R	R	R*
-	S*	S	S	-	-	-	-	Y*	-	S*	-	-	S*	S*	S*	-	S	S*
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
NP	Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	Y*	NP	NP	NP	Y*	Y*	Y*	Y*	Y*	Y*
Y*	-	-	Y*	-	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	R*	R*	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	Y	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
R*	R*	R*	G	R*	R*	R*	G*	R*	R*	G*	G*	G*	G	-	NP	NP	G*	G*
NP	Y*	T*	T*	T*	Y*	-	-	NP	NP	T*	T*	T*	Y*	Y*	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
S*	-	-	-	R*	R*	-	-	-	-	R*	R*	R*	V*	-	R*	R*	R*	R*
NP	NP	NP	NP	Y*	Y*	NP	NP	T*	T*	T	Y*	T*	Y*	T	Y*	T*	Y*	T
R*	R*	-	-	-	-	-	-	-	-	R	R*	R*	R*	-	-	-	-	-
-	-	-	-	S*	G*	-	-	-	-	-	S*	S*	S*	-	S*	S*	NP	NP
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	R*	R	-	-
NP	S*	S*	S*	C	S*	S	C	-	-	S*	low_cov	S*	S*	-	S	C	-	-
-	Y*	-	Y*	Y	Y	Y	Y	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	K*	-	NP	NP
R*	R	R	R	R	R	R*	A	R*	R*	R	R	R	R	R	R	R	R	R
R*	-	-	-	R	R	R	R*	R*	R	R	R	R*	R*	R	R	R	-	-
C	Y*	-	-	Y	Y*	Y	Y*	C	C	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y	-	H*	H*	H*	H*	H*	H*	H*	H*
R*	-	-	R*	R*	R	R*	R*	R*	R	R	R	R	R*	R	R	R	R*	R
R	R*	R*	R	R	R*	R	R*	R*	A	R*	A	R*	R	R*	R	R	R	R*
Y*	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	H*	Y*
-	R	R	R	-	R*	R	-	R*	-	R	R	R*	R	-	R	R*	R	R
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	R	R*	R	-	-	R*	-	R*	-	R	R*	R	R*	R*	R	R	R	R*
-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	R*	R*	-	-
-	S*	G	S	-	-	-	-	-	-	-	S*	S*	S*	-	-	-	V*	-

-	R*	G	R*	-	-	R*	-	R*	-	R*	R*	R*	R	-	R*	R*	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	R	-	-	R*	R	R*	R*	R*	R*	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	NP	NP	NP	NP	NP	S*	S*	S*	S*
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	R*	G*	R*	G*	R	-	-	-	-	R	R*	-	R	R*	R*	R*	R	R
-	-	-	-	-	-	R*	-	-	-	-	-	-	R*	R*	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	S*	S*	S*	-	-	-	-	S*	-
Y*	Y*	Y	Y	-	-	NP	NP	-	Y*	Y	Y*	H*	Y*	-	Y*	Y*	Y*	Y*
Y*	T*	Y*	Y*	T*	T	Y*	T	B*	Y*	T	T	T	Y	T	Y*	Y*	Y	Y
-	-	-	-	-	-	Y*	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*	Y*	H*	-
-	R	R*	R	-	-	-	-	NP	NP	R*	R*	R*	R	R*	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	Y	Y	Y	T*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y
-	Y*	-	-	-	-	N*	-	-	-	Y*	Y*	-	-	-	Y*	Y*	-	-
Y*	B*	-	Y*	B*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	Y*	H*	Y*
-	-	-	-	Y	Y	-	-	Y*	-	-	Y*	H*	Y	Y*	Y	Y*	Y*	Y*
-	R	R	R	R	R	-	-	-	-	-	R*	-	R	-	R*	R	R	R
-	S*	S	S*	S*	S*	-	-	-	S*	-	-	S*	V*	S*	S*	S*	V*	S*
Y*	Y*	-	Y*	Y	Y	Y	Y*	Y*	Y	-	Y*	Y*	Y	Y*	Y*	Y*	H*	Y
-	-	-	Y*	Y*	Y*	-	-	Y*	-	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	R	R*	R	R*	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	G	R*	R*	R*	R*
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	Y*
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S	C*	C	C*	S*	S*	S*	-	-	S	S	S*	C	C	C	C	C	C
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
G*	G	R*	R*	G*	R*	G	G	R*	R*	NP	NP	NP	G	R*	R*	R*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	W*	-	NP	NP
-	S*	G	G	NP	NP	S*	S*	-	-	-	S*	-	S*	-	S*	S*	S*	S*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	G*	G*	R*	G*	G*	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*
R*	R*	R*	R*	R*	R*	G*	G*	G*	G	R*	G*	R*	R*	R*	G*	G*	R*	R*
-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-
NP	-	-	-	NP	NP	NP	NP	NP	NP	-	-	-	Y*	-	Y*	Y*	-	Y*
-	R	R	R*	-	-	NP	NP	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	R	R	-	-	-	R*	R	R	R*	R*	R*	R*	-	R*	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	K	K	-	-	K*	-	K	K	K	K*	K*	K*	K*	K*	K*
-	R	R	R	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*	R*	R*
-	R	R	R	-	-	-	-	-	-	-	-	-	-	R*	R	R	R*	-
M*	M	M	M*	-	-	-	-	M*	M*	M	C*	C*	M*	M*	M*	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R	R	R*	R*	-	K*	R*	R*	R*	R	R*	V*	R*	R	R
T	-	-	-	-	-	-	-	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	-
-	R	R*	R	R	R	R	R	R	A	R	R	R	R*	R*	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	R	A	R	R*	R*	R	R*	R*	-	A*	R*	A*	R	R*	R*	R*	R	R*
-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	Y*	-	Y*	Y*	-	-	Y*	Y*
NP	-	-	-	-	-	-	-	-	-	W	-	W	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	G	R*	R	R	R	R*	R*	R	G	R	G	R	R*	R	R*	R	R
-	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y	T	Y	Y*	Y	Y*	Y	Y*	Y*
-	R	-	R*	R*	R	R*	R	R	R	R	R*	R*	R*	R*	R*	R*	R*	R
Y*	Y*	C*	Y	Y*	Y	Y*	C*	C	Y*	Y*	Y	Y*	C	Y*	Y	Y*	Y	Y*
-	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	low_cov	-	-	S*	S	-	-	-	-	low_cov	-	-	S	-	S*	S*	S*	S*
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	-	Y*	Y*	Y	Y
NP	-	-	Y*	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP
R*	R	R	R	R	R*	R	R*	R	R*	R	G	R	R*	R*	R	R*	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y*	Y*	Y*	NP	NP	Y*	-	Y*	Y*	Y*	Y*	Y*	C	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	R*
-	M	M	M	M	M*	M	A	M	M	-	M*	M*	M	M	A	M	M	M
D*	K*	R*	D*	K	K*	K	D*	D*	D*	-	D*	D*	D*	D*	D*	D*	D*	D*
R*	R*	R	R	R	R*	R*	R*	R*	V*	R*	R	R	R	R	R*	R*	R	R
R*	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP
NP	S	C*	C*	C*	C*	C*	S*	NP	NP	-	-	-	NP	NP	C*	C*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-
R*	R	-	R*	-	-	-	-	-	-	R	R	R*	-	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
G*	G*	G*	G*	G*	G	G*	G	-	-	G*	G*	R*	G*	G*	R	R	G	R
NP	A*	A*	A	A*	A	A*	A*	-	-	A*	low_cov	A*	NP	NP	M*	M*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	C*	C	C*	C*	Y*	C	-	-	Y	Y*	-	C*	C	Y*	Y*	Y	C
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	S*	S*	-	-	-	-
Y*	Y*	-	Y*	-	Y*	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*
NP	NP	NP	NP	T*	T	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	R	-	R*	R	R*	R	R	R*	A	NP	NP	NP	R*	R*	A	A*	R*	R*
-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	Y*	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	R*	R*	R*	R*	-	-	-	-	-	-	-
NP	NP	NP	NP	S*	C*	NP	NP	NP	NP	S*	C	S*	S*	S	C*	S*	-	S*
R*	R*	R*	R*	G*	R*	G	R*	R*	D*	R*	R*	R*	R*	R*	R*	G*	R*	G*
G	R*	R*	R	R	R	R*	R*	G	R*	R	G	R	R	R	R	R*	R	R

-	-	-	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	-	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	M*	-	-	-	-	-	-	-	-	R	R*	R*	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	K*	K	-	-	-	-	-	-	-	-	-
W*	W*	-	W*	W*	W	-	-	W*	-	W	W	W	W*	W	W*	W	W*	W*
-	S	S*	S*	-	-	-	-	S*	S	S	S	S*	-	-	S*	-	-	S*
R*	R	A*	R	R*	R*	R	A	R*	R	A	A	A*	R	-	R*	R*	R	R
-	-	-	-	-	R*	-	R*	R*	R*	-	-	-	R*	-	-	-	-	R*
Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R*	R*	-	R*	R	A	-	-	-	A	-	-	-	R	R	R*	-	R	R*
-	-	-	-	R*	R*	-	R*	R	R*	-	-	-	R*	-	-	-	-	R*
-	R	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
R*	R	R	R	R*	A	R	A	R*	R*	R	R	R	R	R	R	R*	R	R
-	-	-	-	T	T	-	-	D*	K	-	-	-	K	-	NP	NP	-	K
-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	R	R*	-	-	-	-	-	-	R*	R	-	-	R*	R*
-	-	-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	-	-	Y*	Y*
-	Y*	-	Y*	Y*	Y	Y*	C	Y*	Y*	Y*	C	Y*	C	C	Y*	Y*	Y*	Y*
NP	G	-	K*	-	-	-	K*	-	-	-	K*	-	K*	G	G	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
NP	NP	NP	NP	G*	R*	G*	G*	R*	R*	G	R*	R*	NP	NP	G*	G*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
NP	NP	NP	NP	G*	G*	G*	G*	NP	NP	NP	NP	NP	G*	G*	NP	NP	NP	NP
-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	K*	K*	K*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	G*	G*	NP	NP	NP	NP	NP	NP
G	G	G*	G	G*	R*	R*	G*	R*	R*	R*	R	R*	G*	G*	G*	G*	NP	NP
-	-	-	-	-	-	-	-	M*	-	-	-	-	-	R*	-	M*	-	M*
-	-	-	R*	R*	R*	-	-	-	R*	R*	R*	R*	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y	Y	Y	Y*	C*	Y*	Y*	C*	Y*	-	Y*	-	Y	C	C*	C	Y	Y
-	S	S	S	S*	S	S*	S	S*	G	S*	S*	S*	S	S*	S	G	S	S
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B*	B*	K*	K*	K*	K*	K*	-	K*	-	-	-	K*	K*	K*	K*	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S	S	S	G	S*	S	S	G	S*	-	S*	S*	S	G	S	S	S	S
T	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y*	Y
R*	-	-	R*	R*	-	-	-	NP	NP	low_cov	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	Y*	-	-	-
-	Y	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*
R*	-	-	-	R	R	A	A*	R*	R*	R	R	R*	R	R	R	R	R*	R

R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	R	R	-	-	-	-	-	R*	-	R*	-	R*	-	R*	R*
NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	G	-	-	NP	NP
-	-	-	-	-	-	-	-	K*	G	-	-	-	-	-	-	-	K*	-
-	Y*	Y	Y*	Y*	Y*	Y	C	-	-	-	-	-	Y	-	Y*	-	Y	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	K	K	K	G*	K	G*	G*	-	K*	G	K*	K*	K	G	K	K	K	K
-	R	R*	R	-	-	-	-	-	-	-	R*	-	R*	-	-	-	R*	-
-	-	Y*	-	Y*	Y*	Y	Y	-	-	-	-	-	H*	-	Y*	-	Y*	Y*
R*	R	R	R	D*	G	R*	R*	R	D*	R*	G	R*	R	G	R	R	R	G
NP	-	-	-	-	-	Y	C*	Y*	-	NP	NP	NP	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R*	R*	R*	A	R*	V*	R*	R*	R*	R	R	R	R	R	R
-	-	-	-	-	-	K	K*	-	-	-	-	-	-	K*	-	-	-	-
R*	R	R	R*	R	R	-	-	D*	D*	R*	R*	R*	R	R*	R*	R*	R	R
K*	K*	D*	G	R*	D*	R*	K*	K*	D*	K*	K*	K*	K	K	G	D*	K	D*
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
R*	R	R	R	R*	R*	R*	R*	R*	R*	R	R	R*	R	G	R	R*	R	R
R*	-	R*	V*	R	R	R	R	R	R	-	R*	R*	R	R*	R	R*	R*	R
-	M	M	M*	-	-	-	-	-	-	-	M*	-	M*	-	M*	-	M*	M*
-	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*	R*	R*
R*	R*	R*	R	G	R	R*	R*	R*	R	G*	R	R	R	G	R	G	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	Y*	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-
R*	-	-	R*	-	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-
Y*	-	Y*	-	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	Y*	Y	-	Y	Y*	Y*	Y
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-
-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	-	-	Y	Y	Y	Y	Y	Y	C	Y	Y	Y	Y
-	S*	S*	S*	-	-	-	-	S*	-	-	-	-	-	-	-	-	S*	-
-	R*	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
NP	K*	-	K*	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
A*	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	A*	A*	-	-	NP	NP	NP	NP	NP	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*
Y*	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y	-	-	Y*	-	-	-	-	-	M*	-	Y*	Y*	M*	Y*	-	-	H*	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP
M*	M*	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	Y*	Y*	Y	Y	-	-	-	Y*	-	Y*	H*	Y	Y*	Y*	Y*	Y	Y*
-	low_cov	-	R*	-	-	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-
-	W	-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	R*	R	R	A	R	R*	R	R*	R	R*	R*	R*	-	R*	-	R*
S*	S	S	B*	S*	-	-	-	-	-	-	S*	S*	S*	S*	S*	S*	S*	S*
K*	K	K	K	G	G	K	K	K*	K*	K*	K	G	K	K	-	-	K*	K
S	S	S*	S	S*	S	S	S	S	S*	S	S	S	S	S	S	S	S	S

-	-	Y	T	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y
K*	K	K*	K	K*	K	K*	K	K*	K	K	K	K	K	K	K	K*	K	K
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-
R*	-	-	R*	-	-	R	R	-	R*	-	R*	-	R*	-	R*	-	R*	R*
-	-	-	Y*	Y*	Y*	-	-	-	-	Y	Y*	Y*	Y*	-	-	Y*	Y*	Y*
W*	W*	W	W	W*	W*	W	W*	W*	W*	A	W*	-	W	W*	W	A	W	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	R*	R*
-	-	-	R*	R*	R	-	-	-	-	R	R*	R*	R*	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	-	-	Y*	-	Y*	-	-	Y*	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	R	R*	R*	-	R*	R*	A	R*	A
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	A*	A	low_cov	R*	-	-	-	-	-	-	-
S*	C	S	C	-	-	C	C*	-	-	S	C	S*	S	S	S	S*	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	Y*
-	M*	M*	M	-	-	-	-	-	-	-	-	-	M*	-	-	-	M*	-
M*	-	-	-	-	-	-	-	-	-	W	D*	W*	-	-	-	R*	-	-
Y*	Y*	-	-	-	-	Y*	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R*	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	T*	Y*	Y*	Y*	T*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W	W	-	-
-	-	-	-	-	-	-	-	S*	S	-	-	-	-	-	-	-	-	M*
NP	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	R*	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	T*	T*	T	Y*	Y*	Y*	T*	T*	Y*	T*	T*	Y*	NP	NP	NP	NP	T*	T*
G*	K	-	K	-	K*	-	K*	K	K*	K	K	K*	K*	K	K	K	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
NP	NP	NP	NP	-	-	G	K*	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	M*	M*	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	Y*	-
A	R*	-	R*	-	R*	R*	-	R*	R*	R*	R	R	R*	R*	R*	R*	R*	-
W*	-	-	-	-	W*	-	-	-	-	-	W*	-	-	-	W*	W*	-	-
A*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	R*	-	-
Y*	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	Y*	-	-
Y*	-	-	-	-	Y*	M*	-	-	-	-	-	-	Y*	-	Y*	-	-	-
-	R*	R*	-	R	R	R*	-	R*	-	R	R*	R	R*	R*	R*	R*	R*	R*
-	S	S*	S*	S	S*	S*	S*	-	-	S*	-	S*	S*	-	S*	S*	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	M*	M*	-	-	-	-	-	-	-	M*	-	M*	-	M*	M*
NP	NP	NP	NP	NP	NP	NP	NP	G*	R*	NP	NP	NP	NP	NP	-	-	NP	NP
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-

NP	R*	R*	R*	NP	NP	R*	R*	-	-	NP	NP	NP	-	R	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	W	W*	W*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	-	-	Y*	-	-	-	H*	-
-	R*	R*	G	G*	R*	G	G*	R*	R*	G	G	G*	R	R*	G	G*	G	G*
R*	R	R	R	A	R	-	-	-	R*	R*	R*	R*	R	R*	R	R*	R*	R*
G*	S	G*	S	S*	S*	S*	G*	S*	S*	S*	S	S*	S	S	S*	S*	S	S
-	R	R	R	-	R*	-	-	-	R*	R*	-	R*	R	R*	R*	R*	R	R*
-	S*	S	S	-	Y*	S	S	-	M*	-	-	-	S*	S*	-	-	V*	S*
Y*	Y*	W*	H*	Y	Y	-	-	H*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
B*	-	-	-	-	-	Y	Y*	Y*	Y*	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
R	R*	-	-	R	R	-	-	R*	R*	R	R*	R	R*	-	R	R	R*	R
Y*	Y*	Y	Y*	Y	T	-	-	Y*	Y	Y	Y	Y*	Y	-	Y	Y*	Y	Y
R*	R	R	R	R*	R*	-	-	-	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
Y*	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	-	-	-	Y*	-
K	-	K*	K*	K*	K*	-	-	K	K	K	T	K*	K*	-	K*	K*	K*	K*
Y*	Y*	-	Y*	Y*	C	-	-	Y*	Y*	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	R*	R	-	-	-	-	-	-	-	R	R*	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C	-	M*	NP	NP	NP	NP	NP	NP
R*	-	-	-	R*	R	R	R	-	-	-	R*	-	R*	R*	R	R*	R*	R
S*	low_cov	C*	C	S*	C	S*	-	NP	NP	-	S*	-	NP	NP	S*	S*	S*	S*
-	-	-	-	M*	M*	-	-	-	-	M*	M*	-	M*	M*	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	-	-
-	-	-	S*	S	S	S	S	S*	S	-	-	S*	S*	-	S*	B*	S*	S*
NP	C*	Y*	Y	C	C*	-	Y*	C	Y*	C*	C*	C*	Y	Y*	-	Y*	C	C
A*	A*	A*	A*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	M*	C	C*	NP	NP	M*	C*	M*	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	R*	-	-	NP	NP	NP	NP	NP	NP
A	R*	R*	R*	R*	-	R*	A	A	A	R	-	-	R*	R	A	A	R*	R*
M*	-	-	-	-	Y*	M	M*	-	-	-	-	-	-	M*	M*	-	M*	M*
R	R	R*	R	R*	R*	R	R	R	R*	R	R	R	R*	R	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y*	Y*	Y*	Y*	B*	Y	-	Y	Y*	Y	Y	Y	Y*	Y	Y
Y	H*	Y*	H*	H*	Y*	Y*	N*	N*	Y*	Y	H*	Y	N*	N*	H*	N*	N*	N*
-	-	-	-	-	-	Y	Y*	-	Y*	-	Y*	Y*	H*	Y*	H*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	Y*
R*	-	-	R*	R	R	R*	R*	-	-	R*	R*	R*	R	A	R	A	R*	R*
-	R*	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	-
-	M	M*	M*	M	M	-	-	M*	M*	-	M*	-	M*	M*	M	M*	M	M*
S*	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	S*	S*
-	S	S	S	S	S	S*	S*	S	S	-	S*	S*	V*	S*	S	S	S	S
-	-	-	Y*	-	-	Y*	Y	-	-	-	H*	-	H*	Y*	M*	-	H*	Y*
R*	R*	-	R	R	R	R*	R*	R	D*	R	R*	R	R*	R*	R	R*	R	R

Y*	-	-	-	-	-	Y	T*	-	-	Y	Y*	Y*	-	-	Y*	-	-	-
-	R*	-	-	R	R	-	-	-	-	-	-	-	R*	R*	R*	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	M*	M*	-
Y*	Y*	Y*	M*	H*	Y*	Y	Y	-	-	Y	Y	H*	Y*	Y*	Y*	Y*	H*	H*
Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	M*	-	-	-	-	M*
R*	R*	-	R	R	R*	R*	R	R	R	R*	R	R	R	R	R	R	R	R
R	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*	R*	R*
-	M	M	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
R*	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	C*	Y	-	-	Y	C	Y*	Y*	Y	Y	Y	Y*	-	Y	Y	Y	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	Y*	-	Y*	-	-	Y*
-	R	-	R*	-	-	-	-	-	-	R	R	R	-	-	-	-	-	-
-	Y	-	-	NP	NP	-	-	NP	NP	-	Y*	-	Y*	-	NP	NP	NP	NP
NP	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	S*	-	S*	S*	-	G	G	S*	S*	S	S	S	S*	-	S	S	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	C*	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	C*	NP	NP
K*	-	-	-	-	-	K*	K*	K	K	K	K	K	K*	K*	K*	K*	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	R	-	-	R*	-	-	-	-	R*	-	-	-	-	-
Y	-	-	Y	Y*	Y	-	Y*	Y*	C*	C	Y	Y	Y	C	C	C	Y	Y
NP	NP	NP	NP	-	-	NP	NP	NP	NP	low_cov	S	S*	NP	NP	NP	NP	NP	NP
C	Y	C*	Y	C*	C*	C	Y	Y*	Y*	-	-	-	C	Y	Y*	Y*	C	C
NP	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
Y*	-	-	Y	Y	Y	-	-	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*
-	-	Y	Y*	-	-	-	-	-	-	-	M*	-	H*	Y*	-	Y*	Y*	Y*
R	-	-	R*	-	-	R*	R*	R	R	R*	R*	R	R*	-	R*	R*	R*	-
G*	K	G*	G*	G	K	K*	G*	G*	G*	G	G	G*	K	G*	G	G*	G	K
-	R*	R	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	W*	-	W*	-	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	S	S	S	-	-	-	-	-	-
-	-	-	-	-	-	K*	K*	K*	K	-	K*	K*	-	-	-	K*	-	-
-	-	-	-	-	-	-	-	-	-	S*	S	S	-	-	-	-	-	-
Y*	-	K*	Y*	C	Y	Y*	Y	Y	Y*	-	Y*	B*	Y	Y*	Y*	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
NP	M	-	M*	-	-	NP	NP	-	-	-	-	-	M*	M*	-	-	-	-
-	-	-	-	-	-	-	-	M	M*	-	-	-	-	-	-	-	-	M*
NP	R*	-	R*	G*	G*	NP	NP	-	-	R*	G*	G*	R*	G*	G*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	M*	-	M*	-	M*	M*	M*	M*
-	W*	-	W*	W	W	T	W*	-	W*	W	T	W*	T	T	W*	W*	W*	W*
-	R*	-	R*	R	R	R*	R	R*	R*	R	R	R	R	R	R	R	R	R
-	-	-	-	Y*	-	-	-	-	-	-	-	-	M*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	R	R*	R*	-	-	-	-	-	R	R*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	Y*	Y*	T*	Y*	-	-	-	Y*	Y*	-	-	Y*	-

-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W	W*	W*	W	W	W	W*	W	W	W	W*	W	W*	W	W	W	W	W	W
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	NP	NP	NP	A*	A*	NP	NP	NP	NP
-	-	-	-	-	-	R	R	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	S	S	-	-	-	-	G	S	S*	S*	S*	-	-	S*	S*
NP	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
NP	R*	R	R*	-	-	-	-	-	-	NP	NP	NP	R*	-	R*	R*	R*	R*
Y*	Y*	Y*	-	-	-	Y	Y	-	-	Y	H*	Y*	H*	Y*	Y*	Y*	H*	H*
R*	R	-	-	-	-	R	R	-	-	-	-	-	R*	-	R	R*	R*	R*
R*	R*	-	R*	-	-	R	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*
R	R*	R*	R*	R	R	R*	R*	R*	R*	R	R*	R	R*	R*	R	R	R*	R*
M*	M	M	M	-	-	-	-	NP	NP	-	-	-	M*	-	-	-	M*	M*
-	Y	Y*	Y*	-	-	-	-	Y*	Y	-	-	-	-	-	Y*	-	-	-
-	Y*	Y	Y	-	-	-	-	Y	Y*	-	Y*	-	Y	-	Y*	-	Y*	Y*
-	Y	Y	Y*	-	-	-	-	Y*	Y*	-	Y*	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y*	Y	-	Y*	-	W*	Y*	H*	-	Y*	-	H*	H*
-	R	R	R*	-	-	-	-	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*
-	Y	Y	Y*	-	-	-	Y*	Y*	Y	Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y*
-	Y	Y*	Y	-	-	-	-	Y*	Y*	-	-	-	Y*	-	Y*	-	-	Y*
-	Y*	Y*	Y*	-	-	-	-	Y*	Y	NP	NP	NP	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	Y	Y	Y	-	Y*	Y*	Y	Y	Y	T	Y	-	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	B*	Y*	Y*	-	-	N*	B*	Y*	Y*	Y*	N*	Y*	Y*	K*	Y*	N*
Y*	Y	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
R*	-	-	R*	R*	R	-	-	NP	NP	-	-	-	R*	R*	-	-	R*	R*
-	R*	-	-	R*	-	-	-	-	-	-	-	R*	R*	-	-	-	R*	R*
R*	-	-	R*	R	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	R*	-
-	Y	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	R*	-	-	A	R	-	R*	R*	R	R	R	-	R	R*
R*	V*	R	V*	R*	R*	R*	R*	R*	R*	R*	R	R*	R	R*	R*	V*	R	R*
-	-	-	-	-	-	-	-	-	-	M	M*	M*	-	M*	M*	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	K*	-	K*	-	-	-	-	K*	-	-	-	-	D*	-	-	-	K*	-
Y*	Y*	Y	Y	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*	Y	Y	Y	Y	Y	Y*
-	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	S*	S*	-	-	-	-	-	-	-	S*	-	-	-	-	-
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	R*	-	-	-	-

R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R	-	-	-	-	-	-	-	-	-	low_cov	R*	-	-	-	-	-	-	-
R*	R	R	R	-	R*	-	R*	R*	R	R	R	R	R*	-	R	R	R	R
N*	T*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	T	Y*	Y	T	T	Y*	Y	T
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	K*	K*	-	-	-	K*	T	-	-	-	-
-	R	R	R	-	-	-	-	R*	R*	R	R	R	R*	-	R*	-	R	-
-	-	-	-	R	R	-	-	-	R*	-	-	-	R	R*	R*	-	R*	R*
A	A*	A*	A	R	R	A*	A*	NP	NP	A	A	A	R*	A*	R	R*	R*	R*
K*	K*	-	-	K*	K*	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP
-	Y	Y	Y	-	-	Y	Y*	Y*	-	Y	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-
NP	-	Y*	Y*	-	-	-	-	NP	NP	Y*	Y*	Y*	-	-	Y*	Y*	NP	NP
-	NP	NP	NP	NP	NP	Y*	-	T*	Y*	T	T*	Y*	Y*	Y*	Y*	-	NP	NP
M*	M	M	M	M*	M*	M*	M*	M*	M*	-	M	M*	M	M	M	M	M	M*
R	R	R	R	-	-	-	-	-	-	-	-	R*	R*	-	R	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	-	R*	R*	R	R	R*	-	R*	-	R*	R	R	R	R	R*
R*	-	-	-	-	R*	-	-	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	R*	-	R*	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	R	R*	R	R*	-	-	-	-	-	R*	-	R	R*	R*	R*
R*	low_cov	G	R*	R*	R*	R*	R*	R*	R*	low_cov	R*	R*	R*	-	G*	R*	R*	G*
-	-	-	-	-	-	-	-	-	-	R	R	R	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
Y*	-	-	Y*	T	T*	Y*	Y*	-	-	-	-	-	NP	NP	Y*	-	NP	NP
R*	-	-	-	R	R	R	R	R	R	-	-	R*	R*	R	R	R	R	R
T*	K	K	K	K	K	-	-	K	K*	K	K	K*	K	T	K*	-	K	K
-	-	-	Y*	Y*	Y*	-	-	Y*	-	-	Y*	-	Y*	-	-	-	Y*	-
-	R	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	R*
-	-	Y*	Y*	-	-	-	-	-	-	low_cov	Y	Y*	-	-	-	-	-	-
R	G*	R*	R	R	R	R*	R*	R	R	R*	R	R	R	R*	R	R	R	R
Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*
R*	A*	A*	A*	A*	R*	A*	A*	A	A	A*	A*	A*	A*	R*	A	A*	A*	A*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
Y*	Y	Y*	Y*	NP	NP	-	-	Y*	C*	Y*	Y*	C	Y*	Y*	Y*	Y*	NP	NP
-	-	-	-	R	R	-	R*	-	-	-	-	-	R*	-	-	-	-	-
R*	-	-	-	-	-	R*	-	-	-	R*	R	R	-	R	-	R*	-	R*
NP	-	-	-	NP	NP	NP	NP	NP	NP	low_cov	A*	A	R*	-	R*	R*	R*	-
NP	-	-	-	NP	NP	NP	NP	NP	NP	low_cov	Y*	Y*	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	-	-	NP	NP	R*	R*	A*	A*	A*	-	-	R*	R*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	NP	NP	NP	NP	C*	Y*	Y*	Y*	Y*	NP	NP	-	Y*	NP	NP
-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y	-	-	-	-	-	-

NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
G*	-	-	-	-	K	K	G*	K*	K	K*	K	K*	K*	G*	K*	-	NP	NP
NP	NP	NP	NP	-	R*	NP	NP	NP	NP	G*	G*	G*	NP	NP	NP	NP	NP	NP
M*	-	-	M*	-	-	M*	-	-	-	M*	M	M	M*	M	-	-	-	-
W*	A	W*	W	A*	W	-	-	W*	W*	W*	W*	-	W*	W*	W*	-	A	W
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
NP	C*	C*	C*	C*	C*	NP	NP	C*	C*	NP	NP	NP	C*	C*	NP	NP	NP	NP
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
A	-	-	-	R*	R	R	R	R*	R	R	R	R*	R	R	R	R	R	R
NP	low_cov	-	-	NP	NP	NP	NP	Y*	-	NP	NP	NP	-	-	Y*	Y*	NP	NP
A*	A*	A*	M*	A*	A	-	-	M*	A*	M*	M*	M*	M*	M*	M*	M*	M*	M*
-	R	-	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-
-	-	-	-	NP	NP	-	-	NP	NP	-	-	-	R*	-	R*	R*	-	-
G*	R	G*	R	G*	R*	R*	R*	R	G*	-	R*	-	R	G	R	R	R	R
NP	Y*	Y*	Y	-	-	Y*	T*	-	-	Y*	Y*	-	Y*	-	NP	NP	Y*	Y*
T*	Y	T	Y*	Y*	T	Y*	-	T*	Y*	Y	T	Y*	Y	Y*	T	Y	Y	T
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K*
G	S	G*	S	S	S	S*	S*	S*	S*	S*	S*	-	S	S	S	G	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R*	-	-	-	-	-	R*	V*	R*	R	R*	R*	R*	R	R*
N*	-	-	-	G	R	G	G	-	-	-	R*	R*	R*	R	-	-	R*	-
Y*	Y	Y*	Y	Y	C	Y	-	Y*	Y*	-	Y*	-	Y	Y	Y	Y*	Y	Y
R*	R	-	R*	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	R*
-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	Y*	Y*	-	-	Y*	Y*
R*	-	-	R*	-	-	R	R	G*	R*	R	R*	-	R*	R	R*	R*	R*	R*
-	-	-	R*	-	R*	-	-	-	-	R*	A	R*	R*	R*	-	-	R*	R*
-	-	-	-	S*	S	S	G	-	-	S	S*	S*	S	S*	S*	-	S*	S
R*	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	-	M	-	-	-	-	-	-	-	-	-	-	-	M*
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	R*	-	-	-	-	-	-	R	R	R*	R*	R*	R*	-	-	-
R*	R*	R*	R	-	-	R*	R*	A*	A*	-	-	R*	R*	R*	R*	R*	A	-
K*	K*	K	K*	-	-	-	T	-	K*	-	-	-	K*	K*	NP	NP	K*	K*
R*	R	R	R	R*	R	R*	G*	G*	G*	-	R	R*	R	R	R	-	R	R
R*	R	R*	R	-	R*	R	R*	A	R	-	R*	R*	R	R	R	R*	R*	R*
T	Y*	Y	Y	-	-	Y	Y	Y	Y	-	-	Y*	Y*	Y	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	R	-	R*	R	R*	R*	R	-	R*	R*	R*	R*	R	R*	R	R*
G*	R	R*	R	R*	G	G*	G*	G*	R*	-	-	-	R	R	R	G	R	R
Y*	Y	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
C	Y	C	C	Y*	-	-	-	Y	Y*	-	-	-	Y	Y	Y	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	R	R	-	-	R*	-	R	R	R*	R	R*	R	R*	R	R
-	-	-	K*	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R*	-	R*	A	A	A*	R*	R*	-	R*	R*	R*	R*	-	-	-	R*	R*
NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y*	Y	Y*	Y	-	-	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y*
-	Y*	Y	Y*	-	-	-	-	-	W*	-	-	-	Y*	-	-	-	Y*	Y*

-	-	-	R*	R	R*	-	-	R*	R	-	-	-	R*	-	R*	-	R*	R*
R*	R*	-	R*	R	R	R*	-	-	R*	-	R*	-	R*	R	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	R	R	G*	-	-	-	R*	-	-
-	-	-	-	T*	T	-	-	-	-	T	K*	K*	K*	T*	-	K*	NP	NP
-	-	-	-	-	-	-	-	S*	-	-	S*	R*	-	-	-	-	-	-
-	R	R*	R*	-	-	-	-	-	-	R*	R*	R*	R*	-	R*	R*	R*	R*
R*	R*	-	R*	-	R*	R*	R	R*	R	R	R	R	R*	R	R	R	R*	R*
M	M*	-	M*	M*	M*	M	M*	M*	M	M*	M	M*	M*	M	M	M	M*	M
M*	-	-	M*	-	-	-	-	Y*	-	M*	M*	M*	M*	M*	M*	-	M*	M*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-
M*	M*	M	M*	-	-	-	-	M*	-	M*	M*	M*	M*	-	M*	M*	M*	M*
-	K	K	K*	-	-	R*	-	-	-	-	-	-	K*	-	K*	K*	K*	K*
-	W	T	W	-	-	-	-	-	-	W*	W*	W*	W	-	W*	W	W	W*
-	Y	T*	Y	-	-	-	-	NP	NP	Y	Y*	Y	Y	Y*	-	Y*	Y	Y*
S*	S	S	S	-	S*	-	-	-	-	S	S	S*	S	S*	S	V*	S	S*
R*	low_cov	R*	G*	R*	R*	NP	NP	NP	NP	R*	R*	G*	R*	R*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
T*	T*	T*	T*	T*	T*	T*	K*	K*	T*	T*	K*	T*	T*	T*	K*	K*	T*	T*
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
NP	NP	NP	NP	Y*	C*	NP	NP	C*	C*	C*	C*	Y*	Y*	C*	Y*	C*	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	NP	NP	NP	R*	R*	G*	G*	G*	R*	G*	R*	R*	G	G*	NP	NP	R*	G
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-
R*	-	-	-	R*	-	R	R	-	-	-	R*	-	R*	-	-	-	R*	R*
-	-	-	-	Y*	Y	-	S*	-	S*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	A*	A*	M*	-	M	M	A*	-	-	A*	A	M	M	M	M	M	M	A
-	-	-	-	-	-	-	-	-	-	W	W*	W*	-	-	-	-	-	-
-	R*	R*	G	-	R*	R	R*	R*	-	G	G	R*	R	R	R	R*	R	R*
-	R*	R*	R	R*	R	R	R*	-	R*	R*	R*	R	R	R	R	R	R	R
S*	-	-	S*	-	-	-	-	S*	-	-	S*	-	S*	-	-	-	S*	-
-	R*	G*	G*	-	R*	R*	R*	-	-	R	R*	R*	R*	R*	R*	R*	R*	R*
Y*	Y*	Y	Y	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
Y*	Y*	T	Y*	Y*	-	Y*	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	H*
R*	G	R*	R*	-	-	-	-	-	-	-	R*	-	-	-	-	-	R*	R*
-	-	-	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	R*
-	R	A	R*	R*	R*	A*	A*	R*	R*	R*	R*	R*	R*	R*	-	-	R	R*
R*	R	-	R*	R*	G	G	R*	R*	R*	R*	G	G	R	R	G	G	R	R
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	Y*	-	-
Y*	Y*	C*	Y*	Y*	Y*	C	C*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
K*	K	K	K*	K*	K	K*	T*	K*	K*	K	K	K	K	K*	K*	-	K	K*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
S*	S	S	S	S	S	-	-	-	-	-	S*	S*	S	B*	S*	S*	S	S*
C*	C*	C*	Y*	C*	C*	C*	Y*	C*	Y*	C*	Y*	C*	NP	NP	C*	C*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	M*	-	-	-	-	-	-	-	-	-	M*	M*	M*	-	-	-	M*	M*
M*	M	M	M	M*	-	M	M*	M*	M*	M	M	A*	M	M	A	M*	M*	M*
-	S*	S	S	-	-	-	-	-	-	S*	S*	G	S*	-	-	-	S*	S*
G*	G*	R*	R*	R*	R*	R*	R*	R*	G	R*	R*	R*	R*	G*	R*	G*	R*	G*

-	Y*	T	T*	-	-	Y*	T	-	-	-	Y*	-	Y*	-	Y*	Y*	Y	Y*
NP	low_cov	-	-	-	-	NP	NP	S*	S	low_cov	-	-	NP	NP	-	-	NP	NP
NP	low_cov	-	-	-	-	G	R*	-	-	-	-	-	-	-	-	-	-	-
H*	Y*	H*	H*	H*	H*	H*	H*	Y	Y*	Y*	N*	H*	N*	H*	N*	H*	N*	H*
-	-	-	-	-	-	-	R*	-	-	R	R	R	R*	-	-	-	R*	N*
R*	R*	-	V*	R*	V*	R*	R	R	R	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	S	S	-	-	-	S*	-	S*	S*	-	S*
-	Y*	-	-	-	Y*	-	-	-	-	Y	Y	Y	Y*	-	Y*	H*	H*	H*
-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	R
-	G*	G*	R*	-	-	R*	R*	R*	R*	R*	R*	-	-	R*	R*	R*	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	low_cov	-	-	-	-	Y*	NP	NP
-	W*	-	-	-	-	W	W*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
R*	A*	A	R	-	-	R*	R*	R	R	R	R*	R*	R*	-	R	R*	R*	-
-	Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	T*	T*	T*	T*	T*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	A	A*	M*	A	M*	A	A*	M*	M	M	M	M*	M*	M*	M*	A*	M*	A*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	Y*	-	NP	NP
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***M****	**-**	**-**	**-**	***M****	***M****
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Y*	***Y****	***Y****	***Y****	***Y****	***Y****	***Y***	***Y***	***Y***	***Y***	***Y***	***Y***	***Y***	***H****	***Y****	***H****	***Y****	***H****	***H****
Y*	***C****	***Y****	***C****	***Y****	***Y****	***Y****	***C****	***Y****	***C****	***C****	***C****	***C****	***C****	***C****	***C****	***C****	***C****	***C****
-	***Y***	***Y***	***Y***	**-**	**-**	***Y***	***Y***	**-**	**-**	***Y****	***Y***	***Y***	***Y****	**-**	***Y****	**-**	***Y****	***Y****
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***R****	***R****	***R****	***R***
-	**-**	**-**	**-**	***Y****	**-**	***S***	***S***	**-**	**-**	**-**	**-**	**-**	***S****	**-**	***S****	**-**	***S****	***S****
Y*	***C****	***C****	***Y****	***Y****	***Y****	***Y****	***Y****	***C****	***Y****	***C***	***C****	***C***	***Y****	***Y****	***Y****	***C****	***Y****	***Y****
K*	**-**	**-**	***K****	***K***	***K***	**-**	**-**	**-**	***K****	***K****	***K****	***K****	***K***	***K****	***K***	***K***	***K****	***G***
-	**-**	**-**	**-**	***Y****	**-**	***Y****	**-**	**-**	***Y****	**-**	**-**	**-**	***M****	**-**	***Y****	***Y****	***Y****	***Y****
R*	***R****	***R****	***R****	***D****	***R****	***R***	***R***	***R****	***R****	***R***	***R***	***A***	***D****	***R***	***R***	***R***	***R***	***R***
-	**-**	**-**	**-**	**-**	**-**	***M***	***M***	***M****	***M****	**-**	**-**	**-**	***M****	**-**	***M****	***M****	***M****	***M****
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***Y****	***Y***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	***R***	***R***	***R****	***R****	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	***S****	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***Y***	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	***Y***	***Y****	***Y****	**-**	**-**	**-**	**-**	***Y****	**-**	**-**	**-**	**-**	***Y****
G*	***R****	***G****	***R****	***R****	***R****	***R****	***G***	***G****	***R****	***G****	***R****	***G****	***R****	***R****	***R****	***G****	***R****	***G****
R	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***R****	**-**	**-**	***R****	**-**	***R****	**-**
Y	**-**	**-**	**-**	***Y****	**-**	**-**	**-**	**-**	**-**	**-**	***Y****	***Y****	***H****	***Y****	***M****	**-**	***H****	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
R	***R****	**-**	***R****	***R***	***R****	**-**	***R****	**-**	***R****	**-**	***R****	***R****	***R****	**-**	***R***	***R***	***R****	***R***
S*	**-**	**-**	***S****	***S****	***S***	**-**	**-**	***NP***	***NP***	***S***	**-**	***S****	***S***	***S***	***S***	***S***	***S****	***S****
-	**-**	**-**	**-**	**-**	**-**	***M***	***M***	***M****	***M***	***M***	**-**	***M***	***M****	***M***	**-**	**-**	**-**	***M****
-	**-**	**-**	**-**	**-**	**-**	***R***	***R***	***R****	***R****	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***R****	***R****
R*	**-**	**-**	**-**	***R***	***R***	**-**	**-**	**-**	**-**	**-**	***R****	**-**	***R***	***R****	***R***	***R****	***R****	***R***
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	NP	NP	-	-	-	-	NP	NP	NP	-	Y	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	G	R	R	R*	R	R	R*	-	R*	R	G	G	R	R	R	R	R	R

D*	R	R*	R*	A	R*	R*	-	R*	-	A	R	A	R*	R	R	R*	R*	R*
-	-	R*	R*	-	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	S	S	-	-	-	-	-	-	S*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	Y*	Y	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	R	R*	A	-	-	-	-	-	-
-	S	S*	S	G	S*	-	-	-	-	S	S*	S*	S	S*	S	S*	S*	S
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	Y	-	-	-
-	-	-	-	-	-	M	A	-	-	-	-	-	M*	-	-	-	-	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*
-	-	-	-	R*	S*	R*	-	-	-	-	-	-	R*	-	-	-	R*	S*
Y*	-	-	Y*	-	-	Y	Y	-	-	-	Y*	Y*	Y*	-	-	-	Y*	Y*
-	-	-	-	Y*	Y	-	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	S*	S*
R	R	R	R	R	R	R*	R	R*	R*	-	R*	R*	R	R	R	R	R	R
Y*	Y	Y*	Y	-	-	-	-	-	Y*	-	-	-	Y*	T	Y	Y*	Y*	Y*
Y*	Y	Y	Y	-	Y*	Y	-	-	Y*	Y	Y*	C	-	Y*	Y*	Y*	Y*	Y*
-	-	-	S*	S	S	S	S	-	-	-	-	-	S*	-	S*	S*	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	C*	C*	C*	NP	NP	Y*	-	NP	NP	low_cov	C*	C*	NP	NP	NP	NP	NP	NP
C	Y*	C*	Y	Y	Y	Y	Y	Y	Y	C*	C	C	Y	C	Y	Y	Y	Y
-	-	-	-	T	K	-	K*	-	K*	-	K*	-	-	-	-	K*	-	-
H*	Y*	Y*	Y*	Y*	Y	Y*	Y*	H*	Y*	Y*	Y	Y*	C	Y*	C	Y*	Y*	C
Y*	-	-	-	-	-	Y	-	Y*	Y*	Y	Y*	Y*	-	-	Y*	Y*	Y*	-
R	R*	R*	R*	R*	R*	-	-	-	-	-	R*	-	R*	R*	R*	R*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	M	M	M	M	M	-	-	M*	-	-	M*	M*	M	M*	M	M	M	M
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y	Y	Y	Y*	Y	Y	-	-	-	-	-	Y*	-	Y*	Y*	Y	Y*	Y*	Y
C	-	Y*	C	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*
Y*	Y*	Y*	-	Y*	Y*	-	-	-	-	-	Y*	-	Y*	-	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	Y*	Y	Y	Y*	Y	-	-	-	-	-	-	-	Y	-	-	-	Y	Y*
R*	R*	R*	-	R*	R*	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	-	-	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	-	R*	-	-	R*	-	R*	A	R*	R*	A	R*	-	R*	R*
-	-	-	-	-	-	Y*	Y	-	-	-	Y*	-	H*	Y*	Y*	-	H*	Y*
Y*	Y*	-	Y*	-	Y*	-	-	Y*	-	-	Y*	Y*	H*	-	Y*	Y*	H*	W*
-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-	H*	Y*
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-
K*	K	K	K	K*	K*	K	K	K	K	K*	K*	K*	K	K	K	K*	K	K

Y	Y*	-	Y*	Y*	Y	Y	Y	-	Y*	Y	Y	Y	Y	Y	Y*	-	Y*	Y
T*	NP	NP	NP	T*	T*	T*	T*	T*	T*	NP	NP	NP	T*	T*	NP	NP	NP	NP
R*	-	G	R	G	R	-	-	R	R	-	R*	-	R	G*	R*	R*	R	R
NP	NP	NP	NP	C	C*	-	-	S	S*	-	S*	-	NP	NP	S*	S*	NP	NP
NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	R*	-	NP	NP	-	-	NP	NP
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
S*	-	-	-	S*	-	-	-	S*	-	-	S*	-	S*	S*	S*	-	V*	S*
-	R	-	A*	NP	NP	R*	-	R*	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	Y*	-	Y*	C	-	-	Y*	Y*
B*	-	-	-	Y*	-	-	-	Y*	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
S	S*	B*	N*	S*	B*	S*	S*	S*	S*	S*	S	N*	N*	S	B*	N*	N*	N*
S*	S	S	S	-	-	S*	G*	S*	G*	-	S	S	S	G	S	G	S	S
-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	R*	-	-	-	-	-	-	-	R*	R*	-	R*	K*	R*	-
Y*	-	-	Y*	Y*	-	-	-	Y*	Y*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	Y*	Y*	T	-	-	-	-	Y*	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*
Y*	-	-	Y*	-	-	-	-	B*	Y*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	-	S*	S	S*	-	-	S*	-	S*	-	-	S*	S*	-	-	S*	V*
-	-	-	-	-	-	-	-	-	-	-	Y*	-	M*	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	Y*	Y*	-	Y	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	R*	-	G	NP	NP	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	Y	Y	Y	-	Y*	-	-	-	-
NP	-	-	-	NP	NP	-	-	NP	NP	-	-	-	-	-	NP	NP	-	-
NP	-	-	-	NP	NP	NP	NP	NP	NP	-	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	S*	-	-	-	-	R*	-	-	-	-	-	-
S*	S*	-	S*	S*	S	S*	S*	NP	NP	G	G	S*	S*	G	S	S*	S	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	M*	M*	M	A	M*	M*	M*	low_cov	M	M*	M*	A*	M*	M*	M*	A
M*	-	-	-	-	M*	-	-	M*	-	R*	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*
Y*	-	-	Y*	Y*	Y*	W	W	-	-	Y*	-	H*	W*	-	Y*	-	-	-
-	Y	Y*	Y*	-	-	-	-	-	-	-	H*	Y*	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N*	-	-	-	-	S*	-	-	-	-	-	S*	-	S*	-	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	A*	R*	R*	R*	R	A*	-	-	-	R*	R*	R*	R*	R*	R*
H*	-	-	W*	W*	W*	W*	-	-	W*	W	W	W	W*	W*	W	W	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	-	Y*	-	-	Y	Y*	-	-	NP	NP	NP	NP	NP	NP	NP	-	-
-	R	R	R	R	R	R*	-	-	-	-	R*	R*	R	R	R	R	R	R
R*	R*	R*	R*	-	-	-	-	-	-	low_cov	G*	G*	-	-	R*	-	-	R*
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	R*

K	K	K	K	K*	K*	K*	K*	K*	K*	K	K	K	D*	D*	K	K	D*	D*
Y*	Y*	-	Y	Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y	H*	H*	Y	Y*	H*	Y*
-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	Y*	-
-	-	-	-	-	-	R	R*	-	-	-	R*	-	R*	-	-	R*	R*	R*
-	-	-	R*	-	-	R*	-	-	R*	-	R*	-	R*	-	R*	-	R*	-
-	Y	Y	Y*	Y	Y	-	-	-	-	Y	C	Y	Y*	-	Y	Y*	Y	Y*
-	-	-	R*	NP	NP	-	-	-	-	NP	NP	NP	R*	-	R*	-	R*	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	G*	R*	R*	R*	R*	R*	R*	R*	R*
R*	R*	R*	R	R	R	R*	R*	R*	D*	R	R	R	N*	R	R	R	N*	D*
G*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
C	C	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	Y*	Y	Y*	Y*	Y*	Y*	C*	Y*	C
-	NP	NP	NP	W*	T*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	R	R	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	-	R	R
-	-	-	-	Y*	-	-	-	Y	Y*	-	-	-	-	-	Y*	Y*	-	-
Y*	Y*	Y*	Y*	-	Y*	-	-	-	-	-	Y*	M*	Y*	Y*	Y*	Y*	Y*	Y*
M*	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	M*	M*
Y*	Y	Y	Y	T*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y*
-	R*	-	-	-	-	-	-	-	-	R	R	R*	R*	-	-	-	R*	-
Y*	Y*	Y	Y	-	Y*	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
Y*	-	-	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-
R*	-	-	R*	-	-	-	-	-	-	-	-	-	R*	R	-	-	R*	-
NP	low_cov	-	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	M*	NP	NP	NP	-	M	-	-	NP	NP
NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	-	R*	-	-	-	-	-	-	R	R	R*	R*	R	-	-	R*	-
R*	-	-	R*	-	-	-	-	-	R*	R	R*	R*	R*	R	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y	-	-	Y*	-
Y	Y*	-	Y*	H*	Y*	-	-	-	-	-	H*	Y*	H*	Y*	Y*	Y*	H*	H*
S	S	S	S	S	S	S	S	S	S	S*	V*	S*	S	S	S	S	S	S
Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y	Y	H*	Y
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	low_cov	-	-	-	-	-	NP	NP
-	-	-	-	-	R	-	-	-	-	R*	R	R*	R*	-	-	R*	NP	NP
NP	-	-	-	M	M*	NP	NP	M*	-	M	M	M	M*	-	M	M*	NP	NP
Y	-	-	Y*	-	Y*	Y*	-	Y*	Y*	-	-	Y*	Y*	-	-	-	Y*	Y*
NP	K*	K*	K*	-	K*	K*	K*	K*	-	-	-	-	-	T	K*	T	K*	K*
NP	-	-	-	NP	NP	K*	K*	K*	G	-	-	-	K*	K	K	K*	K*	K*
S*	-	-	S*	-	-	-	S*	S	S	-	S*	-	S*	R*	S*	S*	S*	S
Y	Y	Y	Y	Y*	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y
Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y	Y	Y*	Y
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	H*	Y*	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	S	-	S*	-	-	-	-	-	-	S	S	S*	-	-	S*	S*	-	-

-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	-	-	R	-	-	-	R	R	R	R	A	R	R	R*	R*
Y*	-	-	-	-	-	Y*	-	Y*	Y*	-	-	-	-	Y*	Y*	Y*	-	-
Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	R*	-	R*	R*	-	R*	-	-	R*	-	R*	R*	R*	R*	R*	R*
Y*	Y*	Y	Y	Y	Y	Y*	B*	-	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y
R*	G*	G*	R	G	R	G*	G	-	G	G*	G*	G*	G	R*	G	G*	G	G
NP	-	-	-	-	-	R*	R*	NP	NP	-	R*	-	-	R*	A	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	R*	NP	NP	NP	NP	NP	NP
NP	-	-	-	Y*	Y*	NP	NP	T*	T*	T	T*	T*	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	NP	NP	-	-	T	T*	T*	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	NP	NP	G	G*	R*	NP	NP	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-
-	low_cov	-	Y*	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	Y*	Y*	Y*	-	-	-	Y*	-	-	-	Y*	Y*	-	-	Y*	Y*
-	C	C*	C	-	-	Y	C*	-	-	Y	-	Y	Y	C	-	-	Y*	Y*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	S	S	S	-	-	-	-	-	-	-	S*	-	S*	-	-	S*	S*	S*
-	Y*	-	-	-	-	-	-	-	Y*	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	NP	NP	NP	C*	C*	S*	S*	S	C	C*	Y*	C*	C	C*	NP	NP	S*	S*
Y*	T*	T*	Y	Y	Y	T	T	Y*	Y	T*	T	Y*	Y	Y*	Y	Y	Y	Y
Y*	Y*	C*	C*	C*	Y*	Y*	C*	C*	Y*	C*	C*	Y*	C*	C*	C*	C*	Y*	C*
A*	A*	R*	A*	A*	R*	R*	A*	A*	R*	R*	R*	R*	R*	A*	R*	A*	A*	R*
W*	W*	W	W	-	-	W	W*	-	-	W	A*	W*	W*	W*	-	-	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	M*	-	-	-	-	-	-	-	-	-	M*	-	-	M*	M*	M*
-	Y	Y	Y*	Y	Y	-	-	Y*	Y	-	Y*	Y*	T	-	Y	T*	Y	Y
-	-	-	-	W*	W	-	-	W*	W*	-	-	-	W*	-	-	-	W*	W*
Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-	R*	R*
-	Y*	-	Y*	Y	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
S	S	S	S	S*	S*	S	S	S*	S*	S	S	S	S	S	S	S*	S	S*
Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	C*	Y*	C	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
-	-	-	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	Y	Y	Y	Y	Y	-	-	-	-	Y*	Y	Y	Y	Y	Y	-	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	R	R	R*	R*	R*	R	A	R	R	R*	A	R*	R*	R
S*	-	-	-	-	-	Y	Y	-	-	-	-	S*	-	-	-	-	-	-
-	-	-	-	-	-	S	S*	-	-	-	-	-	S*	-	-	-	S*	S*
R*	-	-	-	-	-	R	G	R*	-	-	-	R*	R*	-	R*	R*	R*	R*
S*	-	C*	S*	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R	R*	R	R	R	R	R*	-	-	-	R*	-	R	R	R*	R*	R	R
-	G	G*	G	K*	K*	K*	K*	-	-	-	-	-	K*	G*	-	-	G*	G
Y	Y	C*	Y	Y	Y*	Y*	Y*	-	-	-	-	-	Y	C	-	-	Y	Y
-	R	R*	R	R*	R*	-	-	-	-	-	-	-	R*	A	-	-	-	-
-	-	-	Y*	-	-	-	-	Y*	-	-	Y*	-	H*	-	-	-	Y*	Y*

-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	S*	-	-	-	-	S	S	S	V*	R*	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	R*	-	-	-	-	-	-	R	R	R*	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
R*	-	-	R*	W*	R*	-	-	-	W*	-	-	-	R*	R*	-	-	R*	-
-	-	-	-	-	-	-	-	K*	-	-	-	-	K*	-	-	-	-	-
S*	-	S	S	S*	S	S*	G*	G*	S*	G*	G	S*	S	G	S*	-	S	S
-	W	W	W*	-	-	-	-	-	-	-	W*	W*	W*	W*	-	-	W*	W*
A	R	A	R	R	R	R	R*	R	R	A	R	R	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
Y*	-	C	Y	-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-
-	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y*	C	Y*	Y*	Y*	Y	Y*	-	Y*	C*
-	-	-	-	S	S*	-	-	-	-	-	-	-	S*	S*	-	S*	S*	S*
R*	R	R	R	R	R	R	R	A	A*	R	A	R*	R	R	R*	-	R	R
-	NP	NP	NP	-	-	-	-	NP	NP	R*	R	R*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-
-	S	C*	S	S*	S	S	S*	-	S*	S	S*	S*	S*	S*	S*	-	S	S*
G*	R	G	G	G	R	R*	R*	R*	G	G	G*	G	R*	R	R*	R*	-	R*
-	Y*	Y*	Y*	-	-	Y	Y*	Y*	Y	C	C	C*	-	Y	Y*	-	-	Y*
NP	NP	NP	NP	R*	R*	R*	A*	R*	A*	NP	NP	NP	NP	NP	-	R*	NP	NP
NP	NP	NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
NP	M*	M*	C	C	M*	M	-	NP	NP	C	C	M*	M*	M*	M*	M*	M	M*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y*	-	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP
S*	S*	-	S*	S	S	-	S*	S*	S*	S	S	S	S*	S	V*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S	G*	G	G*	G*	-	S*	-	-	S	S	S	S	S	S	S*	S	G
-	K*	-	R*	-	R*	-	-	R*	-	-	-	-	-	-	R*	-	R*	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	-	R*	D*	R*	R*	R*	R*	R*	R*	-	-	R*	-
K*	K*	-	K*	K	K	-	-	G*	K*	-	K*	-	K*	K*	K*	K*	K*	K*
NP	low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	R*	R*	R*	R	R*	R*	R	R	-	R	R*	R	R	R	R	R	R
K	-	-	-	K	K	-	-	K*	G	-	K*	-	K*	K*	K*	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	R*	R	R*	R	R	G	R	R*	R	R*	-	R*	R*
-	-	-	-	-	-	-	-	NP	NP	-	-	-	Y*	-	-	-	-	-

Y*	-	Y*	C	C*	Y*	Y*	Y*	C*	Y*	C	Y*	Y*	NP	NP	-	-	Y*	Y*
R*	R	R*	R	-	-	-	-	R*	-	-	-	-	R*	R*	-	-	R*	R*
-	-	-	-	-	-	R*	-	R	R*	R	R	R*	-	-	-	-	-	R*
Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	R*	NP	NP	NP	NP	NP	NP
-	-	-	Y*	-	-	-	Y*	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
NP	C	S*	-	-	-	-	-	NP	NP	-	-	-	NP	NP	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	M*	M*	M*	NP	NP	-	-	NP	NP
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	K*	low_cov	K*	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	Y*	Y*	Y*	Y*	-	-	Y*	Y	Y*	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
M*	M	M	M*	-	-	M*	-	-	-	-	-	-	M*	M*	-	-	M	M*
K	T	K	K	K	K	K	K	B*	K*	K	K	K	K	K*	K	K*	K	K
R	R*	R*	R*	R	R*	R	G	R	R	R*	R	R	R	R*	R	G	R	R
B*	S*	C*	S*	S*	S*	C	S*	S*	S*	S*	S*	C*	S*	B*	C*	S*	S*	S*
Y*	Y	C*	Y	Y	Y	Y*	C	Y*	-	Y	Y*	Y*	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
Y*	Y*	Y*	Y*	C*	C*	Y*	C*	Y*	C*	C*	Y*	C*	C*	Y*	C*	C*	Y*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
R*	G*	G*	G*	G*	G*	G*	G*	G*	G	G*	G*	G*	G*	R*	G*	G*	G*	G*
R*	R	R	R	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	A*	A*	A*	A*	NP	NP	NP	NP
Y	Y*	Y*	Y	Y	Y	Y*	B*	Y*	Y*	Y*	Y*	H*	Y	Y	Y	Y*	Y	Y
S*	-	-	S*	-	S*	-	-	S	S	-	S*	-	S*	S*	S*	-	S*	S
-	Y	Y	Y	-	-	Y	Y*	Y*	Y	-	-	-	Y*	Y*	-	-	Y*	Y*
C*	S	S	S	S*	S*	S	S	S*	S*	S*	S	S	S	S	S	S	S	S
NP	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-
-	R	R	R	-	R*	-	-	-	R*	-	R*	-	R*	R	R	-	R*	-
R*	R*	R*	R*	R*	R*	R	G	R*	R*	R*	G	R*	R*	R*	R*	G*	R*	R*
-	-	-	-	K	K*	-	-	-	-	-	-	-	K*	-	K*	-	K*	K*
Y*	-	-	Y*	-	-	-	-	Y*	Y	-	-	-	-	-	Y	Y*	-	-
Y*	-	-	Y*	Y*	-	-	-	-	-	-	-	-	H*	Y	-	-	Y*	H*
-	-	-	R*	W*	-	-	-	R*	-	-	R*	-	R*	R*	R*	R*	R*	R*
Y*	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	T	Y*	-	-
-	-	-	K*	-	-	-	-	-	K	-	K*	-	K*	-	K*	K*	K*	-
-	-	-	R*	-	-	-	-	R	R*	-	-	-	-	-	R*	-	R*	R*
S*	S*	S*	S*	S*	B*	S*	-	S*	S*	S*	S*	S*	N*	S*	N*	B*	N*	N*
-	low_cov	G*	G	R*	G*	-	-	R*	R*	G*	low_cov	G*	NP	NP	NP	NP	G*	G*
-	R	R*	R	R	R	-	R*	-	R	R	R	R	R	R*	R	R	R	R
Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	V*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	D*	R*	R*	R*
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	R*	G	R*	R*	R*	R*	G*	G	R*	R*	G	R*	G*	G	R*	G*	R*	R*
R*	R*	R	R	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	G	R*	R*	R*	R*

-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-	-	-	-
Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y	Y*	C*	Y*	Y	Y*	Y*	C	Y*
R*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*
R*	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	R*
-	S	S*	S	-	-	S	S	S*	S*	S*	S	V*	S	-	S*	S*	S	S*
-	R	R	R	A	R	R*	-	R*	A	R	R	A	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	R	R	R*	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
NP	R	A*	A	A*	A	NP	NP	R*	R*	-	R*	-	NP	NP	NP	NP	NP	NP
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
-	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	-	-	R*	-
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
W*	W*	W*	T	T	T	T	W*	W*	T	T	W*	T	W*	W*	W*	W*	W*	T
M	M	M	M	M*	M*	M*	M	M	M	M	M	M	M	M	M	M	M	M
Y*	Y	Y	Y	T	Y*	-	-	Y*	Y*	T*	T	Y*	Y	T	T	T	Y	Y
-	low_cov	R*	R*	A*	A	-	-	NP	NP	R*	R*	A*	R*	R	R*	R*	R*	R*
K*	-	K*	K*	K	K	K*	K*	K	K	K*	D*	D*	D*	K*	D*	D*	D*	D*
K*	K	K	K*	-	-	K	K*	K*	-	K*	K*	K	D*	K*	D*	D*	D*	D*
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	H*	Y*	H*	H*	Y*	M*
Y*	-	-	Y	Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	-	-	S*	-	NP	NP	NP	-	S*	-	-	NP	NP
Y*	-	Y	Y*	-	-	-	-	Y*	Y*	Y	Y*	-	Y*	Y	NP	NP	Y*	Y*
R	R	R	R	-	-	-	-	R	R	R	R	R*	R*	A	-	-	R*	R*
-	R	R	R	R	R	R	R*	R*	-	-	R*	-	R*	R*	NP	NP	R*	R
-	-	-	-	-	-	R	-	-	-	-	-	-	-	R*	-	-	-	-
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
-	-	-	R*	R	R	R	R	-	-	R	R*	R*	R*	-	-	R*	R*	-
A*	NP	NP	NP	R*	R*	NP	NP	NP	NP	A	A*	A*	-	A	R*	-	NP	NP
V*	V*	V*	V*	V*	N*	V*	V*	V*	V*	V*	V*	R	V*	V*	V*	R	V*	R
-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-
R	R	R	R	R	R*	R	R*	R*	A*	A	A	A	R	A*	A	R	R	R
-	R	R*	R	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
R	R	R*	A	R*	R*	R	R*	-	R*	R*	R*	R*	R	R*	R*	R*	R	R
T*	Y*	Y*	Y*	Y*	T*	Y*	Y*	NP	NP	NP	NP	NP	Y*	Y*	T	T*	Y*	T*
A*	R	R*	R	A*	A*	NP	NP	R*	A*	A*	A	A*	A*	A*	A	A*	NP	NP
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	NP	NP	R*	R*
G	S	S	S	S	S	S	S	G*	G*	G*	G*	G*	S	G	S	-	S	S
-	R*	R*	R	-	-	A	A	-	-	R	R*	-	V*	R	R	R*	R	R*
R	-	-	-	R	R	-	-	R*	R*	R*	R	R	R*	R*	R*	R*	R*	R*
-	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-	-	NP	NP
-	-	-	-	-	-	-	-	R	R	R*	R	R	-	R	R	R*	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP
-	Y*	Y*	Y	-	-	Y	Y	Y	Y*	Y*	T	Y*	Y*	Y*	T	Y*	Y*	Y*

T*	T*	T*	T*	T	Y	T	T*	T*	T*	T*	low_cov	T*	Y*	Y*	NP	NP	Y*	Y*
-	Y*	-	Y*	-	-	T	T*	-	-	Y*	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	C*	C*	C*	Y*	Y*	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
-	R*	-	-	-	-	R	R*	-	-	R*	R*	R*	-	-	R*	-	NP	NP
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	-	-	-	-	-	-	NP	NP	NP	-	-	NP	NP	NP	NP
-	A*	A*	R	R*	R*	-	R*	-	-	-	-	-	R	R*	R	R*	R*	R*
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R	R*	R*	R	R	R*	R	R*	R	R*	R	R*	R	R	R	R
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
NP	-	-	-	-	-	NP	NP	-	-	Y*	Y	Y*	Y*	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	Y	Y*	-	-	-	-	-	NP	NP	-	Y*	-	Y*	-	Y*	Y*	-	-
W*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A	A*	A*	A*
R*	R	R	R	R*	-	A*	R	R*	-	R	R	R*	R*	-	R*	R*	R*	R*
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*
G*	R	G*	G*	G*	G*	R	G	G*	G*	G	G*	G*	G	G	R	R*	R	R*
-	-	-	-	-	-	S	S	-	-	-	-	-	S*	S	-	-	-	S*
R*	R*	-	R*	R*	R*	-	R*	-	-	R*	-	R*	R*	-	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	Y*	-	Y*	-	Y*	-
R	R	R	R	R*	R	R	R	R*	R*	R	R	R	R	R	R	R	R	R
Y	-	-	S*	-	-	-	-	-	-	Y	Y	Y*	H*	M*	-	-	Y*	-
Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	C*	Y*	Y*	Y*	Y*	C*	C*	Y*	C*
K	-	K*	K*	K*	K	K	K	K*	K	K*	K	K*	K	K	K	K*	K	K
-	-	R	R*	-	-	-	-	R*	R	-	-	-	R*	-	R*	-	R*	-
-	-	-	-	Y*	-	T	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	W*	W	W*	-	-	-	-	-	-	-	W	-	W	A	W*	W*
-	R	R	R*	R*	-	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	S*	NP	NP
R	-	-	R*	R	R	-	R*	-	-	R	R*	R	R	R*	R	R	R*	R
Y	-	-	-	-	-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-
R*	R	R*	R*	R	R	R*	R*	A*	R*	R*	R*	R*	R	R*	R	R*	R	R
Y*	Y	Y	Y	Y	Y*	Y	Y	C	Y*	Y	Y	Y*	Y	Y	Y*	Y	Y	Y
Y*	Y*	Y*	Y	Y*	Y*	-	Y*	Y*	-	Y	Y	Y	H*	Y*	Y*	Y*	Y	H*
S*	S	S	S	V*	S	S	S	S	S	S*	V*	V*	V*	V*	S	S	V*	V*
M*	M	M	M	M*	M	M	M	M	M	-	M*	M*	M	M*	M	M	M	M
-	R*	-	R*	R	R	R	R	R	R	-	R*	-	R*	-	R	R	R*	R*
S*	S	S	S	S*	S	S*	S	S	S	-	S*	S*	V*	S*	S	S	S	S
-	-	-	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y	Y*	-
-	-	-	Y*	Y	Y	Y	Y	Y	Y	-	-	-	Y*	-	Y	Y	Y*	Y*
Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y
R	R	R	R	R*	R	R*	R	R*	-	R	R	R*	R	R	R	R	R	R
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	R*

-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	Y*	-	-
S	S	S	S	S*	S	S	S	S*	C	-	S*	S*	S	S	S	S	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
G	G*	R*	R	R*	R*	R	R	R	G	R	R	G	R	R	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	low_cov	low_cov	-	-	T	-	-	-	-
NP	Y*	Y*	Y*	NP	NP	NP	NP	NP	NP	-	-	Y*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
S*	-	-	S*	-	S*	C*	S*	NP	NP	S*	S*	S*	S*	C*	-	-	S*	-
R*	R*	R*	R	-	-	-	R*	R*	G	G	R*	R	R	R*	R*	R*	R*	R*
-	W	T	W	-	-	W*	-	-	W*	-	W*	-	W	-	W*	-	W	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	R*	R*	R*	-
NP	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R*	R*	-	-	R*
G	R	R	R	-	R*	G	G	R*	R*	R	G*	R	R	R	R	R	R*	R
NP	-	-	R*	-	-	-	-	-	-	-	-	-	-	R	-	-	NP	NP
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*
R	A	R*	R*	-	-	A	R	R*	R	A	low_cov	R*	R	R*	NP	NP	R*	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	M*	-	-	-	-	-	C	-	-	-	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	M*	-	-	NP	NP	NP	-	M*	-	-	NP	NP
NP	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	Y*
R*	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-
G	G*	S*	S	S*	S	G	G	G	G	G*	G	G	S	G	G	G	G	S
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NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-
-	Y*	Y	Y*	Y	Y*	Y*	-	-	-	Y	Y	Y*	Y*	Y*	Y	T	Y*	-
R*	R*	-	R*	R*	R*	R*	-	R*	R*	R	R*	R*	R*	R	R*	R*	R*	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y	Y	-	-	-	-	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*
-	Y	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	R	R	R*	R	R*	R*	R*	R*	R*	A	R	R*	R	R*	R	R	R*	R
-	-	-	-	-	-	R	R	-	R*	-	-	-	R*	-	-	-	R*	R*

-	S*	-	-	S*	S	-	-	-	-	S*	S	S*	S*	S	S*	S*	S*	S*
-	-	-	-	-	-	R*	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
C*	C*	Y*	Y*	C*	Y*	Y*	Y*	C*	C*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	Y*	-
R	R*	V*	V*	R*	V*	R*	V*	R	R	R	V*	R	N*	V*	V*	V*	N*	V*
Y*	Y	Y*	Y*	Y*	Y*	Y	C	C	Y	-	Y	Y	Y	C*	Y	Y	Y	Y
N*	N*	B*	N*	B*	N*	B*	B*	H*	B*	B*	N*	N*	N*	N*	N*	N*	N*	N*
-	Y*	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
Y*	Y*	-	-	-	-	Y*	Y*	-	-	Y	Y*	Y	H*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	M*	S*	-	-	M*	S*	-
T*	T*	T*	Y*	Y*	Y*	Y*	Y*	Y*	T*	Y*	T*	Y*	Y*	Y*	Y*	T*	Y*	T*
-	-	-	-	-	-	-	-	-	-	R	R*	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*	-	-	-	-	-
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y*	-	Y*	Y*	Y*
-	-	-	S*	-	S*	-	S*	-	R*	R*	R*	-	V*	-	R*	R*	V*	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	-	-	-	R*	R	R*	R*	V*	R*	R	V*	R	R
Y*	Y*	Y*	Y	Y*	Y*	C	Y*	Y*	Y*	C*	C	C	Y	Y	Y	Y*	Y*	Y
Y*	T*	Y*	Y*	Y*	T	Y*	Y	Y*	Y*	T*	T	Y*	T	Y*	Y	Y*	T	T
K	G	K*	B*	K*	K*	G	K*	K*	K*	G*	K	K	K	K	K	K	K	K
R	G*	R*	G	R*	R*	R*	R*	R*	R*	R*	R*	R*	R	R	R	R	R	R
-	A	A	R	R	A*	R	R	-	-	R*	A	A	R	-	R*	R*	R	R*
-	-	-	-	-	R*	A*	R*	-	-	R*	R*	R	R*	-	R*	R*	-	-
Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T*	T	Y	Y	Y	Y*	Y	Y
S*	-	-	S*	-	-	-	-	-	S*	-	S*	-	S*	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	H*	-	H*	-	M*	H*
-	Y*	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	R*	A	R	R*	R	-	-	R*	R	-	R*	-	R*	-	R	R*	R*	R*
T	low_cov	Y*	Y*	-	Y*	Y*	Y*	T	Y*	T	T*	Y*	Y	Y*	-	-	Y	Y*
C*	-	-	Y*	C*	Y	-	-	Y*	Y*	NP	NP	NP	Y*	C*	Y	Y	Y	Y
Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	C*	Y*	Y*	C*	Y*	C*	C*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	K*	T	-	-	-	-
R*	R*	-	-	-	-	-	-	-	R*	-	-	R*	-	-	-	-	-	-
Y*	Y*	-	Y*	-	-	Y*	Y*	C*	Y*	C*	Y*	C*	Y*	Y*	-	-	Y*	Y*
Y*	Y	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	K*	-	-	-	-	-	-	-	-	-
C	S	C	S	S*	S*	-	S*	C	C	-	S*	S*	S	C	S	S	S	S
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	R*	R	R	-	R*	-	-	G*	R*	-	-	R*	R*	R*	R*	G*	R*	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	R*	-	-	-	-	-	-
-	R*	A	R	-	-	-	-	NP	NP	NP	NP	NP	R*	A*	R*	A*	R*	R*
-	R	R	R	-	R*	-	-	R*	R*	-	R*	-	R	R	R	A	R	R*
Y*	Y	Y	Y	-	Y*	-	-	C	C	-	-	-	Y	Y	Y*	C	Y	-
G*	R	R	R	-	R	R	-	G	G*	R*	R*	-	R	G	R	G	R	R

-	-	-	-	-	-	-	-	Y	Y	-	Y*	-	Y*	Y*	-	-	Y*	Y*
R*	-	-	-	-	-	-	-	R	R*	-	-	-	R*	R*	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*
K*	-	K*	-	R	R	R*	R*	-	-	-	-	-	R*	-	R*	R	D*	R*
Y*	-	-	Y*	Y	Y	Y	Y*	-	-	-	-	-	Y*	Y	Y	Y	Y*	Y*
G*	-	-	S*	-	-	-	-	G	S	-	-	-	S*	S	-	-	S*	S*
-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	R*	R	R	R	-	-	-	-	R*	R*	R*	R	R	R*	R*
-	-	-	-	Y*	Y	Y	C*	-	-	Y*	Y	Y	Y*	-	NP	NP	-	Y*
S*	S*	-	Y*	-	S*	S*	-	S*	S	-	S*	S*	S*	S	S*	S*	S*	S*
NP	-	-	R*	R*	R*	NP	NP	R*	R*	-	-	-	-	A*	-	-	R*	-
Y*	-	-	Y*	C*	Y*	C*	Y*	Y*	C*	-	Y*	Y*	Y*	C*	Y	Y*	Y	Y
-	-	-	-	-	R	R	R*	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
G	R*	-	R*	G	R*	G	G	R*	G*	-	R*	-	R	G	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	S*	-	-	S*	-	S*	S*	-	-	-	S*	S	-	-	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	R*	G*	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	NP	NP
S*	S*	-	S*	S*	S	S	C	S	S	S*	S*	S*	S	S	S	S	S	S*
Y*	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y***	***Y****	***Y****	***Y****	***Y****	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***S****	***C***	**-**	**-**	**-**	**-**	**-**	**-**
Y*	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***Y****	***Y****	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	**-**	***Y****	**-**	**-**	**-**	**-**	***Y***	***Y***	***Y***	**-**	**-**	**-**	**-**	**-**	**-**
-	**-**	**-**	**-**	***R***	***R***	**-**	**-**	**-**	***R****	***R***	***R***	***R***	***R****	**-**	**-**	**-**	***R****	***R****
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***M****	***M***	***M***	**-**	**-**	**-**	**-**	**-**	**-**
R*	R*	R*	-	-	R*	-	R*	R*	R	-	-	-	-	R*	R*	R*	-	R*
-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
-	K*	-	K*	K	K	K*	-	K*	K	K	K*	K	K*	K	K*	K*	K*	K
A	A*	R*	R	R*	R	R*	R*	R*	A*	R*	A	R*	R	R*	R*	R	R	R
R*	G	R	R*	G*	G*	G*	G*	R*	R*	G	G	R*	G*	G*	G*	G*	R*	R*
G*	R*	-	R*	R*	R*	R*	R*	R	G	G	R*	R*	R	R	R*	R*	R	R
-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	W*	-	Y*	H*	W*	Y*
R*	R	R*	R	R	R	R*	-	-	R*	R	R*	A	R*	R*	R*	R*	A	R*
C*	C*	C*	C	C*	Y*	C*	C*	C*	C*	C	C	C*	C*	C*	C*	C*	C*	C*
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	A*	A*	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y*	-	-	-	-	-	-	Y	Y	Y	H*	Y*	Y*	Y*	H*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	R*	R	R	-	-	-	-	-	-	-	-	R*
-	-	-	-	Y*	-	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-
Y*	-	-	-	Y	Y*	NP	NP	NP	NP	low_cov	-	-	-	-	Y*	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	M*	M	A	-	-	-	-	-	-
D*	W	A	W	W	W	W*	W*	W*	W*	A	W	W*	W	W	W	W	W	A
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	Y*	NP	NP	NP	NP	NP	NP

-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	NP	NP	T	K*	K*	K	K*	K*	K*	K*	K*	-	-	NP	NP
R*	R*	R	R	R	R	R*	-	R*	R*	G	G	R	G	R*	R*	R*	G	R*
-	Y	Y*	C	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
NP	NP	NP	NP	G*	G*	NP	NP	NP	NP	R	low_cov	R*	NP	NP	NP	NP	NP	NP
-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
NP	T*	T*	W	W*	-	W*	W*	-	-	W*	W*	-	-	-	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	W*	W*	W*	-	-	W*	W*	-	-	W*	W*	W*	-	-	W*	W*	-	W*
NP	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	Y	Y*	-	T	T*	T*	T*	NP	NP	Y	T*	T	Y	T*	NP	NP	NP	NP
R*	-	R*	R*	R	R	R	R	R*	R*	-	R*	R*	R	R	R	R*	R	R*
-	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	-	-	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	W	-	-	-	-	-	-	-	-	-	-	-	-	W*
G*	G	G*	G*	G*	G*	K*	G*	B*	K*	G*	G*	G*	G*	K*	K*	G*	G*	G*
-	Y	Y	Y	-	-	Y*	-	-	-	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y*
NP	W	W*	W*	-	-	W*	W*	-	-	W*	-	A*	-	-	A	A	-	W*
T*	-	-	-	Y*	Y	Y	Y	Y	Y	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*
NP	-	R*	R*	NP	NP	NP	NP	NP	NP	R*	R*	R*	G	R*	-	R*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	A*	A*	NP	NP	NP	NP	NP	NP
K*	K*	-	K*	K*	K	-	-	K*	K*	K	K	K*	K*	K	K*	K*	K*	K
K*	K*	-	K	K	K	-	K*	-	K*	K	K	K	K	K	K	K*	K	K
-	low_cov	-	-	NP	NP	NP	NP	A*	A	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	-	Y*	T*	Y*	Y	Y*	T	Y*	T	Y	T	Y	T	Y	Y*	Y	Y
Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*
Y*	-	-	-	Y*	Y	-	-	-	-	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*
-	R	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-
Y*	Y*	Y*	Y*	Y*	C	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	Y*	Y	Y	Y*	-	-	-	-	-	-
Y*	Y	Y	Y*	T	T	T	T*	Y*	Y*	Y*	Y*	Y*	Y	Y*	T	T	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	H*
Y	Y	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y	Y
M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C	C*	C	Y*	C*	C*
-	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	-	S	S	-	-	-	-	-	-	-	S*	-	S*	-	S*	S*
R*	R	G	G	-	R*	-	R*	G*	R*	R	R*	R*	R*	R	-	-	R*	R*
Y*	Y	Y*	Y	-	Y	Y	Y	Y*	C*	C*	C*	C*	Y	C	C	C	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	K*	-	-	K*	K*	K*	K*	K*	K*	T*	K*	K*	NP	NP	T*	T*	NP	NP
-	-	-	-	-	-	M	M	-	-	M	M	M	M*	M	-	-	-	-

-	-	-	-	-	-	Y	Y	T	Y*	-	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	Y*	NP	NP	-	Y*
-	-	-	R*	R*	-	R	R	R	R	-	-	R*	R*	-	-	R*	R*	R
-	-	-	-	-	-	-	-	-	-	R*	R	R	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
Y*	T	Y	Y	-	-	Y*	Y*	-	-	-	-	-	Y	Y	Y	Y*	Y*	-
-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	-	-	-	-	R*
-	-	-	-	S*	S*	S*	S*	-	-	-	-	-	V*	-	-	S*	S*	S*
G*	S*	S*	G	S*	S*	S*	G*	S*	-	G*	S*	S*	S*	S*	G*	G*	G*	G
Y*	Y	Y	Y	-	-	Y	Y*	-	-	-	-	-	Y*	Y	Y	Y*	Y*	Y*
S*	S	C	S	-	-	S	-	-	-	S	S	S*	S*	S	S*	S*	S*	S*
R*	R	R	R	R	R	R*	R	R	R	R	R*	R	R	G	R	R	R*	R*
R	R	R*	R	R	R	G*	R*	G*	G*	R	R*	R	R	G	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	M	M	M*	-	-	-	-	-	-
R*	R	R*	R	R	R	R	A*	A*	R	R	R	R	R	R	R	R	R	R
-	R	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	-	-	-	W*	W	-	-	-	-	-	W*	-	W*	-	-	W*	W*	W*
R*	-	-	R*	R	R	-	-	R*	R	-	R*	-	R*	R*	R	R	R*	R*
NP	NP	NP	NP	NP	NP	R*	A*	NP	NP	A*	A*	A*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	S	S	-	-	-	-	-	-	-	-	-	-	-	-	S*
NP	low_cov	Y*	Y*	NP	NP	-	-	T*	-	low_cov	-	-	NP	NP	-	-	-	Y*
-	-	-	-	W*	W	-	-	W*	W	-	-	-	W*	-	W*	W	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	S*	G*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	G*	G*	S*
G*	G*	G*	G*	G*	R*	G*	G*	G*	R*	G*	G*	R*	R*	G*	R*	G*	G*	G*
R	-	-	R	R*	R*	A	R	D*	A*	R	R	R	R*	R	R	R	R*	R
R*	-	-	-	-	-	R	G	R	R	-	G*	R*	-	R*	R*	R*	-	R*
M*	M*	-	M	M*	M*	M*	V*	M*	M	M	M	M	M*	M	M	M	M*	M*
R	R	R	R	R	R	-	-	R*	-	R*	R*	R	R	R	R*	R*	R	R
G*	R*	-	R*	-	-	R*	R*	R*	G*	R	R*	R	NP	NP	G	R	R*	-
-	-	-	-	S*	S	-	-	-	-	-	-	-	S*	S	-	-	S*	-
-	R*	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	R*
-	Y*	-	Y*	-	-	Y	Y	-	-	Y*	Y	Y	Y*	Y	Y	Y	Y*	Y*
-	-	-	K*	-	-	K	K*	-	-	K	K	K	K*	K	K	K	K*	-
-	-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*
-	-	-	M*	-	-	-	-	-	-	-	-	-	M*	M*	M	M*	-	-
R*	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	-	R*	-	R*	-
-	-	-	-	S*	S*	S*	S*	-	-	-	S*	-	S*	-	S*	S*	S*	S*
-	-	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	Y*
-	-	-	Y*	-	-	-	-	Y*	Y*	T	Y*	Y	Y*	-	Y*	Y*	Y*	Y*
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	R	R	R	-	-	-	-	R	R	-	-	-	A	R	R*	R	R	R*
-	-	-	Y*	-	Y*	T	Y*	-	-	Y*	Y	Y*	Y*	-	Y	Y*	Y*	Y*
-	R	R	R	-	-	-	-	-	-	-	R*	-	R	R*	-	-	R	R*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S	S*	-	-	-	-	-	S*	-	M*	-	S*	S*
-	-	-	Y*	-	-	-	-	-	B*	-	Y*	-	Y*	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	NP	NP	-	-
Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*	Y*	H*	Y	Y*	Y*	H*	Y*
-	-	-	-	R	R	S*	-	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	R*	-	-	-	-	R*	-	R*	-	R*	R*	R*	R*
Y*	Y	Y	Y	Y*	Y	-	-	-	-	Y	Y	Y	Y	Y	Y*	Y*	Y	Y*
-	-	-	S*	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-
R	R	R	R	R*	R	-	-	R*	-	R	R	R	R	R	R	R*	R	R
Y*	Y*	Y*	Y*	-	Y*	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	Y*	-
K*	-	-	-	-	-	K*	K*	-	-	-	-	-	K*	-	-	-	-	K*
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	R*	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N*	-	M*	H*	Y*	Y*	Y	Y*	S*	-	-	N*	Y*	N*	Y*	Y*	-	H*	H*
M*	M	A	M	M*	-	M	M*	M*	M	M	M	M	M	M	M	A	M	M*
Y	-	-	Y*	Y	Y	C	C	-	-	-	-	-	-	Y*	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	A	R	R	R*	-	-	-	R*	-	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	-	-	R	R*	R*	G	R	R	R	R	R	R	R	R	R
NP	Y	T*	T*	T	T	T*	T*	Y*	Y*	Y	T	Y*	T	Y	NP	NP	T	T*
NP	NP	NP	NP	Y*	Y*	C*	C*	NP	NP	Y	low_cov	C	C*	C*	C	C	NP	NP
Y	Y	C*	Y*	Y	Y	Y*	Y*	C	C*	Y	Y	Y	Y	C	Y	Y	Y	Y
C*	C*	C*	Y*	C*	C*	Y*	Y*	C*	C*	Y	C	C	Y*	C*	Y*	C*	C*	C*
S*	-	-	S*	-	S*	-	-	S	S*	-	S*	S*	V*	-	S*	-	S*	S*
NP	M*	-	M*	-	-	-	-	-	-	NP	NP	NP	-	M*	NP	NP	NP	NP
-	R	G	R	R	R	G	R*	R	G	R*	R*	G*	R*	G	NP	NP	NP	NP
A*	R*	R	R	R*	R*	-	-	A*	A*	-	-	-	R*	R*	NP	NP	NP	NP
R*	R	R	R	R	R	R*	R*	R*	R*	-	R	R*	R	R	R	R	R	R
S*	S	S	S	S	S	S	S	S*	S*	S	S	S	S	S	S	S	S	S
M*	M*	-	M*	-	-	NP	NP	NP	NP	M*	M*	M*	NP	NP	NP	NP	NP	NP
-	R*	R	D*	-	-	-	-	R*	R*	-	K*	R*	R*	R*	D*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	K	K	K	K*	K*	K	K*	K	K*	K*	K	K	K	K*	K*	K	K	K
-	-	-	-	-	-	-	-	-	-	R	R*	R*	R*	-	D*	R*	R*	R*
-	S	S	S	S*	S*	S	S*	S	S*	S*	C	C	S	S	S	S	S	S
R*	R*	R	R*	-	-	-	-	R*	R	-	R*	-	R	-	R*	-	R	R*
-	W	W	W	W*	-	-	-	W	W*	-	W*	W*	W*	W*	W*	W*	W	W*
R*	A*	R*	R	R*	R*	A*	A*	R*	R*	A*	R*	R*	R	A*	A*	A	R	R
-	R*	R*	R*	-	-	R*	R	NP	NP	R*	R	R*	R*	R*	R*	-	R*	R*
-	R	R	R	R*	R*	R	R	R*	R	R*	R	R	R	R	R	R	R	R
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	R*	D*	-	-	-	R*	R*	-	R*	R*	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K*	K*	R*

-	-	M*	-	-	-	-	-	-	-	-	-	-	H*	-	M*	-	M*	M*
-	-	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
R*	-	-	-	R*	-	R	R*	R*	-	R	R	A	R*	-	R	R	R*	R*
R	R*	-	R*	R*	R*	R	R	-	R*	R	R	R*	R*	R	R	R	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	H*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	V*	-
R*	R*	-	-	-	-	-	-	R*	R	-	-	-	R*	-	D*	R*	R*	R*
-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	-
-	Y*	Y*	H*	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	H*	Y*	Y*	Y*	H*	H*
K*	-	-	-	-	-	-	-	-	-	-	K*	-	-	-	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R	-	R*	-
Y	-	-	-	Y*	Y	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
-	-	-	Y*	-	-	-	-	Y	Y*	Y*	Y*	Y*	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y*	-	-	-	-	-	-	Y*	-	H*	-	B*	H*	H*	W*
Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-	-	-
R*	R*	-	R*	R*	R*	R	R	A	R	-	R*	-	R	R	R*	R	R	R
R	-	-	-	R	R*	R	R	R*	R*	-	R*	R*	R	R	R	R*	R	R
Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	C	Y	Y	Y*	Y	C	Y	Y*
-	M	M*	M*	-	-	M*	-	-	-	-	-	-	M*	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	-	-	R*	-	R*	R*	A	R	R*	R*	R*	R*	R	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	-	-	M*	-
NP	NP	NP	NP	T*	T	-	-	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	R	R	R*	G*	R	G	R	R*	G	R	R*	R*	R	-	-	R*	R*
R*	R	R	R	R	R	-	-	-	-	-	R*	R*	R	R*	R*	R*	R*	R*
-	-	Y	Y*	C	C*	-	-	-	-	-	-	Y*	Y*	-	-	-	Y*	Y*
-	Y*	Y	Y*	Y	Y	-	-	-	-	-	Y*	-	Y	Y*	Y*	Y*	Y*	Y*
-	-	-	R*	R*	-	A	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	V*	R*
NP	-	-	-	-	-	NP	NP	C*	Y*	Y*	Y*	Y*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
C*	C	C*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	C	C*	Y*	Y*	Y*	-	Y*	-
-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*
Y*	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-	-	NP	NP	-	-
-	-	-	K*	-	-	T*	K	K*	K*	K	K	K*	-	-	K*	K*	K*	-
-	-	-	-	-	-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	C*	C*	C*	C*	-	-	C*	C*	S*	S*	S*	S*	S*	S*	S*	S*	C*
M*	M	M*	M	-	-	-	-	-	-	M	M	M*	M*	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	Y*
-	M*	M*	M*	-	-	-	-	-	-	M*	M*	-	M*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-	-	-

NP	Y	Y*	-	-	-	-	-	-	-	Y	-	-	-	-	Y*	-	-	-
-	Y	Y	Y	-	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	-	-	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	K	K*	K*	-	-	-	-	-	-	K*	K*	K	-	-	-	-	K*	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
C*	Y	Y	Y	Y	Y	Y*	-	Y*	-	-	-	-	Y	-	Y	Y	Y	Y*
-	-	W	W	-	-	-	-	-	-	-	-	-	W*	-	-	-	W*	W*
Y*	Y*	Y	H*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	R	R*	R*	-	-	-	-	-	-	-	-	R*	R*	R*	R*	-	R*	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y	Y	Y	Y	Y	T	-	Y	Y	Y*	T*	Y*	-	T	T	Y*	Y
NP	Y*	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	Y	T*	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S	S	S	S	S	S	S	S	S*	-	S	S	S	S	S*	S	S	S	S
W*	W*	-	W*	W	W	W*	W*	W	W	W*	W	W	W	W	W	W	W*	W*
-	-	-	-	Y*	Y*	Y	-	Y*	Y	T*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	-	-	R*	-
R*	-	-	R*	R	R	R	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	D*	R*
Y*	Y*	Y*	Y*	Y	Y	Y*	-	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y	Y
-	R	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	R*
-	M*	-	-	M*	M	M*	M*	-	-	M	M	M*	M*	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*
R*	R	R	R	R*	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
NP	R*	R*	R*	G	G*	G*	G*	-	R*	NP	NP	NP	R	R	R*	-	R	R*
Y*	Y	Y*	Y	C	C	Y	C	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y*	Y	Y
-	R*	R*	R*	R*	R*	R*	-	-	R*	S	V*	V*	N*	R*	D*	R*	D*	R*
-	Y*	-	M*	Y	Y*	M*	-	Y*	M*	-	-	Y*	H*	Y*	Y*	Y*	H*	H*
R*	R	R	R	G	R	R*	R	R*	R	R	R	R	R	R	R	R*	R	R
-	R*	R*	R*	-	R*	A	R*	R*	R*	-	R*	-	V*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	Y*	-	-	-	-	-	H*	Y*	H*	H*	H*	Y*	H*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	C	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-
NP	W*	A*	W*	-	-	-	-	NP	NP	A*	low_cov	A*	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	C	Y	Y	Y*	Y*	Y*	Y
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-
R*	R	R	R	R	R	G	G	R	R	G*	G	G	R	G	R	R	R	R
-	T	T*	Y	T*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	-	Y*	-	Y	Y
-	M	C*	M*	NP	NP	M*	M*	NP	NP	M*	M*	M*	NP	NP	-	M*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	R*	K*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W	W	A	A	W*	W	W*	A	W*	W	W*	W	W*	W*	-	W	W

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R	R*	R	R*	-	-	R	G	R	-	R*	R	R*	-	R*
-	-	-	-	Y	Y	Y	Y	-	-	Y*	Y	Y	Y*	-	Y*	Y*	Y*	Y*
-	Y*	-	Y*	-	Y*	-	-	-	-	Y*	-	-	Y*	-	-	-	-	-
-	-	-	-	R*	R*	R*	R*	-	-	R*	R*	-	-	-	-	-	-	-
-	S	-	S	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-
-	K*	T	K	T	K*	K	-	K*	K*	K*	K*	K*	K	-	K*	-	K*	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	K	K	K	K	-	-	K*	K*	K	K*	-	K*	K*	K*	K*
-	M	M	M	M	A	A	M*	M*	-	M	M	M	M	M*	M*	-	M	M
Y*	-	-	-	-	Y*	Y*	Y	Y*	Y*	-	-	-	-	Y	Y	Y	Y*	-
-	Y	Y	Y*	C	C*	Y	C	Y	Y*	Y	Y	C	Y	-	Y*	-	Y	C
-	T*	Y*	Y*	Y	Y	Y	Y	T*	Y	Y*	Y*	Y	Y	Y*	Y	Y*	Y	Y
-	-	-	-	-	R*	R	R	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	S	S	-	-	-	-	S	S	S*	S	-	-	-	-	S
-	S*	S*	S	-	-	S	S*	S*	S*	-	-	Y*	S*	S*	S	S	S*	S*
-	A*	A*	A	R*	R	NP	NP	-	-	A*	low_cov	A	R	A*	A	R*	R*	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	R*	-
R	R	R*	R*	R*	R*	R	R	R*	R	R	R	R	R*	R	R	R	R*	R*
B*	K*	K*	K*	K*	K*	K*	K*	T*	K*	K*	K*	T*	K*	K*	K*	T*	T*	K*
C*	low_cov	-	-	-	-	C*	C*	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	-	Y*	-	-	-	-	-
-	R*	-	-	-	-	G	R*	-	-	R	R	R*	R*	R	R*	R*	R*	R*
S*	S*	-	S*	S*	S*	S*	S	S	S	S	S	S	S*	S	S	S	S*	S*
R*	R*	-	-	-	R*	R*	R*	R*	R*	NP	NP	NP	R*	R*	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y	-	-	-	-	-	-	Y*	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	R*	-	-
-	low_cov	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	R	R	-	-	-	R*	-	R*	-	R*	R*	R*	R*
-	R	A	R	-	-	R*	A*	-	K*	R	R	R	R*	-	R	R	R	R*
Y*	T*	T*	T*	T	Y*	Y	Y*	T	Y	T*	T*	Y*	Y	T*	T*	T*	T*	T
Y*	Y	Y*	Y	Y	Y	-	-	Y*	-	Y	Y	Y*	Y	Y*	Y	Y	Y	Y
K*	-	-	K*	-	-	-	-	-	K*	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	-	R*	R	R	G	R	R	R	R	R*	R	R*	R*	R*	R*
NP	low_cov	-	-	R*	R*	-	-	-	-	NP	NP	NP	-	-	-	-	NP	NP
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	-	-	-	-	R*	R*	-	R*	-	R*	R*	R*	-	-	-
Y*	Y*	Y*	Y	Y	Y	-	-	-	-	Y	Y	Y	Y	-	Y	Y	Y	Y
K*	K	K*	K	K*	K*	K	K	K*	K	K*	K	K*	K	K	K	K	K	K
-	S*	S*	S*	-	-	-	-	-	-	-	S*	-	S*	S	S*	S	S*	S*
-	Y	Y*	Y*	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
-	-	-	-	D*	R	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	-	-	-	-	-	R	R	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	Y*
R*	R*	R	G	R*	R*	R	-	R	R*	G*	R	R	R	R	R	R*	R	R
K	-	K	K*	-	-	-	-	-	-	NP	NP	NP	K*	K*	-	-	K*	-
S*	G*	S*	S	G*	S*	S*	S*	S*	S	G	S*	S*	S	S*	S	G	S	G
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	Y*	Y*

R*	G*	R*	R*	R*	G*	R*	R*	R*	R	R*	G	R*	R	R*	G	G	R	R*
G	R*	R*	R	R	R*	R*	R*	R	R	R*	G	R*	R	R	R	R	R	R
R*	G	R*	R	-	-	R*	R*	R*	R	G*	G	R	R	R*	R	R	R	R*
T	Y*	Y*	Y*	T*	Y	-	-	-	-	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	M*	-	-	-	M*	-	M*	-	M*	M*
R*	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	R*	R*
Y*	C*	C*	Y	C*	Y	Y	Y	Y*	B*	C*	C	Y	Y	C*	Y	Y*	Y	Y*
Y*	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
Y*	C	C*	Y	Y*	Y*	Y*	C	C	C	C*	Y	Y*	Y	C*	Y*	Y	Y	Y*
-	-	-	-	S	S	-	-	-	-	-	-	-	S*	-	S*	-	S*	S*
-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-	-	C	-	-	-	-
Y*	-	-	Y	-	Y*	-	-	Y*	-	Y*	Y*	Y*	H*	Y*	Y*	Y*	Y*	H*
-	Y*	Y*	Y*	Y*	Y	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y
M*	A	A	A	M*	M*	M*	M	M*	M*	A*	M*	M*	M*	A	M	M*	M*	A*
K*	-	-	K*	K	K	K*	K	T	T	-	K*	K*	K	K	K*	K*	K	K
Y*	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	Y*	Y*	-	-	Y*	-
R	R*	R*	R	R*	R*	R	R	R	R	R*	R*	R*	R	R*	G	G	R	R
C	C	S*	C	S	S	S*	S	S*	S	S	S	V*	S	S*	C	S*	S	S
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	C	Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y*
Y	Y*	-	Y*	Y	Y*	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	NP	NP
R	R*	R*	-	R	R	R	R	-	R*	R	R	R	R	R	R*	R*	R	R*
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W	W	W	-	-	-	-	-	-	-	-	-	W*	W*	W*	W*	W*	W*
Y*	-	-	Y*	Y	Y	Y	Y	-	-	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	-	R*	NP	NP	NP	NP	G	G*	G*	R*	R	NP	NP	NP	NP
-	Y*	Y*	Y*	Y*	-	T*	T	T*	T*	T	low_cov	T*	Y*	T*	NP	NP	NP	NP
W*	W*	W*	W*	W*	W	W*	T*	W*	T	T*	T	W*	W*	T	W*	W*	-	W*
T*	T*	T*	T*	T*	T*	T*	T*	T*	T*	NP	NP	NP	T*	T*	NP	NP	NP	NP
G	R	R	R	R	R	R*	R*	R*	G	R*	R*	R*	R	R*	R	R	R	R
-	-	-	M*	Y*	-	-	-	-	-	-	-	-	M*	-	-	M*	H*	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	Y*	Y*	Y*	C*	C*	C	Y*	C*	C*
-	Y	Y*	-	-	-	-	-	-	-	Y	Y	Y	-	Y*	Y*	Y*	Y*	-
K*	K*	-	K*	NP	NP	-	-	NP	NP	K*	-	-	-	-	K*	K*	NP	NP
-	S	S	S	-	-	-	-	-	-	S	S	S*	B*	S*	S*	S*	V*	S*
R	R	R	R	A	A	-	-	A	R*	-	R	R*	R	R*	R	R	R	R
R*	R	R	R	R	R	-	-	R*	G*	R	R	G	R	R*	R	R*	R	R
S*	S	S	S	S	S	R*	S*	S*	S	S	S	S	S	S*	S	S	S	S
R*	R*	R*	R*	R*	R*	G*	R*	G*	R*	R*	R*	G*	R*	R*	R*	G*	R*	R*
R*	G*	G*	R*	R*	R*	G*	G*	R*	R*	G*	R*	R*	R*	G*	R*	G*	R*	R*
-	-	-	Y*	-	-	-	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	-	Y*	Y*
M*	NP	NP	NP	C*	M*	M*	M*	NP	NP	NP	NP	NP	M*	C*	C*	C*	NP	NP
-	-	-	-	Y	Y*	-	Y*	-	-	-	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*
-	-	-	Y*	-	-	-	-	-	-	Y	Y*	Y*	Y*	-	-	-	H*	-
Y*	Y*	Y*	C	Y*	C	Y*	Y*	C	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	C

Y*	-	-	-	-	-	Y*	-	-	-	NP	NP	NP	-	-	-	-	-	Y*
Y*	-	-	-	Y	Y	-	-	Y*	Y*	-	Y*	Y*	Y	Y*	Y	Y*	Y*	Y
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	Y	Y	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	-	-	R*	-	-	R*	-	R*	-	R*	-	-	-	R*	-
K	K*	K*	K	K	K	K	K*	K*	K*	K	K	K	K	K	K	K	K	K
-	Y	Y	Y*	Y*	Y	Y*	Y*	-	-	Y	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	R	R	R	-	-	R*	-	-	-	R	R*	R	R*	R*	R*	R*	R	R*
R*	R*	R*	R	R	R	R	R	R	R	R*	R*	R*	R*	R	R*	R	R*	R
-	-	-	-	-	-	K*	K*	S*	-	-	-	R*	-	-	-	-	-	-
R*	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	R	R	R*	R*
Y*	Y*	-	Y*	-	-	-	Y*	-	-	-	Y*	H*	Y*	-	-	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	B*	-	R*	R*	V*	R*	R*	-	R*	R*
-	-	Y*	Y*	-	-	-	-	-	Y*	-	-	-	Y*	-	Y*	-	H*	Y*
-	-	-	R*	-	R*	-	-	-	R*	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	Y	Y*	-	Y*	-	-	-	Y*	-	-	-	H*	M*
-	-	-	-	-	-	S	S	-	-	-	-	-	-	-	S*	S	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	R*	R*	R*	R*	-	-	-	R*	R*	-	-	-	R*	R*
-	-	-	Y*	-	Y*	Y	Y*	-	Y*	-	Y*	-	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-	M*	-
-	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	Y*	-	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
B*	Y	B*	Y	B*	Y	Y*	B*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	R	-	R*	-	-	-	-	R*	R*	G	G	G	-	-	R*	R*	-	R*
-	-	-	-	-	-	K	K	-	-	-	-	-	K*	-	-	-	K*	K*
NP	NP	NP	NP	-	R	G*	G*	NP	NP	G	G*	G*	NP	NP	G	R	NP	NP
-	S*	-	Y*	-	-	-	-	-	-	-	M*	M*	H*	V*	M*	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	-	R*	R*	-	-	R*	-	-	-	R*	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
R*	-	-	R*	R	R	R	R*	-	R*	R*	R*	R*	N*	R*	R*	R*	N*	D*
-	A	R*	R	R	R	-	-	R*	R*	R*	R	R	R	R*	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y	N*	Y*	Y*	-	Y*	Y	N*	Y*	N*	Y*	N*	Y*	H*	N*
K*	K*	K*	K*	K	K	K*	K	K*	K*	K	D*	K*	D*	K*	K	D*	D*	D*
M*	M	M*	M*	M	M	M*	M*	-	-	M	M	M*	M*	M*	M*	M*	M*	M*
-	R*	-	R*	R	R	R	R	-	-	R	R*	R*	R*	R*	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	K*	K	K*	K*	K*	K*	-	K*	K*	K*	K*	-	K*	K	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	Y*	-	-	-	-	-	-	M*	H*	H*	H*	-	H*	H*
G*	low_cov	G*	G*	R*	G*	G*	G*	G*	R*	G*	G*	G*	R*	G*	NP	NP	R*	R*
-	-	-	R*	-	-	-	-	-	R*	-	-	-	R*	R	-	-	R*	-
S*	S*	S*	S*	S*	S*	-	-	-	V*	S*	S	S*	V*	S*	S	V*	V*	V*
-	R*	-	R*	R	R	R	R*	R*	-	R	R	R*	R*	-	R*	R	R*	R*
-	-	-	R*	R*	R*	-	-	-	-	R*	R*	R*	R*	R*	R*	-	R*	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	S*	S	S	S	S*	S*	S*	S*	S	-	-	-	S	S*	S*	-	S*	S*
R*	R	R*	R	R	R	R	R	R	R	-	R*	R*	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-
W*	W*	W*	W*	W*	W*	W	A	W*	W*	W	W*	A	W*	W*	W*	A	W*	W
R*	R*	R*	A	R*	R*	R	A	R*	R*	R	A	A	R	R*	R*	R*	R	R
NP	NP	NP	NP	G*	G*	NP	NP	G*	G*	NP	NP	NP	G*	G*	G*	R*	NP	NP
R*	R*	R*	R	R*	R*	NP	NP	A*	A*	R	R*	R*	A	R*	R*	A	R	R
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-
-	W*	W*	W*	W*	W*	-	-	T	W*	-	W*	W*	W*	W*	T	W*	W*	W*
G*	G*	G*	G*	G*	G	R*	-	G	G*	R*	G	R*	NP	NP	NP	NP	NP	NP
-	S*	S*	S*	S	B*	-	-	S	S*	-	S*	S*	S*	S*	S*	S*	S*	S*
-	-	-	-	Y*	M*	Y*	-	-	-	-	-	Y*	M*	-	-	-	-	-
-	-	-	-	-	-	S*	-	-	S	-	-	-	-	-	-	-	-	-
Y*	Y*	M*	M*	M*	H*	-	-	H*	-	-	-	H*	M*	H*	M*	M*	H*	Y*
M*	V*	V*	G	G	V*	-	-	V*	M*	-	V*	V*	V*	V*	V*	V*	V*	V*
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	W*	W*	-
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y	Y	-	-	-	Y*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	M*	M*	M*	M*	M*	-	-	M*
-	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	R*	R*
R	R	R*	R*	-	-	-	-	-	-	-	R*	-	R*	R*	-	-	R*	-
R*	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	R*	-
-	S	S*	S	S	S	C*	C	S	S	S*	S*	S*	S	C	S	S*	S	S
-	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	C	C	Y	Y*	Y*
K	G*	K*	G*	K	K	G*	G*	D*	G*	G*	G*	G*	K	G	G	K	K	K
-	R	R	R	-	-	R*	-	R	R	R	R	R*	R*	R*	-	-	R*	-
-	R	R*	R	-	-	-	-	-	-	R	R*	R	R*	R*	-	-	R*	R*
-	Y	Y	-	-	-	-	-	Y	Y	Y	Y	Y*	Y*	Y*	-	-	NP	NP
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	R*	-	-	-	-	R*	-	R*	R	R*	R*	-	-	-	-	-
S*	G*	S*	S*	S*	S*	G*	S*	S*	G*	G*	G	S*	S	S*	S*	S*	S	G
-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
R*	R	R*	R	R	R	D*	A	R*	R	R	R	R	R	R	R	R	R	R
-	Y	Y	Y	Y*	Y	Y	T	Y*	Y	Y	Y*	Y*	Y	T	Y	T	Y	Y
-	-	-	W*	W	W*	W	T*	W*	W*	-	-	-	-	W*	T	T	-	W*
R*	R*	R*	R*	R*	R	NP	NP	R*	R*	NP	NP	NP	R*	G*	G	R*	R*	G
-	-	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-	Y*	Y*
NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	T	Y*	Y*	Y*	Y*	-	H*	Y*	T	Y*	-	Y*	Y*
-	-	-	M*	M	M	M	M	M*	M*	-	-	-	M	M	M	M	M*	M*
-	-	-	-	Y	Y*	Y	Y*	-	-	-	Y*	-	Y*	Y*	Y	Y	Y*	-

NP	R	R*	R	-	-	-	-	V*	-	R*	R*	-	-	-	-	-	-	R*
-	-	-	-	Y*	-	-	Y*	-	-	-	-	-	Y*	Y	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	M	-	M	M	M	NP	NP	M	M*	M	M*	A	M*	A	A	A	M*	M*
Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	C*	Y*	Y*	Y*	C	Y	Y	Y	C	Y	Y
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-	-	-
M*	M	M	M	M	M	C*	M	M*	M	M	M	M	M	C	M	C	M*	M*
Y*	Y	Y*	Y*	Y	Y	C	C	Y*	Y*	Y	Y	C	Y	C	Y	Y	Y	Y
NP	T*	T	T*	W	W	T*	T*	W*	T*	T*	T*	W*	W	T	T	T	T*	T
R*	R*	-	R*	R	R	G	R*	R*	R	-	-	R*	R	R	G	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R	R	R*	R*	G	R	R*	R*	R*	R*	R	R	R*	R	R	R*	-	R	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	-	Y	Y*	Y*	-	-	-	Y*
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-
-	Y*	Y	Y*	-	-	-	-	M*	-	-	-	-	Y*	-	-	M*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	Y	Y	Y*	Y	Y*
-	-	-	R*	R*	-	-	-	-	-	-	-	R*	R*	-	-	-	R*	R*
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	Y*	Y	Y	Y*	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	Y	-
Y*	Y*	Y*	Y*	Y	Y	Y*	C	C	Y	Y*	Y*	H*	Y	Y	Y	Y	Y	Y
Y*	Y*	-	Y*	Y*	-	Y	Y	Y*	Y	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	-	-	-	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*
R*	R*	R*	R*	R	R	R*	R	R*	R	-	R*	R*	R	R	R	R	R	R
-	R	R	R	-	R*	-	-	R*	R	R*	R	R*	R	R*	R*	R	R	V*
-	S*	S	S*	-	-	-	-	S*	S*	-	S*	-	S*	-	S*	-	S*	-
-	low_cov	-	-	-	-	Y	Y*	-	-	Y*	Y*	-	-	-	NP	NP	-	Y*
-	Y*	Y	Y	-	-	-	-	Y*	Y	-	Y*	-	Y	Y*	Y*	-	Y	-
-	S	S	S*	-	-	-	-	-	-	-	-	-	S*	-	S*	-	V*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
G*	R	-	R*	R*	R*	-	-	-	-	-	R*	-	R*	-	R*	-	R	R*
R	R	R*	R*	R*	R*	G*	G*	G*	G	R	G	R	R*	G	R	R*	R*	G
NP	Y*	Y	Y	C	Y	Y	Y*	-	-	-	-	-	Y*	Y*	-	-	Y*	-
K*	K	K*	K	K	T	T	K*	-	K*	-	K	K*	K	K*	K	K*	K	K
-	R	R	R	R*	R	R	R	R	R	-	R*	R*	R	R	R*	-	R	R
-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
K	-	-	-	-	-	-	-	-	-	-	K*	K*	K*	K*	K*	-	K*	-
W	W	W	W*	W	W	W	W*	W*	W	W*	W*	W	W	W	W	W*	W	W
-	-	-	S*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	R	R	-	-	-	-	R	R*	R	R*	-	R*	-	R*	R*
-	-	-	-	Y	Y	-	-	-	-	Y	Y*	Y	Y*	-	-	-	-	Y*
-	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	Y*	Y*	C*	C*	C*	C*	C*	Y*
-	-	-	-	S	S	-	-	-	-	S	S	S	-	-	-	-	-	S*
-	-	-	-	K	K	-	-	-	-	K*	K	K*	-	K*	K*	-	-	-
-	low_cov	-	-	R*	R	NP	NP	-	-	-	-	-	R*	-	-	-	-	R*
-	-	-	R*	-	-	-	-	R*	R*	R*	R*	R	R*	-	-	-	R*	-

-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	Y*	Y	Y	-	-	-	-	-	-	M*	Y*	Y*	Y*	Y*	Y*	H*
Y*	Y	Y	Y	-	-	-	-	Y	-	Y	Y	T	Y	Y	Y*	Y*	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP
Y*	-	-	-	Y*	Y	Y	Y	T	Y	Y	Y	Y	Y	Y*	-	-	Y	Y*
T	Y*	-	Y*	Y	Y*	Y	Y	-	-	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*
R	R	R	R	R*	R	A*	A*	R*	R	R	R	R*	R	R*	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*
K*	K	K*	K	K	K	K	K*	K	T	-	K*	K*	K	K	K	K	K	K
-	-	-	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-
Y*	Y*	-	Y*	Y	Y	Y	Y	-	-	Y*	Y	T	Y	-	Y*	Y*	Y	Y
-	Y	T*	Y	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
Y	-	-	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y
-	-	-	-	-	-	W	W*	-	-	-	-	-	-	-	-	-	-	W*
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	K	K	-	-
Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	Y*	Y*	Y*	Y*	Y*	Y	T
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B*	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	Y*	Y*	-	-
G	S*	-	-	S*	S	S	G	NP	NP	S*	G	G	S*	S*	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
C*	C*	C*	C*	C*	C*	NP	NP	C*	Y*	NP	NP	NP	C*	C*	C*	C*	C*	C*
-	-	Y*	Y*	-	Y*	-	-	-	-	-	-	M*	Y*	Y*	Y*	-	H*	H*
R*	R	R	R	-	-	R*	-	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*
Y	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y	C	Y*	Y	Y	C	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	R*	-	-	-	-	-	-	R*	R*	R*	N*	R*	V*	R*	N*	V*
-	-	-	-	-	-	A*	R	-	-	-	-	-	R*	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	S	S	S	S*	S*	S	B*	S*	S*	S	S	S	S*	S*	S	S
Y*	Y	Y*	Y	Y	Y	Y*	C	C	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R*	R	R	R	R	R	R*	-	R	R	R	R	R	R	R	R	R*
-	-	-	R*	-	R*	-	R*	-	-	-	-	-	R*	-	-	-	R*	R*
M*	M	M*	M	-	-	-	M*	M*	-	M	M	M	M*	-	M	M	M*	M*
-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	S*	S*	S*	V*	S*	G	S*	G*	S*	V*	S*	S*	S*	S*	G	G*
Y*	-	-	-	Y	Y*	Y	Y*	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-
-	S*	G	S*	-	-	-	-	S*	S*	-	-	-	S*	S*	-	-	S*	S*
R*	R	R*	R	R	R	G	R*	G	R	R	R	R	R	R	R	G*	R	R
R*	R*	R*	R	R*	R	R	R	R	A	-	-	-	R	-	R	R*	R	R*
-	-	-	R*	R	R*	R*	R*	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	W*	W*	W	W*	W*	-	-	-	-	-	W*	W	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	R	-	R*
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-

-	-	-	-	-	-	R*	R	-	R*	-	R*	-	R*	-	-	-	R*	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y	H*	Y	Y	Y	H*	H*
-	-	W*	R*	R*	-	W*	W*	R	D*	R	R*	R*	R*	R	R*	R*	R*	D*
-	-	-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	Y*	Y	-	-
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	Y*	-	W*	-	-	Y*	H*	W*
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	S*	-	S*	-	S*	S	S	S	S	S	S*	S	-	-	S*	-
Y*	-	-	-	-	-	K*	-	W*	-	-	-	-	W*	Y*	-	-	W*	-
-	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y	T	Y*	Y*	-	-	-	Y*
-	-	-	-	-	-	R	R	R*	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y*	-	Y	Y*	C	Y	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*
A	R	A*	A	A	R*	A*	A*	A	A	R	R	R	R	R	R*	R*	A	R
R	R*	-	R*	-	R*	R*	R*	R	R	R	R	R	R	R	R	R*	R*	R
C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	A	-	-	-	-	-	-	R	-	R*	R*	A	-	R*	R*	R*
-	K	K	K	K	K	-	-	K	K	-	-	-	K	K	K	K*	K	K
-	M*	M	M*	-	-	-	-	-	-	-	M*	M*	M*	-	M*	-	M*	M*
-	R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
C	S*	S*	S*	-	-	C	S*	-	-	NP	NP	NP	NP	NP	S*	-	NP	NP
-	-	-	-	Y	Y	-	-	Y	T	-	-	-	Y*	-	-	-	-	-
-	W*	W*	W*	-	-	-	-	-	-	W*	-	-	-	W	-	-	-	-
S*	-	-	S*	-	-	S	S	-	S*	S*	S	S	S*	-	S*	S*	S*	-
-	Y*	-	Y*	Y*	Y	-	-	T*	T*	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-
-	-	-	-	R*	R	-	-	R*	R	-	R*	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
R*	R*	R*	G*	R*	R*	R*	-	R*	R*	R*	R	G	R	R	G	G	R	R
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	-	-	R*
S*	-	S*	S*	S*	S	S*	S*	-	-	S*	S*	S*	S	S*	S*	-	S*	S*
-	-	-	-	R*	R*	R*	-	R*	-	R*	R*	A*	R*	-	NP	NP	-	-
R*	R	R	R	R	R	R*	R*	R	R	R*	R	A	R	R	R	R*	R	R
C	Y*	Y	Y	Y	Y	Y*	C	Y*	Y	Y*	C	C	Y	C	Y	Y*	Y	Y*
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
R*	R*	-	R	R	R	R*	R	R*	R*	R	R*	R	R	R	R	R	R	R
-	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y	-	-	-	Y	Y*	Y	Y*	Y	Y*
-	-	-	-	-	-	R*	R	R*	-	-	-	-	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y*	Y	Y*	Y*	T	T	T	Y*	T	Y	Y	Y*	Y*	Y*	Y*
NP	low_cov	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	S*	S	S	-	-	S*	S*	-	-	-	S*	-	S*	-	-	-	S*	-
-	R	R*	A*	R*	R	R	A*	R*	R*	R*	A*	R*	R*	R	R*	-	R*	R*
-	R	R	R	R*	R	-	-	A	R	R*	R*	R*	R	R	R*	-	R	R*
-	Y	Y	Y*	Y*	Y	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y*
-	S*	G	S	S*	S*	S*	-	S*	S	-	S*	-	S	S*	S*	-	S	S*

R*	R*	R*	R	R	R*	R	R*	R	R*	R	R	R	R	R	R	-	R	R
-	N*	N*	N*	D*	B*	B*	B*	K*	N*	N*	H*	N*	N*	N*	N*	N*	N*	D*
S*	C*	C	S	S*	S*	S	S*	NP	NP	S*	S	C	S	C	S	S	S	S*
K*	K*	G	K*	D*	K*	K*	K*	NP	NP	G*	K*	K*	K	G	K*	G	K*	K*
Y*	Y*	Y*	T*	T*	Y*	Y	Y*	T*	T	T*	Y*	T	T*	Y*	T*	T*	T*	T
Y*	C*	Y*	C*	Y*	C*	Y*	C	C*	C	C*	C*	C*	C*	C*	C*	C*	C*	C*
-	M	M	M	-	-	-	-	-	-	-	-	M*	M*	-	-	-	M*	-
-	R*	R	D*	-	-	-	K*	D*	-	D*	D*	R*	N*	R*	R*	D*	N*	N*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	-	Y	Y	Y	Y*	Y	Y*
NP	NP	NP	NP	NP	NP	NP	NP	G*	R*	low_cov	low_cov	-	NP	NP	NP	NP	NP	NP
-	-	-	M*	A	A*	M	M*	M*	M*	-	-	-	M*	A	M*	M*	-	-
R*	-	-	R*	R*	A*	A	A*	A	A*	R	R	R*	R	-	A	A	R*	R*
NP	Y*	-	-	Y	Y*	T*	Y*	-	T	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
R*	R*	R*	R*	R	R	R*	R	R	R*	R	R	R*	R*	R*	R	R*	R	R
R*	-	S*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	D*	D*	R*	R*	D*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R	-	-	R*	R*	R*	-	R*	R*	-	-	R*	R*	R*	R*	R*	-	R*	R*
Y	-	-	N*	B*	B*	-	-	-	Y*	-	Y*	Y*	N*	Y*	Y*	Y*	H*	B*
W*	W*	W*	W*	-	-	W*	W*	W*	W	W*	W*	W*	W*	W*	W*	W*	W*	W*
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
G*	NP	NP	NP	NP	NP	G	-	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R	R*	R*	R*	R*	R*	R*	R*	R*	R	R	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y	-	-	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y
-	-	-	Y*	-	-	-	-	-	-	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	K*	-	-	-	-	-	-	-	-	-	K*	-	K*	-	K*	-
-	-	-	-	-	-	-	-	M*	M	W*	-	-	-	-	-	-	-	-
R*	-	-	R*	-	-	-	-	-	R*	-	-	-	R*	-	R*	-	R*	-
-	W*	-	W*	-	-	-	-	G	K	-	W*	-	-	-	D*	-	Y*	-
-	R	G	R*	R*	R	-	-	-	-	R	R	R*	R*	R*	G	G	R*	R*
Y*	Y	Y*	Y	-	Y*	Y	Y*	Y	Y*	Y	Y	Y	H*	Y*	Y*	-	Y	Y*
NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	Y	Y*	-	-	-	-	Y	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	Y	Y	-	-	-	-	Y	Y*	Y*	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
NP	S	C	S	-	-	-	-	S*	S	-	S*	-	S*	S*	S*	S*	S*	S*
-	-	-	-	-	M*	-	-	-	-	-	-	M*	-	-	M*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-
Y*	Y*	-	Y	Y	Y	Y	C	C	Y*	Y	Y	C	Y	C	Y	Y*	Y	Y*
-	-	-	K*	-	-	-	-	-	-	-	-	-	K*	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
-	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	-	M*	M	M	M	A*	-	M*	A*	A*	A*	M*	M	M*	A*	M*	M*
R*	-	-	-	R*	R*	A*	A*	NP	NP	low_cov	low_cov	A*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	T	T*	-	Y*	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	S*	S*	S*	S*	-	S*	S*	-	-	R*	S*	S*	S*	R*	S*	S*
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-
R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-
Y*	Y*	Y	Y	Y*	-	-	-	Y*	-	-	-	-	Y*	-	-	-	Y*	-
-	M*	-	-	-	-	Y	Y	Y*	Y*	-	-	-	-	-	-	-	Y*	-
-	Y	-	Y*	-	-	Y	Y*	NP	NP	Y	Y	Y	-	C	NP	NP	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R	G	G*	NP	NP	NP	NP	NP	NP
-	-	-	Y*	-	-	Y*	-	-	Y*	-	-	-	-	Y*	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	-
S*	S	S*	S	S	S*	S	S*	-	-	S*	S	S	S	-	S	G*	S	S
R*	-	-	R*	R*	R*	R*	R*	-	-	-	D*	R*	V*	R*	R*	R*	V*	V*
Y*	Y*	C*	C*	C*	C*	C*	Y*	NP	NP	C	C	C*	Y*	Y	C*	C*	C	Y
-	Y*	-	-	-	Y*	Y	Y*	Y	Y	-	-	-	Y*	Y*	Y*	Y*	Y*	-
Y*	Y	T	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	G*	G*	G*	G*	R*	R*	G*	R*	R*	R*	R*	R*	R*	G	R*	G*	G*	R*
K*	K	K*	K*	K*	K*	K*	K*	K*	K	K*	K	K	K*	K	K*	K*	K*	K
A	A*	R*	R	R	R	R	R*	R*	R*	A*	A	R*	R	A	R	R*	R	R
-	low_cov	R*	R*	-	-	-	-	R*	R	low_cov	-	-	-	R*	R*	-	-	-
G*	G	G*	R*	-	-	R*	R*	R*	G*	-	-	-	R*	R*	R	R*	NP	NP
C*	Y	-	Y*	Y*	Y	-	-	-	-	-	Y*	-	Y	Y*	Y*	-	Y	Y*
-	-	-	Y*	-	-	Y*	Y*	-	-	low_cov	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
R*	R	R	R	R	R	R	R*	-	-	A*	A	A	R	R	R	R	R	R*
-	-	-	K*	-	-	-	-	K*	K	-	-	-	-	K*	-	-	-	-
-	-	-	-	-	-	R*	R*	-	-	-	-	R*	R*	-	R*	-	R*	R*
Y*	Y	Y	Y	Y*	Y*	-	-	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y
-	low_cov	R*	R*	R*	A*	NP	NP	R	R*	low_cov	R*	-	R	R	A	A	R	R
-	Y	Y	Y*	-	-	-	Y*	-	Y*	-	Y*	-	Y*	Y*	Y	Y	Y*	Y*
-	-	-	-	R*	G	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	M*	H*
-	-	-	K*	K*	K*	-	K*	-	K*	-	K*	K*	K*	K	K*	-	D*	K*
Y	Y	Y	Y	Y	Y	Y*	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y
C	-	-	-	S*	S	-	-	-	-	S	S	S*	S	S	S*	S*	S*	S*
-	-	-	R*	-	R*	-	-	R*	R	NP	NP	NP	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	R*
M	-	-	-	M*	M*	-	-	-	-	M*	M	M*	-	M	-	M*	-	-
-	Y	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	R	R	R	K*	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	R*	R	R*	R*	R*	R*	-	-	R*	R*	R*	R*	R*	-	R*	-	R*
C	Y*	C*	C	C*	C*	C*	C*	C	C*	C*	C*	C*	C	Y*	C	C*	C	C*
-	S*	S	S	-	-	-	-	-	-	-	-	S*	S*	-	-	-	S	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	R*	R*	-	-	-

-	-	-	Y*	S*	S*	Y	Y	Y*	-	-	-	-	Y*	-	Y*	-	Y*	-
-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	K*
Y*	Y	Y	Y	Y*	Y	Y*	Y*	-	-	Y	Y*	T	Y	Y*	Y*	Y*	Y	Y*
M	-	-	-	M*	M	-	-	-	-	M	M	M	M*	M	M*	M*	M*	M*
-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	T*
K*	K*	K	-	-	-	-	-	-	-	-	-	-	K*	-	K*	-	K*	-
Y	Y	Y	Y	Y*	Y	Y*	C	Y*	C*	Y	C	C	Y	Y	Y	Y	Y	Y
M	NP	NP	NP	-	-	M*	M*	-	-	NP	NP	NP	M*	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	T	T*	Y*	-	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R*	-	-	-	R*	A	-	-	-	-	-	R*	R*	-	-
-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	-	-	Y*	Y*	-	-	-	Y*	-	Y*	-	Y*	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	K	K*	K*	T	T*	-	-	T*	K*	K*	T	T*	K*	T*	K	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	M	M	M	M	M	-	M*	C*	M	M*	M*	M*	C	M	M	M*	M	M
R*	R	-	R	R	G	R*	-	G*	R	G*	G*	G*	R	G*	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y	Y*	Y*	NP	NP	-	-	Y*	Y	C*	C*	C*	Y*	Y*	Y	Y*	Y*	Y*
C*	-	-	-	-	-	C	C	-	-	S*	C	S*	-	S	S*	-	NP	NP
R*	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	R*	NP	NP
NP	-	-	K*	NP	NP	NP	NP	K*	G*	G*	K*	K*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	Y*	-	NP	NP
A*	NP	NP	NP	R*	R*	NP	NP	R*	R*	low_cov	R*	A*	NP	NP	NP	NP	NP	NP
G*	G*	G*	R*	G*	G*	R*	G*	R*	R*	G	R*	R*	R*	R*	G	G	R*	G*
-	-	-	-	S	S*	-	-	-	-	S*	S*	S	S*	-	-	S*	S*	S*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	-
G	S	G	S	S*	S	-	-	S	S*	G*	G	G	S	S*	S	S*	S	S
S*	-	-	-	-	-	-	-	-	-	-	-	S*	M*	-	-	-	-	-
W	W*	A	W	W*	W	-	W*	W	W	W	A*	W*	W	-	W	W*	W	W*
-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	Y*
-	S	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*
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-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R	-	-
NP	NP	NP	NP	W*	W*	NP	NP	W*	W*	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
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-	Y	C	Y	Y*	Y	-	-	-	-	Y*	Y*	Y	Y	-	Y*	Y*	Y*	Y*
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	R*	R*	-	-
Y*	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	Y	-	-	Y*	Y*
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R	R*	-	R*	-	-	R	R*	-	-	R*	R*	-	R*	R*	R*	-	R*	R*
M	-	-	-	-	-	M	M*	-	-	-	M*	M*	M*	M*	-	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
-	-	-	S*	-	-	S*	S*	-	-	-	-	S*	V*	S*	-	M*	S*	S*
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
-	Y	Y	Y	-	-	-	-	-	-	Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y*
Y*	-	-	-	-	-	-	-	Y*	Y	-	-	-	Y*	Y*	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	Y*	-	M*	-	-	-	M*	-
K*	NP	NP	NP	-	-	G	G	NP	NP	low_cov	K*	K	NP	NP	NP	NP	NP	NP
-	-	R	R*	R*	-	R*	R	-	-	A*	R	R	R*	-	R*	-	R	R*
R*	R*	R	R	R*	V*	R*	R	R*	R*	-	R	V*	R	R	R	R*	R	R
Y	low_cov	-	-	NP	NP	C	Y*	Y*	Y*	-	Y*	-	-	-	NP	NP	NP	NP
R*	low_cov	R*	R*	R*	R*	R	R*	A	R*	low_cov	-	-	R	A*	NP	NP	R	R
Y*	Y*	Y*	T	Y*	Y	T*	T*	Y*	Y*	T*	T*	Y*	Y	T	Y*	Y*	T	Y*
-	M	-	M*	-	-	-	-	M*	M*	-	-	M*	M*	-	-	-	-	-
K*	NP	NP	NP	-	-	-	-	-	-	-	K*	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	Y*	Y	-	-	C	Y	Y*	-	-	Y*	-	Y*	-	Y*	Y*
R*	R	R	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	R	R*	R	R*
NP	R*	R*	R*	-	-	A	R	NP	NP	R*	R*	-	R*	R*	R*	-	R*	R*
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-	-	-	R*	-	-	-	R*	R*	-	-	-	-	R*	-	R*	-	R*	R*
NP	R*	A	A	A*	A*	A*	A*	R*	A*	NP	NP	NP	NP	NP	R*	R*	NP	NP
T*	Y*	T	Y	T*	T*	NP	NP	T*	T*	Y*	T*	T*	Y	-	Y	Y*	T	T
-	-	-	-	-	-	S	G	S*	-	-	-	-	S*	-	-	-	-	-
-	NP	NP	NP	-	R*	NP	NP	NP	NP	-	-	-	R*	R*	-	-	NP	NP
-	R*	-	-	A	R	R	A	-	-	-	-	R*	R	A	R	R*	R	R*
-	R	R*	R*	G	R*	G	G	R*	G	-	-	-	G	G	R*	G	R*	R
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	C	Y*	Y*	Y*	C*	Y*	Y*	C*	Y*	C*	C	-	Y*	-	Y*	C
-	Y	-	H*	Y	Y	C	C	Y*	-	-	-	-	Y	Y	Y	Y	Y*	Y
NP	Y*	C*	Y	C	C*	Y	Y*	NP	NP	-	-	-	C	C*	C*	Y	Y	Y
V*	G*	R*	G	G	R	R*	R*	G	R*	R*	R*	R*	R	R*	G	R*	R	R*
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NP	Y*	Y*	Y*	-	-	Y*	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*	NP	NP
-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	-	R*	A	R	A	A*	R*	-	R*	-	-	R	A	R*	R*	R	R*
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Y*	-	-	-	-	-	-	-	-	-	-	Y*	H*	-	-	-	-	Y*	-
K*	K*	K*	K*	K*	K*	K*	K*	K*	G	K*	K*	K*	K*	G*	K*	K*	K*	K*
NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
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Y*	-	-	-	-	-	-	-	-	-	-	H*	M*	H*	H*	H*	M*	H*	H*
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-	N*	N*	N*	N*	N*	H*	H*	H*	H*	N*	N*	N*	N*	N*	N*	N*	N*	N*

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-	Y*	Y	Y	N*	Y*	-	-	-	-	H*	Y*	H*	H*	H*	Y*	Y*	H*	Y*
R*	R*	-	-	R*	R*	R*	-	R*	R*	R	R	R	R*	R*	R*	R*	R*	R*
NP	Y	C*	Y*	Y*	Y*	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
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R*	R	R	R*	R	R	R*	R*	R*	R*	-	-	-	R	R*	R*	R*	R	R
H*	H*	Y	Y*	-	Y*	Y*	-	Y*	H*	Y*	H*	H*	H*	H*	H*	H*	H*	H*
R*	R	G	R	R	R*	-	-	-	-	-	-	-	R	-	R	R	R	R*
M*	M	M*	M*	V*	-	-	-	-	-	-	M*	-	M*	-	-	-	M*	-
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-	M	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	low_cov	-	-	-	-	-	-	M*	M	low_cov	M*	-	-	M*	NP	NP	-	-
-	**-**	**-**	**-**	***NP***	***NP***	***G***	***R****	**-**	**-**	***NP***	***NP***	***NP***	**-**	**-**	***NP***	***NP***	***NP***	***NP***
Y*	***Y****	***Y****	***Y****	***Y****	***Y****	***Y***	***Y****	***Y****	***Y***	**-**	***Y***	***Y****	***Y****	***Y****	***Y****	***C***	***C***	***Y****
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
NP	**-**	**-**	**-**	***NP***	***NP***	***NP***	***NP***	**-**	**-**	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***
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R*	R	A*	R	R	R	-	-	-	-	-	-	-	R*	R*	R	R*	R	R*
R*	-	-	-	R*	R*	R	A*	A	R	R	A	A*	R*	A	NP	NP	-	R*
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-	Y*	Y*	Y*	Y	Y*	-	-	Y*	Y*	-	-	-	Y*	-	-	-	Y*	Y*
Y	Y*	-	Y*	Y*	Y	Y*	Y	Y*	Y	T	T	T	Y	Y	Y	Y*	Y	Y
A	-	-	R*	-	R*	R	A*	R*	R	-	R*	R*	R	A	R*	-	R*	R
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	-	-	-	Y*
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M*	M	M	M	-	-	M*	M*	M*	M	-	M*	M*	M	M	M*	M	M	M
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-	-	-	W*	-	-	W	W	-	-	W	W*	W*	-	-	W	W*	-	-
-	-	-	-	R*	R	-	-	-	-	-	R*	-	R*	-	R*	-	R*	R*
-	-	-	-	K*	K	-	-	-	-	-	-	-	K*	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
-	NP	NP	NP	-	-	-	-	-	-	S*	low_cov	S*	NP	NP	-	-	-	-
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-	K*	-	K*	-	-	-	-	-	-	-	K*	-	-	-	-	K*	-	-
-	NP	NP	NP	G*	S*	NP	NP	NP	NP	S*	S	S*	NP	NP	-	-	NP	NP
-	R	R*	R	R*	R	-	-	-	-	R*	R*	R*	R	R*	R	R*	R	R
-	-	-	-	-	-	M	M*	-	-	-	-	-	M*	M*	-	-	M*	M*
Y*	Y	Y	Y	Y	Y	-	-	Y*	Y*	Y*	Y	Y	H*	Y	Y	Y	Y	Y
S*	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	S*	S*	-	-
Y*	-	-	Y*	-	Y*	Y*	-	-	-	-	Y*	H*	N*	Y*	Y*	H*	H*	N*
W*	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	W*	W*	-	-
R*	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R	R*	-

M*	-	-	M*	-	-	-	-	-	-	-	-	-	M*	-	M*	-	-	M*
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	R	-	-	R*	R*	-	R*	-	R*	R	R*	R*	R*	R
-	M	M*	M*	M*	M*	M	M	M*	M*	M	M	M	M	M	M*	M*	M	M*
-	-	-	R*	R*	R*	R*	-	R*	-	-	R*	-	R*	R	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	W*	-	-	-
Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	H*	Y*	Y*	Y*	H*	H*	Y*	Y*	Y*	Y*	Y*
R*	-	-	R*	R*	R*	-	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	R*	-	R*	R*	-	-	R*	R*	R	R	R	R	R*	R*	R*	R*	R*	R*
Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	H*	Y*
A*	A	A*	A*	A*	W*	A*	A*	A*	A	A*	A*	A*	A*	A*	W	A*	A	A
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-	-	-	-	Y*	-	-	-	-	S*	-	-	-	-	Y*	-	-	-	-
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NP	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	R*
-	K*	-	-	-	-	-	-	-	-	K	K*	K	K*	-	-	-	-	K*
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NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	S*	-	-	-	-	S	S*	S*	S*	S*	-	S	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
R*	R	R	R	G	R	R	G	R	R*	R	R	R*	R	R	R*	R*	R	G
NP	W	T	W*	T	W*	NP	NP	-	-	W*	T	W*	T	W	T*	T*	T*	T
NP	-	-	-	-	-	-	-	T*	T*	K*	K*	K*	-	K*	K*	-	-	-
-	R*	-	K*	R*	-	-	-	R*	-	-	-	-	R*	-	-	R*	D*	R*
M*	-	-	-	-	-	-	-	-	-	-	-	M*	V*	M*	-	-	-	-
NP	-	-	-	-	-	-	-	***NP***	***NP***	-	-	-	-	-	-	-	-	-
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M*	-	-	-	-	-	-	-	-	-	-	-	-	-	***M***	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	***M****	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H*	-	-	***Y****	-	***Y****	-	-	-	***Y****	-	***Y****	-	***Y****	-	-	-	***Y****	***Y****
-		***Y***	***Y****	-	-	-	-	***M****	***M***		-	-	***Y****	-	-	-	-	-
R*	***R****	-	***R****	***R***	***R***	***R***	***R***	***R****	***R***	***R***	***R***	***G***	***R***	***G***	***R***	***R***	***R***	***R***
C*	***NP***	***NP***	***NP***	***M***	-	***NP***	***NP***	***NP***	***NP***	***C***	***M****	***C****	-	***C****	***C***	***M****	***NP***	***NP***
-	R	R*	R	-	-	R*	R*	R*	-	-	R*	R*	R	R*	R	R*	R	R
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-	R*	R*	R*	-	-	-	-	-	-	-	-	R*	V*	-	R*	R*	V*	R*
-	R	R*	R	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
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-	-	-	R*	-	R*	R	R	-	-	-	R*	-	R*	-	-	-	R*	R*
-	S	S	S	S*	S*	B*	-	-	-	-	S*	S*	S	S*	S*	S*	S	S*
R*	R*	R	R	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	C*	Y*	Y	Y	Y*	Y*	C	Y*	Y*
-	Y	Y	Y	B*	Y*	Y*	-	-	-	-	Y*	-	Y	H*	H*	Y*	Y	Y*

Y*	-	-	-	Y	Y*	Y	Y*	Y*	T	-	Y*	Y*	Y	Y	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	V*	-	S*	-	V*	R*
-	-	-	R*	-	-	-	-	R*	-	-	-	-	R*	R*	-	-	R*	R*
NP	M	M	M	-	M*	C*	C	M	C	-	-	-	M	M	M*	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	-	R*
-	-	-	-	-	-	NP	NP	R*	A	NP	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	R	R	R	-	-	R*	-	-	-
G	R	R	R	R*	R	R	R	R*	R	R*	R	R*	R	R*	R*	-	R*	R*
-	-	-	-	-	-	S	S	S*	-	S	S	G	S*	S	S	S	S*	S*
-	Y*	Y	Y*	-	-	-	-	-	-	Y*	Y*	-	Y*	-	-	-	Y*	Y*
-	low_cov	-	-	-	-	NP	NP	-	-	low_cov	R*	A	-	R*	R*	R*	-	-
K*	K*	K	K*	K	K	-	K*	K*	K	K	K*	K*	K	-	K	K	K	K
-	-	-	Y*	Y*	Y*	Y	Y	-	Y*	Y	Y	Y	Y*	Y	Y*	Y	Y*	Y*
-	NP	NP	NP	-	-	R*	G*	-	-	NP	NP	NP	-	G*	NP	NP	NP	NP
-	-	-	-	-	-	Y	Y	-	-	Y	T	Y*	-	Y*	Y	Y*	-	-
-	-	-	-	-	-	Y	Y	-	-	Y	Y	Y*	Y*	Y	Y*	Y	Y*	-
-	-	-	R*	-	-	R*	A*	-	-	R*	R	R*	R*	R	R*	R*	R*	R*
G	R	R	R	R	R	R*	-	R*	R	R	R*	R*	R	R*	R	-	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M	M	-	-	-	-	-	H*	M*	M*	-	M*	H*
-	-	-	-	-	-	R*	R*	-	-	R*	A	R*	R*	R	R*	R*	R*	-
-	-	-	-	-	-	Y	T	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	R*	-	-	R*	-
-	-	-	-	-	-	-	-	S*	S	-	-	-	-	-	-	-	S*	-
-	R	-	R*	-	-	R*	R*	-	-	-	-	-	R*	R*	-	-	R*	R*
-	R	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
NP	Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y*	Y	Y*	Y	Y*
-	-	-	-	R*	R*	-	-	-	-	-	-	-	R*	-	R*	-	-	R*
-	A*	R*	A	R*	R	-	-	A*	R*	A*	A	A*	R*	-	NP	NP	NP	NP
C*	C*	C*	C*	C*	Y*	C*	C*	C*	Y*	Y*	C*	C*	Y*	C*	C*	C*	C*	C*
-	Y*	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
-	Y	-	Y*	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
S*	S*	S*	S	S	S*	S*	S*	G	S*	S	S	S	S	G	S	S	S	S
-	S	S*	S*	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-
-	-	Y*	Y*	-	-	Y	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-
Y*	-	-	-	Y	Y	Y*	Y*	-	-	-	-	-	Y*	-	NP	NP	-	-
R	-	-	R*	R	R	R	A	R*	R	-	R*	R*	R*	R*	R*	R*	R*	R*
-	R	R	R	-	-	-	-	-	-	-	R*	R*	R*	R	R*	-	R*	R*
A*	A*	R*	R*	D*	D*	R*	D*	R*	R	R	R*	R*	R*	R*	R	R	R*	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

B*	-	-	B*	K	K	B*	K	K*	K	S*	-	R*	K*	-	K*	S*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	R	R	R	R	R*	-	-	R*	R	R*	R*	-	R*	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y*	-	-	Y	Y*	Y	Y*	Y*	Y*
R*	-	-	R*	-	-	-	R*	-	-	-	R*	R*	R*	R*	-	-	R*	R*
S	S*	-	S*	S	S	S	S	S*	S	-	S*	-	S	-	S	S*	S	S
Y	-	-	-	Y	Y	Y	Y*	Y*	-	-	Y*	-	Y	-	Y*	-	Y	Y
R*	A*	V*	A*	R	R	R*	R*	R*	R*	A*	R*	R*	R	R*	R	A*	R*	R
Y	-	-	Y*	Y	Y	-	Y*	-	-	-	Y*	Y*	Y	Y*	Y	Y	Y	Y
R	G	R*	R*	R*	R*	R*	R*	R*	R*	G	R*	R	G	R*	R*	R*	R*	R*
Y*	Y*	Y*	Y	Y	Y	Y*	T*	Y*	Y*	T*	Y*	Y*	Y	T	Y	T	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y
R*	R*	R*	R*	R	R	-	R*	R*	R*	-	R*	R*	R	R	R	R*	R	R
-	Y*	-	-	-	-	-	Y*	-	-	-	H*	-	K*	K	Y*	-	Y*	-
R*	R	R*	R*	R*	R	R	R*	R*	R	R	R	R*	R	R*	R	R	R	R
M*	M*	M*	M*	M	M	M	M	M*	M	M	M	M	M*	M	M*	M	H*	H*
Y	Y	Y*	H*	Y*	Y	Y	Y*	Y*	Y*	Y	H*	H*	N*	H*	N*	H*	N*	H*
S*	-	S*	N*	V*	-	R	R*	R	R*	-	R*	R*	V*	V*	V*	R*	N*	N*
-	-	-	Y*	-	-	Y	Y*	T	Y	-	Y*	Y*	H*	Y*	H*	Y*	H*	Y*
A	R*	R*	R	R*	R*	-	R*	R*	R	R	R	R*	R	R	R	R	R	R
H*	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y*	Y	H*	N*	Y	N*	N*	N*	N*
-	Y*	-	Y*	Y*	Y*	Y	Y	Y*	Y*	-	H*	H*	H*	H*	H*	H*	H*	H*
Y	Y*	Y*	Y	Y	Y	-	Y*	Y	Y*	Y	Y	Y	Y	T	Y	Y*	Y	Y
R*	R	R	R*	-	-	M*	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
NP	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	C	Y*	-	-	Y
Y*	Y*	-	Y*	C	Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	C	Y	Y
Y*	-	-	Y*	-	-	NP	NP	-	-	-	-	-	-	T*	-	-	NP	NP
G*	low_cov	G*	R*	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S*	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R	R	R*	-	R*	-	-	R*	R*	R*	R*	-
R*	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W	A*	A*	A	A*	A	W	W	W*	-	W	A*	W*	W	W*	W	W*	A	A
Y*	C*	Y*	C*	Y*	Y*	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R	R	R	R*	-	R*	R*	R	R	R	R*	R	R	R	R
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	Y*	Y	Y	Y*	-	Y*	Y*	-	-

-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-
K*	K*	K	G	-	K	K*	K*	K	K*	K	K	G	G	G	G	K*	K*	G
-	Y*	Y	Y	Y*	Y	Y*	Y	-	Y	Y	Y*	Y	Y	T	Y	-	Y	Y
Y	-	-	Y*	-	-	Y*	-	Y*	C*	-	-	-	Y*	Y*	Y*	Y*	-	Y*
K*	K*	K*	K*	K*	K*	K*	K*	T	K*	K*	K*	-	K*	K	K	K	K*	K*
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y	Y	Y*	Y*	Y*
Y*	-	-	-	-	-	Y	Y*	Y*	Y	-	Y*	-	Y*	Y	Y*	Y*	Y*	Y
R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*
R	R*	-	-	-	-	-	-	R*	R	-	R*	-	R*	R*	R	R*	-	R*
NP	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	K*	K*	-	-	-	-	-	-	-	-	K*	K*	K*	K*	K*	-
A*	R*	R	R	A	A*	-	-	R*	R*	-	R*	-	R*	-	R*	-	R*	R*
A*	R*	A*	R	R*	R	R	R	R*	R*	A*	A	R*	R	R	A	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K	-	-
-	T	Y*	Y	T	T	Y	Y*	-	Y*	Y*	Y	Y*	Y*	Y*	T	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	Y*	C*	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y*	Y	Y	Y	C	-	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*
-	-	-	-	Y	Y	-	-	Y*	-	Y*	Y*	T*	Y*	Y*	Y*	-	-	-
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	R*	-	-	R*	R	-	-	-	-	R	R*	R*	R	-	R*	-	R*	R*
-	-	-	-	G	R	R*	R*	-	-	R	R	R	R	R	R*	R*	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	R*	R	R	-	-	-	R*	R	R	-	R*	R*	R*	-	R*	R*
-	M*	-	M*	M	M	M	M*	-	-	M	M	M*	M*	-	M*	M*	M*	M*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*
R	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	Y	Y*	-	-	Y*	Y	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
R	R	R	R	R	R	R*	R*	R	R	R*	A	R*	R	R	R	R*	R	R
Y*	low_cov	Y*	Y	Y*	Y*	-	-	Y*	Y*	NP	NP	NP	Y*	-	NP	NP	NP	NP
M*	-	-	-	-	-	-	-	M*	M*	-	-	M*	M*	M	-	-	M*	M*
S*	-	-	S*	S	S	S*	S*	-	-	S*	S	R*	S*	-	-	-	S*	-
S*	S*	-	S*	S*	-	-	-	B*	-	-	B*	-	V*	S*	S*	-	V*	V*
-	-	-	-	S	S	S	S*	S*	S	S*	S	S*	S*	S*	S	-	S*	S
-	-	-	Y*	C	Y	Y*	C*	Y*	C*	C	C	C*	Y	Y*	C	C*	NP	NP
Y*	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y
-	S*	S	S*	S*	S	-	-	-	-	-	-	-	S*	S*	S*	-	S*	S
-	R*	-	R*	R	R	R	R	G	G	R	R*	R*	R	R	R	R	R	R*
-	-	-	-	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	-	Y*	Y
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-
S*	-	-	S*	S	S	S*	S	G*	S	S	S*	S	S*	S	S	S*	S*	S
NP	-	-	-	-	-	Y*	-	NP	NP	Y*	Y*	-	Y*	Y*	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-

R*	-	-	M*	M	M	M	M	M*	M	M	M	M*	M	M	M	M	M*	M*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
R	-	-	-	-	-	R*	R*	-	-	-	R*	R*	R*	R	-	-	R*	R*
R*	R	R*	A	R*	R*	-	R*	R*	R*	R*	A	A	A	R	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	C	Y	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	R*	-	-	-	-	-	-
-	Y	Y	Y	Y*	Y	Y*	T	Y*	Y*	-	-	-	Y	Y*	Y*	Y*	Y	Y*
-	-	-	-	-	-	R	R	R	R	-	-	-	R*	-	-	-	-	R*
-	-	R*	-	A*	A	NP	NP	R*	R*	-	-	-	R*	-	-	-	R*	R*
-	-	-	Y	Y*	Y*	Y	Y*	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
A*	-	-	M*	-	-	-	-	M*	M	M*	M	M*	M*	M*	-	-	M*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A	A*	M*	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	-	-	-	-	R*	R	R*	R	R*	R*	R*	-	-	R*	-
-	R*	-	-	-	-	-	-	-	-	R	R*	R*	-	-	R	R	-	-
-	-	-	Y*	-	-	-	-	-	-	Y	Y*	Y*	-	-	Y	Y*	-	-
-	-	-	-	-	-	R	R*	R*	-	-	-	-	R*	-	-	-	-	R*
NP	NP	NP	NP	-	-	NP	NP	NP	NP	C	Y*	Y*	Y*	Y*	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	R*	-	-	-	-	R*	-	-	-	-	R*	R	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	C	C*	M	-	-	M*	-	NP	NP	M*	M*	-	M*	M*	-	M*	M*	M*
NP	low_cov	A*	M*	-	-	NP	NP	M*	A*	-	M*	M*	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	NP	NP	NP	Y*	Y	Y*	Y*	Y*	Y
NP	NP	NP	NP	-	-	NP	NP	NP	NP	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	R*	-	-	-	R*
NP	T	T	Y	-	-	Y*	Y*	Y*	T*	Y*	-	-	-	Y*	-	-	Y*	Y*
NP	NP	NP	NP	-	-	Y*	Y*	NP	NP	Y	Y*	Y*	-	Y*	-	-	NP	NP
T*	NP	NP	NP	T*	T*	T*	T*	T*	T*	T*	T*	Y*	T*	T*	T*	T*	NP	NP
R*	A	A*	R	-	-	R	R	A*	R	R*	R*	R*	R*	R	R*	-	R	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
R*	-	-	R	R	R	G	R*	-	-	R	R	R	R	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y	T*	T	T*	Y*	Y*	-	-	-	Y*	Y*	Y*	-	NP	NP
-	-	-	-	M*	M	-	-	-	-	-	-	-	M*	-	M*	-	M*	-
R*	R	R	R*	R	R*	R	R	R*	A	-	R*	R*	R	R	R	R	R	R
R*	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	R	R	R*	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	R	R	R*	-	-	-	-	-	-
R*	-	-	-	-	-	R	R	-	-	A	R	R*	R*	-	R	R*	R*	-
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*
-	R*	-	-	-	-	-	-	-	-	R	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	R*	R*	-	R	R	-	R*	-	R*	R*	R	R*	R*	R*
-	R*	A*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	N*	Y*	H*	B*	H*	N*

R	R*	R*	R*	R	R	R	R	R*	R*	R*	R	R	R*	R	R	R	R*	R
R*	R	R	R	R	R	R	R*	R	R*	R	R	R	R	R	R	R*	R	R
Y*	-	Y	Y*	C*	C*	Y*	Y*	-	-	-	-	-	Y	C*	Y*	-	Y	Y
-	low_cov	-	-	-	-	-	-	-	-	low_cov	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	Y	-	-	Y*	-	-	-	-	-	Y*
R*	NP	NP	NP	A	R*	R*	-	-	-	NP	NP	NP	R*	-	NP	NP	-	R*
NP	NP	NP	NP	-	-	NP	NP	NP	NP	C*	C	Y*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	G*	G*	G*	K*	G*	G*	G*	NP	NP
T*	NP	NP	NP	NP	NP	NP	NP	T*	T	T*	T	W*	W*	T*	T*	T*	W*	-
Y*	Y*	-	Y*	Y*	Y	Y	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	-	-	R*	R*	R*	R	-	R*	-	-	R*	R*	R*	R*	R*	-	R*	R*
Y*	-	-	-	-	Y*	Y*	-	Y*	-	-	-	-	Y*	-	Y*	-	Y*	Y*
-	K	K	K	-	-	K	K	-	K*	K	K	K	D*	K*	K*	K*	D*	D*
R*	-	-	R*	-	R*	R	R*	-	-	R*	R	-	R*	R	R*	R*	R*	R*
S*	S*	S*	S*	S*	S*	S*	G*	S*	S*	S	S	S	S*	S*	S*	S	S*	S*
-	-	-	-	R	R	-	-	-	-	-	R*	R*	D*	R*	R*	R*	R*	R*
R*	-	-	-	-	R*	R*	R*	-	-	-	-	-	R*	R*	R*	R*	R*	-
M	M*	-	M*	M*	M*	M	M*	M*	-	M	M	M	M*	M	M*	M*	H*	M*
S	-	S*	S*	B*	S	S	-	S*	-	S*	S	S*	S*	S	S*	S*	S*	S*
Y*	-	Y	T	Y*	Y	-	-	NP	NP	-	Y*	Y*	Y	Y	Y	Y	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	D*	-	K*	K*	K*	K*	K	-	K*	-	K*	K*	K*	K*	K*	K*	D*	K*
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	R*
-	-	M*	M*	-	-	M*	M*	M*	-	M	-	M*	M*	M*	M*	-	M*	M*
S*	S*	-	S	S	S*	S	S	S	S*	S	S	S	S	S	S	S	S	S
C*	NP	NP	NP	-	-	-	-	-	-	S*	S*	S*	-	-	-	-	NP	NP
R*	-	-	R*	-	-	R	R	R	R	R	R*	R	R*	R	R*	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	-	-	-
R*	R*	R	R*	R*	R*	R	R*	G	R*	R*	R	G	R	R*	R	R*	R	R
Y*	NP	NP	NP	Y*	Y*	NP	NP	-	Y*	T*	Y*	Y*	Y*	-	Y*	-	NP	NP
Y*	Y*	C*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	NP	NP	NP	NP
D*	-	-	R*	D*	D*	R	R	-	R*	-	D*	D*	D*	R*	N*	D*	D*	D*
R*	low_cov	-	-	-	-	-	-	NP	NP	-	-	-	R*	A	-	-	-	-
-	R*	R*	R	R	R	R*	R*	-	R*	R*	-	-	R	-	R	R*	R*	R
-	low_cov	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	-	Y*	-
-	-	-	-	M	M	-	-	-	-	-	-	-	M*	-	M*	M	M*	M*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*
R*	R*	R*	R	R*	R*	R*	R*	R*	R*	-	R*	A*	R*	R*	R	R*	R*	R*
R	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
Y*	Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y	-	Y*	Y	Y	Y*	Y	Y	Y	Y
Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-
M*	NP	NP	NP	NP	NP	-	-	C*	C*	M*	M*	M*	C	M*	M*	M*	M*	M*
T	Y*	Y	T	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	-	Y	Y*	Y	Y
R	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R	R*	-	R*	R*
R	R	R*	R	R*	R*	R	R	R	R	R	R	R*	R	R*	R	R*	R	R*
NP	low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	-	Y*	NP	NP
-	K*	-	K*	K*	-	K*	K	-	K*	K	K	K	K*	K	K*	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	T	Y*	-	-	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
-	-	-	-	R*	R	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	R*	-	R*	-	-	-	R*	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	K*	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	-	-	Y*	Y	Y	-	-	-	-	-	Y*	-	H*	Y*	Y*	Y*	Y*	Y*
-	M*	M	M*	M*	M*	M	M*	-	M*	M*	M*	A	-	-	M*	-	M*	-
-	-	-	K*	-	-	-	-	-	K*	R*	R*	R*	B*	R*	R	R*	K*	-
-	-	-	-	-	-	-	-	-	-	R*	R*	R	-	-	-	-	-	-
-	R*	R	R*	R*	R	R*	R*	R*	R	R*	R	R	R	R	R	R*	R	R
T*	low_cov	Y*	Y*	Y*	Y*	-	-	Y*	T*	Y*	Y*	Y	Y	Y*	NP	NP	Y*	T
-	-	-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	D*	-
-	-	-	R*	-	R*	-	-	-	-	-	-	-	R*	-	R	R	R*	R*
-	-	-	-	-	-	Y*	C	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R	R*	-	-	-	R	R*	R*	R	R	R	R	R*	-	R	R*
R*	K	K	K	-	R*	-	-	D*	D*	K	K	K	D*	K*	D*	-	D*	D*
-	R*	R*	R*	-	-	-	-	-	-	R*	R	R	R*	-	R*	-	R*	R*
Y*	Y*	Y*	Y	Y	Y	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
S*	N*	V*	N*	S	S*	S	S	S*	S	S*	V*	S*	N*	S*	N*	N*	N*	N*
Y	Y	B*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y	Y	Y	Y*	Y	Y
R*	R	R	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R	R*	R	-	R	R*
Y	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y	H*	Y*	H*	Y	Y*	H*	H*	H*
R*	R*	D*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	N*	R*	R*	R*	N*	R*
Y*	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
-	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	Y*	Y	-	H*	Y*	Y*	-	H*	H*
H*	Y*	Y	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	-	Y*	Y
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
-	R*	R*	-	R*	R*	-	-	-	-	R*	R*	R*	R*	-	R*	R*	R*	R*
Y*	Y*	Y*	Y	Y*	Y*	H*	H*	Y*	Y	Y	H*	Y*	H*	Y*	H*	H*	H*	Y*
T	Y	Y	Y*	Y	Y*	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*
D*	K	K*	D*	K*	D*	K*	K*	K*	K*	K*	K*	D*	D*	K*	D*	-	D*	D*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
W*	W*	W*	W*	W*	W*	-	-	W*	W*	-	-	-	W*	-	NP	NP	W*	-
R*	R	R	R	R	R	R*	R*	R*	R	R*	R*	R*	R	R*	R*	-	R	R
R	R	R	R	R*	R	R*	N*	R*	V*	R	R	R*	N*	R	R	V*	N*	R
-	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y*
-	R	R	R	R	R*	R	R	-	R	R	R*	R*	R	R*	NP	NP	R	-

-	K*	K*	K*	K*	S*	K*	K*	K*	B*	K*	K*	K*	D*	K*	D*	K*	K*	B*
-	K*	K*	K*	K*	K*	K*	K*	K*	K*	-	K*	-	K*	K*	K*	-	K*	K*
Y*	Y*	Y	Y	-	-	Y	Y*	Y*	Y*	-	Y*	-	Y	Y	-	-	Y	-
R	R	V*	D*	R	R*	R*	R*	R*	R*	R*	D*	N*	R*	R*	R*	-	R*	R*
M*	M*	M*	M	M	M	M*	M	M*	M	M	M*	H*	M*	M*	M*	M*	M*	M*
B*	Y	B*	B*	S*	Y*	Y*	B*	-	B*	Y	Y*	Y*	B*	Y	Y*	Y*	B*	Y*
R	R	R	R	R*	R	R	R*	R*	R	R*	R*	-	R	R*	NP	NP	R	R*
S*	S	S*	S	S	S*	S*	S	S*	B*	S*	S*	S*	N*	S	B*	S*	B*	N*
S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	V*	S*	V*	V*	N*	V*
Y*	Y	B*	Y*	Y*	Y*	Y*	B*	-	Y*	Y	Y	Y	N*	Y*	Y*	Y*	N*	B*
-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
R*	R	R	R	R	R	R	R	R*	R*	R	R	R	R	R	R	R*	R	R
R	R*	V*	R*	D*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	Y*	Y*	-	Y*	Y*	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
-	K	K	K	NP	NP	-	-	T*	T*	low_cov	low_cov	K*	NP	NP	NP	NP	NP	NP
Y*	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*
Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	H*	Y	Y	Y*	Y	Y
R*	R	R	R*	R*	R	R*	R*	-	R*	R	R	R	R*	R	R	R*	R*	R*
Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y
W*	W*	W*	W*	W*	W*	W*	W*	W*	-	W*	W*	W*	W*	W*	W*	W*	W*	W*
R*	R	R	R	R	R	R	R*	R	R*	R	R	R*	R	R	R	R*	R	R
R	R	R	R*	R	R	R*	R	R*	R*	R	R	R	R*	R	R	R*	R*	R*
-	R	R*	V*	R	R*	R	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y*
S*	S	S*	S	S*	S*	S*	S*	S*	S*	S*	S	S*	S	S*	S*	S*	S	S*
-	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	-	Y*	Y*
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	H*	Y*	Y*	Y*	Y*	Y
R	R	R	R	R	R	R	R*	R	R	R	R	R	R	R	R	R*	R	R
W*	W	W	W	W	W	W	W*	W*	W	W	W*	W	W*	W	W*	W*	W*	W*
-	-	-	-	NP	NP	-	-	M*	-	-	-	-	R	-	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	-
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y*	-	Y*
R	-	-	-	-	-	-	-	-	-	R	R	R	R*	R*	R*	R*	R*	-
Y*	-	-	Y*	Y	Y	-	-	Y*	-	-	-	Y*	Y*	H*	Y*	Y*	H*	H*
-	R*	R*	-	R*	-	-	R	R*	R*	R*	R*	R*	R*	-	-	-	-	R*
-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	S	-	-
-	-	-	S*	-	-	-	-	-	-	M	M*	M*	-	-	-	-	-	-
-	M	M*	M	M	M	M	M*	M	M	M*	M	M	M	M	M	M	M	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	NP	NP
A	A*	R*	A*	R*	R	R*	A*	A*	R*	A*	A	R*	R	R*	R*	A*	R	A
R*	A*	A*	R	NP	NP	A*	A*	R*	R*	A*	A*	A	R*	A*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	NP	NP	R*	R*	-	-	-	-	-	NP	NP
C*	C*	C*	C*	-	M*	C*	C*	C*	C*	C*	C	C*	M	C	M	M	M	M
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	S*	NP	NP

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
A*	A*	A*	A*	R*	R*	A*	A*	R*	A*	A*	A*	R*	R	R*	R	R	R	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	C*	C*	C*	C*	C*	Y*	Y*	NP	NP	Y*	Y*
-	-	-	Y*	Y*	Y	NP	NP	Y*	Y*	Y	Y*	Y	Y	Y	-	-	Y*	Y*
R*	-	A	A	-	-	A	R*	R*	R*	low_cov	R*	-	R	R*	A	R*	R	R
G*	R	G*	R*	G	R	G*	G*	G	R	G*	G*	G*	R	R	R	R	R	R
S*	S	C*	C	C	S	S*	S*	S	S	C	S*	C*	S	S	S	S	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-
Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	N*	H*	Y*	Y*	B*	-	Y*	H*	Y*	N*	H*	N*	H*	N*	N*
M*	M	M*	M*	M	M	M*	M*	M*	M	M*	C	M*	M	M	M	M	M	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	Y*
NP	NP	NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	-	-	-	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R	R	-	-	-	-	-	R*	-	R*	-	R*	R*	R*	R*
-	-	-	-	W*	W*	-	-	W*	W*	-	-	-	W*	-	W*	W*	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	R*	-	-	-	NP	NP	NP	-	-	NP	NP	NP	NP
Y*	Y	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y	-	-	Y*	Y*
G	R	R	R*	G	R	-	-	R	R	-	R*	R*	R*	R*	R*	-	R	R
-	-	-	-	-	S	-	-	S*	S*	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y	-	-	Y	-	-	-	-	Y*	-	-	-	-	-
NP	Y	Y	Y	Y*	-	-	-	-	-	-	-	-	Y	Y	Y*	-	Y	Y
W*	-	W*	-	-	-	-	-	-	W*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	W	W	W*	-	-	-	-	-	-
NP	A*	R*	R*	R*	A*	A*	R*	R*	A*	A*	A*	R*	A*	A*	A*	A*	A*	A*
R*	R	R	R	R*	R*	-	-	R*	R	R*	R	R	R	R	R*	R*	R	R
NP	NP	NP	NP	NP	NP	C	Y*	NP	NP	low_cov	low_cov	Y*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	R	R*	R	-	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	R*	-	-	-	-	-	-
A	low_cov	-	-	R*	R*	R*	R*	R*	R	low_cov	A	A*	R*	R*	-	-	R*	R*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M	M	-	M*	-	-	-	-	-	M*	-	M*	-	M*	M*	M*	M*
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-	R*	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	M	M	-	-	-	-	-	-	-	M*	-	M*	M*	M*	M*
NP	A	A*	R*	A*	A	NP	NP	NP	NP	R*	R	R*	R*	R*	R	R*	R	A
-	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	B*	Y*	Y*	Y*	T	Y*	Y*	Y*
Y*	C	C*	Y*	-	Y*	Y	Y*	NP	NP	Y*	Y*	Y*	Y*	Y	Y*	Y*	C	Y*
-	Y	Y*	Y*	T	Y	-	Y*	T	Y*	Y	Y*	-	Y	Y	Y*	Y*	Y	Y*
-	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
D*	K*	K*	D*	D*	D*	D*	D*	D*	K*	K*	D*	K*	D*	D*	D*	D*	D*	D*
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y	Y	Y	Y	Y	Y	Y	Y	T	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y

R	R	R	R	R	R	R*	R*	R	R	R	R	R	R*	R	R*	R	R*	R*
Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	H*	Y	Y	Y	H*	Y
R	R	R	R*	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Y*	Y*	Y*	Y*	-	-	Y*	Y*	-	Y*	-	Y*	Y*	NP	NP	-	-	NP	NP
R*	R	R	R	-	-	R	R*	R*	R	-	R*	R*	R	R*	-	-	R	R
Y*	-	-	-	Y	Y	-	-	-	-	-	Y*	-	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	R*	-	R*	R*
G	G	R*	G	R*	R*	G	R*	R*	R*	R*	R	G	R*	R*	G*	R*	G	R*
S*	G*	G*	G	S*	G*	G*	G	NP	NP	G	S	G*	NP	NP	G*	G*	G*	G*
Y*	C	C*	C	Y*	C	Y*	Y*	C*	C*	C	Y*	Y*	C	C*	C*	C*	Y*	Y*
-	R	R	R	-	-	-	-	R*	-	-	R*	R*	R*	R*	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	R	R*	R*	R	R*	-	-	-	-	-	-	R*	R*	-	R*	R*	R*	R*
NP	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
K*	-	-	-	-	-	-	-	-	-	-	K*	-	-	K*	K*	K*	-	-
A	R	A	R	R	R	-	-	R*	R*	R*	R*	R*	R	R	R	R	R	R
-	-	-	-	-	-	-	-	Y*	-	NP	NP	NP	-	Y	NP	NP	NP	NP
-	Y*	-	Y	-	-	-	-	-	-	-	-	-	Y*	-	Y	Y	Y*	-
-	S*	-	-	-	-	-	-	-	-	S	S	S*	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	H*	Y*	Y*	H*	H*	Y*
NP	S	C	S	-	S*	S*	-	S	S	S	S	S	S	-	S	S	S*	S
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	G	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	K	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	C*	C*	C*	Y*	Y*	NP	NP	B*	C*	NP	NP	NP	C*	Y*	C*	C*	C*	Y*
R*	R*	R*	R	R	R	R*	R*	G	R*	R	R	R	R	R	R	R	R	R
R*	R	R	R*	R*	R	R	R	R*	G	R	R*	R	R	R	R	R	R	R
-	R*	D*	N*	R*	V*	R*	R*	R*	R*	R*	R*	R*	N*	V*	D*	R*	V*	D*
-	-	-	H*	-	-	Y	Y	-	Y*	-	M*	-	H*	Y*	Y*	-	H*	N*
-	A	R	R	R*	D*	R*	R*	R*	D*	A	R	A	R	A	R	D*	R	R
S	S	S	S	S*	S*	S*	S*	S*	S*	S	S	S	S	C	S*	S*	S	S
R	R	R	R*	R	R	R*	R	R*	R*	R	R*	R	D*	R	R*	R*	R*	R
M	M	M	M*	M*	M	C	M*	M*	M*	-	M	M*	M*	M	M*	M*	M	M
H*	Y*	B*	N*	Y	H*	Y	Y*	Y*	Y*	H*	H*	Y*	N*	N*	N*	Y*	N*	N*
NP	S*	S	S	S*	S	S*	S*	G	S	S	S*	-	S	S*	S	G	S	S
-	-	-	-	-	S*	-	-	-	-	-	-	R*	R*	-	-	-	-	-
W	W	W	W*	W*	T	W*	W*	W	W	W	W	W*	W	W	W	W*	W	W
-	-	-	-	-	-	-	-	-	-	W	-	-	-	-	W*	W*	-	-
NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	Y	-	NP	NP	Y*	Y*
-	-	-	-	R*	R	-	-	-	-	-	R*	-	R	-	R*	R*	R*	R
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	R*	R*	-	-	NP	NP
-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	V*	R*	R*	R*	V*	R
R*	R	R	R*	R	R	R	R*	R*	R*	R	R*	R*	D*	R	R*	R*	D*	R*

NP	low_cov	C*	Y*	C	Y*	NP	NP	NP	NP	low_cov	C*	C*	NP	NP	Y*	Y*	Y*	Y*
R*	R	R*	R	R	R	R*	R*	-	R*	-	R*	R*	R	R	R	R*	R	R
M*	M	M*	M	M	M*	M*	-	M	M	M*	M	M*	M	M	M	M	M	M
-	-	-	R*	R*	-	R*	R*	R*	R*	-	R*	-	R*	-	-	R*	R*	R*
Y*	Y	Y	Y	-	Y*	-	-	-	-	-	-	-	Y*	Y	-	-	Y	Y
-	-	R*	-	R*	R	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	R	R*	R*	R*	R	R*	R*	R*	R*	R*	D*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	Y*	Y*	NP	NP	NP	NP	NP	NP
S*	-	-	-	R	R	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	Y	T	Y	Y	T*	Y	Y	Y	Y*
-	-	-	S*	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	Y*	-	-	-	-	-	S*	-	Y*	Y*	H*	Y*	-	-	H*	M*
S*	-	-	-	-	-	-	-	-	-	-	B*	B*	S*	S*	-	-	S*	S*
H*	Y*	Y*	H*	H*	H*	Y	M*	NP	NP	low_cov	H*	Y	Y	Y*	Y*	H*	H*	H*
-	Y*	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y	Y	Y*
R*	-	R*	R*	R*	R*	R*	R*	R*	R	-	R*	-	R*	R*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S	S	S*	S	C	C	S*	S*	C	S*	S*	S	S*	S	S*	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
R*	-	-	R*	R*	R	R	R	R*	-	-	R*	R*	R*	R*	R	R*	R*	R
-	Y*	-	-	-	-	-	-	-	-	Y	Y	C	-	-	-	-	-	-
A	-	-	R*	-	R*	R*	A	R*	R*	R*	R	R*	R	R	-	-	R*	R
NP	K	G	K	-	K*	G	G	NP	NP	K	G	-	K	G	G	K	K	K*
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	T	-	-	-	-	Y*	Y	Y*	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K	K	K*	K*	G	G	K*	K*	K*	K	K	K	K	K	K	K	K
-	W*	W*	W*	-	-	W*	W*	-	-	-	-	-	W*	W	-	-	W*	W*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	C	-	Y*	Y*	C*	Y*	Y*	-	Y*	Y*	Y	Y	Y*	Y*	C	Y*
K*	K	K	K*	K	K	-	K*	B*	K*	K*	K*	K	K	K	K	K	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	-	-	M*	-	M*	-	-	-	-	-	M*	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	R*	-	-	-	-
R	R	R	R	R	R	R*	R*	R	A	A	R	R	V*	R	R	R	R	R
-	-	Y*	Y*	-	-	-	-	-	-	low_cov	Y*	-	Y	-	-	-	Y*	-
-	-	-	-	R*	R*	-	-	R*	R*	-	-	-	R*	-	-	-	-	R*
-	-	-	-	-	-	S	S	-	-	-	-	-	-	-	S*	S*	-	-
R*	G*	R*	R*	R*	R*	R*	R*	NP	NP	R*	R*	R*	R*	R*	R*	R*	R*	R*
-	R	R	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	-	V*	R*
-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	-	-	-
W*	W*	W*	W*	W*	W*	-	W*	NP	NP	W*	W*	W*	W	W*	W*	-	W*	W*
R*	-	-	K*	D*	D*	D*	D*	-	D*	NP	NP	NP	K	-	D*	R*	D*	D*

Y*	Y	Y	Y	Y	Y	Y	Y*	Y*	C	Y	Y	Y	Y	Y	Y	C*	C	Y
Y	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-
-	low_cov	-	-	R*	R*	A	R*	R*	R*	-	R*	R*	R*	R*	NP	NP	R*	R*
R*	R	R	R	G	R	R*	R	R*	R	-	R*	R*	R	R	R	R	R	R
B*	W*	W	W	-	-	-	-	-	-	-	W*	-	W*	W	W*	W*	W*	W*
-	Y	Y	Y	Y	Y	Y*	Y*	Y*	C	-	-	-	Y	Y	Y	Y*	Y	Y
-	R*	R	R	R	R	-	S*	V*	S*	-	R*	V*	R	R	R	R	R	R
-	Y	Y	Y	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y	Y	Y	Y*	Y*
NP	-	-	R*	G*	G	R*	R*	NP	NP	-	-	-	R*	-	-	-	R*	R*
Y*	Y	-	-	Y*	Y*	-	-	-	-	Y	T	Y*	Y*	-	Y*	Y*	Y*	Y*
A	M	M	M	M*	M*	-	M*	M*	M*	A	A	A	M*	M*	M	M*	M	M
-	-	-	-	Y	Y	Y	Y*	-	-	-	-	-	Y*	-	Y	Y*	Y*	Y*
NP	-	-	-	-	-	-	-	C*	C*	M*	M*	M*	-	-	M*	M*	-	-
W*	low_cov	W*	W*	W*	W*	NP	NP	W*	W*	T*	W*	W*	W	W	W	W*	W	W*
R*	A	A	A	A	A	-	-	V*	A	A	A	R*	R	R*	A	A	A	A
-	M*	-	M*	-	-	M	M*	-	-	M*	-	-	M*	-	-	M*	M*	M*
Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*
-	Y	Y*	Y	-	-	-	-	Y*	-	T	Y	Y	Y*	Y*	Y*	-	Y*	Y*
R*	R*	R*	R*	R*	G	R*	R*	NP	NP	G*	R*	G	R	R*	G	R*	R*	R
Y*	C*	Y*	Y*	Y*	C*	C*	C*	Y*	Y*	C*	C	C*	C*	C*	C*	C*	C*	C*
-	low_cov	-	-	T	Y*	-	-	-	Y	low_cov	Y	Y*	Y	-	-	Y*	Y*	Y
-	R	R	R*	-	R*	-	-	-	-	-	-	-	R*	R*	R	R	R*	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	C
G*	NP	NP	NP	R	R*	R*	R*	R*	R*	NP	NP	NP	NP	NP	R	R*	NP	NP
G	K	K*	K	K	K	K	K	K*	K	K	K	K*	K	G	K	K*	K	G
C*	low_cov	Y*	Y*	C*	C*	Y*	C*	C*	C*	low_cov	C*	Y*	Y*	C*	NP	NP	C	Y*
N*	-	-	-	-	-	Y	T	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	Y	Y*	Y	-	-	-	-	-	-	-	Y	-	Y*	Y	Y	Y
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	-	R	R*	R*	R*	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-
-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*
-	-	-	S*	-	-	-	-	-	S*	-	S*	R*	S*	S*	-	-	S*	-
B*	Y*	-	Y*	Y*	Y*	-	-	Y	Y	-	Y*	Y*	Y*	Y	Y*	Y*	N*	Y*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	H*	Y	-	-	M*	-
NP	R*	-	R*	R	R	R	-	-	-	-	-	-	R*	-	-	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
-	R*	-	-	-	-	R	R	-	-	R*	R*	R*	-	-	R	R*	-	R
-	Y*	Y	Y*	Y*	Y*	-	-	-	-	Y*	H*	H*	H*	H*	H*	H*	H*	H*
-	R	R*	R*	R	R	R	R*	-	-	-	-	-	R	-	R*	R*	R	R
-	-	-	-	-	-	-	-	R*	R	-	-	-	R*	A*	-	-	-	-
-	C*	C*	C*	C*	C	NP	NP	-	-	C*	C*	C*	NP	NP	C	C*	NP	NP
G*	G	G*	R	R*	R*	R	R*	R*	R*	R	R	G*	R*	G*	R*	R*	R*	R*
-	-	-	Y*	-	Y*	M*	-	-	Y*	-	H*	H*	H*	Y*	H*	Y*	H*	H*
R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*	R*	-
NP	-	K*	K*	K*	K*	K*	-	-	-	D*	-	K*	K*	-	-	-	K*	K*
G	K*	K*	K	G	K*	K*	G	K*	K*	G*	R*	G*	K	K	G	G*	G	G
R*	R*	R*	R	R*	R*	R	R*	G	R*	R*	R	R*	R*	R*	R*	R*	R*	R*

NP	-	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y	Y*	-
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	-	Y*	-	-
R*	R	R*	R*	R*	R*	R*	-	-	R*	R*	-	R*	R*	R*	R*	-	R*	R*
Y*	C	C*	Y*	Y*	Y	Y*	C*	C*	Y*	Y*	Y*	Y*	Y	C	C	C*	C	C*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	R*	A	R*	R*	-
-	-	-	H*	M*	M*	-	-	-	-	-	-	-	H*	-	M*	-	Y*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-
NP	Y	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	Y*	Y*
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	H*	Y*
-	-	-	R*	-	-	-	-	R*	R	-	-	-	-	R	-	R*	-	-
-	Y	Y	Y*	-	-	-	-	-	M*	-	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
R*	-	-	-	-	R*	-	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*
S*	C	S	S	S*	S	C	S	S*	S	S*	C	S*	S*	S*	S*	S	V*	S*
-	T*	Y*	Y	-	-	Y*	Y	T*	T	-	Y*	Y*	Y	Y*	Y*	Y	Y	Y
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	C	Y*	Y*	C	C	C*	Y	C	C	Y	Y*	C	C	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
Y*	-	-	Y*	H*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y	T	Y*	-	NP	NP	Y	T	T	Y	Y	Y	T	Y*	Y*
G	-	-	K	K*	K	K*	K*	K*	K*	K	G	K	K	K	K	K	K	K
-	-	-	-	M*	M*	M*	M*	M*	M*	A*	M*	M*	M*	M*	M*	M*	M*	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	R*
R*	-	-	-	R	R	R*	R*	R*	R	R	R*	R*	R*	R	R	R*	R*	R*
Y*	Y*	-	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y
M*	C*	M*	M*	M*	C	M*	C*	NP	NP	low_cov	M*	M*	NP	NP	NP	NP	M*	M*
N*	C*	Y*	Y*	Y*	Y*	Y*	C*	NP	NP	low_cov	Y*	C	NP	NP	NP	NP	Y*	Y*
K*	G*	G*	K*	K*	G*	K	G*	G*	K*	K*	K*	G*	K*	G	K*	K*	K*	G*
R*	low_cov	R*	R*	R*	G*	NP	NP	G*	R*	low_cov	G	G*	R	R*	NP	NP	G	G
N*	R	R	V*	R	R	R	R	R	R	-	R*	R*	V*	V*	R	R	V*	R*
S*	S	S	S*	S	S	S	S*	S	S	-	S*	V*	V*	S*	S	S*	N*	S
S*	-	-	S*	-	S*	-	S*	-	-	-	S*	V*	V*	S*	S*	S*	V*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y	-	Y*	Y*	H*	Y*	Y	Y	Y	Y
M*	M	M	M	M	M	M	M*	M*	M	M*	-	M*	M	M*	M	M	M	M
-	Y	Y	Y*	Y	Y	Y*	Y*	Y	Y	-	Y*	Y*	H*	Y*	Y	Y*	H*	Y
-	R*	R*	R*	R	R	R	R*	R	R*	-	R*	-	R*	-	R*	R*	R*	R
-	W*	W	W	W	W	W*	W*	W	W*	-	W*	-	W	W*	W	W	W	W
-	Y	Y*	Y*	T*	Y	-	Y*	T	Y*	-	Y*	-	Y	Y*	Y*	Y*	Y	Y
Y*	Y*	Y*	B*	Y*	Y*	Y*	Y*	Y*	Y	H*	Y*	B*	Y*	C	Y*	C	Y	C
W*	W*	W*	W*	W*	W*	W*	W*	-	W	T*	W*	T*	T	T	T	W*	T	W*
A*	A*	A*	A*	R*	A*	A*	A*	R*	A	A*	A*	R*	A*	A*	A	A*	A	A
G*	G*	R*	K*	K*	K*	K*	G*	K*	G	G*	K*	K*	G	G	K	K*	G	K*
-	R	A*	A	A*	A*	A*	A*	A*	A	R	R*	-	R	R	A	A	R	A*
NP	NP	NP	NP	NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP

R*	R	R	R	A*	R*	R*	R*	R*	A*	R*	R	R*	R	R	R	R	R	R
Y*	Y*	Y*	Y	-	-	-	-	-	-	Y*	-	-	-	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	C*	C	-	-	-	NP	NP	NP	NP	NP	NP
S*	C*	C*	C*	NP	NP	NP	NP	C*	C*	C*	C*	C*	NP	NP	NP	NP	C	C*
Y*	Y	Y	Y	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y	Y
A*	low_cov	A*	A*	A	A*	A*	A*	NP	NP	low_cov	A*	A*	NP	NP	NP	NP	NP	NP
A*	R	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	A*	R*	R*	R*
Y*	low_cov	Y*	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*	T	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R*	A	A	R	A	R*	R*	-	-	-	R*	R	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	R	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	Y*	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	R	R	R*	R*	R	-	-	-	R*
R*	R*	R*	R*	G*	G*	G*	G*	G*	G*	NP	NP	NP	R*	R	G	R*	R*	R*
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	NP	NP	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	G*	G*	G*	G*	G*	G*	G*	K*	G*	G*	K*	G*	G*	G*	G	G*	G*	G*
-	-	-	-	-	S*	-	R*	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	M*	-	-	-	-	-	-	-	W*	-	-	W*	-	-
R*	R*	-	R*	R*	-	-	W*	-	R*	R*	R*	-	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	Y	Y	Y	Y*	Y*	-	-	-	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y*
S*	-	-	-	M*	-	-	-	-	-	-	-	-	-	S*	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
K*	-	-	K*	-	-	-	-	-	D*	-	-	W*	K*	-	-	K*	K*	K*
R	R*	-	R*	-	R*	R*	R	R*	R*	R	R	R	R*	R*	R*	R*	R*	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	NP	NP
-	-	-	Y*	-	-	-	-	-	Y*	-	-	Y*	Y*	-	-	-	Y*	-
-	R*	-	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	T*	T*	Y*	T*	T*	Y*	T*	T*	Y*	T*	Y*	T*	T*	T*	Y	T*	T*	T*
S	S	S	S	S*	S*	S*	S*	S*	S*	S	S	S	S	S*	S	S	S	S
Y*	Y	Y	Y	Y*	Y*	C*	C	Y*	Y*	Y	Y	C	Y	Y*	Y	Y	Y	Y
Y*	Y*	C*	C	Y*	Y*	Y*	C*	C*	C*	Y*	Y*	Y*	Y*	C*	C*	C*	C*	C*
-	K	K	K*	-	-	K	K	K	K	-	K*	-	K*	-	-	K*	K*	K*
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	K*	T	K*	K*	K*	T*	K*	T*	K*	K*	K	T	K*	K*	T	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y*	Y*	-	-	-	-	Y*	-	-	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G*	G*	G*	G*	R*	R*	G*	G	G*	R*	G*	G*	R*	G*	R	G*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	R	R*	R*	-	-	-	-	-	K*	R	R*	R*	-	-	R	R	R*	R*
-	Y	Y	Y	-	-	-	-	-	-	Y	Y	Y*	Y*	-	Y	Y	Y*	Y*
-	-	-	-	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
R	R	R*	R*	R	A	R*	R*	R*	R	R	R	R*	R*	R*	R	R*	R	R*
NP	-	-	R*	R*	R	-	-	-	-	-	-	-	R*	-	-	-	R*	-
Y*	Y	Y*	Y	Y	Y*	H*	Y*	Y	Y	Y	Y	H*	H*	Y	H*	Y	N*	H*
-	-	-	Y*	-	-	-	-	-	-	Y*	-	Y*	M*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	H*	H*	H*	Y*	Y*	Y	H*	Y	Y	Y	H*	H*	H*	Y*	N*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*
A*	NP	NP	NP	A*	W*	W*	-	A*	A*	W*	W*	W*	NP	NP	A*	A*	NP	NP
-	-	-	-	-	-	-	-	M*	M*	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	-	-	-	Y	Y*	-	V*	-	N*	M*	H*	H*	N*	H*
S*	-	-	-	-	-	-	-	-	-	-	S*	-	V*	S*	S*	V*	V*	M*
-	Y	Y	Y	-	-	-	-	-	-	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*
-	M	M*	M*	-	-	-	-	-	-	M	-	M*	M*	M*	M*	M*	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
R*	-	-	-	R*	-	-	-	-	-	-	R*	R*	N*	R*	V*	R*	V*	D*
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	W*	H*	H*
R	R*	R	R	-	-	R	R	R*	R*	-	R*	R*	R	R	R	R	R	R
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	Y*
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	M*	-	-	M*	-	-	M*	-	-	M*	M*	-
W	W*	W*	W	-	-	W	W	W	W	-	W*	-	W	-	W*	-	W	W
R*	-	-	R*	R	R	-	-	-	-	-	R*	-	R*	-	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R	-	-	R*	-
N*	Y	Y	H*	H*	H*	H*	Y	Y	H*	H*	N*	H*	N*	N*	N*	H*	N*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	K*	K*
R*	R*	-	R*	R*	R*	R	-	G	R*	R	R	R	R	R	R	R*	R*	R
NP	R*	-	R*	A	A*	R*	-	A*	A*	A	A*	A*	R*	A*	-	-	NP	NP
-	-	-	-	-	R*	-	-	R*	-	-	-	-	R*	-	-	R*	R*	R*
-	M	M	M	M	M	NP	NP	M	-	C*	C	M*	M*	M*	-	M*	M*	M*
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	Y*	Y	-	-	Y*	-
Y	Y	Y	Y	Y*	C	C	Y	Y*	Y	Y*	C	Y*	Y	C	Y	Y*	Y	Y
R*	-	-	-	-	-	-	-	-	-	-	-	-	D*	-	R*	-	R*	-
-	-	-	-	-	-	-	-	W	W	-	-	-	W*	-	W*	-	W*	W*
S*	-	S	S	C*	S*	S*	-	C*	S*	S*	C	C	S	C*	-	-	NP	NP
-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	T	Y	Y	Y	Y	Y*	T	T	Y	T	Y	Y*	Y	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	NP	NP	NP	-	-	-	-	NP	NP
-	Y*	Y*	Y*	T*	Y*	NP	NP	Y*	T*	Y	low_cov	Y*	NP	NP	-	-	Y*	Y*
R*	R	R	R	R	R*	R	R	R*	R*	R	R	R	R	R	R*	R*	R	R*
A*	NP	NP	NP	-	-	NP	NP	NP	NP	A*	low_cov	-	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	A*	A*	NP	NP	W*	A*	A*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-

A*	M*	-	-	-	-	A*	A	NP	NP	M*	M*	M*	M*	A*	M*	M*	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	W*	-	-	-
C*	C*	C*	M*	NP	NP	C*	C*	NP	NP	low_cov	low_cov	C*	NP	NP	-	M*	NP	NP
-	NP	NP	NP	NP	NP	NP	NP	-	-	low_cov	-	-	NP	NP	NP	NP	NP	NP
-	Y*	Y*	-	Y*	Y	-	-	Y*	-	Y*	-	-	Y*	-	-	-	Y*	Y*
Y*	Y	Y*	T	-	Y*	Y*	Y	Y*	Y	Y	Y*	Y	Y	T	Y	Y*	Y	Y
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	NP	NP	K*	K*	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D*	-	-	-	-	R*	R	R*	-	-	R	R*	R	R*	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R	-	-	-	-	-	-	-	R*	-	-	-	-	R*
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	Y*	Y*	C	C*	C*	Y	Y*	C*	C*
-	-	-	-	-	-	T	-	-	-	-	-	-	-	-	-	-	-	-
A*	A*	A*	A*	A*	A*	M*	M*	A*	A*	M	M	A	A*	A*	M	M	A*	A*
-	K*	-	K*	K*	K*	-	K*	K	K	B*	K*	W*	D*	K*	K*	K*	D*	D*
C	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y*	-	-	-	-	Y*	Y*
R*	R	R	R	R*	R*	R*	-	-	R*	-	R*	R*	R*	-	R*	R*	R	R*
R*	R	R	R	R	R	R*	R*	R	R	R	R*	R	R	R	R	R	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	M*	-	M*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	R*
R	R	R*	R	R	R	R*	R*	R	R	R	R	R	R	R	R	R	R	R
R*	R*	R*	R	G	R	R*	G*	R	G	R	R	R	R	R	R	R	R	R
G*	R	G*	R	R	R	G*	G*	R*	R	R	R	R	R	R*	R	R*	R	R*
A*	-	-	-	-	-	R	R	R*	R*	R*	R	R	-	-	-	-	R*	R*
Y	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y*	H*	Y*	Y*	Y*	Y*	H*
-	R*	R*	R*	-	-	-	-	-	-	-	R*	R*	R*	-	R*	-	R*	R*
-	Y	Y	Y*	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
R*	G*	G*	G	R*	-	G	-	G	R*	R	R*	R*	NP	NP	NP	NP	R*	R*
NP	NP	NP	NP	-	-	NP	NP	R*	-	-	-	R*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	R*	-	-	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	G*	G	NP	NP	R*	R*	-	-	-	R*	-	-	-	NP	NP
Y*	Y	Y*	Y	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
G*	R	G*	R*	-	-	R*	-	NP	NP	-	-	R*	NP	NP	R*	R	R*	-
R	R	R	R	R*	R*	R	R	R	R	R	R	R	R	R*	R	R*	R	R*
R	R	R*	R	R*	R*	R	R	R	R*	R	R*	R*	R*	R*	R*	R	R	R*
R*	A	R*	R	R*	A	R	R	A	A	R	R*	R	R	R*	R*	R*	A	R
NP	-	-	-	R*	R*	NP	NP	G*	-	-	-	-	-	-	R*	R*	-	-
Y*	Y*	-	Y*	Y	Y	Y	T	-	-	T	Y	Y	Y	Y	Y	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	C	S	S	-	-	-	-	-	-
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
R	R	R	R	R*	-	-	-	A	R	-	R	R*	R	R	R*	-	R	R
-	R*	-	R*	-	-	-	-	R*	-	R	R	R*	R*	-	-	R*	R*	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y*	-	-	-	-	-
Y*	Y*	Y	B*	M*	-	-	-	-	Y	-	Y*	B*	N*	Y*	Y*	-	N*	H*
-	-	-	Y*	Y	Y	Y*	Y*	Y	Y	-	Y*	-	Y*	Y*	Y	Y*	Y*	Y*
M*	-	M	M*	M*	C	NP	NP	NP	NP	-	-	-	M	M*	M	M*	M	M*

-	-	-	R*	R*	-	-	-	-	R*	-	R*	R*	R*	R*	-	R*	R*	R*
-	-	-	-	Y*	Y*	Y*	-	NP	NP	-	-	-	Y*	-	Y*	Y	-	Y*
S*	S*	S	S*	S*	S*	S	S*	S*	S*	-	S*	S*	S	S*	S*	S*	S	S*
K*	-	-	-	K	K	-	-	-	-	-	K*	-	K*	-	K*	-	K*	K*
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y	Y*	Y*	Y*	-	Y*	Y*	C*	Y	Y*	Y	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	Y*	Y	Y*	Y	-	-	-	Y*	Y*	-	-	Y*	-
-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	B*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
Y*	-	-	-	-	-	Y*	Y	Y*	Y	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
W*	W	W	W	W	W	W*	-	W*	W*	W	W	W*	W	W	-	-	W	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	K	K	-	-	-	R*	-	K*	K*	K*	D*	D*	K*	K*	K*
K*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
R*	-	-	R*	-	-	-	-	NP	NP	-	R*	R*	-	-	-	-	-	-
-	Y	T	Y	-	-	-	-	-	-	-	-	-	Y	-	-	-	Y*	-
A*	-	-	-	-	-	-	-	-	-	NP	NP	NP	R*	-	-	-	-	-
-	-	-	-	NP	NP	-	-	NP	NP	Y*	Y*	Y*	-	Y*	-	-	-	-
Y*	Y*	-	Y*	-	Y*	-	-	Y*	Y*	Y	Y	Y	H*	Y*	-	Y*	Y*	Y*
-	-	-	Y*	Y	Y	Y*	Y*	Y*	Y	-	Y*	-	Y	-	Y*	Y*	Y*	Y*
NP	low_cov	Y*	Y*	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y	-	-	-	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	Y*	-	-	T	T	Y*	Y*	Y*	Y*	-	-	Y*	Y	-	Y*	Y*	Y*	Y*
Y*	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	W	W	-	-	-	-	-	-	-	W*	-	W*	-	W*	W*
-	-	-	-	-	-	-	M*	-	M*	-	-	-	M*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	R*	-	-	-	R*	-	-	-	R*	R*
R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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S*	-	-	-	R*	-	S	S	-	-	-	S*	S*	-	-	S*	-	-	S*
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	NP	NP	-	M*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	-	-	-	-	R*	R*	R*	A	R*	R*	-	R*	-	R*	R*
Y*	-	-	-	-	-	-	K*	-	-	low_cov	-	-	-	-	-	-	-	-
-	-	-	-	R*	R	-	-	-	-	-	-	-	R	-	-	-	R*	R
NP	-	-	-	-	-	-	-	K*	K*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	low_cov	-	-	-	-	-	-	-	-
M*	NP	NP	NP	NP	NP	C*	C*	-	M*	-	-	-	M*	C	M*	M*	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-
-	Y	T	Y	Y*	Y	Y*	-	-	-	Y*	Y	Y*	Y	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	M*	M	M*	-	-	NP	NP	-	-	-	-	-	M*	-	-	-	-	M*
-	-	-	-	R*	R*	R	R	R*	-	-	-	-	R*	R	R*	-	R*	-
-	R*	-	R*	R*	R*	R	R	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
R*	-	R*	R*	R	R	R*	R*	R	R	-	R*	R*	R	R*	R	R	R*	R
-	-	-	-	-	-	-	-	R*	R*	-	-	-	D*	-	-	-	-	R*
Y*	-	-	Y	Y*	-	-	-	C	C*	-	Y*	-	Y	Y	Y	Y	Y	Y*
NP	-	-	-	NP	NP	-	-	G*	R*	NP	NP	NP	-	G*	-	-	NP	NP
M*	-	-	M*	-	-	-	-	M*	M*	-	-	-	-	M*	M*	M*	M*	M*
T*	-	-	Y*	-	-	-	-	NP	NP	-	-	-	-	T	Y*	Y*	Y*	Y*
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	-	-	R*	-	R*	-	-	R	A*	-	-	-	R*	R	R*	R*	-	R
C	C*	C*	C	C*	C*	C*	C*	C*	C*	Y*	C*	Y*	C*	C*	C*	C*	C	C*
K*	-	-	K*	-	-	-	-	K*	K*	-	-	-	-	K*	K*	K*	K*	K*
Y*	C	C	Y	Y	Y	Y	Y	-	Y*	Y	C	Y	Y	Y*	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W	W	T*	T	T*	T*	T*	T*	W*	W	W	W	T*	W	W*	W	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
Y*	Y*	Y	Y	-	-	-	Y*	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-
Y	Y	Y	Y	-	-	-	-	-	-	Y	Y	Y	Y*	-	Y*	-	Y*	Y*
W*	W*	W	N*	H*	W*	W*	W	W*	W	H*	H*	H*	W*	W*	W*	H*	W*	H*
-	Y*	-	Y*	-	-	-	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	Y*	Y*
K*	K*	K*	K*	K*	K*	D*	K*	K*	K*	K*	K*	K*	K*	D*	D*	K*	D*	D*
Y*	Y	Y*	Y*	Y	Y	Y	C	Y	-	Y	Y	Y	-	Y	Y	-	Y*	Y*
-	-	-	K*	K*	-	-	-	K*	K*	-	K*	K*	D*	K*	K*	D*	D*	K*
S*	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	R*	-	-	-	-	-	R*	-	R*	R*	R*	-	R*	R*
S*	S	S	S	S	S*	V*	S	V*	S*	S	N*	S	S	S	S	S	S	S
-	K*	K*	K*	K*	K	K*	K*	K*	K*	K*	K*	D*	D*	-	K	-	K*	K*
W*	H*	W*	W	D*	W*	W*	W	H*	W	W	W	W	W*	D*	W*	W*	W*	W*
K*	-	-	-	K*	-	-	-	-	-	-	K*	K*	K*	K*	K*	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	-	Y*
-	-	-	-	S	S*	-	-	-	-	-	-	-	S*	-	-	-	-	S*
Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	H*	H*	H*	H*	Y*	H*	H*
-	-	R*	-	-	-	R*	-	K*	K*	-	-	R*	D*	K	K*	-	R*	D*
S*	-	-	S*	-	S*	-	S*	S*	-	-	S*	S*	S*	S*	-	-	S*	V*
R	-	-	R*	R*	R*	-	-	R*	-	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-
Y*	Y	Y*	Y*	Y	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	Y*	Y*
R*	R*	R	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
S*	S*	S*	S*	-	-	S	S*	S*	S*	-	-	S*	-	-	-	-	-	-
C*	C*	Y*	Y*	-	-	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y	Y*	Y*	Y*	C	Y*
-	-	-	-	-	-	-	-	-	-	S*	S*	S*	-	-	-	-	-	-
R*	R*	R	R	R*	-	R	R*	R	R	R*	R	R	R*	R*	R*	-	R	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
M*	M	M	M	M*	M*	M	M	M*	M	M	M	M	M	M*	M*	M*	M	M
Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	-	Y	Y*	Y*	-	-	-	-	-	-
Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y	Y*	T	Y	Y	Y	Y	Y	Y	Y
-	R*	R*	R*	-	-	R	R*	-	-	-	-	-	R*	-	-	-	R*	R*
-	R	R*	R*	-	-	R	G*	R*	-	-	-	-	R*	R	R	R*	G	R*

C*	C*	C*	C*	S*	C*	C*	S*	C*	S*	C*	C*	C*	C*	C*	C*	C*	C*	C*
-	R	R	R*	R*	R*	R	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	K*	T	-	-	-	-	-	-	-	-	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-	-	-	-	-
-	M*	M	M*	M*	M	-	-	-	-	-	-	-	M*	M*	M	M	M*	M
NP	-	-	-	-	Y*	NP	NP	C	Y*	-	-	-	Y*	Y	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	Y	Y	N*	-	-	-	-	-	-	-	K*	-	Y*	Y	-	-	B*	Y*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R*	-	-	R	-	-	-	R*	R*	R	R*	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y	-	-	Y*	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	R*	-	R*	-	-	-	-	R*	R*	-	R*	-	-	R*	-	R*	R*	-
-	R	R	R	R*	R*	R*	R*	R*	R	-	R*	-	R	R*	R*	-	R*	R*
-	Y*	-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	-	M*	M	-	-	M*	-	-	-	-	NP	NP	NP	NP	-	-
Y*	-	Y*	Y*	-	-	Y*	Y*	-	-	Y*	Y*	Y*	-	Y*	-	-	Y*	-
R*	R*	R*	R*	R*	R*	R*	G*	R*	R*	G*	R*	R*	R*	R*	R*	G*	R*	R*
-	K*	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
-	low_cov	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	Y	Y*	-	-	-	-	-	-	-	Y*	H*	N*	Y*	N*	Y*	N*	N*
Y*	Y*	Y*	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*
NP	C*	C*	Y*	-	-	Y	C	-	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	K	K*	K*	K*	K*	-	-	-	-	K	K	K	K*	K*	K*	K*	K*	K*
T*	Y*	Y	Y	Y*	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y
-	R	R	R	-	R*	-	-	-	-	R	R	R	R*	R	R*	R*	R*	R*
Y*	-	Y*	Y*	-	-	Y	Y	-	-	-	Y*	Y*	H*	Y*	Y*	H*	H*	Y*
-	Y*	-	-	-	-	-	-	Y	Y	-	Y*	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	-	Y*	Y*
S*	S*	S*	S	S*	S	S	S	S*	S*	S*	S*	S*	S	S	S	S*	S	S
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	T	-	Y*	Y*	T	Y*	Y*	Y	Y	T	Y*	Y*	Y*	Y*	Y	Y
NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-
-	K*	K	K*	-	-	-	-	-	-	-	K*	-	D*	K*	-	K*	T	K*
-	-	-	-	C	Y	-	-	-	-	Y	Y*	Y	Y*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	G*	G	G*	-	-	G	R*	-	-	low_cov	low_cov	R	NP	NP	R*	R*	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	H*	Y*	Y*	-	Y*	-
R*	R*	R*	R*	-	-	NP	NP	R*	R*	R	R*	R*	R	A	R*	R*	R*	R*
R*	-	-	-	R*	R	-	-	-	-	R	R	R	D*	R	R	R	R	R
NP	NP	NP	NP	T*	T	-	-	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	H*	Y*	-	-	H*	Y*
-	-	S*	B*	Y*	Y*	-	Y*	Y*	Y*	-	H*	Y*	H*	Y*	H*	H*	N*	H*
T	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	T	T	Y	H*	Y	T	T	H*	Y
-	-	-	V*	S*	B*	-	-	S*	-	R*	R*	R*	V*	V*	V*	R*	V*	V*
Y*	Y	Y*	Y	Y	Y	Y	Y*	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y

R*	-	-	-	-	-	-	-	NP	NP	R	-	-	-	R*	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	-	-
-	S*	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	R*	-	R*	R*
Y*	Y	Y	Y	Y	Y	Y*	Y*	-	-	Y	Y	Y*	Y	Y	Y*	Y*	Y	Y
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	A	R*	-	R*	R*	-	-	R*	-	R*	R	R*	R*	R*	R	R
R*	R*	R	R	G	G	NP	NP	-	-	-	-	-	R*	-	R*	-	R*	R*
Y*	H*	Y*	H*	H*	Y*	Y*	Y*	H*	Y	Y*	Y*	H*	H*	H*	Y*	H*	H*	Y
-	S	S*	S	S*	S	S	S	-	-	S*	S	S*	S	S	S	S	S	S
S*	S*	S*	S*	C*	S*	S*	C*	S*	C*	C*	C*	S*	S*	C*	C*	C*	S*	S*
-	-	-	-	R	R	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	-	R*	-	R*	R*	R	-	R*	R*	R*	R*	R*	R	R	R
-	-	-	-	R*	R	-	-	-	-	-	-	R*	R*	-	R*	-	R*	R*
Y*	Y	Y	Y*	-	-	-	-	Y	Y*	Y*	T	Y*	Y*	Y	Y*	Y*	-	Y*
Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
K*	K	K	K	-	-	-	-	K	K	K	K	K	K	K	K	K*	K	K
-	S	S	S	-	-	-	-	-	-	-	S*	S*	S	S*	S*	S*	S	S*
-	-	-	-	-	-	-	-	S	S	-	-	-	S*	S*	S*	S*	V*	S*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	R*	-	-	-	-	-	-	W*	W	-	-	-	-	W*	-	-	W*	-
S*	-	-	S*	-	S*	-	-	-	-	-	S*	S*	S*	S*	S	S*	C	S*
Y*	NP	NP	NP	Y*	Y*	Y*	T*	-	-	T	Y*	Y*	Y*	T	Y*	-	Y*	Y
Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	-	-	-	-	NP	NP	G*	R*	-	-	-	-	R*	R*	R*	-	-
-	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	K*	K*	K	-	-	-	-	-	-	-	-	K*	K*	-	-	-	K*	K*
-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R	R*	-	R*	-	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	W	W*	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	M*	-	M*	-	M*	M*
R*	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	-	-	-	-
-	NP	NP	NP	NP	NP	-	-	NP	NP	low_cov	-	-	-	-	NP	NP	-	-
Y	-	-	-	-	-	Y*	-	-	M*	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	K*	-	-	-	K*	-	-	-	-	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	Y*	Y*	Y*	-	-	-	-	-	-	H*	N*	Y	Y*	M*	Y*	H*
-	K*	K	K	-	-	-	-	-	-	-	K*	-	K*	K*	-	-	K	K*
-	-	-	-	-	-	-	-	-	-	S	S*	S*	M*	-	-	M*	-	-
R*	R*	-	R*	-	R*	R	R	-	-	-	R*	R*	R*	-	R*	-	R*	R*
-	-	-	-	R	R*	-	-	R*	R*	R	R	R*	R*	R*	R*	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
-	-	-	Y*	-	-	Y	Y*	-	-	-	-	-	H*	-	-	-	Y*	-
R*	R	R	R*	R*	R*	NP	NP	R*	R*	NP	NP	NP	R*	A	R*	R*	R*	R*
R*	-	-	R*	R	R	A	A	R*	-	R	A	R*	R	R	R	R	R	A
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
S*	S*	S*	S*	NP	NP	-	S*	NP	NP	low_cov	G	S*	NP	NP	NP	NP	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-

-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M*	M*	-	M*	A	M*	A*	M*	M*	-	M*	-	M*	M*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	R	R	R	R	R*	R	-	-	-	R	R	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	C	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	C	Y*	NP	NP	Y*	Y*
S*	C*	S*	S*	C*	S*	C*	S*	S*	S*	C*	Y*	S*	S*	C*	S*	C*	C*	C*
Y*	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	Y*	-	-
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
R*	R	R*	R	R*	R*	-	-	R*	R*	R*	R*	-	R*	R*	R*	-	R*	R*
-	-	-	-	Y	Y	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y	Y*	Y*	-	Y*	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-
-	M	M*	M	M	M	-	-	-	-	M	M*	M*	M	-	M	M	M	M
-	R	R	R*	R	R*	-	-	-	-	R	R	R*	R*	R*	R*	R*	R*	R*
Y*	Y	Y	Y*	Y	Y	Y*	Y*	-	Y*	Y	Y*	Y	Y	Y*	Y*	-	Y	Y*
Y*	Y	Y	Y	Y	Y	-	Y*	-	-	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
M	M	M*	A	M	M	M*	-	M	M	M	M	M	M	M*	M	M	M	M
R*	R	R*	R	R	R*	-	-	R*	R*	R	R*	R*	R	R	R*	R*	R	R*
NP	NP	NP	NP	R*	R*	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
C*	C*	C	C*	Y*	Y	-	-	C*	C*	C*	Y*	C*	Y	Y	Y*	Y*	C	C
-	M*	M*	M*	M*	M*	-	-	NP	NP	M*	M*	C*	-	M	NP	NP	NP	NP
-	R	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	NP	NP	-	-	M*	M*	M*	-	M*	M*	M*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	Y	Y*	Y	C	Y*	Y	Y	Y*	Y	Y*	Y	C	Y	Y*	C	C	Y	Y
-	-	-	-	-	-	R	R*	R*	R*	-	-	-	-	-	R*	-	-	R*
-	-	-	-	-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
D*	R*	R*	R	R*	-	R	R	R*	-	-	D*	R*	R	R*	R*	-	R	R
A*	A*	A*	A	A	A*	R	R	A*	A*	R	R	R	R	A*	A	A*	R	R
NP	NP	NP	NP	NP	NP	NP	NP	-	-	R*	R*	R*	NP	NP	NP	NP	NP	NP
-	-	-	Y*	Y	Y	Y	Y	Y*	Y*	C*	Y	Y	Y*	Y*	Y*	-	C	Y*
-	-	-	-	-	-	-	-	R*	R	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	R*	G	-	-	R*	R	G	-	G	R*	R*	NP	NP
A*	A*	R*	A*	A*	R*	R*	A*	R*	A*	R*	A*	A*	R*	R*	A*	A*	A*	A*
R*	-	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R	R*	R*	R*	-
S*	C	S*	S*	NP	NP	S*	S*	S*	K*	-	S*	-	S*	S*	-	-	NP	NP
R*	-	-	R*	R*	R*	R*	R*	R*	R*	A*	A	R*	R*	R*	-	R*	R*	A
R*	G*	R*	R*	R*	R*	G*	G	G*	G*	R*	G*	R*	G*	G*	R*	G*	G*	G*
R*	-	R*	R	-	R*	-	-	R	R	G*	R	R	R*	R	-	-	R*	R*
-	Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
M*	M*	M	M	M*	M*	M*	M*	M*	M	M	M*	H*	M	M	M*	M*	M	M
Y*	Y*	Y*	Y*	-	-	Y*	Y*	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W*	-	-
-	-	-	-	K	K	-	K*	-	-	-	-	-	K*	-	K*	K*	K*	K*
-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	-	Y	Y	-	-	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*

R*	-	-	-	S*	-	-	-	-	-	-	R*	R*	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	S	-	-	R*	-	-	S*	-	-	-	-	-
-	-	-	-	M	M	-	M*	-	M*	-	-	-	M*	M*	M*	M*	M	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B*	K*	K	K	K	K	K*	K*	B*	K*	K*	K	K*	K	K	B*	K	N*	N*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
-	-	Y*	-	-	-	M	A*	-	-	-	-	-	M*	-	-	-	M*	-
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
NP	W*	W*	W*	W*	W	-	-	-	-	-	-	-	W*	-	-	W*	W*	W*
-	Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	NP	NP
-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	Y*	-	C	Y	Y*	-	-	Y*	-	-	-	-	Y*
NP	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	C	C*	C	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	R*	R*	R	R	G*	R	R*	-	-	-	R	R*	R*	-	R*	R*
NP	-	-	-	-	S*	NP	NP	S*	S*	-	-	-	NP	NP	NP	NP	NP	NP
NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	-	-	NP	NP
S	-	-	S*	S	S	S	S	S*	S	-	-	-	S	S	S	S*	S	S
NP	Y*	-	Y*	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	Y*
R*	-	-	R*	R	R	R	R*	R*	R	-	R*	R*	R	R	R*	-	R	R
NP	T	T*	Y*	T*	T*	NP	NP	T*	Y*	NP	NP	NP	NP	NP	T*	T*	T*	T*
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-	-	-	Y
R*	-	-	R*	R*	R	R*	-	R*	R	-	R*	R*	R*	R	R*	-	R*	R*
Y*	-	-	Y*	Y	Y	-	Y*	Y	Y	-	Y*	Y*	Y	Y	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W	W*	W*	W*	T	W*	W	W*	W*	NP	NP	NP	W	W	-	-	W*	W*
-	-	Y*	-	-	-	-	-	Y*	Y*	Y*	-	-	Y*	-	-	-	-	Y*
Y*	-	-	Y*	-	-	Y*	-	-	Y*	Y*	Y	Y*	Y*	Y	-	-	Y*	Y*
R*	R*	R	R*	-	-	NP	NP	NP	NP	low_cov	R*	R*	NP	NP	NP	NP	NP	NP
NP	M*	M	M	M*	M	M*	M*	M*	-	M*	C*	M*	M*	M*	M	C*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S*	S*	S*	S	S*	S*	S*	S	S	S*	S	S	S	S	S*	S	S	S	S
M*	C	M*	M	M*	M	-	-	-	W*	M*	C	M	M	C	M*	-	M	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	W*	W	-	-	-	-	-	-	-	W	W	-	-
M	M	M	M	M*	M*	H*	M	M	M	M	M	M*	M	M	M	M*	M	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*

Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y*
G*	G	G*	G	G*	G*	-	K*	K*	G	K*	G	D*	K*	G*	G	K*	G	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	-
Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	Y*	NP	NP	NP	NP	NP	NP
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R*	R*	R	R	R*	G*	R	R	G	R	R	R*	R*	R	R
Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	T*	T*	Y*	Y*	Y*	Y*	Y*	T
NP	-	-	-	-	-	Y*	T	-	-	-	-	-	-	-	-	-	-	-
-	Y	-	Y	-	-	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	-
-	-	-	-	S*	S*	S	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R*	R	-	-	R*	R*	R*	R	R*	R*	R*	R	R
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	K	T*	K	T	T	K*	K	-	-	K	-	K*	K	-	K	K*	K	K*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	T*	Y*	T*	Y*	Y*	Y*	Y*	Y*	T*	T	Y*
W*	W*	-	W*	W*	-	-	W*	W*	T	W	W	T	W*	T	W*	W	W*	W
-	R	-	R*	R*	A	NP	NP	D*	-	R*	-	-	-	R*	R*	R*	R*	R*
-	Y	Y*	Y	Y*	Y*	Y*	C	-	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y
Y*	Y	Y*	Y	Y	Y	Y*	Y	-	Y*	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP
C*	-	-	-	Y	Y	-	Y*	Y*	Y	-	-	-	Y*	Y	-	-	Y*	Y*
Y	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	S	S	-	-	S*	S	-	-	-	S*	S	S*	-	S*	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
NP	-	-	-	-	R*	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
NP	-	-	-	R	R	-	-	R	R*	-	-	-	-	R*	-	-	-	-
A*	A*	A*	R	R*	R*	A	A*	R*	-	NP	NP	NP	NP	NP	NP	NP	A*	R*
Y*	Y*	C	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y	Y	Y	C	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	R*	R*	R*	R*
S*	S*	-	S	S	S	S	S	S*	S	S	G	S	S	S*	S*	S*	S	S
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	R*	-	-	-	-	R*	A	-	-	-	R*	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-
-	Y*	-	-	-	-	-	Y*	-	-	Y	Y*	-	-	-	Y*	Y*	-	-
A	M	M*	M	M*	M	-	-	M*	M	-	M	H*	M	M	M	M*	M	M
-	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	-	-	Y*	Y*	-	-
NP	low_cov	S*	S*	NP	NP	NP	NP	C*	S*	low_cov	S*	C*	S*	S*	S*	S*	S*	S*
Y*	Y*	-	-	-	-	Y*	Y*	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	-
Y	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y*	Y	Y*	Y*	-	Y*	Y*
NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	M*	-	M*	-	-	-	M*	-
-	-	-	-	R	R	-	-	-	R*	-	-	-	R*	-	R	R*	R*	R*
NP	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
-	S*	-	S*	Y	Y	S*	-	-	-	-	-	-	N*	Y*	-	-	N*	B*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	Y*	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-
K*	K	K*	K	-	K	-	-	-	K*	K	K*	K*	K	K	K	K	K	K

-	Y	Y	Y	Y*	Y*	-	-	-	-	-	Y*	-	H*	Y*	Y*	Y*	Y*	Y*
Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	-	R*	R*	R*	D*
-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	-	-	-	R*	-
-	R*	-	-	R	R	-	-	-	-	-	R*	R*	R	-	R*	R*	R*	R
G*	K	K*	K*	G	K	K*	K*	G*	K	K	K*	K*	K	K	K	K	K	K
-	-	-	-	M	M	-	-	M	M*	-	M	M*	M*	M	M	M	M*	M
R*	-	R*	R*	R*	R*	R*	-	R*	R*	-	R*	R*	R*	R*	R*	R	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
S*	NP	NP	NP	-	-	-	-	-	-	S*	S*	S*	S*	S*	NP	NP	S*	S*
C*	Y*	Y*	Y*	Y*	Y	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y
Y*	Y	Y	Y	T	Y	Y*	Y*	Y*	Y*	Y	Y	T	Y	Y*	Y*	-	Y	Y
-	R	R	R	R	R	-	-	R*	-	-	A	R	R*	-	-	-	R*	R*
-	R	R	R	R*	R	R	R*	R	R	-	R*	-	R	R*	R	R	R*	R
NP	G*	G*	G*	NP	NP	NP	NP	G	R*	G*	G*	G*	G	-	NP	NP	R*	R*
T*	Y*	Y*	T*	-	Y	-	-	Y*	Y	Y*	-	-	Y	-	Y*	Y*	T*	Y*
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	R*
R*	R*	R*	R*	R*	R*	NP	NP	G	G	R*	G*	G*	R	-	G	R	G	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	S	S	S	S*	-	S*	-	-	-	S	G	S	S*	S*	S*
K*	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	V*	R*
Y	-	Y*	Y*	Y*	Y*	Y*	C	-	Y	Y*	Y	Y*	Y	Y	Y*	-	Y	Y
K*	K*	K*	K*	K	K	G*	K*	K*	K	-	K*	K*	K	G	K	K*	K	G
-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R	-	-	G	G	R*	R*	R*	R	R	R	R*	R	R
-	R	G	R	-	R*	R*	R*	-	-	G	R	R	R*	R	G	G	R*	R*
-	A	R	R	R*	R	-	-	-	R*	-	R*	R*	R	R*	R	R	R	R
-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	R	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*	R*	R*
R*	R	R	R	R*	R*	-	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R	R*
-	low_cov	-	-	-	-	-	-	R*	R	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	R*	A*	R	R*	R*	-	-	R*	R*	R*	R*	R*	R	R	R	R	R	R
S*	-	-	-	-	-	-	-	M*	M*	-	-	-	-	-	-	-	-	-
-	R	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
S*	-	S*	S*	S*	S*	-	-	-	-	-	S*	-	S*	S*	S*	S*	S*	S*
Y*	Y	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	-	Y*	Y*	H*	Y	Y*	Y*	H*	Y*
R*	R	R	R	R	R	R*	R*	R*	R*	R*	R	R	R	R	R	R*	R	R
NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	-	S*	S*	S*	-	-	-	V*	-	S*	S*	-	S*	NP	NP
V*	M*	M	M*	V*	M*	M*	M	M*	M*	M	M	M	N*	M*	M	M*	M	V*
K*	-	K*	-	K*	K*	K*	K	K*	-	-	K*	K*	K*	K*	K*	K*	K*	K*
-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
S	S	S*	S	S	S	S	S*	S*	S	S	S	S	S	S	S	S	S	S*

Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	-	H*	Y*	Y*	Y*	H*	H*
Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y
-	R*	R	R*	R*	R*	R*	R*	R*	-	R	R*	R*	R*	R*	R*	R*	R*	R*
M*	M*	H*	M*	M	H*	M	M*	M*	M*	-	M*	-	M*	M*	M*	-	M*	M*
-	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
-	R*	-	-	-	-	R*	-	-	-	-	R*	-	-	-	-	-	-	-
S*	S	S*	S*	S*	S	S*	S*	S*	S	S*	S*	-	S*	S*	-	-	-	-
-	-	-	R*	R*	R*	R*	R*	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*
-	M*	M*	M*	M*	M*	M*	M*	M*	M*	-	-	-	M*	M*	-	-	M*	M*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	H*	H*	H*	Y*	Y*	H*	H*
-	R	R	R	R*	R	R*	R	R*	R*	R*	R*	R	R*	R	R*	R*	R*	A
-	S	S	S	-	S*	S	S	S*	-	S*	-	S*	S	S*	S*	S*	S	S*
NP	R*	A*	R*	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	R*
NP	M*	-	M	NP	NP	M	M*	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	R*	R	R	-	-	R	R*	NP	NP	-	-	-	R	-	R*	-	R	R
-	R	R	R	-	-	-	-	-	-	-	-	R*	R*	-	R*	-	R	R*
-	Y	Y	Y	-	-	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	-	Y	Y*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*
-	Y*	Y*	Y*	Y*	-	C	-	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	H*	-	-	-	-	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	M*	-
NP	-	-	-	-	-	R	R*	R*	R*	R*	A*	A*	-	-	R*	R*	-	-
-	Y*	-	-	Y*	-	-	-	Y	Y	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	NP	NP
NP	-	-	-	-	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	-	-	-	-	-	-
-	Y*	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*	Y	Y*
R*	-	-	-	-	R	-	-	-	-	-	R*	-	R*	-	R*	R*	R*	R
R*	-	-	R*	R*	R	-	R*	A	R*	-	R*	-	R	R*	R	R	R	R*
-	-	-	S*	S	S	-	-	S*	S*	-	-	-	S*	S*	S	S*	S	S*
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	R*	-
K	G*	G*	G	G	K	G*	G*	G*	G	G*	G	G	K	K*	G*	G*	G	K
R	R	R	R	A	A	-	R*	A	R	-	R*	R*	R	R	R	R	R	A
-	R*	A	R*	-	-	R*	-	-	-	A*	R*	R*	R*	-	-	R*	R*	-
C*	Y	Y	C	Y*	Y*	-	-	Y*	Y*	-	Y*	Y*	Y	Y*	Y*	Y*	C	Y*
NP	S*	-	-	-	-	-	-	-	-	S*	S*	S*	-	-	-	-	-	-
Y	-	-	Y*	Y*	Y*	-	Y*	-	-	-	Y*	Y*	Y	Y	Y*	Y*	Y	Y
-	-	-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	C	Y*	Y	Y*	C	Y*	Y*	C*	C	Y*	Y	Y*	C*	C	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y	Y	-	-	Y	Y*	-	Y*	-	Y	Y*	Y*	Y*	Y	Y
-	R*	-	R*	-	-	-	-	-	-	R*	R	R*	R*	-	-	-	-	-
R*	R*	R*	R*	R*	G	R*	G	R*	R*	R*	G	G*	R	R*	R*	G	R	G
Y	Y*	C*	Y	Y*	Y	C*	C*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	C	Y	C
-	-	-	-	-	-	-	-	-	-	-	-	M*	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-
Y*	Y*	C*	C	C	Y*	NP	NP	Y*	C*	Y*	Y*	C*	NP	NP	NP	NP	NP	NP
-	R*	R	R	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-

-	-	-	R*	R	R	-	-	R*	R*	-	-	-	R*	-	R*	R	R*	R*
D*	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	-	W*
-	R	R*	R*	-	-	R	-	-	-	R*	R	R	R*	-	-	-	-	-
R*	-	-	R*	R*	R	-	-	R*	R*	R*	R*	R*	R	-	A	R	R	R
-	Y	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	-	Y	Y*
-	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	-	-	Y*	Y*	Y*
R*	R*	-	R*	-	-	R	R	R	R	-	R*	-	R*	R*	R*	R*	R*	R*
Y	Y	Y*	Y	Y*	Y	B*	-	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y
Y*	Y	Y	Y	T	Y*	-	Y*	Y*	T	-	Y*	Y*	Y	T	Y	Y	Y	Y
M*	-	-	M*	-	-	-	-	-	M*	-	M*	M*	M*	M*	M*	M*	M*	M*
Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y	Y*	Y*	Y*	Y	Y	-	H*	Y*	Y*	Y*	Y	Y*	H*	Y
-	-	-	Y*	-	-	-	T*	Y*	Y*	-	Y*	Y*	Y*	-	-	-	Y*	-
-	M	M	M	-	-	-	-	-	-	-	-	-	M*	-	M*	-	M*	M*
-	R*	R*	R	-	-	R	R	R*	R	R*	R	R	R	R	R	R	R	R
K	K	G	K	K*	G	K*	K*	K	K	K	K	K	K	K	K	K	K	K
-	Y	Y	Y*	-	-	-	-	-	-	-	Y*	-	H*	Y*	Y*	-	H*	Y*
-	-	-	-	-	-	-	-	-	-	-	K	K	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	Y*	-	-	-	-	Y*	-	-	Y*	-	-	-	Y*
T*	NP	NP	NP	NP	NP	Y	Y*	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	M*	-	-	Y*	-	-	-	-	M*	M*	M*	M*
W*	W	W*	W*	W*	W*	W	W*	W*	W*	W	W	A	W*	-	-	-	-	W*
Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y
K	K*	K*	K*	K*	K	K	K*	K*	K*	K	K	K	K*	K*	K*	-	K*	K*
K*	K	K	K	K	K	K	K	K*	K	K	K	K	K	K*	K	K*	K	K
R	R	R	R	R*	-	R*	-	-	-	-	R*	R*	R	R	R	R*	R	R*
R*	-	-	-	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	R*	-	-	-	-	R*	-	-	-	-	R*	R	R*	R	R*	R
-	-	-	-	-	-	-	-	-	-	M	M	M*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	S*	-	-	NP	NP	S*	S*	-	-	-	S*	-	S*	-	-	-
-	-	-	-	-	-	-	-	-	-	K*	-	-	K*	K*	-	-	-	K*
-	-	-	-	-	-	R*	R*	R*	R*	-	-	-	R*	R	-	-	-	-
Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	Y*	Y	Y	T
-	R	R	R	-	-	R	R	R*	-	R	R	R	R	R	R	R*	R	R*
-	Y*	Y*	Y	Y*	-	Y*	C	-	-	-	Y*	-	Y	-	Y	Y	Y	Y*
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
G	R	R	R	G	R	R	R*	R*	R*	R	R	R*	R	G	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	S	G	S	-	-	S*	S*	-	-	-	-	-	S	S*	-	-	S*	S*
-	Y	Y	Y	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
G	S*	S	S	G	G	S	S*	-	S*	G	G	G	S	S	S	S	S	S
Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	T	Y	Y*	Y	T
Y*	-	-	Y*	-	-	Y*	Y*	T*	Y	Y	low_cov	Y*	-	T	Y*	Y	-	Y*

-	R	R	R	-	-	R	R*	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
-	M	A	A	-	-	M	M*	-	Y*	-	-	M*	M*	M*	-	-	A	M*
Y*	M	M*	M*	-	-	-	-	-	-	-	M*	M*	M*	M*	M*	-	H*	M*
-	M	C*	M	-	-	M*	-	-	-	-	-	-	-	M*	M*	-	-	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	-	-	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	-	-	-	R	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y	Y*	Y*	NP	NP	NP	NP	NP	NP
T*	NP	NP	NP	K*	T*	NP	NP	K*	-	-	K*	-	K*	K*	NP	NP	K*	K*
A*	R	A*	R	A*	R*	R*	A*	R*	R*	R	R	A	R	A*	A	A*	R	R
NP	A	A*	A	A	A	A	A*	-	-	-	R*	-	A	A*	R*	R*	NP	NP
NP	NP	NP	NP	A*	A*	A*	A*	-	-	-	-	-	NP	NP	-	-	NP	NP
R*	R*	A*	A*	R*	A*	R*	A*	R*	-	R	R	A*	A*	A	R*	A*	R	A*
NP	C*	C*	C	C*	C*	C*	C*	Y*	-	Y*	Y	Y*	C*	C*	C*	C*	NP	NP
NP	-	-	-	-	-	-	R*	-	-	NP	NP	NP	-	-	-	-	-	-
T*	NP	NP	NP	T*	T	T*	T*	-	-	Y*	Y*	Y*	T*	T*	NP	NP	NP	NP
C	S*	S	N*	S*	S*	S*	S	S*	S*	S	S	S	N*	S	S	S*	S	S*
R*	R	A	R	R*	R*	R*	R*	-	R*	-	R*	R*	R	R	R*	R*	R	R*
T*	Y	T*	T*	T*	T*	Y	Y	Y*	-	Y	Y	T	NP	NP	Y	T	NP	NP
V*	R*	V*	G*	G	V*	G	R*	V*	-	R	R*	V*	G	G	R*	G*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	-
NP	Y	T*	T	T*	T*	T*	T*	-	Y*	Y*	Y*	Y*	T	T*	T	Y	T	Y*
K*	K	K*	K*	K*	K*	K*	K*	K*	K*	K	K	G	K*	K*	K*	K	D*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	T	Y*	Y*	Y*	T	Y*	Y*	-	-	NP	NP	NP	Y	T*	T*	T	T	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	NP	NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP
NP	G	G	S	S*	S	G*	G	S*	-	-	-	-	S*	G	G	S*	S*	S*
Y*	Y*	Y*	Y*	Y*	T	Y*	T*	-	-	Y*	T	Y*	T	T*	T	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	A*	A	-	-	NP	NP	NP	NP	NP	NP	NP	M*	A*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	H*	-	-	-	-	NP	NP	NP	NP	NP	NP
NP	T	T*	T*	T*	T*	T*	T*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	W*	-	-	-	-	-	W*	-	W*	-	-	-	-	-	-	H*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	R	R*	R*	A	R*	R*	R*	-	R*	R*	R	R*	A	A*	R*	A*	R	R*
R*	A*	A*	A*	A	R*	R*	R	-	-	R	R	R*	A	A*	R	A*	R	R
NP	NP	NP	NP	NP	NP	R*	G*	-	-	R*	low_cov	R*	NP	NP	NP	NP	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W	W*	W*	W*	W	T*	T*	T	T	W	W*	W*	W*	W	W*	-	-	T
S	S*	-	-	-	-	-	-	S*	S*	S	S	S	S*	-	-	-	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	-	-	-	-
-	-	-	-	-	-	C	S*	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	-	Y*	-	H*	M*	-	Y*	H*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	R	R	R*	R*	-	-	-	R*	-
Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	T*	-	Y*	Y*	Y*	-	-
-	-	-	K*	K*	-	-	-	R*	-	-	K*	-	K*	-	-	-	K*	-
-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	M*

-	-	-	-	-	-	-	-	-	-	-	-	R*	-	S	-	-	-	-
-	-	Y*	-	-	-	Y	Y*	-	-	-	M*	-	Y*	-	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	-	-	NP	NP	A	A	A*	NP	NP	-	-	NP	NP
NP	M	C*	M	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	R	R*	R	-	R*	-	-	-	-	-	R*	R*	R	R*	D*	R*	R	D*
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	K*	K*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	-	-	S*	-	B*	-	-	-	S*	S*	V*	N*	V*	V*	V*	N*	V*
R*	R	R	R	-	R*	R*	R	R*	R	-	R*	R*	R*	R*	R*	R*	R	R*
-	-	-	-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y*	Y	T*	T*	T	T*	T*	T	T	Y*	T	T	T	Y	Y
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y	Y	Y	Y*	C*	Y*	C*	C*	C	C	Y	C	Y	C*	Y	Y
Y*	Y	Y*	Y	-	Y*	Y	T	Y*	Y	Y	T	Y*	Y	-	Y*	T*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	M*	-	M*	M*	M*	-	-	M*
NP	-	-	-	-	-	R	R	-	-	-	-	-	R*	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-
M	M*	M*	M	M	M	M	M	M*	M*	M	M	M	M	M	M	M	M	M
-	-	-	-	-	-	R	R	-	-	-	-	R*	-	-	-	-	R*	R*
G*	R*	-	R*	-	-	G*	G*	NP	NP	NP	NP	NP	R*	-	NP	NP	NP	NP
S*	S*	-	S	S	S	S*	S*	S	S	S	G	S	S	S	S	S	S	S
W*	W*	W*	W*	-	W*	T	W*	W*	W*	W	W	T	W	W	W	W*	W	W*
Y	Y*	-	Y	Y	Y	Y*	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y
-	-	-	-	K	K	-	-	-	-	-	-	-	K*	-	K*	-	-	K*
G*	R*	R*	R	-	R*	R*	G	R*	R	R	G	R*	R	-	G	G	R	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	S	S	S	S*	S*	S*	-	-	-	S	S	S	S	S*	S
-	-	-	-	-	-	K	K	-	-	-	W*	-	K*	-	-	-	-	-
-	-	-	-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	K*
-	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	-	Y	Y	Y	Y	Y*	C	C*	Y	C	Y*	Y	C	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-	-	-
R*	-	-	-	-	M*	-	-	-	-	-	R*	R*	V*	R*	V*	R*	V*	V*
-	Y*	-	-	-	-	-	-	-	-	Y	Y	Y	Y*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	C*	C*	C*	C*	C*	NP	NP	NP	NP	C*	C*	C*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	S*	-	R*	-	-	-	R	R*	-	-
NP	-	-	-	-	-	R*	R*	A*	A*	R	R	A*	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	R*	A*	R*	-	R*	NP	NP	-	-	-	-	-	R*	-	R	A	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
-	Y	Y	Y	Y	Y	-	-	Y*	C	Y*	Y	Y	Y	Y	Y	C	Y	Y
-	-	-	-	R*	R	NP	NP	-	-	-	-	-	R*	-	-	-	R*	R*

Y*	C*	C	Y	Y*	Y	Y	C*	C	C	C	C	Y	Y	Y*	Y	Y	Y	Y
-	-	-	M*	M	M	-	-	M*	-	-	M*	-	M*	M	-	-	M*	-
-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
R*	-	-	-	R*	R	-	-	R*	R*	-	R*	R*	R*	R	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
Y*	-	-	Y*	K*	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
R*	R*	-	R*	-	-	A*	R	-	-	-	-	-	R*	-	R	R*	-	-
A*	R	-	-	-	-	NP	NP	-	-	-	-	-	-	-	R*	-	-	R*
W*	W	T*	W*	W*	W*	T*	W*	W*	T*	W	T	W	W*	W*	T*	T*	W*	W*
-	-	-	S*	S	S	S*	S*	-	S*	-	-	S*	S	S	S	S	V*	S
-	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	Y*	-	Y*	Y*	Y*	M*
-	-	-	-	-	-	R*	R*	-	-	-	-	-	V*	-	R*	R*	R*	-
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	R*	-	-	-	-	-	-	R*	R*	-	-	-	R*	-
-	-	-	-	R	R	R*	-	-	-	-	R*	-	R	R	R	R	R	R
-	-	-	-	-	-	-	-	K*	K	-	-	-	K*	-	K*	-	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	R*	-	-	R*	R*	R	R*	-	-	R	R*	R*	R*	R	R*	R*	R*	R*
-	M*	-	M*	M*	M	M	M*	R*	-	M	M	M	M*	M	M*	M*	M*	M*
NP	NP	NP	NP	C*	Y*	Y*	C*	C	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	A	A	A	R*	-	-	R*	A	R*	R*	-	R	A	R	A	R*	R*
-	R*	-	-	-	-	R	R*	R*	-	R*	R*	R*	-	-	R*	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	R	low_cov	-	NP	NP	R*	R*	NP	NP
-	-	-	R*	R	R	R	R*	-	R*	R	R	R	R*	R*	R*	R*	R*	R
Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y*
S*	S*	S*	S*	S*	S	S*	S*	S*	S*	S*	S*	S*	S*	S*	S	-	S*	S*
Y*	Y*	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	R	R	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	R*	-	-	R	R*	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	-	-	W*	-
-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y	-	-	-	Y*
-	low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	M*	M*	-	-	M*	M*	M*	M*	M*	M	M	M*	-	M*	-
-	R*	R	R*	R*	R	R*	R	-	-	R*	R	R*	R	R*	NP	NP	R*	R*
R*	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	S*	S	S	-	-	G	S*	-	-	-	-	-	S*	-	-	-	S*	-
Y*	Y*	Y	Y	Y	Y	Y	Y	-	Y*	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	R	R	D*	-	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*
Y*	Y*	Y	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-
-	-	-	-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	K*	K*
-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	Y*
T*	T*	T*	Y*	Y*	Y*	T*	T*	T*	T*	Y*	T*	T*	T*	T*	Y	Y	Y*	T*
NP	-	-	-	-	-	R	R*	NP	NP	R*	R*	R*	-	-	-	-	-	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	Y	Y	C	Y	-	Y*	-	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*

Y*	-	-	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	N*	Y	Y*	Y*	H*	H*
Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G	G*	G	NP	NP	NP	NP	S*	S*	S	S*	G	G	G*	S*	-	G	G
Y*	Y*	-	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	N*	B*	H*	Y	N*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	H*	Y*	-	-	-	H*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	S*	-	-	-	-	-	S*	S*	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	-	Y	-	Y*	Y*	H*	Y	Y*	H*	H*	H*
-	-	-	-	-	-	-	-	Y*	Y	-	Y*	-	-	-	-	-	-	-
K*	-	-	K*	K*	K*	-	K*	K*	-	-	K*	K*	D*	K*	K*	K*	D*	K*
-	R*	R*	R*	R*	R*	R	A	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	R	R	R*	R*	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y	H*	Y	H*	H*	Y	Y
NP	R*	R	R*	NP	NP	NP	NP	NP	NP	-	-	R*	-	-	NP	NP	NP	NP
R*	R	R	R	-	-	-	-	R*	-	R	R*	R*	R*	-	R*	-	R*	-
-	-	-	R*	R	R	R	R	-	-	R	R	R*	R*	R	R*	R*	R*	R*
-	-	-	-	R	R	R*	R*	-	R*	R*	R	R	R*	R	R*	-	R*	R
-	Y*	Y*	Y	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
Y*	NP	NP	NP	Y*	Y*	NP	NP	Y	C	Y*	-	-	Y*	-	NP	NP	NP	NP
-	-	-	-	Y*	-	Y	Y*	Y*	C	-	-	-	Y*	-	Y	Y	-	Y*
-	-	-	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	S*	S	S	S	S*	-	S*	S	S*	V*	V*	V*	V*	S*	V*	V*
R*	-	-	R*	R	R	R	R*	G	R	R*	R	R*	R	G	G	R*	R	R*
R*	-	-	-	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	G	R*	R*	R*
R	R	R	R	R*	R*	R*	R*	R*	R*	G	R	G	R*	R*	G	G	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	Y*	Y	Y*	C	C	Y	Y	Y	Y	Y*	Y	Y*	Y	Y*
R*	-	-	R*	-	-	A	R*	R*	A	low_cov	R*	R*	-	R*	R*	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	-	-	K*	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y*	Y	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	Y	Y*	-	-	T	-	-	-	Y*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	R*	R*	-	R*	R*	R*	R*
R	-	-	R*	R	R	R*	R*	R*	R	-	D*	R*	D*	D*	R	D*	N*	N*
-	-	-	-	R*	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	Y*	Y	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	-	-	S*	S	-	-	-	-	-	-	-	-	-
N*	-	S*	B*	B*	Y*	S	S	Y*	Y*	-	N*	S*	N*	S*	B*	B*	N*	N*
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	A	M	-	A	-	-	-	M*

M	-	-	M*	M	M	-	M*	M*	M	-	M*	-	M	-	M	M	M	M*
-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y	Y	-	-
R*	-	-	-	-	R*	-	-	-	-	-	R*	-	R*	R*	R*	R	R*	R*
-	-	-	-	-	-	M	M*	-	-	-	-	-	-	-	-	-	-	M*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	R*	-	-	G	R	R	R*	R*	-	R	R	-	R	R*	G	R	R	R
-	-	-	M*	Y	Y	-	-	-	-	-	-	-	H*	H*	Y*	H*	Y*	Y*
R*	-	-	R*	R	R	-	-	R	R*	-	R*	-	R*	R*	R	R*	R*	R*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	Y*
NP	M	C*	M*	C*	C*	NP	NP	-	-	NP	NP	NP	C*	C*	NP	NP	NP	NP
-	-	-	H*	-	-	-	-	-	-	-	-	-	H*	-	-	Y*	Y*	H*
Y*	Y	Y*	Y	Y	Y*	Y*	Y	Y*	Y	Y*	Y	Y*	Y	Y	Y	C	Y	Y
-	-	-	-	-	-	M*	M*	-	-	-	-	Y*	M*	M*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	-	M*	-	-	M*	M*	-	-	-	-	-	-
B*	-	K*	N*	K*	N*	K	D*	B*	N*	-	K*	K*	N*	K*	K*	D*	N*	N*
-	Y*	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y	-	Y*	-	Y*	-	-
-	-	-	-	R*	-	R	R*	-	-	-	-	-	R*	R*	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	-	Y*	-	Y*	Y	Y	Y*	H*	Y*	Y*	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	-	-	-	R*	-	-	-	-	R	-	-	-	-	-	-	-	-	-
-	R*	-	R*	R*	R*	-	-	R	R	R*	R	R	R*	R*	R*	R*	R*	R*
-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	K*	K*	-	-	-	-	K*	K*	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	Y*	-	NP	NP	NP	NP	NP	NP
Y*	-	-	-	Y*	Y	Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	low_cov	C	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	R*	-	R*	A	A	-	-	-	-	-	-	-	R*	-	NP	NP	NP	NP
R*	-	-	-	-	-	-	-	-	-	A	R*	A*	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	-	-	-	R*	-
R	-	-	-	R	G*	-	-	R*	-	-	-	R*	R*	-	NP	NP	NP	NP
-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R	G*	R*	G*	G	R	R*	R*	R*	R	G*	G	R	R*	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	Y	-	-	-	Y*
Y*	Y	Y	Y*	Y*	Y	-	-	-	Y	-	Y*	-	Y	Y	Y	Y*	Y*	Y
-	M*	M	M	-	M	-	-	M*	M*	-	-	M*	M*	M	M	M*	M*	M*
S*	S	S*	S*	S	S	-	-	S*	S*	S*	S*	-	S	S	S*	S*	S	S
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
R*	-	-	-	-	R*	-	-	-	-	-	-	R*	R*	-	-	R*	R*	R*

R	-	-	R*	-	-	R	R	R	R	R	R	R*	R*	R*	R	R*	R*	R*
-	R*	-	V*	-	-	-	-	-	-	-	-	R*	R*	-	V*	V*	R*	-
M*	M*	-	-	-	-	-	-	M*	M	M*	M*	M	-	M*	M*	M*	-	M*
C	low_cov	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	NP	NP	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	R	R*	R	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	-	R*	R	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	Y*	-	-	-	-	Y*	-	-	-	M*	Y*
-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R	-	-	R*	R*
-	-	-	-	-	-	-	R*	-	-	-	-	-	R*	R*	R*	-	R*	-
-	-	-	-	-	H*	-	-	-	M*	-	-	-	-	-	S	S*	-	-
C	-	-	-	-	-	-	-	C*	C	C	C	Y*	-	Y*	Y*	Y*	-	Y*
-	S*	-	-	-	-	-	-	-	-	S	S*	S*	-	-	-	-	-	-
-	-	-	W*	-	-	-	-	-	-	R	R	R	R*	-	-	-	R*	-
-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	Y*	-
NP	-	-	-	NP	NP	-	-	M*	C*	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	Y*	-	-	-	Y*	-	Y	Y*	Y*	-	-	-	-	-	-
-	-	-	D*	-	R*	-	-	R*	R*	-	-	-	R*	-	R*	D*	-	-
-	-	-	-	-	-	-	-	-	-	S	S	S	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y*	Y*	T	Y*	-	Y*	-	T	Y*	Y*	-
Y*	-	-	Y*	-	-	-	Y*	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	M*	M	M	-	-	-	-	-	-
W*	W*	-	-	-	-	-	-	W	W	W	W	W*	W*	W*	W	W*	W*	-
R*	R*	M*	-	-	-	R	R*	R*	R	R*	R	R*	-	R*	R*	R*	-	R*
-	-	-	-	-	K*	-	-	-	-	-	-	-	-	R*	-	-	-	-
M*	-	-	M*	-	M*	-	M*	M*	-	-	M*	M*	M*	M*	M*	M*	M*	M*
R*	R*	-	-	-	-	-	R*	-	-	R	R	R	R*	R	R*	-	-	R*
NP	Y*	Y*	Y*	Y	Y*	-	-	Y*	Y*	-	Y*	-	Y*	-	NP	NP	Y*	Y*
-	-	-	-	-	-	NP	NP	-	-	-	low_cov	-	NP	NP	-	-	-	-
-	S	G*	S	G	G	S	S*	S	S*	-	S*	-	S*	S*	S*	S*	NP	NP
-	W	W	W	-	W*	-	-	-	-	-	W*	W*	W*	W*	W*	W*	W*	W*
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y*	Y	N*	N*	Y*	Y*	Y*	Y*	Y*	Y*	Y	N*	Y	N*	H*	N*	H*	N*	H*
-	-	-	W*	-	W*	-	-	W*	W*	-	W*	W*	W*	W*	W*	W*	W*	W*
R*	R*	-	R*	R	R	R	R*	R	R	-	R*	R*	R	R*	R	R*	R*	R
R*	-	-	-	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	R*	R*	R*	-	-	-	R*	-	R*	-	R*	R*	-	-	R*	R*
R	-	-	R*	R	R	R	R	R*	R	R*	R*	R*	R	R*	R*	R*	R	R
-	-	-	-	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*
NP	G*	G*	R*	G*	R*	NP	NP	R*	G*	NP	NP	NP	NP	NP	R*	G*	G	G*
-	Y*	-	Y*	-	-	-	-	Y*	-	-	Y*	-	H*	-	Y*	M*	H*	Y*

-	G	S*	G	S	S*	-	-	-	-	-	S*	S*	S	-	S	S*	G	S*
-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	-	R*	R*	-	-	-	R*	-	-	-	R*	R*	R*	R*	-	R*
Y*	Y	T*	Y	-	-	-	-	-	-	Y*	Y*	Y	Y	Y*	Y	Y*	Y	Y*
S*	-	-	S*	-	-	-	-	S*	S*	-	S*	-	N*	S*	S*	S*	N*	S*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y*	Y*	Y*	Y*	-	-	Y	Y*	Y*	-	-	-	-	-	-
A*	-	-	-	A*	W*	W	W	A*	A*	-	-	-	W*	W	A	A*	W*	A*
-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	-
M*	M*	-	M	C	M	M	M	M*	C*	M	M	M	M	M	M	C	M	M
NP	R	R*	-	NP	NP	R*	-	NP	NP	R	R*	R*	-	-	R*	-	-	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	low_cov	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	-	Y*
-	M*	M*	-	-	-	NP	NP	-	-	M	M*	A*	-	M*	-	-	NP	NP
K*	NP	NP	NP	G	K*	G*	G	G*	K	K	G	G*	G*	G*	K	G*	G	G
-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-
Y*	C	C	C	Y*	Y	Y*	Y*	-	Y*	-	-	-	Y	C	Y*	Y	C	Y
Y*	C*	Y*	C*	Y*	C	-	-	Y*	-	-	-	-	C*	Y*	Y*	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	Y*	-	-	-
Y*	low_cov	Y*	Y*	C	C*	NP	NP	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	Y	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	T	K*	K	K*	K	-	-	K	K	K*	K*	-	K*	T*	T	T	T*	T
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
NP	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	C	C*	Y*	NP	NP	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
Y*	Y*	Y	Y*	Y*	Y	-	Y*	Y*	Y*	Y*	H*	H*	H*	H*	H*	H*	H*	H*
-	S	S*	S	-	-	-	-	-	-	-	-	-	S*	S*	-	-	S*	S*
-	S*	S	S	-	-	-	-	-	-	-	-	-	S*	-	-	-	S*	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	K*	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	K*	K	-	-	-	-	-	-	-	K*	K*
-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	M*	M	-	-	-	M*
-	Y*	Y	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	-	-	-	Y*	Y*
Y*	Y*	C	C	Y*	Y*	Y*	Y*	-	Y	Y*	C	C	Y*	Y*	Y*	Y*	Y*	H*
-	-	-	-	-	-	M	M*	-	-	-	-	-	M*	-	-	-	M*	M*
-	-	-	-	W	W	-	-	-	-	-	-	-	W*	W*	-	W*	W*	W*
R	R	R	R	R*	R*	R	R	R*	R	R*	R	R	R	R	R	R	R	R
-	-	-	Y*	Y*	-	Y	Y	Y*	-	-	Y*	Y*	H*	Y	-	-	Y*	Y*
S*	-	-	-	-	-	S	S	-	-	-	S*	-	S*	S*	-	-	S*	-
Y*	-	-	Y*	-	Y*	-	-	Y*	Y*	-	Y*	-	Y*	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	K*	-	-	-	K*	K*	K	K*	K*	K*	K*	K*	K	K	K*	K*

S*	S	S*	S	S	S	S	S*	C*	S*	S	S*	C	S	S	S	C	S	C
-	R*	R*	R*	-	-	-	-	R*	-	R*	R*	R*	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y	Y	Y*	Y*	Y*
R*	R	R*	R*	-	-	-	-	-	-	R*	R	R	R*	R*	R*	R	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	S	G	S	S*	S	S*	V*	N*	M*	-	S*	M*	S	H*	V*	V*	S	N*
-	-	-	-	-	-	R	R	R	R	-	-	-	R*	-	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	Y*	Y*	-	-	-	-	-	low_cov	-	-	Y*	Y*	Y*	Y*	Y*	Y*
R*	G	G	G	R	R	-	-	R*	-	R*	R*	-	R	G	R*	R*	R	R*
-	R	R	R	R*	R	NP	NP	R*	-	G*	R	G*	R*	-	R*	-	R*	G*
NP	NP	NP	NP	R	R*	R*	R*	-	-	A	R*	R*	R*	R*	R*	R*	R	R*
-	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	R*	-	-	NP	NP
M*	M*	M*	M	M*	M*	M*	C*	M*	C	C*	C	C*	M	C	M*	C*	M	C
-	-	-	Y*	Y*	-	-	Y*	Y*	-	-	-	-	Y*	-	-	-	Y*	-
NP	W*	-	W*	W*	-	W*	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	R	R	R*	R	R	R*	-	-	-	-	R*	-	R*	R	R*	R	R*	R*
Y*	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
NP	R*	R*	R*	-	-	R*	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R*	A	R*	R*	-	-	-	-	-	-
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	R	R*	R*	R*	-	-	-	-	-	R*	R*	R	R	-	R*	R*	R*
-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	-	Y*	Y	Y*	Y*
R*	R	R*	R*	-	-	-	R*	R*	R*	-	-	-	R*	-	R*	-	R*	R*
NP	M*	-	M*	-	-	-	-	M*	M*	-	M*	-	M*	-	-	-	M*	M*
R*	R	R	R*	-	R*	-	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	W*	-	-	-	-	NP	NP
R*	R*	R*	R	-	-	-	-	A	R*	-	R*	R*	R*	R*	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	W*	W*	W*	-	-	-	-	W*	W*	W*	W*	-	-	W*	-	-	W*	-
NP	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	Y*	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R	R*	-	R*	R*	R*	R*	-	R*
NP	NP	NP	NP	NP	NP	-	-	-	R*	NP	NP	NP	NP	NP	-	-	NP	NP
-	S*	S*	S	S	S	-	-	-	-	-	-	-	S*	S*	S*	-	S*	S
Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	Y	Y	Y	-	-	-	-	Y*	Y*	-	-	-	-	-	Y*	-	Y*	-
Y*	Y*	Y	Y*	-	-	-	-	Y*	-	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
A*	A	A*	R*	R*	R	R	R	A	A*	R	A	R	R	A*	A	A	R	A
G*	R	G	-	-	R	-	-	R*	-	-	-	-	R*	G	R*	-	R*	R*
W*	T*	T*	T	W	W	W	W	T*	T*	W	W	W	W	W	W	W	W	W*
T*	Y*	Y	Y	Y	Y	T*	T*	T*	T	T*	T	T*	Y	Y*	Y	Y	Y	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
M	M	M*	M	C	M	M	M*	M*	M*	-	M*	M*	M	M	M	M*	M	M
R*	R	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	R*	R	-	R*	R*	R	R*

R*	R	R	R	A*	A*	NP	NP	A	R*	-	-	-	R	-	R*	R*	R	R*
R	R*	R*	G	R	G	R	G	G	R	-	-	-	R	R*	R	R*	R	R
-	Y	Y	Y	-	Y*	-	-	Y*	Y	-	-	Y*	Y*	-	-	Y*	Y	Y*
-	-	-	-	NP	NP	K*	K*	-	-	-	-	-	-	-	NP	NP	NP	NP
Y*	Y*	Y*	Y*	T	T	Y*	Y*	-	-	-	-	-	Y	-	-	Y*	Y	Y
-	R*	G	R*	G*	R*	NP	NP	-	R*	-	-	-	R*	-	R*	-	NP	NP
-	Y	Y	Y	-	Y	-	-	Y*	Y*	-	-	Y*	Y	Y*	Y*	Y*	Y	Y*
NP	Y*	T*	T*	NP	NP	Y*	Y*	T*	T*	T*	T*	T*	NP	NP	Y*	-	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-
R*	-	-	R*	R*	R	-	R*	R	R*	-	R*	R*	R*	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	A*	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	-	-	-	-	Y*	-
Y*	-	-	-	-	Y*	-	-	Y*	-	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	R*	-	NP	NP	A*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	NP	NP
A	R*	R*	R*	R*	R	-	R*	A	A	R	R*	R	R	R	R	R	R	R
M*	M*	N*	N*	M*	N*	V*	V*	V*	N*	M*	H*	N*	N*	H*	N*	N*	N*	N*
NP	-	-	-	-	-	G*	G*	R*	R*	R*	R	R*	-	R	R*	R*	-	-
Y*	C*	C*	Y*	Y*	Y*	Y*	C*	Y*	Y*	C*	C*	Y*	Y*	Y*	Y*	C*	Y*	Y*
G	R*	R	R	R	R	R*	R*	R	R	R	R	R	R	R	R	R	R	R
NP	-	R*	V*	R*	-	-	-	-	-	-	R*	-	R*	-	-	R*	V*	R*
Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
K*	K*	D*	K*	K*	D*	K*	T*	K*	K*	K*	K*	T*	D*	K*	D*	K*	K*	D*
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	Y*	-	-	Y	Y	-	-	-	-	Y	Y*	Y*	Y	Y*	Y*	-	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	***NP***	***NP***	***NP***	***Y****	**-**	***Y****	***Y****	***NP***	***NP***	**-**	**-**	**-**	**-**	**-**	***Y****	**-**	***NP***	***NP***
R*	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***R****	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Y*	***Y****	***Y****	***Y****	***Y****	***B****	***Y****	***Y****	**-**	**-**	**-**	**-**	**-**	***Y****	**-**	***Y****	***Y****	***Y****	**-**
NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	Y*	low_cov	-	NP	NP	-	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	K	-	K*	K	K*	K*	-	-	K*	-	K*	K*	K*	K*	K	K*
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP
Y*	C*	C*	C	Y	Y	Y*	C*	Y*	Y*	C*	C	C*	C	C*	C*	C*	C	C*
K*	T*	K*	T	K	K	T	T*	-	-	K*	K*	T*	K	K*	-	K*	T	K*
-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y	Y*
Y*	Y*	Y*	Y	C	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y	C	Y*	Y*	C	Y*
-	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	-	-	-	-	Y	-	Y*

R	-	-	-	R	R	-	-	R*	R	A	A	R*	R	A	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	-	-
R*	R	R	R	R	R	R	R	R	R*	R*	R	R*	R	R	R	R	R	R*
-	M*	M	M	-	-	-	-	M*	-	-	-	-	M*	-	-	M*	M	M*
R	R	R	R	R*	R*	R*	R*	R*	R	R	R	R	R	R	R	R	R	R
-	-	-	-	-	R*	-	-	R*	R	-	-	-	-	R	-	-	-	-
-	-	-	M*	-	M	-	-	Y*	-	-	-	-	M*	M*	-	M*	M*	M*
-	-	-	-	-	Y*	-	-	Y	Y*	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	R	R*	-	-	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	Y*
NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	NP	NP	Y*	Y*	Y*	-
G*	low_cov	R	R	-	-	-	-	R*	R*	low_cov	R*	R*	R	-	NP	NP	R	R*
R*	R	R*	R	-	-	-	-	-	-	-	-	-	R*	-	R	R*	R*	R*
-	low_cov	C*	C	Y*	Y*	NP	NP	C	C	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
Y*	Y	Y*	Y*	Y*	H*	C	Y	Y	Y*	Y	H*	Y	H*	H*	N*	H*	H*	H*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
M*	-	-	-	M	M	-	-	-	-	-	-	-	M*	M*	M*	-	-	M*
-	-	-	-	A	R*	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
R*	R*	A*	A	A	A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	C	Y*	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP
R*	G	R*	R*	R	R	G	G	R*	-	NP	NP	NP	R	R*	G	R	R	R
-	-	-	R*	A	R	NP	NP	R*	-	R	A	A	R	-	NP	NP	R*	R*
-	low_cov	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-
-	-	-	W*	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	S	S*	G*	S*	S*	S*	-	S*	B*	S*	-	S*	S*	S*	S*
M*	-	-	M*	M*	Y*	-	-	-	M*	-	M*	-	H*	-	H*	M*	M*	H*
-	R*	-	-	-	-	-	-	-	-	R*	-	-	R*	-	-	-	R*	R*
-	-	-	-	Y	Y	T*	Y	Y*	Y	-	Y*	-	Y*	-	Y	Y	Y*	Y
-	Y	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
M*	M*	M*	M*	M*	M*	M	M*	M*	M*	M*	M	A	M*	M*	M*	M*	M*	M
-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y	Y
Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	T*	T	T	Y	Y	Y*	Y	Y	Y
Y*	T*	T*	Y*	T*	Y*	Y*	Y*	T	T*	T*	Y*	T*	Y	Y*	T	T*	Y	Y
-	Y*	-	-	-	-	-	-	-	M*	Y	Y*	Y	-	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	S	S	S	-	-	-	-	-	-
NP	NP	NP	NP	M*	A*	A*	A*	M*	A*	M	M*	M*	M*	M*	M*	A*	M*	M*
R*	R*	-	-	R	R	-	-	R*	R	R	R	R	R	R	R*	R*	R	R
V*	S*	S*	S	S*	C	V*	S*	B*	V*	S*	S*	S*	V*	V*	V*	-	V*	C
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
-	-	-	-	C	Y*	-	-	Y*	Y	C	C	Y*	Y*	Y*	-	-	Y*	Y*
NP	R*	R*	R*	R*	R*	R*	R*	R*	R*	R	R*	R	R*	R*	R*	A*	R*	R*
R*	R	R*	R*	R*	R	R*	-	A*	A	R	R	R*	R	R*	R	R	R	R*
M	M	C	M	M	M	M	M*	M*	M*	M	M	M	M	M	M	M	M	M
S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	G*	S	S	S*	S*	V*	V*
K*	K*	K*	K*	-	S*	NP	NP	NP	NP	-	K*	R*	N*	K*	B*	B*	K*	-
R*	R*	R*	R*	R*	R*	R*	V*	R*	R*	R*	R*	R*	R*	R*	R*	A*	R*	R*
-	-	-	-	-	-	Y*	Y*	Y*	T	low_cov	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	C*	Y	Y	C*	Y*	-	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y*

-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	R	R	R	R*	-	-	-	R*	-
Y*	Y	C	Y	C	Y	Y	C	Y*	-	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y
Y*	Y	C	C	Y	Y	Y	C*	Y*	Y*	Y	Y	C	Y	-	Y*	Y*	Y	Y
NP	R	-	R*	-	R	-	-	R*	R*	-	R*	R*	-	R*	R	G	-	-
S*	-	-	S*	-	S*	S	S*	S	S*	-	S*	S*	V*	S*	S*	S*	V*	S*
W*	W*	W*	W*	W*	W*	W*	T*	W*	W*	W*	W*	W*	W*	W	W*	W*	W*	W*
K*	K	K	K	K	K	K	K*	K*	-	K	K	K	K	K*	K	K*	K	K
M*	M*	-	-	-	M*	-	-	M*	M*	M*	M*	-	-	-	NP	NP	M*	M*
NP	W	T	W	T	W	W	T	-	-	W	W	W*	W*	-	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C	Y*	C*	C*	C*	C*
-	R*	R	R	S*	-	S*	S*	-	N*	R*	R	R*	R	-	R*	-	R	R
-	-	-	-	Y*	-	-	-	-	-	-	-	M*	M*	-	-	-	-	-
-	M*	M*	M	M*	M*	-	M*	M*	M*	M*	M*	M*	M*	-	M*	M*	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y
R*	R*	R*	R*	-	-	-	-	-	-	R*	R*	R*	R*	-	-	-	R*	R*
-	-	R	R	-	-	-	-	-	-	R*	R	R*	R*	R*	-	R*	R*	R*
-	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	R	G	R	R	R*	R*	G	R
R*	R	R	A	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	low_cov	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
-	W*	W*	W*	W*	W*	W	W*	W*	W*	W*	W*	W*	W	W	W*	W*	W	W*
-	-	-	Y*	-	M*	-	-	-	-	-	-	-	Y*	-	-	-	M*	-
-	low_cov	Y	Y*	Y*	Y*	Y*	Y*	-	Y*	-	-	-	NP	NP	Y*	Y*	Y*	-
-	-	K*	K*	K*	K*	K*	K*	-	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
Y*	-	M*	H*	M*	-	Y	Y*	-	M*	-	-	H*	Y*	Y*	Y*	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
-	-	-	K*	-	-	Y	Y*	W*	-	-	-	-	N*	W*	-	N*	N*	B*
W*	W*	W	W*	W	W	-	W*	-	W*	W	W	W	W	W	W*	-	W	W
-	-	R*	R*	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	W*	W*	W*	W*	W*	-	-	W*	W*
K*	-	-	-	-	-	-	K*	-	-	K*	K*	K*	K*	-	-	-	-	-
R	R	R*	R*	R	R*	R	D*	R*	R*	R	R	R*	R*	R	R	R*	R*	R*
-	M*	M	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
NP	C*	C*	C	C	C	C*	C*	-	-	C	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R	R*	R*	R*	R	R	R*	-	R*	-	R	R	R*	R	R	R*	R*	R	R
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y	Y	-	Y*	-	-	Y*	-	-	-	Y*	Y	Y*	Y	Y	Y	Y*
-	Y	Y*	Y	-	-	Y	Y	T	T*	-	-	-	Y*	Y	Y*	-	Y	Y*
-	-	-	-	-	-	-	-	-	-	R	R	R	-	-	-	-	-	-
R*	NP	NP	NP	-	-	R	R*	A*	A*	NP	NP	NP	R*	R*	R*	R*	NP	NP
-	-	-	-	Y*	Y*	-	-	-	-	T	T	T	-	-	-	-	-	Y*
R*	A	R	R	R*	R*	-	-	R*	-	A	A	R*	R	R*	A	R*	R	R*
NP	Y*	-	-	Y*	C	-	-	Y*	-	Y*	C	Y*	Y*	Y*	NP	NP	NP	NP
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	K	K	K*	-	-
-	R	R*	R	-	-	A	A	R	R*	-	-	-	R	-	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	K	K*	K*	-	-	-	-	-	-

-	-	-	S*	-	-	-	-	-	Y*	-	-	-	S*	-	-	-	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	low_cov	K*	K*	NP	NP	NP	NP	-	K*	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	Y	Y	Y	Y	Y	T	-	-	T	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R	R	-	-	R*	R	R	R	R*	R*	R*	R*	-	R*	R*
-	R	R	R	W*	-	W*	-	R*	R	-	R*	R*	D*	-	R*	R*	R	R*
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*
G*	G*	R*	R*	R*	R*	R*	R*	R*	R*	G*	G*	G*	G*	G*	R*	G*	G*	G*
-	M	M	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	C	Y*	Y*	C	C*	C*	C*	C*	C*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	C*	C*	C*	C*	NP	NP	Y	Y*	Y*	C*	C*	C*	C	C*	C*
C*	NP	NP	NP	NP	NP	C*	C*	C	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*
R*	G*	G*	G*	G*	R*	NP	NP	G*	R*	NP	NP	NP	G	G*	NP	NP	NP	NP
-	R	R*	R	-	-	-	-	R*	R	-	-	-	-	-	R	R	-	-
G	R	R	R	-	-	R	R	R	R*	R	R	R	R	R	R*	R*	R	R
C*	Y	Y*	C*	Y	Y	C*	C	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	M	-	M*	-	-	-	-	M*	M	-	-	-	-	-	M	M*	M*	-
A	R	R	R	R	R	R*	A	R*	-	R*	R	R	R	R	R*	-	R*	R
NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	S*	S*	S*	NP	NP	NP	NP
-	S	S	S	-	-	-	-	S*	S*	-	-	-	S*	-	S	S	S*	-
Y*	Y*	Y	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	-	Y	Y*	-	-
R*	R*	G*	R*	R*	R*	R*	G*	R*	R*	R	R*	G	R*	R*	R*	R*	R	R
S*	S	S	S	-	S*	B*	S*	S*	S	-	S*	S*	S*	S*	S	S	S*	S*
-	Y	Y*	Y*	-	-	-	-	-	Y*	-	Y*	-	-	-	Y	Y	-	-
-	-	-	-	Y	Y	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	R	R*	-	-	-	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*
R*	R*	-	R	R*	R*	R*	-	R*	A	R	R	R*	R*	-	R*	R*	R	R*
-	-	-	-	R	R	-	-	-	-	-	R*	R*	R	R*	R*	R*	R*	R
T*	Y	T*	T*	NP	NP	T*	T*	NP	NP	Y	Y*	Y*	T	T*	T*	Y*	T	T*
-	R*	R	R	R	R	W*	-	-	-	M*	-	-	R*	-	-	-	R*	R*
-	-	-	-	S	S	-	-	Y*	-	-	S*	-	S*	-	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	M*	-	Y*	-	-	-	-	-	Y	H*	Y*	M*	-	M*	-	-	M*
Y*	-	-	-	-	Y*	-	-	Y*	Y	Y*	H*	Y*	H*	Y	Y*	-	Y*	-
-	R	R	R	R*	-	R*	R	R	R*	A*	A	A	R*	R*	A	R*	R*	R
-	-	-	-	-	-	S*	-	-	-	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	Y*	-	Y*	-	-	-	-	-	Y*	M*	-	Y*	Y*	-	Y*	M*
-	R	R	R*	-	-	-	-	R*	R*	R*	-	R*	R*	-	R*	-	R*	R*
Y*	Y*	Y*	Y*	-	-	Y	Y*	Y	Y	C	Y	Y	Y*	Y	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	R*	-	-	-
-	-	-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y	Y	Y	Y*	T	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y
-	-	-	K*	K	K	-	-	-	R*	K	D*	K	D*	D*	D*	D*	D*	D*
R*	R	R*	R	R*	R*	R*	-	-	-	R*	R*	R*	R*	R	R	R*	R*	R*
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*
Y*	Y*	-	Y	Y*	Y*	Y*	C*	Y	C*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y
-	-	-	-	R*	R	R	R	-	-	-	R*	-	R*	R*	R*	-	R*	R*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	-	M*	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-
-	-	-	-	K	K	-	-	-	-	-	K*	-	K	K*	K*	K*	K*	K
-	M*	-	M*	C	M	M	M*	-	-	M	M	M*	M	M	M*	-	M*	M*
-	S*	-	-	-	-	-	-	-	Y*	Y*	M*	M*	-	-	-	-	-	Y*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	R*	R*	R*
-	R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	S	S	S*	-	-	-	-	-	-	-	-	S*	S*	S*	S*	-	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S	S	-	S*	-	-	S*	C*	-	-	-	S	S	S	C	S	S*
T*	Y	T	Y*	-	Y*	-	-	Y*	Y*	-	-	-	-	Y*	T	Y*	Y*	Y*
A*	R	R	R	R*	R	-	-	R*	A	R*	R*	R*	R	R	R	R	R	R
-	R	R*	R	-	R*	R	R*	R*	-	R	R	R*	R	-	R	R*	R	R
H*	C	M*	M	M*	C	C	M*	H*	C	M	M	M	M	M*	M*	M*	M	M
R*	-	-	-	-	-	R	R*	-	-	-	-	-	R*	R	-	-	-	-
Y*	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y*
-	R	R*	R*	NP	NP	-	-	R	-	-	-	-	NP	NP	R*	-	R*	-
-	Y*	Y*	Y*	-	-	C	-	Y	Y*	-	Y*	-	Y*	Y*	-	-	-	Y*
S*	S	S	S	S*	S*	-	S*	S*	-	S	S	S*	S	S	S*	S	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	Y	Y	-	-	-	-	-	Y*	Y	-	Y*	-	-
A*	A*	A*	A	-	-	R*	R*	R*	R*	R*	R*	R*	NP	NP	R*	R*	NP	NP
-	low_cov	-	-	T*	Y*	-	-	NP	NP	low_cov	-	-	Y	-	Y*	Y	NP	NP
-	-	-	-	Y	T	-	-	Y*	Y	-	-	-	Y*	-	Y*	-	-	Y*
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	R*	-	-	-	-
Y*	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	R*	R*	R*	-	R*	-	-	R	R	R*	R*	R*	R*	-	R*	R*
S*	-	-	S*	-	-	-	-	-	-	-	S*	S*	S*	S*	S*	S*	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	-	-	NP	NP	A*	A*	NP	NP	W*	W	W*	W*	W*	-	-	NP	NP
-	K	-	K	T	K*	K	T*	T*	K	K	K	K	K	K	K*	-	K	K
NP	low_cov	A*	A	A*	A*	NP	NP	R*	R*	low_cov	A*	A*	NP	NP	R*	R*	NP	NP
K*	K*	-	K*	K*	K*	K*	-	K*	-	K	K	K	D*	K*	K*	K*	K*	K*
R*	R*	R*	R	NP	NP	-	-	-	R*	-	R*	R*	R*	R*	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	C	S*	C	S*	S	C	C	C*	S*	C*	C	C*	S*	C*	NP	NP	S*	S
-	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y	-	-	Y*	-
-	-	-	-	S*	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*
R*	R	R	R	R*	-	-	R*	R*	R*	R	R*	R*	R*	R*	R	R	R*	R*
D*	R*	-	K*	R	R	R	R*	K*	D*	-	D*	D*	R*	R	D*	D*	R*	R*
-	Y*	-	-	-	-	-	-	-	Y*	Y	N*	Y*	M*	-	-	M*	M*	-
Y*	-	-	-	Y	Y	Y	Y	Y*	Y*	-	Y*	-	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	-	S*	S*	S	S*	-	-	-	-	-	S*	S*	-	-	S*	S*
-	-	-	-	-	-	-	-	K*	K	-	K*	K*	-	K*	-	K*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	T*	T	Y	Y	T*	T*	T*	T*	Y*	T*	T*	Y	T*	Y	Y*	Y	T

A	A*	A*	R	R*	R*	R*	A	A*	A*	A*	A*	R*	R	A*	A*	A*	R	A*
C*	C*	C*	C	S*	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	T*	T*	Y	Y*	Y*	T	Y	T*	Y	low_cov	T*	T*	Y*	Y*	T	T	Y*	Y*
Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*	low_cov	Y*	Y*	Y*	Y*	NP	NP	NP	NP
Y*	Y*	Y	Y	Y	Y	Y	T	Y*	Y*	Y*	Y	T	Y	Y	Y	Y	Y	Y
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	S*	-	-	-	-	-	R*	R	R*	R*	R	-	-	-	-
-	-	-	Y*	-	-	-	-	-	Y*	-	Y*	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R*	R*	-	-	-	-	-	-	R*	-	R*	R*	-	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	Y*	Y	Y*	Y	-	-	Y*	-	Y	Y	Y*	Y	-	Y*	-	Y*	Y*
-	K	K	K	K	K	-	-	-	-	K	K	K*	K	-	K*	K*	K	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	-	-	R*	-	-	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	S*	S	S*	-	-	-	-	-	S*	-
S*	-	-	S*	-	-	S*	G	-	-	-	-	-	S*	S*	S*	M*	S*	-
R	-	-	-	-	-	R*	R*	-	-	-	-	R*	R*	R*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	M	C	C	-	-	-	-	-	-
-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	Y	-	Y*	Y*	Y*	Y*
Y*	-	-	-	-	-	-	-	Y	Y	Y	Y*	Y	Y*	Y*	-	-	Y*	Y*
-	Y*	-	-	-	-	-	-	-	-	Y	Y*	H*	M*	-	Y*	Y*	-	-
NP	M*	-	-	M*	M*	NP	NP	NP	NP	NP	NP	NP	-	M*	-	M*	NP	NP
Y*	Y	Y	T	Y	Y	-	Y*	Y	Y	Y*	Y	Y	Y	Y	Y*	-	Y	Y
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	R*	R*	-	-	R*	R*	NP	NP	NP	R*	R*	-	-	NP	NP
S*	-	-	-	-	-	S*	S*	S*	S*	-	S*	-	S*	S	-	-	-	-
Y	Y	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
NP	NP	NP	NP	NP	NP	C	C*	-	-	NP	NP	NP	NP	NP	-	M*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	C	Y*	Y	Y	Y*	C*	C	C	Y	C	Y*	Y	C	Y	Y	Y	C
C*	-	-	-	-	-	S	S*	C*	C*	NP	NP	NP	-	-	S	S*	NP	NP
-	-	-	-	-	-	-	-	K*	K*	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	-	S*	S*	-	-	S	S*	-	-	S	S	S	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	Y*	Y	Y	-	-	Y	Y*	Y	Y	Y*	Y	Y*	Y*	Y	Y*	Y	Y	Y
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	-
-	R	R	R	-	R*	R	A	A	R*	R	A	A	R	R	R	R	R	R
-	-	-	-	-	R*	-	R*	-	-	-	-	-	R*	-	-	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	R*	R*	-	-	R	R*	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
A*	R	R*	R	A*	R*	R*	A*	R*	A*	A*	A*	A*	R*	A	A	A*	R*	A
R*	R*	R*	R*	V*	R*	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	H*	-	Y*	-	-	Y	Y	-	-	H*	Y*	M*	Y*	-	-	-	Y*	-
-	-	-	-	W*	W	-	-	-	-	-	W*	-	W*	W*	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
R*	R	R	R	-	R*	-	-	R	R	-	R*	R*	R	R*	R*	R*	R	R
-	-	-	-	-	H*	-	-	M*	M	-	-	-	H*	M*	H*	H*	H*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	W*	W	W	-	-	W	W*	W*	W	W*	W*	-	W*	-	W*	W
S*	-	-	S*	-	-	-	-	S*	C	S	S	S*	S*	-	-	-	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	T	-	-
M*	-	-	-	M*	-	-	-	M*	M*	M*	M*	-	-	-	-	-	NP	NP
Y*	Y	Y	Y	-	Y*	-	-	Y*	Y	Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	W	W*	W*	-	-	-	-	W*	W*	-	-	-	-	-	-	W*	-	W*
R	R*	R*	R	R	R	R	R	R	R	R	R	R*	R	R	R	R*	R	R
-	-	-	-	K*	K	-	-	-	-	-	-	-	K*	-	-	-	-	-
Y*	Y*	Y	Y	Y*	Y*	-	Y*	Y*	C	-	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*
-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	Y*
Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	T*	T*	T*	T*	T*	Y*	Y*	T*	Y*	Y*	Y*	T*	Y*	T*	Y	Y*	Y	Y
R*	-	-	R*	R*	R	R	R*	-	R*	R	A	R*	R*	R*	R	R*	R*	R
-	-	-	R*	-	-	-	-	-	-	R	R*	D*	R*	-	R*	R*	R*	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*
C*	M*	M*	M	M*	M*	M*	C*	M*	-	M*	M*	M*	M*	M*	M*	M*	M*	M*
-	Y*	Y	Y*	-	-	-	-	Y*	Y*	-	Y*	Y*	H*	Y*	Y*	-	Y*	Y*
R	R	R	R	-	-	R	G	R	R*	G*	R	R*	R	R	R	R*	R	R
-	NP	NP	NP	-	R	-	-	-	-	low_cov	-	-	NP	NP	NP	NP	NP	NP
-	M*	M*	H*	M	M	-	-	H*	-	M	M	M	M	M*	M*	-	M	M*
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*
S*	-	-	-	-	-	-	-	-	-	S	S*	S*	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	R*	R	-	-	R*	R	R	R	R*	R*	R*	R*	R*	R*	R*
-	T	K	K*	K*	K	K*	K*	-	-	K*	K*	K*	K*	K*	K*	K*	K*	K*
Y*	Y	Y*	Y*	Y	Y	Y*	Y*	-	-	Y	Y	Y	Y	Y*	Y*	Y	Y	Y
-	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	Y*	-	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	R*	-	-	-
Y*	Y*	-	Y*	Y*	-	-	-	-	-	Y	Y	Y	Y*	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	NP	NP	Y*	Y*	-	-
T*	T*	T*	T*	Y*	Y*	T*	T*	T*	T*	Y*	T*	T*	T*	Y	T*	Y*	T*	T*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-
R*	-	-	R*	-	S*	-	-	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*
Y*	Y*	-	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y	Y
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	Y*	Y*	Y*	Y*	Y*	T	-	-	T	Y	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	R*	R	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
K*	K*	-	-	G*	K	-	-	-	-	K	K*	K*	K*	-	K	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
Y	-	-	Y*	Y	Y	-	-	-	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	-	-	-	-	R*	-	-	-	-	R*	R*	-	-	R*	R*
-	-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*
NP	K*	-	K*	K	K	K*	K*	-	-	NP	NP	NP	K*	-	T	K*	K*	K*
-	-	-	Y*	-	-	Y	Y	-	-	Y	Y	Y*	Y*	-	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	R	R	-	-	-	-	-	-	R*	R*	-	R	R*	R*	R*
S*	-	-	Y*	-	N*	Y	Y	Y*	-	T	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	T	T	-	-	NP	NP	-	-	-	K*	-	K*	K*	-	K*
R*	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
R	R	R	R	R*	-	R	R	G*	R	R	R	R	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-
-	Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y*	-	Y*	-	-	C*	C*	C*	C*	Y*	Y*	Y*	Y*	Y	Y	Y*	NP	NP
Y*	Y	Y*	Y	Y*	Y*	-	-	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y*
Y*	Y*	-	-	-	-	-	Y*	Y*	C*	NP	NP	NP	Y*	C	-	-	-	Y*
R*	R*	R*	R	R	R*	A	R	R*	R*	R	R	R	R	R	R	R	V*	R
-	-	-	Y*	Y*	Y*	NP	NP	NP	NP	-	-	-	Y*	Y*	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R	-	-	R*	-	-	R*	-	R*	-	R*	R*	R	R	R*	R*
-	-	-	-	-	-	R*	-	-	-	R	R	R	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	R*	-
-	-	-	-	K*	K	-	-	K	K*	-	-	-	K*	K*	K*	-	K*	K
S*	S	S	S	S	S*	S	S	-	S*	S*	S*	V*	S	S	S*	S*	S	S
-	-	-	-	R*	R	-	-	R	R	-	R*	-	R*	R*	R*	-	R*	R
G*	R	G	R*	G*	G	R*	G*	R*	-	NP	NP	NP	G*	G*	NP	NP	NP	NP
S*	S	S	S	S*	S*	S*	G*	S	-	-	S*	S*	S	G	G	G*	S	G
-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	-	-	-	R*	R	-	-	R	R	-	R*	-	R*	-	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*

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-	-	-	-	-	-	-	-	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	R	R	R*	R	R	R*	R*	-	-	-	R*
R*	R*	R*	A	R	R*	R*	A*	D*	R*	R*	R*	R	R*	A	R*	R*	R	R
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y*
-	R*	-	-	-	-	-	-	R*	R	R	R*	R	R*	R	R*	-	R*	R*
Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y*
K*	T	T*	K	-	K*	K	T	-	-	-	K	-	K	K*	K	K	K	K
Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	H*	Y	Y	Y	H*	Y
K*	-	-	K*	K*	K*	K	K	K*	K*	K	D*	K	K*	K	D*	-	K*	K*
-	T	W*	W	W	W	W	W	W*	W	-	W*	-	W	W*	W	W	W	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	NP	NP	NP	NP	NP	R	R*	-	-	-	-	-	-	A*	-	-	NP	NP
R	R	G	R	-	-	R	R	R*	-	R*	R*	R*	R	R	R*	-	R	R*
Y	Y	T	Y	Y*	-	Y	Y	-	-	Y	T	Y	Y	Y	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	G	R	-	-	R	R*	-	-	-	-	-	R*	G*	R*	-	R*	-
R*	G*	R*	G	R*	R	R*	G*	R*	R*	R*	R*	R*	G*	G*	NP	NP	G*	R*
Y*	NP	NP	NP	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
NP	C*	C*	Y*	Y*	Y*	C*	C*	C*	C*	C	C*	C*	NP	NP	NP	NP	NP	NP
A*	A*	A*	R	R	R	A*	A*	A*	A*	A*	A	R*	R	A*	R	R	R	R
NP	NP	NP	NP	Y*	-	NP	NP	NP	NP	T*	T*	T*	NP	NP	NP	NP	NP	NP
G	R*	G*	G	R	R	G	G*	G*	G	G*	G	R*	R	R	G	G	R	R
R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
T*	K*	T*	T	K	K	NP	NP	K*	K*	K*	T	K*	K*	K*	T	T	K*	K*
G*	R*	G*	G*	R*	G	G*	G*	G*	G*	NP	NP	NP	R*	G*	NP	NP	NP	NP
G*	G*	G*	K*	K	K	K*	G*	K*	G*	G*	G*	G*	K	G*	G*	G*	K	K
S	-	-	-	-	S*	-	-	-	-	S	S	S	S*	-	S*	-	S*	S*
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y	-	Y*	Y*	Y	Y
-	-	-	-	-	-	Y*	-	-	Y*	Y	Y*	Y	-	-	-	-	M*	-
R*	-	-	R*	R	R	R*	R*	R*	-	-	R*	R*	R	R*	R	R*	R*	R
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R*	-	-	-	-	R	R*	-	R*	-	R*	-	R	R*	R*	R*
M	M	M*	M	-	-	M*	-	M*	M*	-	-	M*	-	-	M	M	M*	M*
-	-	-	W*	-	-	Y	Y	-	Y*	-	-	-	W*	-	-	W*	H*	Y*
-	Y*	T	T	T	Y	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	T	Y	T	T	T	-	-	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	-	T	T*
-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	W*	W*	W*	W*	W*	-	-	-	W*
-	R*	R	R*	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	R*	R*	-	R*	-	R*	-	R	R*	-	-	D*
-	-	-	-	-	-	-	-	-	-	K	K*	K*	K*	K*	-	-	-	K*
R*	R*	R	R	R*	R*	R	R	R	R	-	R*	R*	R	R*	R*	R*	R	R
-	W*	W*	W*	-	-	-	-	W*	-	-	-	-	W*	W*	W*	W*	W*	W*
-	-	-	W*	-	-	-	-	-	-	-	-	-	-	W*	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*

-	-	-	-	-	-	-	-	R*	R*	A	R*	A	R*	R	A	R*	-	-
-	R	R	R*	-	-	NP	NP	-	-	NP	NP	NP	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
R*	-	-	-	-	R*	-	-	-	-	-	R*	-	R*	-	-	R*	R*	R*
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***
NP	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***
NP	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	-	-	-	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	NP	NP	-	-	-	-	Y*	-	-	-	-	Y*	-
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	H*	Y	Y	Y	C	Y	C
-	-	-	-	-	M*	M	M*	-	-	M*	-	M*	M*	M	M*	M*	M*	M*
G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	NP	NP	NP	G	G*	G*	G*	G*	G*
R*	-	R*	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	R*	-
-	Y	T	Y	-	Y	-	Y*	-	-	Y	Y	Y	Y	Y	Y	Y*	Y	Y*
-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	-	-	-	-	W*	-	-	W*	W*	-	-	-	-	W	W*	W*	-	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	R	R	R*	-	R*	R	R	R	R*	R	R*	R	R	R	R
G*	G	R*	G	G*	R*	NP	NP	R*	G*	R	R*	G	G	R	G	G*	G	G*
-	-	-	-	Y	Y	-	-	Y	C	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
Y*	Y*	Y*	Y*	Y*	Y*	C*	C	C*	C*	Y	Y	C	Y	Y	C	Y*	Y*	Y*
C*	C*	C*	C*	C	Y*	NP	NP	C*	C*	C*	C*	C*	Y	-	C*	C*	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	R	R	-	-	G	R	R	R	R*	R*	-	R*	-	R*	R*
R*	R	A	R	R	R	R*	A*	-	-	A	R*	R*	R	R*	R	-	R	R
C*	Y*	C*	C*	C*	C*	C*	C*	C*	Y*	Y	C*	C	C	Y*	C*	C*	C*	C*
NP	-	-	-	R	R*	-	-	R	R	R*	-	R*	R*	-	R*	R*	R*	R*
R	A	R*	R*	R*	-	R*	R*	-	-	R	R*	R	R	R*	R*	R*	R	R
G*	R*	R*	G*	G*	G*	R*	G*	G*	G*	R	R	G	R*	R	R*	G*	R*	G*
G*	G*	G*	R*	R*	G*	G*	G*	G*	G*	R	R	G	R	R	G*	G*	G*	G*
Y*	Y	C*	C	Y	Y	NP	NP	Y*	-	C	Y*	-	Y	-	-	-	Y	C
-	W	W*	W	W*	W*	T	W*	W	W	W*	T	W*	W	W*	W	W	W	W
-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	K	K	K*	-	-	K*	K*	K*	K*
B*	-	-	B*	-	K*	S	S	B*	K*	-	B*	-	B*	B*	S*	N*	N*	B*
-	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	Y*	-	-	W*	W*	-	W*	Y*	H*
-	-	-	R*	R	R	R*	A	A	R	R	R	R*	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	S	S*	S	-	-	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	K	-	K*	K*	K*	K*	K*	K	-	K*	K*	K*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M	M	M*	-	-	-	-	M*	M*	-	-	-	M*	M	NP	NP	M*	-

S*	-	-	S*	-	-	-	-	-	-	-	-	-	-	S*	-	-	S*	S*
-	R	R	R	-	-	-	-	-	-	R	R*	R*	R*	R*	R*	-	R*	R*
-	K	K*	K	-	-	NP	NP	-	-	K	K*	K*	-	-	-	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-
K*	G	K*	K*	G	K*	K*	G*	NP	NP	K*	-	K*	K*	-	-	K*	K*	K*
R*	G	G	R*	R	R	R*	G*	G	R	R*	G	G	R	R*	R	R	R	G
-	M	M	M	-	-	-	-	-	-	M	M	M	M*	M*	M*	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	Y*	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	M	M	-	-	-	-	-	-	M*	M	M	M	-	-	-	M	M*
C*	Y*	Y*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	Y*	Y	T	Y*	Y*	Y*	T	Y*	T	T	T	Y	Y	Y	Y*	Y	Y
NP	R*	R*	R*	A*	A*	A*	A*	NP	NP	NP	NP	NP	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	S*	S*	S*	-	-	-	-	-	-
-	K	K*	K*	-	-	-	-	-	-	K*	K*	K	-	K*	-	-	-	-
A*	-	-	-	R	A	R	R	-	-	-	R*	-	R	R	R	R	R	R
NP	C*	Y*	Y*	C*	C*	NP	NP	C*	C*	NP	NP	NP	Y*	Y*	NP	NP	Y	C*
Y*	Y*	-	Y*	Y	Y*	Y	B*	Y*	Y*	Y*	C	Y	Y	Y	NP	NP	Y*	Y
-	R*	R*	R	R*	R	R*	R*	-	R*	R	R*	-	R	-	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y	Y	Y	Y*	Y*	Y*	-	Y*	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
K*	K	K*	K	G	K	K*	K*	K*	-	K	K*	-	K*	-	K*	-	K*	K*
-	R	R*	R	R	R	R*	R*	-	-	R	-	-	R*	-	-	-	R*	R*
Y*	-	-	Y*	-	-	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
R*	R*	R*	R	R	R	R*	R*	-	R*	R	-	-	R	-	R*	-	R*	R*
-	Y	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
C*	Y*	Y*	Y*	Y*	B*	Y*	Y*	Y*	Y	Y*	Y*	C*	Y*	C*	Y	Y	Y*	Y*
-	-	-	Y*	-	-	-	-	-	-	-	M*	M*	Y*	-	-	-	Y*	Y*
Y*	-	-	Y*	-	-	Y*	C	Y*	Y*	Y	Y	C	Y*	-	Y*	-	Y*	Y*
-	S	S	S*	-	-	S	S*	S*	S	-	-	-	S*	S*	G	S	S*	S*
-	-	-	R*	R*	-	R	R*	R	R*	R	R	R	-	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M	-	-
-	-	-	-	R*	R	-	-	R*	-	R*	-	-	R*	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	-	Y*	Y*	Y*	Y*
-	R*	-	R*	-	R	R	R*	-	R*	-	-	-	R	-	R*	R*	R*	R*
Y*	Y*	C	Y	Y*	C	Y*	Y*	Y*	Y*	Y*	C	C	Y	Y	Y	Y*	Y	Y
-	Y*	Y	Y	Y	Y	Y*	Y*	-	-	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y
Y*	Y	C*	Y	C	C*	C*	C*	Y*	Y*	C*	Y*	Y*	Y	C	Y	Y	Y	C
R*	R*	R	A	R*	R*	R*	R*	R*	R	R*	A	A	R	A	R	R*	R	R*
-	C*	Y	C*	Y*	C	Y*	-	-	-	low_cov	C*	Y*	Y*	C*	NP	NP	NP	NP
R*	R*	R*	R*	A	R*	NP	NP	R*	R*	NP	NP	NP	A	A*	R*	-	R*	-
-	NP	NP	NP	T*	T	NP	NP	NP	NP	-	Y*	Y*	Y	Y*	-	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	-	R*	R*

Y*	-	Y*	-	Y*	Y*	Y*	Y*	H*	-	-	-	-	H*	Y*	Y*	-	Y*	-
Y*	Y*	T	T	T*	Y*	Y*	T*	Y*	Y	T	T*	T*	Y*	T	Y*	Y*	Y*	Y
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	G	R	R	G*	R	R	-	R*	R*	R	R	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	-	-	-	-	R*
Y*	Y	T	Y	Y*	Y	Y	-	-	-	Y	Y	Y	Y	T	Y	Y*	Y	Y
Y	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y
-	Y*	Y*	Y*	Y*	Y*	-	Y*	-	-	-	Y*	W*	H*	H*	Y*	Y*	H*	H*
R*	-	-	R*	-	-	R	R*	R*	-	-	-	-	-	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y*	Y*	Y*	-	C	NP	NP	Y*	C*	Y*	low_cov	C*	NP	NP	NP	NP	NP	NP
A*	M	M	M	A*	A*	A*	M*	A*	A*	A*	A*	A*	M	M*	M	M	M	A
NP	R*	R*	-	NP	NP	NP	NP	R*	-	-	-	-	-	R*	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	Y	Y	Y	-	-	Y*	Y	Y*	Y	Y	Y	Y*	Y	Y*	Y	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y	Y	Y	Y*	Y	Y*	Y*	H*	Y*
R*	-	-	-	R*	R*	-	-	NP	NP	-	-	-	R*	R*	R*	-	R*	R*
Y*	-	-	S*	-	-	-	-	-	-	-	Y*	-	-	S*	-	-	-	-
-	-	-	R*	R	R	-	-	R*	R*	-	-	-	R*	-	R*	-	-	R*
A*	R*	R*	R	R*	A*	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP	NP	NP
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	H*	Y	Y*	Y*	H*	H*
-	G*	G	R	R	R*	-	-	-	-	-	R	R*	R	R	R*	R*	NP	NP
-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y	T*	Y	Y	Y	Y*	Y	Y*	Y*	Y*
Y*	Y	Y*	Y*	Y*	Y*	Y*	C*	C*	Y*	Y	Y	Y	H*	Y	Y*	C*	Y*	Y*
-	-	-	R*	A*	R*	R	-	R*	-	low_cov	R	R*	R	R*	R	R*	R*	R*
G*	low_cov	-	-	S*	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
G	R*	R*	R*	R*	R*	R*	-	R*	G	R*	R*	R*	R	R*	R	G	R	R
-	-	-	-	S	S*	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	R*	R*
-	-	-	R*	-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	-
T*	T	Y*	T	T	Y*	Y*	-	T*	Y*	Y	Y	Y*	Y	T	Y*	T	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	Y	Y	Y	-	-	Y*	Y*	-	-	Y*	Y*	-	Y*	-	Y	Y	Y*	Y*
R*	R*	R	R*	R*	R*	R	R*	R*	R*	-	R*	-	R*	R*	R	R*	R*	R*
-	-	-	-	-	-	-	-	B*	-	-	-	-	-	K*	K*	K*	-	-
R*	R	R	R*	R*	-	R	R*	-	-	-	R*	R*	R*	-	R*	-	R*	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	-	-	-	-	-	-	-	W*	W	-	-	-	-	-	-	-	W*	W*
NP	S	S	S	-	-	S	S*	-	-	-	-	-	S*	-	-	-	S*	S*
R*	R	R*	R*	R	R*	R	R	R	R*	R*	R	R	R*	R*	R*	R	R	R*
R*	-	-	-	-	-	R*	-	-	-	-	R*	R*	R*	-	-	-	R*	S*
Y*	-	-	-	Y*	Y*	Y	Y*	NP	NP	-	-	-	Y*	-	-	-	-	Y*
Y*	Y*	Y	Y	Y	Y	H*	Y*	Y*	N*	Y*	Y	Y*	Y	Y	H*	Y*	Y	Y
A*	A*	A*	A*	A*	A*	NP	NP	NP	NP	R*	R*	-	A*	A*	NP	NP	NP	NP
S*	-	-	S*	S*	S	S	S	-	-	-	-	-	S*	-	S*	-	S*	S*
A	R*	R	R	R	R	R	R*	R*	-	-	R*	R*	R	R*	A	R*	R	R
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	Y*	-	-	-	Y*	-	-	Y*	-	-	-	Y*	S*	-	-	B*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	Y*	Y	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-
R*	-	-	-	R*	R*	A	R*	-	-	-	R*	-	-	-	-	-	R*	-
R	-	-	-	R*	R*	R	R	-	-	-	-	-	R*	-	-	-	-	-
R*	-	-	-	R	R*	R	R*	-	-	-	-	-	R*	-	R*	-	R*	-
R*	R	R	R	R*	R	R	R	-	R*	-	-	-	R	R*	R	A	R	R
Y*	-	-	-	-	Y	NP	NP	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	K*	-	-	-	-	-	-	-
NP	R	R	R	R	R	R*	R*	R	R*	G	R*	R	R	R	-	-	R	R
Y*	Y	Y	Y	Y	Y	Y	Y	NP	NP	Y	Y*	Y	Y	Y*	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	Y*	M*	-	-	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
Y	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	Y*	-
-	-	-	-	Y*	Y*	-	-	NP	NP	-	-	-	Y*	-	-	-	-	Y*
R*	-	-	R*	R	R	-	-	R*	R	-	R*	R*	R	R	R*	R*	R*	R*
R	R*	R	R	R	R	R*	R*	A	R	R*	R*	R*	R	R	R	R	R	R
Y*	Y	Y	Y	Y*	Y	Y	Y*	Y*	-	-	Y*	Y*	Y	Y*	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	H*	W*	-	-	W*	-
-	-	-	R*	-	-	-	-	-	-	G	R*	G	-	R*	-	-	R*	R*
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	Y*	-	Y*	-	-	H*	Y*	M*	H*	H*	H*
-	-	-	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*
Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y
R*	A	R	R	-	-	R*	R*	-	-	-	R*	-	R*	-	R	R	R	R*
NP	R*	R*	-	NP	NP	NP	NP	-	R*	low_cov	G*	G	NP	NP	NP	NP	NP	NP
-	Y*	Y	Y*	-	-	Y*	Y*	-	-	-	M*	-	Y*	-	H*	Y*	Y*	Y*
-	-	-	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-
-	S	S*	S*	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R*	-	R*	R*	-	-	-	-	R*	-	R*	-	R*	R*	R*	R*
Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	N*	Y	Y	H*	H*	H*
-	Y	T	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y	Y*	Y*	-
G*	R*	G*	R*	R*	R	G*	G*	G	R	G*	G*	G*	R	R	G	G	R	G
-	Y	Y	Y*	-	-	Y*	-	-	-	-	-	-	Y*	-	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
Y*	Y	Y*	Y	Y	Y	C	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	NP	NP	NP	NP
-	low_cov	-	-	-	-	NP	NP	-	-	NP	NP	NP	R*	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	-	-	T	Y	Y*	Y*	-	-	-	Y	Y*	Y*	Y*	Y*	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
-	Y*	-	H*	Y	Y	-	Y*	Y*	Y*	Y	Y	Y	Y	-	Y	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	R*	low_cov	R*	R	-	-	-	-	-	-
T*	low_cov	Y*	Y*	-	-	Y*	-	NP	NP	Y*	Y*	Y*	NP	NP	T*	T*	NP	NP
NP	R*	A*	R*	D*	K*	D*	R*	-	-	-	-	-	R*	R*	R*	D*	R*	R*
-	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R	R*	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	S*	S	S	S*	S*	S*	-	S*	S*	-	S*
NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
-	K*	-	K*	K	K	K	K*	-	-	K	K*	G	K	K	K*	K*	K	K
NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
A	R*	R*	R*	-	R	R	R*	-	R	-	R*	-	R*	R*	R	R	R*	R
Y*	Y*	-	Y*	Y*	Y*	-	-	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y	-	Y*	Y*	H*	Y*	Y	Y*	H*	H*
R*	R*	-	R*	R	R	R*	R*	-	R*	R	R	R	R	R	R*	R*	R*	R*
Y	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	NP	NP	NP	NP	NP	NP	NP	-	-	M*	M*	M*	M*	M*	M*	C	M*	C
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y	Y*	Y*	-	Y	Y*	Y*	Y*	Y*	-	-	H*	Y*
NP	-	-	-	-	-	R	R	-	-	NP	NP	NP	-	R*	-	-	-	-
Y*	Y*	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y*	Y*	Y*	-	Y*	-	-	H*	Y*	H*	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y	Y*	Y	Y	-	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y
R*	R	R*	R*	R	R	R*	R*	R*	R*	R	R*	R	R	R	R*	R*	R	R*
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	-
Y*	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y	Y*
S*	S	S	S	S	S	S	S	S*	B*	S	S	S	S	S	S	S*	S	S
W*	W	T*	T*	W	W	W*	T*	T*	W*	W	W	W	W	W	T	T	W	W
NP	NP	NP	NP	-	-	T*	T*	NP	NP	T*	T*	Y*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	S*	S	S	S*	-	-	-	-	-	-	-
T*	Y*	T*	T	Y*	Y	NP	NP	Y*	Y*	-	-	-	NP	NP	NP	NP	NP	NP
-	R	R*	R*	R*	-	R*	-	-	R*	R	R*	R*	R*	-	-	R*	R*	R*
NP	-	G*	G	R*	R	NP	NP	NP	NP	R*	-	R*	R*	R*	NP	NP	R*	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-
-	-	-	-	-	-	Y*	Y*	-	-	Y	-	-	Y*	-	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	Y	Y	Y	-	Y*	Y*	Y*	T	Y*	Y*	Y*
Y*	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	Y	-	Y*	-	-
B*	K*	B*	K*	B*	K*	K*	K*	B*	B*	K*	K*	D*	K*	K*	K*	K*	K*	K*
-	-	-	-	-	-	K*	K	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M	M*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	-	-	-	-	R*
NP	NP	NP	NP	-	-	Y*	Y*	Y*	B*	Y*	Y*	Y*	NP	NP	Y*	Y	NP	NP
NP	NP	NP	NP	K*	K*	NP	NP	NP	NP	K*	K*	K*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP
-	R	G	R	-	-	R	-	R*	R*	R	G	R*	R	R*	R	R	R	R*
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	R	R*	R*	-	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
Y*	Y	T	Y	-	Y*	Y*	-	Y	Y	Y*	T	Y	Y	Y*	Y*	Y*	Y	Y
K*	K	T	K	K*	K*	-	K*	K	K	T	T	K	K	-	K	K*	K	K
-	R*	-	R*	-	-	-	-	-	-	-	R*	R*	-	-	R	R*	-	-
-	-	-	S*	-	-	-	-	NP	NP	-	B*	-	S*	-	-	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	Y	-	Y*	-	Y*	Y*	Y	T	Y	T	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	R*	-	-	-	D*	-	R*	-	-	R*	R*	R*
-	-	-	R*	-	-	-	-	R*	K*	R*	R*	R*	R*	R*	R*	R*	R*	R*
R*	-	-	-	-	-	-	R*	G	G	R*	R*	R*	R*	R*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	low_cov	-	-	-	-	NP	NP	Y*	C*	low_cov	-	Y*	Y*	Y*	-	-	NP	NP
-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
-	-	-	-	-	-	G*	G*	R*	R*	NP	NP	NP	R*	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	-	-	K*	-	-	K*	-	T	T	K*	-	K*	-	K*	-	-	-	-
-	Y*	Y	Y	Y*	-	-	-	-	-	Y*	Y	Y	Y*	-	-	-	Y*	-
NP	Y*	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	H*	Y*	Y*	Y	C*	Y*	Y*
R*	-	-	D*	-	-	-	-	-	-	-	R*	-	-	R*	-	-	-	-
R*	-	-	R*	-	-	R*	R*	R*	R	R	R*	R*	R*	R	-	-	R*	R*
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	T	Y*	Y	T	Y*	Y	Y	Y
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	Y	Y	-	-	-	Y*	-	Y*	-	-	-	Y*	-
R*	-	-	R*	-	-	R*	-	G*	G	R*	R	R*	R*	R*	R*	R*	R*	-
S*	-	-	V*	-	S*	S	S*	-	-	-	V*	S*	V*	V*	S*	N*	N*	V*
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-
R*	-	-	-	-	-	R*	R*	G*	G	low_cov	-	R*	-	R*	-	-	-	-
-	R*	-	K*	K*	-	-	-	-	-	-	D*	R*	R*	R*	N*	R*	D*	N*
A	R*	R	R	-	-	-	-	-	-	-	R*	V*	R	R	R*	R*	R	-
M*	-	-	-	-	-	M*	-	C	C	M*	M*	M*	M*	M	-	M*	M*	M*
R*	R*	R*	R*	-	D*	R*	A	R*	R*	R*	R	R	R	R*	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	Y*	Y*	Y*	Y*	Y	Y	Y*	-	-	Y*	Y*	Y*	Y	Y*	-	Y*	Y*	Y*
-	-	-	K*	-	-	-	-	-	-	R	R*	R*	-	-	-	-	R*	-
-	Y*	-	-	Y*	Y*	-	-	Y*	-	-	-	-	NP	NP	-	-	NP	NP
-	M	M	M	-	-	-	-	-	-	M	M	M	M*	-	M	C	M*	-
W*	W	W	W	W*	W*	W	W	W	W	T	W	W*	W	W	W	W	W	W
-	-	-	-	R*	R	-	-	-	-	-	K*	K*	R*	-	-	-	R*	R*
-	-	-	-	W*	W	-	-	-	-	-	-	-	W*	-	-	-	W*	W*
-	-	-	-	-	Y*	-	-	-	-	-	-	-	H*	-	-	Y*	Y*	Y*
-	K*	-	K*	K	K	K	-	-	K	K	K	K*	K*	K*	K	K*	-	K*
-	-	G	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	A	R	R	R	R*	A	R	R	R	R	R*	R	R*	R	R
-	R*	-	R*	-	-	-	-	-	-	R	R*	R*	R*	R	-	-	-	R*
R*	R*	R*	R*	R*	V*	R*	V*	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*

-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	Y	-	Y*	Y*	Y	Y*
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	-	-	-	-
R*	G	R*	R	R*	R	R*	G	R	R	G	G	R	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-	-	S*
-	-	-	-	Y*	Y*	-	-	Y*	Y*	-	-	-	Y*	Y*	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	R	R	-	-	-	R*	-	R*	-	R*	-
-	Y	Y*	Y*	Y*	Y*	Y	Y	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
R*	R*	-	D*	R	R	-	R*	R	R	-	R*	R*	R	R	R	R	R*	R
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	Y*
NP	NP	NP	NP	NP	NP	-	-	NP	NP	S*	-	S*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	Y*	NP	NP	-	Y*	NP	NP
W*	W	W*	W	-	-	-	W*	-	W*	W	-	-	W*	-	-	-	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	NP	NP	NP	-	W*	NP	NP	NP	NP	W	W	W*	W*	W*	-	W*	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
W*	W	W	W	W*	W*	W*	W*	W	W*	W	W	W	W	W*	W*	W*	W	W
R*	R	R	R	R*	R*	R	R*	R	R	R	R	R	R	R*	R*	R*	R	R
NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-
S*	-	-	-	-	-	-	-	-	Y*	-	M*	-	H*	-	-	-	-	-
Y*	Y*	-	-	-	-	Y	Y*	Y*	Y*	-	Y*	-	Y*	-	-	-	Y*	N*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	T	Y*	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	-	-	B*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	R*	-	-	-	-	-	S*	R*	R	R	R*	-	R*	R*	R*	R*
A*	low_cov	A*	A*	A*	A*	A*	A*	A*	A*	NP	NP	NP	A*	A*	A*	A*	A*	A*
G*	low_cov	G*	R*	R*	R*	G*	-	-	R*	R*	R*	-	R*	R*	-	R*	R*	-
Y*	Y	Y	Y	-	Y	-	-	-	-	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y
C*	Y*	Y*	Y	C*	C*	Y*	Y*	Y	Y	Y*	C	Y*	Y*	Y*	Y*	C	Y	C
T*	low_cov	K	K	K*	T*	K*	T*	NP	NP	T*	T*	K*	NP	NP	K	K*	NP	NP
-	S*	-	-	S*	G	S*	S*	-	-	S*	S*	S*	S*	S*	-	S*	S*	S*
-	-	-	-	R	R	R*	R*	-	-	R*	R*	-	R	R	R*	-	R*	R*
R	R	R	R	R*	R*	R*	R*	R*	R	R	G	R	R	R*	R	R*	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	W*	W*	A*	A	A*	A*	A*	NP	NP
-	-	-	-	A*	R*	R*	-	NP	NP	R*	R*	R*	R*	A	-	-	-	R*
Y*	Y*	Y	Y	-	Y*	-	Y*	-	-	Y*	Y	Y*	Y	-	Y	Y	Y*	Y*
-	-	-	-	R	R*	R*	R*	-	-	-	-	-	NP	NP	NP	NP	NP	NP
S*	S*	-	-	-	S	S*	S*	S*	S*	S*	C	S*	S*	S	S*	S*	S*	C
NP	-	R	R*	G	R*	R*	R*	R*	R*	NP	NP	NP	R	R*	R*	R*	R*	R*
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	S	S*	S*	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y*
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	G*	R*	-	-	-	R*	-	-	-	-	R*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y	C	Y	Y
-	R	R*	V*	-	-	R*	-	-	-	-	-	S*	S*	R*	V*	V*	S*	S*
G*	-	-	-	G	R	R*	R	R*	R*	-	R*	-	R	R*	G	R	R	R
-	A*	M	M	-	M*	M*	M*	M	M*	M*	A	M	M	M*	M	M	M	M*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	-	-	NP	NP
NP	R*	R*	A	NP	NP	NP	NP	R*	R*	R*	R*	A	R*	R*	R*	R*	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	low_cov	-	R*	R	G	-	-	-	-	low_cov	-	R*	R	R*	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	-	Y*	Y	Y	Y	Y*	Y	T*	Y	Y	Y	Y	Y*	-	H*	Y*
Y*	C	Y*	Y	Y*	Y	Y	Y*	Y	Y*	C*	Y	Y	Y	Y	Y	Y	Y	Y
Y	Y*	Y*	-	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	H*	Y	Y*	Y*	H*	H*
Y*	-	-	-	-	Y*	Y	Y	Y*	Y*	Y	C	C	Y	C	Y*	Y*	Y*	Y*
A*	-	-	-	M*	M*	A	M*	M	M	A*	A	A	M*	M	M*	M*	M*	M*
R*	-	R*	R*	R*	R*	NP	NP	G	R*	R	R*	G	R	R	R*	R*	R	R*
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	W	W*	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*
R	R*	-	-	R*	R*	R*	R*	R*	R*	A	R	R*	R*	R	R*	R*	R*	R*
-	K*	-	K*	-	-	-	-	K	K*	-	-	-	K*	K*	-	K*	K*	K*
-	-	-	M*	M*	M*	-	-	-	-	-	M*	-	M*	M*	M*	-	M*	H*
-	R*	-	R*	-	R*	-	R*	R	R*	R*	R*	-	D*	R*	R*	R*	R*	R*
NP	low_cov	-	-	NP	NP	NP	NP	S*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	R*	R*	R	R*	R	R	R*	R*	R*	R	R	R	R*	R	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	-
-	-	-	-	S*	S	S*	S*	S*	S*	S	S	S	S*	S	S*	-	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y	Y	-	-	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y*
NP	M	M*	M*	M*	M*	-	-	M*	M*	M	-	M*	-	M*	M*	M*	M*	M*
-	Y	Y	Y	Y*	-	-	-	-	-	-	Y*	Y*	H*	Y*	Y*	Y*	Y*	H*
R	R	R	R	R*	R	-	-	R*	R*	R*	R	R*	R	R*	R	R*	R	R
-	A*	A*	R	R	R	R*	-	R	R	A*	A	A	R	A	R	R	R	R
-	-	-	R*	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y	Y	-	-	T	Y	Y*	T	T*	Y	T	Y	T	Y	Y
-	S*	C	S	S	S	-	-	S*	S	C	S*	S*	S	S	S*	S*	S	S*
-	G*	G*	R	R	R	-	-	R	R	G*	G	G	R	R	G	G	R	R
M*	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	R*	R	R	-	-	-	-	R*	R	-	-	-	R*	-	-	R*	R*	-
-	NP	NP	NP	A	M*	-	-	M*	M*	A*	M*	M*	NP	NP	NP	NP	M*	-
R*	R*	R*	R*	-	-	-	-	R*	R*	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	W*	W	-	-	-	-	-	-	-	-	-	W*	-

-	R	R*	R*	-	-	-	-	R*	R*	-	R*	-	R*	-	-	-	-	R*
S*	G*	S*	S	S	S	-	-	S*	S*	G*	G	G	S	S	S	S	S	S
-	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	-	Y*	-	Y*	Y*
R*	G*	R*	R*	G*	R*	G*	R*	R*	R*	G*	G	G*	R*	G*	R*	G*	R*	G*
-	-	-	-	-	-	NP	NP	-	R	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	NP	NP	R	R*	R*	-	-	-	-	NP	NP
Y*	Y	C*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y
R*	-	-	R	-	R*	NP	NP	R*	-	R	R	G	R*	-	-	R*	R*	R*
R*	G	R*	G	-	-	-	R*	R*	-	-	R*	R*	R	G	R	R*	R*	R*
NP	-	-	-	-	-	-	-	R*	-	R	A	R*	-	R*	-	-	-	-
-	-	-	-	-	-	-	-	M	M*	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	-	Y*	Y*	Y*	-	-	-	Y*	Y*	Y	Y	Y	Y	Y	-
NP	K*	T	K*	T	T	NP	NP	K*	K*	T	K*	K*	T	K*	K*	K*	T	T
-	R*	-	R*	-	R*	-	-	R*	-	R	R	R*	R*	R*	-	-	-	R*
Y*	T*	T*	Y*	Y*	Y*	Y*	T	Y	Y*	T*	Y*	T*	T*	T*	T*	T*	T*	T*
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	C*	Y	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y
-	T*	T*	T*	T	Y	T	Y*	T*	T*	Y*	Y*	Y*	Y	Y*	T	Y*	Y	T
-	Y*	Y*	Y*	Y*	Y*	T*	T*	T*	Y*	NP	NP	NP	Y	-	Y	Y	Y	T
S	low_cov	C*	C*	C*	S*	C*	C*	S*	C*	S	-	-	C	S*	NP	NP	C	C*
-	R	R	R	-	-	-	-	-	-	R	R*	R*	R*	-	R*	-	R*	R*
-	R	-	-	-	-	-	-	-	-	R*	-	-	NP	NP	-	-	NP	NP
-	M	M	M*	-	-	-	-	-	-	M	-	-	M*	-	-	-	-	M*
R*	R	R	R	R*	R	R*	-	R*	R*	R*	R*	R*	R	R*	R	R	R	R
Y*	-	-	Y*	Y*	-	Y	Y	Y*	B*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
K*	-	-	W*	-	W*	D*	R*	-	-	K*	D*	K*	D*	K*	D*	K*	D*	W*
-	-	-	-	-	-	Y	Y*	-	-	Y	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	NP	NP	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	T	W	-	-	-	-	W	W*	W*	-	-
-	-	-	-	-	-	-	-	R*	R	-	-	-	R*	R	R*	-	-	-
-	-	-	R	R	R	R	R	R	R	-	-	-	R	R	R*	-	R	R
-	NP	NP	NP	-	-	W*	-	A*	A*	W*	W*	-	-	W*	W*	W*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	-	-	Y	Y	-	Y*	-	-	Y	Y	Y	Y	-	Y	Y	Y*	Y
-	S	S*	S*	-	-	S*	S*	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	Y	Y	-	-	-	-	Y	Y	Y	Y*	-	Y	Y	Y*	Y
-	-	-	-	Y	Y*	-	-	-	-	Y	C	C	-	-	Y*	Y*	-	-
R*	R*	R*	R	R*	R*	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	M*	M*	M	M*	M	M*	M*	-	-	H*	M*
-	Y*	-	Y*	Y*	Y	-	-	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	-	-	R*	-
D*	R	R*	R	R	R	R*	R	R*	R*	R	R	R*	R	R	R	R	R	R
-	M*	M*	M*	M	M	-	-	-	-	-	-	-	M*	-	M*	-	M*	M*
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	R*	-	R*	-	R*

Y*	Y	Y	Y	-	-	Y*	Y	-	-	-	Y*	-	Y	-	Y*	Y*	T	Y*
-	R*	R*	R*	R*	R*	-	-	-	R*	-	-	-	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	-
Y*	-	-	Y*	Y*	Y*	-	-	-	-	-	Y*	-	Y*	Y	Y*	Y*	Y*	-
R*	R	R	R	R*	D*	A	R	R	R*	R*	R*	R*	D*	R	D*	D*	N*	D*
-	Y*	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-
-	R*	R	R	-	-	A	R*	R*	R*	-	R*	R*	R*	R*	R*	-	R	R*
R	R	R*	R*	R	R	R*	R*	R*	R*	R	R	R	D*	R	R*	R	D*	R*
G	K*	B*	K	G	B*	B*	B*	G	K*	K*	N*	G	N*	G	B*	G	N*	B*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	Y	Y	-	-	-	-	Y	Y*	Y*	Y	Y*	Y	-	Y*	-	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R	R	-	-	-	-	-	R*	-	R*	R*	R*	-	R*	-	R	-
K*	K	K*	K*	K*	K*	K	K	K*	K	K*	K*	K*	K*	T	K	K*	K*	K
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y
NP	-	-	-	-	-	M*	A	-	-	-	-	-	M*	-	-	-	-	M*
-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-
G*	G*	G*	R*	G*	G	G*	G*	G*	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R	R*	-	-	R*	R*	R*	R*	R*	R	R*	R*	R*	-	-	R*	R*
K	-	-	K*	K	K	-	-	K*	K*	-	D*	-	K	-	K*	K*	K*	K*
R*	G*	G*	G*	R*	R*	R*	R*	R*	R*	G*	R*	R*	G*	R*	G*	G*	G*	G*
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
Y*	-	-	Y*	-	Y*	Y	Y*	T*	Y*	-	Y*	Y*	-	-	Y*	Y*	-	Y*
-	S*	S*	S*	S*	S*	-	-	-	-	-	S*	S*	-	S*	-	-	S*	-
-	S*	S*	S*	S	S*	-	-	-	-	S*	G	G	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	-	-	-	-	low_cov	-	-	NP	NP	NP	NP	NP	NP
NP	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
Y*	Y	-	Y*	Y*	Y	T	Y*	T	T*	Y*	Y*	Y*	Y*	-	T	Y	-	Y*
Y	-	-	H*	-	Y*	Y*	Y	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*	H*	Y*
R	R*	R	R	R*	R*	G	R	G	R	R	R	R	G*	R	NP	NP	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
W*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
NP	R*	R*	R*	R*	R*	R*	R*	R*	R	R*	R	R*	G*	R*	NP	NP	NP	NP
G*	G	G*	G*	G*	G*	G*	G*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*	G*
-	A	R*	A	R*	R	-	-	A	R	R	R	R	R	R	NP	NP	R	R
R*	R*	R	R*	R*	R	R*	G*	R*	R*	R*	R	R*	R	R	NP	NP	R	R
NP	R*	R*	R*	-	-	-	-	-	-	-	-	R*	R*	R*	NP	NP	R*	R*
-	W*	-	-	-	-	-	-	-	-	M	M*	M*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	-	W*	R*	R	-	-	-	-	-	-	-	R*	-	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	M*	M	-	-	-	-	-	-	-	M	-	M	M	M*	M
-	-	-	-	R*	R	-	-	-	-	-	-	R*	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	-	-	-	R*	R	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Y*	Y*	Y*	Y*	C	Y*	NP	NP	-	-	Y*	C*	C	Y	Y*	-	Y*	Y	Y*
-	R	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	low_cov	S*	S*	S*	S*	NP	NP	S*	S*	G*	S*	S*	S	S*	S*	S*	S*	S
NP	Y	-	-	-	-	Y*	Y*	Y*	Y*	C	C*	C	-	-	Y*	Y*	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	Y*
-	-	-	-	A*	R*	R	A*	NP	NP	R*	R*	R*	R*	-	R*	R*	R*	R*
R*	-	-	-	R*	R	-	-	-	R*	-	-	-	R*	-	R*	R*	R*	R*
Y*	-	-	-	Y*	Y	-	-	-	-	Y	Y	Y	Y*	Y*	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	low_cov	M*	NP	NP	NP	NP	NP	NP
-	-	-	Y*	Y	Y	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y
NP	-	-	-	NP	NP	NP	NP	NP	NP	Y*	Y*	Y*	Y*	-	Y*	-	NP	NP
R*	G	R*	G	G	R*	R*	R*	R*	R*	R*	R*	R*	R*	G*	R	R	R*	R*
S*	-	-	S*	-	S	-	-	-	-	S*	S*	S	-	-	-	-	S*	-
Y*	-	-	Y*	Y	Y	-	Y*	-	-	-	Y*	-	Y	-	Y*	Y*	Y*	Y
R*	R*	R	R*	R*	R*	-	-	-	R	-	R*	-	R	R*	R*	-	R*	R*
Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	H*	Y	Y	Y	H*	H*
R	R*	-	R*	R	R	R	R	R*	R	R	R	R	R	R	R	R	R	R
R*	-	-	R*	-	R*	R	R*	R*	R*	-	-	R*	R*	R*	-	-	R*	-
-	Y*	-	-	-	-	NP	NP	-	-	-	-	-	-	Y*	-	-	-	-
Y*	-	-	-	Y	Y*	Y	Y*	-	-	-	Y*	-	Y	Y*	Y	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	R*	A*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	R*	R*	-	-	-	-	R*	-	-	R*	-
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	Y	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	Y*	M*
-	NP	NP	NP	-	-	-	-	-	-	NP	NP	NP	S*	S*	-	-	-	-
-	Y*	-	-	-	-	-	-	S*	S*	-	-	-	S*	S*	S*	S*	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	-	-	W*	W*	-	-	-	-	-	-	-	-	W*	R*	-	-	W*	-
-	-	-	-	-	-	-	-	W*	W	-	-	-	W*	W	-	-	-	W*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	Y	Y*	-	-	M*	-	-	-	-	H*	-	Y*	Y*	Y*	Y*
Y*	-	-	-	-	-	-	-	Y*	Y	-	-	-	Y*	Y	-	-	-	Y*
-	-	-	-	-	-	-	-	K*	K	-	-	-	K*	K*	-	-	-	K*
-	R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R	-	-	-	R*
-	K*	K	K	-	-	T	K	-	K*	-	-	-	K*	K	K*	-	K*	K*
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-
R*	R	R*	R	R	R	-	-	R*	R	-	-	-	R	-	R	R	R	R
R*	R	R	R	R	R	-	R*	R*	R*	R	R*	R	R	R	R*	R*	R	R*
K*	K	K*	K	K	K	-	K*	G	K*	K	K	K	K	K	K	K*	K*	K*
-	R	R	R*	-	-	R	R*	-	R*	-	R*	-	R*	R*	R	R*	R*	R*
-	-	Y	Y	-	-	Y	Y*	Y*	Y*	-	-	-	Y	Y*	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R*	R*	-	-	R	R*	R	R	R*	R*	R	R*	R	R	R*
Y*	-	-	B*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G	R	R*	R	R*	R	-	-	R*	R	R*	V*	R	R	R	G	R	R	R
T*	T	T*	Y	T	Y	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	T*	T*	Y*	Y*

-	-	K*	K*	-	-	K*	K*	K*	K*	-	-	-	K*	K*	K*	-	K*	-
R	R	R*	R	R	R	-	-	R	R	R	R	R	R	R	R	R	R	R
NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	-	Y*	Y*	-	-	-	-	Y*	Y	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y	Y*	Y	Y	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	R*	R*	R	R	R	R	R*	R*	R*	R	R*	R*	R	R	R	R	R	R
-	G*	R	R	R	G*	NP	NP	-	-	R*	R	G*	G*	-	NP	NP	NP	NP
R*	R	-	R	R	R	-	R*	-	R*	R	R*	R*	R	R*	R*	R*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	R*	A	-	-	-	R*	A*	NP	NP	-	-	-	-
G*	G*	R*	G	G*	R*	G*	R*	NP	NP	NP	NP	NP	G	R*	NP	NP	G*	G*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	-	-	-	NP	NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP
-	-	-	R*	-	-	A	A*	-	-	R*	R	A	-	R*	-	-	-	-
-	-	-	-	-	-	S	S	-	-	S*	S*	-	-	-	-	-	-	-
T*	Y	T*	Y	T*	T*	Y*	Y*	Y*	T	Y	Y*	Y*	Y	Y*	Y*	T	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	-	S*	-	-	-	NP	NP	-	-	NP	NP
-	R*	-	-	-	-	R	R	-	-	R	R	R	R*	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
-	-	-	-	-	-	Y	Y*	-	-	Y*	Y*	Y	-	-	-	-	-	-
Y*	T*	T*	T*	T*	Y*	Y*	Y*	T	T	Y*	T*	Y*	Y	Y	T*	T*	Y*	T*
T*	Y	T*	T	T*	T*	Y	-	T	T	Y	Y*	-	Y	Y*	T	Y	T	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	R*	R*	R	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	R*	-	-	-	-	R*	R	R	R	R*	R*
-	K	T*	K	-	-	-	-	-	-	-	K*	-	K*	K	K*	K*	K*	-
-	G	G*	G	-	-	-	-	-	-	-	-	-	R*	G*	G*	R*	R*	R*
NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W	T*	W	-	-	W*	W*	-	-	W	W*	W*	W	W*	W	T	W*	-
-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y	-	-	Y	Y*	-	-
Y*	Y	T	Y	Y*	Y*	Y	Y*	Y*	-	Y	Y	Y*	Y*	Y*	Y	T	Y*	Y*
Y	Y	Y*	Y	-	Y*	-	-	-	Y	Y	Y	Y*	Y*	-	Y	Y*	Y	Y*
NP	NP	NP	NP	-	-	R*	R*	-	-	R*	G*	R*	R*	G*	-	-	R*	R*
-	R	R	R	-	R*	R	R	G	R	R	R	R	R	R	R	R	R	R*
-	A	A	A	R	R*	NP	NP	-	-	low_cov	A*	R*	R	R*	R	R*	R*	R*
Y*	NP	NP	NP	Y*	Y*	Y*	Y*	-	-	NP	NP	NP	Y*	Y*	Y*	Y*	NP	NP
-	S	S*	S	B*	B*	S*	S*	-	S*	S	G*	S*	B*	S	B*	B*	S*	S*
NP	NP	NP	NP	Y*	Y*	Y*	-	-	-	low_cov	T	Y*	NP	NP	NP	NP	NP	NP
V*	N*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	D*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S	S	-	-	-	-	-	-	-	-	-	S*	S*	S*	-	S*	-
S*	S	S*	S*	S	S	-	-	-	-	-	S*	-	S*	-	S*	S*	S*	S
R	R*	R	R	R	A	R*	R*	R	R*	R*	R*	R*	R*	R	R*	R*	R*	R*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-
-	W	W*	W*	-	-	-	-	-	-	-	W*	W*	W*	-	W*	W	W*	W*
-	-	-	-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	A*	A*	A*	A*	-	-	A	low_cov	A*	NP	NP	R*	R*	NP	NP
K*	-	-	-	-	-	-	-	K*	K	-	-	K*	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	Y*	Y*	NP	NP	NP	-	-	-	-	-	-
-	-	-	Y*	Y*	-	-	-	Y	Y	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	Y*	Y	Y*	C	Y	-	-	-	-	-	Y*	-	Y	Y	C	Y*	Y*	Y*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
K*	K*	K*	K*	K*	-	K*	K*	-	-	K*	K*	S*	-	K*	-	-	NP	NP
K*	K*	K*	K*	NP	NP	K*	K*	T*	T*	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	V*	R	R	R*	R	R	R	-	-	-	R*	R*	R	R	R*	R*	R	A
-	Y	Y	Y	Y	Y	-	-	-	-	Y	Y*	Y*	Y	-	T	T*	Y*	Y
R*	R*	R*	R*	R*	R*	R*	-	R*	G	R*	R*	R	R*	R*	R*	R*	R	R
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	-	-
T	T*	T	Y*	Y*	Y*	Y*	T*	Y*	Y*	T*	Y*	H*	Y*	Y*	NP	NP	T	T*
-	low_cov	-	-	R*	R*	G*	G*	G*	G*	-	low_cov	-	NP	NP	NP	NP	NP	NP
R*	R*	R	R	R*	R	R*	R*	R*	R*	G*	R	R	R	R	R	R*	R	R
R*	NP	NP	NP	-	-	-	-	-	-	low_cov	G	R*	NP	NP	NP	NP	NP	NP
-	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	NP	NP	-	Y*
-	-	-	R*	-	-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	NP	NP
-	-	-	-	R*	R	-	-	NP	NP	-	R*	-	-	-	R	R*	R*	R*
-	R	R	R	-	-	-	-	-	-	-	-	-	R	R	R*	R*	R	R*
Y*	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
-	-	-	-	Y*	T	-	-	Y*	Y	-	-	-	Y	-	-	-	Y*	Y
NP	-	-	-	G*	G	NP	NP	S*	S*	NP	NP	NP	S	-	NP	NP	S*	S*
Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	C*	C	C	Y	C	Y	Y*	Y	Y
-	-	-	-	NP	NP	Y*	-	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-	S*	S*
-	Y*	Y	Y*	C	Y*	Y*	Y*	Y*	-	-	-	-	Y	Y*	Y*	-	Y	Y*
-	-	-	-	-	-	-	W*	-	-	-	-	-	W*	W	-	-	W*	W*
R*	-	-	-	R*	R	R*	R*	-	-	-	-	-	R*	-	R*	R*	NP	NP
Y*	Y	Y	Y	C	C	Y	-	-	-	-	Y*	-	Y	-	-	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	H*	Y	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-	-	-	K*
R*	-	-	R*	R	R	R*	R*	-	-	-	-	-	R*	R	R	R*	R*	R
-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	Y	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	Y*	-	-	Y*	Y	NP	NP	Y*	Y*	-	-	-	-	Y*	-	Y*	-	Y*
-	Y*	-	-	-	-	Y*	Y*	Y*	T	-	-	-	-	Y*	Y*	Y*	-	-
T*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
Y*	Y	Y	Y	Y*	Y*	Y	Y	C*	C*	Y	C	Y*	Y	Y*	Y	Y	Y	Y

S*	-	-	V*	-	-	-	-	S*	S*	-	S*	-	V*	-	S*	-	V*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	-	Y	Y	Y*	Y	Y	T	-	-	-	Y	Y*	Y	Y	Y	Y
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
R	R*	R	R*	R	A	R*	-	-	R*	R	R*	R*	R*	R*	R	R*	R	R
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-
Y	Y	Y	Y	Y	Y	Y	Y*	-	-	Y*	Y*	Y*	Y	Y*	Y	Y*	Y	Y*
S*	S*	S*	S*	S	S*	-	-	S*	S*	S*	S*	S	S*	S*	S*	S*	S*	S*
Y	-	-	Y*	-	-	Y	C*	Y	Y	-	Y*	-	Y*	-	-	-	Y*	-
-	A*	W*	W	W*	W	-	-	W	W*	W*	W*	W*	W	-	W	W	W	W*
R*	R*	-	-	R*	R	-	-	R*	R	-	R*	R*	R*	-	R	R	R*	R*
S*	S*	S	S	S	S	S*	S*	S*	S*	-	S	N*	S	S	S	S	S	S
Y*	Y*	Y	Y	Y	Y*	-	-	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y
G*	G*	G*	G*	G*	G*	NP	NP	NP	NP	G*	R*	R*	G*	G*	R*	R*	R*	G*
R*	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	M	-	-	-	-	-	-	-	-	-	NP	NP	-	-	M*	-
C	Y	C*	C*	C*	Y*	Y	C*	C*	C*	-	Y*	-	Y	C*	Y*	C*	C	Y*
Y*	Y	C*	Y*	C*	Y*	NP	NP	Y*	C*	Y	Y	Y*	C	-	C*	C*	C*	C*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	M*	low_cov	-	M*	-	C*	C*	NP	NP
-	-	-	-	M	M	-	-	-	-	M	M	M*	M*	M*	-	-	M*	M*
R*	-	-	-	R*	-	R	R	R*	-	-	-	-	R*	-	-	-	R*	R
C*	C*	C*	C	C*	C*	NP	NP	C*	M*	NP	NP	NP	NP	NP	C*	C*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	T*	T*	T*	K*	T*	NP	NP	NP	NP	NP	NP
-	Y	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	Y*	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	S*	-	M*	-	S*	-	-	-	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
R*	-	-	-	-	-	R	R*	-	-	R	R	R*	R*	-	R*	-	R*	R*
NP	NP	NP	NP	NP	NP	Y*	Y	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	NP	NP	R*	R*	R*	R*	A*	NP	NP	-	-	NP	NP
Y*	Y*	-	-	Y*	Y	Y	C	-	-	C	C	Y*	Y*	-	-	-	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	A*	R*	R*	R*	A	-	-	R*	R*	A*	R*	A*	R	A	A	A*	R	R
-	T*	T*	Y*	T	Y*	-	-	Y*	T*	T*	T	T*	Y	T	Y	T	Y	T
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	R*	-	R*	-	-	-	-	-	R*	-	R*	-	-	-	R*	R*
Y*	-	Y*	Y	Y*	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y	-	-	Y*	Y
Y*	Y	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y	H*	Y*	Y*	Y*	Y	Y*	Y*	C*
R*	-	R*	R*	R*	R*	R*	-	R*	R*	R	R*	R*	G	R*	G	R*	R*	R*
NP	low_cov	A	-	NP	NP	NP	NP	NP	NP	low_cov	A*	A*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	R*	-	R*	-	-	R	R	-	R*	-	R*	-	R*	R	R*	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	-	-
-	W*	W	W	-	-	W	W	-	-	W*	W*	W*	W	-	W*	W*	W	W*
-	-	-	-	-	-	S	S*	-	-	-	-	-	-	-	-	-	-	-
-	S*	S	S	S	S	S	S*	S*	-	S*	S*	S*	S	S*	S*	S*	S	S
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	R	-	-	R*	-
R*	R*	R*	R*	R	R	R*	R*	R*	R*	G*	R*	G*	R	G	G*	G*	R*	R*
-	-	-	-	-	-	-	-	-	-	Y	Y	T	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	R	R	-	-	-	-	NP	NP	low_cov	-	-	-	-	NP	NP	NP	NP
-	W*	-	-	A	A	-	W*	W*	W*	W	W*	W	A	W*	W	W*	W*	W
R*	R	G	G	G	G	R*	-	R*	G*	R	R*	R*	G	G*	G	R	G	R
-	S*	-	-	-	-	-	-	-	-	-	-	-	V*	-	S*	-	S*	V*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
Y*	C	C	C*	Y*	-	Y*	C	C	Y	C	C	C*	Y	Y	Y	Y*	Y*	Y
NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	R*	R*	R	R*	R*	R	-	-	-	R*	R*	-	-	NP	NP
-	M*	M*	M*	-	-	M*	M*	-	-	M*	M*	M*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	R*	R*	R*	NP	NP	-	-	NP	NP
-	-	-	-	-	R*	-	-	NP	NP	NP	NP	NP	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	Y*	Y*	-	NP	NP	Y*	Y*	Y*	-	C	Y*	Y*	Y*	C	Y*	Y*	Y*	Y
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	V*	Y*	-	Y	Y*	-	Y*	-	M*	-	M*	M*	-	-	M*	M*
A	R*	R*	A	A	R	R*	R	R*	R	A*	A	R*	R	A	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP
-	S*	S	S*	-	-	-	-	-	-	-	-	S*	S*	-	S*	S*	S*	S*
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	R	R	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*
NP	T*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y	Y	Y	-	Y*	Y
T*	T*	T*	T*	T*	T*	Y*	Y*	T*	T*	Y*	Y	Y	T	Y	Y	Y*	T	T
M*	M*	M*	C	M*	M*	NP	NP	C	M*	M	M*	C	M	C	NP	NP	M	M*
-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	-	Y*	Y*	Y*
T*	low_cov	-	-	NP	NP	NP	NP	-	T*	low_cov	-	-	-	Y*	-	-	NP	NP
-	-	-	S*	-	-	-	R*	S*	-	-	-	S*	S*	-	-	-	S*	S*
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	NP	NP	-	-	-	-
G	G*	G	G	R*	R*	NP	NP	-	R*	-	-	-	R*	G	NP	NP	-	-
R*	-	-	R*	-	-	R	R*	R*	R*	-	-	R*	R*	R	-	-	R*	R*
-	Y*	-	-	Y*	-	Y*	-	-	Y*	Y	H*	N*	H*	M*	H*	H*	H*	H*
K*	NP	NP	NP	K*	K*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	low_cov	Y*	Y*	Y*	Y*	Y*	Y*	T*	T*	low_cov	T*	T*	Y*	Y*	NP	NP	NP	NP
C*	C*	C*	Y*	Y*	Y*	Y*	C	Y*	C	C*	Y*	Y*	C*	Y*	Y	Y*	Y*	C*
-	Y*	Y*	Y*	-	-	-	Y*	-	-	-	-	-	T	-	Y*	Y*	NP	NP
-	-	-	-	-	R*	R	R	R*	R	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	R	R	R	R*	R	-	R*	R	R	R	R*	R*	R	R	R	R	R	A
R*	R*	R*	R*	R*	G*	R*	G*	G*	G*	G*	R*	R*	G	R	R*	G*	R*	G
-	-	-	-	R*	-	R*	-	-	R*	R*	R*	R*	-	-	-	-	-	-
A*	A*	A*	R*	A*	A*	A*	A*	A*	A*	A*	A*	A*	R*	R	A*	A*	A*	A*
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	-	-	-	-	-
NP	A*	A*	A*	A*	A*	NP	NP	A*	A*	R	R*	-	R*	R	A*	A*	A*	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
Y*	-	-	-	Y*	Y	-	-	Y*	Y	-	Y*	-	Y	Y	Y*	Y*	Y	Y
Y*	Y*	-	-	Y	Y	T	Y	T	T	Y*	-	-	Y*	Y	Y*	Y	Y*	Y*
NP	-	-	-	A*	R*	A*	A*	NP	NP	-	-	-	NP	NP	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	M	M	M	-	-	-	-	-	-
R*	G*	G*	R*	R*	R*	G*	R*	G*	G*	G*	R	G	G*	R*	R*	G*	G*	G*
S*	C	S*	S*	S*	S*	S	S*	C	S*	S	S	S*	S	S*	S*	C	C	C
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R	R*	-	-
-	-	-	R*	-	-	-	-	R*	-	-	-	-	R*	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R	R	R	R*	R	R	R	R*	R*	R	R	R	R	R	R
-	W	W	W	-	-	-	M*	-	-	W	W	-	W*	-	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	-	B*	-	B*	B*	-	-	-	-	-	B*	W*	N*	-	H*	N*	N*	N*
M*	-	-	-	-	-	-	-	-	-	-	M*	-	M*	M	M*	-	M*	-
-	NP	NP	NP	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	Y	H*	H*	W*	H*	W*	W*	W*	W*
-	S	S	S	S*	S*	-	V*	S*	S*	S	S	S*	V*	V*	S*	V*	V*	V*
-	K	K	K	K	G	K	K*	-	K	G*	G	K*	K	-	G	G	K	K
W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	-
-	-	-	-	-	K*	-	-	-	-	-	-	-	D*	-	K*	-	R*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	R*	G*	R*	G*	G*	G*	R*	G*	G*	G*	G	R*	G*	R*	G*	G*	G*	G*
M	M*	-	-	-	M*	V*	-	-	M*	-	M*	M*	M*	H*	M*	M*	V*	M*
-	-	-	-	Y*	Y	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	low_cov	-	-	-	-	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	M*	-	-	M*	NP	NP
NP	-	-	-	-	-	NP	NP	NP	NP	-	low_cov	-	-	-	R*	R*	NP	NP
Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y
R*	-	-	R*	R*	R	-	-	-	-	-	-	-	R*	-	R*	-	-	R*
R*	R	R	R	R	R	-	R*	R*	R*	-	R	R*	R	R*	R	R*	R	R
-	R	R	R	R	R	-	-	-	-	-	R*	R*	R	R*	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	Y
NP	NP	NP	NP	A*	A	A*	A*	NP	NP	NP	NP	NP	NP	NP	A*	A*	NP	NP

NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	Y*	-
R	R	R*	R	R	R	R*	-	R*	-	-	-	R*	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	NP	NP	R	G	G*	-	-	R*	G	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*
-	Y	C	Y*	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	Y*	-	Y*	-
NP	-	-	-	-	-	NP	NP	-	-	Y*	Y*	T	-	-	Y*	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	C*	C*	C	C*	NP	NP	NP	NP	NP	NP
NP	R	-	-	R*	R*	NP	NP	NP	NP	G*	G	R*	R	R*	R	G	R*	-
W*	W	-	W*	T	T	W	T*	NP	NP	W	W*	W*	W*	W*	-	-	W*	W
-	-	-	R*	-	R*	R	R	-	-	-	R*	-	R*	-	R*	-	R*	-
-	-	-	-	R	A	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	R*	R*	R*	A	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	Y*	Y	Y	Y	T	-	Y*	-	-	-	Y	-	Y*	Y*	-	Y*
G*	R*	R*	R	R*	G	R*	G*	R*	R*	R*	G*	R*	R	G	R	R	R	G
-	-	-	-	Y	Y	Y	Y	-	-	-	-	Y*	Y*	-	-	-	Y*	Y*
NP	R*	A*	R*	-	-	R*	-	NP	NP	R*	-	R*	-	-	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	R*	R*	R	R*	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R
-	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	-	-	R*	-
Y*	-	-	Y*	Y	Y	Y	Y	Y*	-	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
Y*	-	-	-	-	-	-	-	Y*	C*	Y	Y	Y	Y*	C	-	-	-	-
-	-	-	-	-	-	W*	W	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	R	R	R*	NP	NP	-	-	-	-	-	R*	-	R*	R*
-	R	R*	R	R	R	R	R	-	-	R	R*	R*	R	R	R	R	R	R
S*	-	-	-	-	-	-	-	-	-	-	S*	Y*	-	-	-	-	-	-
-	-	-	-	-	S*	-	-	R*	-	-	-	-	S*	-	V*	-	V*	V*
R*	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
M*	M	C	M*	M*	-	-	-	-	-	-	M*	M*	M*	M*	M*	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y	Y	Y*	Y*	-	-	-	Y*	-	Y	Y*	Y*	Y*	Y*	Y
NP	low_cov	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R	-	NP	NP	-	-	NP	NP	NP	R*	-	NP	NP	-	R*
NP	-	-	-	-	-	Y*	Y	NP	NP	-	-	-	-	-	-	-	-	-
-	K*	K*	K*	K*	K*	K*	K*	-	-	K*	K*	K*	K*	K*	K*	-	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	C	S*	S	S	S*	S*	-	-	S*	S*	S*	-	S	S*	S*	-	S*	S
NP	low_cov	A*	A	NP	NP	NP	NP	R*	-	NP	NP	NP	NP	NP	A*	R*	A*	A*
-	-	-	Y*	Y	Y	Y	Y	-	-	Y	Y*	Y	H*	Y*	Y	Y*	Y*	Y*
NP	G*	G*	G*	R*	G*	G*	G*	NP	NP	G*	R*	G*	R*	G*	G*	G*	G*	G*
R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	-
-	-	-	M*	M*	M	M*	M*	-	-	-	-	-	M	M	M	M	M*	M*
R*	-	-	R*	-	-	-	-	R*	R*	R	R	-	R*	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	R*	A*	R*	A*	R*	A*	R*	A*	A*	-	R*	A*	A*
NP	-	-	M*	NP	NP	NP	NP	-	-	-	-	-	M*	M	-	-	NP	NP
R*	R*	R*	R*	NP	NP	NP	NP	R*	G*	NP	NP	NP	R*	-	G*	R*	NP	NP
NP	C	Y*	Y*	-	-	Y*	Y*	-	-	NP	NP	NP	Y*	C*	-	Y*	Y*	Y*
Y*	T	T	T	T	T*	Y*	T*	T*	T*	T	T	T	Y	-	Y	Y*	Y*	Y*
K*	NP	NP	NP	NP	NP	NP	NP	K*	T*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	S	S	S*	S*	NP	NP	-	-	-	S*	-	S*	-	S*	S*

R*	-	-	-	R	R	R*	R*	R*	R*	-	-	-	R*	-	R*	-	R*	R
S*	S*	S*	S*	S	S	S	C	C	S	S*	S	C	S	S	S	S	S	S
-	-	-	-	M	M	M	M	M*	M	-	-	-	M*	-	M*	-	M*	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
R*	R*	R*	R*	R	R	R	R	R*	R	R	R*	R*	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	-	-
-	-	-	-	Y	Y	Y	T	Y*	Y	-	-	-	Y	Y*	Y*	Y*	Y*	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	A	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
Y*	Y	Y	Y	Y*	H*	Y*	Y	Y	Y	H*	Y*	C	Y	C	Y	Y	Y	Y
-	Y*	B*	Y*	Y	B*	Y*	Y	B*	Y	-	H*	Y*	N*	Y*	Y*	W*	N*	Y*
-	-	-	-	M*	M*	NP	NP	-	-	M*	M*	M*	M*	M*	M*	-	-	M*
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y
R*	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
-	-	Y*	-	-	-	-	-	S*	S*	-	-	-	-	-	S*	S*	S*	S*
R*	R	R	R	R*	R*	R*	R	V*	R*	A	R	R*	R	R	R	R	R	R
S*	-	-	S*	-	S*	-	-	S*	-	-	S*	S*	S*	S*	S*	S	V*	S*
-	-	-	-	-	-	-	-	-	-	R*	R	R*	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y	Y	Y	Y*	Y	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	S*	-	S*	S*	S*	S	S*	-	-	S*	S*	S*	S*	S	-	-	S*	S*
-	Y*	Y*	Y	Y*	Y	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	M*	-	-	-	-	NP	NP	NP	NP	-	-	-	-	M*	NP	NP	NP	NP
G	G	R*	R	R	R	R*	R*	-	-	R*	R	R*	R	G	R	R	R	R
-	Y*	Y	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-	Y*	Y*
-	R	R	R	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
-	S*	S	S	-	-	-	-	-	-	S*	S*	-	S*	-	S*	-	S*	S*
NP	-	-	-	M	M	NP	NP	NP	NP	-	-	-	M*	-	NP	NP	NP	NP
-	Y*	Y	Y	-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	-	Y*	-
-	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	M*	-	M*	-	-	-	-
NP	low_cov	W*	T*	NP	NP	NP	NP	W*	W*	NP	NP	NP	T*	W*	W*	W*	NP	NP
G*	G	G*	G*	G*	R*	G*	G*	G*	G*	R	R	R	G*	G*	G*	G*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	R	R	R	-	-	-	-	-	-	-	R*	-	R*	R*	R*	-	R*	R*
C	Y	C*	Y*	NP	NP	Y*	C*	Y*	Y*	Y*	C	Y*	C*	Y*	C*	Y*	C*	C*
Y*	Y	C*	Y*	Y	Y*	C*	Y*	C	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y
G*	G	G*	G*	G*	R*	G*	G*	G*	G*	R*	G	G	G*	G*	G*	G	G*	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	Y	Y	Y	-	Y*	Y	Y	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	-
NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-
A*	R	R*	R	R*	A	R	R*	A	A	R	R*	R*	R	R*	A	R*	R	R
Y*	-	-	Y*	-	-	-	-	Y	Y	-	-	-	Y*	-	-	-	Y*	-
R*	R	R	R	-	-	-	-	-	-	R	R	R	R*	R	R	R	R*	R*
Y	C	C	Y	Y	Y	Y*	-	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y
Y*	Y	Y	Y	Y	Y	-	Y*	C*	Y	Y*	Y	Y*	Y	Y*	Y	Y	Y	Y
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R*	R*	R	R	R*	R*	R*	A	R*	R	A	R	R	R	R

-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	R*
-	-	-	R*	-	-	-	-	-	-	-	-	S*	-	R*	-	-	R*	-
C*	Y*	C*	C*	Y*	Y*	Y*	C*	Y*	Y	C	C*	C*	C*	C*	C*	C*	C*	C
A*	A*	A*	A*	A*	A*	A*	A*	R	R*	A*	A*	A*	A*	A	A*	A*	A*	A
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
C*	low_cov	C*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	C*
-	R*	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-	-	-	R*
R*	R	R	R*	R	R	R*	-	-	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	Y*	Y*	Y*	Y	Y	Y	Y	-	M*	-	Y*	Y*	Y*	Y*	H*	H*
-	-	-	Y*	W*	W*	Y	Y*	Y	Y*	-	-	-	H*	-	Y	Y	Y*	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	H*	Y*	Y*	Y	Y	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	-	-	R	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*
Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	H*	Y*	H*	-	H*	W*
V*	S	S	V*	B*	N*	V*	S	S*	S*	S*	V*	S*	N*	V*	N*	S*	V*	N*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	low_cov	Y*	Y*	C	Y*	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	D*	D*	-	R*	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S*	S	G*	S	G*	G	G*	G*	G*	S*	S	S	G	S	G*	S	S*	G	G*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-
A*	A*	A*	A	A	R	A*	A*	R	-	R	A	R	R	R*	R	R*	R	R
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-
-	-	-	M*	M*	M*	-	M*	M	M*	-	-	-	M*	M	-	M*	M*	M*
-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y*	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*
-	-	-	K*	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
NP	-	-	-	-	-	-	-	R*	G	-	-	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	Y*	-	S*	S	-	-	-	-	-	-	S*	-	S*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*	Y*	-	-
-	R*	R*	R*	R	R*	G	R*	R	R	R*	R*	R*	R	R*	R*	G	G	G
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	-
-	Y	C*	Y	Y	Y	C	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y
-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R	R	R	R	R	R*	-	R*	-	R	R	R	R	R	R
Y*	Y	Y	Y	T	Y	Y	T	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	Y*	-	K*	-	-	-	-	-	-	-
-	-	-	-	C	Y	-	-	-	-	-	-	-	Y	-	-	-	Y*	Y*
-	-	-	Y*	Y*	-	Y	Y*	-	Y*	-	Y*	Y*	H*	Y*	Y*	Y*	H*	H*
R*	R	R*	R*	R	R	R	R*	R*	-	-	R*	-	R	R*	R*	R*	R	R*
R*	R*	R*	V*	R	R	-	R*	-	R*	-	R*	R*	R*	R*	R*	R	R*	R*
Y*	-	-	Y*	Y	Y	Y*	Y*	-	-	-	Y*	Y*	Y	Y*	Y	Y	H*	Y
Y	-	-	Y*	Y	Y	-	-	-	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y*
Y	Y*	-	-	Y	Y	-	-	-	Y*	Y	Y	Y	Y	Y	Y*	-	Y*	Y*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
NP	NP	NP	NP	-	-	NP	NP	NP	NP	low_cov	-	R*	R	R*	A*	A	R*	-
Y*	-	-	Y*	Y	Y	Y*	-	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y
K	-	-	K*	K	K	-	-	-	-	K	K	K	K	K	K	K*	K	K*
-	-	-	-	T	T	-	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	-	K*	-	-	-	-	-
-	Y*	-	-	Y	Y	-	-	-	Y*	Y	Y	Y	Y*	Y*	H*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
T	Y	Y	Y	Y	T*	Y*	Y	T	Y*	Y	T*	T*	Y	T*	Y	Y	Y	Y
Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y	C*	C	Y	Y	Y	Y	Y	Y	Y
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	T	Y	Y	Y	Y
-	-	-	-	Y	Y*	-	-	Y*	Y	-	-	-	Y*	Y	Y*	Y*	Y*	Y*
R*	low_cov	R*	G*	R*	R	R*	-	R*	R*	-	-	-	R	R*	R*	-	R	G*
Y*	-	-	-	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y	T*	T*	T*	T*	Y*	Y	T*	T*	T*	T*	Y*	T*	Y*	T*	Y	Y*	T*	T*
-	-	-	-	-	-	-	-	-	-	R*	A	R*	-	-	A	R*	-	-
-	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	R*	R	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP
-	R	R*	R*	-	-	-	-	-	-	-	-	R*	R*	R	R*	R	R*	R*
B*	K*	K*	B*	K*	B*	K*	K	K*	K*	K	K*	B*	N*	B*	N*	K*	N*	N*
M*	-	-	Y*	-	-	-	-	-	-	-	M*	M*	H*	M*	M*	M*	M*	M*
R*	R	R	R	R*	R	R	R	R*	R*	R	R	R*	R*	R	R	R	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	NP	NP
Y*	Y*	Y	Y	Y	Y	-	-	-	-	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y
R*	-	-	R*	-	-	-	-	NP	NP	R*	-	-	-	R*	R	R*	NP	NP
K	K	K	K*	K	K	K	K	K	K	K	K	K	K*	K	K*	K*	K*	K
Y*	-	-	Y*	-	-	-	-	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
G*	R	R	R	R	R*	R	R	R	R	R	G	G*	R	G	R*	G*	R	G
NP	Y*	Y*	Y*	-	Y*	Y	Y*	Y*	T*	Y	T	T*	Y*	T	Y*	Y	-	-
-	-	-	-	-	-	R	R*	NP	NP	-	-	-	-	-	-	-	-	-
NP	Y*	Y*	-	Y*	Y*	Y	Y*	NP	NP	Y*	Y	Y*	Y*	Y	Y*	-	Y*	Y*
R*	R*	R*	R	R*	R	R	-	R	R	R	R	G	R*	R	R	R	R*	R*
R	-	-	R*	R*	-	-	-	-	-	R	R	R*	R*	R*	R	R	R*	-
Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	-	-	Y*	Y
A*	W*	W*	W*	W*	W*	W*	-	NP	NP	W*	W*	W*	NP	NP	A*	W*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	R	R*	R	NP	NP	G*	G*	NP	NP
A*	R	R*	R	R*	R*	R*	-	NP	NP	-	R	-	R*	R	R	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y	C	Y	Y	Y*	Y	Y*	Y	C*	C*	-	Y*	-	Y	Y	C	Y	Y	Y
-	R*	R*	R*	R*	R*	R*	R*	R*	A*	-	-	R*	R*	-	R*	R*	R*	R*
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	R	-	R*	-	-
Y*	M	M	M	-	M	M	M	M*	M	-	-	-	M*	Y	M	H*	M	M
-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	H*	-	Y*	Y*	Y*	Y*	-
Y*	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y	Y	Y*	-	-	Y*	-	H*	-	Y*	-	H*	Y*
Y*	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
D*	R	R	R*	R*	R*	D*	R*	N*	V*	-	R*	D*	D*	R*	R	R*	D*	D*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	-
M*	-	-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y*	-	Y*	T	Y*	Y*	T	-	-	-	-	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	R*	-	R*	-	-	-	N*	-	R*	R*	R*	R*	R*	R*	R*	R*
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
R	R	R	R	R	R	R	R	R	R*	R*	R	R*	R	R	R	R*	R	R
R*	R*	-	R*	-	R*	-	R*	R*	-	R	R*	R*	R*	R*	R*	R*	R*	R*
D*	K*	-	K*	-	-	-	S*	K	K	-	K*	K*	N*	K*	K*	K*	K*	B*
Y*	-	-	Y*	Y*	Y*	-	-	-	Y*	-	H*	N*	H*	H*	H*	H*	H*	H*
A	R*	R	R	R*	A	R*	R	A	A	-	R	R*	R	R	R	R	R	R
R*	-	-	-	-	-	-	-	R*	R	-	R*	-	R*	-	R*	R*	R*	R*
-	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	K*	-	K*	-
-	-	-	-	-	-	K*	K*	-	-	-	-	-	-	-	K	-	-	K*
Y*	-	-	Y*	-	-	-	-	Y	Y*	Y	Y	Y	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	K*	-	-	-	-	NP	NP	NP	-	-	K	K*	K*	K*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	R*	R	R*	R*	-
S*	S*	S	S	-	-	-	-	-	-	S	S*	S*	-	S	-	-	S*	-
-	-	-	R*	-	-	-	-	-	-	-	-	R*	R*	R	R*	R*	R*	R*
K	-	-	K*	K	K	K	K	-	-	-	K*	K*	K	K*	K*	K	K	K*
R*	-	-	-	-	-	-	-	R*	R*	R	R	R*	-	-	-	-	-	-
-	S	S	C	-	S	C*	C	C	C*	-	S*	-	S	S	C	C*	NP	NP
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	H*	Y*	Y*	-	-	-	Y*	Y*	H*	H*	H*	H*	H*	H*	H*	H*
Y*	Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y*	T	Y*
NP	K*	K*	K*	-	-	-	-	-	-	K*	K*	-	K*	K*	K*	K*	K*	K*
R*	T	T	T	-	-	-	-	R*	-	K*	K	K*	K	K	K*	K*	T	K
M*	M*	M	M	V*	V*	V*	V*	M*	V*	M	M	M	V*	M	M	M	M	M
Y*	Y	Y	Y	-	-	-	-	Y*	-	Y	Y	Y	Y	Y*	Y	Y	Y	Y
M*	M	M	M*	M*	M*	-	-	-	M*	M*	M*	H*	M*	M*	M*	M*	M*	V*
R*	R	-	R*	R	R	R*	R*	R*	R*	R	R*	R*	R	R	R	R	R	R
R*	R*	R*	R	-	-	-	-	R*	R*	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	R*	A	R	A	R*	R*	R*	-	R*	R*	R*	R	R*	R*	R*	R
R*	-	K*	-	-	-	-	-	-	-	-	R*	R*	D*	R*	R*	-	D*	K*
Y*	-	Y*	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	H*	-
-	S*	S*	S*	-	-	-	-	S*	S*	-	S*	-	S*	S*	S*	S*	S*	S*
K*	K	K	K	K*	K*	B*	-	R*	K*	K	K*	K	D*	K	K	K*	D*	N*
NP	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	Y*
R	R	R	R*	R	R	R	R*	R*	R	R*	R*	R	R*	R	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M*	M*	-	-	-	-	-	-	M*	M*	M*	M*	M	M*	-	-	-
-	M	A	A	M	M	M	M	M*	-	M	M	M	M*	M	A	A	M*	-
C*	-	-	S*	S	S*	S*	-	NP	NP	S	S	S	S*	S*	S*	S*	S*	S*

-	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y*	-	-	Y	Y*	-	-	-
Y*	C	C*	C	-	-	Y	Y*	Y	Y*	Y	Y	C	Y	Y	C	C	Y	Y
R*	R*	-	R*	R	R	R	R	R	R*	R	R*	R*	R*	R	R*	R*	R*	R
Y*	-	-	-	Y	T	Y*	Y*	-	-	Y	Y	T	Y*	Y	Y*	-	Y*	Y*
R*	-	-	-	G	R*	NP	NP	-	-	R	R	R	R	R	R*	-	R*	R*
R*	R*	-	R*	R*	R	R	R	R*	-	R	R	R	R	R	R*	R*	R	R
C*	-	-	-	C	C*	C	C	-	-	NP	NP	NP	M*	C	M*	-	NP	NP
-	-	-	-	Y*	Y	-	-	-	-	-	Y*	-	Y*	-	-	-	Y*	Y*
S	S	S	S*	S	C	S	S	S*	S*	C	S	S	S	S	S	S	S	S
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
S*	Y*	-	-	-	-	-	-	-	-	-	-	S*	S*	S*	-	S*	S*	-
Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y
Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	H*	Y*	Y*	Y
R*	-	-	R*	R	R	R	R*	-	-	R	R	R	R*	R	R*	-	R*	R
R	R*	-	-	R	R	R	R	-	-	R	R	R	R	R	R*	R*	R*	R
R*	R*	-	R*	R	R	R	R*	-	-	R	R	R	R	R	R*	-	R*	R
Y*	-	-	Y*	-	Y*	-	-	Y*	Y	-	Y*	-	H*	Y*	Y*	Y*	H*	H*
R*	R*	R	R	R	R	-	-	R	R*	R	R	R*	R	R*	R	R*	R*	R*
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
R	R	R*	R*	R	R	-	-	R*	R	R	R	R	R	R*	R	R	R	R
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
NP	-	-	R*	R*	R	-	-	-	-	A	R	A	R	R	R	R*	R*	R*
-	Y	Y*	Y	-	-	-	-	-	-	-	M*	-	Y*	-	Y*	-	Y*	Y*
-	NP	NP	NP	NP	NP	Y*	T*	-	-	-	-	Y*	-	-	Y*	-	-	-
-	R	R	R*	-	-	R	R	-	-	-	-	-	R*	-	R	R*	-	R*
R*	-	-	R*	R	R	-	-	-	-	R*	R*	R	R	G	R*	R*	R	R
-	-	-	K*	-	-	-	-	K*	K*	-	-	-	K*	-	-	K*	K*	K*
-	-	-	-	R*	R*	-	-	-	-	R*	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
NP	-	-	-	-	R*	-	-	-	-	low_cov	-	-	-	-	-	-	NP	NP
S*	-	-	-	S*	S	-	-	-	-	S	S*	S*	S*	-	-	-	-	S*
-	-	-	-	S	S*	-	-	-	-	-	S*	-	N*	S*	S*	V*	V*	N*
NP	NP	NP	NP	NP	NP	-	-	NP	NP	low_cov	K*	T*	NP	NP	NP	NP	NP	NP
Y*	-	-	Y*	Y	Y	Y*	-	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	M	M	-	-	C	M*	M	M	C	M	M	M	M	M*	M
-	-	-	R*	R	R	R*	-	R*	R	R*	R	R	R	R	R	R*	R*	R
-	Y	Y	Y	Y	Y	-	-	Y*	Y*	-	Y*	-	Y	Y*	Y	Y*	Y	Y
-	R	R*	R*	-	-	-	-	-	-	R	R	R	D*	R*	R*	R*	R*	R*
-	NP	NP	NP	-	-	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	NP	NP
K*	-	-	K*	-	-	-	-	-	-	K	K*	K*	K*	-	-	-	K*	-
Y*	Y*	-	Y*	Y*	-	-	Y*	-	Y*	Y	Y*	Y	Y*	-	-	-	Y*	Y*
-	-	-	R*	-	R*	R	R	R*	R*	-	R*	R*	R*	R	R*	R*	R*	R*
-	-	-	-	-	-	R	R	-	R*	-	-	-	R*	R*	R*	R*	R*	R*
S*	-	-	S*	-	-	-	-	S*	-	S	S*	S*	S*	S*	S*	-	S*	-
NP	G*	G*	R*	G*	G*	R*	G*	R*	G*	low_cov	G*	G*	R*	G*	R*	G*	R*	G*
-	NP	NP	NP	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
R*	R*	R*	R*	-	-	-	-	R*	G	-	-	-	-	R*	-	-	-	-
R*	-	-	R*	R*	R	R*	R*	-	-	R	R*	R	R*	R	R*	R*	R*	R

C	C	C*	Y	Y	Y	NP	NP	C*	C*	Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y
R*	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	R*
-	R*	-	R*	-	-	-	-	-	-	R	R*	R*	R*	-	R*	R*	R*	R*
Y*	Y*	-	-	-	Y*	Y	Y*	Y*	-	Y	Y	Y*	Y*	Y	Y*	-	Y*	Y*
-	-	-	R*	-	-	-	-	-	R*	R	R*	R*	R*	R*	R*	R*	R*	R*
Y*	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	NP	NP
-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*
-	-	-	Y*	-	-	-	-	-	-	Y	Y	Y*	-	-	Y*	Y*	-	-
Y*	Y*	-	Y*	-	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*
-	Y*	-	-	-	-	-	Y*	-	-	Y	Y*	Y*	-	-	Y*	Y*	Y*	-
Y*	-	-	M*	-	-	-	-	-	-	-	Y*	-	-	M*	-	-	-	-
K*	K*	G	K	NP	NP	K*	G*	NP	NP	NP	NP	NP	K	K*	G	K*	G	K*
Y	Y*	-	Y*	-	Y*	Y	Y	Y*	-	Y	Y	Y	Y*	Y	Y*	-	Y*	Y*
-	R	G	R	R	R	-	-	R*	R*	R	R*	R*	R	R	R	R	R	R
R*	R*	R	R	-	-	-	-	-	-	R	R*	-	R*	R*	-	-	R*	-
-	-	-	Y*	-	-	Y	Y*	-	Y*	-	-	-	Y*	Y	Y	Y*	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	R	R	-	-	-	-	-	R*	R*	R	R*	R*	R*	R	R
-	R	R*	-	-	R*	-	-	R*	R	-	-	-	-	R	R*	R*	-	R*
-	Y	Y	Y	Y*	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R*	S*	-	-	-	S*	-	-	-	-	R*	-	R*	R*	R*	-
Y*	Y	C*	Y	C*	C*	Y*	C	-	-	C	C*	C*	Y	C*	Y*	Y*	Y	C
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	C*	S	-	-	S*	C	S*	-	-	S*	-	-	-	S*	-
-	Y*	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*
-	R	R*	R	-	R*	R*	-	R*	R*	-	R*	-	R*	R	R	R*	R*	R*
-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	-	-	-	R*
R*	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-	-	R*	-
-	S*	S*	S*	-	-	-	-	-	-	-	-	-	S*	S*	-	-	S*	S*
M*	-	-	-	M*	M*	-	-	M	M	-	-	-	M*	M	M*	M*	M*	M*
-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	R	R	R*	R*	R	R*	-	-	-	-	-
-	-	-	M*	M*	M*	M	-	-	Y*	-	M*	M*	M*	M*	M*	M*	M*	M*
-	-	-	Y*	-	-	Y*	Y*	-	-	-	-	-	Y*	Y*	-	-	Y*	-
-	-	-	-	NP	NP	R*	R*	NP	NP	-	-	-	-	R*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
R*	-	-	R	R	R*	R*	R*	R*	R	-	R*	-	R	R	G	G	R	R
-	-	-	-	R	R	R	R*	R	R*	R	R	R*	R	R*	R	R	R*	R
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*
-	-	-	-	Y	Y*	-	-	Y*	Y*	-	-	-	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	T*	T*	T*	T*	T*	Y*	T*	T*	T*	Y*	Y*	T*	T*	T*	T*	T*	T*	T*
-	-	-	R*	R	R	-	-	-	-	-	R*	-	R*	-	R	R*	R*	R*

NP	NP	NP	NP	-	-	NP	NP	-	-	R*	low_cov	-	NP	NP	NP	NP	NP	NP
-	A*	A	A*	M	M	A*	M*	M*	A	M*	A*	A*	M	M*	M	M*	M	M
-	-	-	-	Y	Y	-	-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y*	Y*
D*	-	-	-	-	-	-	-	-	-	-	W*	-	W*	-	W*	-	W*	-
T	K*	T*	K*	K	K	K*	T	K*	K*	T*	T	T	K	K	K	K	K	K
-	-	-	-	W*	W	-	-	W*	W*	-	-	-	W*	-	W*	-	W*	W*
-	-	-	-	Y	Y	-	-	Y*	Y*	-	Y*	-	Y*	Y*	Y	Y	Y*	Y*
R*	-	-	R*	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
NP	Y*	C*	C*	Y*	Y*	C*	C*	NP	NP	NP	NP	NP	Y*	Y*	Y*	Y*	Y*	Y*
-	M	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	S	S	-	-	S	S	-	-	-	S*	S*	S	S*	S*	S*
-	-	-	-	-	-	R	R	-	-	-	R*	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	K	K	K*	-	-	-	-	-	-
R*	-	-	R*	R	R	R*	R	-	R	-	R*	R*	R	R	R	R	R*	R
Y*	-	-	-	Y*	Y*	Y	Y*	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-
R*	-	-	R*	-	-	R	R*	-	-	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y	Y	-	Y*	Y*	Y	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	-	-	-	A	R*	R*	R*	-	R*	-	-	-	R*	R*	A*	R*	NP	NP
T	W	W*	W	W*	W*	W*	T*	W*	T*	W	W*	T*	W	W	T	W	W	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-	-	-	-	-
W	W	W	W	W	H*	W*	W*	W*	W*	W	W	W*	W	W	W	W	W	W
NP	-	-	-	A*	A	-	-	R*	-	-	-	-	R*	R*	R*	R*	R*	R*
S*	-	-	-	-	-	S	S*	-	-	S	S*	S*	-	-	S	S*	-	-
M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	C*	M*	M*
R	R*	G*	R	R	R	G*	G*	G*	G*	G*	G	R*	R	R	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	Y*	NP	NP
-	-	-	-	-	-	R*	R	A	R	-	-	-	R*	R	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R*	R*	R*	R	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
-	NP	NP	NP	-	-	NP	NP	Y*	-	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	C	C	NP	NP	C*	Y*	C	Y*	C*	Y*	Y*	C	Y*	C	Y*
NP	NP	NP	NP	R*	R*	NP	NP	A*	R*	NP	NP	NP	NP	NP	R*	R*	NP	NP
-	NP	NP	NP	Y*	Y*	-	-	-	Y*	-	-	-	-	Y*	Y*	Y*	-	Y*
-	-	-	R*	R	R*	-	-	R*	R*	R*	-	-	R*	-	R*	R	R*	R*
-	-	-	-	W*	-	NP	NP	-	W*	D*	D*	D*	-	D*	D*	W*	D*	-
R*	R	R*	R	R	R	R*	R*	A	A	A*	R	A	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	A	R*	R*	-	-	-	-	-	-	R	R	R	R*	R*	R*	R*	R	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	W*	-	-	A*	A*	A*	A*	A*	A*	A*	A*	A*	NP	NP	NP	NP	NP	NP
-	-	-	-	Y	Y	-	-	C	Y*	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	R*	R*	-	-	NP	NP	-	-	-	-	-	R*	R*	NP	NP
Y*	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	Y*
-	Y*	-	-	-	Y*	W*	-	-	-	Y*	-	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y	Y	-	H*	Y*	H*	H*	Y*	Y*	H*	H*
Y*	Y*	T*	Y*	T*	T	-	-	Y*	Y*	NP	NP	NP	Y*	T*	Y*	Y*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	-	-	G	R	-	-	-	-	R	G*	R*	R*	R*	R	G	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R*	-	-	-	A	R	R	R	R	R	R	R	R
-	-	-	-	R*	R	R*	R*	-	-	-	-	-	R*	-	NP	NP	R*	R*
Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	Y	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K	K*	K	K*	K*
-	R*	R*	R*	R	R*	R	R*	-	-	-	-	-	-	-	R*	R*	-	-
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
R*	R	R	R	G	R	R*	R	R*	-	R*	R*	R*	R	R*	R	R	R	R
-	Y*	-	-	T	Y*	Y*	-	-	Y*	Y*	-	-	Y*	-	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	W*	-	-	W	W	-	-	-	-	-	W*	W*	W*	W*	W*	W*	W*	W
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	R	-	-	-	-	-	-
-	R	-	-	-	-	-	-	R*	A*	R	R	R*	-	-	A	R*	-	-
Y*	Y*	T*	Y	-	-	NP	NP	-	-	-	-	-	Y*	Y*	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	B*	-	-	-	S*	Y	-	-	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
-	-	-	Y*	-	W*	-	-	Y*	Y	-	W*	-	H*	Y	Y*	Y*	H*	Y*
-	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	G*	G	R	R*	G*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C	Y*	Y*	-	-	-	-	NP	NP
R*	-	R*	R*	R*	R*	R*	-	R*	R*	-	-	R*	R*	R*	V*	S*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S	S	S	S	S	S	-	-	-	-	-	V*	-	S	S*	S	S	S	S
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
R	R	G	G	G	R*	G*	R*	R	G	G*	G	G*	G	G	G	G*	G	G
-	Y	C	Y*	C	Y	Y*	Y*	-	W*	Y	Y*	Y*	Y*	C	C	Y	Y*	Y
Y*	-	-	H*	Y*	Y*	-	-	-	-	-	Y*	H*	H*	Y*	Y*	H*	H*	H*
R*	R*	R*	R*	R	R*	R	R*	R*	R*	G	R	R*	R	R*	G	G	R	R*
R*	R	R*	V*	R	R	-	-	-	-	-	R*	R*	R	R*	R	R	R*	R*
-	Y*	Y*	Y*	Y	Y	-	-	-	-	-	Y*	-	Y*	Y*	Y	Y	Y*	Y*
-	Y	Y	Y*	-	-	Y	Y	Y*	Y*	C	Y	Y	Y*	Y	Y*	-	Y*	Y*
Y*	-	-	Y*	-	-	-	-	Y*	Y*	-	Y*	-	-	-	-	-	-	Y*

-	R	R*	R	R	R	R	R*	R	R*	R	R	R	R	R	R	R	R	R
Y	C	Y*	Y	Y	Y	Y	Y	C	Y	Y*	C	C	Y	Y	Y	Y	Y	Y
Y*	Y	Y	Y	Y	Y	Y*	H*	Y*	Y*	-	Y*	Y*	Y	Y*	Y	Y	Y	Y*
-	-	-	-	-	-	NP	NP	-	-	S*	-	S*	-	-	-	-	-	-
-	-	-	-	K*	K*	-	-	-	-	-	-	-	K*	-	-	-	-	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-
-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	R*	-	-	-	-	-	-	-	R*	R*	S*	-	R*	R*
R*	R	R	R	R*	R*	R	R	R	R	G	R	R	R	R	R	R	R	R*
R*	R*	A	R	-	R*	-	-	R*	R*	-	R*	R*	R	R*	R*	-	R	R*
-	-	-	-	-	-	-	-	-	-	R	R*	R*	-	-	-	-	-	R*
-	R*	R	R	R*	-	-	-	R*	R	-	-	-	R	R*	-	-	R*	-
-	-	-	Y*	-	-	-	-	Y*	Y*	-	-	-	Y*	Y	-	-	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	-	W*	-	-	-	-
-	-	-	-	-	-	A	R*	-	-	R*	-	R*	-	R	R	R*	-	-
M*	C*	C*	Y*	C*	C*	C*	M*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
R*	R*	R*	R	R	R	-	-	A	R	R	R	R	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M*	A*	M	M*	M*	A	A	M*	-	M*	M*	M*	M*	M	M	M*	M	M*
R*	R	R*	R	R	R	R	R	R*	R*	R*	R*	R*	R	R	R	R	R	R
-	R	-	-	R	R	-	-	-	-	-	-	-	R	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W*
R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
Y*	NP	NP	NP	-	-	NP	NP	T*	T*	Y*	Y*	Y	-	T*	Y*	-	NP	NP
Y*	Y	Y	Y	-	Y*	-	-	Y*	Y	-	Y*	-	Y	Y*	Y*	-	Y	Y*
NP	Y	Y	Y	C*	C*	C*	Y*	Y*	C*	C*	C*	C*	C*	C*	NP	NP	NP	NP
Y*	Y*	-	Y*	Y*	B*	-	-	Y*	H*	C	C	C	Y*	Y	Y*	Y*	Y*	Y
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y*	H*	Y
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
W*	W	W	W	W	W	-	-	W*	W*	W	W	W	W	W	W*	W*	W	W
M*	M*	M*	C	M*	M*	-	-	R*	M*	M*	M*	M*	C*	M*	M	M*	M	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	-
NP	C*	S*	S*	C*	S*	-	-	-	S*	low_cov	S*	S*	C	S	S	S*	S	S
M*	M	M*	M*	-	M	-	-	-	-	-	-	-	-	-	M*	M*	M*	-
-	-	-	-	R*	R	-	-	-	-	-	R*	-	R*	-	R*	R*	R*	R*
-	low_cov	-	-	R	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	-	-	-	-	R*	R*	-	-	R	G	R	-	-	-	-	-	R
-	K	K	K	-	-	K	K*	-	-	K	K	K	K*	K*	-	K*	K*	K
-	NP	NP	NP	-	-	NP	NP	NP	NP	R*	G	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	V*	-	-	-	R*	S*	-	R*	R*	R*	R*	-	S*	-	R*	R*
-	-	-	S*	-	-	S	S*	-	-	S*	S	S*	S*	-	-	-	S*	S*
-	W	W	W	-	-	-	-	W*	W*	A*	A	W	W	A	W*	-	W*	W*
-	-	-	-	M*	-	-	-	-	-	-	-	-	M*	-	-	-	M*	M*
-	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	V*	-	R*	-	V*	R*	R*	-	-	-	R*	-	R*	R*	R*	R*

R*	R*	D*	D*	R*	R*	R*	R*	D*	R*	-	R*	D*	D*	R*	R*	N*	V*	R*
Y*	-	-	Y*	C	C	Y*	C*	-	-	Y*	Y*	Y*	Y	C	Y	Y*	C	C
S	-	-	S*	C	S	S*	S	-	-	S*	S	S*	S	S	S	S*	S	S*
-	R*	R	R*	-	-	-	-	-	-	-	R*	R*	R*	-	R*	R*	R*	R*
M*	M*	M*	M	M	M	M*	M	A	M*	M*	M	M	M	A	M	M*	M	M
R	R*	-	R*	R*	R	R*	R*	-	R*	R	R*	R	R	R	R	R	R	R
C*	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	H*	Y	Y	Y	Y	Y
S*	S*	S*	S*	S*	S*	S*	S*	S*	S	S*	B*	S*	C	C	S	C	S	S
R*	R	R	R	R	R*	R*	R	-	R*	-	R*	R*	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	low_cov	C*	Y*	Y*	Y*	Y*	C*	Y*	Y*
Y*	-	-	Y*	-	Y*	-	-	-	-	-	Y*	-	-	Y*	-	-	Y*	-
-	Y*	-	-	Y*	Y	Y	Y*	-	-	-	H*	Y*	H*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y*	-	-	Y*	Y*	Y*	-	-	-	M*	Y*	Y	Y*	H*	Y	H*	H*	H*	H*
Y	Y*	Y*	Y	Y*	Y	Y*	C*	Y*	Y*	C*	Y	C	Y	Y	Y	C	Y	Y
G	R*	R*	R	R	R	R*	R*	G	R*	R*	G	R*	R	G	R	R*	R	R*
Y*	Y	Y	Y*	Y	Y	-	Y*	-	-	-	Y	Y*	H*	Y*	Y*	Y*	B*	H*
-	N*	-	R*	-	-	-	-	-	R*	R	V*	R*	V*	R*	R*	R*	R*	R*
K*	K*	-	K*	K*	K*	K*	-	K*	K*	K	K*	K	K*	K	K*	K*	K*	D*
-	R*	R	R*	R	R*	R*	-	-	-	-	R*	-	R*	R*	D*	R*	R*	D*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	R*	-	R*
-	S*	G	S	G	G	-	S*	-	-	S*	S*	S	S	S*	S*	S*	S*	S
-	K	K*	K*	-	-	-	-	K*	-	NP	NP	NP	-	-	-	-	-	-
-	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R*	V*	R	R*	R	R	-	R	R*	V*	R*	R	R	R	V*
C	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	H*	Y	Y*	C	Y*	Y*
NP	Y	Y*	-	-	-	NP	NP	Y*	Y*	-	-	-	Y*	T	-	-	-	Y*
-	Y	Y*	Y	-	Y*	-	Y*	Y*	-	-	-	-	Y*	Y	-	-	Y	-
Y*	Y	Y*	Y*	-	-	NP	NP	NP	NP	-	Y*	-	-	Y*	-	-	Y*	-
-	S	S*	S*	-	-	-	-	-	-	-	-	-	-	S	-	-	-	-
R*	R	G	G	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
M*	M*	-	M*	NP	NP	M*	M*	M*	M*	M	low_cov	M*	M*	M*	-	-	NP	NP
R*	R*	-	R*	G	G	G	-	R*	R*	R	R*	G*	R*	G*	-	-	NP	NP
R*	R*	A*	A*	A*	A*	R	R*	R*	A*	A*	A*	A*	A	A*	A*	R*	A*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y	-	-	-	-	-	-	Y*	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	T	K*	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	-	-
NP	R*	G	R	-	-	-	-	-	-	-	-	-	R*	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M	C*	M	M*	-	M	M	-	-	M	M	M*	M	M	M*	-	M	M*

NP	-	-	R*	-	R*	-	-	-	-	R*	R*	-	-	-	NP	NP	NP	NP
NP	-	-	-	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	S	S	S	-	S	S	S*	R*	-	S	S	S	S	S	S*	S*	S	S
NP	-	-	Y*	-	C	-	-	-	-	NP	NP	NP	Y*	-	Y*	-	NP	NP
R*	G	G*	G	R*	R*	R	G	R*	R*	R	R*	G*	R*	G	R*	R*	R*	R*
Y*	Y	C*	Y	Y*	Y	Y	Y	-	Y*	Y	Y	Y*	Y	Y	Y*	-	Y	Y
S*	-	-	-	-	S	-	-	-	-	NP	NP	NP	NP	NP	S*	-	NP	NP
Y*	NP	NP	NP	C*	Y	NP	NP	-	-	Y	C	C*	Y*	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	M*	NP	NP	-	low_cov	M*	NP	NP	-	-	NP	NP
NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	NP	Y*	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-
-	-	-	Y*	-	-	-	-	-	-	Y	Y*	-	Y*	-	-	-	-	-
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	V*	-	-	S*	-
R*	-	-	-	-	-	-	-	R*	-	R	R*	R*	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	R	R*	R*	-	-	-	-	-	R*
-	-	-	-	-	-	Y	C	-	-	-	Y*	-	Y*	Y	-	-	Y*	H*
-	R*	R	R*	-	-	-	-	-	-	-	-	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	K*	K*	-	-	-	-	-	-	K*
NP	NP	NP	NP	Y*	C*	NP	NP	NP	NP	-	Y*	Y*	NP	NP	NP	NP	NP	NP
R*	R	R	R	R	R	R*	R*	R*	R	R	R	R	R	R	R	R	R	R
R*	-	-	-	-	-	R*	-	-	-	R	R*	R*	R*	-	R*	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	H*	Y	Y	Y	H*	Y
-	T	T*	T*	NP	NP	NP	NP	T*	T*	K*	K*	-	-	-	K*	K*	NP	NP
R*	R*	A	R*	R*	R	R*	R*	A*	R*	R	R	R*	R	R	R	R	A	A
R*	R	R*	G	R	R	R*	G	R*	G	R*	R	R*	R	R*	R	R*	R	G
-	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	C	Y	-	-	NP	NP	-	-	-	-	-	-	-	-	-
R*	R	R	R	R*	R*	R*	R*	R	R	G	R*	G*	R	R	R	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	low_cov	T*	Y*	NP	NP	NP	NP	NP	NP
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
NP	Y*	Y*	Y*	Y*	-	NP	NP	-	-	Y*	Y*	-	Y*	Y*	-	-	Y*	Y*
Y*	T*	T*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y	Y	Y	T	Y	Y
-	-	-	-	-	-	-	-	K*	K	-	-	-	-	-	-	-	-	K*
-	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	NP	NP	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	G*	R*	R*	G	R	R*	R*	R*	R*	R*	R*	R*	R	G	R	R	R	R
S*	S	S	S	S*	-	C	S*	S*	S*	S	S	S*	S	S	C	S	S	S
R	-	-	D*	R*	R*	-	-	R*	R*	R	R	R	D*	R*	R*	R*	R*	R*
NP	NP	NP	NP	R*	D*	NP	NP	R*	D*	NP	NP	NP	R*	R*	NP	NP	R*	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	-	-	-	-	Y*
-	-	-	Y*	-	-	Y*	Y*	Y	Y	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
R*	R	R*	R	R	R*	R*	R*	R	R	R*	R	G	R	R*	R	R	R	R*
-	-	-	S*	-	-	G	S*	S	S	-	-	S*	-	-	S*	-	-	S*
-	Y*	-	-	-	-	-	-	-	-	Y	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	R*	R*

-	Y*	Y	Y	Y*	Y*	NP	NP	C*	C*	Y*	Y*	Y*	Y	Y	C	C	NP	NP
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	NP	NP	NP	-	Y	C*	Y*	-	-	low_cov	C*	C	Y*	-	Y*	Y*	Y*	Y*
N*	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-
R*	R*	G*	R	G*	R	NP	NP	NP	NP	-	R	R*	R	R*	R*	-	R	R*
R*	R*	R*	R*	R*	R*	R	R	R*	R*	R	R*	R	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K*	-	K*
Y*	Y	T*	Y*	S*	Y	Y*	-	Y*	Y*	-	Y	Y*	Y	Y*	Y	Y	Y	Y
K*	K	K*	K*	-	-	K	-	G*	K*	-	-	K*	K*	-	-	W*	K*	K*
-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	M*	-	M*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	NP	NP	NP	NP	Y	Y*	Y*	Y*	T	NP	NP	Y*	Y*
Y	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	-	-	R*	-
V*	-	-	S*	-	-	-	-	-	-	-	-	-	V*	-	S*	S*	R*	V*
-	-	-	Y*	Y*	Y*	-	-	Y*	Y	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
T	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	-	-	-	Y*	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	Y	Y*	Y	-	-	-	-	-	-
H*	-	-	-	-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
K	K	K	K	K	K*	-	K*	-	K*	K	B*	G	K	K	K	K	K	K
R*	R	R	R	G	G	-	-	-	-	R*	R*	R	R	R*	G	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	Y*	-	-	-	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	NP	NP	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	-	-	-	R*	R	-	-	-	R*	R*	-	-	R*	R*
-	-	-	Y*	T	Y	-	-	Y*	Y	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
-	A*	A*	A	R*	R*	R*	R*	A*	A*	NP	NP	NP	R*	R*	NP	NP	NP	NP
-	-	-	-	R	R	R*	-	-	-	-	-	-	R*	R	R*	R*	-	R*
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	R*	-
-	-	-	-	-	-	-	-	-	-	W	W	W	-	-	-	-	-	-
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
M*	-	-	M*	-	-	-	-	-	-	-	-	Y*	M*	-	-	-	M*	-
S*	G*	S*	G*	S*	S*	S*	G*	G*	G*	G*	G*	G*	G*	G*	NP	NP	G*	G*
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-	Y*	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	M*	-	-	Y*	Y*
NP	-	-	-	-	-	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
R*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G	G*	G*	R	-	R*	G*
NP	NP	NP	NP	NP	NP	-	-	-	-	-	W*	-	NP	NP	-	-	NP	NP
-	A	A*	W	-	W*	W*	-	W*	A*	W*	W*	-	W*	W*	W*	W*	W	W*
NP	NP	NP	NP	NP	NP	A*	A*	NP	NP	A*	A*	A*	A*	A*	NP	NP	NP	NP
-	-	-	-	-	-	T	Y	-	-	-	-	-	-	Y	-	Y*	Y*	-
Y*	-	Y*	Y*	Y	Y	-	-	-	Y*	Y	T	T	Y	Y*	T	Y	Y	Y
-	-	K*	-	-	-	-	-	-	-	R	R*	R*	D*	-	-	R*	R*	-

-	Y	Y	Y	-	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	Y*
-	-	-	-	Y	Y	-	-	-	-	-	Y*	-	H*	Y*	Y*	Y*	Y*	Y*
-	R*	R	R	-	-	-	-	-	-	-	R*	-	R	R*	R	R*	R	R*
-	Y	Y	Y	Y	H*	-	Y*	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	R*	-	-	-	-	-	-	-	-	R	R	R*	-	-	-	-	-	-
R*	R*	R	R	R*	R*	-	-	R*	R*	R*	D*	R*	R	R	R	R*	R	R
-	-	-	-	M*	M	-	-	-	-	-	M*	M*	H*	H*	H*	M*	H*	M*
NP	Y*	Y	Y	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*
R*	R*	R	R	R	R	-	-	R*	R	-	R*	R*	R	R	R	R*	R	R
C	C	C*	C	Y	Y*	-	-	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y*	Y	C
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	M*	-
N*	Y	Y	Y	Y*	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
Y*	-	-	Y	-	-	-	Y*	Y*	T	-	Y*	-	H*	Y*	-	Y*	Y	Y*
R	-	-	R*	R*	R	-	-	R*	R*	R*	R*	R	R	R*	R*	R*	R	R
R*	R	R*	R	R	R	R*	R	R*	R	R	R	R*	R*	R	R	R*	R*	R
R*	R	R*	R	R*	R*	R*	R*	R*	R	R*	R	R*	R	R	R	R	R	R
Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y	Y	H*	Y	Y
NP	R*	R	R	R*	R	R*	-	R	R*	R*	R*	R*	R	R	R	R	R	R
NP	-	-	-	R*	R*	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	-	-	Y*	Y*	-	-	Y	Y	Y*	-	-	Y*	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	A	-	-	-	-	-	R*	R*	-	-
NP	R*	R*	R*	R*	R*	NP	NP	R*	-	NP	NP	NP	R*	R*	-	G	R*	R*
-	R*	G	R*	-	-	-	-	R*	R*	-	-	-	-	-	NP	NP	R*	-
Y*	Y*	Y*	H*	Y*	Y*	Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
-	S	S	S	S	S	S*	-	S	S*	-	-	-	S	G	S*	S*	S	S
-	M	M	M	-	-	-	-	M*	M	-	-	-	M*	-	M*	-	M*	M*
-	-	-	-	R*	R	-	-	R*	-	-	-	-	R*	-	R*	-	R*	R*
R*	-	-	-	R*	R	-	-	R*	R	-	-	-	R*	R*	R*	-	R*	-
-	Y*	Y*	Y	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-
-	-	-	-	R*	R	R*	R*	-	-	-	-	-	R*	-	R*	-	-	R*
-	-	-	S*	G*	S	G*	G*	S*	S*	NP	NP	NP	S*	S*	S*	G	-	S*
NP	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	Y	Y	-	-
NP	NP	NP	NP	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	M*	M*	NP	NP
R*	R*	A	A	R	R	-	R*	R*	-	R	R	R*	R*	R*	R	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	low_cov	low_cov	T*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	-	-	-	-	-	-	-	A	R*	-	-	R*	R*	NP	NP
NP	NP	NP	NP	G*	G*	NP	NP	-	-	G	G*	R*	NP	NP	G*	R*	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP
Y*	-	-	-	-	-	-	-	-	Y*	-	Y*	-	-	-	Y	Y	-	-
-	-	-	R*	R	R	R	R	R	R*	R	R*	R*	R	G	R	R	R	R
-	-	-	D*	K*	R*	-	-	K*	R*	-	R*	R*	D*	R*	R*	D*	D*	D*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	-	Y*	-	Y*	Y*
-	-	-	-	Y	Y*	-	-	-	-	low_cov	Y*	Y*	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-

Y	Y	Y*	Y	Y*	Y	Y	Y*	Y	Y	-	Y*	Y*	Y	Y	Y	Y*	Y	Y
-	-	-	R*	-	-	R	R*	-	-	-	-	-	R*	-	R*	-	R*	-
T*	Y	T*	Y	T*	Y	Y	Y*	Y*	Y	-	-	Y*	Y	Y	Y	Y*	Y	T
Y*	Y	Y*	Y	Y*	Y	Y*	Y*	Y	Y	-	Y	Y*	Y	Y	Y	Y	Y	Y
-	-	-	-	-	-	M	M	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	A	A*	R	R*	A	-	-	R*	A	-	-	-	R	R*	R*	-	R	R*
R*	R	R	R	R	R	-	-	-	-	R*	-	-	R	-	R*	R*	R	R
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	M*	M	-	-	-	-	-	-	-	M*	-	M*	-	-	M*
S	S	S*	S	S	S	S*	B*	S	S	S*	S*	S*	S	S	S	B*	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R	R*	R*	R	-	-	R*	R*	-	-	-	R*	-	R*	R*	R*	R*
-	-	-	S*	-	-	S*	S*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	Y*	Y	-	-	Y*	-	-	Y*	Y*	Y	-	Y*	-	C	Y*
-	Y	Y*	Y	Y	Y	-	-	-	-	-	-	-	Y	Y*	Y*	-	Y*	Y
M*	M*	M*	M	M	M	-	-	M*	M	M*	M	M	M	M	M	M	M	M
-	Y*	Y	Y*	Y*	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	G*	S*	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
R*	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	-	-	-	-	-	R*	A	-	-	-	-	-	-	-	R*	-	-	R*
-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	S*	C*	C*	S*	C*	C*	C*	C*	C*	S*	C*	C*	S*	C*	S	S*	S*	C*
R*	-	-	S*	-	-	-	-	-	-	-	R*	-	R*	R	-	-	R*	-
-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R*	R	R	-	-	R	R	-	-	R*	R*	R*	R*	R*	R*	R
-	W	W	W	-	-	-	-	-	-	-	W*	-	W*	W	W*	W*	W	W*
-	-	-	-	-	-	-	-	K	G	-	-	-	-	K*	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y*	Y*	Y	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-
-	S*	S*	-	S*	S*	-	-	S*	S*	NP	NP	NP	-	-	-	-	-	-
-	K	K*	K*	K	K*	-	-	K*	K*	-	-	-	K*	-	K*	K*	K*	K*
-	-	-	-	-	Y*	-	Y*	NP	NP	-	-	-	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	K*	K*	-	-	-	-	-	-	K*	-	-	-	-
-	-	-	-	-	-	-	-	M*	-	Y	N*	Y*	M*	-	M*	M*	M*	M*
-	Y*	H*	Y*	-	-	-	-	M*	-	Y	Y	Y	H*	Y*	-	-	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	S	-	-	-	-	-	-	-	-
-	R	R	R	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	W*	-	Y*	-	-	-	-	-	-	-	-	W*	Y*	W*	-	-	Y*	-
-	Y	Y*	Y*	-	-	-	-	NP	NP	Y	C	C	Y*	-	-	-	Y*	Y*
-	S*	S*	B*	-	-	-	-	S*	-	S*	S*	S	S*	S*	-	-	S*	Y*
-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
K*	T*	T*	K	K*	K*	K	T*	K*	K*	T*	T*	T*	K	T	T	K	K	K*
-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	Y	-	-	Y*	Y*
Y*	-	-	-	-	-	Y	Y	-	Y*	-	-	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	R	R	R*	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-
-	-	-	-	-	-	D*	R*	-	R*	-	-	-	R*	R	-	-	R*	R*
NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S	S	S	S*	S*	S*	S	-	S*	S	S	V*	S	S	S	S	S	S*
-	-	-	M*	NP	NP	NP	NP	NP	NP	NP	NP	NP	M*	M*	NP	NP	NP	NP
Y*	T*	T*	T*	T	Y*	NP	NP	Y*	Y*	T*	Y*	T*	Y*	T*	T*	T*	T	T*
-	-	-	-	-	-	S	S*	-	-	-	-	-	-	S*	-	-	-	-
K*	T	T*	T*	T	T	K*	-	K*	K	NP	NP	NP	T	T*	NP	NP	NP	NP
Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	T*	Y*	Y*	T	Y*	Y*	T	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	R*	R*	-	R*	-	R*	R*
R*	R*	-	R*	R*	-	-	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
R*	G	R*	R*	R*	R	R*	-	R*	R*	R*	R	R*	R	R	G	G*	R	R*
-	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	Y*	Y	Y*	-	-	-	-	-	-
-	R*	R*	R*	R*	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
-	S*	S*	S*	-	-	-	-	S*	-	-	-	-	S*	S	-	-	S*	S
K	-	W*	W*	Y*	N*	N*	-	H*	N*	-	D*	N*	N*	N*	N*	-	D*	N*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R	G	-	-	-	R*	-	G	R*	-	R*
C*	NP	NP	NP	C*	C*	NP	NP	-	-	C*	C*	C	NP	NP	Y*	-	NP	NP
R*	R*	R*	R*	R*	A*	-	-	R*	R*	A*	A*	A*	R	R	R	-	R	A
Y*	Y	Y*	Y*	-	Y*	-	-	-	Y*	Y	C	Y*	Y*	Y*	-	-	Y*	Y*
R*	A	A*	R*	A*	R*	R*	R*	R*	R*	R*	A*	A*	R	R	R	R*	R	A
Y*	Y*	T*	Y*	Y*	Y*	T*	T*	-	Y*	Y*	T*	Y*	Y	Y	Y*	-	T	Y*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	low_cov	-	-	-	-	-	-	NP	NP
R*	-	-	R*	-	-	-	-	-	R*	-	-	R*	R*	R	R*	R*	R*	-
K*	K*	K*	K*	K	K	K*	T	T	K*	K*	K	K*	K	T*	T	T*	K	K
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	K*	-	-	NP	NP	Y*	B*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-
-	-	-	Y*	Y*	-	-	Y*	-	-	-	Y*	-	Y*	Y	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	Y	Y*	-	-	-	H*	-	Y*	-	-	-
-	-	-	Y*	Y*	-	Y*	Y*	Y*	Y	Y*	-	H*	Y*	T	Y	Y*	Y*	Y*
-	low_cov	C*	Y	Y	Y	C*	C*	C*	Y*	C*	Y	C	Y	C	Y	C	Y	Y
W*	W*	A*	A*	A	A*	NP	NP	A*	A*	A*	A*	A*	A	A*	A*	A*	NP	NP
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*

NP	NP	NP	NP	Y*	Y*	C*	C*	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	R*	R	R*	R*	-	-	-	-	-	-	-	R*	-	-	-	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	Y*	-	-
-	R*	-	-	-	-	NP	NP	NP	NP	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	R	G*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
G*	R*	G*	R*	G*	R*	R*	G*	R	R	G*	G*	G*	R*	R	R*	R	G*	R*
NP	NP	NP	NP	A*	A*	NP	NP	A*	A*	A*	A*	A*	NP	NP	A*	A*	NP	NP
-	-	-	-	-	-	-	-	NP	NP	-	-	-	Y*	T	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	-	-	-	Y*	Y	-	-	Y*	-	-	-	-	-	-
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	Y*	-	-	-	-	-	Y*	-	Y*	Y	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	R	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	H*	-	-	M*	-
Y*	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	R	R	-	-	-	R*	-	R*	R*	-	-	R*	R*
M	M	M*	M	C	M	M*	M*	M	M*	M	M	M	M	M	M	M	M	M
-	S*	-	-	-	-	Y	Y	-	-	-	M*	-	H*	-	H*	-	H*	M*
R	-	R*	R*	R*	R*	R	R	R*	V*	-	R*	R*	R*	R	R*	R*	R*	R*
-	-	-	M*	-	M*	M	M	M*	M*	-	M*	-	M*	M	M*	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-	-	-
Y	Y	Y*	Y	T*	Y	Y*	Y*	Y	T	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	R	A*	R	A*	R	R*	-	R*	A*	R	R*	-	R*	R	R	R*	R*	A
-	K*	-	R*	-	R*	R	R	-	R*	-	R*	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	-
R*	R*	R	R	R	R	R	R	R*	R*	R	R	R*	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y*	-	-	-	Y	Y	Y*	Y*	T	Y*
-	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
K*	C	C	S	R*	-	-	-	-	-	C	S	C	S	S*	S*	S*	S	C
-	Y	Y	Y	-	Y*	-	-	-	-	Y*	Y	Y*	Y*	Y*	Y*	Y*	H*	Y*
-	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y	Y
NP	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	-	-	-	-	Y*	-	-	Y*	-	Y*
Y*	Y*	C*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y	Y	Y	Y*	Y	Y
-	-	-	-	K	K	-	-	-	-	-	-	-	K*	K*	K*	-	K*	K*
NP	-	-	-	-	-	NP	NP	-	R*	R*	R*	R	-	-	-	-	-	-
-	-	-	-	-	-	Y	Y*	-	Y*	Y*	Y*	Y	Y*	-	-	-	-	Y*
-	Y*	Y	Y	-	-	Y*	Y*	-	C	Y*	C	Y*	Y*	-	Y*	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	-	-	-	-	C*	S*	-	-	-	-	-	NP	NP	S*	-
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-

NP	low_cov	-	-	S*	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	R	R	R	R	R	-	-	-	-	R	R	R	R	R	R*	-	R*	R
-	-	-	R*	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	low_cov	-	-	NP	NP	NP	NP	NP	NP
R	R	R*	R	R	R	-	R*	R	R*	R*	R	R	R	R	R	R	R	R
-	R*	-	R*	-	-	-	-	-	-	R*	-	R*	R*	-	R*	-	R*	-
Y*	C*	Y*	Y	Y	Y	Y	Y*	C	C	C*	Y*	H*	Y	C	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*
Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	-	H*	-	-	-	Y*	-
Y*	-	-	-	-	-	Y	Y*	Y*	Y	Y	Y	Y	-	-	-	Y*	Y*	-
-	-	-	-	C	Y	-	-	-	-	-	-	-	Y	-	-	Y*	Y*	Y*
T*	T*	T*	T	Y*	Y*	T*	T	NP	NP	T*	T*	T*	NP	NP	T*	T*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
-	W*	-	-	-	-	-	-	W*	-	R	R	R*	-	-	-	-	-	-
R*	R*	R	R*	R*	R	A	R	-	-	-	-	-	R	R	R	-	R	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
NP	Y	-	-	NP	NP	NP	NP	NP	NP	low_cov	Y*	Y*	Y*	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	S	S	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R	-	R*	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	S*	S*	S*	S*	S*	S*	-	-	-	-	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	C*	C*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	S*	S*	NP	NP	NP	NP	G*	S*	S*	NP	NP	G*	G*	NP	NP
-	-	-	-	S*	S	-	-	-	R*	-	-	-	S*	-	S*	-	-	S
-	-	M*	-	Y	H*	-	-	M*	Y*	-	-	-	Y*	-	-	-	Y*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R	-	-	-	-	-	R*	-	R*	R*	-	-	R*	R*
NP	C*	C*	C	Y*	Y*	C*	C*	C	C*	C*	C	C*	Y	C*	C	Y*	NP	NP
-	-	-	-	-	-	W	W	-	-	-	-	-	W*	-	-	W*	W*	W*
-	-	-	Y*	Y	Y*	-	-	Y*	-	-	-	-	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	R	R	R	R	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	K*	-	K	K	-	-	-	-	-	K*	-	-	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	-	-	-
NP	NP	NP	NP	NP	NP	C*	C*	C*	C*	Y*	C*	C*	C*	Y*	C*	C*	Y*	Y*
-	Y*	-	Y	Y	Y	Y	Y*	C	Y	Y	Y*	Y	Y	-	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	-	-	Y	Y	Y*	Y	Y*	Y	Y*	Y*	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-

-	-	-	-	-	-	K*	K	K	K	K	K	K	K*	-	K*	-	K*	K*
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	Y	Y	Y*	-	Y	Y*	Y	Y*	-	-	-	-	-
-	-	-	R*	R	R*	-	-	V*	-	-	R*	-	R*	R*	R*	R*	V*	R*
-	-	-	W*	W	W	W	W	W	W*	W	W	W	W*	W*	W*	W*	W*	W*
Y*	T*	Y*	Y	Y	Y	T*	T	Y	Y*	Y*	Y*	T*	Y	Y	T	Y	Y	Y
W	W*	W*	W*	W*	W*	H*	W*	W*	W*	W*	H*	W	W*	W*	W*	W*	W*	W*
-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-
-	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*	A*	NP	NP	NP	NP	NP	NP
NP	Y*	Y*	Y*	NP	NP	-	-	Y*	-	-	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*
Y*	-	-	-	-	-	Y	Y*	Y	H*	Y	Y	Y*	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	R	R*	R	R	R*	R	R*	R	R*	R*	R*	R*	R*	R*
Y*	-	-	Y	Y	Y	Y*	Y*	-	-	-	H*	-	Y	Y*	Y*	Y*	Y	Y
-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	-	-	NP	NP
-	-	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	-	-	-	Y*	-
-	R	R	R*	-	R*	-	-	-	R*	-	R*	R*	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	W	W	-	-	-	-	-	-
Y*	-	-	Y*	Y	Y*	T	Y	Y*	T	Y	Y*	Y	Y	Y	Y*	-	Y*	Y*
A*	NP	NP	NP	NP	NP	NP	NP	A*	A*	W*	W*	W*	NP	NP	NP	NP	NP	NP
C*	S*	S*	S*	NP	NP	NP	NP	S*	-	S*	S*	-	S	C	S*	-	S	C
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	C	M*	M*	-	-	-	-	C*	M*	M*	M*	M*	M*	-	-	-	M*	-
R*	-	-	R*	-	R*	-	-	V*	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	R	R	-	-
NP	NP	NP	NP	-	-	-	-	A*	A*	NP	NP	NP	M	A	-	-	A	M*
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	NP	NP	-	-	-	-	-	-	-	T	Y*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	R*	-	NP	NP	NP	NP	NP	-	-	R*	R*
-	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y	Y
-	-	-	-	K*	-	-	-	K*	K*	-	-	-	K*	K	K	K	-	-
-	-	-	Y*	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
-	-	-	-	Y	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	-	Y*	Y*	Y*	Y*
-	W	W*	W*	-	-	-	-	-	-	W*	W*	W*	W*	W*	-	-	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	S*	-	Y*	-	-	-	-	-	M*	M*	N*	M*	H*	V*	V*	M*
-	-	R	R*	-	-	-	-	R*	R	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	Y	Y	-	-	-	-	Y	Y*	Y*	Y	-	Y*	Y*	Y*	Y*
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-
-	Y	Y*	Y*	-	-	Y	Y*	-	-	Y	Y	Y*	Y*	Y*	-	-	Y*	Y*
-	C*	Y*	Y*	Y*	C	-	-	NP	NP	-	-	-	Y*	Y*	NP	NP	Y*	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	Y*	Y*
R*	-	-	R*	-	-	R	R*	-	-	-	-	-	R	-	-	-	R*	R*
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	C*	Y*	C*	Y*	Y*	C*	C*	C	Y*	Y*	C*	Y*	C*	Y*	Y*	C*	C*	Y*
-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	R	A	R*	-	-	NP	NP	-	R*	-	R*	R*	NP	NP	R*	R*
R*	-	-	-	-	-	R	R*	-	-	-	R*	-	R*	-	-	-	R*	R*
M	M*	-	M*	-	M*	M	M	-	M*	-	M*	M*	M*	M*	M*	M*	M*	M*
-	M	M	M	M*	M*	M	M	M	M	M*	M	M*	M	M	M*	M*	M	M
-	-	-	Y*	Y	Y	-	-	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y*	Y
-	-	-	R*	R	R	-	-	-	-	R	R	R*	R*	G*	R	R*	R*	R*
-	-	-	-	-	R	-	-	-	-	-	-	-	R*	-	-	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
NP	K*	-	K*	K	K	-	-	-	-	K*	K	G*	K	K	K*	K*	K	-
-	-	-	-	NP	NP	-	-	-	-	Y*	Y*	Y*	NP	NP	-	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R*	R	-	-	NP	NP	R*	R*	-	R	G	-	R	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	R*	R	R*	-	-	R*	-	R	R*	-	R	A	R	R*	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	-	M*	M	M*	M*	-	M*	M*	M*	-	M*	M*	M	M	M*	M*	M	M
-	-	-	-	-	-	M	M	-	-	-	-	-	-	-	M*	-	-	-
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	Y	Y*	-	-	Y	Y	Y*	Y*	-	Y	Y*	Y*	-
Y	-	-	-	-	-	Y	Y	-	-	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	-
Y*	T	Y*	Y*	Y*	T	Y*	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
G*	NP	NP	NP	G*	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G*	R*	G*	G*	R*	NP	NP	G*	R*	R*	R*	G*	R*	R*	G*	G*	NP	NP
NP	low_cov	-	Y*	-	Y*	NP	NP	Y*	-	-	-	-	-	-	NP	NP	NP	NP
-	R*	R	R*	R*	R	R*	G*	R*	R	-	R*	R*	R	R*	R	R*	R	R
S*	S	S	S	-	S*	-	S*	S*	-	S*	S	V*	S*	S*	S*	S	S	S*
Y*	Y	Y	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	H*	Y*	H*	Y*	H*	H*	H*	H*
NP	NP	NP	NP	C*	C	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	C*	NP	NP
-	-	-	-	Y	Y	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	Y*	Y*
-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	-	Y*	-	H*	Y*
-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
NP	low_cov	S	S*	G	G	NP	NP	NP	NP	low_cov	S*	S	S	S*	NP	NP	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-
-	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	-	-	-	-
NP	-	-	-	Y*	Y	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	-	-	M*	-	-	-	-	-	-	-	-	-	M*	-	-	M*	M*	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
R*	-	-	R*	-	R*	-	-	R*	-	-	-	-	R*	R*	R	R	R*	R*
R	-	-	R*	R	G	R	R	-	-	R	R*	R*	R	R	R	R*	R	R
M*	-	-	M*	-	M*	-	-	-	M*	-	M*	M*	M*	M*	M*	M*	M*	M*
-	-	M*	-	M*	-	M*	M*	-	-	-	-	-	-	-	-	-	M*	-
S*	-	S*	S*	S*	S*	-	-	S*	-	NP	NP	NP	S	S*	S*	-	S*	S*
-	C	Y*	C	-	-	Y*	Y*	NP	NP	low_cov	Y*	C*	Y*	Y*	C	Y*	Y*	Y*
-	-	-	R*	-	-	-	-	R*	R*	-	-	-	R*	R	R*	R*	R*	R*
Y*	Y	Y	Y	Y*	Y	-	-	Y*	-	-	Y*	Y*	Y	Y	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	R*	R	R	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	S*	S	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	NP	NP	NP	A*	R*	R*	R*	R	R*	-	-	R*	A*	A*	R*	R*	NP	NP
-	Y	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
Y*	Y*	C*	Y*	Y*	Y*	Y	Y*	Y*	Y*	C*	Y*	Y*	Y*	C*	Y*	C	Y*	C
R*	R*	-	R*	-	-	-	-	-	-	R	R	R*	R*	-	-	-	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	W*	W*	low_cov	low_cov	A*	A*	A*	NP	NP	NP	NP
NP	NP	NP	NP	A*	A*	R*	-	R	R*	R*	R*	R*	A*	A*	NP	NP	A*	A*
S*	S*	-	S*	-	-	-	-	-	-	S*	S	S*	-	-	-	-	S*	-
G*	G*	R*	G*	G*	G*	G*	R*	R*	R*	G*	R*	G*	R*	G*	G*	G*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y	Y	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
S*	S	S	S	S	S	-	S*	S*	S*	S*	C	S*	S	S*	S	C	S	S
R	R	R	R	R*	R*	R*	-	R*	-	-	R	R*	R	R	R	A	R	R
-	R*	R*	R*	-	-	R*	A	A*	R	-	-	-	R*	R	R*	R*	-	-
Y*	Y	Y	Y	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y	C	Y	Y	Y	Y*	Y	C
-	Y*	Y*	T	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*
M*	-	-	M	M	M	-	-	M*	M*	-	-	-	M	M	M	M	M	M
Y*	-	-	Y*	Y*	Y*	-	-	Y*	-	-	H*	-	H*	Y*	Y*	Y*	H*	N*
NP	low_cov	Y*	C	C	Y*	-	-	NP	NP	NP	NP	NP	Y*	-	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S	S	-	-	S	S	S	S	-	R*	V*	S*	S	S	S	S*	S*
NP	-	-	-	R	G	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R*
-	NP	NP	NP	-	-	-	-	NP	NP	-	-	-	-	-	NP	NP	NP	NP
S*	S	S	S*	S	S	-	-	S*	G	S*	S	S*	S*	-	S	S*	S*	S*
-	Y	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	Y*
-	Y	Y	Y*	-	-	Y	Y*	Y	Y	-	Y*	-	Y*	Y	Y*	Y	Y*	Y*
-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	R*	-	-	-
-	-	-	S*	-	-	-	-	-	-	-	-	-	S*	-	S*	S*	-	-
-	-	-	-	S*	S*	-	-	-	-	-	-	-	S*	-	S*	-	B*	S*
S*	-	-	-	Y	Y	-	-	-	-	S	S	S	Y*	Y	Y*	-	Y*	H*
Y*	-	-	-	-	-	Y*	-	Y*	-	-	H*	M*	H*	-	H*	N*	N*	H*
NP	Y*	Y*	Y	Y*	Y	-	-	T*	Y*	Y*	T*	Y*	Y*	-	Y*	T*	Y*	-
R*	-	-	-	-	-	-	-	-	-	R	R*	R*	R*	R*	-	R*	R*	R*
Y*	-	-	-	-	-	-	-	-	-	T	Y*	T	-	-	-	-	-	-

-	-	-	-	R*	R	-	-	-	-	-	-	-	R*	R*	-	-	R*	R*
-	-	-	Y*	-	-	-	-	-	Y*	-	Y*	-	M*	-	-	-	-	Y*
-	Y*	Y*	Y*	-	-	Y	Y*	Y*	T*	-	-	-	Y*	Y	Y*	Y*	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	R	R	R	R*	R*	-	-	R*	-
-	R*	R	R*	-	-	R	A	R	R	-	-	-	R*	R	R	R	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-	-	-
Y*	Y*	Y	Y	Y	Y	-	-	Y*	C	Y*	Y*	Y*	Y	Y*	Y	C	Y	Y
-	Y	Y	Y*	Y*	-	Y	Y	Y	C	-	-	-	Y*	Y	Y	Y*	Y*	Y*
Y*	T	Y*	Y*	-	-	T*	Y*	T	T	T	Y	Y	Y*	Y	Y*	Y*	-	-
Y*	-	-	Y	Y	Y	-	-	-	-	-	-	-	Y	Y	Y	Y*	Y	Y*
-	-	M*	R*	M*	M*	-	M*	-	-	-	-	-	-	-	V*	R*	-	-
Y*	Y	Y	Y	Y	Y	Y*	C	Y*	C*	C	Y	Y*	Y	C	Y	Y*	Y	Y
V*	S	S	S	V*	S	S*	S*	S*	S*	S*	V*	V*	N*	S	N*	S	N*	N*
-	-	-	Y	Y*	Y*	-	-	-	Y*	-	-	Y*	Y*	Y	Y*	-	Y*	H*
Y*	H*	-	Y*	-	Y*	-	-	-	Y*	-	H*	H*	H*	H*	H*	H*	H*	H*
R	R	R	R	R	R	R*	R*	R	R*	R	R	R	D*	R	R	R	R*	R*
-	-	-	-	-	-	-	-	-	-	-	M*	-	M*	M*	M*	M*	M*	M*
R*	-	-	-	-	-	-	-	-	R*	-	R*	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	Y*	-	M*	-	-	-	M*	M*
R*	A*	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R	A	R*	R*	R	R*
R*	R	R*	R	A*	R*	A*	A	R*	A*	R*	R*	R*	R	R*	R	R	R	R*
Y*	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	A	-	-	-	R*	R*	R*	R*	R*	-	R*	R*
G*	R*	R*	R*	R	R*	R*	G*	NP	NP	NP	NP	NP	R*	-	R*	R*	NP	NP
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	-	-	-
NP	NP	NP	NP	NP	NP	R*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	R*	R	-	-	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	R*	R*	-	-	R*	-	-	-	-	-	R*	R*	-	-	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
Y*	-	-	-	Y*	Y*	-	-	Y*	Y*	-	-	-	Y*	Y*	Y*	-	-	Y*
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-
-	Y*	-	-	T	Y	-	-	-	-	-	M*	-	Y*	-	Y*	-	Y*	Y*
S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	R	R*	R*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	-	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP
M*	low_cov	-	-	-	-	M	M*	-	-	-	-	-	M*	-	M*	-	M*	M*
R*	-	-	R*	R	R	R	R*	R	R	-	R*	R*	R	R*	R	R	R*	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*
-	R	R	R	G	R*	-	-	G	R*	R*	R	R*	R	R*	R*	R*	R	R
-	R*	G	R*	G	G	-	-	R*	G*	R	R*	R*	R*	-	-	-	NP	NP
R*	G	R*	G	R*	R*	G*	R*	G*	R*	R*	G*	G	R*	G	R*	R*	R*	G*
-	R	G	R	R*	R	R*	G*	R	R	R*	R	R*	R	G	R	R	R	R
M*	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	K	K*	K*	K*	K	K	T	K	-	K*	K	K*	K*	T	NP	NP	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y*	Y	Y	Y*	Y*	C*	C*	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	Y*
R*	R	A	R	R	R	R*	-	R*	R*	A	A	A*	R	A*	R*	-	R	A
Y*	-	-	Y*	-	-	-	Y*	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-
R*	R*	R*	R*	R	R	-	R*	R	A	A*	R	A	R	R	R	R*	R	R
Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	Y*	Y*	-	Y	Y	Y*	Y*
-	Y	Y	Y*	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	-	Y*	Y*
-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
A	R	A*	R	A*	R*	R*	R*	R*	R*	R	R	R	R*	A*	A*	A	R	A
R*	-	-	R*	R	R	-	R*	R*	R*	R	R	R	R	R	R*	-	R	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*	H*	H*	N*	Y*	N*	H*
Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	-	Y*	Y*	Y	Y	Y	Y	Y	Y
G*	G	R*	G	R*	G*	G*	R*	R*	R*	G*	R*	R*	G	G*	G*	G	R	R*
NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
NP	R*	-	-	K*	K*	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
C*	M	M	M	C*	M*	C	C*	M*	M	C*	C*	C*	M	C*	C*	C	M	C
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	NP	NP	-	-	NP	NP
T*	T*	T*	T*	NP	NP	Y*	T*	T*	T*	T*	T*	T*	T*	T*	NP	NP	T*	T*
-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
-	low_cov	-	-	S*	S*	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP
S*	S	S	S	S	S	-	-	-	-	S*	-	-	S	-	S*	-	S	S*
-	Y*	-	-	-	Y*	-	-	Y	Y	-	-	-	Y*	-	Y*	Y	Y*	Y*
S*	S*	S*	S*	S*	S*	S*	S*	C*	S*	C	C*	C*	S*	C*	C*	C*	C*	S*
R*	-	-	R*	R*	R*	-	-	R*	R	-	R*	R*	R*	R*	R*	R*	R*	R*
R*	R	R*	R	R*	R	R*	-	R*	R	low_cov	R	G	R	G	R	R	R	R
R*	G*	G*	G*	R*	G*	G*	G*	G*	G*	G*	G*	G*	R*	R*	G*	G*	R*	G*
-	R*	R*	R*	R	R	-	-	-	-	R*	R*	R*	R	R	R*	R*	R	R
R*	R	R	R	G	G	R*	R*	R*	R*	G*	R*	R*	R	R	G	R	R	R
Y	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	-	-	S*	K*	S	-	-	C	S	-	-	-	S*	S*	S*	S*	S*	V*
Y*	Y*	Y*	Y*	Y*	T	-	-	-	-	Y*	-	-	Y*	Y*	Y*	Y*	Y*	T
-	-	-	-	-	Y*	-	Y*	Y*	Y	-	Y*	-	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	Y	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*
-	-	-	-	G*	G	-	-	-	-	R	-	-	-	-	R*	-	NP	NP
K*	-	-	K*	K*	K	-	-	K*	K	-	K*	K*	K*	K*	K*	K*	K*	K*
R	R*	R*	R*	R*	R*	R*	R*	R	R*	R	R	R	R*	R	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
R*	R*	-	R	R*	R	R	R	R*	N*	R*	R*	R*	V*	R	R	R	V*	V*
R*	-	-	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	R*	R*	R*	R*
M*	NP	NP	NP	-	-	NP	NP	-	-	NP	NP	NP	M*	M*	M*	M*	M*	M*
-	R	R	R	R*	R*	-	R*	-	-	A	R	A	R	R	R	R	R	R
K*	-	K*	K	K	K	K	K	K	K	K*	D*	K*	D*	K	K	K	K	K

S*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*
S*	S*	S*	V*	S*	S*	S*	S*	S*	S*	S*	S*	S*	V*	S*	S	S*	S*	V*
R*	-	-	R*	-	-	R	R*	R*	R	-	R*	R*	R*	R*	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-
Y*	Y*	-	Y*	-	-	Y	Y	Y*	-	-	-	-	Y*	-	-	-	Y*	H*
NP	NP	NP	NP	R*	R	R	R*	NP	NP	R*	R*	R*	A*	A*	NP	NP	-	R*
-	-	-	-	Y	Y	Y*	-	T	T*	-	-	-	T	-	Y*	-	Y*	Y*
-	NP	NP	NP	R*	R*	NP	NP	-	R*	-	-	-	-	-	-	-	NP	NP
T*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y
S*	S*	-	S*	-	-	S*	-	S*	S*	NP	NP	NP	-	-	S	G*	S*	S*
R*	R	R*	R	-	-	NP	NP	R*	-	A	A*	A	-	-	R*	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	-	Y*	Y*	Y*	Y	-	-	-	Y*	M*	-	H*	Y*	-	-	H*	Y*
-	-	-	-	-	-	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	-
R	R*	R	R	R*	R*	R*	R*	R	R	R*	R	R	R*	R	R	R	R*	R
-	R	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-
Y	Y	Y	Y	-	-	Y*	Y*	Y*	Y	-	Y*	Y*	Y	Y*	Y	Y	Y	Y*
-	-	-	-	-	-	G	R	-	-	-	-	-	R*	-	R	R*	R*	-
NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP
-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	T	Y*	-	-	M*	-	-	Y*	-	-	-
-	Y	Y	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-	Y*	Y*
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	S*	C	-	-	S*	S*	-	-	-	-	-	NP	NP	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	-	R*	R*
NP	-	-	-	-	-	-	R*	-	-	-	-	-	R*	-	-	-	-	R*
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y*	Y	C	Y	Y*	C	Y	Y	C	Y	Y	Y	Y	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	W	W	W	-	-	-	-	-	-	-	W*	-	W	W	W*	W*	W	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	W*	NP	NP	W*	A	W	W	W*	W*	W	W	A	-	W*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	W*	NP	NP	NP	NP
S*	C	C*	S	S*	S*	NP	NP	C*	C	S*	S*	S*	S	S*	S	C	S	S
R*	-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	R*
Y*	Y	Y	Y	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	T	Y	T	Y	Y
NP	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
M*	M*	-	-	-	-	M*	-	-	-	-	M*	-	-	-	M*	M	M*	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y	Y	-	-
-	-	-	S	S*	S	-	-	S*	-	S	S	S	S	S*	S*	-	S*	S*
Y*	Y	Y*	Y	C	Y*	Y*	Y*	Y*	C	C*	C	C	Y	Y	Y	Y*	Y	Y
M*	-	-	-	-	-	-	-	M*	M*	-	M*	-	M*	-	M*	M	M*	-
R*	R*	-	-	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP
-	R	R	R	-	R*	-	-	-	-	R	R	R	R	R	R*	R	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	Y	Y*	-	-
R	R	R	R	-	R*	-	-	-	-	R	R	R*	R	R	R	R	R	R

-	-	-	M*	M	M	-	-	-	-	-	-	M*	M*	M*	M	M*	M*	M*
Y*	Y	-	-	-	-	-	Y*	Y*	Y	Y	Y*	Y	-	Y*	-	-	Y*	Y*
-	R	R	R	-	-	R	R	-	-	-	-	-	R	R*	R*	-	R*	R*
-	-	-	-	Y*	Y	-	-	-	-	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*
-	T	T	T	Y*	-	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*
-	K	K*	K	K	K	K	K*	K*	K*	-	B*	K*	K	K*	K	K*	K	K
-	-	-	-	A	R*	-	-	R*	R*	low_cov	-	-	R*	-	-	-	R*	R*
-	-	-	-	R	R	-	-	R*	R*	-	-	-	R*	-	-	-	R*	R*
-	-	-	-	S	S	-	-	S	S	-	V*	S*	S*	S*	S*	S*	S*	V*
-	K	K	K	-	-	K	K*	-	-	-	-	-	K*	-	-	K*	K*	K*
-	R*	R*	R*	R*	R*	-	R*	R*	R	-	-	-	R*	-	R*	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R	R	-	R*	R*	R*	-	R*	R*	R	R	R	R	R	R
-	Y*	Y	C	-	-	C	Y*	-	-	Y	Y*	-	Y	-	Y*	-	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	R	-	-	-	-	-	-
Y	Y*	Y*	Y	C	C	-	-	Y*	Y*	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
K*	K	K	K	K	K	-	-	G	K	K	K	K	K	-	K	K	K	K
-	S	S*	S*	NP	NP	-	-	C*	S*	S	-	S*	S*	-	S	-	S*	C*
R*	-	-	R*	R*	-	R	R	R*	-	-	R*	-	R*	R*	R*	R*	R*	-
-	-	-	R*	R	R	-	-	-	R*	-	-	R*	R*	R	R	R	R*	R*
R*	-	R*	R	D*	R	-	-	R	G	R*	G	G*	G	G	NP	NP	G	R*
R*	-	-	-	-	-	R	R*	-	-	-	-	-	R*	-	R*	R	-	R*
D*	R*	R*	R*	R*	R	R*	R*	R	R	R*	R*	R	R	R	R	R	R	R
R*	-	-	-	-	-	R	R*	-	R*	-	-	-	R*	-	R	R*	R*	R*
Y*	Y*	Y	Y	Y	Y*	Y	Y	Y*	H*	Y*	Y*	Y*	Y	Y*	T*	T	Y	Y*
Y*	T	Y*	Y	Y	Y	Y*	-	Y*	Y	T*	Y*	T*	Y	Y*	Y	Y*	Y	Y
-	R*	-	R*	R	R	-	-	-	-	-	R*	R*	R*	R	R*	R*	R*	R*
K*	-	-	-	-	-	T	T	-	-	-	-	-	K*	K*	K*	K*	K*	K*
K*	-	-	-	-	-	K	K	-	-	-	-	-	K*	-	K*	K*	K*	-
Y*	Y*	C	Y*	Y*	Y*	C*	Y*	C	Y	Y*	B*	C*	Y*	Y*	C	C*	Y*	Y
S*	Y*	Y*	Y*	Y*	Y*	S	S*	-	-	Y*	-	Y*	B*	S*	S*	S*	S*	Y*
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y
-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-	R*	-	R*	R*
R*	R*	R*	R*	R	R	-	-	R	G	R*	R*	R*	R	R*	R	R	R	R
S	S*	S*	-	S	S	S	S	-	S*	-	S*	-	S*	S	S	S	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	R	R	R*	R	R	R*	R*	R	R*	R	R*	R	R	R
-	-	-	-	-	-	-	-	S	S*	-	-	-	-	S*	S*	-	-	-
Y*	low_cov	Y	Y*	Y*	Y	Y	Y	C*	Y	C*	Y*	Y*	Y	Y	Y	Y*	Y	Y
NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	R*
-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	-	Y*	-
-	H*	Y	Y	Y	Y	H*	-	Y*	Y*	-	-	Y*	Y	Y*	Y*	-	Y*	H*
-	S	S*	S	S	S	-	S*	S*	S*	-	S*	S*	S	S	S	S	S	S
K*	G	G*	K*	K*	K*	K*	K*	K*	K*	-	K*	K*	K*	K*	G	K*	K*	K*
R*	R*	R*	R	R*	R	-	-	R*	R*	R*	R*	R*	R	R	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
S*	S*	S*	S	-	-	-	-	S*	C	C	V*	S	S*	S*	S*	-	S*	S*

-	-	-	Y*	-	-	NP	NP	B*	-	NP	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-
-	-	-	-	M	M	M	M	-	-	-	-	-	M*	-	M	M*	M*	M
NP	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y
-	low_cov	-	Y*	-	-	-	-	Y*	-	-	-	-	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	M	M	-	-	-	M*	-	M*	-	M*	M*
R*	-	-	-	-	-	-	-	-	-	S	S*	S	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	-	R*	-	-	A	R*	R	R	R	R*	R*	R*	R*	R*	R*
Y*	Y	Y	Y	-	-	Y	-	Y*	Y*	Y	Y	Y*	Y*	W*	Y*	Y*	Y*	Y*
-	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	-	Y*	Y	C	Y*	Y*	NP	NP
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	-	-	R*	-	-	-	-	-	-	R*	-	R	R	-	-
NP	R	G*	-	-	-	NP	NP	R*	R*	-	R*	-	-	R*	-	-	NP	NP
NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	-	R*	-	-	NP	NP
NP	NP	NP	NP	Y*	C	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	-	-	-	Y*
R*	R*	R*	R*	R*	R*	G*	R*	R*	G	NP	NP	NP	R*	R*	R*	G*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	B*	Y	Y*	Y*	B*	Y*
-	-	-	-	S*	S	-	-	-	-	-	-	-	S*	-	S*	S*	S*	S*
S	-	-	-	-	-	-	-	S*	S*	-	S*	S*	V*	-	S*	-	S*	S*
-	low_cov	-	-	M*	M	NP	NP	M*	A	M*	-	M*	M*	M*	M*	M*	M*	M*
NP	low_cov	-	-	R	R*	A*	A*	R*	R*	NP	NP	NP	R*	R*	R*	-	-	R*
R*	R*	R*	R*	R	R	R	R*	R	R	R	R	R	R*	R	R	R*	R*	R
-	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP
-	R	R	R*	-	-	-	-	-	-	-	-	R*	R*	-	R*	-	R*	R*
R*	-	-	N*	-	R*	R*	-	-	R*	-	R*	-	V*	-	R*	R*	D*	R*
-	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	-	-	Y*	Y*
-	K	K	K	K*	-	-	-	K*	K	-	-	K*	K	K*	K	K*	K	K*
-	T	T	Y	-	-	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y*
R*	R	R	R	-	-	-	-	R	R	-	-	-	R*	-	R*	-	R	R
-	Y*	-	Y*	Y*	Y	-	-	-	-	Y	Y	Y	Y	-	Y	Y	Y	Y
-	-	-	S*	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	NP	NP	-	-	NP	NP	low_cov	-	-	NP	NP	-	R*	-	-
-	-	-	R*	-	-	-	-	-	-	-	R*	-	R*	-	-	R*	-	-
Y*	low_cov	T*	Y*	T*	T*	NP	NP	T*	T*	T*	Y*	T*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-
K	-	K*	K*	K*	K*	K*	-	K*	K*	-	K*	D*	K*	K*	D*	K*	D*	K*
-	-	-	-	-	-	-	-	-	-	R	R*	R*	R*	-	-	-	R*	-
-	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	NP	NP
Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	NP	NP
-	-	M*	Y*	-	Y*	-	-	NP	NP	-	Y*	-	H*	-	H*	Y*	H*	-
-	R	R*	R*	-	-	R*	R	NP	NP	-	-	-	R*	-	-	-	R*	R*
R*	R*	-	R*	R*	R*	R*	-	R	R	-	R*	-	R*	R	R*	R*	R*	V*
Y*	Y*	-	-	-	Y*	Y	Y*	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-
R*	-	-	-	R	R	-	-	-	-	-	-	-	R*	-	R*	-	R	R*
Y*	-	-	-	Y	Y	-	-	-	-	-	-	-	Y	-	NP	NP	-	Y*

R*	-	-	-	NP	NP	-	-	NP	NP	A	R*	R*	-	-	R*	-	-	-
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	W*	W*	-	-	-	W*	-	W*	-	W*	W*	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	R*	-	-	-	-	R*	-	-	-	-	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	T*	T	Y*	Y*	-	-	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y
-	-	-	-	S*	S	S*	-	-	-	S*	S*	S*	S*	S*	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	NP	NP	NP	NP	-	low_cov	-	-	-	NP	NP	NP	NP
-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	M*
NP	-	-	-	-	-	-	-	Y*	Y	Y	Y*	Y*	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
NP	-	-	S*	-	-	-	-	S*	S*	S*	-	-	-	-	-	-	NP	NP
NP	low_cov	Y*	-	-	-	-	-	Y*	-	NP	NP	NP	-	-	NP	NP	-	-

rwise comparison. Samples in green are normal tissue controls. Low cov means that there was ins

pt15_control	pt15_livermeta_CRC	pt15_primary_CRC_tumor	pt16_livermeta_T04_8616	pt16_primary_CRC_tumor	pt17_control	pt17_livermeta	pt17_primary_CRC_tumor	pt18_livermeta	pt18_primary_CRC_tumor	pt19_livermeta	pt19_primary_CRC_tumor	pt20_livermeta	pt20_primary_CRC_tumor	pt21_livermeta	pt21_primary_CRC_tumor
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	-	-	R*	-	-	-	-	R*	-	R*	-
-	-	-	-	-	R	R*	R	-	-	-	-	-	-	-	-
G*	G*	G*	G*	K*	G*	K*	K*	G*	G*	K*	K*	K*	D*	K	K*
Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	Y*	-	-	Y	Y*	Y*	-	-	-	-	-	-	-	-
-	D*	D*	K	K	-	-	-	K*	K*	-	K*	-	K*	D*	-
Y*	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
Y	Y*	Y*	-	-	Y	Y	Y	Y*	Y*	Y	Y	-	-	Y*	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	-	-	Y	Y*	-	Y	Y	T	Y	NP	NP	Y	Y
R	-	R*	-	-	R	R*	R	-	-	-	-	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	Y*	C*	Y*	-	C*	C*	NP	NP	Y*	Y
-	-	-	-	-	-	S*	-	S*	S	-	-	NP	NP	-	-
Y*	Y*	Y*	-	-	Y*	-	-	Y*	Y*	-	-	Y	Y*	Y*	-
-	H*	Y*	-	Y*	-	Y	Y	-	Y*	-	-	Y*	Y*	-	-
-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y
-	V*	V*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	-	-	R*	R*	-	R	R*	-	-	-	R*	A	R
-	D*	K*	K*	-	K*	K	K*	-	K*	-	-	K*	K*	K*	-
R	R*	R*	-	-	-	R*	R*	R	R	-	-	-	-	-	-
R	R*	R*	R	R	R	R*	R*	-	-	-	-	-	-	R	R*
Y*	Y	Y	-	Y*	-	Y*	-	Y*	Y	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	-	-	-	-	-	-	K*	-	-	-	K*	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	S*	-	-	-	-	-	-	S*	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y
-	-	S*	-	-	-	-	-	NP	NP	T	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	V*	R

-	M*	-	-	-	-	-	-	-	Y*	-	-	-	-	Y	Y
low_cov	-	-	-	R*	-	-	-	-	R	-	-	-	-	-	-
low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP
-	-	-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	R*	R*	-	R*	-	R	R	-	-	-	-	-	-
-	N*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
low_cov	-	-	NP	NP	low_cov	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	R*	G	G	-	-	-	-	NP	NP	-	-
R*	R	R	R*	R	R	A	A	R*	R	-	-	R	R*	R*	R
R*	R	R	R*	G	R	R	R*	R	R	R*	-	R	R*	R	R
Y*	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y
R*	R	R	A	R*	R	R	R*	R	R	R	R	R	R*	R*	R
Y*	Y	Y	Y*	T	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y
R*	R*	R*	R*	R*	R*	G*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
K*	K	K	K*	G	K	K	G	K*	K*	-	-	K*	K*	K*	K
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	T	K*	K*	K*	T*	-	-	K*	K*	-	-	K*	-
R*	-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
S*	S	S*	G	S	S	S	S	S	S*	S	S	S	-	S	S
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S	S	S	V*	S*	S*	-	S*	G*	S	S	G	S*	S*	S
R	R	R	A*	A*	-	R*	-	A*	A*	R	R	A	A	R*	R*
Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	B*	-	-	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
C	S	S	S	S*	S	S*	S*	-	-	S*	S*	C	C	S	S
-	R	R	-	-	-	R*	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	Y*	-	-	-	-	-	Y*	Y*	Y
R	R	R	R	R	R*	R*	R*	-	R*	-	-	R	R	R*	-
S	G	G	G	G	S	S	S*	S	B*	G	G	G	S*	G	S
NP	NP	NP	C*	C*	C*	Y	C*	Y	Y*	C*	C*	C*	C*	C*	C*
-	H*	H*	-	-	-	M*	-	-	-	-	-	-	-	M*	-
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	Y*	Y
M*	M*	M	-	-	M	M*	M*	-	-	M	M*	M*	M*	C	M*
-	-	-	-	-	-	-	-	-	-	R	R	-	-	R	R
Y	Y*	Y*	-	-	Y*	Y*	S*	Y	Y	Y	Y	Y*	-	-	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	M*	M*	M	-	low_cov	M*	M	-	-	-	-	-	-	M*	A*

Y*	Y	Y	Y*	C	Y*	Y*	C*	Y*	Y*	Y	Y	-	Y*	Y	Y
-	-	-	-	-	-	M*	M*	-	-	-	-	-	-	M*	M
-	M*	M*	-	M*	M*	M	M*	M*	M*	M	M	-	-	M*	-
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	S*	-	-	-	-	-	-	S*	S
R*	R	R	R*	R*	R*	R	R	R	R	R	R	R*	-	R*	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	G	R*	-	-	-	-	-	-	-	NP	NP	-	-
-	M*	-	M*	M	low_cov	-	-	-	-	-	M*	M*	-	M*	M*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	-	Y*	-	Y*	-	-	-	-	-	Y*	Y*	Y*	-
-	Y	Y	Y	-	low_cov	Y	Y*	Y*	Y*	-	-	Y*	Y	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	C	C	Y*	Y*	Y	Y	Y	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	Y	Y*	-	-
R*	-	-	-	-	-	-	-	-	-	R*	-	R	-	-	-
R*	R	R	-	R*	-	R*	-	R	R	R	R	R	R*	R*	R*
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	-	-	-	Y*	-	T	T	-	-	Y*	-	-	-
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
Y	H*	Y*	-	-	Y*	Y	-	Y	Y	Y	Y	Y	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y	M*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	NP	NP	low_cov	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
-	-	-	S	S	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	R*	-	R	R	R*	R*	R	R*	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
R*	R*	-	-	-	R*	R*	-	R	R	-	-	R	R	-	-
-	R*	R	-	R*	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	S*	-	S	S	-	-	-	-	-	-
-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
-	Y*	B*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	-	-	Y*	Y*	Y*	Y*	-	-	-	Y	Y*	Y*	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
-	-	M*	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	R*	-	NP	NP	-	-
-	Y*	Y*	-	Y*	-	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	R	R	-	R*	R*	-
-	M*	M*	Y	Y	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	-	-	-	M*	-	-	-	Y*	Y	Y*	Y*	-	-
-	-	-	-	-	-	W*	-	W	W*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y*	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	-	-	-	R*	-	-	-	-	-	-	R*
-	M*	M*	S	S*	-	-	-	-	-	-	-	M*	-	-	-
-	H*	Y*	-	-	-	Y*	Y*	-	-	Y	Y*	-	-	-	Y*
-	-	-	-	-	-	M*	-	M	M	-	-	-	-	-	-
K*	-	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	-	Y*	Y	-	Y	Y	Y	Y	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
Y*	Y	Y	-	-	Y*	Y*	-	Y	Y	Y	Y	Y	Y	-	-
-	M*	M*	-	-	-	-	-	-	-	M	M	-	M*	-	-
-	-	Y*	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	-	R	R	R	R*	R	R	-	-
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	-	Y*	-	Y	Y	Y	Y*	Y	-	Y*	-
-	R*	R*	-	R*	-	R*	R*	R	R	R	R*	R*	R*	R*	-
-	R*	R*	-	-	-	R*	R*	R	R*	-	-	-	-	-	-
R*	-	R*	-	-	R*	-	-	-	-	-	-	R	R*	R*	-
-	K	K*	-	K*	-	K*	-	-	-	K	K*	K*	K*	-	-
R	R	R	-	R*	R*	R	R	R	R*	R	R	-	-	-	-
R	R*	R*	-	R*	R	R	R	R	R	R	R	-	V*	R*	R*
R	R	R	R*	R*	R	R	R	R	R	R	R	R*	R*	R*	R*
Y*	N*	Y	-	Y*	Y	Y	Y	Y	Y*	-	-	-	Y*	Y*	-
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	-	-	-	-	-	-	NP	NP	K*	K
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	C	C	Y	Y	Y*	C	Y*	Y	Y*	C*	Y*	NP	NP	Y*	Y
-	-	-	R	R	-	-	-	-	-	-	-	-	-	R	R
Y	Y	Y*	-	Y*	Y	C	Y*	Y	Y	C*	C*	Y*	C	Y	Y
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	N*	N*	R*	R*	R*	R*	R*	R*	R*	V*	R*	R*	V*	R*	V*
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-	-	-
-	R*	R*	R	R	-	R*	-	R	R	-	-	-	-	R*	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	R*	A	A*	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-

NP	NP	NP	-	-	low_cov	-	-	NP	NP	-	-	-	-	C*	Y
NP	NP	NP	M*	M*	M*	C	C	M	M*	NP	NP	NP	NP	-	M
R*	R*	R*	-	-	D*	-	R*	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y*	Y*	T	Y*	Y	Y	-	Y*	Y*	Y	Y	Y*	T*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	Y	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y	T	-	-	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	K*	K
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	Y	Y	-	Y	-	Y*	Y*	Y	Y	Y*	Y	-	-
S*	S*	S	-	S*	-	S*	S*	-	-	-	S*	NP	NP	S	S*
-	Y*	Y*	-	-	Y*	-	-	-	-	C	Y	C	Y*	Y*	Y
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S*	C	S*	S	R*	S*	C	S*	S	S*	S*	S*	S
W	W*	W*	W	W	W	W	W	W*	W*	W*	W	W	W	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	-	S*	-	-	-	-	-	S	S*	S*	S*
R	R	R	-	R*	R*	R	R	-	-	R	R	A	A*	R*	R
-	K	D*	K	K	-	K*	-	-	-	-	-	-	-	-	-
K*	K*	-	K	K	K	K	K	T*	T*	T*	T*	NP	NP	K*	K*
Y*	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	T	Y*	Y	Y
R*	R	R	R	R*	R	A	A	R	R*	R	A	-	-	R*	-
Y*	H*	H*	Y*	C	Y*	Y	Y*	Y	Y	Y*	C*	Y*	Y*	Y*	Y
K*	K*	K*	K*	K*	K*	G	G*	K*	K*	K*	K*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	M*	S*	S	S	S*	V*	S	-	-	S*	S*	S*	S*
Y*	Y	T	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP	NP	NP	-	-
-	Y*	Y*	Y	Y*	Y*	Y*	-	-	-	Y*	-	Y	Y*	Y	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	D*	D*	-	R*	R*	R*	-	-	R*	R*	-	R*	R*	R*	R*
Y	Y	Y	C*	C*	Y	Y	Y	C*	C*	Y*	Y*	C*	C*	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	M	M	M	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R*	R*	R*	R	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	-	Y	Y	Y	Y	C*	Y*	Y	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	R*	R*	R*	R*	A	-	-	-	-	NP	NP	S*	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	S	S
R*	R	R	-	R*	R*	R*	R*	-	-	R	R	-	R*	-	-
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-
-	R*	R*	-	-	-	R*	-	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y	Y*	Y	Y	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-
M*	M*	M*	-	-	M*	M*	-	-	-	M	M	-	-	-	-
-	R*	R*	-	-	R*	R	R	-	-	R	R	R	R*	-	-

-	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
R	R	R	R	R	R*	R	R*	R*	G	R*	-	R*	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y	-	-	Y*	Y*	Y*	-	-	-	-	-	Y*	-	-
-	Y*	Y*	Y	Y	-	Y*	Y*	Y	Y	Y*	-	-	Y*	Y*	-
Y*	Y*	Y*	T*	T	low_cov	Y*	-	T*	Y*	-	-	-	Y*	-	Y*
low_cov	S*	S*	-	-	-	S*	S*	-	-	-	-	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
Y*	Y*	Y*	-	-	Y*	-	Y*	-	-	-	-	Y	Y*	-	-
K*	K*	B*	-	B*	K	B*	K*	NP	NP	-	-	B*	K*	K*	K
R*	R	R	-	-	R*	-	-	-	-	-	-	R	R	-	-
S*	S*	-	-	-	-	S*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R	R	R	R	R	R	R*	R*	R	R*	R	R*	R	R
-	Y*	Y*	C*	C*	low_cov	Y*	Y*	-	-	-	-	-	-	-	-
-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	-	R*	R*	-	R	R	-	-	R	R	-	-
G	D*	K*	-	-	K	K*	K	K	K	-	-	K	K*	-	-
low_cov	R*	-	NP	NP	NP	NP	NP	R*	R*	-	-	R*	R*	-	-
Y	Y	Y	Y*	-	Y	Y	Y*	Y	Y	-	-	C	Y*	C	Y
S*	S*	S*	-	-	-	-	-	-	-	-	-	S	S*	-	-
-	R*	-	R	R	-	-	-	-	-	R	R	-	-	-	-
Y*	H*	H*	-	Y*	Y*	Y*	-	-	-	Y	Y	Y*	Y*	-	-
K*	K	K*	K*	K*	K*	T	K*	K	K	K	K	K*	K*	K*	-
low_cov	S	S	S*	C*	C*	S*	C*	-	-	-	-	S*	S*	-	-
NP	NP	NP	NP	NP	G*	G*	G*	NP	NP	NP	NP	NP	NP	-	-
R	R	R*	R	R	R	R	R*	R	R	R	R	R*	R*	R*	R*
R	R	R	R	R	R	R*	R	R	R	R	R	R*	R*	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-
-	-	-	Y*	-	-	Y*	-	T	Y*	Y*	Y*	-	-	-	Y*
-	W	W	-	-	-	W*	W*	-	-	-	-	W*	W*	-	-
-	Y*	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	R	-	R*	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	R	R*	-	-	-	-	-	-
-	S*	S*	-	S*	S*	S*	S*	-	-	-	-	-	S*	-	-
-	Y	Y	Y	Y	Y	Y	Y	-	-	Y	-	Y*	Y*	Y*	Y
-	-	-	Y*	Y*	-	-	-	-	-	Y*	Y*	-	-	Y*	Y
-	-	-	M	M	-	-	-	-	-	M*	-	-	-	M*	M
R*	-	R*	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	-	S*	-	-	-	-	-	-	-	S*	-	-	-	-	-
C*	Y	Y	Y*	C	Y*	C	Y*	Y*	Y*	C	C	C	C	Y*	Y*
A	M	M*	A*	A*	M*	M	-	A*	A*	A*	A*	NP	NP	A	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y	Y*	Y	-	-	Y*	-	-	Y	Y	Y	Y*	Y	Y

C	M	M	M*	C	M*	M	M*	M	C	M*	M*	M*	C	M	M*
-	R*	R*	R	R*	R*	R*	R*	R	R*	-	-	R*	R*	-	-
-	N*	H*	Y*	-	-	Y*	Y*	-	-	Y*	-	-	Y*	-	-
Y	Y	Y	H*	Y*	Y	Y	Y*	Y	Y	K*	B*	K*	-	B*	D*
Y*	Y	T	Y*	T*	T	Y	T	-	-	Y	T	Y*	T	Y*	Y
R	R*	R*	G*	G*	R*	R*	G*	-	-	G*	G*	R*	G*	R*	R*
S*	S*	S*	G*	G*	S*	S	G*	-	-	G*	G*	NP	NP	-	S
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	-
NP	NP	NP	T*	T*	Y*	Y*	Y*	-	-	Y*	-	Y	T	Y*	Y*
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	M*	M
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y	Y	Y	Y	T	Y	Y*	Y*	Y*	Y	Y*
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	H*	M*
M*	M*	V*	M*	M*	-	M*	M*	M	M	M*	M*	M*	M*	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	M*	M
R	-	-	-	-	-	-	-	-	-	R	R	-	-	R*	R
low_cov	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-	R*	A
Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y	-	-	Y	Y	-	Y*
low_cov	M*	M*	M*	M*	-	M*	-	M*	M*	NP	NP	NP	NP	-	-
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	R*	R*	R*	-	-	-	-	R	R*
R*	-	-	-	-	-	-	-	-	-	G	G	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	S*	S	-	-
Y	Y*	Y	T*	T*	Y	Y	Y	T*	T	T	T	T*	Y*	Y*	Y
-	-	R*	-	-	-	-	-	R*	R*	-	-	-	-	R*	R*
-	R*	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-
R	D*	R	R*	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	A	R*
Y*	-	-	-	-	Y*	Y*	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	-	Y*	-	Y	Y*	-	-	Y*	Y*	T*	Y
Y*	Y*	Y*	-	-	low_cov	Y	Y*	-	-	Y*	T*	Y*	-	Y*	Y*
S	S	S	S	S	B*	S*	-	S	S	S*	-	S	S	-	S
-	H*	Y*	-	-	Y*	B*	-	Y	Y	-	-	-	-	-	-
Y*	Y*	Y*	T	Y*	low_cov	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	-
K	K	K	K*	K*	K*	K*	K*	K*	K*	K*	D*	K*	K*	K*	K*
-	K*	K*	K	K	-	-	-	-	-	-	-	-	-	-	-
M*	M	A	-	-	M*	M*	M	-	-	M*	A	NP	NP	M*	M*
-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
G	K	K	G*	G	K*	K	K*	K*	K*	K*	G*	G*	K*	K*	K*
low_cov	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	Y*	Y*
-	-	Y*	-	-	Y*	Y	Y	Y	Y*	-	-	Y	Y*	-	-
R*	R*	R*	R	R*	R*	R	R	R*	R	-	-	R	R	-	-
Y*	Y*	Y*	Y	Y	Y*	Y	Y*	Y	Y	T	Y*	Y*	Y*	-	-
M*	M	M	M*	A*	M*	M	A*	M*	A*	-	M*	M*	A*	M*	M*

C	Y	Y	-	Y*	C	Y	C	Y	Y*	C	C	Y*	Y*	Y*	Y
Y	Y	Y	C*	C	Y	C*	C*	C*	C*	Y*	Y*	C*	Y*	Y*	Y*
-	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y	Y	-	-	-	-
Y*	Y*	Y*	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-
R*	G*	G*	-	-	NP	NP	NP	-	R*	NP	NP	NP	NP	-	-
-	R*	R*	-	-	R*	R*	-	R*	R*	NP	NP	NP	NP	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP	-	-
-	R*	-	R	R*	-	-	-	-	-	-	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y	Y	Y	-	Y*	-	Y	Y	-	-	NP	NP	V*	Y*
-	-	-	-	-	R*	R*	-	-	-	-	-	R*	R*	-	-
R	R*	R*	G	R	R	R	R	-	-	R*	R*	R	R	R	R
low_cov	S	S*	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	-	-
low_cov	Y*	Y*	NP	NP	NP	NP	NP	-	-	-	-	-	Y*	Y*	-
-	-	-	-	-	-	R*	-	R	R*	-	-	-	-	-	-
-	S*	-	S*	-	-	-	-	-	-	-	S	-	-	-	-
-	Y*	-	-	-	-	Y*	-	Y*	Y*	-	-	-	-	-	-
-	Y*	-	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R
-	R*	R*	-	-	-	-	R*	-	-	R*	-	-	-	-	-
-	Y*	H*	-	Y*	-	Y*	H*	M*	Y*	-	-	Y*	Y*	H*	Y*
-	R*	R*	-	R*	-	R*	S*	-	R*	-	R*	R*	R*	-	-
-	Y*	Y*	-	Y*	Y*	Y*	-	-	-	Y*	-	-	Y*	Y*	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y	Y
-	Y*	H*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	Y*	Y*	-	-	Y*	Y	C	-	-	Y*	-	C	C	-	Y
-	W*	W*	W*	-	-	-	-	-	-	-	-	-	W*	W	W
Y*	Y*	Y	-	-	Y*	Y	Y	-	Y*	-	-	Y	Y*	Y*	Y*
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	K	K	K*	G	G*	G	G	K*	K*	K*	G*	G	K*	G	K*
-	Y	Y*	Y*	-	Y*	Y*	Y	Y*	Y	Y	T	Y	Y	Y*	-
T*	Y*	Y*	Y*	Y*	T*	Y*	T	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*
-	R	R	R*	A	R*	R	A*	R*	R	R	R	R	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y*	Y*	-	Y*	-	Y*	Y	-	Y*	-	-	Y*	Y*	Y*	Y
R*	R	R	A	A	R	A	R*	R	R*	R	R	R*	R*	R*	R*
R*	R*	A	R*	A*	R	R*	R*	R*	R	A	A	R*	R*	A	R*
-	Y*	-	Y*	Y*	-	Y*	Y*	-	-	Y*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y	Y	-	-	Y	Y	-	-	-	-
R	R	R*	R*	R	R	R	A	R*	R*	R*	-	R	A	-	-
W*	W*	W*	-	-	W*	-	-	-	-	-	-	-	W*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	-	-
Y	H*	H*	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*
M	M	M	M*	A	M*	M	M*	M	M	M	M	M	M*	M*	M*
K	K	K	K*	K	K*	K*	-	K	K*	K*	K	K	K*	K*	K*
K	K	K	G*	G	K*	K*	-	K	K	K	K	K	K*	G	G*
S*	S*	-	G*	S*	-	S*	-	S*	S*	S*	S*	S*	S*	S*	G*

R	R	R	G*	G	R*	R	R*	R	R*	R	R	R	R*	G*	G
R	R	R	R*	R*	R	R*	-	R	R*	R	R	R	R*	R*	G
Y*	-	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	Y	Y*	-	-
A	R*	R*	-	R	NP	NP	NP	R	R*	A	A	NP	NP	R*	R
-	K*	K*	-	-	-	K*	-	K	K	-	-	-	-	K*	K
R*	R	R	R*	R*	R*	R	G	R	R	R*	R	R*	R	R*	R*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R	R*	R*	-	-	R	R	R*	-	-	R	-	R	G	R	R*
Y*	Y*	Y*	-	Y*	Y*	Y	-	Y*	Y*	C*	C*	Y*	-	Y*	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
K	K	K	K	K	D*	-	K*	-	-	K	K	T	K	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W	W	W*	W	W	W	W	W*	W*	W	-	W*	W	T	W*	W*
-	M*	M	M	M	-	M*	-	M	M	-	M*	-	-	M	M*
T	K*	K*	T*	T	T	T	T*	T*	T	-	-	-	-	T*	T*
-	-	-	-	-	-	-	-	-	-	-	-	M	M*	-	-
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M*	M*	Y*	-	-	-	-	-	M*	-	-	-	-	-	-
G	R*	R*	G	G	low_cov	G	G	G*	G*	R*	G*	G	R*	G*	R*
Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	-
R*	R*	R	-	R*	R*	R*	-	-	-	R*	-	-	R*	-	-
S*	S*	S*	Y*	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	Y	Y	-	Y*	-	Y	Y	Y*	-	-	-	Y	Y*
-	R*	R*	R	R	-	R*	-	R	R*	R*	-	-	-	R	R
S*	-	-	-	S	S*	-	-	NP	NP	NP	NP	NP	NP	-	-
Y*	Y*	Y*	Y	Y	Y*	Y*	-	Y*	Y*	-	-	-	-	Y	Y
R*	R*	R*	R	R	R	R*	R	-	-	R	R	R	V*	R*	R*
Y*	Y	Y	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y
R*	R	R	R*	R*	R	G	G	R*	R*	-	-	R*	R*	R	R
-	S*	S*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
K*	K*	K*	NP	NP	K*	T*	T*	T*	T*	K*	K*	T*	T*	K*	K*
S	G	S	S	G	G*	G*	G	G*	G*	S	G*	NP	NP	S*	S
-	-	-	-	-	Y*	T	Y*	-	-	-	-	-	Y*	-	-
R*	R	R	-	-	-	R*	R*	R*	R*	R	R	R*	R*	R*	-
Y	Y	Y	Y	Y	C	Y*	Y*	C*	Y*	Y	C	Y	Y	Y	Y
M	M	M*	-	-	A	M	A	-	-	-	-	-	-	M	M
R	R*	R*	R*	R*	R	R	G*	-	-	-	-	R	R*	-	-
Y	Y	Y	-	-	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*	N*	Y
-	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	C	C	Y*	Y	Y	Y*	Y
-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
Y*	-	-	Y*	-	Y*	Y	Y*	-	D*	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	A	A*	R*	R*
Y*	Y	Y	Y	Y*	Y*	Y*	Y	-	-	Y	Y*	C	C*	Y*	Y*
Y	Y*	-	-	-	Y	Y*	Y*	Y	Y	Y	Y	-	-	Y*	Y
low_cov	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	A	R*
-	-	-	-	-	-	M*	-	NP	NP	M*	M*	M*	M*	-	-

-	H*	M*	-	-	-	-	-	-	-	Y	Y	-	Y*	-	-
low_cov	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP	NP	NP
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	S*	-
K*	K*	K*	-	-	K*	-	K*	-	-	-	-	G	K*	-	-
-	H*	Y*	-	Y*	Y*	Y*	-	-	Y*	Y	Y	-	Y*	Y*	-
-	D*	R*	-	-	-	-	-	-	-	-	-	K*	-	-	-
C*	M*	M	M*	C	low_cov	M*	M*	M*	M*	C	M*	M*	C	M*	M*
Y*	H*	H*	-	-	Y*	Y*	Y*	-	-	-	-	-	-	Y*	-
low_cov	A*	A*	A*	A*	low_cov	A*	A*	A*	A*	A*	A*	NP	NP	A*	A*
-	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP	T*	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	-	R*	R*	NP	NP	-	-	-	-	NP	NP
-	B*	V*	-	-	-	-	-	-	-	-	-	-	S*	S*	-
-	R	R*	-	R*	-	R*	-	R*	-	-	-	R*	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	M*	-	-	-	-	-	-	M*	-	-
-	R*	R	-	R*	-	-	R*	-	R*	-	-	R*	R*	R*	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y*	Y*	Y*	Y*	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R	R*	-	R*	-	-	-	-	-	R*	-	R*	R*	-	-
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	M*	M	M*	M*	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	R*	R*	-	-	A	A*	-	-	-	-
Y	Y*	Y*	Y	Y	-	Y*	-	Y	Y	-	-	-	-	Y*	Y
-	-	Y*	-	-	-	-	Y*	-	Y*	-	-	-	-	-	Y*
M	C	M*	C*	C*	C	C	C*	M*	H*	C*	C*	NP	NP	M*	M*
M*	M*	M	-	-	M	M	M	-	-	C	M	-	-	-	-
-	-	-	-	W	-	-	-	-	-	-	-	-	-	-	-
low_cov	G	G	NP	NP	NP	NP	NP	G*	G*	NP	NP	NP	NP	G*	G*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R	R	R	R*	-	-	-	-	-	R*	-	R*	-
low_cov	R*	R*	NP	NP	NP	NP	NP	G*	G*	NP	NP	NP	NP	R*	-
H*	Y*	Y*	-	-	Y*	Y*	Y	-	-	Y	Y	Y*	-	-	-
-	Y*	-	-	-	-	Y*	-	Y*	Y*	-	-	Y*	-	-	-
R	R*	R*	R*	R*	R*	G*	R*	G*	R*	G	R*	G	R*	V*	R*
low_cov	S	S	-	-	low_cov	-	-	-	-	-	-	S*	S*	C	C
-	S	S	-	S*	-	-	-	-	-	-	-	S	S*	-	-
M*	-	-	M	M	M*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	C	Y*	Y*	-	-	-	-	-	-	-	-	-	-
M	M*	M*	-	-	M*	M*	Y*	M	M	M	M	-	M*	M	M
NP	NP	NP	-	-	low_cov	R*	-	R*	R*	-	-	NP	NP	A	R
Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	-
K*	K	K	G*	G	G	K	K	K*	G	K*	K*	G	K	K*	K*
Y*	N*	H*	Y	Y	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y*	Y*
M*	M*	M*	M	M	M*	M*	-	M	M	M	M	M*	-	M*	M

G*	R*	R*	R*	R*	G*	R*	R*	NP	NP	G	R*	R*	R*	R*	R*
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
M	M	M	M	M	M	M	M*	M	M	M	M*	M	M*	M*	-
-	-	-	Y*	Y*	-	Y	Y*	-	-	-	Y*	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	T	Y*
Y*	Y	Y	-	-	-	Y*	-	-	-	Y	Y	-	-	Y*	-
-	V*	V*	-	-	-	-	S*	-	Y*	-	-	M*	-	B*	-
Y	H*	Y*	Y	Y	Y	Y	Y*	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
K*	K*	D*	K*	K*	K*	K	K*	-	-	-	-	-	-	K*	K*
low_cov	Y*	Y*	Y*	Y*	low_cov	Y*	T*	Y*	Y*	-	-	-	-	Y*	Y
-	-	S*	-	-	-	-	-	-	-	-	-	-	-	Y*	S*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	V*	R*	R*	S*	S*	S*	-	S*	-	S*	S*	-
-	-	-	-	-	-	M*	-	M	M*	-	-	-	-	-	-
Y	Y*	Y*	Y	Y*	Y	Y	Y*	-	-	-	-	-	-	Y*	Y
R*	R	R	R*	R*	R	R	R	R	G	R	R	R*	R*	-	R*
-	H*	H*	-	-	-	-	-	-	-	-	-	Y*	M*	Y*	-
R*	R*	R*	R*	R*	R*	R	R	R*	R*	R*	R*	R*	R*	K*	-
-	-	-	-	-	-	-	-	-	-	-	M*	S*	S	V*	-
Y*	Y*	C*	Y*	C*	Y*	Y*	C*	Y*	C*	C*	C*	C*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	K*	-	-	-	K*	K	K	-	-	-	-	K*	K*	-	-
NP	NP	NP	NP	NP	low_cov	Y*	Y	C*	C*	Y*	-	NP	NP	-	-
R*	N*	N*	R*	R*	-	D*	R*	R*	R*	R*	R*	V*	R*	D*	R*
Y*	Y	Y	Y	C	Y	C	C	Y*	C*	Y	Y	Y	Y*	-	-
-	R*	V*	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	M*	M*	-	-	M	M*	-	-
-	-	-	-	-	-	S*	-	S	S	-	-	S*	S*	-	-
-	D*	K*	-	-	-	R*	-	-	-	-	-	-	-	-	-
K*	K	K	K*	K	K	K	K	K	K	K	D*	K*	K*	K*	K*
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	T	-	-	-
-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
-	R*	R*	R*	G*	-	-	-	-	-	R*	R*	G	R*	R*	R*
-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-
W	W	W	W	A	W	W	-	W	W	A*	W*	A	W*	W	W
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-
M	M*	M*	-	-	C	M*	M	-	-	-	-	M*	M*	-	-
-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	Y*	T
NP	NP	NP	-	-	Y	low_cov	Y*	NP	NP	NP	NP	Y*	-	T*	T*
NP	NP	NP	-	-	-	-	-	NP	NP	C*	C*	NP	NP	Y*	Y*
-	M*	M*	-	-	-	M*	-	C*	C	M	C	-	-	M*	M
NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP	Y*	T
-	R*	R*	-	-	-	-	-	-	-	R	R*	R*	R*	-	-
-	Y	Y	-	Y*	-	-	-	-	-	Y	Y	Y*	C	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	S*	C
Y*	Y*	Y*	NP	NP	NP	NP	NP	Y	-	Y	Y*	-	Y*	NP	NP
Y	Y	Y	-	Y*	Y*	Y	-	C	Y	Y	Y*	Y*	Y*	Y	Y

-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	Y*	-	Y	C*	-	-
-	D*	K*	-	-	K*	-	K*	-	-	-	-	-	-	Y*	-
NP	NP	NP	NP	NP	-	-	-	NP	NP	K*	K*	NP	NP	-	-
R	V*	N*	R*	R*	S*	V*	R*	V*	V*	R*	R*	V*	N*	N*	R*
Y*	Y*	Y*	-	Y*	-	Y*	-	-	-	Y*	-	-	-	Y*	-
-	V*	S*	-	M*	-	S*	S*	-	S*	S	S	S	S*	S*	-
-	-	-	-	-	-	-	-	-	S*	-	-	-	S*	-	-
Y*	H*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	H*	H*	Y*
R	N*	N*	D*	R	R	D*	D*	R	R*	R	D*	D*	R*	D*	D*
Y	H*	H*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*
R	N*	D*	R*	N*	R*	D*	R	D*	R*	D*	N*	R	V*	N*	R
R	R	R*	R	R	R	R	R*	R*	G	R	R*	R*	R*	-	R*
Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y*	-
R	R*	R*	R	R	R	R*	R*	R	R*	-	-	-	-	-	-
S*	S*	S	S*	S*	S*	S*	S*	S*	S*	S	S*	G*	S*	-	-
S*	S*	-	C*	C*	-	R*	-	S*	C	-	-	-	-	-	-
W*	W*	-	-	-	-	-	-	-	-	-	-	W	W	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	M*	M
NP	NP	NP	-	-	R	R*	R*	-	-	-	-	NP	NP	R*	R
-	-	-	-	-	K*	K	K	-	-	-	-	-	-	K*	K
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
W*	W*	-	-	-	W*	W	T	-	-	-	-	-	-	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
-	-	Y*	-	-	Y*	Y*	C	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	R*	R	G*	-	-	-	-	-	-	R*	R
Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	-	-	-	Y*	Y*	Y
K*	K*	-	-	K*	K*	-	-	-	-	-	-	-	-	K	K*
Y	H*	Y*	Y	Y	Y	Y*	Y*	Y	Y	C	C	Y	Y	Y*	-
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S*	S*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	T	T*	T*	T*	NP	NP	Y*	Y*
low_cov	S	S	S	S*	low_cov	C	C	C*	C	S*	S*	S*	S*	C	C*
NP	NP	NP	NP	NP	-	-	-	K*	K*	K	K	K*	-	-	-
Y*	H*	Y*	Y*	Y	Y	Y	Y*	-	-	-	-	Y	Y*	-	-
W	W	T	W*	T*	W	T	W*	W*	W*	W*	W*	W*	W*	W*	W*
Y	Y	Y	Y*	C	Y*	Y	Y*	Y*	Y	Y*	Y*	C	C	C	Y*
NP	NP	NP	R*	A*	R*	R*	A*	A	A*	R*	R*	R*	A*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
-	R*	R*	-	R*	R*	R	R*	-	-	-	-	-	-	-	-
R*	R*	R*	R*	G	G	G	G*	G	R*	R*	R*	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y
NP	NP	NP	-	-	R*	R*	R*	NP	NP	NP	NP	A*	R*	R*	R*
R	R	R	-	-	R*	R	R	R	R	R	R	A	A	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	-	-	-	R	R	R*	R	R	R	R	R*	R*	R	R

R*	R*	R*	-	-	R*	R	R*	R	R	R	G*	R	R*	R*	R
-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
-	R	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K	K*	G	K	K*	K	K	K*	K*	K*	-	G*	K*	K*	K*
W*	-	W*	W*	W*	W*	low_cov	W*	-	-	-	-	NP	NP	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
R	R*	R*	R*	A	R	R	A	-	-	-	-	R	A	-	-
K*	K*	-	G	K*	K*	K*	G	-	-	-	-	K*	-	-	-
Y	Y	Y	Y*	Y	Y	Y	Y	Y*	-	-	-	Y	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-
M	M	M	C	C*	M	C	M	C*	C*	M	-	C	C*	M	M
S*	-	-	S	S	S	S*	S*	-	-	-	-	-	-	Y*	-
Y	Y	Y	Y*	Y*	Y	Y	Y*	Y	Y	-	-	C	Y*	Y*	Y*
-	-	-	G	K	-	-	-	-	-	-	-	-	-	-	-
M	M	M	M*	C*	M	M	M	-	-	-	-	M	C	-	-
-	Y*	-	-	-	-	-	-	-	-	Y	T	-	-	-	-
-	Y	Y	-	-	-	-	-	-	-	Y	Y	-	-	-	-
M	M*	M	A*	M	M	M	A	-	-	-	-	M	M*	-	-
-	R*	R*	-	-	-	-	-	-	-	A	A	-	-	-	-
Y	Y*	C	Y*	Y*	Y*	-	-	Y	Y	C*	C*	C	C	C*	C*
R*	R	R	R*	G	R	R*	-	-	R*	-	-	R*	R*	R	R
R*	R	R	G	R*	R	R	R	R*	R*	R*	-	R*	G*	R*	R*
S	S	S	S*	C	S	C	S	S*	S*	S*	-	S*	S*	C	S
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	C	C	Y*	C*	Y	Y	Y*	C*	C*	-	-	Y	Y*	NP	NP
M	M*	M*	M*	M	M	M	-	M	M	-	-	A	A	A*	M*
NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	NP	NP	NP	NP	G*	G*
S*	-	S*	G*	S*	-	S*	S	-	-	-	-	G	-	-	-
R	R*	R*	R*	R*	R*	R	A	R*	R*	R*	A*	R*	R*	A	R
Y	Y*	Y	T*	T	Y	Y	Y	-	-	-	-	Y	Y	-	-
Y	Y*	Y*	T*	T	Y*	Y	Y	-	-	-	-	Y	Y*	-	-
K*	K*	K*	K*	K	K*	T	T*	K*	K*	K*	K*	K*	T	K*	K
-	K*	K*	-	-	-	K*	-	K*	K*	K*	K*	-	K*	K*	K
-	S*	-	S*	S*	-	-	-	-	-	-	-	-	-	S*	S*
R	G	R	G*	G	R	R	-	R*	R*	-	-	R	R*	R*	R
Y	Y*	Y*	Y*	-	Y	Y*	-	Y	Y*	-	-	Y	C	Y*	C
W	W	W	T*	T*	W*	T	T	W*	T*	-	W*	T*	T	W*	W
R	R*	R	R*	R*	R	R*	R*	R	R	-	-	R	R	R*	R*
low_cov	R*	R*	-	-	low_cov	-	R*	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
-	S*	S*	-	-	S*	-	-	-	-	-	-	-	S*	-	-
low_cov	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	-	-	-	Y*	-	Y*	-	-	-	-	-	Y	Y	-	-
Y	Y	Y	Y*	-	low_cov	Y	-	T	T	Y	T	-	-	Y*	T*
G*	R	R*	-	R*	low_cov	R*	R*	G	R	G	G	R*	R*	R*	G
-	-	-	-	-	R*	R	R	-	-	-	-	NP	NP	-	-
C	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y	C	Y	Y	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	R*	-	R*	R*	R*	G	G	G	G*	-	-	G	G*
C	M	C	M*	M*	C	C	C	M	M	C	C	M*	M	C	M*
R*	A*	R	-	-	A	A*	A*	A	A*	R*	A*	R*	R*	A*	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP	-	-
Y*	Y*	Y*	-	-	Y*	Y	T	-	-	-	-	Y	Y*	-	-
M	M	M	M*	M*	-	M*	-	M	M	M	M	-	-	M*	M
low_cov	Y*	C	-	-	C*	Y	Y	Y*	C	Y*	Y*	NP	NP	Y*	Y*
low_cov	Y*	Y*	-	-	Y*	T	Y	-	-	-	-	Y*	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y	Y*	Y*	-	-
-	-	R*	-	-	-	-	-	R	R*	-	-	-	-	-	-
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	R	R
-	-	-	-	-	-	K*	-	-	-	K*	K	-	-	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	G	G	G	R	R*	R*	R*	R*	G	G*	NP	NP	G	G*
-	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	Y	Y*	S*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	A	R	-	R*	R*	R*	R*	-	-	R	R*	-	-	R*	-
-	D*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*
C	Y	Y	Y*	Y	Y	Y	Y*	Y*	Y	C*	C	Y	Y	C	Y*
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-
S	S	S	S*	S	S	S*	S*	G*	G*	S*	S	S	S*	S	G*
low_cov	-	R*	-	-	-	R*	R*	R	R	R*	R*	NP	NP	-	-
R*	R*	R*	-	-	low_cov	R*	R*	R*	R*	-	R*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	-	Y*	Y*	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	T	Y*	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	-	Y
-	-	R*	-	-	-	-	-	-	-	-	-	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	R*	R
-	R*	R*	R*	-	NP	NP	NP	-	-	R*	A*	-	-	-	-
G	R	R	R	R*	R*	R	R*	R*	R	R*	R*	R	R	R*	R
low_cov	-	-	NP	NP	NP	NP	NP	-	-	R*	A*	NP	NP	-	-
C	M	M	M	M	C	M	M	M*	M	M	-	C	C	M*	M*
C	S	S	S*	C	C	S	S	S	S*	C	S	C	C	C*	S*
C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	-	C	Y	Y*	Y*
T	Y	Y	T*	T	T	Y	Y	Y*	Y*	T*	Y*	T	Y*	Y*	Y*
Y*	-	-	-	-	B*	-	-	-	-	-	-	-	-	-	-
W	W*	W	-	W*	W	-	-	W	W*	A*	A*	-	-	W*	W
R*	R*	R*	R*	R*	G*	G*	R*	G*	R*	G	R*	R*	R*	R*	R
K*	-	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
-	-	W*	-	-	-	K*	-	K	K	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-
-	R*	R*	NP	NP	-	R*	R*	R*	R*	R*	R*	NP	NP	G*	R*
S*	S*	S*	G*	G*	S*	-	S*	S	S*	NP	NP	G*	G*	G*	G*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	-	-	-	-	-	-	-	-	R	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	Y*	NP	NP	Y*	Y*
-	R*	-	-	R*	R	R	R	-	-	-	-	-	-	R	R
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	K*	K*	NP	NP	NP	NP	NP	K	K*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	-	K*	-	K*	-	K	K	-	-	-	-	K*	K
-	-	-	-	-	-	-	-	Y	Y	-	-	NP	NP	Y*	-
R	R	A	R	R	R	R*	R	-	-	R*	-	R	R*	A	R*
NP	NP	NP	NP	NP	R*	-	R*	NP	NP	NP	NP	NP	NP	A*	A*
R	A	A*	A	R	R	R	R*	-	-	R*	-	R*	R*	A*	A*
W	-	W*	-	-	W*	-	-	W*	-	-	-	-	-	-	-
NP	NP	NP	R*	R*	low_cov	R*	R*	R*	R*	-	R*	NP	NP	R*	R
NP	NP	NP	S*	S*	G*	S*	-	-	-	NP	NP	NP	NP	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	T	Y*	-	-
NP	NP	NP	W*	W*	W	A*	A*	W*	W*	W*	-	W*	-	A*	W*
K*	G	G	K*	K*	K	K*	K*	-	-	K*	-	K*	K*	G	K*
C	C*	C*	Y	Y	Y	Y	C	C	C	Y	-	NP	NP	Y*	C*
-	-	-	-	-	-	K*	-	-	-	-	-	-	K*	-	-
R	R	A	R	R	R	R*	R*	-	-	R*	-	R	R*	R*	R*
low_cov	R*	R*	R*	-	low_cov	-	-	NP	NP	-	-	-	-	-	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
-	-	-	S	S*	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
low_cov	M*	M*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R	R*	-	-	-	R	R	R	-	-	R	R	NP	NP	R	R
NP	NP	NP	G*	G*	-	R*	G*	-	-	R*	R*	NP	NP	R*	R*
Y*	Y	Y	C*	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	-
Y	Y	Y*	Y*	Y*	Y	Y*	Y	-	-	Y*	Y	-	Y*	C	Y
low_cov	Y*	-	-	-	Y*	Y*	Y*	NP	NP	T*	T*	Y	Y*	Y*	T
-	M*	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
-	N*	H*	Y	Y*	Y*	B*	B*	Y	Y*	Y	Y	Y*	-	N*	B*
-	M*	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
-	R	R	R	R*	R*	R*	R*	R*	R	R	R	-	-	A	R
-	K	K	K	K	K*	K*	K*	K	K	K	K	-	-	K*	K
-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	-	-	Y*	Y*
Y	Y	Y	Y	Y	Y	Y	Y	Y	C	Y*	C	Y*	Y*	Y*	Y
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
NP	NP	NP	-	-	-	R*	R	-	-	-	-	-	-	-	-
C	C*	C*	S*	S*	C	S	S	S	S	C*	C*	S	S*	S*	S*
S*	V*	S*	S*	S*	S	S	S	S	S	-	B*	S*	S*	S*	S*
-	Y*	-	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	-	-
R*	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	-
Y*	Y	Y	-	-	Y	Y	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-

Y*	-	Y*	-	-	Y*	Y*	Y	-	-	Y*	Y*	-	-	Y*	Y*
B*	D*	K*	T*	K*	K*	K*	K*	K*	T*	K*	K*	K	K*	K	K*
Y*	-	Y*	-	-	Y	Y	Y	-	-	Y*	T	-	-	Y*	Y
A*	R	R	A*	A*	R*	R	R	A*	A*	-	-	R*	R*	R*	R*
K	K*	K*	-	-	K	K	K*	-	-	K	K	-	-	K*	K
-	M*	-	-	Y*	-	-	-	-	-	Y	Y	-	-	-	Y*
-	-	-	-	-	-	M*	M*	-	-	-	-	-	-	-	-
K*	K*	K*	T*	K*	K*	K*	K*	K*	T*	-	-	K*	K*	N*	K*
S	S	S	S*	G	S	S	S	S*	G	-	S*	S	S*	S	S
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
Y	N*	Y	Y	C	Y*	C	Y	N*	C	B*	N*	Y	Y	Y*	Y*
Y*	Y*	Y	T*	T*	Y	T	Y*	T*	Y*	-	Y*	Y*	Y*	Y*	T
-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
R*	-	R	R	R*	R*	R	R	-	-	R	R	-	R*	-	-
Y*	Y	Y	-	-	Y*	Y*	Y	-	-	-	-	-	-	Y*	-
-	-	-	R	R	-	-	M*	-	M*	-	-	-	-	-	M*
-	R*	-	R	R	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	A	A	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	M*	M*	M	M	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R	R	R*	R*	R	R	R	R*	R*	-
Y	Y*	-	Y*	Y*	Y*	Y	Y*	-	-	C*	C	Y	Y*	B*	Y*
-	H*	H*	M*	H*	-	Y	Y	M*	M*	T	H*	-	Y*	Y*	Y
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	Y*	Y*	-	-	-	Y*	Y*	-	Y*	-	-	Y*	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R	R*	R*	R*	R	R	R	R	-	R*	R	R	R	R	V*	R
low_cov	W*	W*	-	-	-	-	W*	W*	W*	NP	NP	A	A	-	A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
Y	Y*	Y	C*	C	Y	Y	Y	-	-	Y	Y	-	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	R*	G	-	-	-	R*	R*	R*	-	R*	R*	-	R
-	D*	D*	K	-	-	K*	-	K*	K*	K*	-	K*	K*	K*	K*
Y*	Y*	H*	-	-	-	-	-	-	Y*	Y	Y*	Y*	Y*	Y*	-
Y*	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
Y	H*	H*	-	Y*	Y*	Y*	Y*	-	Y*	Y	Y	Y*	Y*	Y*	Y*
S*	S	S	G*	S*	S*	S	-	S	S	S*	-	S	S*	S	S
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	S*	S*	C	S*	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R	R*	R*	R*	R	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	M*	A	NP	NP	NP	A*	A*	NP	NP	NP	NP	M*	M*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
G	G*	R*	-	-	G	G	G*	NP	NP	-	-	-	-	R*	G*
R*	-	-	-	-	R	R	G	R*	R	-	-	-	-	R	R
T*	Y	Y	Y	Y	T*	T*	T*	Y*	Y*	T*	Y*	Y	Y*	Y*	Y*
W	low_cov	W	-	-	T*	W	T*	T*	T	-	-	NP	NP	T*	T*
Y*	Y*	Y*	-	-	Y*	-	-	Y	Y	-	-	-	-	Y*	Y
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-
S	S	S	-	-	S	S	S	-	-	C*	S	S	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R	R	-	-	-	-
S*	S*	S*	S*	S*	Y*	B*	Y*	Y*	-	-	-	S*	S*	S*	S
Y*	-	-	-	-	Y*	T	T	-	-	-	-	-	-	Y*	Y
S*	V*	V*	S*	S*	-	S	S	-	-	-	-	-	-	S*	S*
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W*	W*	-	-	W*	W*	-	-	-	-	-	W	W	W	W
Y	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*
G	R	G	G*	G*	G	R*	G*	R	R*	R*	G*	G*	G*	R*	G*
-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	-
R*	R*	R*	A*	R*	A	R*	A*	R*	A*	R*	A*	A	A*	R*	R*
-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R	R	R	-	-	-	-	-	-	-	-
C*	S	S	S*	S*	C*	C	S*	C	S	C	C	C	C	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
-	-	-	R*	R	R*	R	R*	R	R	-	-	-	-	R*	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	W*	W*	-	W*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	V*	S*	-	-	S*	-	-	-	-	-	-	-	-	-	R*
R*	R*	R	-	-	R	R*	R	-	-	R	R	R*	R	-	-
-	D*	R	R*	R*	-	R*	-	R*	R*	-	-	-	-	R*	R*
-	R*	R*	R*	-	-	-	R*	-	-	-	-	-	-	R	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	R*	R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	N*	-	-
Y*	Y	Y	Y	Y	Y*	Y*	Y*	-	-	Y	Y	Y*	Y*	Y*	Y
-	Y*	Y*	Y*	-	-	Y*	Y*	-	-	-	-	-	Y*	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	Y*	Y	Y*	Y	-	-	Y	Y	Y*	-	Y*	-
Y*	Y	Y	Y	Y	-	Y*	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	Y*	Y	-	-	-	K*	-	-	Y*	Y*	Y	NP	NP	-	-
-	Y*	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	Y	Y
-	R*	R	R	R*	-	-	-	-	-	-	-	-	-	R*	R
-	Y*	-	Y	Y*	-	-	-	-	-	-	-	-	-	Y	Y
-	M*	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
S	S	S	S	S*	S	S	S	-	-	S	S	-	-	S	S
low_cov	-	-	NP	NP	low_cov	-	-	NP	NP	-	-	-	-	Y*	-
T*	Y*	Y*	-	-	low_cov	Y*	Y*	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	R	R	-	-
R*	R*	R*	R	R*	-	-	-	R*	-	-	-	R*	-	R*	R
K*	K*	K*	K	K	K*	-	-	-	-	-	-	K	K*	K*	K
low_cov	Y	Y*	Y*	-	-	-	-	-	-	Y*	C	-	-	Y*	Y*
R	R	R	R	R	R	R*	R	-	R*	R	R	R	R	R	R
K*	K	K	K*	K*	K*	K*	K*	-	K*	K	K	K	K	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	R*	-	-	-	R*	-	-	-	R	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
-	R	R	R*	-	-	R*	R*	-	-	-	-	-	-	R*	R
R*	R*	R*	R	R*	-	-	-	-	-	-	-	R*	-	R*	R
G	S*	S*	G	G*	G*	S*	G*	S*	G*	S*	S*	S*	S*	S*	S*
-	R*	B*	R	R*	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R	R	R	R	R	R*	R*	R*	R*	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	M*	M*	M*	M	M*	M*	M*	M*	M*	M*	-	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	R	-	R*	-	R*	A*	R*	A*	R*	R*	R*	R*
-	R*	-	-	-	-	R*	-	-	-	-	-	R*	-	R*	-
W*	W	W	W	W	W*	W*	W*	W*	W	W*	T	W	W*	W*	W*
low_cov	-	K*	K*	K*	-	-	-	-	-	-	-	K	-	-	-
Y	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R	R	R	R	R	R	R	R	R	R	R	A	R	R	R*	R*
A	R	R	R	R*	R	R	A*	-	-	R*	R*	R*	R*	D*	A*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	Y*	Y	-	-
S	S	S	S*	S*	S	S	S	S*	S	S	-	S	S*	S	S
S	S	S	S*	S*	S	B*	S	S*	S*	S	G	S	G	S*	S
-	N*	V*	A	R*	-	R*	R*	-	-	A	A	-	R*	R*	-
NP	NP	NP	W*	W*	-	-	-	-	-	-	-	NP	NP	-	-
-	R*	-	R	R*	-	-	-	-	-	-	-	R*	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y*	low_cov	Y*	C*	C	Y	Y	Y	-	-	Y	C*	Y*	Y*	Y*	Y
-	Y	Y*	W*	W*	-	W*	W*	W*	W*	W*	W*	NP	NP	-	W*
Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	-	-	-	Y*	Y*	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	V*	V*	G	S	S*	S	S	-	S*	S	G	S*	S*	S*	S

T	Y	Y*	T*	T*	T	Y*	T*	Y*	T*	T*	T*	NP	NP	Y*	T*
Y*	H*	H*	Y*	T	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y
S	S*	S*	-	-	-	S*	S*	S*	S*	S*	-	S	-	S	S
R	R	R	R	R	R	R	R	R*	R*	R*	G	R	R	R*	R*
R*	R*	R*	G	R	R	R	R	-	R*	R	R	R*	R*	R*	R*
Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
NP	NP	NP	A*	A*	A*	A	A*	A*	R*	A*	A*	NP	NP	A*	A*
low_cov	Y	Y	Y*	Y*	-	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	H*	H*	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*
T*	T*	T*	Y*	T*	low_cov	T*	T*	Y*	T*	Y	Y	Y*	Y*	T*	Y*
Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	Y	Y	-	-	Y*	-
low_cov	G	R*	NP	NP	low_cov	-	R*	NP	NP	R*	R*	R*	-	R*	R*
C*	C*	C*	C	Y*	C*	Y*	C*	Y*	Y*	C*	C*	C*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP
K*	-	-	-	-	-	-	-	-	-	B*	T	-	-	B*	K*
-	R*	R*	R	G	-	-	-	R*	-	R	R	-	-	R*	R
S	N*	N*	N*	S*	S	S	S	S*	B*	S*	S*	S	S	S*	B*
C*	Y*	Y*	Y*	C*	Y	Y	Y*	C*	Y*	C	C*	Y*	Y*	C	C*
NP	NP	NP	R	R	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	M*	A*	M*	M*	M	M	A	M	M	M	M*	A*	A*
low_cov	-	S*	NP	NP	NP	NP	NP	-	R*	-	-	-	-	S*	-
-	G	G	G	G	-	R	-	R*	R*	R*	G	-	-	R*	R
R*	R	R*	-	-	-	R*	-	R*	R	-	-	-	R*	-	-
Y*	Y*	Y*	-	-	Y*	Y*	Y	-	Y*	Y	Y	Y	Y*	Y*	Y*
Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
S*	N*	V*	S*	S*	S*	S*	S*	S	B*	S*	S*	S*	S*	N*	S*
R*	R*	R*	-	-	-	-	R*	-	-	-	-	-	R*	R*	K*
R	R*	R*	R	R*	R*	R*	R*	R	R	A	A	-	-	R*	-
K	K	T	-	-	K*	K	-	T*	T*	-	-	T	T	K*	K
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	-	-
-	-	-	Y	Y	NP	NP	NP	-	-	-	-	-	-	-	-
Y	Y	C	-	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	C	C	Y*	Y*
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y*	-	-	-	-	-	Y*	-	-	-	-	-
-	Y*	Y*	Y*	Y*	-	Y*	-	Y	Y	-	-	-	-	-	-
-	-	-	Y	T	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	T	T	-	-	-	-
-	Y*	-	Y	Y	-	-	-	-	-	Y	C	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	T	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	W	W*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	W*	M*	-
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	H*	Y*	Y	Y	Y	Y
K	K*	K	K	K	K*	K*	K*	K	K	K	K*	K	K*	D*	K
R*	R*	R*	R*	R*	R*	-	-	R	R*	A*	A	-	-	R*	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	T	Y*	T	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	W	W
-	R*	R*	-	S*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
K*	K*	-	K	K	K*	K	K	K	K	-	-	-	K*	K*	K
Y*	Y	Y	Y	Y	Y	Y	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y
Y*	Y	Y	Y	Y	Y	Y*	H*	Y	Y*	Y	Y*	T	Y	Y	Y
S*	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-
Y*	Y	Y	T*	T*	T*	Y*	Y	Y*	Y	T*	T*	T*	T*	Y*	Y*
R	R	R	R	R	R	R	R	R	R	R*	R*	A*	A	-	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	S*	S*	-	-
Y*	H*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y	Y	-	-	Y*	Y
NP	NP	NP	-	-	S*	S*	S	S*	G	S*	S*	NP	NP	-	S
Y*	-	-	-	-	Y	Y*	Y	-	-	-	-	Y	Y*	Y*	Y
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
Y*	Y*	Y	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-
R*	R	R	-	-	R*	-	-	R*	R	-	-	-	-	R*	-
-	-	-	-	-	Y*	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	S*	S*	S*	C*	C*	C*	C*	S	S	NP	NP	C*	C*
G	R	R	G*	R*	G	G	R*	R	R	G*	G*	R	G	R*	R*
C	C	Y	Y	C	Y	Y*	C	Y*	C*	Y	Y	NP	NP	C*	Y*
S*	S*	S	G*	S*	G*	G	S*	S	S*	G*	S*	G*	S*	S*	S*
R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	M*	M*	-	M*
low_cov	R	R	NP	NP	low_cov	R*	A*	-	-	-	-	NP	NP	-	-
G*	G*	R*	R	R	R*	G	G*	R	R*	R*	G*	G*	G*	R*	R*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*
S	S	S	S	S	S	S*	S*	S	S*	S	S	S	S	S	S*
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G	R*	R*	R*	G*	G	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y*	Y*	Y	Y	Y	Y	Y	Y	-	-	-	-	Y	Y*	-	-
-	Y*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	Y
R*	R	R	G*	G	R	R	R	R*	G*	R*	G*	R*	G	R*	R*
Y*	T	Y	Y*	T*	T*	T*	T*	T*	T*	T*	Y*	Y*	T*	T	Y*
M*	M	M	-	-	M*	-	-	M*	M*	-	-	-	-	M	M
-	Y	Y	-	-	Y*	Y*	Y*	Y*	-	-	-	Y*	-	Y*	Y
A*	A*	A	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	R*	R*
-	-	-	-	-	-	-	-	-	W*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	C	M	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R*	R*	R*	-	R*	R*	R*	-	R*	-	R
S*	S	S	-	-	S*	-	-	-	-	-	-	-	S*	S	S
-	Y	Y	-	-	Y*	-	-	-	-	-	-	Y*	-	Y*	Y
K*	K	K	-	K*	K	K*	-	-	-	-	-	-	-	K*	T
A	M	M	-	-	NP	NP	NP	NP	NP	M*	M	-	M*	M*	-
M	M	M	M	M	M	M*	M*	M	M	M	M	M	M*	M	A

-	R*	R*	-	-	R*	-	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	M*	M*	-	-	M*	M*
Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	-	Y	Y	Y*	Y*	Y*	Y
Y	Y*	Y*	Y*	-	Y*	Y*	-	Y*	Y	Y	Y	Y*	-	-	-
-	-	-	R*	-	-	-	-	-	R*	R	R*	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	-	-
-	M*	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R*	-	-	R	R*	-	-	-	R*	R	R
K*	K*	K*	K*	G*	K*	K*	K*	G*	G*	G*	K*	K*	G*	G*	G*
G*	R	G	NP	NP	G	R*	R*	G*	G*	G*	G*	G*	G*	R*	G*
R*	-	R*	A*	R	R*	R*	A*	-	R*	R*	R*	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	-	-	M	M	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	-	R*	R*	R*	R*	R*	R*	-	-	-	R*	R	R*
Y*	Y	Y	-	-	-	Y*	Y*	-	-	-	-	-	Y*	Y*	Y
M*	M*	M*	-	-	M*	-	-	-	-	M	M	-	-	-	-
-	R	R	-	-	-	D*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	Y*	Y*	T*	T	T*	T	T	Y*	Y*	Y	Y	Y	Y*	Y	Y
C*	C	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y	Y*
M*	M*	-	M*	M*	M*	M*	-	-	-	M*	M*	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R	R	R*	R*	R*	-
K*	-	-	-	K*	K*	K*	-	-	R*	K*	K*	-	-	-	-
Y	Y*	Y*	Y	Y	Y	Y	Y	-	-	Y	Y	-	-	Y*	-
Y*	Y*	Y	C*	C*	Y*	Y*	Y*	C*	Y*	C*	C*	-	Y*	-	Y*
Y*	B*	Y*	Y	Y	K*	-	-	Y*	-	-	Y*	B*	-	-	K*
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	N*	D*	K*	K*	-	R*	R*	R*	R*	R*	-	R*	D*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	-
G	R	R*	G*	G*	D*	R*	G	R*	G*	G*	G*	R*	R*	R*	R*
-	M*	M*	-	-	-	-	-	-	-	Y	Y	-	-	Y*	-
A	R	R	A*	A	R	A	A	A*	R*	R*	R*	R*	A	-	R
-	-	R*	R	R*	low_cov	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	-	Y	Y	Y	Y
Y*	Y	Y	-	-	-	Y*	-	-	-	-	-	-	-	-	-
C	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	-	Y	Y*	Y*	Y
A*	R*	R*	R*	R*	A	R*	R*	R*	R*	R*	R*	A	A	D*	R*
-	S*	S*	S*	S*	low_cov	S*	S*	S	-	S	C*	-	C*	C	S
W*	W*	W*	-	-	-	-	-	-	-	W*	-	-	-	W*	W
R	R	R	R	R	R*	R	R	R	R	R*	R*	R	R	R	R
Y	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*
M*	M	M	-	M*	M*	M*	-	-	-	-	-	-	-	M*	-
low_cov	Y	Y	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	NP	NP
Y*	Y	Y	Y*	C	NP	NP	NP	Y*	Y	NP	NP	C*	Y*	Y*	C*
low_cov	R	R	NP	NP	low_cov	-	-	-	-	NP	NP	R*	A*	-	-
Y	Y*	Y*	Y	Y*	Y	Y*	-	Y	Y	Y*	Y*	C	Y	Y*	-
R	R	R	G	G	G	R	R*	R	R	G	R*	G	R*	R*	R*

Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	Y	Y	T*	Y*	Y*	Y*	Y*
-	-	Y*	C	Y*	-	-	-	-	-	-	-	-	-	C	C
-	R*	R*	-	-	R*	K*	K*	-	K*	-	-	-	-	-	-
-	K*	K*	-	-	-	-	K*	-	-	-	-	-	-	-	-
-	H*	Y*	-	-	-	Y*	-	Y	C	-	-	-	-	-	-
M*	H*	M*	-	-	M	M*	M	-	-	-	-	-	-	-	-
-	Y*	H*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
R*	R*	R*	R*	R*	R	R	G	R	R	R*	R*	R*	R*	G	R
-	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
R*	-	R*	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
K	K	K*	K*	K	K*	K*	-	K	K	-	-	NP	NP	G*	G*
-	K*	-	-	-	K*	K*	K*	-	-	K	K*	K*	K*	-	-
-	M*	M*	-	-	-	-	M*	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	Y*	-	-	Y*	Y*	NP	NP	-	-
-	R*	-	-	R*	-	R*	R*	-	R*	-	-	-	R*	R*	R
NP	NP	NP	-	-	-	R*	G	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	Y*	-	-	-	Y*	Y	T*	-	-	T	Y*	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	-	R*	-	R*	R*	-	-	-	-	-	-
-	-	-	-	-	low_cov	-	-	-	-	-	A*	NP	NP	NP	NP
Y	Y*	Y*	-	-	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*
Y*	H*	H*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	-	-	-	-	R	R	R	-	-	-	-	-	-	-	-
-	H*	H*	-	Y*	-	Y*	-	-	Y*	-	-	Y*	Y*	Y*	-
-	R*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	N*	N*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
S	V*	S	S*	S*	S	S	S	S	S	S	S	S*	S*	S*	S
S	S	S*	S*	S*	G	S	S*	S	S	S	S	S	S	S*	S*
Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	-	Y	Y*	Y*
-	H*	Y*	Y	Y	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y
R	R*	R*	-	-	R*	R*	-	-	R*	-	-	R*	R*	-	-
-	H*	H*	M*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
S*	S*	S	-	-	-	-	-	-	-	-	-	-	-	S*	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	-	-	-	R*	-	-	-	R*	R*	R*
-	R*	R*	R*	-	-	-	-	-	-	-	-	R*	R*	R*	R
-	S*	S*	S	S*	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	-	-	-
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*
S	S*	V*	S*	S*	S*	S*	S*	-	S*	S*	S*	S*	S*	S*	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	R*	R*	R*	R
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	-	-	Y	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	M*	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	K	K	K	-	R*	-	-	-	-	-	-

M*	-	M*	-	-	M	M*	M*	-	-	M	M*	M*	M	-	-
R	R*	R*	R	R	R*	R*	R*	R*	R*	R*	-	R*	R	R*	R
-	-	-	***Y****	***Y****	-	***Y****	***Y****	-	-	***Y****	***Y***	***Y****	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	***R****	-	-	-	-	***R***	***R***	***G****	***G****	-	-	***NP***	***NP***	***R****	***R****
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	R*	R*	-	R*	R	R	R	R	R*	-	-
-	Y*	Y*	Y	Y	Y*	Y	-	B*	Y	Y	Y	Y	Y*	-	-
-	-	-	-	M*	-	-	-	-	-	-	-	-	-	M*	M
K*	-	-	K*	K	-	K*	-	G*	G*	K	G	K*	-	-	-
-	R*	R*	R	R	R*	R*	R*	R*	R	R	G	R	R*	-	-
Y*	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
-	-	-	R	R*	-	R*	-	A*	A*	A	A	R*	R*	-	-
M*	M*	-	M	M	M*	M*	M*	M*	M	M	M	M	M*	-	-
-	H*	Y*	Y	Y*	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*
R*	R*	R*	R	R	R*	R	-	R*	R	R	R	R	R*	R*	-
R*	R*	D*	R*	R	R*	R*	R*	R	R	R	R	R	R*	-	K*
Y*	H*	H*	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	-	-
Y*	Y*	Y*	Y	Y	-	Y	-	Y*	Y	Y	Y	Y	Y*	-	-
M*	M*	-	-	-	M*	M*	M*	C*	M*	M*	M*	M*	M*	-	-
NP	NP	NP	-	-	low_cov	-	R*	NP	NP	NP	NP	-	-	R*	R
R*	R*	R*	-	-	R*	R*	R*	-	-	-	-	NP	NP	R	R
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-	W*	-
C*	C*	C*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	C	C*	C*	C*	C*
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
M	M*	M	-	M*	M*	M*	-	-	-	M	C*	M*	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	R*	R*	R	-	-	-	-	-	-	R*	R
R	R	R	R	R	R	R	R	-	R*	R*	-	R	-	R*	R
Y	C	C	Y	Y	Y	Y	Y	-	-	-	Y*	Y*	C*	Y*	Y*
NP	NP	NP	-	A	NP	NP	NP	-	-	NP	NP	NP	NP	R*	R*
NP	NP	NP	-	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	-
-	R*	R*	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	low_cov	-	-	Y*	Y*	-	-	-	-	NP	NP
Y	Y	Y	Y*	Y	Y*	Y	Y*	Y	Y	-	-	Y*	-	Y*	Y
C*	Y*	Y*	Y*	C*	Y*	Y*	C*	Y*	C*	Y*	Y*	Y*	Y*	C	Y*
C	Y	Y	Y*	Y	Y*	Y	B*	Y	Y*	Y*	Y*	Y	Y	Y	Y*
-	V*	V*	-	-	-	-	S*	-	-	-	-	-	-	S*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
low_cov	-	-	S*	S*	-	S*	-	S*	S*	-	-	-	-	S*	S
R*	-	-	-	-	R*	-	-	-	-	-	-	R*	-	-	-
K	K	K*	-	-	K*	K	G	G	K*	-	-	K*	K*	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	R*	R	R*	-	-	-	-	V*	-
R	R	R	G*	G	R	R	R*	R	R	G*	G	G*	R*	R*	R
-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	R*	-	-	-	-	-	-	R	R*	R*	-
-	K*	-	K*	K*	-	R*	-	-	-	-	-	-	-	K*	K*

R	R*	R*	-	-	R*	R*	-	-	-	-	-	R*	R*	-	-
Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y
T	Y	Y*	Y*	T	Y	Y	Y	Y	Y	Y*	T	Y*	T*	Y	Y
A*	A	A	-	R*	R	A	A	NP	NP	A*	A*	NP	NP	A*	A*
R	R	R	R*	R*	R*	R	R*	R*	R*	R*	R*	R	R*	R*	R*
-	R*	D*	-	-	-	-	-	-	-	-	-	-	-	R*	R*
R	-	R*	-	-	-	R*	-	R	R	-	-	R	-	R*	R*
R	R*	R*	-	-	R	R	A	R*	R*	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	Y
-	S*	S*	-	-	-	-	-	-	-	S*	S	-	-	-	-
-	Y*	Y*	C*	C*	low_cov	-	Y*	-	-	NP	NP	-	-	Y*	Y*
NP	NP	NP	G*	G*	S*	-	-	-	-	S*	S*	-	-	S*	S*
low_cov	R*	R*	A*	A*	low_cov	-	-	-	-	A	R*	-	-	R*	R*
-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
NP	NP	NP	G*	G	R*	-	-	-	-	R*	R*	NP	NP	R*	R
R	R	R	R	R	R	-	R*	-	-	R	R	-	R*	R*	R
R	R	R	R	R	R*	R*	R*	-	R*	R	R	R*	R*	R	R
-	V*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y	Y*	Y*	-	-	Y*	-	Y	Y*	-	-
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	Y*	Y	Y	Y*	-	-	-	-	-	-	-	-
Y	Y	Y	-	Y*	T	Y	Y	-	-	Y*	Y	Y*	-	Y*	Y
R*	R*	R*	-	-	R	R*	R	-	-	R	R	-	-	R*	R
-	Y*	Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	Y	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S	S	S*	-	S*	-	S*	S*	S*	-	-	-	S	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	NP	NP	NP	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
Y*	Y	Y	-	Y*	Y	Y	Y*	-	-	Y	Y	Y	Y	Y*	Y
S*	S	S	-	-	S	S*	S*	-	-	G	G*	S*	S*	S	S*
Y*	Y	Y*	-	-	Y*	Y	C	-	-	-	-	Y	C	Y	Y
S*	S	G	-	-	S*	-	-	-	-	-	-	S	G	-	-
Y*	Y	Y	-	Y*	Y	Y	Y	-	-	-	-	Y	Y*	Y	Y
-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
-	-	-	-	R*	-	-	-	R*	R*	-	-	-	-	R*	R
-	R*	R*	R*	R	-	R*	R	-	-	-	-	-	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	Y*	Y*	T	Y*	-	Y*	Y*	-	-	-	-	-	Y*	-	Y
M*	M*	M	A*	M	-	M*	M*	M	-	M*	M*	-	-	-	M
Y*	Y	T	Y*	Y*	-	Y*	Y	Y*	Y*	Y	Y*	NP	NP	Y*	Y
R*	R	R	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	-	R	R	R	R	R	R	R	R*	R	R	R*	R*
-	Y*	-	-	-	-	Y*	Y	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	R	R	-	-	-	-	-	R*	R*	-

-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	A	R	-	-	-	-	-	-	-	-	-	R*	R
-	K*	-	K*	K	-	K*	-	K	K	-	-	-	K*	-	-
-	-	-	-	R*	low_cov	R*	R*	-	-	-	-	R*	-	R*	R*
NP	NP	NP	Y*	Y*	Y*	Y*	-	Y*	Y*	-	-	-	-	Y*	Y
R*	R*	R*	-	D*	-	R*	-	R*	R	R	R	R*	R*	A	R*
-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	Y	Y*	Y*	Y	Y*	-	Y	Y	Y*	Y*	-	Y*
-	Y	Y	-	-	-	Y*	-	Y	Y*	Y	Y	Y*	-	-	-
-	R*	R*	-	R*	R*	-	R*	-	-	R	R	R*	R*	-	-
Y*	Y*	Y*	Y	Y	Y*	Y*	Y	-	-	Y	Y	Y*	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-
R*	V*	R	R*	R	-	R*	R*	-	R*	R	R*	R*	R*	R*	-
S*	S*	-	S*	S*	S	S*	S*	-	-	G	G	-	-	S*	S
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	Y	Y	Y*	Y*	Y*	-	-	T	Y	Y*	Y*	Y*	Y
R*	R*	R*	R*	R*	R*	R	R*	-	-	G	R	R*	-	R*	R
Y	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	R	R	R*	R*	-	-	-	R*	R*	R*	R*	R	R*
Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	Y*	-	-	-	Y	Y*
-	R*	R*	R	R*	-	R*	-	-	-	R*	R*	-	-	R	R*
G	S	S	S*	S*	G*	S	G*	S	S	G*	G*	G	G*	S*	S*
-	Y*	Y*	Y	Y*	-	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y	Y
-	-	K*	-	-	-	K*	-	-	-	-	-	-	-	-	-
M*	M*	M*	M	M*	M*	-	-	-	-	M*	-	M*	-	M*	M
-	R*	R*	R*	R	-	-	R*	-	-	R*	R*	R*	R*	R*	R
-	-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
R*	R*	D*	D*	R*	-	R*	-	W*	-	R*	R*	-	-	D*	R*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	D*	-	-	-	K*	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R	-	R*	-	-	-	R*	-	-	-	R*	R*
-	K	K*	K*	K*	-	K*	-	K*	-	K*	K*	K*	K*	K	K
-	K*	K*	K	K	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	R	R*	low_cov	-	-	-	-	R*	-	NP	NP	R*	G*
R*	R*	R*	-	R*	R*	-	-	-	-	-	-	R*	-	-	-
-	V*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	Y*	H*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	N*	-	Y*	-	-	K*	-	-	-	-	-	-	-	-
-	R*	R*	R	R	-	R*	R*	-	R*	R*	R*	R*	R*	V*	R*
-	-	-	Y*	T	-	-	-	-	-	-	-	NP	NP	Y*	T*
R*	R*	R*	-	-	R*	R*	-	R*	R	R	R*	R*	-	-	-
R*	V*	V*	R	R*	R*	R	R*	-	R*	R	R*	-	-	V*	R
-	K*	K*	-	-	-	K*	K*	-	-	-	-	-	K*	-	-
low_cov	Y*	Y*	Y*	Y*	low_cov	-	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*
low_cov	G	G*	G*	R*	low_cov	G*	G	R*	R*	G*	G*	NP	NP	G*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	-	C	Y*	C	-	Y*	-	-

-	R	R	-	-	-	-	-	-	-	-	-	A*	R*	-	-
-	Y*	-	-	-	-	-	-	Y	Y*	Y*	Y	Y*	-	-	-
-	-	-	R	R*	-	R	A	-	-	-	-	-	-	-	-
G	R	R	R	R*	R	R	R*	R*	R*	R	R*	R*	R*	G	R
-	Y	Y	-	Y*	-	Y*	-	-	-	-	-	Y	Y	Y*	-
Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	C	C	Y*	Y*	Y*	Y*	C*	Y
R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	NP	NP
R	R*	R	-	-	R*	R*	R*	R	R	R*	R*	R*	R*	R*	R*
R*	G*	G	G*	V*	R*	R*	R*	D*	G*	G	G*	R*	R*	N*	R
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	Y*	T	Y*	Y	Y*	Y
R	R	R	-	-	R*	R*	R	-	-	-	-	-	R*	-	-
-	R	R	-	R*	R*	R*	R*	-	-	-	R*	R	R*	-	-
Y	H*	H*	Y*	Y*	Y	Y	Y	Y	Y	T	T	Y	Y	Y*	Y
-	R*	N*	-	R*	R*	R*	R*	R*	R*	-	-	R	R	R*	-
R*	R	R	-	R*	R*	R*	R*	-	R*	R*	R*	R	R	R	R*
R*	R	R	-	R*	R*	R*	R*	R*	R*	A	R*	R*	R*	R	R
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
R*	R*	R*	-	-	R*	-	-	R*	-	-	R*	-	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y
-	Y	Y	Y*	-	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*
Y	Y	Y	Y*	Y	Y	Y	Y	-	-	Y*	Y*	Y	Y*	Y*	Y*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W*	W	-	W*	-	-	-	-	-	-	-	-	W*	W*	W
-	W*	-	W	W*	-	W*	-	-	-	-	-	-	-	-	-
Y	Y*	Y	Y	Y*	Y	Y*	Y	Y*	Y*	T*	Y*	Y*	Y*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	-
R	R	A	-	R*	R	R	R	R	R*	-	R*	R	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y	Y
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	C	S
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	T*	T	-	-	-	K*	K*	-	-	NP	NP	T	K
-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
NP	NP	NP	C*	C	Y*	Y	Y*	Y	C	-	-	-	-	Y*	-
NP	NP	NP	-	-	R*	R*	-	-	-	-	-	-	-	R*	G
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y	C*	C*	C*	C	C	Y*	Y*	-	Y*	Y*	C*	C*	C*	Y*	C*
R*	-	R*	-	-	R*	R*	R	-	-	-	-	-	-	-	-
R*	-	-	-	-	R	R	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	-	-	-	-	-	-	-	-	-	Y	T	NP	NP	-	-
-	-	-	R	R*	-	-	-	-	-	R*	R*	-	-	-	-
-	R	R*	-	R*	-	R*	-	-	-	-	-	-	-	-	-
S*	S*	V*	S*	S	S*	S*	R*	S	S	-	-	-	R*	V*	S

-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
K*	-	-	-	-	K	K	K*	-	-	-	-	-	-	-	-
R	-	R*	-	W*	R*	R	R	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	Y*	Y*	-	-	Y*	-	-	-	-	-
W*	-	-	-	-	W	W	W*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
K*	-	-	-	-	K*	K*	K*	-	-	-	-	-	-	-	-
W*	W	W	A*	A	-	-	-	W*	A	W	W	W*	W*	W	A
S*	S*	S*	S	S	-	-	-	-	-	S	S	S*	S*	-	-
W*	W*	W*	-	-	-	-	-	-	-	-	-	-	-	D*	-
R	R*	R*	R	R	R	R	R	R	R*	R	R	R	R	V*	R*
R	R*	R*	R	R*	R	R	R*	R	R*	R	R*	R	R*	R*	-
Y*	Y*	H*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y	N*	N*	S*	Y*	Y	Y	Y*	Y	Y	Y*	B*	-	B*	N*	Y
K	D*	D*	K	K*	K	K*	K*	K	K	K	K*	K*	K*	K	K
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
low_cov	M*	M*	C	M*	low_cov	M*	-	M*	M*	-	-	M*	M*	-	-
Y	H*	H*	H*	Y*	Y*	Y*	Y	Y*	-	Y	Y	-	-	Y	Y
K*	K*	K*	K*	K	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	C	Y*	Y	Y	Y	Y	Y	Y*	Y	Y*	C	C
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	T	Y	-	-	-	-
R*	R	R	R	R*	R*	R	R	-	R*	R	R	D*	R*	V*	R
-	D*	K*	-	-	-	-	K*	-	-	-	-	-	-	K*	K*
-	M*	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
Y	Y*	Y*	Y	Y	Y	Y*	Y	-	-	Y	Y	Y*	Y*	-	-
R	R	R	R	R	R	R	R	-	-	R*	R	R	R*	-	R*
M*	M*	M*	M*	M*	-	-	H*	M*	M*	M*	M*	S	S*	M*	M*
-	R*	R*	-	-	-	-	-	-	-	R	R*	-	-	-	-
R*	R*	R*	R	R	R*	R*	R*	R*	R*	R	R	R	R	R	R
-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-
R*	V*	R*	R	R*	-	-	-	-	-	G	G	R*	R*	R*	R*
Y	Y	Y	Y	Y	Y	Y	Y	-	Y*	Y	Y	Y	Y*	Y*	Y*
R*	R	R	R	R	R*	R*	R*	-	R*	R	R	R	R	R	R
R*	R	R	R	R	R*	R	R*	R*	R*	R	R	R*	R*	R*	R
-	D*	D*	-	-	R*	-	-	-	-	-	-	R*	R*	B*	-
-	R*	-	R*	R*	-	-	-	-	-	R*	R*	-	-	R*	R*
-	K	K*	K*	K	K*	K	K	-	-	K	T	K*	K*	K*	K*
NP	NP	NP	NP	NP	low_cov	Y*	Y*	-	-	-	T	-	-	Y*	-
R	-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
low_cov	R	R	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	-	V*	R*
-	-	-	-	-	R*	R	R*	R	R*	-	-	R*	A*	R	R
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
W	W	W	W	W	W	D*	W	W*	W	-	W*	W*	A	W	W
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	R*	R*	R*	G	R	G	G	-	-	R*	R*	R	R
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R

-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	M*	M*	-	-	-	-	-	-	-	M	M	-	-	M*	M*
-	S*	-	-	-	-	-	-	-	-	-	-	S*	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
W*	W	W	A*	A*	W*	A*	W*	A*	A*	A*	A*	A	W*	A	W*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	Y*	-	Y*	-	Y*	-	Y*	C*	Y*	-	C*	Y*	Y*	Y*
R*	-	-	-	-	-	R*	-	G*	G	-	-	R*	R*	R*	R*
Y*	Y*	B*	-	-	-	Y*	-	Y*	Y	-	-	Y*	Y*	Y*	Y*
K*	K*	K*	T*	T	-	K	K*	K*	K*	K	-	K	K*	K*	K
R	-	-	G*	R*	R*	R*	R	-	-	R	-	-	-	-	-
-	-	-	S	S	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	C*	C*	Y*	Y*	Y*	B*	C*	C*	C*	C*	C*	Y*	Y*
-	-	-	-	-	-	-	-	Y*	-	-	-	NP	NP	-	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	Y
-	low_cov	-	S	S	-	-	-	-	-	-	-	-	-	S*	S
-	W*	-	-	-	-	W*	-	-	-	-	-	-	-	-	-
M*	H*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	C	Y*	-	Y*	Y*	Y*	Y*	C	Y*	NP	NP	C*	Y*
-	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
S	S	S	V*	S*	S	S	S	S*	S*	C	C	C	C	S	S
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
K*	K	K	-	K*	K*	K*	K*	K	K	-	K*	-	K*	K*	K
S	V*	V*	S	S	S	S	S	S*	S*	S	S	S	S	S	S
R	R*	V*	R	R	R	R	R	R*	R*	R	R	R	R*	R*	R
T	Y	Y	T*	T	T	T	Y*	T*	Y*	Y	Y*	Y*	T*	Y*	Y*
-	K*	-	K*	K*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	Y	Y*	-	-
Y*	Y	Y	C	C	Y*	Y	Y	Y*	-	Y	Y	Y	Y	Y	Y
S	V*	V*	S	S	S	S	S	S*	S*	S	S	S	S*	S	S
-	Y*	-	-	-	-	-	-	-	-	Y	Y	Y	Y*	-	-
R	R	R	-	R*	R*	R	R	R*	R*	R	R	G	R	R	R
G*	G*	G*	G*	G*	R*	G*	G*	R*	G*	G*	G*	G*	G*	R*	R*
-	-	-	-	-	H*	Y	Y	Y*	Y	-	-	-	-	Y*	-
-	Y*	-	Y	Y	-	-	Y*	-	-	-	-	Y*	Y*	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R	R	R	R*	R*	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	Y*	-
R*	V*	R*	R	R	R	R*	R	R	A	R	R*	R	R*	R	R
G*	S*	S*	S*	S	S	S*	G	S*	G	G*	G	G	G	S*	S
-	R*	R*	-	-	R*	R*	R	R*	R	R*	R*	R*	R*	D*	R
NP	NP	NP	M*	M	M*	A*	M*	M*	A*	A*	A	NP	NP	-	M*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y*	-	-	-
low_cov	-	-	-	-	low_cov	W*	A	W	W*	W	W*	W	W*	W*	W
-	R*	R*	R*	R*	-	R*	R*	-	R*	R	R	R*	R*	R*	-
C*	Y	Y	Y*	Y	C*	Y*	Y*	C*	C*	Y*	Y*	C*	Y*	Y*	Y

R*	R	R*	R*	R*	R	R*	R*	G*	R*	R*	R*	R*	R*	R*	R*
S	S	S	G*	G	S	S*	S	-	-	S*	-	-	-	S*	S*
S*	S*	S*	-	-	-	-	-	-	-	S*	-	-	-	-	-
Y*	Y	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
M	M	M	A*	A*	M	M	M	-	-	M	-	NP	NP	M*	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	K	K	K*	K*	K*	-	-	-	-	K*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	G*	G	R	R	R	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	Y*	-	NP	NP	-	-
R*	R	R	R*	G	R	R	R	-	-	-	-	R*	-	-	-
-	low_cov	-	NP	NP	NP	NP	NP	M*	M*	-	-	NP	NP	M*	M
S*	S*	-	-	-	-	-	-	-	-	-	-	S	S*	S*	S
NP	NP	NP	C*	C*	C*	C*	C*	C*	C*	C*	C*	-	-	C*	C*
low_cov	R	R	R*	R*	-	R*	-	R*	R*	A*	A	-	R*	R*	R*
K	D*	D*	D*	K	K*	K*	K*	K*	K*	K	K	K	K*	K*	D*
-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S	S	S*	S*	S*	S*	G	S*	S*	S*	S*	G	G
M*	A	M*	M	M	M*	H*	-	A*	A*	M*	M*	M*	A*	M*	-
-	-	Y*	Y	Y*	-	-	-	-	-	Y*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y	Y	Y	-	-	-	-	-	Y*	Y	Y
NP	NP	NP	NP	NP	low_cov	-	G*	NP	NP	-	-	NP	NP	G	R
NP	NP	NP	NP	NP	low_cov	C*	C	NP	NP	NP	NP	Y*	Y	Y*	Y*
Y*	-	-	Y	Y	S*	Y*	-	-	-	-	-	-	Y*	Y*	-
S*	S*	S*	-	-	G*	G	G*	S*	G*	S*	S*	G*	G*	S*	S
Y	H*	H*	-	Y*	Y*	Y*	Y*	Y	Y	-	-	Y	Y*	Y*	Y
Y	Y	Y	Y	Y*	Y*	Y*	-	Y	Y	Y	Y	-	Y*	Y*	Y*
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y*	Y	Y*	Y	-	Y*	Y*	Y*	Y*	C	Y*	Y*
M	M*	M*	M	M	M	M*	M	M*	M*	M*	M*	M	M*	M	M
K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	M*	M	M	M*	M	M	M	-	-	M	M	M	M*	M	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	-	-	-	-	-	R*	R*	-	-	-	-	R*	R
-	K*	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	V*	V*	S	S	S	S	S	S*	S*	S	S*	S	S	S*	S*
Y	Y*	Y*	T	Y	Y*	Y*	Y*	T	Y*	T	Y*	Y*	Y*	Y	Y
Y	Y	Y	C	Y	Y	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y*
R	R*	R*	-	-	R	R*	R*	-	-	-	-	-	-	A	A
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-	R*	-
-	-	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
NP	NP	NP	R*	R*	low_cov	-	-	-	-	-	-	R*	R*	-	-
K*	K	K	-	K*	K*	-	-	-	-	-	-	K*	K*	K*	-

NP	NP	NP	G	G*	NP	NP	NP	G	G*	G*	G*	NP	NP	R*	G*
-	R*	-	-	R*	-	R*	-	R*	-	-	-	-	-	R*	R
G	K	K	K*	K	K*	K	K	K*	K	G	G	G	K*	K*	K*
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
R	R*	R*	-	-	low_cov	R*	-	-	-	NP	NP	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	W	W*
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*	NP	NP
R*	R	R	R	R	R*	R	R*	R*	R*	R*	R	R	G	R	R*
A	R	A	A*	A*	A*	R*	R	-	-	R	-	-	R*	A	R*
Y*	H*	-	-	Y*	Y	Y*	Y	-	-	-	-	-	-	Y*	-
Y	Y	Y	Y	Y	Y	Y	Y	-	Y*	Y	Y*	Y	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-
-	M*	M*	M	M	-	M*	-	-	-	-	-	-	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y	Y	Y*	Y	Y*	Y	Y	-	-	Y	Y*	Y	Y
-	R	R	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	S*	S*	-	-	S*	S*	-	-	-	-	-	-	-	-	-
-	-	M*	-	M*	-	-	-	-	-	-	-	Y	Y*	-	-
NP	NP	NP	-	-	-	W	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R	R	R*	R	R	R*	R*	R	R*	R*	R
C*	Y*	Y*	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	Y*
Y	Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	Y	NP	NP	Y*	Y*
C*	Y*	C	C	Y*	Y*	Y*	Y*	Y*	Y*	C	C*	Y*	Y*	C	Y*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
R*	R*	R*	-	-	R	R*	R*	-	-	R	-	-	-	-	-
-	R*	R*	-	-	B*	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
W*	W	W	T*	W*	W*	T*	T	T*	W*	T	T*	T*	W*	W*	W*
S*	N*	V*	S	S*	S*	S	S*	S*	S	S	S	S	S	S*	S*
R	R	R	R	R	R*	R*	R	-	R*	R*	R*	-	-	R*	-
Y	Y	Y*	Y	Y	Y*	Y	Y	-	-	-	-	Y*	Y*	-	-
R*	-	R*	R*	R*	R*	R*	R*	-	-	-	-	-	-	-	-
-	H*	Y*	-	-	S*	M*	Y*	-	-	-	-	-	-	M*	-
R*	R	R	R	R	R	R*	R	-	R*	R*	-	R*	R*	-	-
-	N*	M*	-	-	Y*	Y	Y	-	-	-	-	M*	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	-	-	-	Y*	-	-	-	-	-	Y*	Y*	Y*	-
Y*	Y	Y	Y*	Y*	-	-	-	-	-	-	-	Y	-	-	-
low_cov	Y*	Y*	-	-	Y*	Y*	Y*	-	-	NP	NP	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y*	Y*	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y*	Y*	Y*	Y	-	-	-	-	-	NP	NP	NP	NP	-	-
-	S*	S*	S	S	-	-	-	-	-	-	-	-	-	S*	-
-	Y*	H*	Y	Y	-	-	-	-	-	-	-	-	Y*	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	W*	W*	W*	A	W	W*	A	W*	D*	-	-	W*	W*	W*	W*
Y	H*	H*	Y	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	Y*
NP	NP	NP	R*	R*	R*	-	R*	R*	R*	NP	NP	NP	NP	R*	-
-	M*	M*	-	-	-	M*	-	M	M	-	-	-	-	H*	M*
Y*	Y*	Y*	Y	C	C*	Y*	Y	-	-	C*	C*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	R	R*	-	-	-	-	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	C*	Y*	Y*	-	-	NP	NP	NP	NP	Y*	C
NP	NP	NP	-	Y*	Y*	-	-	-	-	-	-	NP	NP	-	-
K*	-	-	-	K	K*	-	-	-	-	-	-	K*	K*	-	-
NP	NP	NP	-	Y*	Y*	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	Y*	Y*	Y*	Y*	-	-	Y*	Y	Y*	Y*	-	-
NP	NP	NP	M*	M	low_cov	-	-	-	-	C*	C*	-	-	M*	M
-	-	-	-	-	-	M*	-	C	M*	-	-	-	-	-	-
S*	S*	S*	S	S	S*	S*	S	-	-	S*	S*	S*	-	S*	-
R*	R	R	R*	G	R	R	R	R	R	R*	R*	-	-	R*	R*
Y*	Y	Y	C	Y	Y	Y	Y	-	-	Y	Y	-	Y*	-	-
R*	R*	R*	R	R	R*	R*	R	-	-	R*	R*	-	-	R*	-
Y*	Y*	-	Y*	Y*	Y*	-	-	-	-	Y*	T*	-	-	Y*	Y
Y*	Y	Y	Y*	Y	Y*	Y*	Y*	-	Y*	Y	Y	Y*	Y*	Y*	Y*
Y*	Y	Y	Y	Y*	Y*	Y	Y*	-	-	Y*	Y*	-	Y*	Y*	Y
K*	K*	K*	K	K	K	K*	K*	-	-	K*	K	-	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	C	Y	Y*	Y*	Y*	-	-	Y*	Y*	-	-	-	-
N*	N*	N*	Y	Y	Y	Y	Y	H*	N*	Y	Y	H*	H*	N*	Y*
-	M	M	C	C	M*	M*	M*	-	-	M	M*	-	-	-	-
-	-	-	-	-	-	-	-	S	S*	-	-	-	-	-	-
-	R*	R*	-	-	-	-	S*	-	-	-	-	R*	-	-	-
M*	M	M	C	C	M*	M*	M	-	-	M	M	-	M*	M*	-
R*	R	R	A	A	R*	R*	R	R	R	A	A	R*	R*	A*	R*
-	-	R*	-	-	-	-	-	R*	R	-	-	R*	R*	-	-
R*	R	R	R	R	R	R	R	-	-	R	R	R*	-	-	-
-	Y*	Y*	-	-	Y	Y*	Y	-	Y*	Y	Y	-	-	Y	Y
R*	R*	R	R	R	R	R	R	-	-	R*	R*	R*	-	-	-
-	-	-	-	-	R*	R*	-	R	R	-	-	-	-	-	-
R*	R	R*	G	R*	R	R*	R	-	-	R	R	-	R*	-	-
W*	W	W	W*	T	W	W*	T	-	-	W	W	W*	W*	-	-
Y*	Y*	Y	-	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	-	-
-	R*	-	-	-	-	-	-	-	-	R	R*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	T	Y*	-	-	-	-	Y*	Y*
K*	D*	D*	K	K	K	K	K*	K*	K*	K	K	K*	K*	K*	K*

-	N*	N*	-	-	-	-	Y*	-	-	Y	Y	-	-	Y	Y
Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
R*	R*	R*	R*	R*	R	R	R	R*	R*	R*	R*	R	R	R*	R*
-	K	K	K	K*	low_cov	K	K	K*	K*	T	K*	-	R*	D*	K
-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y	C*	C	-	-	Y*	Y
-	M*	H*	-	-	Y*	Y	Y*	-	-	-	-	-	-	-	-
low_cov	Y*	Y*	-	Y*	low_cov	-	-	NP	NP	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	NP	NP	R*	-
-	R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*
R*	G	R	R*	G*	R*	R*	-	R	R*	R*	R*	-	-	R*	R*
NP	NP	NP	Y*	-	-	-	-	-	-	-	-	-	-	NP	NP
Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y*	-	Y*	Y	Y	Y	Y
-	-	R*	-	-	-	R*	-	R	R	-	S*	-	-	-	-
Y*	Y*	Y*	-	-	Y*	-	Y*	-	-	-	-	-	M*	-	-
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
B*	Y	Y*	Y	Y	C*	Y*	C	Y*	Y*	B*	Y*	Y	Y*	Y*	Y*
-	-	R*	-	-	-	-	-	-	-	K*	K*	-	-	-	-
-	K	K	-	-	-	K	K*	T	T	-	-	K*	K	K*	K
K*	K	K	K*	K*	K*	K*	K*	K*	K*	K*	K*	K	K*	K*	K
-	Y*	Y*	-	Y*	-	Y*	Y*	-	-	-	-	Y*	Y*	Y*	-
-	H*	H*	Y*	Y*	Y*	Y*	Y*	Y	Y	-	-	Y*	Y*	Y*	Y*
Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y	Y	-	-	-	-	-	-
Y*	Y	Y	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y	-	-
R*	-	-	-	-	R*	-	-	-	R*	-	-	-	-	R*	-
-	-	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y*
-	M	M*	M*	M*	-	M*	M*	M	M	-	-	M*	M*	-	-
K	K	K	T*	T	K*	K	K*	T*	T*	K*	K*	K	K*	K	K*
R	R	R	R	R	R	R	A	A*	A*	R*	R	R	R*	R*	A*
C	S	S	S	C	S	S	S	C	S	S	S	B*	S*	S*	S*
M	M	M	M	M	M	M	M	M	M*	M*	M	M	M*	M*	M*
-	R*	R*	-	-	-	R*	R	R*	R	-	-	-	-	R*	R
M	M	M	M	M	M	M	M	A*	M*	M	M	M	M	M*	M*
-	K*	K*	-	-	-	K*	-	K*	K*	-	-	-	-	-	S*
-	-	-	R	R	-	-	-	-	-	-	-	R*	-	R*	R
G	G*	G*	G*	R*	G*	R*	G*	R	R*	G	G	NP	NP	G*	R*
K*	K	K	-	-	K*	K	K	-	-	K	K	K	K*	K	K
R	R	R	R	R	R	R	A*	R	R	R	R	A	R	R	R*
Y*	N*	W*	-	-	Y*	Y*	H*	-	-	Y	Y	-	-	Y*	Y*
Y*	H*	H*	-	Y*	Y*	Y	Y	-	Y*	Y*	Y*	Y	Y*	Y*	Y*
-	R*	R*	-	-	-	R*	-	R	R	-	R*	-	-	R*	-
S*	S*	S*	-	-	S*	S	S*	S*	S*	S*	S	-	-	V*	S*
Y*	Y*	Y	Y*	Y*	Y	Y	Y*	B*	Y*	Y	Y	Y	Y*	Y*	Y
Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*

R*	R	R	NP	NP	-	R*	-	A	A	-	-	R*	R*	-	-
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-
S*	S	S	S*	S*	C*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*
Y*	Y	Y	Y	Y	Y*	Y*	Y*	-	Y*	Y	Y	Y	Y	Y	Y
Y	H*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y	Y
-	S*	C	S*	C	-	-	-	-	-	S*	-	S*	S*	S*	S*
R*	R	R	R*	A	R*	-	R*	-	-	R*	R*	A	R*	R*	R
R*	R*	R*	R*	R	R*	A	R*	R*	R*	-	-	-	-	-	-
Y*	Y	Y	Y	Y	-	Y*	-	-	Y*	Y	Y	T	Y*	H*	Y*
Y*	Y*	Y*	NP	NP	-	-	-	NP	NP	Y	Y*	Y*	C	Y*	Y
R	A	R*	R	R	R	R	R	R	R	R	R	R	R	R	R
Y*	H*	H*	Y	Y	B*	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	Y
-	D*	R*	R*	R*	-	R*	D*	NP	NP	R*	R*	D*	R*	R*	R*
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y
S	S*	S*	S	S	S	S	S	S	S*	S	S	S	-	S*	S
R	R*	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*
NP	NP	NP	-	-	-	-	Y*	-	-	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-
NP	NP	NP	Y*	Y*	NP	NP	NP	-	-	NP	NP	NP	NP	B*	C*
-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-
R*	-	R*	-	-	-	-	V*	R	R	R	R	-	-	-	-
S*	-	S*	-	-	-	-	-	S	S*	S*	C	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-
low_cov	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
-	S	S	-	-	-	S*	-	S*	S*	S	S	-	S*	S*	S
K*	K*	K*	-	-	K*	K*	-	K*	K*	K	K	-	K*	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	-	S*	-	B*	-	-	-	S*	-	-	-
R*	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R	R	R	R*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	Y	Y*	Y	C*	Y*	C*	C*	Y*	C*	C*	-	C*	C*
NP	NP	NP	R*	G	NP	NP	NP	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	-	K*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	-	Y	-	-	-	-	-	-	-	NP	NP	Y*	-
-	S	S*	-	-	-	S*	S	-	-	-	-	-	-	-	-
S*	S*	-	S	S	S*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
W	W*	W*	W	W	W*	-	-	-	-	-	-	-	-	-	-
W*	-	-	W*	W*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y*	Y	Y*	Y*	-	-	Y*	-	-	Y*	Y*	-	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	R*	R*

R*	R*	R*	-	R*	R*	R*	R*	-	-	-	-	-	-	R*	-
-	R*	R*	R*	R*	-	R*	R*	-	-	R*	R*	R*	R*	-	-
R*	R	R*	R	R	R	R	R	R*	R*	R	R	R	A	R	R
R*	R	R*	R	R	R	R	R	-	R*	R*	R	R	R*	R*	R
R*	R	R	R*	R*	R*	R*	G*	G	R	R*	R*	R*	R*	R*	G*
NP	NP	NP	NP	NP	NP	NP	NP	A*	A*	R*	R*	NP	NP	R*	-
-	-	S*	-	-	-	R*	-	R*	-	-	-	-	-	-	-
M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	V*	V*	V*	M*	M*	V*	M*	V*	V*	V*	-	M*	M*	M*	M*
NP	NP	NP	NP	NP	NP	NP	NP	M*	C*	NP	NP	NP	NP	NP	NP
M	-	M*	-	-	M	A	A	M	M	M	A	M	M*	M*	M
R	-	R*	-	-	A	R*	R*	-	-	R*	A	R	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y*	C	Y*	Y*	C	Y*	Y*	C*	Y*	C*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
M*	M*	-	M*	M*	M*	-	-	M	M	M*	M*	C*	C	M*	M*
-	R*	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	-
-	H*	M*	M	M*	-	-	-	-	-	-	-	-	-	V*	M
low_cov	Y*	-	-	-	-	Y*	-	Y*	C	Y*	Y*	Y*	C	Y*	Y*
R*	R	R*	R	R*	R*	R	-	R*	R	R	R*	R	G	R*	R*
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	Y	Y
NP	NP	NP	A*	M*	low_cov	A*	M*	M	M*	A*	A*	NP	NP	M*	M
K*	K*	K*	-	-	low_cov	K*	K*	-	-	K	K	K	K*	-	-
Y*	Y	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y*	Y*	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	T	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	Y	-	-	-	-	-	-	-	-
-	-	-	-	R*	-	R*	-	-	-	-	-	R	R*	-	-
R*	-	R*	A	A	-	-	-	-	-	-	-	R*	R*	A	R
T	W	W	W*	W*	T	T	T	W*	W*	W*	W*	T	T	T	W
R*	R*	-	R*	G	-	-	-	-	-	-	-	R*	R*	R*	R
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	R*	R	G*	G	-	R*	-	R	R	R*	R*	-	-	R*	R
-	R*	R*	-	-	-	-	-	-	-	R*	A	-	-	R	R*
R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	-	-	R	R	R	-	-	R	G	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y*	Y	Y*	Y*	-	-	NP	NP	Y*	-
-	-	-	-	-	-	-	-	Y	Y*	-	-	NP	NP	Y*	Y*
Y*	-	Y*	-	-	-	Y*	Y*	Y*	T	NP	NP	NP	NP	Y*	Y*
NP	NP	NP	NP	NP	low_cov	Y*	-	T*	T*	NP	NP	NP	NP	-	-

Y*	Y	Y*	-	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R*	R*	R*	R*	K*	R*	-	R*	R*	R*	R*	R*	-	-	-
R*	R*	-	-	-	R*	R	R*	-	-	R*	A*	-	-	R*	R*
-	-	-	-	-	-	R*	-	R*	R*	-	-	NP	NP	-	-
Y*	Y	Y*	Y*	Y*	-	Y*	-	Y*	Y*	-	-	NP	NP	Y*	Y
M*	M	M*	-	M*	-	-	-	M*	M*	M*	-	-	-	-	-
-	-	-	-	-	-	S*	S*	-	-	-	-	G	S*	-	-
S*	S	S	-	-	S*	S*	S	-	-	S*	S*	S*	S	-	-
-	-	-	-	-	Y*	Y	Y	-	-	-	Y*	Y	T	-	-
low_cov	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	S*	-	S	S	-	-	-	-	-	-
-	-	-	-	-	-	R*	R*	-	-	R*	-	R*	G	-	-
Y	Y	Y	-	-	-	Y*	Y*	-	-	Y*	Y*	Y*	T	-	-
low_cov	Y*	C*	Y*	-	low_cov	C	C*	Y*	Y*	-	-	C*	C*	C*	C*
R*	R	R	-	-	R*	R	R	-	-	R*	-	G	R*	R*	-
S*	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	S
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R	R
NP	NP	NP	Y	T	T	Y*	Y*	T*	Y*	-	-	-	-	Y*	Y
-	Y*	-	Y*	Y*	-	-	-	-	-	Y	Y*	Y*	C*	Y	Y*
-	R*	-	-	-	-	-	-	NP	NP	-	-	NP	NP	R*	R
Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
G*	G	G	G*	G*	low_cov	G*	G*	G*	R*	R*	R*	G*	R*	R*	G*
Y*	Y	T	T*	T*	Y	-	-	Y*	-	Y*	Y*	Y*	-	Y*	Y
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	-	-	R*	R*	R*	R*	R	R*	R*	-	-
NP	NP	NP	Y*	Y*	Y*	Y	Y*	T*	T*	T*	T*	NP	NP	T*	Y*
-	R*	-	-	-	-	-	-	R*	R*	R*	R	-	-	-	-
S*	S*	S*	-	-	S*	S	G*	-	-	-	-	NP	NP	-	-
NP	NP	NP	C*	C*	low_cov	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
Y	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	low_cov	-	-	-	-	NP	NP	NP	NP	G*	R
-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
S*	S*	S*	-	-	S*	S*	-	-	-	-	-	-	-	C	S
Y*	Y	Y	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
NP	NP	NP	K*	K*	low_cov	K	K*	NP	NP	K*	-	NP	NP	K*	G*
R	R	R	R	R	R*	R	R	R	R	R	R*	R	R*	R	R
-	R*	R*	G	R	-	-	-	-	-	-	-	-	-	-	-
-	Y*	H*	Y	Y	-	-	-	-	-	-	-	-	-	W*	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	R*	R
Y*	H*	H*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R	R*	R	R	R	R*	R	R	R	R	-	-	R	R*	G	R
R	R	V*	R*	R*	R	R	-	R*	R*	R*	R*	R	R	R*	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	-	-
R	R	R	R	R	R*	R	R	-	-	R	R	R	R*	R	R*
-	R*	-	-	-	R*	R	R*	-	-	-	-	-	S*	R*	-
-	R	R	R*	A	-	-	-	-	-	-	-	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
-	B*	S*	G	G	-	-	-	-	-	-	-	B*	S*	-	-

R*	R*	R*	-	-	R*	-	-	-	-	R	G	-	-	NP	NP
low_cov	A*	A*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	R
low_cov	S*	S*	G*	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	M*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	R	R	R*	G*	R*	R*	G*	R*	R*	R*	R*	NP	NP	R*	G*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*
Y*	Y*	Y*	Y*	Y	Y*	Y*	-	-	-	-	-	Y	Y*	Y*	Y
Y	Y	Y	-	Y*	Y	Y*	Y*	T*	T	Y*	T*	Y*	Y*	Y*	T
Y*	H*	H*	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-
R*	R	R	-	-	R*	-	-	-	-	R	R	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
Y*	Y*	Y*	-	-	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	H*	Y*
Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	-	-
-	Y*	Y*	-	-	-	Y*	Y*	-	Y*	Y	Y	-	Y*	H*	-
-	R	R*	-	-	-	R*	-	R	R*	R*	-	R*	-	-	-
-	V*	V*	-	S*	-	S*	S*	S*	S*	S*	-	-	-	S*	S*
Y	Y	Y	-	B*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y*
-	Y*	Y*	Y	Y*	Y*	Y	Y	-	Y*	-	-	Y*	Y*	Y*	Y
-	R*	R*	-	R*	-	R*	R*	R*	R*	R*	-	-	-	R*	R*
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
S*	S	S	-	-	S*	C	C	S*	S*	S*	S*	-	S*	C	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-
R	G*	G	G*	G*	G	G*	G*	R*	G*	G*	G*	NP	NP	G	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
NP	NP	NP	-	-	low_cov	-	-	-	-	NP	NP	NP	NP	-	W*
low_cov	S*	S*	-	S*	S*	S*	S*	-	-	S*	S*	NP	NP	G*	S*
NP	NP	NP	NP	NP	C*	C*	C*	NP	NP	NP	NP	NP	NP	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	NP	NP	-	-	-	-
G	G*	G*	R*	R*	R*	G	G*	G	R*	R*	G*	NP	NP	G*	R*
R*	G*	G*	G*	R*	R*	V*	G*	R*	R*	G*	R*	G*	G*	G*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y*	Y*	-	Y*	Y*	Y	-	-	-	-	-	Y*	-
R*	-	R*	-	-	R*	-	-	-	-	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R*	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R	R*	-	-	-	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	Y*	-	-	-
K*	K*	K*	-	-	-	-	-	-	-	K	K*	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
M	M*	M*	M	M	M	M*	-	C	C	C*	C	C*	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	Y
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	W*	W

-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
R	R	R	R	R	R*	R*	-	-	-	-	-	R	R*	-	-
-	Y*	Y*	-	-	Y*	Y	Y	Y*	Y*	-	-	-	-	T	Y
R*	R*	R*	R	R	R*	-	-	-	-	R	R	-	-	R	R
Y*	-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	S*	S	-	-	-	-	NP	NP	-	-
A	R*	A	-	-	R	R*	R*	-	-	-	-	A*	A*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R	R	-	R*	R	R	R	-	-	-	-	G	G	R	R*
Y*	Y	Y	-	-	Y*	Y*	Y*	-	-	-	-	Y	T*	Y*	Y
-	R*	R*	R	R	-	R*	-	-	-	R	R	-	-	R*	R
Y*	C	Y*	Y*	C	Y	Y	Y	Y	Y	Y*	Y*	C*	C	Y	Y
Y	Y	Y	-	Y*	Y	Y	Y	-	Y*	-	-	Y	T	-	Y*
low_cov	S	S*	-	-	low_cov	-	-	-	-	-	-	S*	S	-	-
Y*	Y	Y*	-	-	Y*	Y	Y	T*	T*	Y	Y	Y	Y	Y	Y*
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP	Y*	Y*
R*	R	R	-	-	R	R	R	G*	G*	R	R	G	R*	R	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y	Y*	NP	NP	Y*	C
low_cov	Y*	-	-	-	low_cov	Y*	Y*	C	C	Y*	Y*	C	Y*	H*	Y*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M	-	M*	-	M	M	M*	A	M	M	A	M*	M*	M
D*	D*	D*	R*	D*	K*	K*	D*	K	K	K*	K*	K*	K*	K*	D*
R*	R	R*	R*	R	R*	R*	R*	R*	R*	R*	R	R*	R*	R	G
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
S*	C*	S*	S*	S*	S*	S*	S*	-	-	C*	C*	S*	-	C*	C*
Y	-	-	Y	Y	Y	Y	Y	C	C	-	-	Y*	-	-	-
-	-	-	-	-	-	K*	-	-	-	Y	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
R*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-
-	-	-	NP	NP	-	-	-	NP	NP	-	-	Y*	T	NP	NP
-	R*	R*	-	-	-	-	-	-	-	R*	-	R	R*	-	-
R*	G	G	G*	G*	R*	G	G*	-	R*	G*	G*	G*	G*	G*	R*
A*	low_cov	A*	A*	A*	A*	M	A*	-	-	A*	A*	NP	NP	A*	A*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y	C	C	C*	C*	Y	Y	Y	-	-	C*	C*	C*	C*	-	-
-	-	-	K*	K	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
S*	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	Y*	NP	NP	NP	Y*	Y*	T*	T*	NP	NP	NP	NP
R	R*	R*	R	R	R	R	R*	R	R*	A*	A	NP	NP	R*	R
Y*	Y*	C	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y
-	-	-	R	R	-	-	-	-	-	-	-	R*	-	-	-
S	S*	C*	C	C*	C*	C	B*	S*	S*	C*	C*	NP	NP	S	S
G	R*	G*	-	R*	R*	R*	R*	R*	R*	R*	R*	G*	R*	R*	R*
R	R	R	G*	G	G	R	G	-	-	R*	R*	R	R	R*	R*

-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	W*	W*	-	W*	NP	NP	-	-
R*	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-
-	-	-	K*	K*	-	-	-	-	-	-	-	-	-	-	-
W	W*	W*	W	W	W*	W	W	W	W	W	W	W	W*	W*	-
S*	S*	-	-	-	S*	-	-	-	-	S	S	S*	-	-	-
R*	R	R*	R	R*	R	R	R	R	R*	R	R*	-	-	R*	-
-	R*	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	T	Y*	Y*	Y*	-	Y	Y*	Y*	Y*
R*	R*	R	-	-	R*	R	R	R*	A*	-	-	A	R*	A*	R*
-	R*	-	R*	R*	-	-	-	-	R*	-	-	-	R*	-	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	C	Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y
R	R	R	R	R	R*	R*	-	R*	R	R*	-	R*	R*	R	R
low_cov	K	K	T*	T*	low_cov	K	K*	-	-	K*	K*	K*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
R*	-	R*	R*	R*	-	R	R	-	-	-	-	NP	NP	R*	R
Y	Y*	Y*	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
Y	C	Y*	-	-	Y*	Y*	Y*	C*	Y*	C	Y*	Y*	Y*	-	-
G	K*	K*	K*	G	K*	K	K*	-	-	K	G	K*	K*	-	-
-	-	-	K*	K	-	-	-	-	-	-	-	K*	K*	-	-
Y*	-	-	Y*	Y	Y*	Y	Y	-	-	Y	T	-	Y*	-	-
G	R*	R*	R	R*	G	R*	G	R*	G*	R*	-	NP	NP	R*	R*
-	-	-	-	-	low_cov	-	-	-	-	-	A	-	-	-	-
G*	low_cov	G*	G	R	R*	R	R	NP	NP	R	-	G*	R*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
low_cov	-	-	K*	-	-	K*	K	-	-	K*	T	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*	G*
R	G*	G	R*	R*	R*	G	R*	R*	G*	-	-	R*	G*	R*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y	Y	C	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
S	S	S	S	S	S	S*	S*	S*	V*	S*	S*	S*	S*	S*	S*
NP	NP	NP	-	-	Y*	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	K*	K	K*	K*	K*	K*	-	K*	K*	-	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S	S	S	S	S*	G*	G	V*	G	G*	S*	S*	G*	S*	S*
Y	Y*	Y*	T	T	-	Y*	-	T	T	-	-	T	Y*	B*	T
low_cov	R*	-	NP	NP	-	-	-	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	S*	S	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	Y*	-	Y*	-	-	-	-	-	Y*	Y*	-	-
R*	R*	R	-	-	R*	R	R	R	R	R	R	-	-	R*	R

-	R*	R*	-	R*	-	V*	R*	-	-	-	-	R*	R*	R*	-
-	R*	R*	-	-	-	-	W*	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	R*	-	R	R*	-	-
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
K	K	K	-	K*	K	K*	K*	K	K	K*	G*	G	G*	K*	K*
R*	R*	R*	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	H*	Y*	-	-	-	-	Y*	-	-	-	Y*	-	-	H*	-
R	R	R	R*	G	R	G	R*	R*	R*	R*	R*	R	R	R*	G
-	Y*	-	-	-	Y*	Y*	Y	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
R*	R	R	A*	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	-	R*
-	K*	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
R*	R*	R	-	R*	R*	R	R	R*	-	R*	R*	R*	-	R*	R*
K*	D*	D*	G*	K*	K*	K*	K*	K*	K*	R*	D*	G*	G*	-	K*
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R*	R*	-	R	R	R*	R*	R	R*	R*	-
-	R*	R	-	R*	-	R*	R*	R	R	R*	-	-	-	R*	R*
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	V*	-
G*	R	R	R*	R	G*	R	G	R*	R*	R*	R*	R*	R*	R*	R*
-	M*	-	Y*	-	Y*	Y	Y	-	-	Y	Y*	Y*	Y*	Y*	Y*
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	-	G*	R	R	R	G*	-	-	R	R	R*	R*	R*	R
-	Y	Y	Y*	-	-	Y*	-	T	T	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	T
Y	Y	Y	Y*	C	Y	Y	C	Y*	Y*	C	Y*	Y*	-	Y*	Y*
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	K*	K
NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP	NP	NP	-	-
NP	NP	NP	-	-	NP	NP	NP	A*	A*	A*	A*	NP	NP	-	-
-	-	-	-	-	-	R*	-	R	R	-	R*	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	Y*	-	-	-	-	-	Y
NP	NP	NP	NP	NP	NP	NP	NP	G*	G*	R*	G*	NP	NP	R*	R*
-	H*	M*	-	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	-	-
NP	NP	NP	NP	NP	low_cov	-	-	-	-	Y*	-	NP	NP	NP	NP
-	-	-	Y	Y	-	-	-	Y*	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	Y	Y	Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y*	-
low_cov	-	R*	-	-	NP	NP	NP	-	-	-	-	NP	NP	R*	A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	A*	R	R*	R	-	R*	-	-	R	R*	-	-	-	-
-	B*	S*	S*	S*	S*	S*	S*	-	S*	S	S	S*	S*	-	-
K	K*	K	K	K	K*	K*	K	-	-	K	K*	-	-	-	-
S	S	S	S	S	S	S	S	-	-	S	S	S*	S*	S*	-

Y*	Y*	Y	Y	Y	Y	Y*	Y*	-	-	Y*	Y*	-	-	Y*	-
K	K	K	K	K	K	K	K	-	K*	K	K	K*	K*	K*	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-
W	W	W	-	-	W*	W*	W*	W*	W*	W	W*	W*	W*	W*	W*
K*	-	-	-	-	K	K*	K*	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R	R	-	-	-	-
-	R*	R*	-	R*	-	R*	-	-	-	R	R	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	Y*	Y
-	R*	-	R	R*	R*	-	-	-	R*	-	-	-	-	-	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	S*	R*	-	-	-	-	-	-	-	-	-	K*	K	-	-
A	R*	R*	-	-	R	A*	R*	R*	R*	R*	A	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
S	S	S*	-	S*	S	S	S*	-	S*	-	-	S*	S*	S*	S
-	H*	M*	-	-	-	-	-	-	-	Y	Y	-	Y*	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	W*	-	R*	-	-	-	-	-	-	R*	R*
Y*	Y*	-	-	-	Y*	Y	Y	-	-	Y	Y	Y*	Y*	Y	Y
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	-	-	NP	NP	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
T*	Y*	Y*	Y*	T	T*	Y*	T*	T*	Y*	Y*	Y*	Y*	T*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	W	W*	W*	W*	W*	W	W	-	-	NP	NP	-	-
-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	R*	-	R	R*	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	S*	S*	-	-	-	-	S	S*	S*	S
T*	T*	T*	T*	T*	low_cov	Y*	Y*	T*	Y*	NP	NP	NP	NP	T*	Y*
K	K*	K	-	K*	K	K*	K	-	K*	K*	K*	K	K*	K*	K
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	K	K*	-	K*	K	-	-	-	-	-	-	-	-
NP	NP	NP	M*	M*	M*	M	M	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-
low_cov	R*	R*	-	-	-	R*	R	-	-	-	-	R*	R*	A	R
W*	W*	-	W*	W	W*	-	W	-	-	-	-	W*	-	-	-
-	R*	R*	R*	R*	R*	R*	R	R*	-	-	-	R	R*	-	-
Y*	Y*	-	Y*	Y*	B*	Y*	Y	-	-	-	-	Y*	Y*	-	-
-	-	-	T	Y*	Y*	Y*	Y	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	R*	-	R*	-	-	-	-	-	-	-	-
S	-	S*	S	S	S*	S	S	S	S	G*	S*	S*	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	M*	M	-	-	-	-	-	-	M*	M
NP	NP	NP	-	-	R*	-	R*	NP	NP	G	R*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	low_cov	-	-	-	-	R*	-	R*	-	-	-	R*	R*	R*	-
W*	-	-	-	-	W*	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	R	R	R*	R*	G*	G	R*	G	R*	G	R	R*	R*	R*	R*
R	R*	R*	-	-	R	R*	R	-	-	R	R*	-	R*	R*	R
S	S	S	S*	-	S*	S	S*	S*	S*	S*	G*	S*	G*	S	S
R	R*	R*	-	-	R*	-	-	-	-	R	R	-	-	-	-
-	V*	V*	-	S*	-	M*	M*	S*	S	V*	-	S	S*	-	-
Y*	Y	Y	W*	-	Y	Y	Y	-	-	-	-	-	Y*	Y*	Y
-	Y*	H*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y
R*	R*	R*	-	-	R	R	R	-	-	-	-	-	-	R*	R*
Y*	Y	Y	-	-	Y	Y	Y	Y*	-	Y	T	-	-	Y	Y*
R*	R*	R*	-	R*	-	R*	R*	-	R*	R*	R*	R*	R*	R*	R*
Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-	Y*	S*	-
K	K*	K*	K*	-	K*	-	K*	-	-	-	K*	K*	K*	K*	K*
Y	Y*	Y*	C	C	Y	Y	Y*	-	Y*	Y*	-	Y	Y*	NP	NP
-	R*	R*	-	-	-	-	-	-	S*	-	-	-	-	-	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	M*	M
-	R*	R*	-	R*	-	-	-	-	-	R	R	R*	R*	-	-
low_cov	S*	C	-	-	-	-	-	-	-	S*	S*	-	C*	S*	C
-	M*	M*	A	M*	low_cov	M	M*	M*	M	-	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	-	W	W	-	-	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	S	S	S	S
low_cov	C	C	C*	Y*	low_cov	C	C*	C	Y*	Y*	C	C	Y*	C*	C*
NP	NP	NP	A*	A*	NP	NP	NP	NP	NP	NP	NP	A	A*	A*	A*
-	-	-	-	-	-	-	-	-	-	R	R*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	R*	R	R*	R*	-	-
NP	NP	NP	-	-	M*	M*	C*	NP	NP	-	-	NP	NP	M*	C
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	R*	G*
R*	R*	R*	R*	R*	R	R	A	-	-	-	-	R*	R*	R*	R*
-	M*	M*	M*	A	M*	M	A	-	Y*	-	-	M*	M*	M*	M*
R	D*	R*	R	R	R	R	R	R	R	R	R	R	R	R	R
-	-	-	M	M*	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	W*	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y*	Y*
Y	N*	N*	Y	Y	Y*	Y	Y	Y*	H*	Y	Y	Y	Y	N*	Y
-	Y*	H*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	Y*	Y
R	R	R	A	A	R	A	A	-	R*	R*	R*	A	R*	R*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M	M*	-	-	-	-	-	-	-	-	M*	M*	-	-
-	-	-	-	-	-	-	-	-	S*	-	-	-	-	S*	-
-	S	V*	-	-	-	S*	-	-	-	-	-	S*	-	-	-
-	H*	H*	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
R*	D*	D*	-	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	D*	R*

-	-	-	NP	NP	NP	NP	NP	T	T	-	-	NP	NP	-	-
R*	R*	R*	-	-	R	R*	G*	-	-	-	-	-	-	-	-
Y*	H*	H*	-	-	Y*	Y*	-	Y*	-	-	-	H*	-	-	Y*
Y*	H*	H*	Y	Y*	Y*	Y	Y*	Y*	Y	-	-	Y*	Y*	Y*	Y*
-	M*	-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-
R*	R	R	R	R	R	R	R	R	R	R	R	R	R*	R*	-
-	R*	R*	-	R*	-	R*	-	-	R*	-	-	R*	R*	R*	-
-	-	-	-	-	-	-	-	M	M	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	R*	R
Y	Y	Y	Y	Y	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	R	R	R*	-	-	-	-	-	-	R	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y	Y*	T*	NP	NP	Y*	Y*
-	low_cov	-	-	-	-	-	-	-	-	-	-	NP	NP	-	Y
S	S*	S*	-	-	S*	-	-	-	-	S*	S*	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	M	C	C*	C	NP	NP	NP	C*	C*	C*	C*	C*	C*	C*	C*
K*	K*	K*	K*	K*	K	K	K	-	-	-	-	K*	R*	-	-
-	-	-	-	-	low_cov	-	M	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y*	Y	Y	Y	Y	Y	C	C	Y	Y*	Y	Y*	-	Y*
NP	NP	NP	-	-	S*	S*	-	NP	NP	NP	NP	NP	NP	-	-
Y	C	C	Y*	C*	Y	Y	Y*	-	Y*	C*	C*	Y	Y*	Y*	Y*
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	NP	NP	-	-
Y*	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y	Y*	Y	Y*	C	Y*	Y	Y	Y	Y*	-	-
-	H*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
R*	R*	-	-	-	R*	-	R*	-	-	-	-	-	-	-	-
K	G*	G*	G*	K*	K*	K	K	G*	G*	G*	G*	K*	G*	K*	K*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	W*	W*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	-	S*	S*	S	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
S*	-	-	-	-	S*	S*	S*	-	-	-	-	-	-	-	-
-	Y	Y	-	-	-	-	Y*	-	-	-	-	-	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
Y	-	-	-	-	Y*	-	-	-	-	-	S*	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-
-	M*	-	-	-	-	M*	-	M	M*	-	-	-	-	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R*	R*	low_cov	R	R*	G*	G	G*	G*	G*	G*	R*	R
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	M*	Y*
T	W*	T	W	W	W*	W*	W*	W*	W*	-	-	W*	W*	W*	W
R	R	R	R	R	R	R	R	R	R	-	-	R	R	R	R
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R	R*	R*	-	R	R	R	R*	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	Y*	-	-	-	-	Y*	Y*	Y*	Y*	-	-	-	-	T	Y*

-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-
W*	W	W	W*	W*	W	W	W	W	W	W*	W*	W*	W*	W*	W
-	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
A*	A*	A*	NP	NP	A*	A*	A*	A*	A*	A*	A*	NP	NP	A*	A*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	Y	Y*	-	-
S*	S*	S	S	S	S*	-	-	-	-	-	-	S*	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	C	Y*	-	-
R*	R*	R*	R	R*	-	R*	-	A*	R*	R*	R*	R*	R*	R*	R*
-	H*	H*	Y*	-	Y*	Y*	Y*	-	-	Y	Y	Y*	Y*	Y*	-
-	R*	R*	R	R	-	-	-	-	-	R	R	R*	-	K*	-
-	R*	R*	R*	-	-	R*	R*	-	-	R	R	R*	-	-	-
R	R*	R*	R	R	R*	R*	R*	R	R	R	R	R	R	R*	R
M*	M*	M*	-	-	M*	-	-	-	A	-	-	-	-	M*	M*
-	Y*	Y*	-	-	-	-	-	Y*	Y*	-	-	-	-	Y*	Y*
Y*	Y	Y	Y*	-	Y	Y*	-	Y	Y*	-	-	-	-	Y*	Y*
-	Y*	Y*	-	-	Y*	Y*	-	Y*	Y	-	-	-	-	Y*	Y
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	H*	H*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	-	R	R	-	A	A	-	-	-	-	R*	R*
Y	Y*	Y*	-	-	Y*	Y*	Y*	Y	Y	Y*	-	-	Y*	Y*	Y
Y*	Y*	Y*	-	-	Y	Y*	Y*	Y	Y	-	-	-	-	Y*	Y
-	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R	R	R	-	-	-	-	R*	R*	R*	-
-	R*	R*	-	R*	-	-	R*	-	-	-	-	K	K*	-	-
Y*	Y*	Y*	-	-	Y*	Y*	-	Y*	Y	Y	Y	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	N*	H*	-	-	Y*	Y*	H*	C	C	C	Y	-	Y*	Y*	Y
-	H*	Y*	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*
low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-
-	R*	R*	R	R	-	R*	R*	R*	R	-	-	R*	R*	-	-
R*	R*	R*	R*	-	R*	R*	-	R	R	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	R*	-	-	-	-	R*	-	R*
-	R*	-	R	R	-	R*	-	-	-	-	-	R*	R*	-	-
-	H*	H*	-	-	-	Y*	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	M*	M	M	-	-	-	-	-	-	-	-
-	R	R	R	R*	low_cov	R*	-	R	R*	-	-	R*	R*	-	-
R	R	R	R	R	R*	N*	R*	R	R	R*	R*	R	R	R*	-
-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
Y*	M*	-	Y	Y*	Y	Y*	Y	-	-	-	-	-	-	Y*	-
K*	R*	K*	R*	-	-	D*	-	K	K	-	R*	R*	-	-	-
Y	Y	H*	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*
-	R*	N*	-	-	-	R*	R*	-	-	-	-	S	S	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	S	-	-	-	-	-	-	S*	S*	-	-	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NP	NP	NP	NP	NP	NP	NP	NP	-	-	R*	R*	NP	NP	-	-
-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
R*	R*	R*	R*	-	-	R	-	R*	R*	R	R	-	-	R*	R*
T*	Y	T	Y	Y*	Y	Y	Y	Y	Y	T	T	T	Y*	Y	Y
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	R	R*
Y	Y	Y	Y*	C	Y	Y	Y*	Y	Y	Y*	Y*	C	C	B*	Y*
-	-	-	-	-	low_cov	-	-	G*	G	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	K*	K	K	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	-	-	-	-	R	R	-	-	R*	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	R*	R*	R	-	A*	A*	A*	A*	A	A*	A*	A*	A*	A*	A*
NP	NP	NP	NP	NP	-	-	-	K*	K*	-	-	NP	NP	K*	-
Y*	-	-	Y*	Y*	Y	Y	Y*	Y	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	low_cov	-	NP	NP	Y*	Y*	NP	NP	-	-
NP	NP	NP	Y*	Y*	Y*	Y	Y*	Y*	-	-	-	-	T*	Y*	Y
M*	M	M*	M	M	M	M	M	M	M	M	M	M*	M*	M	M*
-	R*	R*	-	-	-	R	-	G	R*	-	-	-	-	R*	-
-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	R	R	R	R	R	R	R	R*	-	R*	R*
-	R*	-	-	R*	R*	R*	-	-	R*	R*	-	R*	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	R*	-	R	-	-	-	-	-	-	R*	R	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	R*	R*	NP	NP	V*	R
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	R*	-	R	R	R*	R	R*	R	R	R	R	R*	R*	-	-
NP	NP	NP	Y*	Y*	NP	NP	NP	Y	Y*	Y*	Y*	NP	NP	-	-
-	R*	R	R	R	R	R	R	A	R	-	-	R	R*	R*	R*
K	K*	K	T*	T*	K	K*	K*	T*	T*	T*	T*	T*	T*	T	K
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	R*	R*	-	-	-	R*	R	-	-	-	-	-	-	-	-
low_cov	Y*	-	-	-	low_cov	-	-	-	-	Y*	Y*	-	-	-	-
R	R	R	R	R	R	R*	G	R*	R*	R*	R*	G	G*	R*	R*
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
A*	A*	A*	R*	A	R*	R*	R*	R*	-	A*	A*	A*	A*	A	A
Y	Y*	Y*	Y	Y	Y*	Y*	-	Y	Y	-	-	Y	-	Y	Y
Y*	Y*	Y*	Y	Y*	Y*	Y*	-	Y	C	-	-	NP	NP	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	C*	Y	Y*	Y	Y	Y*	Y*	Y*	-	-	-	-	-	-
-	-	R*	R	R	R*	R	R*	-	-	R	R	-	-	R*	R
-	-	-	R	R*	low_cov	R*	R*	-	-	R*	R*	R*	R*	-	-
low_cov	R*	-	R*	R*	low_cov	A	R*	R*	-	NP	NP	NP	NP	R*	-
NP	NP	NP	Y*	-	Y*	Y*	-	C	Y*	C*	C*	-	Y*	C*	C*
NP	NP	NP	R*	R*	R*	R	R*	R*	R*	R*	A	R*	R*	R*	-
NP	NP	NP	Y*	Y*	NP	NP	NP	Y*	Y*	C*	C*	NP	NP	C*	C*
-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	-	-	Y*	Y*	-	-	Y*	C	NP	NP	-	-
-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	Y*	-

NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	-	-	K*	K*	K	-	K	K
NP	NP	NP	R*	R*	low_cov	R*	R*	R*	R*	G*	G*	NP	NP	R*	R
-	-	-	-	-	-	M*	-	M	M	-	-	M*	M*	M*	M
W*	W	A	W*	W*	W*	W*	W*	W	W	-	-	W*	W*	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	C*	C*	C*	C*	NP	NP	NP	C*	C*	C*	C*	M*	M*	M	M*
-	-	-	-	-	low_cov	Y*	Y	-	-	-	-	-	-	-	-
R*	R	R*	-	-	R*	-	-	-	-	R	R	R	R*	R	R
low_cov	-	-	Y*	Y*	low_cov	-	-	M*	-	Y*	-	NP	NP	-	-
M*	M*	M*	M*	M*	M*	M*	M*	-	-	M*	M*	-	-	-	-
-	R*	-	-	-	R*	-	-	R*	R*	-	-	NP	NP	R*	R
-	R*	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	NP	NP	R	R*	-	-	-	R*	-	NP	NP	R*	R*
-	-	-	-	-	-	Y*	Y*	Y*	Y*	T*	T*	Y*	-	Y*	Y*
Y*	Y	Y	Y*	T	Y	Y*	T	T*	T*	Y*	Y*	Y*	-	Y*	Y*
-	-	-	R	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	NP	NP	NP	T	K*	K	T	-	-	-	-
S	S	S	S	S	S	S*	S	S	S	-	-	S*	S*	B*	S*
Y*	-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	-	-	-	-	-	-	-	-	-	-	V*	R*
R	R	R	G	R*	-	-	R*	-	-	-	-	R	R*	-	-
Y	Y	Y	Y	C	Y	-	-	-	-	-	-	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	R*	-	-	R*	R*	R*	-	-	-	-	-
-	R*	R*	R*	R*	R*	-	-	-	-	R*	R*	R*	-	R*	R*
-	S	S	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	A	R	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	K*	K	-	R*	-	-
R*	-	-	R*	A	R	R*	-	-	-	-	-	-	-	R*	R
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	R	R	-	-	R	R	R	R*	R*	R	G	R	R	R*	R
R	R*	R	-	-	-	R*	-	-	-	-	-	-	-	-	R*
Y*	Y*	Y*	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-
-	-	-	-	-	-	S	S	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R*	-	-	-	-	-	-	-	-	-	-
R	R	R	-	R*	R*	R	R*	R*	-	G*	G	G	R*	R*	R*
Y*	Y*	H*	Y	Y*	Y*	Y*	Y	Y*	-	-	-	-	Y*	-	-
Y*	Y	Y*	Y	Y*	Y*	Y	Y	-	-	Y	Y	Y	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	S	S	-	-	-	-
R	R	R	R	R	R	R	R	R	R	R	R	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	R*	R	NP	NP	-	-
-	R*	R*	-	-	-	-	-	R*	R*	NP	NP	NP	NP	R*	R*
NP	NP	NP	-	-	low_cov	-	-	-	-	NP	NP	NP	NP	Y*	Y*
-	Y*	Y*	-	-	-	-	-	-	Y*	-	-	-	-	Y*	Y
Y	Y	Y	Y	Y*	Y*	Y	C*	-	-	Y*	Y	-	Y*	Y*	-
-	Y*	-	-	-	Y	Y*	Y	-	-	-	-	-	Y*	-	-

-	R*	R*	-	-	-	-	-	-	-	-	-	-	R	R
R*	R*	R*	R	R	R	R	R	-	R*	-	-	-	-	R*	R*
R*	-	-	-	-	R*	-	-	-	-	R	G	-	-	R*	R*
NP	NP	NP	K*	K*	K*	K*	K*	-	-	K*	-	-	-	K*	T*
-	S*	-	-	-	-	-	-	-	-	R	R	-	-	S*	-
R*	R*	R*	-	-	R*	R*	R*	-	-	R*	-	R*	R*	-	-
R*	R*	R*	R*	R	R*	R*	-	R*	R*	A	R*	-	-	R	R
M*	M*	M*	C	M	M*	M*	M*	M	M	M	M	M*	M*	M*	M
M*	M*	-	-	M*	M	M	M	Y*	M*	-	-	-	-	M*	M
-	Y*	-	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	Y
M*	M*	M*	-	-	M*	M*	M*	-	-	-	-	M	M*	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W	W	-	W*	W*	W*	W*	-	-	-	-	W	-	-	-
Y*	Y	Y*	Y*	-	Y*	Y*	Y	-	-	Y*	-	NP	NP	-	-
S*	S	S	-	S*	S	S	S*	-	S*	-	-	S	S	S*	S
low_cov	R*	R*	R*	G	G*	R	R*	R*	R*	R*	R*	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
low_cov	K*	T*	T*	T*	T*	T*	K*	K*	K*	T*	T*	K*	T*	K*	K*
low_cov	-	-	NP	NP	low_cov	-	-	-	-	-	-	-	-	-	-
low_cov	C*	C*	NP	NP	C*	B*	Y*	NP	NP	Y*	Y*	C*	C*	Y*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
G*	G	R*	NP	NP	G*	G*	R*	R*	G*	R*	G*	G*	G*	G*	G*
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
NP	NP	NP	T*	K*	NP	NP	NP	T*	T*	K*	K*	NP	NP	K*	-
M*	M	M	M	A	M*	A*	A*	A*	A*	M	M	NP	NP	M*	M
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R*	G	R*	R	R	R*	R*	R*	R	R	R	R*	R
R*	R	R	R*	A	R	A	R	R*	R*	R	R	A	A	R*	R
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	G*	G*	R*	R*	R*	NP	NP	R	R*	G	R*	-	R*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	-	-	-	-	-	-	Y*	Y*	Y*	H*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
R	R*	R*	A*	A*	low_cov	R	R*	R	R*	R*	-	NP	NP	-	-
R	R	R	R*	G	R*	G	R*	G	R	G	R*	G	G	R*	R*
-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	NP	NP	Y	Y
-	Y*	Y*	C*	Y	-	Y*	-	Y	Y*	-	-	Y*	Y*	Y*	-
K	K	K	K*	K*	K*	T	K	K	K	K*	K*	K*	K*	K*	-
-	-	-	-	-	-	-	-	R*	R*	-	-	NP	NP	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	-	-	-	S*	S*	-	Y*	-	-	-	-	-	-
NP	NP	NP	-	-	C	Y*	Y*	C*	Y*	C*	C*	NP	NP	Y*	Y*
-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
-	M*	M*	M	M*	M*	M*	M*	-	-	M	M	-	M*	M*	-
M*	M*	M*	-	-	-	-	-	-	-	M*	-	-	-	M*	M
S*	S*	S*	-	-	S*	-	-	-	-	-	-	-	S*	-	-
R*	R*	R*	R*	R*	G*	R*	G	R*	G*	R*	R*	R*	R*	G*	R*

-	Y	Y*	-	-	-	-	-	-	-	Y*	-	M*	-	-	-
low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	N*	N*	Y*	H*	Y*	H*	N*	Y*	Y*	Y*	Y*	H*	Y*	H*	H*
R*	R*	R*	-	-	-	R*	R*	R	R	-	-	-	-	-	-
R*	R*	R*	R*	R	R	R	R	R*	R*	R	R	R	R	R	R
-	S*	S*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
Y*	H*	H*	-	Y*	Y*	Y*	-	Y	Y	-	-	-	Y*	-	-
-	-	-	R	R	-	-	-	-	-	-	-	R	R*	-	-
R*	-	R*	-	-	R*	R*	R*	-	-	R*	R*	-	-	R*	R
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
W*	-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R	R	-	-	-	-	-	-	A	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	T*	T*	NP	NP	low_cov	W	T*	W*	W*	-	-	NP	NP	T*	T*
M*	M*	M*	A*	A*	A	M*	A*	A*	A*	NP	NP	M*	-	M*	A*
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP
-	***M****	***M****	***Y***	***Y****	***-***	***-***	***-***	***-***	***-***	***Y****	***-***	***-***	***-***	***-***	***-***
-	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
Y*	***H****	***H****	***Y***	***Y***	***Y***	***Y***	***Y****	***Y***	***Y***	***Y****	***Y***	***Y***	***Y***	***Y***	***Y***
low_cov	***C****	***C****	***C****	***C****	***low_cov***	***Y****	***C****	***Y****	***Y****	***C****	***C****	***C****	***C****	***Y****	***Y****
Y*	***Y****	***Y****	***Y***	***Y***	***Y****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
-	***-***	***-***	***-***	***-***	***R***	***R***	***R****	***R****	***R***	***R***	***R***	***-***	***-***	***R****	***R****
-	***S****	***S****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
C*	***Y****	***Y****	***Y****	***Y****	***C****	***C****	***Y****	***Y****	***C****	***Y***	***Y***	***C****	***C****	***Y****	***Y****
K*	***K***	***K***	***K***	***K***	***K***	***K***	***G***	***-***	***-***	***K***	***K***	***G***	***G***	***K****	***K****
-	***M****	***M****	***-***	***-***	***Y****	***Y***	***Y****	***Y***	***Y***	***Y***	***Y***	***-***	***-***	***Y****	***Y****
R	***R***	***R***	***R****	***R****	***R***	***R***	***R****	***R****	***R****	***R****	***R****	***R***	***R***	***R***	***R****
M*	***M****	***-***	***-***	***-***	***-***	***M***	***M****	***A****	***A***	***M***	***M***	***M***	***-***	***M****	***M****
-	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
-	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***R****	***-***	***-***	***-***
-	***S****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
-	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
-	***Y****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***Y***	***-***	***-***	***-***
G*	***R****	***R****	***R****	***G****	***G****	***G****	***R****	***R****	***R****	***R***	***R***	***R****	***G****	***R***	***R****
-	***R****	***-***	***-***	***-***	***-***	***R****	***-***	***-***	***-***	***-***	***-***	***R****	***-***	***-***	***-***
-	***H****	***Y****	***-***	***Y****	***-***	***-***	***Y****	***-***	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****	***Y****
-	***-***	***-***	***-***	***-***	***-***	***Y****	***-***	***Y***	***Y***	***-***	***-***	***-***	***-***	***-***	***-***
R*	***R****	***R****	***R***	***R****	***R***	***R***	***A***	***-***	***-***	***R***	***R***	***A***	***A****	***R****	***R****
S*	***S****	***S****	***S****	***S****	***S****	***S***	***S***	***-***	***-***	***-***	***-***	***S***	***S****	***S****	***-***
M*	***M****	***M****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
-	***R****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***R***	***-***	***R****	***-***
R*	***R***	***R****	***R****	***-***	***low_cov***	***R****	***R****	***-***	***-***	***R***	***R***	***R****	***R****	***-***	***R****
-	-	-	-	-	-	R*	-	R	R	-	-	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	G*	R*
-	-	-	G	S*	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R*	R*	-	R	R*	-	-	-	-	R*	R

R*	R*	R*	A	R*	-	-	-	R	R*	-	-	R*	-	R*	R
-	R*	R*	-	-	-	R*	R*	R	R	-	-	-	-	-	-
-	-	Y*	-	-	-	Y*	-	-	-	-	-	Y	Y	Y*	Y
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	A*	R*	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
S	S	S	S*	G	NP	NP	NP	S	S*	-	-	G	G	-	S*
NP	NP	NP	NP	NP	-	-	-	-	-	Y*	Y*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	Y*	-
-	-	-	-	-	S	S	S*	-	-	-	-	-	-	-	-
R*	V*	V*	R	R	R	R	R	R	R	-	-	-	-	V*	-
-	Y*	Y*	-	-	Y*	Y*	Y	-	-	-	-	Y*	Y*	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
S	-	S*	-	-	-	-	-	-	-	-	-	-	-	S*	-
R	R	R	A*	R*	R*	R	R	R*	-	R*	-	R	R	R*	R
Y	Y*	Y*	Y	Y	Y*	Y	Y	-	-	-	-	Y	Y*	Y*	Y
Y*	Y	Y*	C	C	Y*	-	-	-	-	-	-	NP	NP	-	-
-	S*	S*	-	-	S*	S	S	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
NP	NP	NP	C*	C*	low_cov	Y*	-	C*	C*	C*	C*	NP	NP	Y	Y
Y	Y	C	C	C*	Y	Y*	Y*	C*	C*	C	C*	C*	C	C	Y
-	K*	K*	-	-	K*	K	T	K*	K*	-	-	-	-	-	K
Y*	Y	C	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y
Y	Y*	Y*	T*	T*	Y*	Y	Y*	-	-	Y	T*	-	Y*	Y	Y
R*	R*	R*	R	R	R*	R*	R*	-	-	R*	-	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	R	R*	-	-	-	-
-	M*	M	M	M	-	-	-	-	-	M	M	M	M	M*	M
R*	-	-	-	-	R	R	R*	R*	R*	R*	R*	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	-	Y*	-	-	Y	Y	Y*	Y*	Y*	Y
-	Y*	Y*	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*	-	Y*
-	Y*	Y*	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	A	R*	-	-	-	-
-	Y	Y	Y	Y*	Y*	-	-	-	-	-	-	T	Y	Y*	Y*
-	R*	R*	G	R*	-	-	-	-	-	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
R*	R	R*	-	-	R*	-	R*	-	-	R*	R*	A	R*	R*	R
-	H*	H*	-	-	Y*	Y*	-	-	Y*	-	-	-	-	-	-
-	H*	H*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	-	Y*	Y
-	Y*	Y*	-	-	Y*	-	-	-	-	S*	-	-	-	Y	Y
-	-	-	M*	M	M*	M	M*	M	M*	M	M	-	-	M*	M
K*	K	K	K*	K*	K*	K*	D*	-	K*	K*	K*	K	K	K*	K

Y	Y	Y	-	Y*	Y	Y*	Y	-	Y*	Y	Y	Y	Y	Y*	Y*
low_cov	T*	T*	T*	T*	T*	T*	Y*	T*	T*	T*	T*	T*	T*	Y*	Y
-	R	R	R*	R	-	R	R	-	-	R	G	R	R	R*	R*
NP	NP	NP	S*	S*	S*	S*	C	-	-	S*	C*	S*	-	C*	C*
NP	NP	NP	R*	R*	-	-	-	-	-	NP	NP	NP	NP	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	-	S*	S*	-	S*	-	-	-	-	-	-
NP	NP	NP	R*	R*	R	A	A*	R*	R*	R*	R	NP	NP	-	R*
-	Y*	Y*	Y*	Y*	-	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y
-	Y*	Y*	-	-	Y*	-	Y*	-	-	-	W*	-	-	-	K*
S*	N*	N*	S*	S	S	S	S	S*	S*	S*	B*	S	N*	B*	S*
S*	S	S	S	S	S*	S	S	S	S	G	G*	G*	G*	S*	S
-	-	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	Y*	-	Y*	Y
-	Y	Y*	-	-	-	-	Y*	NP	NP	Y*	Y*	T	Y*	-	-
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	Y*	-	Y	Y
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
S	S*	S*	-	-	S	G	S	-	-	-	-	S	S*	-	-
-	H*	-	-	-	-	Y*	-	Y*	Y	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	-	-	-	-	NP	NP	NP	NP	Y*	T*
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	R*	R
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M*	M	-	-	M	M	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
S*	S	S*	G*	G	S	S*	-	S*	G	-	-	S	S*	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
M*	M*	M*	M*	M*	M*	M*	M*	A*	A*	-	-	M*	M*	A*	A*
R*	-	-	-	M*	R	R	R*	-	-	-	M*	M*	M*	W*	-
Y*	Y	Y*	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	Y*	-	-	Y*	W*	Y*	-	Y*	-	-	-	-	-
-	Y*	Y*	-	Y*	-	Y*	-	-	Y*	-	-	Y*	-	-	-
-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	M*	M	M*	-	-	S*	S*	S*	S*	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R	R	A*	-	-	R*	R*	-	-	-	-
W*	W*	W*	W*	W*	W*	W*	-	W	W*	W	W	W*	H*	W	T
-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-
NP	NP	NP	NP	NP	-	Y	-	T*	T*	NP	NP	T*	T*	T*	T*
R*	R	R	-	-	-	-	R*	R*	-	-	-	R*	R*	R*	-
-	-	-	-	-	-	-	-	G*	G	-	R*	NP	NP	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

K*	D*	D*	K*	K*	K*	K	D*	K*	K	K*	K	K	K	K	B*
Y*	H*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R	-	-	-	-	-	-	-	V*	R*	-	-
-	R*	R*	-	R*	-	R*	R*	R*	R*	R*	R*	R	R*	-	-
Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	C	Y*	Y*	Y*	Y
R*	R*	R*	NP	NP	R*	R*	R*	NP	NP	G*	G	-	-	R*	R*
-	-	-	-	-	Y	Y	Y*	-	-	-	-	NP	NP	-	-
R*	R*	R*	R*	R*	G*	R*	G	R*	R*	R*	R*	R*	R*	R	R
R	N*	N*	R	R	R	R	R	R*	R*	R*	R*	R*	N*	R*	R
-	-	-	S*	S*	S*	-	S	-	-	-	-	NP	NP	-	-
-	H*	-	-	Y*	Y*	Y*	Y	-	-	-	-	Y*	-	-	-
C*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y
NP	NP	NP	NP	NP	W*	-	-	NP	NP	-	-	NP	NP	NP	NP
R*	R*	R*	R	R	-	R*	R*	-	R*	R	R	R	R	R*	R
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	H*	Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y	Y*
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
Y*	Y	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	Y*	Y*	-	-	-	-	-	Y	Y	Y*	Y*	Y*	Y
Y*	Y*	Y*	C*	Y*	-	-	-	Y*	Y*	Y*	Y*	-	Y*	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	C	C*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
Y*	-	Y*	Y	Y	Y*	Y*	-	Y	Y*	Y	Y	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	-
A	-	-	NP	NP	low_cov	-	-	M*	M*	M*	-	NP	NP	-	-
NP	NP	NP	A*	A*	NP	NP	NP	NP	NP	W*	W*	NP	NP	-	-
R	R*	R*	A*	A*	R	R*	-	R	R	R	R	R*	-	-	-
R*	R*	R*	R	R	R*	R*	-	R	R*	R	R	-	-	-	-
-	V*	-	-	-	-	-	-	-	-	-	-	R	R*	-	R*
Y*	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y*	H*	Y*	Y*	Y*	-	-
Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y
S	S	S	S	S	S*	S	V*	S	S	S	S*	S*	S*	S	S
Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	H*	Y
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	-	-	NP	NP
R*	-	R*	R*	R	-	R	-	R	R*	R	A	NP	NP	-	-
M*	low_cov	-	M*	C	M*	-	-	M	M	M	C	-	-	-	-
Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	Y*	Y*	Y*	-
K	-	-	K*	K*	-	-	-	K*	-	-	-	-	-	K*	K
K*	K*	K*	K*	K*	-	K*	-	K	K	K	-	-	-	K*	K
-	S	S*	S*	V*	-	S*	-	S	S	-	-	S*	S*	S*	S*
Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y*	-	-	Y*	Y
Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	-	Y*	B*	Y
Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	Y*	-	Y	-	-	-	-	-
-	-	-	-	-	-	Y*	Y	-	-	-	-	Y	Y*	-	-
NP	NP	NP	Y*	Y*	low_cov	-	-	-	-	-	-	-	-	-	-
S*	S*	-	-	-	S*	-	-	R*	-	-	-	-	-	S*	S

-	-	-	Y	Y	K*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	-	-	R*	-	-	-	-	R	R	-	-	R*	-
low_cov	-	-	-	-	low_cov	Y*	Y*	T*	T*	NP	NP	NP	NP	Y*	Y
-	Y*	M*	-	Y*	-	-	Y*	-	-	Y	Y	Y*	-	-	-
-	R*	R*	-	-	-	R*	R*	-	-	R*	-	R*	R*	-	-
-	Y	Y*	Y*	Y*	-	Y	Y*	Y	Y*	T	Y*	Y*	Y*	Y*	Y
G	G	G	G*	G	G*	R*	G*	R	R	G*	G*	G	G*	R*	G*
R*	-	-	-	R*	NP	NP	NP	-	-	R*	-	-	-	-	-
NP	NP	NP	-	R*	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
Y*	Y*	-	T*	Y*	Y	T*	T*	NP	NP	NP	NP	-	-	-	-
-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	-	-	-	-	R*	R*	G*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-
low_cov	-	-	-	Y*	Y*	Y*	T	-	-	-	-	-	Y*	-	-
-	Y*	H*	-	-	-	-	-	-	-	Y*	Y*	-	-	Y*	-
-	Y	Y*	C	C	Y*	Y*	C*	-	-	Y	Y*	Y	Y*	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	S*	S
Y*	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	C*	C*	C*	S*	low_cov	S*	C*	S*	S*	C*	C*	S*	S*	S*	-
T*	Y	Y	Y*	Y*	T*	Y	Y*	Y	Y	T*	Y*	Y	Y*	Y*	Y
C*	Y*	C*	C*	C*	Y*	C*	C	C*	C*	C*	C*	Y*	C*	Y*	Y*
A*	R*	R*	A*	A	A*	A*	A*	A*	A*	A*	A*	A*	A*	R*	A*
W	W	W	W*	A*	W*	W*	-	W	W*	W*	A	W	W*	W	A
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	M*	M*	-	-	-	M*	-	M*	M*	-	-	-	-	M	M*
Y*	Y	Y*	-	-	Y*	Y*	Y*	-	-	-	-	Y*	-	-	-
-	W*	-	W*	A	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	R*	R	R	R*	R	R	R	-	-	R*	-
Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	-	-	Y	Y
S	S	S	S*	S	S	S	S*	S	S	S*	S*	S	S	S	S*
C*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	Y*	C*	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	R	R	-	-	-	-
Y*	Y	Y	-	-	Y*	T	Y	Y	Y	-	-	T	Y*	Y*	T*
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
R*	R	R*	R*	R*	R*	R*	R	-	-	R	R	R	R*	R	R
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	V*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	R*	-	-	R*	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	S*	C*	S*	S	NP	NP	-	-
R	R	R	R*	R	R*	R	R*	G	R*	R*	R	R*	R*	R*	R*
K*	K*	K*	K*	-	K*	K	K*	G	K*	K*	K*	K*	K*	-	-
Y	Y	Y	Y	Y	Y	Y	Y	C*	C*	Y*	Y*	Y*	C*	Y*	Y*
R*	-	-	-	-	R	R*	R*	-	-	-	-	R*	R*	-	R*
-	H*	Y*	Y*	-	-	Y*	Y*	-	-	-	-	-	-	-	Y*

Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	Y*	-	T	Y	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	-	-	-	-	R	R	R*	-	-	-	-	-	-	-	-
S	S*	S*	-	-	S*	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R	R*	R*	-	-	-	-	-	-	-	-
R	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
R*	-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	C	C	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M*	-	M	M*	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	D*	R*	R	R	-	R*	-	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
G	S	S	G*	G	S	G*	G*	S*	G*	G*	S*	S*	G*	G	G*
W	W*	W*	-	-	W*	-	-	-	-	W*	W	-	W*	W*	-
R*	R	R	R	R	R*	R	R	R*	R*	-	-	R	R	R*	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	-	-	Y*	Y	-	Y*	-	C*	C*	-	-	Y*	Y*	Y*	Y*
Y*	Y	Y*	Y	Y*	Y*	Y*	-	Y	Y*	Y*	-	Y	Y*	C	Y
-	S*	S*	-	-	S	S	S	-	-	-	-	-	-	-	-
R*	R	R*	R*	R*	R	R*	R*	R	A*	R	-	R	R*	R*	R*
NP	NP	NP	-	-	R*	-	-	-	-	R*	-	NP	NP	R*	R
-	-	-	S	S	-	-	-	-	-	-	-	S	S	-	-
-	S	S*	S	S	S*	S*	-	S*	S	S*	-	S*	-	S*	S
R*	G*	-	R*	G	G	R	R*	R*	G	R*	-	NP	NP	R*	R*
Y*	-	-	Y	Y	Y	Y	Y*	-	-	Y*	-	Y	Y*	Y	Y
NP	NP	NP	A	R*	A*	R	-	A*	R*	-	-	R*	R*	R*	R*
NP	NP	NP	T*	T*	NP	NP	NP	T*	T*	T*	T*	NP	NP	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	R*	A
M*	M*	M*	C*	C	M*	M	M*	M*	C*	M*	-	NP	NP	M*	M*
-	-	-	Y*	Y*	-	-	-	-	-	Y*	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W
Y*	Y*	Y*	-	-	Y	Y	Y*	-	-	Y	-	Y*	Y*	Y*	Y
NP	NP	NP	-	-	-	-	-	-	-	-	-	W	W*	-	-
S*	S*	V*	S	C	S*	V*	S	S*	-	S	S	S*	S*	S	S*
-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
S*	S	S	S	S	-	-	-	-	-	G*	G*	-	-	S*	V*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R	R*	R	-	-	R	R*	R*	R	R	G
K*	K*	K*	-	-	K*	K*	K*	-	-	K*	K*	K*	K*	K*	K*
low_cov	-	-	-	-	-	-	-	NP	NP	Y*	Y*	-	-	NP	NP
R	R	R	R*	R	R	R	R	R	R	R	R	R*	R*	R*	R*
K*	D*	K*	-	K*	K*	K	K	K	K	K	K	-	K*	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
R	R*	R*	R	R	R	R	R*	-	-	R	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

low_cov	Y	Y	Y*	Y*	Y*	Y	Y*	-	-	Y*	C*	NP	NP	Y*	C
R*	R*	R*	R*	G	R	R	R*	-	-	R	G*	R*	R*	R	G
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
Y	Y	H*	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	-
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	NP	NP	R*	R
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	S	S*	C*	S	S	-	-	NP	NP	-	-
NP	NP	NP	-	-	NP	NP	NP	M	A	-	-	NP	NP	A*	A
NP	NP	NP	NP	NP	-	-	-	-	-	-	-	NP	NP	T*	T*
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	R*	R	R*	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	C	Y*
-	-	-	-	-	-	R	-	R	R	-	-	-	K*	R*	-
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
M*	M*	M*	-	-	M*	M	A	M	M*	-	-	M*	-	NP	NP
K	K	K	-	-	T	K	T	K	K	-	-	-	K*	T	T
-	R	R	R	R	R*	R*	R	R*	R	R*	-	G	R	R*	R
S*	C*	C*	C*	S*	V*	S*	S*	S*	S*	C*	C*	S*	S*	S*	S*
Y*	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y*	-	Y*	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y*	Y*	C*	C*	C	Y*	C*	Y*	Y*	C*	C*	Y*	Y*	Y*	Y*
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
G*	G*	G*	G*	G*	G*	G*	R*	R*	G*	G*	G*	G*	G*	R*	G*
-	R*	R*	-	-	R*	-	R*	-	R*	-	-	R	R	-	-
-	-	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
NP	NP	NP	-	R*	NP	NP	NP	-	-	NP	NP	A*	A*	A*	R*
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y
S*	S*	S*	S	S	-	V*	-	S	S*	-	-	-	-	-	-
-	Y*	Y*	Y	Y*	Y*	Y*	Y*	-	-	-	-	Y	Y*	Y*	-
S	S	S	S*	S	S	S*	S*	S*	S*	S*	S*	S	S*	S*	S*
low_cov	-	-	NP	NP	low_cov	-	-	-	-	NP	NP	NP	NP	-	-
R*	R*	R*	-	-	NP	NP	NP	R*	R	-	-	R*	R*	A*	A*
R*	G*	R*	R*	R*	R*	G	R*	R	R	R*	R*	R	R*	R	R
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	Y*	-	-	Y*	Y*	-	-	-	-
-	H*	H*	-	Y*	-	-	-	-	Y*	-	-	Y*	-	Y*	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	T	T*	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	K	K*	-	-	K*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
S	N*	N*	S*	S*	S*	S*	S*	N*	S*	S*	S*	S*	S*	S*	S*
low_cov	G	G*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R	R	R	R	R*	R	R	R	R*	-	R*	R	R*	-	R*	R*
Y*	Y	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	B*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
R*	R*	R*	R*	G	R*	R*	R*	R*	R*	R*	R*	G	R*	R*	R*
-	-	-	R*	R	-	R*	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	R*	G*	G	R*	G*	G	R*	G	R*	R*	G*	R*	G*	R*	R*
R*	R*	R	R	R*	R*	R	G	R*	R*	R	R	R*	G	R*	R*

-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y
Y	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	C*	Y	Y*	-	-
G*	G*	G*	G*	G*	G*	R*	G*	R*	G	G*	G*	G*	G*	G*	R*
R*	R*	R*	-	-	-	-	-	-	-	R	R	-	-	-	-
S*	S	S	S*	S*	-	S*	S*	G	S*	S	S*	S	S	-	-
R	R	R	R	R	R	R*	R	R*	R*	R	R	R	R*	R*	R
R*	-	-	-	-	-	-	-	-	-	R*	R	R	R*	R*	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	R*	-	R*	-	A*	A*	NP	NP
Y	Y*	Y*	-	-	-	-	-	-	-	-	-	T	Y*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	W	T	W*	T	W*	T	T	T	T	T	W*	W*	W*	T	T
M	M	M	M*	M	M	M	M	-	-	M*	M*	M	M	M	M
Y	Y	Y	Y	Y*	Y*	Y*	-	T*	T	Y*	Y*	Y*	Y*	Y*	Y
low_cov	R*	R*	-	-	low_cov	R*	-	A*	A*	A	A*	R*	R*	A*	R
-	D*	D*	-	K*	-	R*	K*	-	K*	-	-	K	K	-	K*
K*	D*	D*	K*	K*	K	K	K	K*	K*	K*	K*	K*	K*	K*	R*
-	H*	H*	Y*	Y*	-	Y*	-	-	Y*	Y	Y	-	-	-	-
Y*	Y*	Y	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y	Y	-	Y*
-	-	S*	NP	NP	-	-	-	-	-	S	G	NP	NP	S*	S*
Y*	Y*	-	-	-	-	-	-	-	-	Y	T*	Y*	-	Y	-
R	R*	R	-	-	R*	-	-	-	-	R*	R*	R	R*	R*	R
R	R*	R*	R*	-	R	R	A	-	-	-	-	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R	R	R*	-	-	-	-	R*	R*	NP	NP	R*	A
R*	V*	V*	R	V*	R*	-	R*	-	R*	V*	V*	V*	N*	V*	V*
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
R	R	R	R	R	R*	-	R*	-	-	R	R	R	A*	R	R
-	-	-	-	-	M*	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	K*	-	R*	-	-	-	K	K	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R*	R*	R	R*	R*	R*	R*	R*	A	R*	R*	R*	R*
Y	Y*	Y	Y*	Y*	Y*	-	-	-	-	Y*	Y	Y	T*	T	Y
NP	NP	NP	R	R*	R	R*	-	-	-	R	R	NP	NP	A	R
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S	S	S*	S*	-	-	S*	S	S	S	S*	S*	S
R*	R*	V*	-	R*	R*	R*	R*	R*	R*	-	-	NP	NP	-	-
-	R*	R*	-	R*	-	R*	-	R	R	R	R	-	R*	R*	R*
NP	NP	NP	Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-
R*	-	-	R	R	-	-	-	-	-	R	R	R	-	R*	R
NP	NP	NP	R*	R*	-	R*	-	-	-	R*	R*	NP	NP	R*	R*
Y	Y*	Y	T	Y*	Y*	Y*	-	Y*	Y*	Y	Y	-	Y*	Y*	Y*

Y*	T	Y*	T*	T*	Y*	Y	T*	-	-	T*	T*	NP	NP	Y*	T*
Y*	low_cov	-	-	-	Y*	-	-	-	-	Y*	Y	NP	NP	-	-
-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	Y*	Y*	C*	-	-	C*	C*	NP	NP	Y*	C*
-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	Y*	-	-	Y*	-	Y*	-	-	C	C*	-	-	Y*	-
low_cov	R*	R*	-	-	low_cov	R	R*	R*	R*	R*	A*	-	R*	R*	R*
-	S*	S*	-	-	-	S*	-	-	-	-	-	-	-	-	-
G*	R	R	R*	R	G	R	R	R	R	R*	R*	G	G	R*	R*
-	-	-	-	-	-	-	M*	-	-	-	-	NP	NP	-	-
Y*	-	-	-	-	Y*	Y*	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	-	Y	T*	NP	NP	Y*	Y
A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	W*
R	R	R	R*	R	R	R	A*	-	R*	-	-	R*	R*	R*	R
-	R*	R*	R*	R	R*	R	R	-	-	-	-	-	-	-	-
R	G	R*	R	R*	R	R	G	R	R*	-	-	G	G*	G	R
-	-	-	S*	S	-	-	-	-	-	-	-	G	G*	-	-
R*	R*	R*	-	R*	R*	R	R	-	-	-	R*	R*	R*	R	R
NP	NP	NP	T*	T*	-	Y*	-	Y*	-	Y*	Y*	NP	NP	Y*	Y*
-	Y*	Y*	Y	Y	-	-	-	-	-	Y	Y	-	-	-	-
R	R	R	R*	R*	-	R	R	-	-	R	R	R	R	R*	-
Y*	Y*	-	M*	-	Y	Y	Y	-	M*	-	-	Y*	Y*	H*	-
C*	Y*	Y*	C*	Y*	C*	Y*	Y*	C*	C	Y*	Y*	C*	C	Y*	Y*
K*	K	K	K*	-	K*	K*	K*	-	-	K	K*	K	K*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R	R*	R*	-	-	-	-	-	R*	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	S*	-
-	R	R	-	-	R	R	R	-	-	-	-	-	-	R*	-
-	Y*	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
low_cov	R	R*	-	R*	A*	R*	A*	R*	R	R*	A*	-	R*	R	R*
Y	Y	Y	Y	Y	Y*	Y*	Y	-	-	Y	Y	Y*	Y*	Y*	Y
Y	H*	H*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	H*	Y
S*	N*	V*	S*	S	S	S	S	S	V*	S	S	S	S	V*	S
M*	M	M	M	M*	M	M	M	M	M	M	M*	M	M*	M*	M
R*	R*	R*	-	-	-	-	-	-	-	R	R	-	-	R*	R
S*	S	S	S*	S*	S*	S	S	S	S	S	S	S	S	S	S
-	R*	R*	R*	R*	-	R*	R*	R*	-	-	-	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	Y	Y
Y	Y*	Y*	Y	Y	Y	Y	Y*	Y	Y	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	Y	Y	-	-	Y*	Y
Y	Y	Y	Y	Y	Y	Y	Y	-	-	T	T*	-	-	Y	Y
R	R	R	R	R	R	R	R	-	R*	R*	G	R*	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Y*	-	-	-	-	-	Y*	-	Y*	Y	Y*	-	-	-	-	-
S*	S	S	S*	C*	S	S	S	C*	C*	S*	-	S	C	-	S*
-	-	-	-	-	-	-	-	-	-	Y	T	-	-	-	-
R	R	G	G*	G*	R	R*	G	R*	R*	G*	G*	R	R	R*	R
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	W*	T	NP	NP	NP	-	-	-	-	NP	NP	W*	W
NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	C*	C*	C	S*	C	C*	S*	S*	-	S*	S*	C*	S*
R*	R	R	-	R*	R*	R	G	R	R*	R	R*	G	R*	R*	-
W*	W	W	W	-	W*	W	T*	T*	T*	-	-	-	W*	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	Y*	-
-	R	R*	-	-	R	R*	R	-	-	R*	-	G	R*	-	-
R	R	R	R	R	R	R	R	R	R	R	R	-	R*	R*	R
NP	NP	NP	R	R	R*	R	R*	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
-	-	-	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
R*	R*	R*	R*	-	R*	R*	R*	-	R*	A	R*	R*	R*	R*	R
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	R	R	R*	-	-	R*	-	-	-	-	-
-	-	-	M	M	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	M*	M*	M	-	-	M*	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	M*	M*	M	-	-	-	-	NP	NP	-	-
NP	NP	NP	W*	-	W*	W	W	-	-	W*	-	-	-	-	-
Y*	-	-	-	-	Y	Y	Y	-	-	Y*	-	-	-	-	-
-	-	-	-	R*	-	R*	-	-	-	R	A	-	-	-	-
G*	S	S	G	G	G*	S	S*	S	S	S*	G*	S	S	G	S
-	-	-	R*	R	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	R*	R*	R*	-	-	R*	-	-	-	-	-
-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R	R	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	M	M*	-	M	M*	-	-	M*	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	Y	Y	-	-	-	-	-	-	-	Y	Y	-	-
T	Y	Y	-	-	Y*	Y*	-	Y	Y*	-	-	T*	T*	Y	T
R*	R*	R*	R	R	V*	R*	R*	R	R	R*	-	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	G	R
Y*	Y*	Y*	Y	Y	Y*	-	-	Y	Y*	-	-	-	-	Y	Y
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-
R*	R	R	R*	R*	R*	R	R	R*	R*	R	R*	R*	R*	R	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-

S*	S*	S*	G*	S	-	S*	-	S*	S*	-	-	-	-	S	S
-	R*	R*	-	-	-	-	-	-	-	A	R*	-	-	-	-
C*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	C	Y*	C*	Y*	C
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
R	N*	V*	R	R*	R*	R	V*	R	R	R	R	R	R	N*	V*
Y	Y	Y*	C*	C	Y	Y*	Y*	Y*	C*	Y	Y*	Y	C	Y	Y
Y	N*	N*	B*	N*	Y	N*	B*	N*	B*	B*	B*	N*	N*	N*	N*
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y	H*	H*	Y*	Y*	Y*	Y*	Y*	-	Y*	-	-	Y*	Y*	-	-
-	V*	N*	Y	Y	-	Y*	Y*	-	-	-	-	-	-	-	-
Y	T*	T*	T*	Y*	T	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	T*
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	R*	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	Y*	Y*	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-	-	-
R*	V*	V*	-	-	R*	S*	-	-	-	-	-	-	-	B*	-
-	-	-	-	-	-	-	-	-	-	Y*	T	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
R	V*	R*	R	R*	R	R	R	A	R	R*	R*	R*	R*	R	R*
C*	Y	Y	C	C	C*	C	Y*	Y*	C	Y*	Y*	Y*	Y*	C	C*
T*	Y	T	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T*	Y*	Y*
G*	K	K	G	K	G*	K	K	K*	K	K	G	K	K	K*	K*
R*	R	R	R*	R*	G*	R*	R*	R*	R*	R*	R*	R*	G	R*	G
A	R	R	R*	R*	R*	A	A	R*	R*	A*	R*	A*	R*	R*	A
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	-	-
T*	Y	Y	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y	Y*
S*	S*	-	S*	S*	S	S*	S*	-	-	S*	C	S*	-	S*	S
-	H*	N*	-	-	-	-	-	-	Y*	Y*	-	-	-	-	-
-	low_cov	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
-	R*	-	R	R	-	-	-	-	-	-	-	-	R*	-	-
Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R	R	-	-	-	-	-	-	-	R*	R*	R*	R*
T*	Y*	Y*	-	-	T*	Y	Y*	Y	Y*	Y	T*	Y*	Y*	Y*	T
Y*	Y*	Y*	C	C*	Y	C	Y*	Y	Y*	C	C*	Y	Y*	C	Y*
Y*	Y*	Y*	Y*	Y*	C*	Y*	C*	C	C*	Y*	Y*	C*	Y*	C*	Y*
-	-	K*	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	K*	-	-	-	K*	-	-	-	R*	R*	-
C*	Y*	Y*	C	-	C*	Y*	C*	Y*	C	Y*	C	Y*	-	Y*	C
-	Y*	Y*	-	-	Y*	-	Y*	-	-	-	-	-	-	-	-
-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	K	K*	-	-	-	-	-	-	-	-	-	K*	K*
S	S	S	C*	S	S	C	C	S	S	S*	-	S*	-	S*	C
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R	R	R*	G	R*	R	R	R*	R	R*	-	-	R*	R*	R*	R*
-	-	-	-	-	Y*	-	Y*	-	-	Y*	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R	R	NP	NP	low_cov	R	R*	R	R*	NP	NP	NP	NP	A*	A*
R	R	R	R	R	R*	R	R*	R	R	-	-	-	R*	R*	R
Y	Y	Y	C*	C*	C	Y	C*	Y	Y	-	-	Y*	-	Y*	C
R	R	R	R	R	R	R	G*	R	G	-	-	R*	R*	R*	R

-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	-	-	-	-	R*	-	R	R	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	-	-	R*	R*	R	-	-	-	-	R	R*	-	R*
Y	Y*	Y*	-	Y*	Y*	Y*	Y	-	-	-	-	Y	Y*	-	-
S*	-	-	-	-	S	S	S	S	S	S	S	-	-	S*	S
-	Y*	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
R*	R*	R	-	-	R	R*	R	-	-	-	-	R*	R	-	-
Y	Y*	Y*	-	-	Y	Y*	Y	-	-	-	-	Y*	-	Y*	-
S*	S*	S*	S*	-	S	S	S	S	S	S	G	S	S*	G	S
low_cov	R*	R*	-	-	low_cov	-	R*	R*	R*	A*	R*	-	-	R*	R*
Y*	Y	Y	-	-	Y	Y*	C*	Y	Y*	C*	C*	C*	Y*	-	Y
-	R*	R*	-	-	R*	-	R*	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*
R*	R	R	-	-	R	G	R*	R	R	R*	G	G	G	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	S	S	S	S	S	C	C	-	S*	S*	S
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	G*	G*	R*	G*	G*	G*	G*	NP	NP	NP	NP	R*	R
S	S	S	-	-	S	S	S	S	S	S*	S	S	S	S	S*
Y*	***Y****	***-***	***Y****	***Y****	***Y****	***Y****	***Y****	***Y***	***Y****	***-***	***-***	***-***	***-***	***Y****	***Y****
-	***-***	***-***	***-***	***-***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***-***	***-***	***S***	***S***
-	***-***	***-***	***Y***	***Y***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
-	***-***	***-***	***-***	***-***	***-***	***Y****	***Y****	***Y***	***Y****	***-***	***-***	***-***	***-***	***-***	***-***
Y*	***-***	***-***	***-***	***-***	***Y****	***Y****	***-***	***Y***	***Y***	***-***	***-***	***-***	***-***	***Y***	***Y***
-	***R****	***-***	***R****	***R***	***R****	***R***	***R***	***G***	***R****	***R****	***R****	***-***	***-***	***-***	***-***
-	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***M***	***M****	***-***	***-***	***-***	***-***	***M****	***M***
R*	R*	-	R	R	-	R*	R*	A*	A	R*	A	A	A	R	R
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	NP	NP	-	-	Y*	Y
K	K*	K	T	K	K	K	K	K*	K*	K	K	K	K*	K*	K
A*	R	R	R*	R*	A*	R*	R*	A*	R*	R*	R	R*	A*	R*	R*
G*	R*	G*	G	G	R*	G*	G*	R*	R*	G*	G*	G*	G*	-	G
G	R*	R	R*	G*	R	R*	-	R*	R	G	R*	G	G	R	R
-	Y*	Y*	-	-	K*	-	-	-	-	-	-	-	-	Y*	Y
R*	R	R*	-	R*	R*	R	R*	-	R*	R	R	R*	R*	-	-
Y	Y*	Y	C*	C*	Y	Y*	C*	C*	C*	C*	C*	C*	C*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	W*	-	W	W*	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
Y	H*	H*	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	-
low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	Y*	-	NP	NP	NP	NP	NP	Y*	Y*	Y*	T	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	A
W	W	W	-	W*	W*	W	W*	W	W*	W	A	W	A	W	W*
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	M*	M
C	low_cov	Y*	-	-	-	Y*	-	Y*	Y*	C*	C*	Y*	-	Y	C

-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
NP	NP	NP	G*	R*	low_cov	R*	R*	G*	R*	G*	G	NP	NP	R*	R
-	-	K*	-	-	-	K*	-	K*	K*	-	-	K*	K*	NP	NP
R*	G	G	G	G	R*	R*	R*	R	R	R	R*	R	R*	R*	R
Y*	Y*	Y*	-	-	Y*	-	Y*	-	Y*	-	-	-	Y*	-	-
-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
NP	NP	NP	G*	G*	R*	G*	G*	NP	NP	-	-	NP	NP	R*	R*
-	Y*	Y*	-	-	-	-	-	-	-	Y*	-	NP	NP	Y*	Y
-	-	R*	S	S	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	-	-
NP	NP	NP	-	-	Y*	Y*	-	NP	NP	C*	C*	NP	NP	Y*	Y
W	W*	-	-	-	W*	-	-	-	-	W*	A	W*	W	-	-
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	NP	NP	R*	R
Y*	Y*	Y*	T*	T	T*	T*	T	T*	T*	Y	Y	T	T	Y*	Y
-	R	R	-	R*	-	R*	R*	R*	R*	R	-	R*	-	-	R*
-	R*	R*	-	R*	-	R*	-	-	-	-	R*	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	W	W	-	W*	-	W	T	-	-	-	-	-	-
G	K*	K	K*	G*	K	G*	K*	K*	K*	G*	G*	K*	G*	K*	K*
Y	Y*	Y*	-	-	Y*	-	-	-	-	Y	T	-	-	Y*	-
W	-	-	-	-	NP	NP	NP	NP	NP	A	A*	W*	A*	-	-
-	Y*	Y*	-	Y*	-	Y*	-	Y*	Y*	-	-	Y*	Y*	-	-
-	low_cov	G	R*	R*	-	R*	-	R*	R*	R*	-	R*	R*	NP	NP
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*
K*	K*	D*	G	K	K	K	K	K	K	-	-	K	K*	K*	K*
K	K	K	G	G	K	K	K*	K	K	-	-	G	K	K	K
NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	NP
Y*	Y	Y	T*	T	-	Y*	-	T*	Y*	T*	T*	Y*	Y*	Y*	Y
Y*	Y	Y	T	Y	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y	Y
NP	NP	NP	T	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	Y*	-	-	-	-	Y	Y*	Y*	-	Y*	Y
-	R*	R*	-	-	-	-	R*	-	-	-	-	NP	NP	-	-
Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-
Y*	Y	T	-	Y*	Y*	Y*	Y*	Y	T	Y	T	Y*	Y*	-	-
-	M*	M*	-	-	-	-	-	-	-	Y	Y	-	-	-	-
Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*
M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	M*	-
-	-	-	-	-	-	-	-	-	-	R	A*	-	-	-	-
NP	NP	NP	Y	Y*	C	Y	Y	Y	C	C*	C*	Y	Y*	Y*	-
-	Y*	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
-	S*	S*	S	S	-	-	-	R*	-	-	-	-	-	-	-
R*	R	R*	-	-	-	-	R*	-	-	R	R	NP	NP	R*	R
-	Y	Y*	Y*	C	Y	C*	C*	C*	Y*	C*	C*	C	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
NP	NP	NP	K*	K*	K*	-	-	T*	K*	NP	NP	NP	NP	-	-
M*	-	M*	-	-	M*	-	-	-	-	-	-	NP	NP	-	-

-	Y*	Y*	-	Y*	Y*	Y*	Y	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	NP	NP	-	-	-	-
R*	R*	R*	R*	R	R*	R	R	-	-	-	-	R	-	-	-
R	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	-	-	-	-	-	Y	Y	-	-	-	-	NP	NP	Y*	Y
-	Y*	Y*	Y	Y	Y	Y	Y*	-	-	-	-	-	-	Y*	Y
-	R*	R*	R	R	-	-	-	-	-	R	R	-	R*	R*	R*
-	V*	V*	S*	S*	-	-	-	-	-	S	S	S*	S*	S*	-
S*	G*	G*	S*	S*	G*	S*	S*	S*	S*	S*	G*	S*	S*	S*	S*
Y*	Y*	Y*	Y*	Y	Y	Y	Y*	-	-	-	-	Y*	Y*	Y*	Y
S	S*	S	S	S	S	S	S*	S	S	-	-	-	-	S*	S
R	R	R	R	R	R	R	R	G*	G*	R	-	R	R*	R*	R*
R	R	R	R*	R*	R	R	R	R*	G*	R	-	G	G*	G*	R
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-
M*	-	-	-	-	-	-	Y*	-	M*	-	-	-	-	-	-
R	R	R	A	A	R	R	R	A*	A	R	A	A*	R*	R	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W*	W	W	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	-	R*	-	R	R	-	-	-	-	R*	-
NP	NP	NP	NP	NP	low_cov	A*	A*	A*	A*	NP	NP	R	R*	A*	A*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	C*
-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	Y*	Y	-	Y*	Y*	-	-	-	-	-
W*	W*	W*	-	-	-	W*	-	W	W	-	-	-	-	-	-
Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	S*	S*	G*	S*	S*	S*	S*	S*	S*	S	S	S*	S*
G*	R*	R*	G*	G*	G*	G*	G*	G*	R*	R*	R*	R*	R*	R	R
A	R	R	R	R	R	R	A	R*	R*	R	R	R	R	-	-
NP	NP	NP	G*	R*	NP	NP	NP	NP	NP	R*	R*	NP	NP	-	-
M	M	M	M	M	M	M	C	M*	M*	M	M	M	M	V*	M*
-	R	R	-	-	-	-	-	-	R*	R*	-	R*	-	R*	W*
G	low_cov	R*	G	R*	G*	R*	G*	R*	R*	R	R	R	R*	-	-
-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	R*	R*	-	R	R	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	Y*	Y*	-	-
K*	K*	K*	-	-	K	K	K	-	-	-	-	K	K*	-	-
Y	-	Y*	-	-	-	Y*	Y	-	-	-	-	-	-	Y*	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	R*	R*	-	-
-	S*	S*	-	-	-	S*	-	C	C	-	-	S*	S*	S*	-
low_cov	Y*	Y*	Y*	Y	-	-	-	-	-	-	-	Y*	Y*	Y*	-
-	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	Y	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
R	R	R	R	R	low_cov	R	R	R*	-	R	-	A*	A	R*	-
-	Y*	Y*	Y	Y	-	-	-	-	-	-	-	-	-	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	V*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	Y*	-	Y*	Y*	Y	Y*	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	Y	Y*	-	-
Y*	H*	H*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R	R	-	-	-	-	R*	-	-	-	-	-	-	-	-
-	R*	R*	-	-	S	S	S	-	-	S*	S*	S	S	S*	-
Y*	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-
-	S*	-	-	-	-	Y*	-	-	-	-	-	-	Y*	-	-
R	R*	R	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R
-	Y*	-	-	-	-	Y*	-	Y	Y	-	-	Y*	Y*	-	-
K*	K*	D*	-	-	K*	K*	K*	-	-	-	-	K*	K*	-	-
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
-	N*	H*	Y*	-	-	-	Y*	-	Y*	-	Y*	Y*	N*	-	Y*
M*	M	M	-	-	M*	M*	-	-	-	M*	A	M	M*	M	M
-	Y*	Y*	Y*	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-
Y	-	Y*	Y	Y	Y*	Y	Y	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	-	-	-	-	-	-	R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R*	R	-	R	R	G	R*	R	G	R	R
Y	T*	Y	-	-	Y	Y	T	Y	Y	T*	T*	T*	T*	Y*	Y
NP	NP	NP	-	-	Y	Y	C*	Y	Y*	C*	C*	Y	-	Y*	Y
Y	Y	Y	Y*	Y*	Y	Y	C*	Y	Y	C*	C*	Y	Y	Y	Y
C*	Y*	C*	Y*	Y*	C	Y	Y*	Y	Y	C*	C*	Y	C	Y*	Y
-	S*	S*	-	S*	-	S	S	-	-	-	-	S	S	S*	S*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	M	M*	NP	NP	-	M
NP	NP	NP	NP	NP	NP	NP	NP	R*	G	G*	G*	NP	NP	R*	R
low_cov	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	-	-	R	A*
R	R	R	R	R	R*	R	R	R	R	R	R	R	R	R*	R*
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S*	S*
NP	NP	NP	NP	NP	M*	M*	M*	NP	NP	M*	-	NP	NP	M*	M*
R*	D*	R*	-	-	R*	R*	R*	-	-	-	-	-	K*	R*	-
K*	-	-	-	-	R*	R*	-	R	R	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
K	K	K	-	-	K	K	K*	K	T	K	K	K	K*	K*	K
-	D*	D*	-	-	R*	-	-	-	-	-	-	-	-	R*	-
S	S	S	-	S*	S	S	S	S*	C	S	S	C	C	S	S*
-	R	R*	-	R*	-	R*	R*	-	-	-	-	R*	-	-	-
W*	W*	W*	-	W*	W*	W	W*	-	-	-	-	W*	W*	-	-
A*	R	R	A*	R*	A*	A*	A*	A*	A*	A*	A*	A	A*	R	R*
R*	R*	R*	-	-	R*	R*	-	R*	R*	R*	A	R*	R*	R*	A
R	R	R	-	R*	R	R	R*	R	G	R	R	R	N*	R*	G
-	R*	R*	-	R*	R*	-	-	-	-	-	-	-	-	R*	-
-	Y*	-	-	-	-	W*	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	-	-	-	R*	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	K*	-	K	K	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-

-	M*	H*	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	D*	R
R*	R*	R*	R	R*	R	R*	R*	-	-	-	-	A	A*	-	-
R*	R*	R*	R	R	R*	R*	-	-	R*	R*	R	R	R	R*	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
NP	NP	NP	-	-	low_cov	-	-	-	-	NP	NP	-	-	-	-
-	V*	Y*	-	-	-	M*	-	-	-	-	-	-	-	-	-
-	N*	M*	-	-	-	-	-	-	-	-	-	-	-	V*	-
-	D*	R*	-	-	-	R*	-	R*	-	-	-	-	-	-	-
Y*	Y*	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	Y	Y	Y	Y	Y	-	-	-	-	Y*	Y*	Y*	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y	Y*	Y	Y	Y	Y	-	-	Y*	Y*	Y	Y
Y*	Y*	-	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	-	-	B*	-	-	-	-	-	-	-	Y*	Y*	K*
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*
-	-	-	-	-	-	-	R*	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	R	R	A	R	R*	-	-	-	-	R	R	R	R*	-	R*
R*	R	R	R	R	R*	-	R*	-	R*	R	R	R	R	R*	R*
C	Y	Y	Y*	Y*	Y	C	Y	-	Y*	Y	Y	C	C	Y*	Y*
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	M*	-
R	-	-	R*	-	R	R	R	-	-	R	R*	-	-	-	-
R	R*	R*	NP	NP	A	-	R*	NP	NP	R*	-	R*	A*	R	R*
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
NP	NP	NP	T*	T*	Y	T*	T*	NP	NP	NP	NP	NP	NP	T*	T*
-	R*	R	R*	R*	low_cov	G	R	R	G*	R*	R*	R	G	R*	R
R*	R	R	-	-	-	-	R*	-	-	-	-	R*	-	R*	R*
-	Y*	Y*	-	-	low_cov	-	-	NP	NP	-	-	-	-	NP	NP
Y*	H*	Y	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-
R*	V*	V*	-	-	R	R	R*	R*	R	R	R	-	-	S*	-
NP	NP	NP	-	-	Y	C	Y*	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	Y*	Y*	-	-	Y*	Y*	Y*	C*	-	-	-	-
Y*	H*	H*	-	-	Y	Y	Y	Y*	Y	Y	Y	-	-	Y*	-
NP	NP	NP	-	-	Y*	Y*	Y*	Y*	T	Y*	T*	-	-	-	-
K*	K*	K*	-	-	K	K	K*	T	T*	K*	T	NP	NP	K*	-
-	R*	-	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	W	W	-	-
S*	S*	C	S*	S*	low_cov	S*	S*	S*	S*	S*	C*	C	S*	S*	S*
-	M*	-	-	-	M*	M*	-	-	-	-	-	-	-	M*	M
-	Y*	Y*	-	-	-	Y*	-	Y	Y	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-

Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R*	R*	NP	NP	NP	NP	NP	G*	G*	NP	NP	R*	G*
-	-	-	-	-	S*	S	S*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
NP	NP	NP	-	-	Y*	Y*	Y*	NP	NP	C*	C*	NP	NP	NP	NP
-	K*	-	-	-	K*	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y*	Y	Y	Y	Y	-	-	Y	C*	Y	Y*	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y	Y*	Y*	Y	-	-	-	-	-	Y*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	T*	T	low_cov	Y*	Y*	T*	T*	T	T*	Y	T*	Y	Y
Y	Y*	Y*	T*	T	Y*	Y*	Y*	T*	T*	T*	Y*	T	Y*	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-
S	S	S	G	G	S	S	S	G	S*	S*	G*	G	G	-	S*
W*	W	W	-	-	W	-	W*	-	-	-	-	W	W*	W*	-
Y*	Y*	Y	-	-	Y*	-	-	-	-	-	-	-	Y	Y*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*
R*	R*	R*	-	R*	R*	R*	R*	-	-	R*	-	R	R*	R*	R*
Y*	Y	Y	-	Y*	Y	Y*	-	-	-	Y*	-	Y	Y*	Y*	-
R*	-	-	-	-	R*	-	-	-	-	-	-	-	R*	-	-
M*	M*	M*	-	-	M*	-	-	-	-	-	-	M*	M*	-	-
-	-	-	-	-	-	-	-	-	-	T	W	-	-	-	-
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
R*	R	R	R*	R*	low_cov	R*	R*	R*	G	G*	R*	R*	G	-	R*
C*	Y	Y	C	Y*	Y	C	C	Y*	Y	C	C*	C	C	Y*	C*
R*	N*	V*	-	-	-	R*	R*	-	-	R*	R*	R*	R*	D*	-
Y	H*	H*	Y*	-	Y	Y	Y	-	-	-	-	-	-	Y*	-
R	R	R	R*	R*	G	R	R	R*	R	R	R*	R	R	G	R
R*	R*	R*	R*	R*	R*	R*	R*	R*	-	-	-	-	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	-	H*	-	Y*	-	-	-	-	-	-	-	Y*	-
Y	Y*	H*	-	-	Y*	-	-	-	-	Y	Y	-	-	Y*	Y
NP	NP	NP	C*	Y*	NP	NP	NP	-	Y*	NP	NP	NP	NP	Y*	Y*
-	Y*	Y*	Y*	-	Y*	Y*	Y*	-	-	-	-	-	-	Y*	Y
A	low_cov	W*	W*	W*	W*	W*	A	-	-	NP	NP	NP	NP	W*	W
NP	NP	NP	-	M*	-	-	-	-	-	-	-	NP	NP	-	-
Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
-	M*	M*	Y	Y	-	-	-	-	-	-	-	-	-	B*	-
R	R	R	G	R	R	R	R	R	R*	-	-	R	R*	R*	R
Y*	Y	Y	T*	T	Y*	Y	Y*	-	Y*	Y	Y	-	Y*	Y*	Y
NP	NP	NP	M*	C*	M*	M*	C*	NP	NP	-	-	NP	NP	M*	M*
-	M*	M*	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	M*	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
W*	W*	W	A	A	W*	W*	W	-	-	-	-	-	-	W*	-

-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	R*	R*	R	R*	R*	R*	R*	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y	Y*	Y*	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	R	R*	R*	R*	R*	-	-	-	-	-	-	-	-
S*	S*	-	-	-	S	S	S	S	S	-	-	-	-	S*	S*
-	K	K	T	T	-	K*	K*	T	K	-	-	-	-	-	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	K	K	K*	K	K	-	-	-	-	-	-	-	-
M*	M	M	A	M	M*	M	M	-	-	-	-	-	-	M*	-
Y	Y*	Y*	-	-	-	-	-	-	-	Y*	-	NP	NP	Y	Y
Y*	Y	C	C*	Y	Y	Y	Y*	-	-	-	-	-	-	Y*	-
-	Y	Y	Y*	T	-	-	-	-	-	T*	Y*	T*	Y*	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S	S	S	S*	S	S*	-	-	-	-	-	-	-	-
-	S	S*	S*	S*	-	-	-	S	S*	-	-	S	S*	-	S*
A*	R	R*	R*	A*	NP	NP	NP	A	R*	R	-	R*	R*	R*	R*
-	R*	R*	-	-	R	R*	R	-	-	-	-	-	-	-	-
R	R*	R*	-	R*	R*	R*	R*	R	R	R	R*	A	R	R	R
T*	K*	K*	T*	K*	K*	T*	T*	K*	K*	T*	K*	K*	T*	K	K*
low_cov	Y*	Y*	NP	NP	low_cov	C*	C*	-	C*	NP	NP	NP	NP	NP	NP
-	Y*	-	Y*	Y*	-	-	-	-	-	-	-	Y	Y*	Y*	Y
G	-	R*	-	-	R	G	G	R*	G	G	G	R	R*	R*	R*
V*	S	S	S*	S	S	S	S*	S	S	S*	S*	C	C	C	S
A*	R*	R*	R*	R*	A	R*	R*	R	R*	A*	R*	R*	-	-	-
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*
R*	-	R*	NP	NP	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	A*	A*	R*	R*	-	A*	A*	-	-	-	-	-	-
T	T	T*	T*	T*	Y	Y	Y	T*	T*	T*	T*	Y*	Y*	Y*	T*
Y	Y	Y	-	-	Y*	Y	-	Y*	Y	-	-	-	-	Y	Y
-	-	-	K	K*	K*	K*	K	-	-	K*	K	-	K*	-	K
R	R*	R*	R	R	R*	R	R	-	R*	R	R*	R*	R*	R*	R
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	R	R	-	-	-	-
-	R*	R*	R	R*	R*	R*	R*	-	-	R*	R*	R*	-	R*	R*
Y	Y	Y	-	Y*	-	Y	-	T*	T	-	-	-	-	Y*	Y
K	G	K	K*	K*	K*	K	K	K*	K*	K*	K*	K*	K*	K*	K*
-	S*	S	S	G	-	-	-	-	-	-	-	NP	NP	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R*	-	-	R	R	R*	R*	G*	-	-	R	R	R*	R
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
G	S	S	S*	G	G	S	S	G*	G*	S*	S*	S*	S*	S*	S*
Y	Y*	Y*	Y	Y*	Y	Y	Y	-	-	Y	Y	-	Y*	Y	Y

G	R	R	G	R*	R*	R	R*	R*	R*	R*	R*	NP	NP	G	R*
R	R	R	G	R	R	R	R	R*	R*	R*	R*	R	R*	R*	R*
R*	R	R	G*	G*	R*	R	R*	-	-	R*	R*	R*	R*	R*	G
Y*	Y*	Y*	-	-	Y*	Y*	-	T*	T	-	-	-	-	Y*	Y
-	N*	V*	-	-	-	Y*	-	Y	Y	-	-	Y*	-	-	Y*
R*	R*	R*	R	R	R*	R	R	-	R*	R	R	R*	R*	-	R
Y*	Y	Y	C*	C	Y	Y*	C*	Y	Y	C*	C*	C	C*	Y*	Y
Y	Y*	Y*	Y	Y	Y*	-	Y	-	Y*	Y	Y*	Y*	Y*	Y*	Y
C	Y	Y	Y*	C	Y	Y	Y	Y*	C*	Y*	Y*	Y	C	C	C*
-	S*	S	-	-	-	-	-	S*	-	-	-	-	-	S*	-
-	-	-	-	-	low_cov	-	-	-	-	Y*	Y	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	-	Y*	Y	Y	Y*	Y*	Y*	Y
Y*	Y*	Y*	-	-	-	Y*	-	Y*	Y*	-	-	-	-	Y*	Y
A*	M	M	A*	A*	-	M	M*	A*	A*	A*	M*	-	M*	A*	M*
K	K	K	K	K*	K*	K*	K*	K	K*	K*	T*	K*	-	K*	K
Y	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	T	T	Y*	Y*
R	R	R	R*	R*	R	R	R	R*	R*	R*	R*	R*	R*	R*	R*
S	S	S	C*	C	C	C	S*	C*	C	-	-	S*	C	S*	C*
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y	Y	Y	Y*	C	Y	Y	Y	Y*	Y*	Y*	Y*	-	Y*	Y*	Y
-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	Y	Y	Y*	-
-	low_cov	-	-	-	low_cov	-	-	-	-	-	-	R	-	-	-
R	R	R	R*	R	V*	R*	R*	R	R	R*	R*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R	R*	-	-	-	-	-	-
-	W*	W*	-	W*	-	-	-	-	-	-	-	-	W*	-	-
Y	Y	Y*	-	Y*	Y	Y	Y	-	-	-	-	C	C	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	S*	-	NP	NP	S*	G*
NP	NP	NP	G	G*	NP	NP	NP	-	R*	R*	R*	-	R*	R*	R*
NP	NP	NP	T*	T*	low_cov	-	Y*	Y*	-	Y*	Y*	NP	NP	Y*	T*
W	W*	W*	T*	W*	low_cov	W	W*	-	-	W	W	W*	-	W*	T
NP	NP	NP	T*	T*	T*	Y	T*	-	Y*	T*	T*	NP	NP	Y*	T*
R	R	R	R*	R*	R	R	R	R	R*	R	R	R	R	G	R*
low_cov	H*	M*	-	Y*	-	-	-	-	-	-	-	M*	M*	-	-
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
Y*	C*	C*	C*	Y*	NP	NP	NP	C*	C*	Y	Y*	C*	C*	Y*	Y*
-	Y*	-	-	-	H*	-	-	-	-	Y	Y	-	-	-	-
NP	NP	NP	-	-	-	K*	-	K*	K*	-	-	-	K*	K*	K*
S	S*	S	S*	S*	S*	S*	Y*	-	-	S	S*	S*	-	S	S
-	R	R	R*	R*	R*	R*	-	R	A	-	-	R*	R*	R*	-
R*	R	R	R*	R	R*	R*	-	R	R	-	-	R	G*	R*	-
S*	S	S	S*	S*	S*	S*	S*	S	S	-	-	S	S	S*	-
R*	R*	G*	R*	G*	R*	G*	R*	R*	G	R	R	G*	G*	G*	G*
G*	R*	R*	G*	G*	G*	R	R*	R	R	G	R*	R*	R*	R*	G*
-	Y*	Y*	Y	Y*	-	Y*	-	Y*	-	-	-	Y*	-	-	-
C*	M*	C*	C*	C*	C*	C	M*	M*	M*	C*	C*	NP	NP	C	C*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	B*	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y	C	Y	Y	Y*	C	Y*	C	Y*	Y*

-	Y*	-	Y	Y*	Y*	-	-	-	-	-	-	Y*	Y*	-	-
-	Y*	Y	-	-	-	Y*	Y*	-	-	-	-	Y	Y*	Y*	-
R	R*	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	R*	R*	-	-
-	Y	Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	W	W*	-	-
-	-	-	-	-	-	-	-	-	-	S	S	-	-	-	-
-	-	-	W*	W	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	M*	-	-	-	-	-	-	-	R*	-	-
K*	K	K	-	K*	K*	K*	-	K*	K	-	-	-	K*	K*	K*
Y*	Y	Y	Y	Y	Y*	Y	Y	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	R	R	R	-	R*	R*	R*	R*	R*	-	-
R*	R*	R*	R*	R*	R*	R	R*	R	R	R*	R*	R*	R*	R*	R
-	-	-	K	K*	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	R	R	-	-	-	-	-	R*	-	-	-	-	-
Y*	Y*	-	-	Y*	-	-	-	-	Y*	-	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	Y*	H*	-	-	-	-	-	-	-	-	M*	-	-	Y*	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	R	R*	-	-
-	H*	H*	Y	Y	Y*	-	-	-	-	-	-	-	-	-	-
-	-	S*	S*	S	-	-	-	-	-	-	-	-	-	S*	S*
-	-	-	-	-	-	R	R*	-	-	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	R	R*	-	-
-	Y*	H*	Y	Y	-	-	Y*	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	B*	C	Y	B*
R	-	R*	R	R	R	R*	R*	-	-	R	R*	-	-	R	R
-	K*	K*	-	-	-	-	-	-	K*	-	-	-	-	-	-
NP	NP	NP	G*	G*	G	G	G*	NP	NP	R	-	R*	G*	G*	G*
-	H*	M*	-	-	Y*	-	Y*	-	-	Y*	-	-	-	Y*	Y
N*	-	Y*	Y	Y*	-	Y*	-	Y	Y	Y	Y	-	-	-	-
K*	-	-	-	-	-	K*	-	K	K	-	-	-	-	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R*	-	low_cov	R*	R*	NP	NP	NP	NP	NP	NP	A	R
low_cov	-	R*	R	R*	low_cov	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
R*	D*	D*	-	-	R*	-	-	-	-	-	S*	-	-	R	R
-	R	R	-	-	R*	R*	-	-	-	-	-	-	-	R*	-
-	R*	-	-	-	-	-	-	-	-	R	R	-	-	-	-
Y	N*	N*	-	-	Y*	-	M*	M*	-	-	-	Y*	Y*	Y*	Y
K	D*	D*	K*	K*	D*	K	K	K	K	K*	-	K*	K*	K	K
M	M*	M*	-	M*	M	M*	M*	-	M*	-	-	M*	M*	M*	M
R	R*	R*	-	R*	R	R	R	R*	R*	-	-	R*	R*	R*	R
low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
K*	K*	K*	-	-	K*	K*	K*	K	K*	-	-	K*	K*	K*	K
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-

-	H*	H*	-	Y*	-	Y	Y	-	-	-	-	-	-	M*	-
G*	R*	G*	NP	NP	NP	NP	NP	G	R*	G	G	NP	NP	R*	G*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	V*	V*	-	S*	S*	S*	S	S*	S*	S*	-	S*	S*	S*	S
R	R*	R*	-	-	R*	R	R	R	R*	-	-	R*	R*	R*	R
-	R*	R*	-	-	-	R*	R*	R	R*	-	-	R*	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-
-	S	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	-	R	-	R	R	-	-	R	R	R	-
-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-
A	W*	W*	W*	W*	W*	W*	A*	W*	W*	W*	W*	A*	A*	A*	A
R	R	R*	A	R*	A	A	R*	R*	R*	R*	R*	R*	R*	R*	R
G*	low_cov	G*	G*	R*	G*	G*	R*	G*	G*	R*	G*	R*	G*	R*	G
A	R	R	R*	A*	A	R*	R*	A*	R*	R*	R*	A*	A*	A*	R
NP	NP	NP	-	-	-	low_cov	-	R*	R*	-	-	NP	NP	-	-
W*	W*	W*	W*	W*	W*	W*	T	W*	T	W*	W*	W*	-	W*	W*
NP	NP	NP	G*	R*	G*	G*	G*	G*	G*	G*	G*	G	R*	G*	R*
-	S*	S*	S*	-	B*	S	S	B*	S	S*	B*	S*	-	S*	B*
-	-	Y*	-	-	-	-	M*	M*	Y*	-	-	-	-	H*	-
-	-	-	S	S*	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	-	M*	-	M*	H*	M*	H*	Y	H*	H*	M*	H*	H*
V*	V*	V*	V*	M*	V*	V*	G	V*	V*	V*	V*	V*	M*	V*	G
W*	W*	H*	-	-	-	W*	-	W	W	W*	W*	-	-	W*	-
Y*	Y	Y*	Y	Y	-	-	-	Y	Y	-	-	-	-	-	-
low_cov	-	-	NP	NP	low_cov	-	-	S*	S*	S*	-	NP	NP	-	-
R*	-	-	R*	R*	low_cov	R*	-	R	R	-	-	-	-	R*	R
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	R*	R	R	R	R	R	R	R	R*	R	R
NP	NP	NP	-	-	-	R*	-	-	-	R*	-	R	R*	-	-
S*	S	S	S*	S*	S	S*	-	S*	C	-	-	S	S*	S*	S*
Y*	Y	Y*	Y*	Y*	Y*	-	-	Y*	Y*	-	-	C	C*	Y*	Y*
K	K	K	K*	K*	G*	G	G*	G*	G*	-	-	G*	G*	K	K
R	R*	R*	-	-	R*	A	R	R	R*	-	-	R*	R*	-	-
R*	R*	R*	-	-	R*	-	-	R*	-	-	-	-	-	-	-
NP	NP	NP	-	-	Y*	Y	Y	Y	Y*	-	-	Y	Y*	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	R*	-	R	R*
R	R*	-	-	-	R	R*	R*	-	-	-	-	-	-	-	-
S	S	S	-	-	G*	G	G	G*	G*	-	-	NP	NP	S*	S
-	Y*	Y*	-	-	Y*	-	-	-	-	-	-	Y	Y*	Y	Y
R*	R	R	R	R	R	R	R*	D*	A*	D*	-	R	R	R	R
Y*	Y	Y	Y*	Y	Y*	Y	Y*	T*	T	-	-	T*	Y*	Y*	Y*
-	-	-	W*	W*	W*	-	-	T	T*	-	-	W*	-	-	-
-	R*	R*	R*	R*	R*	R*	-	G	G	-	-	R*	G	R*	R*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	Y*	NP	NP	NP	NP	NP	-	-	NP	NP	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	Y*	Y*	-	Y*	Y*	-	-	Y*	Y*	Y*	Y*
M*	M*	M*	M*	M*	M*	M*	-	M	A	-	-	-	M*	H*	-
-	Y*	Y*	Y*	-	Y*	Y*	Y*	T*	T*	-	-	Y*	Y*	-	-

R*	-	R*	-	-	-	R*	G*	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y	Y
-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
M*	M	M*	-	M*	M*	M*	-	A	A	-	-	A	M*	M*	M
Y	Y	Y	Y	Y	Y	Y*	C	Y*	C*	Y*	Y*	C	Y*	Y	Y
-	-	-	-	-	NP	NP	NP	-	-	-	-	S	S*	-	-
M*	M*	M*	M*	M*	M*	M*	-	C*	C*	-	-	C*	C*	M	M
Y*	Y	Y*	-	Y	Y*	Y*	Y*	C*	C*	-	-	C*	C*	Y*	Y
W	W	T	W*	W*	T*	T*	T*	T*	T*	-	-	T*	T*	W*	W
R*	R	R	R*	R*	R*	R*	R*	R*	R*	-	-	R*	R	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	T	Y*	Y
Y*	Y	Y	Y*	Y	Y	Y	Y	Y*	Y*	-	-	Y	Y	Y*	Y
R*	R*	R	R*	R*	R*	R*	-	R	R	R	R	R	R*	R	R
NP	NP	NP	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y
-	-	-	Y*	Y	-	Y*	-	Y	Y*	Y*	Y	Y*	-	Y*	Y
S*	-	-	-	-	-	V*	S*	R*	A	-	S*	S*	-	S*	S*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	-	Y	Y	Y*	Y	Y	-	-	Y*	Y*	Y*	Y*
S*	R*	R*	-	-	S*	S	B*	-	-	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y	Y	-	-	-	-	-	Y	Y	-	-	-	-
Y*	Y	Y	Y*	C	Y*	Y*	Y*	Y	Y*	C	C	Y*	Y*	Y*	H*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	Y*	-	Y*	Y
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP
low_cov	R*	R	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
-	R	R	A	R	R	R	R*	R	R	R	R	-	-	A*	R*
R	R*	R*	R*	R*	R*	R*	-	-	-	R	R*	R	R*	R*	R*
S*	S*	S*	-	-	-	-	-	-	-	S*	-	S*	S*	-	-
-	-	-	NP	NP	-	-	Y*	-	-	-	-	Y*	Y*	Y*	Y*
Y	Y	Y	-	-	-	-	-	-	-	Y	-	Y	Y	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R	R	R	R*	R	R	R	R*	-	-
Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	-	-	NP	NP	-	-
K*	K	K	K	K*	K*	K*	K*	K*	K*	-	-	K*	K*	K*	K*
R*	R	R	-	R*	R	R	R	R	R	R	R	R	R	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	D*	K*	-	K*	-	K*	-	-	-	K*	-	K*	K*	K*	-
W*	W	W	W	T	W	W	T	W	W	W	W	W	W*	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	C	C	C*	C*	Y*	Y	C*	Y	Y	C	Y*	Y*	Y*	C*	Y*
-	S*	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	K*	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	R	R*	-	R*	R	NP	NP	-	-	NP	NP	R*	-

-	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y	Y	Y	Y*	Y	T	Y	-	-	Y	Y*	Y*	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y*
Y	Y	Y	-	-	Y*	Y*	-	Y	Y*	Y*	Y*	-	-	Y	Y
Y*	Y	Y	-	-	-	-	-	Y*	Y	T	Y*	-	-	Y	Y
R	R	R	-	-	R	R	R	R	R	A*	A*	R*	R*	A*	R*
-	-	-	-	-	B*	Y	Y	-	-	-	-	Y*	-	-	-
Y	Y*	Y	Y*	-	Y*	Y*	-	Y	Y	Y	Y	Y*	Y*	Y	Y
K*	K	K	K	K	K	K	K*	K*	K	K	-	K	K	K*	K*
-	Y*	-	Y*	Y	Y*	-	-	-	-	-	-	-	Y*	M*	-
Y	Y	Y	Y*	Y*	Y*	Y	-	Y	Y	Y	T	-	-	Y	Y
-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	-	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y*	-	-	-	-	-
Y	Y*	Y	Y	Y*	T	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	Y*	-	-	Y*	Y*	-	B*	-	-	-	-	-	-	-
G	S*	S*	S*	-	S*	S*	S*	S	G	S*	S*	-	-	S	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	R*	-	NP	NP	NP	NP	NP	NP	NP	NP
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	NP	NP	C	C*
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-
-	R*	R*	R	R	R*	R*	R*	-	R*	-	-	R*	R*	R	R
Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*
-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	Y	Y*	-	-
R*	N*	V*	-	-	R*	-	R*	R*	-	-	-	R*	-	-	R*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	K*	-	R*	-	-	-	-	-	-	-	-
S	S	S	S	S	S	S	S*	S*	S*	S	S	S	S	S*	V*
Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R*	R	R	R	R	R*	R*	R*	-	R	R	R*	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	M*	-	-	-	-	-	-	M	M*	M*	-
-	-	-	NP	NP	low_cov	-	-	M*	-	NP	NP	NP	NP	M*	M
G*	S*	G	S*	S*	S*	G*	S*	S*	S*	S*	S*	S*	S*	S*	S*
-	Y*	Y*	-	-	Y*	Y*	Y	-	-	-	-	Y*	Y*	M*	-
S*	S*	-	-	-	-	-	-	-	-	-	-	NP	NP	-	S*
R*	R	R	R*	R*	R	G	R*	G*	G*	R*	G*	G	R*	R*	R
R*	R	R	-	-	R*	R	R*	-	R*	-	-	R*	-	R*	R
-	R*	R*	-	-	-	R*	R*	-	-	-	-	G	R*	-	-
-	W*	W*	W*	W	-	W*	W	W*	W*	-	-	W*	-	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	S*	-	S	S*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	S	S*	-	-	-	-	-	-

-	R*	R*	-	-	-	-	-	-	-	-	R*	-	-	-	-
Y*	H*	H*	Y	Y	Y	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*
R*	D*	D*	R	R	R	R	R*	R	R*	R*	R*	R*	R*	R*	R
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
-	-	-	-	-	Y*	H*	-	Y	Y	-	-	-	-	-	-
S*	S*	S*	S*	S	-	S*	S*	S	B*	S	S	S*	S*	S	S
-	W*	-	-	-	W*	Y*	-	Y	Y*	-	-	-	-	-	-
-	-	-	NP	NP	-	Y*	-	-	-	Y	Y*	Y*	Y*	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y	C	Y*	Y*	Y*	Y*	Y*
R*	R	R	R	R	R	R	R	R	R	A*	A*	R*	-	-	-
R*	R*	R	G*	R	R	R	R	G*	R	R	R	R*	R*	R	R
-	-	-	-	-	low_cov	M*	-	M*	M*	-	-	NP	NP	-	-
-	R*	R*	-	R*	R*	-	-	-	-	-	-	-	-	-	-
-	K	K	-	-	-	K*	K	-	-	-	-	-	-	K*	-
M*	M*	M*	C	M*	-	M*	-	-	M*	-	-	M*	M*	M*	-
-	R*	R*	R	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	S*	C	C	S*	NP	NP	NP	C*	C*	S*	S*	S*	-	S*	C
-	Y*	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	-	-	-	S*	S*	S	S	S*	S*	S*	-	S	S
NP	NP	NP	Y*	-	-	Y*	Y*	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	R*	R*	R*	-	R*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	R	R	R*	R*	G*	R*	R*	R*	R*	R*	R*	G	R*	R*	R*
-	R*	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-
S*	S*	S	-	-	S*	S*	S	S*	S*	S*	S*	NP	NP	S*	-
low_cov	R*	R*	NP	NP	NP	NP	NP	-	-	-	-	-	-	R*	R*
R*	R	R	-	R*	R*	A	R*	R*	V*	A	R*	A	A	N*	R*
Y*	Y*	Y	Y*	C	C	Y*	Y*	C*	Y*	Y*	Y*	C	Y*	C	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R*	R*	R	R	R	R	R	R*	R	R	R	R*	R*
Y*	Y	Y*	Y	Y	Y*	-	Y*	-	-	-	-	-	-	Y*	Y
-	R*	-	-	-	R*	R	R	R	R*	-	-	-	-	-	-
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	-	-	Y	Y	Y	Y	T	Y	Y	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
S*	S*	S*	-	-	S*	-	-	-	-	-	-	-	-	S*	-
R*	R*	R*	-	-	R	R*	R*	R*	R*	R*	R*	NP	NP	-	-
-	R	R	-	-	R*	R	R*	R	R	R	R	R	R*	-	-
Y*	Y*	Y	-	-	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y*	-	-
S*	S	S	-	-	S*	-	S*	S*	B*	S	S	S*	S*	S*	-

R	R	R	-	R*	R	R	R*	R	R	R	R	R	R	-	-
N*	N*	N*	Y*	H*	N*	N*	N*	Y*	N*	K*	-	Y*	-	N*	B*
C*	S	S	C	S*	C*	C	S*	S*	S*	C	S*	S*	S*	S*	S*
G*	K	K	G*	K*	G*	G	G	G*	K*	G*	G	K*	K*	G*	K*
T*	Y	Y	Y*	Y*	Y*	Y*	Y*	T*	Y*	T*	Y*	T*	T*	Y*	Y*
C*	C	Y	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*
M*	M*	-	-	-	M	M	M	-	-	-	-	-	M*	-	-
R*	D*	D*	-	-	R*	D*	D*	-	R*	-	-	-	R*	B*	R*
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	Y*	-	-
-	-	-	S*	S	-	-	-	-	-	-	-	-	-	-	-
Y	C	Y	-	-	Y*	Y	Y*	Y*	C	Y	-	NP	NP	Y*	Y
NP	NP	NP	NP	NP	low_cov	R*	R*	R*	R*	NP	NP	NP	NP	R*	G
NP	NP	NP	-	-	M*	M*	M*	M*	M*	M*	-	-	-	M*	M
R*	R	A	R*	R	R	R	R	R*	A	A	A	A	R	R	R*
Y	Y*	Y*	-	-	B*	Y	Y*	Y*	Y	-	-	-	-	-	-
R	R	R	-	R*	D*	R	R	R	R*	R*	-	R*	R*	-	-
-	R*	R*	-	V*	-	R*	R*	-	-	R*	-	R*	R*	-	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y*	N*	H*	-	Y*	Y*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*
-	W*	W*	-	W*	W*	W*	W*	W*	W*	-	-	-	W*	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-
NP	NP	NP	-	-	G	G*	G*	G*	G*	NP	NP	S*	-	G*	G*
R*	R*	R*	-	R*	R	R*	R*	R*	R*	R	R	R	R*	R*	R*
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
Y*	Y	Y	-	-	Y	Y*	Y	Y	Y	Y*	Y*	-	-	-	-
-	Y*	Y*	-	-	Y*	Y*	Y	-	Y*	Y	Y	-	-	-	-
-	-	-	-	Y*	M	M*	M	-	-	-	-	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M*	-	M	M	-	-	-	-	D*	-
-	R*	R*	-	R*	-	-	R*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	D*	-	K	K	-	-	-	-	-	-
R	R*	R*	-	-	R*	R*	R	-	-	R	-	-	-	R	R
Y*	Y*	Y*	-	Y*	Y	Y	Y	Y*	Y	-	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	-	-	-	-	Y*	-
Y	Y*	Y	-	-	Y	Y	Y*	Y	Y	-	-	Y*	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	S*	S*	-	-	-	-	S*	-	-	-	-	S*	S*	S	S
-	-	-	-	-	-	-	R*	M*	-	-	-	-	-	W*	W
-	-	-	-	-	-	-	-	M*	M*	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y*	Y*	Y	-	-	Y	Y	C	C	-	Y*
-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y	-	-	-	Y*	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M*	M*	A*	A	low_cov	M*	A*	M*	M*	A*	A	-	-	M*	M
NP	NP	NP	NP	NP	low_cov	R*	A*	R*	-	NP	NP	NP	NP	R*	R
NP	NP	NP	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S*

-	S*	S*	-	-	-	-	-	-	-	-	-	-	S*	-	S*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	R*	R*	R*	R	-	-	-	-	-	-	-	-	-	R*	-
-	Y*	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y	Y	-	Y*	-	Y	Y	-	-	Y*	Y*	-	-
Y*	-	-	Y*	Y*	Y*	Y*	-	C	C	Y*	Y*	-	-	Y*	Y
NP	NP	NP	R*	-	R*	R*	-	R*	G*	R*	G*	NP	NP	R*	R*
-	-	-	-	-	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S	S*	S*	-	-	S*	S*	S	S	G*	G*	S*	S*
R*	R*	R*	-	R*	R*	R*	R*	-	-	R*	R*	R*	R*	V*	-
Y*	Y*	C	C*	C	Y*	Y*	Y*	C*	C*	Y*	Y	C*	Y*	C*	C*
Y	-	Y*	-	-	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	-	-
Y*	Y	Y	T	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	T	Y*
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-
R*	R*	R*	R*	G*	R*	R	R	G*	G*	R	G	NP	NP	G	R*
K	K	K*	K	K*	K	K	K	K*	K*	K	K	K*	K*	K*	T*
A	R	R	R	R	R	A	R*	R	A	R	A	R	A	A	R
low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R	R*	NP	NP	low_cov	G*	R*	-	-	R*	-	R*	-	G*	G
-	Y	Y*	-	-	-	Y*	Y*	-	-	Y*	-	Y	Y	Y*	Y
low_cov	-	Y*	-	-	low_cov	Y*	-	Y*	T*	-	-	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	R	A	-	-	-	-
R	R	R	R	R	R*	R	-	A*	A*	R	A	R	R*	R	R*
-	K*	-	K	K	K	K*	K	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R	-	R*
-	Y	Y	Y	Y	-	Y*	-	-	-	-	-	-	-	Y*	Y
low_cov	R	R	R*	R*	low_cov	-	-	-	-	R*	R*	-	-	R	R
-	Y*	Y*	Y*	Y	-	Y*	Y*	-	-	-	-	Y*	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	R*	-	R*	R*	R*	R
-	-	-	-	-	K*	K*	K	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	M	M*	-	-
-	D*	D*	K	K	-	-	-	-	-	K	K	K*	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	Y*
S*	S*	S*	-	-	-	-	-	S	S	S	S	S	S*	-	-
-	R*	-	-	-	-	-	-	-	-	R	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	R*	-	R*	-	-	-	-	-	-	-	R	R	-	-
M*	M*	-	-	-	-	M*	-	M	-	M*	M	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	R*	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	R*	R*	R*	R*	R*	R*	-	-
Y	C	Y	-	-	Y	Y	Y	Y	Y	C*	Y*	C*	C	Y*	C*
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-
-	-	-	-	-	-	-	-	-	R*	-	R	-	-	-	-

-	Y*	Y*	-	-	-	-	Y*	-	-	-	-	Y	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
Y*	Y	Y	Y	Y*	Y*	Y*	Y	-	Y*	-	-	-	-	Y*	Y
M*	M*	M*	-	M*	-	-	-	M	M	M	M	M*	M*	M	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	R*
Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y*	Y	Y	T	Y*	T	Y*
-	K*	K*	G	G	-	K*	K*	-	-	-	-	-	-	-	-
C	Y	Y	-	Y*	Y	Y	Y	C	C	Y*	Y*	Y	Y	Y*	C
NP	NP	NP	A*	M*	-	-	M*	-	-	M*	M*	NP	NP	-	-
-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	T*	T*	NP	NP	NP	Y*	Y*	T	Y*	NP	NP	Y*	Y*
-	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	W*	W*	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	-	-
K	K	K	K	K	T*	K	K	K	T	T*	T*	K*	T*	K*	K*
-	-	-	Y	Y*	-	Y*	-	Y	Y*	Y*	-	-	-	-	Y*
M	M	M	M	M	M	M	M	M	C	M*	C*	M*	C	V*	M
R	R	R	R	R	R	R	R	G*	G*	G*	G*	G*	R*	R*	R
-	-	-	-	-	-	W*	-	W*	W*	-	-	-	-	-	-
Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	C*	C*	C*	C	Y*
S*	-	-	S*	S*	-	S*	S*	-	S*	C*	C*	S*	S*	C*	S
NP	NP	NP	R	R*	R*	R*	R*	-	-	G*	G*	NP	NP	G*	R
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	G*	K*
NP	NP	NP	Y*	Y*	NP	NP	NP	-	Y*	NP	NP	NP	NP	Y*	T
NP	NP	NP	NP	NP	low_cov	A	R*	-	-	NP	NP	-	R*	R*	R*
G*	R	R*	G*	G*	G*	R	R*	-	R*	G*	R*	G*	G*	G	R*
S*	S*	S*	-	-	-	-	-	-	-	S*	S*	-	-	-	S*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	S	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
S	S	S	S	S	S	S*	-	G*	S*	S	S*	-	-	S	S
-	S*	-	-	-	-	S*	S*	-	-	-	-	S*	S*	-	-
W	W	W*	A*	A*	W*	W*	-	W*	A*	W*	A	-	-	W*	W
Y	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-
-	-	-	S	S	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	-
R*	-	R*	-	-	-	-	-	-	-	-	-	A	R*	-	-
NP	NP	NP	W*	W*	NP	NP	NP	NP	NP	W	W	NP	NP	-	W*
-	-	-	-	-	R*	R*	R	-	-	-	-	NP	NP	-	-
-	R*	R*	R	R	-	-	-	R*	-	-	-	-	-	-	-
K*	-	K*	-	-	K*	-	-	-	-	-	-	K	-	-	-
Y*	Y	Y*	Y	Y	-	Y*	Y*	Y	C	Y	Y*	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	R*	R
Y*	-	-	-	-	Y*	Y	Y	Y*	Y*	-	-	Y	Y	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	R*	-

R	R*	R*	-	-	R	R	R	R*	R*	-	-	R	R*	R*	-
M*	M*	M*	-	M*	M	M	M	M*	M	-	-	M	M	M*	M*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
S	S*	S*	-	-	S*	S	S	S	S	-	-	S	S*	S*	S
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	-	-	-	Y*	-	-	-	-	-	Y	Y	-	-
-	Y*	Y*	-	-	-	-	-	-	-	Y	-	-	-	Y*	-
-	-	-	-	-	-	-	Y*	-	-	-	-	Y	Y*	-	-
NP	NP	NP	G	K*	low_cov	K*	K	NP	NP	G*	K*	K*	K*	K*	K
low_cov	R*	R*	-	R*	-	-	-	R*	R*	R*	R*	R*	R*	R*	-
R*	R	R	R*	G	G	R	R	-	R*	R	R*	R	R	R	R*
NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	-	Y*	-	-
low_cov	R	A	R*	R*	R*	R	R*	-	-	NP	NP	NP	NP	R*	R*
T	Y	Y*	Y*	Y*	T*	Y*	T*	NP	NP	Y*	Y*	Y*	T*	Y*	Y*
M	-	-	A*	A	M	A	A	-	-	-	-	M	M*	M	M
-	-	-	-	-	-	-	-	-	-	NP	NP	K*	K*	-	-
Y	Y*	Y*	C*	Y*	Y	C	C	-	-	-	-	Y	Y*	Y	Y
R	R*	R*	R	R*	R	A	A	A*	A	R	R*	R*	A	R*	R
R	R*	R*	R*	R	-	-	-	-	-	R*	R	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-
A	R*	A*	-	-	A*	A*	A*	NP	NP	A*	A*	NP	NP	A*	A*
T*	Y	Y	-	-	T	T*	T*	T*	T*	T*	T*	T	-	Y*	T*
-	S*	S*	-	-	S*	S*	S*	S*	-	-	-	NP	NP	-	-
NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	R*	-
-	R	R	R*	-	R*	-	-	R*	R*	-	-	-	-	-	-
R*	G	R	-	R*	R*	-	-	-	R*	-	-	R*	R*	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
C*	C	Y*	-	-	C*	Y*	Y*	C	Y*	Y*	Y*	NP	NP	Y*	Y*
-	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	-
-	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y*
G	R	R	R	R	G	V*	R*	R*	R*	R*	R*	R*	G	R*	R*
-	M*	M*	-	-	-	-	Y*	-	-	-	-	M*	M	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-
Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	-	-	NP	NP	Y	Y*
-	Y*	Y*	-	-	low_cov	-	Y	-	-	Y*	Y*	Y*	Y*	-	-
R*	R*	R	R*	R	R	R*	R*	-	-	-	-	NP	NP	A*	R*
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	R*	R*	R	R*	R*	R*	R*	R
-	Y*	-	-	Y*	-	-	Y*	-	-	Y	Y	-	-	Y*	-
low_cov	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
-	low_cov	-	-	-	-	C	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	M*	M	-	-	-	-	-	M*	-	-
-	H*	H*	-	Y*	-	Y*	Y*	-	Y*	S	S	Y*	H*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*
H*	N*	N*	-	H*	N*	H*	H*	N*	N*	H*	H*	N*	-	N*	N*

-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
B*	H*	H*	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	Y
R	R*	R*	R	R*	R	R	R	R	R	-	R*	R	R	R	-
Y*	Y*	Y*	-	-	Y*	-	-	Y	Y*	-	-	-	-	Y*	Y*
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R*	-	-	R*	-	R	R	-	-	R*	-	R*	R
Y*	H*	H*	Y*	Y*	N*	Y*	Y*	Y*	Y*	Y*	H*	Y*	Y*	H*	Y*
R*	R*	R*	-	R*	-	-	R*	R	R	-	-	-	R*	R*	R
-	M*	M*	-	-	-	-	-	M*	M*	-	-	-	M*	M*	M*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	Y*
low_cov	-	-	-	-	-	-	-	M*	M*	M*	A	-	-	-	M*
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***NP***	***NP***	**-**	**-**
-	***Y***	***Y****	***C***	***C***	***Y****	***Y***	***Y***	***Y***	***Y***	***Y****	***Y****	***Y****	***C***	***Y****	***Y***
-	**-**	**-**	**-**	**-**	**-**	***Y****	**-**	***Y***	***Y***	**-**	**-**	**-**	**-**	**-**	**-**
NP	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
R*	R*	R*	R	R*	R*	-	-	-	-	R	R	-	-	R*	-
R*	-	-	NP	NP	low_cov	A	R*	R*	R*	R*	R*	A*	A*	-	R*
-	-	-	Y	Y*	NP	NP	NP	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y	Y*	T*	Y	T	Y*	Y*
-	R	R*	R*	R*	S*	R*	-	R	R*	A*	R*	A	R*	-	R*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	M	M	A	M	M	M	M	M	M*	M	A	M	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
W*	-	W*	-	-	W*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	S*	S*	S	-	S*	-	-	NP	NP	S*	S
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	S	S*	-	-	-	M*
N*	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
NP	NP	NP	-	-	-	-	-	S*	S*	-	-	NP	NP	S*	S*
R*	R	R	-	R*	R	R	R*	R*	R*	R*	-	R*	R*	R*	R
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	Y*	Y	Y	Y	H*	Y*	Y*	-	Y*	Y*	Y*	Y*
-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-
-	N*	N*	-	Y*	-	Y*	Y*	-	B*	Y*	-	Y*	Y*	Y*	B*
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	R*	-	R*	-	-	-	-	-	R*	R*	-	-

-	-	-	-	-	-	M*	-	-	-	-	-	M*	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R	-	D*	-	-	-	-	-	-	R*	R*	R*
M	M*	M	-	-	M	M*	M	M*	M*	C	C	-	-	-	-
-	R*	R*	R	R*	-	-	R*	-	-	-	-	R*	-	-	-
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*
R*	R*	R*	R	R	R*	-	-	-	-	R*	-	R*	R*	R*	-
R*	R*	R*	-	-	R*	R*	R*	-	-	R*	R*	-	R*	-	-
Y	Y	Y	-	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*
A*	A*	A*	A*	A*	A*	A	A*	W	W	A*	A*	A*	A*	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	K*	T	-	-	-	-
R	-	-	-	-	R*	-	-	-	-	R	A	R	-	R*	R
K	-	-	-	-	K*	-	-	-	-	K	K	K	K*	K*	K
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
M	-	-	-	-	M*	-	-	-	-	M	C	M	C*	M*	C
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	C*
S*	-	-	-	Y*	S*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	G	R*	G*	R*	R	R	R*	G*	R*	G*	R*	G*	R*	R*
NP	NP	NP	W*	W*	W*	W	W*	T*	T*	T*	W*	NP	NP	W*	T*
-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R	R	R*	-	-	-	-	-	-	-
M*	-	-	-	M*	M	M*	M	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	Y	Y		-	-	-	-	-	-	Y	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	C*	Y
-	-	-	G*	G*	-	-	-	NP	NP	R	R	-	-	G*	R
-	-	-	-	-	-	M*	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	G	G	low_cov	-	-	R*	G*	R*	R	NP	NP	R*	R*
-	M*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y	-	Y*	-	Y	Y	Y	Y	-	-	Y	Y
	Y*	-	-	-		-	-	-	-	-	-	-	-	-	-
R	R	R	-	R*	R	R	R*	R	R	R	R	R*	R*	R*	R
M	low_cov	M*	-	-	M	M*	M*	M	M*	M*	M*	NP	NP	-	M
R*	R	R	-	R*	R*	-	R*	-	-	-	-	R*	R*	R	R
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
-	V*	V*	R	-	-	-	-	-	-	-	-	R*	R*	V*	R*
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	K*	-	K	K*	-	-	-	-	-	-
-	R*	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-
-	S	S	-	S*	-	S*	S*	-	-	-	-	S*	S*	S*	S
R	R*	R*	R*	R*	R*	R	R*	R	R	-	-	R*	R*	R*	R
Y	Y	Y	Y*	C*	Y	Y*	Y*	Y*	Y*	Y*	Y*	C*	C	Y*	Y*
Y*	Y	Y*	-	Y*	B*	Y*	-	-	-	-	Y*	Y*	Y	Y*	Y

-	Y*	Y	-	-	Y*	Y	T	-	-	Y*	T	-	S*	-	-
-	-	V*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	K*	-	-	-	-	-	-	R*	-	-
-	M	M*	C*	C*	M*	M	M	-	-	C*	C*	M	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	NP	NP	NP	NP	NP	-	-	R*	A*	NP	NP	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	R	R
R*	R	R*	G*	G	R	R	R*	R	R	G*	G*	R	R*	R*	R
S*	-	-	S	S	-	S*	-	S	S	-	-	-	-	-	-
-	Y*	Y*	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	-
low_cov	-	-	R*	R*	low_cov	-	-	NP	NP	-	-	-	-	R*	R*
K	K*	K	K	K	K*	-	K*	-	S*	K	K	K*	K*	T*	K*
-	Y*	H*	Y	Y*	-	Y*	-	Y	Y	-	-	Y*	-	Y*	Y*
low_cov	-	-	G	G*	-	-	-	NP	NP	-	-	NP	NP	-	-
-	-	-	Y	Y	Y*	-	-	Y	Y	-	-	-	-	-	-
-	Y*	Y*	Y	Y	Y*	-	-	Y	Y*	-	-	-	-	-	-
-	R*	R*	R	R	R*	R*	-	R	A	-	-	-	-	-	-
R	R	R	R	R	R*	-	R*	-	-	R	R	R*	R*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	M*	M	M*	-	-	M*	M*	-	-	-	-	-	-	-
-	-	-	R	R*	-	-	-	R*	R*	-	-	-	-	-	-
-	Y*	Y*	Y	Y*	-	-	Y*	-	-	-	-	-	-	-	-
-	R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	S	S
-	R*	-	R*	-	-	-	-	R*	R*	R*	R*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	C*	C	C*	C*	C	Y	Y*	C*	C*	Y*	Y	C*	C*	C*	C*
-	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y
NP	NP	NP	C	C*	-	-	-	NP	NP	NP	NP	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y*	-	-	-	-
Y*	Y	Y	-	-	Y	Y	T	Y	Y	-	-	T	T	Y*	Y*
-	R*	R*	-	-	D*	R*	R	-	-	-	-	-	-	-	-
R*	R*	A*	-	-	NP	NP	NP	R	A*	R*	R*	-	R*	R	R
Y	Y*	Y*	C*	C*	Y	Y	Y	C*	C*	Y	Y	C*	C*	C*	Y*
-	-	-	-	-	M*	-	-	-	-	Y	Y*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S*	G	S	G*	G	S*	G*	G*	G*	S*	S*	G	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	-	-	-	Y*	-	NP	NP	-	-	-	-	-	-
R	A	R*	-	R*	R*	R*	R*	-	-	-	-	R*	R*	N*	-
-	R*	R*	-	-	-	-	-	-	-	R*	-	-	R*	-	R*
R	R*	R*	R*	A*	R	R*	R*	A*	A*	R*	A*	R*	A*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

K*	K*	K*	-	S*	-	S*	-	-	-	-	-	S*	K*	-	S*
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
R	-	-	R	R	-	-	-	-	-	-	-	R	R	-	-
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-	-	-
Y*	-	Y*	Y	Y	-	-	-	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y*	-	-	-	-	Y	Y	Y	Y*	Y*	-
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-
S*	S	S	S	S	S*	-	R*	-	-	S	S	S	C	-	-
Y*	Y	Y	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-
R*	R	R	R*	A*	A	A*	R*	A*	A*	R	A	R*	R*	A	A*
-	Y*	Y*	-	Y*	-	Y*	-	Y	Y	Y	Y	Y*	Y*	Y*	Y*
R	R*	R	R	R	G	R*	R*	R	G	R	G*	R	G*	R*	R
T*	Y	Y	T*	T	T	Y*	Y*	Y*	T*	Y	Y*	Y*	T	Y*	Y*
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*
R*	R	R	-	R*	R*	R*	R*	-	R*	R*	-	R*	-	R*	-
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
R	R	R	R*	R	R	R	R*	R*	R*	R	R	R	R*	R*	R
M*	M*	H*	M	M	M	M	M*	M*	M*	M	M*	M	M	N*	M*
Y*	N*	H*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	H*	Y
-	N*	N*	R*	V*	-	V*	R*	S*	S*	V*	-	R*	D*	-	R*
-	H*	H*	-	-	-	Y*	Y*	-	Y*	S*	-	-	-	Y*	-
R*	R	R	R	R*	R	A	R	A*	R*	R	R*	R	R*	R*	R*
Y*	N*	N*	H*	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	C
Y*	H*	H*	Y*	Y*	-	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	T	Y*	Y*
-	R*	R*	-	R*	R*	R*	R*	-	-	R*	-	R*	R*	-	R*
Y*	Y*	Y*	Y*	C	Y*	Y*	C	Y*	Y*	Y*	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	C	Y*	Y*	Y*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	G*	R*	G*	G*	G	R*	G*	G*	G*	R*	R*
-	S*	-	-	-	-	S*	-	S	S	-	-	-	S*	S*	-
R*	R*	R*	-	-	R*	R	R*	-	R*	R	R	-	R*	-	-
-	-	-	-	-	R*	R*	-	R	R*	-	-	-	-	R*	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
W*	A	W	-	W*	W*	W*	-	W	W	W	W	A	W*	W*	W*
C*	C*	Y*	C*	C*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	C*	C*
-	Y*	-	-	-	Y*	Y	Y*	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	R	-	R	R	-	-	-	-	-	-
R*	R	R	-	R*	R*	R*	-	R	R	R	R	R	R	R	R
R*	R*	-	-	-	-	R*	-	R	R	-	-	-	R*	-	-
-	-	-	-	-	-	Y	-	Y	Y	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	R*	-	R	R	R	R	-	-	R*	G
-	-	-	-	-	-	Y*	-	NP	NP	-	-	-	-	-	-
Y*	Y*	-	-	-	Y*	Y*	-	Y	Y	Y*	-	Y*	-	Y*	Y*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
K	K	G	K*	K*	G	K*	K*	K*	K*	K	K	K	K*	K*	K
Y*	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y*	Y	Y	-	-	-	-
-	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	C*	NP	NP	-	-
K*	K*	K*	K	K*	K*	K	K*	-	K*	K*	K	K*	K*	K*	K
-	H*	-	-	Y*	Y	Y	Y	Y	Y	-	-	Y	Y	Y*	Y
-	-	Y*	Y*	C	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	-
R*	-	-	R	R	R*	R	R	-	-	-	-	-	-	-	-
R	R*	-	R	R*	-	R*	-	R	R*	-	-	R*	R*	R*	-
-	-	Y*	-	-	-	-	-	S*	S*	-	-	-	-	S*	S
-	-	K*	-	-	-	-	-	-	-	K*	K*	-	-	-	-
NP	NP	NP	R*	R*	-	R*	-	R	-	-	-	-	-	-	-
A*	R	R	A*	R*	A*	A	R*	R*	A*	R	R	A	A	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	T	-	-	T	Y*	T	-	-	-	-	T	T	Y	Y*
-	-	-	-	-	-	S*	-	S	S	-	-	-	-	-	-
NP	NP	NP	C*	C*	low_cov	C*	C*	C*	C*	C*	C*	NP	NP	NP	NP
-	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	C	-	-
-	Y*	-	-	-	-	-	Y*	-	-	-	-	Y*	Y*	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	R	R	-	-	-	-	R*	-	-	-	-	R	R*	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	R*	-	-	R*	-	-	-	-	-	-	R	R*	-	-
M*	M	M	-	M*	M	M	M	-	-	-	-	M	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*
-	R*	R*	-	R*	-	R*	R*	-	-	-	-	-	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-
R	R	R	R*	R*	A	R*	R*	R*	A*	R*	R*	R*	R*	R*	R*
low_cov	Y*	Y*	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	M*	M*	-	-	M*	M	M	-	-	M*	M*	M*	M*	-	-
S*	S*	S*	S*	-	S*	S*	S*	-	-	-	-	S*	S*	-	-
S*	V*	V*	-	-	V*	-	-	-	-	-	-	-	S*	S*	S*
S*	S*	S*	C*	C	-	S*	-	S	S	C	C	S	K*	S*	S
NP	NP	NP	C	C*	Y*	Y*	Y*	Y	C	Y	C*	Y	Y	Y*	Y
Y*	Y*	Y*	Y*	T	Y*	Y	Y*	Y*	Y	Y*	T	Y	Y*	Y	Y
-	S*	S*	-	-	S*	S	S	-	-	-	-	-	-	-	-
R	R	R	R*	R	R	R*	R*	R	R	G	R*	R	-	R*	R*
-	Y*	Y*	Y*	Y	-	-	-	Y	Y	C	Y	Y*	Y*	Y	Y
-	-	-	-	-	H*	Y*	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
-	S*	S*	G	S	S*	S	S	S*	S	G*	G*	S	S	S	S
-	Y*	Y*	NP	NP	-	-	-	Y*	Y*	Y*	T	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	M	M*	-	-	-	-	-	-	-	-	-

M*	M*	M*	M*	M*	-	M*	-	M	M	C	M	M	M*	M	M
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R*	R*	-	R*	-	-	-	-	R*	R*	R*	R*	-
R*	R*	R	R*	R*	R*	R*	R*	R*	A	-	-	R	R*	R*	R*
-	-	-	T	Y*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	C*	C	-	-	-	-	-	-	-	Y*	C	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	-	Y*	-	T*	Y*	Y*	-	Y*	Y*	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	NP	NP	-	R*	-	A*	A*	R*	-	R*	A*	R*	R*
Y	Y	Y*	-	-	Y*	-	-	-	-	T	T	-	-	-	-
-	M*	-	-	-	M*	M	A	-	-	-	-	M*	M*	M*	M*
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	R*	-
-	R*	-	-	-	A*	R	R	-	-	-	-	R*	R*	R	R*
R*	-	-	R	R*	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	-	R*	-	-	-	-	A	A	-	-	-	-
Y*	Y*	Y*	-	-	C*	Y*	C	Y*	Y*	-	-	NP	NP	C	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	W	-	NP	NP	A*	A*
low_cov	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	Y*	-	-	Y*	-	Y*	Y*	Y*	Y	-	-	-	-
M*	M*	-	-	-	-	M	M*	C*	C*	M	M	NP	NP	M*	M*
low_cov	M*	-	-	-	M*	A	A*	A*	M*	-	M*	NP	NP	M*	A*
R*	-	-	-	-	R*	R	R*	-	-	-	-	NP	NP	-	-
Y	Y*	Y*	-	Y*	Y	Y	Y	Y*	C*	Y	Y	Y*	Y*	Y*	Y*
Y*	Y*	Y*	-	-	NP	NP	NP	C*	C*	Y*	Y*	NP	NP	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	-	-	-	-	R*	R	R	G	G	-	-	-	-	R*	R
Y*	Y*	Y*	-	-	Y*	Y	Y	T*	T*	Y	Y	Y*	T*	Y*	T*
NP	NP	NP	-	-	Y	Y	C*	Y*	-	-	-	Y*	Y*	Y*	C*
T*	T*	T	T*	T*	T*	T*	T*	T*	T*	T*	T*	NP	NP	Y*	T*
R*	R*	R*	-	-	R*	A*	A*	A*	A*	R*	R	NP	NP	A*	A*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	W*	A
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	-	-	Y*	-	-	Y*	Y*	Y	Y*	Y*	Y*	T	Y
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R*	-	R*	R*	R*	R*	A	R	R	R	R*	R*	R
-	-	-	R*	R	-	-	-	-	-	R	A	-	-	R	R
R*	-	-	-	-	R	R*	R	-	-	-	-	-	-	A	R
R*	-	-	-	-	R	R	R	-	-	-	-	-	-	R*	R
-	R*	-	-	R*	-	R*	-	R*	R*	-	-	R*	R*	-	-
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	-	-	-	-	-	-	R*	-	-	-
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	-	R*	R*	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	NP	NP	R*	A
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-
Y*	N*	N*	Y	Y*	C*	H*	C	Y	Y*	Y*	Y*	Y*	H*	N*	N*

R	R*	R	R*	R	R	R	R	R	R	R	R	R	R	R
R	R	R	R	R	R*	R*	R	R*	R	R	R*	R*	A	R*	R*
Y*	Y	Y	C*	C	-	-	-	-	-	-	-	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	Y	Y*	-	-	-	-	-	-	-	Y*	Y*	-	-
-	R*	R*	NP	NP	NP	NP	NP	-	-	NP	NP	R*	-	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	-	NP	NP	NP	NP
NP	NP	NP	-	-	G	G	G*	NP	NP	K*	K*	NP	NP	K*	K
W	-	W*	-	-	T	T	T*	-	-	-	-	-	T*	W*	W
Y	Y*	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	Y*	Y*	Y*	Y
-	R*	R*	R*	R*	-	R*	R*	-	R*	R*	-	-	R*	-	R
Y*	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	Y*	Y
K*	D*	D*	-	-	-	K*	K*	K	K	-	-	K*	K*	K*	-
R*	R*	R*	-	-	-	-	-	-	-	R*	-	-	-	R*	R
G*	S*	V*	G*	G*	S*	S*	S*	S*	S*	S	S*	S*	S*	G	S*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	-	-	-	-	-	-	R*	-	-	-	R*	R
M*	M*	M*	M*	M*	M*	M*	M*	H*	M*	M	M*	M*	M*	M	M
S	V*	B*	-	S*	S*	S*	S*	-	-	S*	B*	-	-	S*	S
Y*	Y	Y	T*	Y*	Y*	T	T	Y*	Y*	-	-	-	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
K	K*	D*	K*	K*	K*	K*	K*	K*	-	K	K*	D*	K*	K*	K
-	-	R*	-	-	-	-	R*	-	-	R	R	-	-	-	-
M*	M*	M	-	M*	-	-	-	-	M*	-	-	-	M*	M*	M*
S	S	S	S	S	S	S*	S*	S*	S*	G	G*	S*	S*	S*	S*
NP	NP	NP	-	-	-	-	-	-	-	S*	-	NP	NP	-	-
R*	R*	R*	-	-	R	R	R*	R	R*	R*	R*	-	-	R*	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	G	R	R*	G	R*	R*	R	R*	G	-	-	G*	G*	R	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	Y*	Y*	Y*	-
-	Y*	-	NP	NP	Y*	Y*	-	-	Y*	Y*	C*	NP	NP	C*	C*
-	D*	D*	D*	D*	-	D*	R*	D*	R*	R	R	R*	D*	R*	R
-	R*	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	A	R*	R*	R*	R*	-	-	R	R	R*	R*	R*	R
-	-	-	NP	NP	-	Y*	Y*	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	-	-	-	-	-	Y*	-
M*	M*	M*	-	-	-	M*	-	M	M	-	-	M*	M*	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y	Y*	Y	Y	Y	Y*	Y*	-	-	Y	Y*	B*	Y*
R*	R*	R	-	-	R*	R	R*	R*	R*	-	-	R*	R*	-	-
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	-	Y*	Y*	Y	Y*	Y*	-	-	Y	Y*	Y*	Y*
-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	M	M*	NP	NP	low_cov	M	C*	M*	-	M	M*	NP	NP	M*	-
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	Y	Y*	Y	Y*
-	R*	R*	-	-	-	R*	R*	-	R*	-	-	-	R*	-	-
R	R	R	R*	R*	R	R	R	R	R*	-	-	A	R	R*	R*
low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	-
NP	NP	NP	Y*	Y*	NP	NP	NP	Y*	Y*	Y*	Y*	NP	NP	-	-
K*	K*	K*	-	-	K*	K	K	D*	K*	K	K	-	K*	K*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	-	-	-	-	-	Y*	-	-	-	-	Y*	Y*	-	-
-	-	-	-	R*	-	R*	-	R	R*	-	-	-	-	-	-
Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	T	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	R*	-	R	R	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	R*	-	S	B*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	K	-	-	-
-	H*	H*	-	-	-	-	-	-	-	Y*	-	-	Y*	-	-
-	M*	M*	-	-	-	-	-	M*	-	-	-	-	-	-	-
-	D*	-	-	-	-	-	-	R	R*	R	R	-	-	K*	-
R*	-	-	-	R*	-	-	-	R*	-	-	-	-	-	-	-
R*	R	R	R	R	R*	-	R*	-	-	R*	R*	R	R	R	R
-	Y*	Y	Y*	Y*	Y*	Y*	Y*	NP	NP	-	-	Y*	Y*	Y*	-
-	D*	D*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	-	-	R*	-	R	R	-	-	R	R*	R	R
-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	-
R*	R	R*	R*	R*	R	R	R	-	-	R	R	-	-	R*	R
K*	N*	N*	-	K*	R*	K*	-	K*	K*	K*	-	-	K*	R*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y
S*	N*	N*	S*	S*	S*	V*	S*	S*	S	S*	S	S	S	S	N*
Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y	B*	B*
R	R	R*	R*	R*	R	R*	-	R	R*	A	R*	R	R*	R	R
Y	N*	H*	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*
R*	N*	N*	R*	R*	R*	R*	R*	R*	R*	D*	R	R*	R	R*	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y*	Y*	Y	Y
Y*	H*	Y*	Y	Y*	-	-	-	Y*	Y*	-	-	Y	Y*	Y*	-
Y*	H*	Y	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y*	-	Y*	H*	Y*
Y	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	R*	R*	-	R*	-	-	R*	R*	-	-	-	-	R*	R*
Y*	N*	N*	Y	Y*	H*	Y*	Y*	Y*	Y*	H*	Y	Y	Y*	Y*	H*
Y	N*	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	B*	Y*
K*	D*	D*	K*	K*	K*	K*	K*	K	K*	K*	K*	K*	K*	K*	K*
Y	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
-	W*	W*	-	-	W*	-	W*	-	-	W*	-	-	W*	W*	W*
R	R	R	R*	R	R*	R*	R*	R*	R	R	R	R*	R*	R	R
R	V*	V*	R	R*	R	D*	D*	D*	D*	R	D*	R*	D*	D*	R
Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*
R	R	R*	R*	R*	R	R*	R*	R	R*	R*	R*	R*	R*	R*	R

K	B*	K*	K*	K*	K*	K*	K*	K*	-	K*	K*	K*	K*	K*	K*
K*	K*	K*	T	-	K*	K*	-	K*	K*	K*	K*	K*	-	K*	K*
Y*	T	Y*	Y	Y*	Y*	Y*	T*	-	-	Y*	Y*	Y*	Y*	Y*	-
R*	D*	R*	V*	R*	R*	R*	R*	R	R	R*	V*	V*	R*	R*	R*
M	M*	M*	M	M*	M	M	M*	M*	M*	M*	M	M*	M*	M*	H*
Y*	Y	N*	Y*	Y*	Y	Y*	Y*	-	Y*	Y	Y	Y	Y*	Y	Y
R*	R	R	R*	R*	R	R*	R*	R	R	R*	R*	R*	R*	R*	R*
S	N*	N*	S	S*	S	S*	S*	S*	B*	S*	S*	S*	S*	B*	S
S*	V*	N*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	-
Y*	N*	H*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	B*
Y	Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
Y*	H*	Y*	Y*	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*
R	R	R	R	R	R	R	-	R	R	R	R*	R	R	R	R
R*	N*	D*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	N*	R*
-	Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*	T	Y
Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	K*	K*	NP	NP	K*	T*	K*	K
Y	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y
Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y*	Y	Y	Y*	Y
Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*
R*	R*	R*	R	R*	R	R	R*	R*	R*	R	R	R*	R	R	R*
Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
W*	W*	W*	W*	-	W*	W	W	W*	W	W*	W	W*	-	W*	W*
R	R	R	R	R	R	R	R*	R	R*	R	R	R	R*	R	R
R	R	R	R	R	R	R*	R*	R	R	R	R	R	R*	R	R*
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
Y	Y	Y	Y*	Y	Y*	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y
S	S*	S*	S*	S*	S*	S	S*	S*	S*	S*	C	S*	S*	V*	S
Y	Y	Y*	Y	-	Y	Y	Y*	Y	Y*	T	Y*	Y*	Y*	Y*	Y
Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*
R	R	R	R	R	R	R	R	R	R*	R	R	R	R	R	R
W	W*	W*	W	W	W	W*	W	W	W	W	W	W	W*	W*	W
-	R	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R*	R	-	-	-	-	R*	R*
-	Y*	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-
R	R*	R*	-	R*	R*	-	-	-	-	-	-	R*	-	R*	R
-	H*	H*	-	Y*	-	Y*	Y*	Y*	Y*	-	-	-	-	Y*	-
R*	-	-	-	-	R*	-	-	R*	-	R*	-	R*	R*	R*	R*
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M	M	-	-	M*	M*	M*	-	M*	M*	M	M*	-	M*	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	T*	T*
R*	R	R	A*	R*	A*	R*	A*	A*	R*	R*	R*	A*	A*	R*	R*
A*	R*	A*	R*	R*	A*	A*	R*	R	R*	A*	A*	R*	A*	R*	R
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	M	M	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
NP	NP	NP	G*	G*	low_cov	G*	G*	NP	NP	NP	NP	S*	G*	G	G*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	-	-	-	-	-	-	K*	K*	-	-	-	-	K*	K*
A*	R	R	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A	A*
Y*	Y*	Y	NP	NP	-	Y*	Y*	Y*	C*	Y*	Y*	C*	Y*	Y*	-
Y	Y	Y	-	-	Y*	-	-	-	-	C	Y	-	Y*	Y*	Y
low_cov	R	R	-	-	low_cov	R	A	-	-	-	-	R*	R*	-	-
R	R	R	R	R*	R	R	R	-	-	R	R	R	R	R	R
S	S	S	S	S	S	S	S	-	S*	S	S	S	C	S*	S
-	-	-	-	-	W	W	W*	-	-	-	-	-	-	W	W
C*	Y*	H*	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	N*	H*	Y*	Y	Y	Y	H*	Y*	Y*	H*	B*	Y*	H*	Y
M	M	M	M	M	M	M	M	-	-	M	M	M	M	M*	M
Y*	-	-	-	-	Y*	Y	B*	-	-	-	-	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
-	R*	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	C*
-	R*	R*	-	-	-	-	-	R*	-	-	-	-	-	-	-
A	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	R*	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	R*	-	G*	G	-	-	NP	NP	-	-
Y*	Y*	-	Y	Y	Y	Y*	Y	-	-	Y	T	Y	Y*	Y*	Y
R	R*	R*	R*	R	R*	R*	R	-	-	R	G*	R	R*	R*	R
-	-	S*	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y	Y	-	Y*	Y	-	-	Y	C	Y	Y*	C	Y
-	-	-	-	-	-	-	-	-	-	-	-	M	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	A	A*	A*	A*	NP	NP	NP	A*	R*	A*	A*	A*	A*	A*	R*
R	R*	R	R*	R	R	R	R	R*	A	R*	R	R*	R*	R*	R*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	C
-	-	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	-	R*	low_cov	A	R*	R*	R*	R*	R*	-	R*	A*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	M*	-	M*	-
-	R*	-	R*	R*	-	-	R*	-	-	R*	R*	-	R*	R*	R*
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	M*	M*	-	-	-	M*	-	-	-	-	-	-	-	-	-
A	R*	A	A*	R	R	A	R*	NP	NP	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y	Y*	Y	Y*	-	-	NP	NP	-	Y*
Y*	Y*	Y*	C	-	Y*	C	C*	NP	NP	-	-	-	-	-	-
Y	Y*	Y*	Y	Y*	Y*	Y	T*	T*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	D*	N*	K*	D*	K*	D*	K*	K*	D*	D*	K*	K	D*	D*	D*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	-	Y	Y	Y*	Y	Y	-	-	Y*	-	-	-

R*	V*	R*	R	R	R	R	R	R*	R	R	R	R	R*	R*
Y*	H*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y*
R*	R	R	G	G	R	R	R	R*	R	R*	-	R	R	R	R*
-	low_cov	-	NP	NP	-	-	Y*	NP	NP	-	-	-	-	-	-
R*	R	R*	R*	R	R	R	R	R	R	-	-	-	-	-	-
-	Y*	Y*	-	Y*	-	Y*	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	R*	-	-	R	R	R	R	R	-	-	-	-	R*	R
R	G	R*	R*	R	G	R*	G	R*	R*	R*	G*	G	G*	R*	R*
NP	NP	NP	S	S	G	G*	G*	S*	G*	S*	S*	NP	NP	G*	G*
low_cov	C	C	-	Y*	C*	Y*	Y*	Y*	Y*	Y	Y*	NP	NP	Y*	Y
R*	R	R*	-	R*	R*	-	R*	-	-	-	-	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	M*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
K*	K*	K*	K*	K	K*	K*	-	K*	K*	-	-	K*	-	NP	NP
R	R	R	R	R	R	R	R	R	R	-	-	R	R	R	R
-	-	-	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y	-	-	-	-	-	-
S*	Y*	-	-	Y*	S*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y	Y*	Y
S	S	S	S	S	S	S*	-	S	S	C*	C*	S	S*	S*	S
NP	NP	NP	NP	NP	NP	NP	NP	K*	-	NP	NP	NP	NP	G*	G*
NP	NP	NP	-	-	-	-	R*	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
low_cov	C*	Y*	C*	C*	NP	NP	NP	-	-	NP	NP	NP	NP	Y*	Y*
R	R	R	G	R*	G	R	R*	R*	R*	R	R	R*	R*	R	R
R	R	R	R	R	R	R	R	R*	G	G	R	R	G	R	R
N*	N*	N*	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R*	V*	D*
Y*	H*	H*	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	-
A	R	R	A	R*	R*	A	A	R*	A*	A	A	A	A	R*	R
S*	S	S	-	S*	C	S*	S	C	S*	S*	S*	C	C	S*	S
R	R*	R	R*	R	R	R	R	R	R	R	G	G	R	R*	R
low_cov	M	M	M*	M*	M*	M	C	M	C	M	C	M	M*	M*	M
Y	N*	N*	-	Y*	Y	H*	Y*	Y	Y*	Y	Y*	Y*	H*	H*	Y*
S*	S	S	G	G	S*	S	G	-	-	S	S*	S*	S*	S*	-
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
W	W	W	W*	W*	W	T	T	W*	W*	T	W*	W	W*	W*	T
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y	Y	NP	NP	NP	NP	NP	-	-	Y*	-	NP	NP	NP	NP
-	R*	R*	-	-	-	-	-	-	-	-	R*	-	-	D*	-
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
R*	V*	V*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
R	R*	R*	R*	R*	R	R	R	R	R	R	R	R	R	R*	R*

low_cov	Y*	Y*	NP	NP	low_cov	C*	C*	NP	NP	NP	NP	NP	NP	C*	C*
R*	R	R	R*	R*	R	R	R	R	R	R*	-	R	R*	R	R
M	M	M	M	C	M	M	C	M	M	M*	M*	M	M	M*	H*
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
Y*	Y*	H*	-	-	-	Y*	Y*	Y	Y	-	-	Y	Y	Y*	-
-	R*	R*	-	-	R*	R*	R	-	-	-	-	-	-	R	R
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y	Y*	Y*	-	-	-	-	-	-	Y	Y
-	R*	R*	-	-	-	R*	R	-	-	-	-	-	-	R	R
NP	NP	NP	-	-	-	M*	M*	-	-	NP	NP	NP	NP	M*	C
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	R*	-
NP	NP	NP	-	-	low_cov	C*	C*	NP	NP	NP	NP	NP	NP	NP	NP
-	R*	R*	-	-	R*	R*	D*	R*	R	-	R*	R*	R*	R*	R*
-	-	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
Y*	Y	Y	T*	T	T	T	Y*	Y*	T*	Y*	Y*	Y*	T	T	T
-	Y*	Y*	-	-	-	-	-	-	Y*	-	-	-	-	-	-
-	H*	H*	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-
-	V*	V*	-	S*	-	S*	-	-	S*	-	S*	B*	-	Y*	-
low_cov	H*	H*	Y*	T*	M*	Y*	Y	NP	NP	H*	H*	Y*	Y*	H*	-
Y*	Y	H*	-	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	Y*	-
-	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	-	R*	R*
Y*	-	W*	-	-	Y	Y*	Y	-	-	-	-	-	-	-	-
-	S	S	S*	C	S*	-	S*	S*	S*	S*	C	S*	S*	S*	S*
-	-	-	-	R*	-	-	-	-	-	-	-	R	R*	-	-
-	V*	R*	R	R	-	R*	R*	-	-	-	-	R*	R*	R*	-
Y	-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
low_cov	R	R	-	-	low_cov	R	A*	A*	A*	-	-	R*	R*	-	-
K	K	K	K*	K*	K	K*	G	K*	K*	K	K	K*	G	K*	K*
Y	-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	T	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y	Y*	Y*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
K	K	K	G	G	K*	K	K*	-	-	K	K*	K	K	K	K*
W	W*	W*	-	W*	W*	-	-	-	-	-	-	W*	W*	-	-
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y*	-	Y*	Y*	Y	C	-	-	Y	C	Y	Y*	Y*	Y
K	K	K	K	K	K	K	K	K	K*	K*	K*	K*	K*	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	M*	-	M*	M*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	V*	R*	R	R	R	R	R	A	R	R	R	R	R	R*	R
low_cov	Y*	-	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP	-	-
-	R*	-	-	-	-	R*	-	R*	G	-	-	-	-	-	-
S*	-	S*	-	K*	-	-	-	-	-	-	K*	-	-	S*	C
G*	R	R*	V*	R*	R*	R*	V*	V*	R*	R*	R*	V*	R*	R*	R*
-	R*	R*	-	-	-	R*	R*	R*	-	-	-	-	R*	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
W*	W	W*	W*	W*	W*	W*	W*	W	W*	W*	W*	W*	W*	W*	W*
-	D*	D*	R*	-	-	-	R*	R*	D*	R*	D*	R*	D*	D*	D*

Y*	Y	Y	Y*	-	Y*	Y	Y*	Y	Y*	Y	Y*	Y	Y*	Y*	Y*
-	H*	Y*	Y*	-	-	-	Y*	-	Y*	-	-	-	Y*	-	-
low_cov	R*	R*	R*	R*	-	R*	R*	A	R*	R*	A	R*	-	R*	R
R*	R	R	R	R	-	R*	R*	R	R	R*	R*	R	R	-	R
-	W*	W*	W	W	-	-	D*	W*	-	W	W	-	W*	W*	W*
Y*	Y*	Y*	Y*	Y	-	-	-	Y	Y	Y*	Y	NP	NP	Y*	Y*
-	R	R	R	R	-	R*	R*	R*	S*	R	A	R*	R*	V*	R*
-	Y*	Y*	Y	Y	-	-	Y*	-	-	T	Y	-	-	-	Y*
-	R*	R*	-	-	-	-	-	-	-	NP	NP	R*	R*	NP	NP
Y	Y*	-	Y*	Y	T	Y*	T	-	-	-	-	-	-	-	-
M	M	M*	M	M	M	M	M*	-	M*	-	M*	M*	M*	M*	-
-	Y*	Y*	-	-	Y	Y	Y	Y	Y	Y*	Y*	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
T*	W	W	W	W	T*	W	W*	W	W*	W*	T*	T	T	W*	W*
A	R	N*	R*	R*	R*	A	A	R*	R*	R*	A	A	R*	A	A
M*	M*	M*	-	-	C	M*	C	M*	M*	-	-	M*	M	-	M
Y	H*	H*	Y	Y	Y	Y	Y	-	Y*	Y	Y*	Y	Y	Y*	Y*
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	Y*	-	-	-	-	-
G	R	R*	R*	G*	G	G	R*	R*	G*	-	R*	G	G	R	R
C*	C*	C*	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	Y*	C*
low_cov	Y*	Y*	-	-	-	Y*	-	T*	T	-	-	-	-	T*	T
R	R*	R*	-	-	R	R	R	-	-	R	R*	-	-	-	-
Y*	Y*	Y*	Y*	C*	C*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	R*	G	G*	R	G	R*	R	-	R*	R*	NP	NP	R*	R*
K	K	K	K	K	K	K	K*	K	K*	K	K	K*	K*	K*	K*
low_cov	Y*	C*	C*	Y*	Y*	Y*	C*	Y	Y*	C	C*	C*	Y*	C*	C*
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	Y*	Y*	-	-
-	Y*	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	-	Y*	-	-	Y*	Y*	Y*	Y	-	Y*	Y*	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R*	-	-	R*	-	R*	R*	-	R	-	-	R*	-
-	R*	R*	-	-	-	R*	-	R	R*	-	-	-	-	R*	-
-	S*	S*	-	-	-	-	-	-	-	-	-	S*	S*	-	-
Y*	Y*	H*	Y	Y	Y	Y	Y	Y*	-	Y	Y	Y	Y*	Y*	Y*
-	M*	M*	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	R*	R*	NP	NP	-	-	-	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	Y*	NP	NP	-	-
R*	-	R*	R	R	R	-	-	-	-	R*	R	NP	NP	R*	R
-	H*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	R	R*	R	-	-	R	R	R	-	-	-
C*	C*	C*	Y*	Y*	C	C*	-	C	C*	-	-	NP	NP	C*	C*
R*	R*	G	R	G	R	R*	G	G*	G*	R	R	R*	R*	R*	R*
-	H*	H*	-	Y*	Y*	-	-	-	-	-	Y*	-	-	Y*	Y*
-	R*	R*	R*	R*	-	R	R	-	-	-	-	-	R*	R*	R*
-	K*	K*	-	-	-	K*	-	K*	K*	-	-	NP	NP	D*	K*
K*	G	G	K	K	G	G	K*	K*	K*	K*	K	K	G	G*	G*
R*	R*	R	R*	R*	R	R*	R*	R*	R*	R*	R	R	R*	R*	R

NP	NP	NP	NP	NP	-	-	T*	Y*	T*	Y*	Y*	NP	NP	NP	NP
Y*	Y*	-	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y	T
-	Y*	Y*	Y*	-	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	T*	Y*	T*
R*	R*	R*	-	R*	R*	R*	R*	R*	R*	-	R*	R	R*	-	R
C*	Y	Y	C*	C*	C	Y*	Y*	Y*	C*	Y*	C*	C*	Y*	Y*	C*
low_cov	R*	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	-	A	R*
-	H*	H*	M*	M*	-	-	-	-	-	M*	-	-	-	M*	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R	R*	-	R*	-	-	-	-	-	-	-	-	-
-	-	W*	-	-	-	-	-	W*	-	-	-	-	-	W*	-
Y*	Y*	Y*	Y	Y*	-	Y*	-	-	-	-	-	-	-	-	-
Y*	Y*	H*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	Y	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	-	-
C*	B*	S*	S*	S	S*	S	S	C	C	S*	S*	S*	S	S*	S*
Y	Y	Y	Y*	Y*	-	Y*	Y	Y*	Y*	Y*	Y*	T	T	Y*	T
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
Y	C	Y	Y*	C	Y	Y*	-	C*	Y*	Y*	C	Y*	Y*	Y*	-
-	R*	-	-	-	-	-	R*	-	R*	-	-	-	-	R	R
-	H*	Y*	Y*	Y*	Y*	Y	C	Y*	Y*	Y*	Y*	Y	Y	Y*	Y
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
Y	Y*	T*	T*	T	Y*	Y*	-	T	T	Y	Y	Y	Y*	Y*	Y*
K	K	K	K*	K	G	K*	K	K	K	K	K	G	K	K	K
-	V*	M*	M*	M*	-	M*	-	M*	M*	M*	M*	-	M*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
R*	-	-	-	-	R*	R	R*	-	-	-	-	G	R*	R	G
R*	R*	R*	A*	R	R*	R*	R*	R	R	R	R*	R*	R	R*	-
Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*
low_cov	M*	M	M*	M*	C*	C*	C*	M*	M*	M*	C*	NP	NP	M*	M*
low_cov	Y	Y	Y*	Y*	Y*	C*	C*	Y*	Y*	Y*	Y*	NP	NP	Y*	Y*
G*	K*	K*	K*	G*	NP	NP	NP	NP	NP	K*	K*	K*	K*	K*	K*
low_cov	R	R*	R*	R*	low_cov	R*	G*	NP	NP	G*	R*	-	R*	-	R*
R*	V*	V*	R*	R*	R	R*	R*	R	R*	R	R	R*	R*	R*	R*
S*	V*	N*	S*	S*	S*	B*	B*	S	S	B*	S	S	B*	V*	S*
-	S*	S*	-	S*	-	V*	-	R*	-	-	-	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*
M*	M	M	-	-	M*	M*	M*	M	M	M	M*	M	M	M*	-
Y*	Y	Y*	-	Y*	Y	Y*	Y*	Y	Y*	Y*	Y	Y*	Y*	-	-
R*	R	R	-	R*	R*	-	R*	R	R*	R	R	R	R*	-	-
-	W	W	-	-	W*	W*	W*	W	W	W	W	W*	W*	-	-
Y*	Y*	Y*	-	-	Y*	-	Y*	Y	Y	Y	Y*	Y*	-	Y*	-
Y*	Y	C	Y*	B*	Y*	Y*	H*	C*	Y*	B*	Y*	Y*	Y*	Y*	H*
T*	T	T	T*	T*	T*	T*	T*	T*	W*	T*	T*	T	T*	W*	T*
A*	A	A*	A*	R*	A*	A*	A*	A*	R*	A*	R*	A*	A*	R*	A*
G*	K*	K	G*	K*	G*	K*	R*	K*	G	K*	K*	K*	K*	G*	G*
R	A*	A	R	R*	R*	R	R*	A*	A*	A*	A*	R	R*	-	-
NP	NP	NP	M	M	low_cov	M*	M*	M*	M*	C	C*	NP	NP	-	-

R	R	R	R	R	R	R	R	R	R	R	A*	R	R*	R*	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	low_cov	-	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y
NP	NP	NP	Y*	Y*	low_cov	-	Y*	Y	-	C*	C*	NP	NP	-	-
low_cov	C	C*	NP	NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	C*	C*
Y*	Y*	Y*	-	-	-	Y*	-	Y	Y	-	-	-	Y*	-	-
low_cov	A*	A*	A*	A*	low_cov	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
R*	R	R*	R*	A*	R*	R	R*	R*	R*	-	-	A*	A*	-	-
T*	Y*	Y*	NP	NP	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	-	R*	-	R*	R*	R	R*	R*	R*	-	-
Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	Y*	Y*	NP	NP	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	R*	R*	R*	-	-	-	R	R	-	R*	R	R
R*	R*	R	R	R*	R	R*	-	R*	R*	G	G*	NP	NP	-	-
C*	C*	C*	C*	C*	C*	C*	C*	Y*	C*	C*	C*	C*	C*	C*	C*
M*	-	-	-	-	M	M*	M	-	-	-	-	M	M	-	-
G*	G*	G*	K*	G*	G	G*	G	K*	G*	G*	G*	G*	G*	K*	G*
-	R*	R*	-	-	-	R*	-	R	R	-	-	R*	-	R*	R*
W*	W*	-	-	-	-	-	-	M*	-	-	-	-	-	W*	-
D*	R*	R*	-	R*	R	R	R	-	R*	-	-	R	R	-	M*
-	-	-	-	-	R*	R	R*	-	-	-	-	R	R*	-	-
Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-
S*	-	-	S*	S*	-	-	-	-	S*	-	-	S*	S	S*	S*
R*	R*	-	-	-	R	R	R*	-	-	-	-	R	G	-	-
-	K*	-	K	K	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R	R	R*	R*
NP	NP	NP	Y*	T	T	Y*	Y*	Y*	T*	Y*	Y*	Y*	T*	Y*	Y*
-	Y*	Y*	-	-	Y*	-	Y*	-	-	-	-	Y*	Y*	-	-
R*	-	-	-	-	R	R	R	-	-	-	-	R	R	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
T*	T*	T*	T*	T*	Y*	Y*	T*	T*	Y*	T*	Y*	T*	Y*	Y*	Y*
S*	S	S	S	S	S*	S	S	S	S	S	S	S*	S*	S*	S*
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*
Y*	C*	Y*	C*	Y*	Y*	Y*	C*	Y*	C*	Y*	Y*	C*	Y*	Y	Y*
-	K*	K*	-	-	-	-	-	-	-	K	K	-	-	-	-
R*	-	-	-	-	R*	R	G*	-	-	-	-	G*	G	-	-
T*	K	T	K*	K*	T*	K*	T*	K*	K*	K*	K*	K*	K*	K*	T
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
-	-	-	-	-	R*	R	R*	-	-	-	-	R	R*	-	-
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	Y	Y	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-
NP	NP	NP	NP	NP	T*	T*	Y*	NP	NP	T*	T*	NP	NP	T*	T*
-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
R*	R*	R*	G*	G*	G*	R*	G*	G*	G*	G*	G*	R*	G*	R*	G*
-	-	-	-	-	-	-	-	-	Y*	-	-	Y	Y	-	-

R	R*	R*	R	R	R	R	R	R*	R	R	R	-	-	-	-
Y	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	Y*	-
NP	NP	NP	-	-	low_cov	R*	R	-	-	-	-	-	-	-	-
R*	R	R*	R	R	R*	R	R	R	R*	R	R	R	R*	R*	R
-	R*	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
Y	N*	N*	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y*	H*	H*
-	Y*	-	-	-	Y	Y	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	N*	H*	Y	Y	Y	Y	Y*	Y	Y*	H*	Y*	Y	Y	Y*	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	NP	NP	-	R*	R*	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	Y	Y	-	-	-	Y*
A*	low_cov	A*	NP	NP	A	A*	A*	A*	A*	A*	A*	NP	NP	W*	A*
-	M*	-	-	-	-	-	-	-	S*	-	-	-	-	S*	-
-	N*	H*	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	V*	M*	-	S*	-	B*	-	S*	S*	-	S*	-	S*	B*	-
Y*	Y*	Y*	-	Y*	Y	Y	Y	Y*	Y*	-	-	-	Y*	-	-
M*	-	-	-	-	M*	A	A	NP	NP	M*	A	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	N*	N*	-	-	-	R*	-	-	R*	-	-	-	R*	R*	R*
-	W*	W*	-	-	-	-	-	-	-	Y	Y	-	-	-	-
R*	R	R	R*	R*	R*	R	R	-	R*	R*	R*	R*	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M*	-	-	-	M	M*	M	Y*	-	-	-	-	-	Y*	-
W*	W	W	-	-	W	W	W*	W	W	-	-	W*	-	-	-
R*	R*	R*	-	-	-	R*	-	R	R	-	-	R	R*	R*	-
-	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
Y	H*	H*	H*	H*	Y	H*	Y	Y	N*	H*	Y*	H*	H*	Y*	B*
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
R*	R	R	-	R*	-	R*	-	G	R*	R	R	R	R	R	R
low_cov	low_cov	A*	-	-	-	R*	-	A*	R*	R	R	NP	NP	R*	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M	M*	M*	M*	M*	M*	C*	C*	M	-	-	NP	NP	M*	M*
-	-	-	-	-	-	-	Y*	-	-	-	-	S*	-	-	-
-	Y*	Y*	-	Y*	Y	Y	Y*	Y	Y*	-	-	T	T*	-	-
Y*	Y	Y	Y*	Y*	Y	Y	C	Y	C*	-	-	C	C	Y*	Y*
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	W*	-	-	-
NP	NP	NP	C*	S*	C	S*	C*	S*	C*	-	-	C*	C*	C	S*
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
Y*	Y	Y	T	Y	Y	T	T	Y*	T	Y*	Y*	T	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP
Y*	Y*	Y*	Y*	T*	-	Y*	Y*	Y*	Y*	-	-	-	-	Y*	T*
NP	NP	NP	Y*	Y*	Y	T	Y*	Y*	Y*	-	-	NP	NP	Y*	Y*
R*	R	R*	R	R*	R	R*	R*	R*	R*	R*	-	R*	R*	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*
NP	NP	NP	NP	NP	A*	A*	A*	NP	NP	A*	A*	NP	NP	W*	A*
Y*	-	-	-	-	-	Y*	Y	-	-	-	-	-	-	-	-

M*	-	-	M	M*	M	A	-	NP	NP	M*	M*	M	M*	M*	A
Y*	W*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-
NP	NP	NP	NP	NP	low_cov	M*	M*	M*	M*	NP	NP	NP	NP	M*	M*
NP	NP	NP	-	-	low_cov	-	-	-	-	R	R*	NP	NP	-	-
low_cov	-	-	-	Y*	Y*	-	-	-	-	-	-	NP	NP	-	-
Y	Y	Y*	Y	Y	T	Y	Y*	Y	Y	Y*	Y	-	Y*	Y	Y*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
K*	-	-	K*	K	K	K	T*	-	-	-	-	K*	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	R*	-	-	R*	R
R*	R*	R*	-	K*	R*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	T	T	-	-	K*	K*
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	S*	S*	-	-	S*	S
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	C*	C*	C*	C*	C	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M	A*	A*	A*	A*	M	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
K*	D*	D*	-	-	K	K*	K	-	-	-	-	-	-	-	K*
Y	-	Y*	-	-	Y*	Y*	-	Y	Y	-	-	-	Y*	Y*	Y
-	R	R*	R	R	-	R	-	R	R	R*	-	R*	R*	R*	-
R	R	R	R*	-	R	R*	R	-	-	R	R	R	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	-	-	-
R	R	R	R*	R	R	R	R	R	R	R*	R*	R*	R	R*	R
R	G	R	R*	R*	R	R	R	R	R	R*	K*	R*	G	R*	R*
R	R	R	G*	G	R	R	R	R	R	G*	G*	G*	G*	R*	R*
R	R*	R*	R*	R	R	R*	R	-	-	A*	A*	-	R*	R*	R
Y	H*	H*	Y*	Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y
-	R*	R*	-	R*	-	R*	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
R*	low_cov	R*	G	R*	G	R	G	G*	G	R	R*	NP	NP	-	-
low_cov	low_cov	R*	R*	R*	low_cov	R*	R*	NP	NP	R*	R*	NP	NP	R*	-
-	-	R*	-	-	-	-	-	-	-	R	R	-	R*	R*	-
NP	NP	NP	-	R*	NP	NP	NP	-	-	-	-	NP	NP	-	-
Y*	Y*	Y*	Y	Y	Y*	Y*	-	Y*	Y	Y	Y*	-	Y*	-	-
NP	NP	NP	R*	R	-	R	R	R	R*	R	R	NP	NP	-	-
R	R*	R	R	R	R	R	R	R	R	R	R	R	R	R*	R*
R	R*	R*	R	R	R*	R	R	R	R	R	R	R*	R	R*	R*
R	R	R	R*	R*	R*	R*	R*	R*	R*	R	R*	R*	A*	-	R*
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	R*	R
Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	T	T	-	-
S*	-	-	-	-	S*	-	-	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
R*	R	R	R	R	R*	R*	-	R	R	R	R	R*	-	R*	R
R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	N*	H*	Y*	H*	-	Y*	-	Y*	H*	Y*	Y*	S*	-	Y	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
M*	M	M	NP	NP	-	-	-	M*	-	M*	M*	M*	-	C	M*

-	R*	R*	-	R*	R*	R	R	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
S*	S	S	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	-	Y*	Y*	C*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*
Y*	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	Y*	Y*	Y*	Y*	M*	Y*	Y*	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	M*	B*	B*	-	S*	-	-	-	-	Y*	Y
W	W*	W	W*	-	W	W	T	W*	W*	W	W*	W*	W*	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	D*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*	K
-	-	-	-	-	K*	K*	K*	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	Y	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	Y	Y	NP	NP	Y	Y*	-	-	Y*	Y
Y*	H*	Y*	Y*	Y*	Y	Y	Y	Y*	Y*	-	-	-	Y*	Y*	Y
-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y	Y*	-	-	Y	Y
NP	NP	NP	NP	NP	low_cov	Y*	Y*	Y*	Y*	NP	NP	NP	NP	Y*	Y*
-	R*	K*	-	-	-	-	-	R*	-	-	-	R	R*	K*	-
-	Y*	Y*	-	Y*	S*	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	-	Y*	Y	Y
-	-	-	-	-	Y*	-	Y	-	-	Y*	Y*	-	-	Y*	Y*
low_cov	W*	W*	-	-	low_cov	W*	-	-	-	-	-	W*	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	M	M	-	-	-	-
-	-	-	Y	Y	Y*	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	S*	S	S	S*	C	S*	S*	S*	-	-	S	C	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
NP	NP	NP	-	-	M*	-	-	-	-	-	-	NP	NP	-	-
A*	R	R	A*	R*	R*	R	R	R*	R*	-	-	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	-	-	-	-	-	K	-	T*	T	-	-	-	-	-	K
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	M*	V*	M*	M*	M*	-	-	-	NP	NP	-	M*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	R*	R	R*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*
-	Y	Y*	Y	Y	Y	Y*	-	Y	T	Y	Y*	-	Y	Y*	T
-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-

-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R	R*	R*	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	R*	R	R	R*	-	-	-	R*	-	R*	-
R*	R	R	-	R*	R*	R	R	R	R*	G	R	R	R*	-	-
R	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
Y	Y	Y*	-	-	Y*	Y*	-	Y	Y	-	-	NP	NP	Y*	Y
-	low_cov	-	NP	NP	-	-	-	R	R*	-	-	-	-	G	G
M*	-	-	-	-	M*	M*	M*	M	M*	-	-	-	-	M*	M
Y*	-	-	-	-	-	Y*	Y*	Y	Y*	-	-	NP	NP	Y*	Y
NP	NP	NP	-	-	-	K*	-	K	K	-	-	NP	NP	-	-
R*	-	-	-	-	R*	R*	R*	R	A	-	-	-	-	-	R
C*	C	C*	C*	C*	C*	C*	C*	C*	C*	Y*	C*	Y*	C*	Y*	Y*
K*	-	-	-	-	K*	K*	-	K	K*	-	-	-	-	K	K
Y	Y	Y	C*	C*	Y	Y	Y	Y	Y	C*	C*	C	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
W	W	W	-	-	W*	W	W	T*	W	W	T*	-	-	W*	W
-	-	-	R	R	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	Y*	Y*	Y*	Y*	-	-
W*	H*	W*	W*	H*	W*	W*	H*	W*	H*	H*	W*	H*	W*	W	H*
-	H*	Y*	-	-	-	Y*	-	-	-	Y	Y	Y*	Y*	Y	Y*
K*	K*	D*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
NP	NP	NP	Y	Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y
-	D*	D*	-	K*	-	K*	-	-	K*	-	K*	-	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	R*	-	-	-	-	-	-	R*	-
S	S	S	S*	S*	V*	S*	S*	S*	S	S	S*	S*	S*	S*	V*
K*	D*	D*	-	K*	K*	K*	K*	K	K*	K*	K*	-	K*	K*	K*
W	H*	W*	W*	W	W	W*	W*	W*	H*	W	W	W*	W*	N*	W
-	K*	K*	K*	K*	-	K*	K*	K*	K*	K*	-	K*	K*	-	K*
-	-	Y*	-	Y*	-	-	-	Y*	-	Y*	-	-	-	-	Y*
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	D*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	-	-	-	-	S*	-	S*	S*	-	-	-
-	R*	R*	R	R	-	R*	-	-	R*	R*	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	K	K	-	-	-	-
Y	Y*	Y*	Y*	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	-	S*	S*	S*	NP	NP	C*	C	S*	S*	S*	-
Y*	Y	Y*	Y*	C*	Y*	Y*	C*	C*	C*	C*	C*	C*	C*	Y*	Y*
-	-	-	-	-	-	S*	S	-	-	-	-	-	-	-	-
R	R	A	R	R*	R*	R	R*	R	R*	R*	R*	R*	R*	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	R*	R*
M	M	M	M	M	M	M	M	C	M*	C*	C*	M*	M*	M*	M
Y*	Y*	-	Y*	Y*	Y*	Y*	Y	NP	NP	Y*	Y*	Y	Y*	Y*	Y
Y	Y	Y	-	Y*	Y	Y	Y*	Y*	-	Y*	Y*	Y	Y	Y*	Y
-	R*	R*	-	-	-	-	-	R*	R*	-	-	-	-	-	-
-	R*	R*	G*	G	-	-	-	R*	R	R*	R*	R*	R*	R*	R

C*	C*	C*	C*	C*	C*	C	C*	S	C	S*	S*	C*	C*	S*	C*
-	R*	R*	-	-	-	R*	-	R	R	R*	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	K*	K	-	-	-	-
-	M*	M*	M	M*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	Y*	low_cov	-	-	-	-	NP	NP	-	-	C*	C*
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	Y*	Y*	Y*	Y*	Y*	B*	Y*	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	-	G	R	R*	G	-	-	R*	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y	-	Y*	-	Y	Y	-	-	Y	Y*	Y	Y
-	M*	S*	Y	Y	-	Y	-	Y*	Y*	-	-	Y*	Y*	Y*	Y
-	R*	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
R*	R*	R*	R	R*	R*	R*	R	-	-	R*	R	R*	R*	R*	R*
-	Y*	-	-	-	low_cov	-	-	-	-	Y*	Y*	-	-	Y*	Y*
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	B*	Y*	-	Y*	Y*
G*	R*	R*	R*	R*	G*	R*	G*	R*	R*	G*	R*	R*	R*	R*	R*
low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	Y*	Y*	Y	Y*	-	Y*	-	NP	NP	Y*	Y*
-	N*	N*	Y	Y	-	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	-
Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y*	Y*	-
C*	Y*	Y*	Y	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*	C	Y*	-	-
NP	NP	NP	-	-	low_cov	-	R*	NP	NP	NP	NP	NP	NP	R*	R*
NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
K	K*	K	-	K*	K*	-	-	-	K*	K	K	-	K*	-	-
Y*	Y	Y	-	Y*	T	Y*	Y	Y*	Y*	Y*	Y*	T*	T*	B*	Y
R	R*	R*	-	R*	R	-	-	-	R*	R	R	-	R*	-	-
-	H*	H*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	-	Y*	-
-	-	Y*	-	-	Y*	Y	Y	Y	Y	-	-	-	-	-	-
Y*	H*	-	-	-	Y*	Y*	Y	Y	Y	-	-	-	-	-	-
G*	S*	S	S	S	S*	S*	S*	S*	S*	S*	S*	S	S*	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
Y	Y	Y*	Y*	Y	Y	T	Y*	Y	Y*	Y	Y*	Y	-	T	Y*
NP	NP	NP	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	K	K*	-	-	K*	K*	T	-	-	-	-	-	K*	-	-
-	-	-	Y	Y	-	Y	-	Y	Y	-	-	Y*	-	-	-
R	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	R*	R*	low_cov	G	G*	-	R*	G*	G*	NP	NP	G*	R*
-	Y*	-	-	Y*	-	Y*	-	-	Y*	Y*	Y*	Y*	Y*	-	-
R	R	R	R*	R	R	R	R*	R*	R	R*	R*	-	-	R*	A*
R*	R	R	R	R	R*	R*	R*	R	R	R*	-	R	R*	-	R*
-	-	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	H*	N*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	Y*	Y*	-	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	-
Y*	H*	H*	Y	Y	T	Y	Y	T	Y	Y	Y	T	T	H*	Y
-	N*	N*	-	-	-	S*	-	R*	R*	R*	-	R*	-	-	-
Y	Y	Y	Y	Y	Y*	Y*	Y*	-	-	Y	Y	Y*	Y*	-	-

NP	NP	NP	-	-	-	R*	R*	R*	-	R*	R*	NP	NP	-	-
-	R*	-	-	-	-	-	-	-	R*	-	-	-	-	R*	R
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y*	Y*	-	-	-	-	-	Y	Y	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R*	-	R*	-	-	R	R	R*	R*	-	-
R*	R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	Y	Y	Y*	N*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*
S*	N*	S	S*	S*	S*	S*	S*	S*	S*	S*	-	S	S	S*	S*
C*	S*	S*	S*	S*	C*	S*	S*	S*	S*	S*	S*	S*	C*	C*	S*
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	-	R*	R*	R*	R*	-	R*	R*	R*	R	R*	R*	-
-	R	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	Y	Y	T*	Y*	Y*	Y
NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP	NP	NP
K*	K	K*	-	-	-	-	K*	-	-	K	K	G	G*	K	K
-	S*	S*	-	S*	S*	-	S*	-	-	-	-	-	S*	S*	-
-	V*	S*	S	S*	-	S*	B*	-	-	Y*	-	-	-	S*	-
-	Y*	Y*	Y	Y*	-	-	-	-	Y*	-	-	-	-	-	-
-	-	W*	W*	W	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	S*	-	S*	-	-	-	S	S	S*	-	-	-
Y*	Y*	Y*	-	Y*	Y	T	T	Y*	Y*	Y*	-	NP	NP	Y*	Y*
C	Y	Y*	Y	Y	Y*	Y	Y*	Y	Y*	C*	C*	Y	Y	Y*	Y*
-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	R*	-	-	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	-	-	R*	-	-	-	G	R
K*	K*	K*	-	K*	K*	K*	-	-	-	-	-	-	K*	-	-
-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	K*	-
-	R*	R*	R*	R*	-	-	R*	-	-	-	-	-	-	R*	-
-	-	-	W	W	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	Y*	-	Y*	-	Y	Y	-	-	-	-	Y*	Y*
-	-	-	-	-	-	R*	-	-	R*	-	-	-	-	-	-
low_cov	-	-	NP	NP	low_cov	-	-	-	-	NP	NP	-	-	-	-
-	Y*	Y*	-	-	-	Y*	H*	M*	H*	Y*	-	Y*	Y*	M*	-
-	K*	-	-	-	-	-	-	K*	K	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	H*	H*	-	-	Y*	Y	Y	-	Y*	-	-	Y	Y*	B*	Y
-	K*	K*	-	-	-	-	K*	-	-	-	-	-	-	-	-
S*	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	R*	R	-	R	R*	-	-	R*	R*	R*	R*
R*	R*	R*	R	R	R*	-	-	-	-	-	-	-	-	R*	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	-	-	-	-	-	-	Y*	-	-	-	Y*	-	-
low_cov	R*	R*	R*	R*	R*	A*	A*	R*	R*	-	-	-	-	A*	A*
R	R	R*	R*	R*	R	R*	R*	R	A	-	-	R*	-	A	R
Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	H*	C
low_cov	S*	S*	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	low_cov	-	-	-	-	-	Y	NP	NP	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	M	M*	-	M*	NP	NP	NP	-	-	-	-	NP	NP	A	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	-	R*	R	R	R	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	-	-	-	-	-
low_cov	C	Y	NP	NP	NP	NP	NP	Y*	Y*	-	-	NP	NP	NP	NP
C*	S*	S*	S*	C*	C*	S*	C*	S*	C*	S*	S*	C	C	S*	C*
-	-	-	NP	NP	-	-	-	NP	NP	-	-	NP	NP	Y*	Y*
-	low_cov	-	-	W*	W*	W*	W*	W*	W*	W*	W*	NP	NP	W*	W*
R*	R*	-	R	R	R*	R	R*	R*	R	R*	R*	-	-	R*	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	Y*	Y*	Y*	Y	Y*	-	Y*	Y*	Y*	-	-	Y*	-
M	M	M	M	M	M*	M	M	M	M	M*	C*	-	-	M*	M
R*	R*	R*	-	R*	R*	R*	-	-	-	R	R	R*	R*	V*	-
Y*	Y	Y	-	Y*	Y*	-	-	-	Y*	Y	Y	Y*	Y*	Y*	Y*
Y	H*	Y*	Y*	Y*	Y	Y*	-	-	-	Y	Y	Y*	Y*	Y*	Y*
M	M	M	A*	M	M	M	M	M*	M*	A*	A*	M*	M*	M	M
R*	R	R*	R	R	R	R	A	R	R	R*	A	-	-	R*	R
NP	NP	NP	G*	G*	low_cov	G*	G*	G*	G*	NP	NP	NP	NP	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C	C	Y	C*	C*	NP	NP	NP	C*	C*	C*	C*	Y*	-	Y*	Y
NP	NP	NP	-	-	-	M	M*	-	-	M	C	NP	NP	-	-
R*	-	-	R	R	R	R	-	R	R*	-	-	-	-	R*	R
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	K	K	NP	NP	-	-
Y	Y	Y	Y*	Y*	Y	C	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*
-	-	-	-	R*	-	R*	R*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	-	R*	R	R	R	G*	G	R	R*	R	D*	R	R
R	R	R	A*	A*	R	A*	A*	A*	A*	A*	A*	R	R	R*	R*
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y	Y	Y*	C*	Y	Y	Y*	Y	Y	Y	Y	Y	-	Y*	-	-
-	R*	R*	-	-	-	W*	-	-	-	R	R*	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	R*	R*	-	-
A*	A*	R*	A*	A*	A*	A*	A*	R*	A*	R*	A*	A*	A*	R*	R*
R*	R*	R*	-	R*	R*	R*	-	-	R*	R*	-	R	R*	R*	-
NP	NP	NP	S*	S*	C*	-	S*	NP	NP	NP	NP	S*	-	B*	S*
R*	R	R	A	R*	-	R*	R*	R*	R*	R*	R*	-	-	R*	R*
G*	R*	G*	G*	R*	G*	G	R*	G*	R*	G*	G*	G*	G*	G*	G*
R*	R*	R*	R*	R	R	R	R	R	R	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y	Y	-	-
M*	M	M	M*	M	M*	M*	-	M	C	-	-	C	M*	M*	M*
-	Y*	Y*	Y	Y	-	-	-	Y*	Y*	-	-	-	-	Y*	-
-	Y*	Y*	Y*	Y*	-	-	-	Y	Y*	-	-	-	Y*	-	-
-	-	-	W*	W*	-	-	-	-	-	-	-	-	-	W	W
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	M*
-	Y*	Y	-	Y*	-	-	-	-	-	-	-	Y	Y*	-	-

-	R*	R*	R	R*	-	R*	-	R	R	-	-	-	-	-	-
-	-	-	-	-	R*	R	V*	-	-	-	-	-	-	-	-
-	V*	S*	-	-	-	-	-	-	-	-	-	-	-	S*	-
-	M*	M*	-	-	-	-	-	-	-	-	-	M*	M*	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	N*	N*	K	K	K*	K	K	K*	K*	K	K	K	K	K*	K
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
K*	-	-	-	-	K*	-	-	-	-	-	-	-	-	K*	K*
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	Y*
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	C	C*	low_cov	-	-	NP	NP	NP	NP	C	C*	NP	NP
-	-	-	-	-	-	-	-	-	-	Y*	T	-	-	-	-
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	-	-
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R	R	R	R*	NP	NP	-	-
-	-	-	Y*	Y	Y*	Y*	Y	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R*	R*	NP	NP	NP	R*	R*	-	-	NP	NP	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	-	-	-	-	-	R*	-	NP	NP	NP	NP	R*	R*
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	S*	S*	NP	NP	NP	NP	S*	S*
-	R	R*	-	-	-	R*	-	R*	R*	-	-	-	-	G	R
low_cov	-	-	-	-	-	-	-	S*	S*	NP	NP	NP	NP	S*	S*
-	low_cov	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	R
-	S	S	-	S*	Y*	S*	-	S	S	-	-	-	-	S*	S
-	-	Y*	Y*	Y*	Y*	-	-	-	-	-	-	NP	NP	-	-
-	R	R	-	-	-	R*	-	R	R*	-	-	R*	-	R*	R
NP	NP	NP	T*	Y*	T*	T*	Y*	Y*	T*	T*	T*	NP	NP	NP	NP
-	Y*	-	Y	Y	Y	Y*	Y	-	-	-	-	Y*	-	-	-
-	R*	R*	-	R*	-	R*	R*	R	R	-	-	-	R*	R*	R
-	Y	Y*	-	-	-	Y*	-	Y	Y	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
W	W*	W*	W*	W*	W*	W*	W	W	W*	W*	W*	W	T	T	W
-	Y*	-	Y	Y*	-	Y*	Y*	Y	Y	-	-	-	Y*	-	-
-	H*	Y*	-	Y*	-	-	-	-	-	Y	Y	Y*	Y*	-	-
NP	NP	NP	R*	-	G	G	G	NP	NP	G*	G*	-	-	R*	R
M*	M*	M*	M	M*	C*	C	C*	M*	M*	C*	M*	NP	NP	M*	M*
-	-	-	-	-	low_cov	M*	M*	-	-	-	-	-	-	M*	M
NP	NP	NP	-	-	low_cov	Y*	Y*	-	-	C*	C*	-	-	Y*	Y*
S	S	S	S*	G	S	S	S	S	S	S*	S*	S	S	S	S
M*	M	M*	M*	C*	-	M*	-	-	-	M	M*	M	M*	C	M
-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
-	-	-	-	-	-	W*	-	W	W*	-	-	-	-	W*	-
M	M	M	M	M	M	M	M*	-	M*	M	M*	-	-	M	M
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-

Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	C*	C*	Y*	Y*	Y	Y
K	K*	K*	G*	G*	K*	G	K*	G	G	G*	G	K	K*	G	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
R	R	R	R*	R*	R	R	R	R	R	R*	R*	R	R*	G	R
T*	Y*	Y*	T	Y*	T*	T	Y*	Y*	Y*	Y*	Y*	Y*	T	T	T
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R	R	-	R*	R*	R	R	-	-	R*	-	R	R*	-	R*
Y*	Y*	Y*	-	-	-	Y*	-	Y	Y	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-
K*	K	K	K	T	K	K	T	-	-	K	K	K	T*	K*	K*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
low_cov	T	T*	NP	NP	T*	T	Y*	T	Y*	Y*	Y*	Y*	Y*	B*	Y*
W	W*	W*	-	-	W	W	W*	T	T*	W	W	W*	W*	W	W
-	R*	-	R*	R*	R*	R*	R*	-	-	-	-	NP	NP	R*	R*
Y	Y	Y	Y*	C	Y	Y	Y	-	-	Y	Y	Y*	Y*	Y	Y*
Y	Y	Y	T	Y	Y	Y	Y	-	-	Y	Y	Y	Y	-	Y*
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y	Y*	-	-	Y*	-	NP	NP	-	-
Y	Y	Y	Y	Y	Y*	Y	Y	Y*	C*	-	Y*	Y*	Y*	Y	Y
S*	S*	S*	S	S*	S*	S	S*	-	-	S	S*	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	NP	NP	-	-
NP	NP	NP	-	K*	NP	NP	NP	-	-	-	-	NP	NP	-	-
-	-	-	R	R*	-	R	R	-	-	-	-	-	-	-	-
NP	NP	NP	R*	R	A	A*	R*	A*	A*	R*	R*	NP	NP	A*	A*
Y	Y	Y	Y	Y	Y	Y	Y	Y*	C*	Y	Y	C	Y*	C*	Y*
R*	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	R*	R
S*	S	S	S	G	S	S	G	S*	S*	G	G	-	S*	G	S
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	R*	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	-	-	-	-	-	-	R	R*	R*	R
Y	-	Y*	Y*	Y*	-	Y*	-	Y	Y	-	-	Y	Y*	Y*	Y
M*	M	M	M*	M	M*	M*	M*	M*	M	M*	-	M*	M*	M*	-
Y	-	-	Y*	Y*	Y*	Y*	-	Y	Y	-	-	Y	Y*	Y*	Y
low_cov	S*	S*	NP	NP	NP	NP	NP	C*	S*	NP	NP	NP	NP	S*	S*
-	Y*	Y*	-	Y*	Y*	Y	Y	-	-	-	-	-	Y*	Y*	Y
-	Y	Y*	Y	C	Y*	Y	Y	-	-	C	C*	-	-	Y*	Y*
-	Y*	-	NP	NP	NP	NP	NP	-	-	-	-	-	-	T	T*
-	M*	M*	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	G	R	-	R*	-	R	R	-	-	-	-	-	R*
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	A	A*
-	N*	N*	-	-	Y*	-	-	-	S*	-	-	-	Y*	S*	-
Y*	-	-	Y*	-	-	-	-	Y	Y*	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	Y	Y
K*	K	K	K*	K*	K*	K	K*	K	K	G	K*	K*	K	K	K

Y*	Y*	H*	-	Y*	-	Y*	Y*	-	Y*	Y*	-	Y	Y*	Y*	-
Y*	Y*	Y*	Y	Y	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	-
-	N*	R*	R	R	-	-	-	-	R*	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R	-	R*	R*	-	-	-	-	R	R	-	-	-	-
K	K	K	-	K*	K	K	K	K*	K*	G*	G	K*	K*	K	K
-	M*	M	-	M*	-	M*	-	-	-	-	M*	M*	-	M*	M*
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	R*	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	R	R	-	-	R*	-
S*	S*	-	-	-	M*	S*	S*	S	S	NP	NP	-	-	S*	S
Y*	Y	Y	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	C*	Y*	Y*
Y	Y	Y	-	Y*	Y	Y	Y	-	-	Y	Y	Y	Y*	-	-
R	R*	R*	-	-	R*	R	R*	-	-	R	R*	R*	-	-	-
R	R*	R	-	R*	R	R	R	-	-	-	-	R*	-	R*	R
R	G*	R*	NP	NP	G	G*	G*	G	G	-	-	NP	NP	G*	G*
Y	Y	Y	NP	NP	T*	Y*	T*	-	-	-	-	NP	NP	-	-
-	R*	-	-	-	R*	-	-	-	-	R	R	-	-	-	-
G*	R*	R*	R	R	G*	G	R*	R	R	-	-	R*	R*	G*	G*
-	-	-	-	-	-	-	-	-	-	W	W	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S	-	-	S*	S*	S	S*	-	-	-	NP	NP	S*	-
-	V*	V*	R*	-	-	V*	-	R	R	-	-	R*	-	-	-
low_cov	Y	Y	Y*	Y*	Y*	Y*	Y	-	-	Y	Y*	Y*	Y*	C*	Y*
low_cov	K	K	K*	K*	low_cov	G*	G*	K*	K*	K*	K*	-	K*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	-
R*	R*	R*	R	R*	G*	R	G	-	-	-	-	R*	R*	R*	R*
R*	R	R	-	R*	R*	R	R	-	-	R	A	R*	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	T*	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	R*	R*	-	-	-	-	R*	-	-	-	-	R*	-	-	-
R	R*	R*	R*	R*	R	R	R	R*	R*	R*	R*	R*	R*	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
R	R	R	R	R	R	R	R	A*	A*	A*	R*	-	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
S*	S*	S*	-	-	S*	S*	S*	S*	S*	S*	S	-	-	S*	S*
Y*	Y	Y*	-	Y*	Y*	Y*	Y	Y	Y*	-	Y*	Y	Y	Y*	Y*
R*	R	R	-	R*	R*	R	R	R	R	R*	R*	R	R	R*	R*
NP	NP	NP	-	-	NP	NP	NP	C	C*	-	-	NP	NP	Y*	-
NP	NP	NP	S*	S*	S*	S*	-	-	S*	S*	S*	S*	-	S*	S*
M*	M	M	M	M	M*	M*	M*	M*	M	M*	M*	M	H*	M	M*
-	K*	K*	K*	K*	-	K*	K*	K*	K*	K*	K*	K*	K*	K*	K*
Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y	Y*	Y*	Y*
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
S*	S*	S	S	S	S*	S	S*	S	S	S	S	S	S	S	S

B*	Y*	Y*	-	-	Y*	Y*	Y*	Y	Y*	-	-	Y*	Y*	Y*	Y*
Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y*	Y	-	-	Y*	Y*	Y*	Y*
R*	R*	R*	R*	R*	-	R*	R*	R*	-	R*	-	-	-	R*	R
-	M*	M*	-	-	-	M*	M	H*	M*	-	-	M	M*	M*	M*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y
R*	-	-	R*	R	R*	R	R*	R*	R	R*	R	R*	R*	R*	R*
R*	-	-	-	-	V*	-	R*	-	-	-	-	-	-	-	R*
S*	S*	-	-	-	S	S	S*	S*	S	-	-	S	S	S*	S*
R*	D*	R*	R*	R*	-	R*	-	R*	R*	-	W*	R*	R*	R*	R*
-	M*	M*	-	-	-	M*	M*	M*	M*	-	-	M*	-	M*	M*
Y*	H*	H*	-	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*
R*	R*	R*	R*	R*	R	R	R	R	R*	-	R*	R*	R*	R*	R
S	S	S	-	S*	S*	S*	-	S	S	-	-	S	S*	S*	S
-	-	-	-	-	-	-	-	NP	NP	-	-	R	R*	R*	R
NP	NP	NP	M*	M*	M*	M*	-	-	-	-	-	NP	NP	-	M
R	R	R	-	-	R*	R*	R*	R	R*	-	R*	R	R*	R	R
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	R*	R*	R
Y*	Y*	Y	-	Y*	Y*	-	-	Y*	Y*	-	-	Y	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	R	R	R	-	-	-
-	H*	Y*	-	Y*	-	Y*	Y*	-	-	Y*	Y*	C	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	M*	-	-	-	Y*	-	-	-	-	-	Y*	Y*	-	-
-	M*	-	-	-	-	S*	-	S	S*	-	-	-	-	-	-
R*	-	-	R*	R	-	-	-	-	-	R	R*	R	R*	A	R
Y*	Y*	Y*	Y*	Y	Y*	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	-	-	NP	NP	NP	-	-	Y*	Y*	NP	NP	Y*	Y*
-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	Y*	Y
-	Y*	Y	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	Y
-	R*	R*	R	R	-	-	-	-	-	R	R	-	-	R*	R
-	R	R	-	R*	-	R*	-	R*	-	-	-	-	-	-	-
-	S	S*	-	-	-	-	-	S*	S*	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
G*	G	G	K	K*	K*	G	G*	G*	G*	K	K	G*	G*	G	K
R*	R	R	R	R	R*	R	R*	R	R	R	R	R*	R*	R*	R*
R*	R	R*	R*	R*	R*	-	-	-	-	A	R	R	R*	-	-
-	Y	C	C	Y	-	-	-	Y	Y*	C	Y	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	S*	S*	S*	-	-	-
-	Y	Y*	Y	Y	-	Y*	Y*	-	Y*	Y	Y*	-	Y*	Y*	Y
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y	Y	Y	Y*	C*	C	C*	Y*	Y*	Y	Y	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	W*	W	-	-	W*	W
-	Y	Y*	-	-	-	Y*	Y*	Y	Y*	-	-	-	-	Y*	-
R*	R*	R*	R	R	R	-	-	-	-	-	-	R	R*	-	-
G	R	G	R*	R*	G	R*	R*	G	G	R	R	R*	R*	G	R*
C*	Y	Y	C*	C	C*	Y*	Y*	Y*	Y*	Y	Y	C*	C*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	Y	Y*	K*	-
C*	C	Y*	Y*	Y*	C*	C	C*	C*	C*	C	Y*	Y*	Y*	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-

-	R*	R*	-	-	-	R*	-	R*	R*	-	-	-	-	-	-
-	-	-	W	W*	-	-	-	-	-	-	-	-	-	-	-
R	R*	-	R	R	R	-	-	-	-	R	R	R	-	-	-
-	R	R	-	R*	-	R*	-	-	R*	-	-	R*	-	R*	-
-	Y	Y	-	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-
R	R*	R*	-	R*	R	R	R	R	R	R*	-	R	R*	R*	R
Y*	N*	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*	B*	Y
Y*	Y	Y	Y	Y	Y*	Y	Y*	Y	Y*	Y	Y*	Y*	Y*	Y*	T*
-	M*	M*	-	M*	-	-	M*	-	-	M*	-	-	-	M*	-
Y*	Y*	Y*	-	-	Y	Y*	Y*	Y*	Y	-	-	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	Y*	Y*	-	Y*	Y*	Y*	Y	Y*	Y*	-	Y*	Y*	Y*
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	NP	NP	-	M*
-	M	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R*	R	R	R	R	R	R	R	R*	R*	R
K	K	K	K*	G	K	K	K*	K	K*	K	K	K	K	K	K*
Y*	H*	H*	-	Y*	Y*	Y*	-	-	-	-	-	Y*	Y*	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	R*	-	R*	R*	-	-	-	-	NP	NP	-	-
Y*	-	-	-	-	Y	Y	Y	-	-	Y	Y	-	-	-	-
T*	T*	Y*	T*	T	low_cov	T*	T*	Y	T	T*	T*	Y	Y	Y	Y*
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
Y*	M*	-	Y	Y	-	-	-	-	-	-	M*	-	-	-	-
W*	W*	W*	A*	W*	W	W	A*	W	W	A	A*	W	W*	W*	W*
Y*	Y	Y	C*	Y	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y	Y
K*	K*	K*	T	K	K	K	T	K	K	K	K*	K*	K*	D*	K
K	K	K	K*	K	K	K	K	K	K	K*	K*	K	K	K	K
R*	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R	R	R*	-
-	R	R	S*	R*	V*	R	R*	-	-	R*	R*	S*	-	R	V*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	R	-	-
-	-	-	-	-	Y*	Y*	C	-	-	-	-	-	-	Y*	-
-	R*	-	-	-	-	-	-	-	S*	-	-	-	-	-	-
-	S*	-	S	S*	-	-	-	NP	NP	S	S	-	-	-	-
-	-	-	K	K*	-	K*	-	K*	-	K*	K	-	-	-	-
-	R*	-	R	R*	R*	R	R	R*	R*	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	T	-	NP	NP	Y*	Y*	-	-	Y*	Y*
R*	R*	R	R	R	-	R*	-	R	R	R	R	R	R*	-	-
Y*	C	Y	Y	Y	-	-	-	-	-	-	-	Y*	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R	G	R*	R	R	R	R	R*	G	R*	R*
-	-	-	-	Y*	-	-	-	-	-	-	-	S	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	S*	S*	S	S	-	-	Y*	-	-	-	-	S*	-	S*	-
-	-	-	Y*	Y*	-	-	-	-	Y*	-	-	-	-	-	-
G	S	S	S*	S*	G	S	G	-	-	S	G	S	G	S	G
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y*	H*	Y*
-	Y*	Y*	Y	Y*	low_cov	low_cov	Y*	Y*	Y*	-	-	NP	NP	Y*	Y

R*	R*	R*	R	R*	-	-	-	-	-	R*	-	R*	R*	-	R*
-	A	M*	M	M*	-	-	-	-	-	-	-	M*	-	-	-
-	H*	M*	Y*	M*	-	-	-	-	-	-	-	-	-	-	Y*
NP	NP	NP	M	M	-	-	-	-	-	-	-	-	-	-	-
R*	low_cov	R*	-	R*	NP	NP	NP	NP	NP	R*	R*	NP	NP	R*	R
-	R*	R*	-	R*	-	R*	R*	R*	R*	-	R*	R*	R*	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP	-	-
K*	K*	K*	NP	NP	-	T	K*	-	K*	K*	K*	NP	NP	K*	-
R	R	A	A*	A*	R	R*	A*	A	A	R	A*	A*	A*	R*	-
-	A	A*	R*	R*	R	A	R*	R	R*	R*	A*	NP	NP	-	-
NP	NP	NP	A*	A*	A	A	A*	W*	W*	W	A	NP	NP	-	-
R	A*	A*	R	R	R	R*	A*	R	R	R	R	A*	A*	-	-
NP	NP	NP	C*	C*	Y	Y*	C*	C	Y	C	C*	NP	NP	-	-
low_cov	-	-	NP	NP	-	-	-	-	-	R	A*	-	-	-	-
NP	NP	NP	T*	T	T	Y*	T*	T	T*	T	T*	T*	T*	-	-
S*	S	S	S*	S	S	S*	S	S	S*	S	S	S*	S	B*	S*
R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*	-	A	R*	R*	R
Y	low_cov	T*	Y	Y	Y	Y	Y*	T	T	Y	T	T*	T*	-	-
G	G	R*	R*	R*	R	G	R*	R	G	R	G	V*	V*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
T*	T	Y*	Y*	T*	T	T*	T*	T	Y	T	T	T*	Y*	-	-
K	K	K	K	K	K	K	K*	K	K	K	G	K	K*	K	K*
-	R*	-	-	-	-	-	-	-	-	-	R*	-	-	S*	R*
Y	Y	Y	Y*	T	T	Y*	Y*	Y	T*	Y	T*	T*	T*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	S*	-	-	-	-	NP	NP	NP	NP	-	-
G	G	G*	-	-	S*	S	G	-	-	S	G	G*	G*	G*	G
Y	T	Y*	Y*	Y*	Y*	Y	T	Y	Y*	Y*	Y	NP	NP	-	-
NP	NP	NP	A*	A*	M	A*	A*	A	A	M	A	M*	M*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	R*	A	NP	NP	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
T	W*	W*	T*	T*	T	W*	W*	T	W*	W*	T	NP	NP	-	-
-	W*	W*	-	-	W*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
R*	A	R*	R*	A*	A	R*	R*	R	R	R	R*	A*	A*	-	-
R	A	A	R	A	R	R*	A	R	A	R	A	R*	A*	-	-
NP	NP	NP	NP	NP	G*	G	G*	R*	G	NP	NP	NP	NP	-	-
M*	-	-	-	-	M*	M*	-	-	-	-	-	NP	NP	-	-
W*	-	W*	W*	W	W*	W	W*	-	-	W	W	W*	-	W*	W*
S	S*	S*	S	S	S*	S	-	S	S	-	-	S	C	R*	-
-	R*	R*	-	-	-	R	R	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	M*	-	-	-	-	-	-	-	-	-	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
-	R*	M*	-	-	-	R*	-	-	-	R	R	-	-	-	R*
Y*	-	-	Y	Y*	Y	Y	Y	-	-	Y	Y	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	R*	-	-	-	-	-	-	-	-	-	S	S
-	Y*	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-
NP	NP	NP	A*	A*	A	M	A*	M*	M*	A*	A	-	-	A*	A
M*	M*	M*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R	R	-	D*	-	R*	R*	-	-	R*	-	R*	-	R*	-
-	-	-	-	-	-	K	K	-	-	-	-	K	K	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	N*	N*	S*	B*	S	S*	S*	S	S*	S	S	S*	S*	S*	S
R*	R	R	-	R*	R*	R*	R*	-	R*	-	-	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y*	-	-	Y*	Y*	-	T	T	Y*	Y	Y*	Y*	Y	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	-	Y	Y*	-	Y*	C	Y*	Y*	Y	Y*	Y*	Y*
Y*	Y*	Y	T*	T*	Y*	Y*	-	T*	T	Y*	Y	-	-	Y*	Y*
-	-	M*	-	-	-	Y*	Y*	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
M	M	M	-	M*	M*	M	M*	M*	M*	M*	M	M*	M	M	M*
-	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	G*	G*	R*	-	-	G*	G*	-	R*	NP	NP	NP	NP
S	S	S	-	S*	S	S*	-	S*	S	S*	S	S*	S*	S	S*
W	W	W*	W*	W*	W*	-	-	W*	W*	-	W*	W*	-	W*	W
Y	Y	Y	-	Y*	Y	Y	Y*	C*	Y	Y	Y	Y	Y*	Y*	Y*
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	G*	G	R*	R*	-	G*	G*	R*	R	-	-	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
-	-	-	-	-	-	-	-	-	-	Y*	Y	-	-	Y*	Y
S*	S*	S*	-	-	S*	-	-	-	-	-	-	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y*	Y*	Y*	Y	Y*	-	C	Y	Y*	Y*	Y	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	N*	V*	-	R*	-	R*	-	R	R*	R*	R	R*	R*	-	-
Y*	-	Y*	-	-	Y*	Y*	-	T	Y	-	-	-	-	Y*	Y
-	low_cov	-	R*	R*	-	-	-	NP	NP	-	-	NP	NP	R	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	Y	Y*	C*	C*	C*	C*	Y*	C*	C*	NP	NP	Y*	Y
NP	NP	NP	NP	NP	low_cov	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	R	R*	-	-
NP	NP	NP	R*	R*	R*	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	R*	R*	-	-	-	-	R*	R*	-	-
-	-	-	S	S	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	-	Y*	Y*	Y	-	-	-	-	Y*	Y	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-

C	Y	Y	-	-	Y	Y	Y*	-	-	-	-	C	C*	-	-
M*	M*	M*	-	-	-	M*	-	M	M	M	C	-	-	-	-
R*	-	-	R	R*	-	-	-	G	R	-	-	-	-	R*	G
-	R*	R*	R	R	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	H*	-	-	Y*	Y*	Y	-	-	-	-	Y*	Y*	-	-
R*	R*	R*	R	R*	R*	R	R*	R	R	-	-	R	R*	R	A
R	-	R*	R*	R*	R	R	R*	R	R	-	-	R	R	R*	A*
W	W*	W*	W*	T*	W	W*	T*	T*	T*	W*	T*	T*	T*	W*	T*
-	S	S	S	S	-	-	-	-	-	V*	-	-	-	-	-
-	H*	Y*	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	V*	V*	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R	R	-	R*	-	-	-	-	-	-	-	R*	-
-	D*	K*	K	K	-	-	-	-	-	-	-	K	K*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
R	R*	R*	R	R	R*	R*	R*	-	-	R*	R*	R	R*	R*	R
M*	M*	M*	M	M	M*	M*	M*	-	-	N*	M	-	-	M*	M
NP	NP	NP	Y*	Y*	Y	Y	-	C*	C*	Y*	Y	NP	NP	Y*	Y*
-	-	-	-	-	R*	R*	-	R	R*	-	-	-	-	-	-
R	R*	R*	R	R*	R	R	R	A*	D*	R	R	-	-	R*	R
R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	NP	NP	G	R*
R*	R*	R*	-	-	R	R	R*	-	-	-	-	R	R*	R	R
Y*	Y*	Y*	-	-	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y	Y
S*	S*	S*	S*	S*	S*	S*	S*	S*	-	S*	S*	S*	S*	S*	S*
Y*	Y*	Y*	-	-	Y*	Y	Y	Y*	Y*	-	-	C	C	C	Y*
R	R*	R*	-	R*	R*	R	R	R	R	-	R*	R	R	R	R*
-	R*	R*	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	Y	Y	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R*	-	-	-	R*	R*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
M*	M*	M*	A	M	M*	A	A	M	M	M*	A	-	A*	-	-
-	R	R*	-	-	-	-	-	R*	R*	-	-	-	-	R*	R
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	-	-	S*	S*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y*	Y*	Y	-	-	-	-	-	Y*	Y*	Y*
R*	R*	R*	R	R	R	R	R	R	R	-	-	R*	R*	-	K*
NP	NP	NP	Y*	Y*	-	-	-	Y*	T	Y*	Y*	NP	NP	Y	Y
-	K*	-	-	-	K*	K*	K*	-	-	-	-	-	-	T	K
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y*	Y*	Y	Y	Y	T*	T*	T*	Y*	T*	T*	Y*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	A
-	-	-	-	-	-	-	-	-	-	S*	S	-	-	-	-
-	Y*	Y*	Y*	C	Y*	Y*	Y*	-	-	-	-	C	Y*	C*	Y*

Y	Y*	H*	Y	Y	-	Y	Y	-	Y*	Y*	Y	Y*	Y*	Y*	Y
-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-
-	Y*	Y*	-	-	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*	-	-
-	R*	R*	R*	-	R*	-	R*	-	R*	R	R	R	R*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	G	S*	S*	S*	S	S	G*	-	-	S*	S*	G*	G*	G*	G*
-	N*	N*	Y*	-	Y*	Y*	Y*	-	Y*	Y*	Y*	B*	Y*	Y*	Y*
-	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	Y*	-	Y*	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	S	-	-	-	-	-	-	-	S*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	R*	R*
Y*	H*	H*	Y*	Y	-	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	-
-	H*	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
K*	D*	D*	-	-	-	-	K*	-	-	-	-	-	K*	K*	-
R*	R*	R*	-	R*	R*	R*	R*	R*	R	-	-	R*	R*	R*	R*
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	H*	Y*	Y	Y*	Y	Y*	Y*	C	Y	Y	Y*	Y	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	G	G*	-	-	NP	NP	-	R
R*	R*	R	-	-	R*	R	-	A*	A*	-	-	-	-	R*	R
R*	R*	R*	R	R	-	R*	-	-	-	R	R	-	-	-	-
-	R*	R*	R*	R*	-	-	-	-	-	R	R*	-	-	R*	-
-	Y*	Y*	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
NP	NP	NP	Y*	Y*	C*	C*	C	C	Y*	Y*	Y*	NP	NP	Y*	Y*
Y*	Y*	Y*	-	-	Y*	Y*	Y	-	-	-	-	Y	Y*	-	-
Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	Y*	-
-	V*	V*	S*	S*	-	S*	-	-	S*	S	S	S*	S*	S*	S*
R*	R*	R*	R	R*	R*	R*	R	-	-	R	R	R	G	R*	-
-	R*	R*	-	-	-	R*	-	R*	R*	R*	R*	R*	R*	R*	R*
R*	R	R	R	R*	R*	R*	-	R*	-	R*	G	R	G	R*	R
-	-	-	-	-	-	-	-	-	-	Y*	Y	-	Y*	-	-
-	Y	Y	-	Y*	-	Y*	-	Y*	Y*	C	Y*	Y	Y*	Y	Y
low_cov	R*	R*	-	-	low_cov	-	-	R*	R*	A	A*	R*	R	A	R
-	-	-	R	R	-	R	R	-	-	-	-	-	-	-	-
NP	NP	NP	K*	K*	NP	NP	NP	K*	K*	-	-	NP	NP	-	-
Y*	-	-	Y	Y	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y*	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	N*	N*	R*	R*	-	R*	R*	R*	D*	R	R	R	R	R*	R*
-	R*	R*	-	-	-	-	-	R*	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
Y*	-	-	Y	Y*	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M	Y*	M	M	-	-	-	-	-	-
low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	N*	N*	S*	-	-	M*	S*	-	S*	B*	H*	Y	B*	N*	B*
-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-
-	-	-	H*	M*	-	-	-	M	A	-	-	-	-	-	-

M	M	M	-	M*	M*	M*	-	-	-	M	M	M	M*	M*	M
-	Y*	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R*	R*	-	R*	R*	R	R	R	R*	R*	R*
-	H*	Y*	-	Y*	-	-	-	Y*	Y*	-	-	-	-	Y*	Y
R*	R*	R	R*	-	R*	R*	R*	-	R*	R	R	R	R*	R*	R*
Y*	W*	Y*	Y	Y	-	-	-	-	-	-	-	-	-	-	-
M	C	C*	M*	M	M*	M*	M*	M*	M*	M*	M	-	-	-	-
-	H*	Y*	-	-	-	-	Y*	-	Y*	Y	Y	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y*	C	Y	Y	Y*	Y*	Y	Y
-	M*	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
-	M*	-	-	M*	-	M*	-	-	-	-	-	-	-	-	-
-	N*	N*	K*	K*	-	K*	K*	K*	K*	K	K*	B*	K*	B*	B*
Y	-	-	-	-	Y*	-	-	Y	Y	-	-	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y	H*	H*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	-	R*	-	R*	R*	R*	R*	-	-	-	-
R*	R*	R*	-	-	R*	K*	-	-	-	R*	-	R*	R*	R*	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	-	NP	NP	NP	T*	T*	Y*	-	NP	NP	NP	NP
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
NP	NP	NP	-	-	M*	C	M*	-	-	-	-	M*	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	R*	-	-	-	-	-	R*	R*	-	-	NP	NP	A*	R
R*	-	-	R*	R*	R*	R*	R*	-	-	-	-	NP	NP	-	-
-	-	R*	-	-	-	-	-	-	-	R*	R*	-	-	-	-
-	R*	-	G*	G	-	-	-	R*	G	-	-	-	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-
-	Y*	-	Y*	-	-	-	-	-	-	Y*	-	-	-	Y*	Y
NP	NP	NP	-	-	low_cov	R*	-	R	R*	NP	NP	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
R*	G*	R*	G*	G	-	R	R	R	R	R	R*	R	-	R*	R
-	-	-	R	R	-	R*	-	R*	R	-	-	-	-	-	-
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	-	-	-	-	R*	A	-	-	-	-
-	-	-	Y	Y	-	Y*	-	Y	Y	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y	Y	Y	H*	Y*	Y	Y*	Y*	Y	Y*	-	-
-	M*	M*	A	M	M*	M	M	M*	M*	M	A*	M*	M*	-	-
-	S*	S*	S*	-	S*	S	S	-	-	-	-	S	S*	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y*	-	-	-	Y*	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	A*	A*	-	-	-	-
R	R*	R*	-	-	R*	-	-	R*	-	-	-	-	-	-	-

R	R*	R*	R*	R	R*	R	R*	R*	R	R	R*	R	R	R*	-
R*	R*	R*	R	R*	R*	S*	-	-	-	R	R*	-	-	R*	-
M	M*	M*	M*	M*	M	M	C	M*	M*	M*	-	M	M*	M*	-
Y*	-	-	Y*	Y*	low_cov	C*	Y*	Y*	C*	Y*	-	NP	NP	-	-
-	-	-	-	-	-	R	R	-	-	-	-	-	-	R*	-
R*	R*	-	-	-	R*	R*	-	R	R	-	-	-	-	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	K*	R	R	-	-	-	-	R*	-
-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-	-	-
Y*	-	-	-	-	Y	Y	Y*	Y	Y*	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R*	R*	R	-	-	-	-	-	-	R*	-
S*	-	-	-	-	S*	-	-	-	-	S	S*	S	S*	-	-
C	Y*	-	Y*	Y*	C	Y*	C	Y*	C	Y*	-	Y	Y*	-	-
-	-	-	-	-	S*	S*	-	S	S	-	-	-	-	-	-
R*	-	-	-	-	-	R*	W*	R	R	-	W*	-	-	-	-
Y	W*	H*	-	-	Y	Y	Y	-	-	Y*	Y*	Y	Y*	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	M*	-	-
-	-	-	-	-	-	R*	-	R*	A	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	Y	Y	Y*	Y*	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	K*
S*	-	-	-	-	S*	S*	-	S	S	-	-	-	-	-	-
Y*	Y*	Y*	Y	T	Y*	Y*	Y*	Y*	Y*	T	-	T	Y*	B*	-
-	Y*	Y*	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
-	R*	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y	Y	Y	-	Y*	Y*	Y*	Y*	Y*	Y*	-
-	-	-	-	-	-	M*	-	M	M	-	-	-	-	M*	-
W	W*	-	W*	W*	W	A*	W*	A	A*	W	-	W	W*	W*	-
R*	R*	V*	R*	R*	-	R	-	R	V*	R	-	R*	R	-	-
R*	R*	-	-	-	R	R	R	-	-	-	-	-	-	-	-
-	M*	M*	M*	-	-	-	-	-	M*	-	-	M	M	-	-
R*	R*	R*	-	-	R	R	R	R	R	-	-	-	-	R*	-
Y*	-	Y*	-	-	NP	NP	NP	Y*	Y*	-	-	-	-	-	-
NP	NP	NP	-	-	-	Y*	-	-	Y	Y*	Y*	NP	NP	-	-
NP	NP	NP	S*	S*	S	G	G*	S	S*	-	-	NP	NP	-	S*
-	W*	W*	-	-	-	W*	W*	-	-	-	-	-	W*	-	-
R*	R*	R*	R*	R*	G	R*	R*	G	R*	R*	R*	R*	G*	R*	R*
Y*	N*	N*	Y*	Y*	B*	B*	Y*	Y*	Y	Y*	Y*	Y	Y	N*	Y*
-	W*	W*	-	-	-	-	-	-	-	-	-	W*	-	-	-
R*	R*	D*	-	R*	R*	R	R	-	-	W*	R*	R*	-	-	-
R*	R	R*	-	R*	R*	R*	R	-	-	-	-	-	-	R*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	-	R*	R	R	-	-	-	-	-	R*	R*	R*
-	Y*	H*	Y*	Y*	-	-	-	Y*	H*	Y	Y	-	-	-	Y*
-	Y*	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*
low_cov	G	G	NP	NP	low_cov	R*	R*	NP	NP	G*	G*	NP	NP	G*	G*
-	H*	H*	-	-	Y*	-	Y*	-	-	-	-	-	-	Y*	-

S*	S	G	S	S*	-	-	-	S	S*	-	-	S*	S*	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	-	-	-	-	Y*	Y	-	-	Y	Y*	Y*	-
-	N*	V*	-	S*	-	-	-	-	-	-	-	-	S*	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
-	Y*	Y*	Y	Y*	Y*	Y*	Y	-	-	T	T	Y	Y*	-	-
NP	NP	NP	W*	W	W*	W*	-	A*	A*	-	-	NP	NP	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
M	M	M	M	M	M*	M	M*	C*	C	M*	-	M*	M	C*	M*
NP	NP	NP	R	R	R	R*	R	-	-	G*	G*	NP	NP	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	T*
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
NP	NP	NP	M*	M*	M*	-	-	NP	NP	NP	NP	NP	NP	-	-
K	G	G*	G*	G	G	G	G*	K	K	G	G	G*	K	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	C*	C*	-	Y*	-	Y	Y	Y*	-	Y*	Y*	Y*	Y*
Y*	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*
-	-	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y*	Y*	NP	NP	NP	NP	NP	NP	NP	-	-	-	Y*	Y*	-
-	H*	Y	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-
-	-	-	-	-	W*	W*	W	-	-	-	-	NP	NP	-	-
-	-	-	-	-	S*	S	S	-	-	-	-	NP	NP	-	-
K*	K	-	-	K*	K*	T*	T*	T*	K	K	K	-	K*	K*	K
-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-
Y*	Y*	Y*	NP	NP	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	C*	Y
Y*	H*	H*	-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	-	Y*	Y*
-	S*	-	-	-	-	-	-	-	-	S*	S	-	-	-	-
-	S*	-	-	-	-	-	-	-	-	S	S	-	-	-	-
-	W*	-	-	-	-	-	-	-	-	-	-	K	K*	D*	K*
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	R*	R
-	-	-	Y	Y	-	Y	-	Y*	Y*	-	-	-	-	-	-
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y	Y*	Y*	Y*	low_cov	Y*	Y*	C	Y	Y*	Y*	Y*	Y*	Y*	C
-	M*	-	-	-	-	M*	Y*	-	-	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R*	R	R	R*	R	R	G	R	R	R*	R*
-	H*	Y*	-	Y*	-	Y*	Y*	Y	Y	-	-	-	-	-	-
-	S*	-	-	-	-	S*	S*	-	-	-	-	-	S*	-	-
-	Y*	Y*	Y*	Y*	-	Y	Y*	Y	Y	-	-	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
K*	K*	K*	-	K*	K*	K*	K*	-	-	-	-	K*	-	-	-

S	S	C	C	S	S	S*	S*	C*	S*	C*	C*	C*	C*	S*	S*
R*	-	-	-	-	R*	R*	R*	-	-	A	A*	R*	R*	R*	R*
-	-	-	-	Y*	-	-	-	-	-	-	-	Y	Y*	-	-
R*	R*	R*	-	R*	R	R*	R	-	R*	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S	-	M*	N*	V*	V*	S	S	M*	M*	-	V*	-	S*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	low_cov	-	-	-	-	-	-	Y*	Y*	-	-
-	R	R	R	R	R*	R	R	R*	R	-	-	G*	G	-	-
R	R*	G*	R	R*	R*	R*	R*	-	-	R	R*	R*	-	R*	R
R	R*	R*	A	R	R	-	R*	-	-	R	R*	R*	R*	R*	R
NP	NP	NP	-	R*	R*	-	A	-	-	-	-	-	-	-	-
M*	M	C	C*	M*	C	C	M*	M*	M*	C*	C*	M*	M*	M*	H*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	low_cov	W*	-	NP	NP	NP	NP	W*	-	-	-
R*	R*	R*	-	-	-	R*	-	R*	G	R	R	R	R	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	low_cov	R*	-	A*	R*	NP	NP	R*	-	A	R
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	-	-	R*	-	-	-	-	NP	NP	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
R*	R*	R*	R*	R*	-	R	R	R*	R*	R*	R*	-	-	R*	R
Y*	Y*	Y*	-	Y*	-	-	Y*	-	-	-	-	-	-	-	Y
R*	R*	R*	-	-	-	R*	-	R*	R	R	R	R	R*	-	-
-	M*	M*	-	-	-	M*	-	M*	M*	M	M	M	M*	-	-
R	R*	R*	R*	R*	R*	R*	R*	R	R	R	R	R	R*	R*	-
low_cov	low_cov	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
R*	R*	R	R*	-	R*	R*	R*	R*	R*	R*	R	A	R*	R*	R*
-	-	-	-	-	-	-	-	K	K	-	-	-	-	-	-
W*	W*	-	-	-	W*	-	-	W*	W*	W*	W	W	-	-	-
-	Y*	Y*	-	Y*	-	Y*	-	Y*	Y*	Y	Y*	Y	Y*	-	-
-	-	-	R	R*	-	-	-	-	-	-	-	R	R*	-	-
R*	low_cov	R*	R*	R*	low_cov	R*	-	A*	A*	R*	R	NP	NP	R*	R
-	S*	S*	-	S*	S*	S*	S	-	-	-	-	-	-	S*	S
-	H*	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	-	NP	NP	NP	NP
Y*	Y*	Y*	-	-	Y*	Y*	-	Y*	Y*	Y	Y	Y	Y*	-	-
-	Y*	Y*	-	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-
R	R	R*	A*	A	R	R	R	R*	R*	A*	A*	R	R*	R*	A*
R*	R*	R*	G*	R*	-	R	R	R*	G*	R	R	-	R*	R*	R
W	W	W	W*	T*	W	W	W	T*	T*	W*	T*	W	W*	W*	T
T	Y	Y	Y*	T*	T*	Y	Y	T*	T*	T*	T*	T*	T*	Y	Y
NP	NP	NP	NP	NP	low_cov	R*	R*	NP	NP	R*	R*	-	-	R*	R
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
M*	M	M	M*	M*	-	M*	-	-	-	M*	M*	M	M	M	M
R*	R*	R*	R*	-	R*	-	-	-	-	-	-	R*	R*	R*	R

R	R	A	R*	R*	R*	R*	-	-	-	R*	-	R	R*	R*	R
R*	R	R	R*	-	-	-	-	-	-	R*	-	R	R*	R	R
Y*	Y	Y	Y*	Y*	-	-	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y
low_cov	K*	K*	NP	NP	NP	NP	NP	-	-	NP	NP	-	-	NP	NP
-	Y	Y	Y*	-	-	-	-	Y*	Y*	-	-	-	-	Y*	-
R*	-	R*	NP	NP	low_cov	-	-	-	-	R*	-	-	-	R*	R*
Y*	Y*	Y*	-	Y*	-	-	-	-	-	Y*	-	Y	-	Y*	Y*
NP	NP	NP	T*	T*	T*	T*	Y*	T*	T*	T*	T*	NP	NP	Y*	Y
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	-	-	NP	NP
Y*	-	-	-	-	Y*	Y	T	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	S*	-
-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
-	-	-	-	-	-	R*	-	-	-	R*	R*	R	R	R*	R*
Y	Y*	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	-	-	-	-	-	-	-	Y	Y	Y	C	Y*	Y
R*	-	-	-	-	-	-	-	-	-	A	R*	A*	A*	-	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R	R	R	-	R*	R	R*	R	R	R	R
H*	N*	N*	M*	M*	-	M	M*	M	M*	M*	M*	M	M*	H*	N*
NP	NP	NP	R*	R	R	G	R*	G*	G*	R	-	-	-	R	R
C*	Y*	Y*	Y*	Y*	C	Y*	C*	C*	C*	C*	Y*	C*	Y*	Y*	Y*
R	R	R	R	R	R*	R	R	-	-	R	G	G	R*	R	R
R*	R*	A	-	-	-	-	R*	R*	R*	-	-	R*	V*	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	R*	-	-	-	R	R	R*	R	-	-	R	R	-	-
K*	D*	K*	N*	K*	K	K*	K	D*	K*	D*	K*	D*	K*	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	-	-	-	Y*	-	-	NP	NP	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	-	-	-	-	-	-	K*	-	-	Y*	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H*	**-**	**-**	**-**	**-**	***Y****	***Y****	***Y****	**-**	**-**	**-**	**-**	***Y****	**-**	**-**	**-**
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
-	***Y****	**-**	**-**	**-**	***Y****	***Y****	***Y****	**-**	**-**	**-**	**-**	***Y****	***Y****	**-**	**-**
NP	NP	NP	NP	NP	NP	NP	NP	-	Y*	Y*	Y*	NP	NP	Y*	-
-	K*	Y*	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y	-	Y*	-	-	-	-	-	-	-	-	-
K*	K*	K	-	K*	K*	-	-	-	K*	-	-	-	K*	K	K
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	Y	Y	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
C*	Y	C*	C*	C*	C*	Y*	Y*	Y*	C*	Y*	Y*	C	Y*	Y*	C*
T*	K	T	K*	K*	K*	K*	T*	K	K*	K	K	K*	K*	T*	T*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	B*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	Y*	Y*	Y*	T	T*	Y	T	-	-	-	-	-	-

R	R*	A	R	R	R	R	R	R*	-	A	A	-	-	R*	A*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	Y*	T*	T	Y	Y	Y*	Y	Y	-	-	-	-	-	-
R*	R	R	R*	G	R*	G	R*	R	R*	R*	R*	R	R*	R*	R*
-	M*	M*	-	M*	-	-	-	-	-	-	-	M	A*	-	-
R*	R	R	R	R	R	R	R	R*	R	R*	R*	R*	R*	R	R
-	-	-	R	R	R*	R*	R	R*	R*	-	-	-	-	R	R
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y	Y	Y*	Y	Y	Y*	Y*	-	-	-	-	Y*	Y
-	-	-	-	R*	R*	R*	R	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
-	-	Y*	Y*	Y	-	-	-	Y	Y*	-	-	Y*	T*	Y*	-
-	R	R	-	-	-	-	-	R	R	-	-	NP	NP	R*	-
R*	R*	R*	-	-	-	-	R*	-	-	-	R*	-	-	-	-
low_cov	Y*	Y	C*	C*	C*	C*	C*	C*	Y	C	C*	C*	C*	C	C*
Y	N*	N*	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y	H*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	-	R
M*	M*	M*	-	-	M*	M*	M	-	-	-	-	M*	M*	M	M
-	low_cov	-	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-
R*	R*	R*	NP	NP	low_cov	R*	R*	R*	A*	-	-	-	R*	R*	-
NP	NP	NP	-	-	Y*	Y*	-	C*	C	-	-	-	-	-	-
R	R	R	-	R*	R*	G	-	G*	G*	-	-	R*	R*	-	-
R	R	R*	-	-	NP	NP	NP	A*	A*	-	-	NP	NP	-	-
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	R*	R
-	N*	-	-	-	Y*	Y	Y	-	-	Y*	Y*	-	-	-	-
-	S*	S*	-	-	-	-	-	S*	S	S*	-	-	S*	-	-
-	H*	Y*	-	-	-	-	-	-	-	-	-	-	M*	M	M
R	R*	R*	-	-	R*	R	R	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	-	Y*	-	Y	T	Y	Y*	Y	Y*	Y*	Y
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-
M*	H*	M*	-	M*	M*	M*	M*	M*	H*	M	M	M*	M*	M*	M*
Y*	Y	Y	Y*	Y*	-	Y*	Y	-	-	Y*	-	Y*	Y*	N*	Y
T	Y	Y	Y	T	Y	Y	Y	Y*	Y*	Y	Y	T	Y*	Y*	Y*
T*	Y	Y	T*	Y*	T*	Y*	Y	Y*	-	Y*	Y*	T*	Y*	T*	Y*
Y*	H*	-	-	Y*	Y*	-	Y*	-	-	-	-	-	S*	S*	-
S*	-	-	-	-	S*	-	-	-	-	-	-	-	-	B*	-
M	M*	M*	NP	NP	M*	M*	M*	NP	NP	A*	M*	M*	A*	M*	M*
R*	R	R	-	-	R*	-	-	-	-	-	-	R	R	-	-
S*	C	S	S*	S*	S*	C	V*	S*	S*	-	-	S*	S*	V*	V*
Y*	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
Y*	Y	-	-	-	Y*	-	-	-	-	-	-	Y	Y*	-	-
R	R*	R*	R*	A*	R*	R*	R*	A*	R*	R*	R*	R*	A*	R*	R*
R*	R*	R*	A*	R	R	A	R*	R	R*	R*	R*	R	R*	-	-
M*	M	M	M*	M*	M	M*	M*	M	M	M*	M*	M*	C	M	M
S*	V*	V*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S	S	S*	S
K*	S*	N*	T	-	K*	K*	B*	K*	K*	-	K*	-	K*	-	-
R*	R*	R*	A*	R*	R*	A*	A*	R*	R*	R*	R*	R	R	R*	R
-	-	Y*	Y*	Y*	-	Y*	-	Y	Y*	-	-	-	-	-	-
Y*	Y	Y	-	Y*	-	-	-	Y	Y	-	-	-	-	Y*	Y

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	-	-	Y*	Y*	Y*	Y	Y*	-	-	-	-	Y*	Y
Y*	Y	C	-	Y*	Y*	Y*	-	Y	Y*	-	Y*	-	Y*	Y*	Y
R*	R*	R*	R*	R	G	R	R*	-	-	G	G	R*	-	-	-
S*	S*	S*	S	S*	-	S*	Y*	S	S	-	-	S*	S*	S*	V*
W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W	W*	W	W
K*	K	K	K*	K*	K	K*	K*	K	K*	-	-	K*	-	K	D*
M*	M	M*	M*	M	-	M*	M*	-	-	M*	M*	NP	NP	-	-
W*	low_cov	W*	-	-	W*	W*	-	W*	W*	-	-	NP	NP	W*	W
-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	Y	Y*	Y*	Y
-	R	V*	S*	R*	-	S*	S*	S*	S*	B*	-	-	-	R*	R
-	M*	M*	-	-	-	Y*	-	-	-	-	-	-	-	Y*	Y
-	M*	M*	-	-	-	-	-	-	-	-	-	M*	M	-	M*
-	-	-	-	-	-	R*	-	R*	R*	-	-	-	-	-	-
Y*	Y	Y	-	Y*	Y*	-	-	-	-	-	-	Y	Y	Y	Y
R*	R*	R*	-	-	-	-	S*	-	-	-	-	-	-	R	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
R*	R	R	-	R*	-	-	R*	-	-	-	-	R	R*	R*	R
R*	R*	R*	-	R*	-	-	-	-	-	R*	R*	R*	R*	-	-
low_cov	-	-	-	-	low_cov	-	-	K*	K*	-	-	-	-	-	-
-	W*	W	-	-	-	W*	-	-	-	-	-	W*	W*	W*	T
-	Y*	H*	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	C	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	K	K*	-	-	-	-	-	-	-	-	-	-	K*	K*	K*
-	Y*	H*	Y*	Y	-	Y*	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	NP	NP	-	R*	-	R*	R*	NP	NP	NP	NP	R*	A*
Y*	Y*	N*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	N*	N*	-	-	Y	Y*	Y	-	-	Y	Y	K*	-	-	-
low_cov	W	W	-	-	-	-	-	W*	W	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	-	-	-	-	-	-	W*	W*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	K	K*	-	-	-	-	-	-
R	R*	R*	R*	R*	R	R	R	R	R	R	R	R*	R*	R*	R*
-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	Y*	Y*	-	C*	C*	-	-	Y*	Y*	Y*	C*
R	R	R	-	R*	R*	R*	-	-	R*	R*	-	-	R*	R	R
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	NP	NP	-	-
-	-	-	Y*	Y	Y*	Y	Y	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y	-	Y*	-	Y	Y	Y*	Y	Y	Y	Y*	-
Y*	Y	Y*	T	Y	Y	Y	T	Y*	Y*	Y*	Y*	T	T	-	-
R*	-	-	R	R	-	-	-	R*	-	R	R	-	-	-	-
R*	R*	-	-	R*	A*	A	A*	A*	A*	R*	R*	A*	A*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	Y*
-	A	R*	A	R	R*	R*	-	R*	A*	R*	A	A	A	R	R*
NP	NP	NP	-	-	Y*	-	-	C	Y*	-	-	-	-	C	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R	A	A*	A*	A*	R*	R	R*	R*	A	R*
-	-	-	K	K	-	-	-	-	-	K	K	-	-	-	-

-	S*	S*	-	-	-	-	-	-	-	-	-	S	S*	-	-
-	-	-	W	W	-	W*	-	-	-	-	-	-	-	-	-
low_cov	K*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Y	Y	Y	-	Y*	Y*	Y	-	Y	Y	Y*	Y*	Y	Y*	Y	Y
-	-	-	-	-	-	S*	R*	S	S	-	-	-	-	-	-
R*	R*	R*	-	R*	R	R	R	-	-	-	-	-	-	-	-
-	D*	D*	R	R	-	W*	-	W*	W*	R	R	-	-	D*	-
-	-	Y*	-	-	-	-	-	Y*	-	-	-	Y*	Y*	B*	Y*
G*	R*	G*	G*	R*	R*	R*	G*	G*	G*	G	G*	G*	G*	R*	G*
-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	W*	W	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	Y	Y*	Y*	C*	Y*	Y	Y*	-	NP	NP	C*	C*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	Y*	Y*
NP	NP	NP	C	C*	C	C*	C	Y*	Y	Y*	-	Y*	-	Y*	C*
C*	C*	C*	C*	C*	NP	NP	NP	C*	C*	C*	C*	C*	C*	NP	NP
low_cov	G*	R*	NP	NP	low_cov	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*
R	R*	R*	-	-	R*	-	-	-	-	R	G	-	-	-	-
R*	R	R	R*	R*	R	G	G	R*	R*	R*	R*	R	R	R	R
Y	Y	Y	Y*	Y*	Y	C	C	C*	C*	Y	Y*	C*	C*	Y*	Y
M*	-	M*	-	-	M*	-	-	-	-	M	A*	-	-	-	-
-	R	R	R*	R*	R*	R*	A	A*	R*	-	-	R*	A*	R*	R
NP	NP	NP	-	-	-	-	S*	NP	NP	-	-	S*	-	S*	S
S	S*	S	-	-	S*	-	-	-	-	C*	S	-	-	-	-
Y	Y*	Y*	-	Y*	-	-	-	-	-	T	Y	-	Y*	-	-
R	R*	G*	G	R*	G	R*	R*	R*	R*	R*	R*	R*	G*	R*	R*
S	S*	S	-	-	-	S*	-	-	-	S	C	-	-	-	-
Y*	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-
-	Y*	Y	-	Y*	-	Y*	-	-	-	Y*	Y	-	-	Y*	-
R*	R*	R*	R*	R*	-	R*	V*	-	-	-	-	R*	R*	-	R*
R*	R	R	A	R	R*	R*	R*	R*	-	R*	R*	R	R*	R*	R*
R*	R	R	-	R*	R*	R*	-	-	R*	R	R	-	-	R	R
Y*	Y	T	Y	Y	Y	T*	T*	Y*	T*	Y*	Y*	Y	Y*	Y*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	R*	-	-	-	-
-	S*	S*	-	S*	-	S*	-	-	-	S	S	-	-	-	-
-	-	-	K	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	-	-
R	R*	R*	A	A	R	R*	R*	R*	R*	R	R	R*	R*	-	-
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
Y*	H*	H*	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R	R*	R*	-	-	-	-	-	-	-	-
Y	H*	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	Y*	Y*	Y
-	R*	D*	-	-	-	K*	-	K	K	-	-	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
Y	H*	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y*	T
K*	D*	N*	-	K*	K*	-	K*	-	R*	R*	-	K*	R*	D*	K*
R*	R*	R*	-	R*	R*	R	R	-	-	-	-	-	R*	-	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	C*	C*	Y*	Y	Y	C*	Y*	Y	C	Y*	Y*	C*	C*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-

R*	-	-	-	-	R*	R	R*	-	-	-	-	-	-	-	-
-	-	-	M	M*	-	-	-	-	M*	-	-	-	-	-	-
-	D*	K	-	-	-	-	-	-	-	-	K*	-	-	-	-
M	M	M*	M	M	M	C	M*	M	M*	M	M*	C	M*	R*	-
-	-	-	-	M*	-	Y*	-	-	-	-	-	-	-	M*	M*
R	-	-	-	-	-	-	-	-	-	-	-	-	-	V*	S*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	-	-	R*	-
-	S*	S*	S	S	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	C	C	C	S	C	S	S	S	-	-	S*	S*	C	C*
Y	Y*	Y*	Y	Y	Y	Y*	T*	Y	Y*	-	-	NP	NP	Y*	Y*
R	R	R	R	R	R	R	A*	R	R*	-	-	R*	R*	R*	A
R*	R	R	R	R*	R*	R*	-	R*	G	-	R*	G	G	R*	-
M	M	M	M*	C	M	M	M	M*	M*	M*	M*	M	C	M*	M*
-	R*	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y*	T	Y*	Y	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y	Y	Y	Y*	Y*	Y*	Y	-	-	-	-	-	-	Y*	-
S	S	S	-	-	S	S*	-	S	S	S*	S*	S	S	-	-
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
NP	NP	NP	R*	R*	low_cov	R*	R*	R*	R*	NP	NP	NP	NP	-	-
low_cov	Y	Y	-	-	low_cov	-	-	-	-	-	-	-	-	Y*	T*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	T
-	R*	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	Y*	Y	Y	-	-	Y*	-	-	-	-	-
R*	R*	R*	-	R*	-	-	-	-	-	R*	-	R*	R	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	low_cov	W*	W*	W*	W*	W*	W*	A	W*	A	A*	-	-	W*	W*
K	K	K	K	K*	K*	K	K	T*	T*	T	T*	-	K*	K	K
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	R*	A*
K	D*	D*	K*	K*	K*	-	-	-	-	K*	-	-	K*	-	-
R*	R	R	-	R*	R*	R*	R*	-	R*	-	R*	R	R*	-	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	-	-	-	-	-	-	-	S*	S	-	-	-	-	-	-
C	S*	S*	C*	S*	S*	C	S*	S	S	C*	C	S*	S*	C*	S*
-	-	W*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
K*	V*	R*	K	K	K	K	K	-	-	-	-	-	-	-	-
R	R*	R*	R*	R*	R	R	R*	R	R*	R*	R*	R	R	R*	R*
R*	D*	D*	-	D*	K*	D*	K*	V*	R*	K*	K*	K*	K*	R	R*
Y*	H*	M*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	Y*	Y*	-	Y	Y	-	-	Y*	-	Y*	Y
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	K*	K*	-	-	-	K	K*	G	K	K	G	-	-	K	K*
NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP	-	-
low_cov	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	R*	-
R*	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-
Y	Y	Y	-	Y	Y	Y	Y	-	Y*	Y	Y	T*	T*	T*	T*

A*	R	R	R*	R*	R*	A*	R*	R*	R*	R*	A*	A	R	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	S*	S*
Y*	Y*	Y*	NP	NP	Y*	Y	Y	Y*	Y*	Y	Y*	T*	T*	Y*	T*
low_cov	Y*	-	NP	NP	-	-	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*
Y	Y	Y	Y*	Y	Y	Y*	Y*	-	-	Y	Y*	T	T	Y*	Y*
-	-	-	-	-	-	R*	-	R*	R	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	R*	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R	A	-	-	R	R*	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	W*	-	W	W*	NP	NP	-	-
-	-	Y*	Y	Y	-	-	-	-	-	Y	Y	-	-	-	-
-	K	K	K	K	-	-	-	-	-	K	K	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	S	S	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	-	-	R*	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
S*	V*	V*	-	S*	-	-	-	-	S*	-	-	S*	-	S*	G
R*	R*	R*	-	R*	-	R*	R*	-	-	-	-	R*	R*	R*	-
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	M*	M*	-	-	NP	NP	M*	M*
Y	Y	Y	-	Y*	Y	Y	Y	Y	Y	-	-	Y	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
NP	NP	NP	-	-	R*	R*	R*	R	R*	-	-	R*	-	R*	-
-	S*	-	S	S*	S*	S	S*	S*	S	-	-	S*	S*	Y*	-
Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	-	C	C*	M*	M*
-	-	-	-	-	-	R*	-	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	R*	R*	R*	-	NP	NP	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	-	S	S	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP
Y*	Y	Y	Y	Y	Y	C	C	Y	Y*	Y	-	Y	Y	Y*	Y*
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	S*	-
K*	K*	-	-	-	K	K*	K	-	-	-	-	-	-	-	-
S	S*	-	S	S	-	S	S	C	S	S	S	-	-	S	S
-	-	-	-	-	-	Y*	-	Y*	Y*	-	-	Y*	Y*	-	-
Y*	Y	Y	-	-	Y*	Y	Y*	-	-	Y*	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R	A	R*	R	R	R*	-	A*	A	R*	R
-	R*	-	R	R	-	-	-	-	-	R	R	-	-	-	-
Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	W*	K*	-	K	K	-	-	K	K*	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	R*	R*	-	-	R	R*	R*	-
-	Y*	Y*	Y	Y*	-	-	-	-	-	-	-	T	T	Y*	-
A*	A	R*	A*	A*	NP	NP	NP	A*	A*	A*	A*	A*	A*	A*	A*
G	R*	R*	R*	R*	G	R*	R*	R*	R*	R*	G	R*	R*	R*	R*
-	-	-	-	-	-	-	-	R	R	-	-	R	R*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
M	-	M*	-	-	M*	M*	-	M	M	-	-	M	M	-	-
-	-	-	-	-	-	-	-	-	R*	R	R	-	-	-	R
-	D*	D*	R*	R*	-	R*	R*	R*	-	R*	R*	R*	R*	-	-
M*	Y*	Y*	-	-	-	-	-	-	M*	-	Y*	-	-	Y*	-
-	W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	Y*	Y*	Y	Y*	-	-	Y*	Y*
R	R	R	-	R*	R*	R*	R*	R	R	R	R	R	R	R	R*
Y*	H*	H*	-	-	-	-	M*	-	-	Y*	-	-	Y*	H*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W	W*	-	-	-	W*	-	W	W	W	W	-	-	W*	W
S*	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	M*	M*	M*	M*	-	M*	M	M
Y	Y*	Y	-	-	Y*	Y*	-	Y	Y	Y	Y	Y	Y*	Y*	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	S*
W*	-	-	-	-	-	W*	-	W	W*	W	W	NP	NP	W	W*
R	R	R	R*	A	R	R*	R*	R	R	R	R	R*	A	R*	R
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y	Y	Y*	C	Y	C
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	T*	T*	Y*	Y*	T	T*	T*	Y*	T*	T*	T*	Y*	T	Y*	Y
R*	R	R	R	R	R*	-	-	-	R*	-	-	R*	R*	R	R
-	R*	R*	R	R	-	-	-	-	-	-	-	-	-	R	R
Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
M*	M*	C	M*	M*	M*	M*	C*	M*	M*	M*	M	C	M*	M*	M*
Y*	H*	H*	-	Y*	-	-	-	Y*	Y*	Y	Y*	Y*	Y*	Y*	-
R	R	R	-	R*	R	-	-	-	-	R*	G*	R*	-	R*	R
low_cov	-	-	NP	NP	low_cov	-	-	-	-	NP	NP	-	-	A*	R
M*	M	M	-	M*	M*	M	M	C	M	M	M	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	A*	A	R*	R	R*	A*	A	-	-	A	R*	-	-
-	K*	K*	K*	K*	-	K*	-	T	K*	K*	K*	K*	K*	-	-
Y*	Y	Y	-	Y*	Y*	-	-	-	-	Y	Y*	Y	Y*	Y*	Y*
Y*	-	-	Y*	Y*	-	Y*	-	Y*	T	-	-	NP	NP	-	-
-	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
Y*	-	Y*	-	Y*	Y*	-	Y*	-	-	-	-	-	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R

-	-	-	A	R*	-	-	R*	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
Y*	Y*	T*	T*	T*	T*	Y*	T*	T*	Y*	Y*	Y*	Y*	T*	Y*	T*
NP	NP	NP	NP	NP	low_cov	Y*	Y*	Y*	Y	NP	NP	-	-	-	-
NP	NP	NP	NP	NP	low_cov	K*	K	K*	K*	NP	NP	-	-	-	-
R*	R*	R*	-	R*	-	-	-	B*	R*	-	-	R*	-	R*	-
Y*	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	-	-	Y	Y*	Y*	Y
-	-	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
T*	Y*	T	-	-	low_cov	-	-	Y*	Y*	Y*	Y*	Y*	Y*	-	-
-	low_cov	-	NP	NP	low_cov	R*	R*	-	-	-	-	NP	NP	-	-
-	-	-	-	-	K*	K	K	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y*	Y*	Y*	Y	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	-	R*	R*	R*	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	K*	K*	T	K*	K*	K*	K*	T*	T*	T	T	K*	K*	-	K
Y*	Y*	Y*	-	-	Y*	Y*	-	Y	Y*	T	Y	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	Y*	Y*	-	-
-	R	R*	A*	A	-	R	R	R	R	-	-	R*	R*	R	R
-	Y*	Y*	-	-	-	Y*	Y*	Y	-	Y	Y	-	-	-	-
-	K*	K*	T*	T*	-	K*	K*	NP	NP	-	-	K*	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	-	R*	R	R	R	R	R	R	G	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R*	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	low_cov	C	Y*	Y*	Y	Y*	C*	Y*	Y*	Y*	Y
Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	-	-	Y*	Y	-	-
-	Y*	-	-	-	-	Y*	-	C	Y*	-	-	Y*	Y*	-	-
R*	N*	N*	R	R	R	R	R	R*	R*	R	R*	R	R*	N*	R
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	-	-	-	R	R*	R	R	R	R*	G	R
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	R*	-	-	R*	-	R*	-	-	-	-	-	R	R	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	C*	S	S	S*	S	V*	S*	S*	S*	S*	S*	S*	S
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	G	G*	G*	G*	R	R*	R*	NP	NP	R*	-	-	-	R*	R*
S*	S	S	G*	G*	S	G	G*	S*	S*	G*	S*	S	S*	S*	S
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	Y*
-	low_cov	-	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	R*	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
R	R	R*	R*	A	R	A	R	R*	R	R*	R*	R	R*	R	-
-	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	NP	NP
Y	Y	Y	Y*	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
K	K	K	K*	K	K	T*	K*	T*	T*	K	T*	T	T*	K	K
Y	H*	H*	Y*	Y	Y*	Y	Y	Y*	H*	Y	Y*	Y	Y	Y	Y
K*	K*	K*	K	K*	-	K*	-	-	-	K	-	-	-	K*	K
W*	W	W	-	-	W*	W*	W*	W*	W	W*	-	W	W	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R	R	R*	A*	A*	R	R*	R*	R*	R*	R*	R*	R*
R	R	R*	R	R	R	R	R*	-	-	R	R	R*	R	R	R
Y*	Y	Y	Y	Y	Y*	Y	Y	-	-	Y	Y*	Y*	-	Y*	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	Y*
R	R*	R*	R	R	R	R	G	R	R	R	R*	R	R*	R*	R
G	G*	G	-	-	R*	R*	G*	R*	G*	R*	R*	NP	NP	R*	R*
-	-	-	Y	Y	-	-	-	-	-	-	-	Y	-	-	-
-	-	-	R	R	-	-	-	-	-	-	-	R	R*	-	-
C*	low_cov	C	-	-	C*	C*	C*	C	C*	Y	Y*	Y	-	Y*	C*
A	R	R	-	R*	A	A*	R*	A*	R*	R	R	R	R*	R*	R*
NP	NP	NP	-	-	T*	T*	Y*	NP	NP	Y	Y*	NP	NP	Y*	T*
R*	R	R	-	-	R*	R*	G*	G*	R*	R	R	R	R*	R*	R*
-	R*	R*	R*	R*	-	R*	R*	-	R*	R*	R*	R*	R*	V*	R
-	R*	-	R	R	-	-	-	-	-	-	-	R	R	-	-
K	T	K*	-	-	K	K*	K*	K*	K*	K	K	K	K	K*	K*
NP	NP	NP	R	R*	R*	G*	R*	R*	G*	R	R	G*	R*	G	R*
G	G	G*	-	K*	G*	G*	G*	G*	K*	K	K	K	K	D*	G*
S*	S*	S*	S	S	-	-	-	-	-	-	-	-	-	S*	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-
R	R*	R	R*	R*	R*	R*	R*	R*	-	-	-	R*	R*	-	-
-	-	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-
R*	R*	-	R	R	R*	R	R	-	-	R	R	R	R*	-	-
-	M*	-	M	M	M*	M	M	-	-	M	M	M	M	-	-
-	-	-	-	-	Y	Y*	Y	-	-	-	-	-	W*	-	-
-	Y	Y*	-	-	-	-	-	Y*	Y*	-	-	-	-	Y*	Y*
Y*	T	T	Y*	Y*	Y*	Y	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
W*	-	W*	-	-	W*	-	-	-	Y*	-	-	W*	W*	-	-
R*	R*	R*	-	-	R*	R*	-	R*	-	R*	-	-	R*	-	-
R*	-	-	-	-	-	-	-	R*	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
-	R	R*	R*	R	-	R*	-	R	R	-	-	-	R*	-	-
W*	W*	W*	T	T	W*	-	-	W	W*	T*	T	-	-	-	-
-	-	W*	-	-	-	-	-	-	-	-	-	W	W*	-	-
-	-	-	R	R	-	-	-	-	-	R	R	-	-	-	-
-	-	-	S	S	-	-	-	-	-	-	-	-	-	Y*	-
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	-	-	-

R*	R*	-	-	-	R*	R*	R*	R*	R*	-	-	R	R*	R*	R
-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R	-	-
NP	***NP***	***NP***	***-***	***-***	***Y***	***Y***	***Y****	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***
NP	***NP***	***NP***	***NP***	***NP***	***low_cov***	***-***	***-***	***-***	***-***	***NP***	***NP***	***NP***	***NP***	***R****	***R***
NP	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***
NP	***NP***	***NP***	***-***	***-***	***-***	***Y****	***Y****	***NP***	***NP***	***NP***	***NP***	***NP***	***NP***	***-***	***-***
-	-	-	-	-	-	-	-	-	-	R*	R	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
Y	Y	Y	Y*	C	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
M*	M*	M*	M	M	-	-	-	-	-	-	-	-	-	-	-
G*	G*	G*	G*	G*	low_cov	G*	R*	G*	G*	G*	G*	NP	NP	G*	R*
-	R*	-	-	-	-	R*	R*	-	R*	-	-	R	R*	-	-
Y*	Y	Y*	Y*	Y	Y*	Y	-	T*	T*	-	-	Y*	-	-	-
-	-	-	-	-	Y	Y*	Y	-	-	-	-	-	-	Y*	Y
Y*	Y*	-	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	Y
-	R*	R*	-	-	R	R*	R*	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
W	-	W*	W	W*	T*	W*	W*	-	-	-	-	-	-	W	W
-	-	-	-	-	-	M*	-	M	M	-	-	-	-	-	-
R	R	R	G*	G	R	R	R	-	-	-	-	R*	R	R*	R
G	G	G	R*	G*	R*	R	G*	R	G	R	R*	G*	R*	R*	R*
Y*	Y*	Y	C	C	Y*	Y*	-	-	-	-	-	Y*	Y*	Y*	Y*
Y	H*	Y*	Y*	C*	Y*	C	C*	Y	Y*	Y	Y	C*	C*	Y*	Y*
C*	C*	C*	NP	NP	C	C*	C*	Y	Y*	Y*	Y*	C*	C*	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
R*	R*	R	G	G*	R	R*	R*	-	-	-	-	-	R*	R*	R*
R*	R	R	-	-	A*	R*	R*	R	R*	R*	R*	-	-	-	-
C	C*	Y*	C*	C*	C*	C	C*	Y	Y	Y*	Y*	C*	C*	Y*	Y*
R*	R*	R*	NP	NP	R*	-	R*	-	-	-	-	-	-	-	R*
R*	R	R*	-	-	-	R*	-	R	R	R	R*	R*	R*	R*	-
R	R*	R*	G*	G*	R	R	R*	R	R	R	R	G*	R*	R*	R
R	G*	G*	G*	G*	R	R	G*	R	R	R	R	G*	G*	R*	-
-	Y	Y*	-	-	Y*	Y*	Y*	Y	Y*	Y	Y*	-	-	-	-
W*	W	W	-	-	W*	-	-	-	-	W	W*	T	T	-	M*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	K*	-	K	K*	-	-	-	-	K*	K
-	B*	B*	-	-	S*	B*	B*	-	K*	-	-	-	-	B*	-
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	Y	Y*	Y*	-
Y	H*	H*	-	-	Y*	Y*	-	Y	Y*	-	-	-	-	Y*	Y
R	R	R	R	R	R	R	R	R	R*	R*	-	R	R	-	-
S*	-	-	-	-	S*	S*	S*	S	S	-	-	-	-	S*	S
-	-	-	-	-	-	K*	-	K	K*	-	-	-	-	K*	K
K*	K*	K*	-	-	-	K*	-	K	K	-	-	-	-	K*	K
-	M*	M*	-	-	-	Y*	-	Y*	Y*	-	-	-	-	Y*	Y
-	-	-	K	K	-	-	-	-	R*	-	-	-	-	-	-
NP	NP	NP	K*	K*	K*	-	K*	K*	K*	K*	K	K*	G*	K*	K
-	-	-	-	-	Y	Y*	Y	-	-	-	-	-	-	-	-
M	M*	M*	-	-	M	M	M	-	-	M	-	M*	M*	-	-

-	S*	-	S	S	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	Y*	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
-	K*	K*	G	G*	K*	K*	-	-	-	K*	K*	K*	-	W*	-
R*	G	R	R*	G	R*	R	R*	-	-	R	R*	-	-	R*	-
M*	M*	M	M	M	M*	M*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y*	Y*	Y	Y	Y	Y	-	-	-	-
Y*	-	Y*	Y*	Y	Y*	-	-	-	-	-	-	-	-	-	-
-	M	M	M*	M*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	C	C*	NP	NP	NP	NP	Y	Y*
Y*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	T	Y*	Y*
R*	R*	R*	A*	A	R*	R*	R*	A*	A*	A*	R*	A*	A*	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
NP	NP	NP	K*	K*	K*	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R*	R*	R*	R*	R	R	R	R	R*	-
NP	NP	NP	Y*	Y*	C	Y*	C*	NP	NP	Y*	Y*	Y*	C*	C	Y*
Y*	Y	Y*	Y*	C	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	C	Y	Y
R*	R	R	R*	R	-	-	-	-	-	-	-	R*	-	R	R*
-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y	Y*	-	-	-	-	-	-	Y	Y*	Y	Y
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	K*	K*	K	K	-	-	-	-	-	-	-	K*	-	K	K
R	R*	R*	R	R	-	-	-	R*	-	-	-	R	R*	R	R
-	Y*	Y*	-	Y*	-	Y*	-	-	Y*	Y*	Y*	Y*	-	-	-
R*	R	R*	R	R	R*	-	-	-	-	-	-	R	R*	R*	R
Y	-	-	Y*	Y*	Y*	-	-	-	-	-	-	NP	NP	-	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	C	C*
C*	Y*	Y*	B*	C*	C*	Y*	Y	B*	Y*	Y*	Y*	C	Y*	Y*	B*
-	Y*	-	Y	Y	-	-	-	-	-	-	-	-	-	Y	Y
Y*	H*	Y*	Y	Y	-	-	-	-	-	Y	Y	Y	Y*	-	-
S	S	S*	S*	S	S*	S*	S*	S*	S	-	-	S*	-	S*	S
-	-	-	R	R	-	-	-	-	-	-	-	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-
R	R*	R	R	R	R*	R	R	-	-	-	-	R	R*	R*	-
Y*	Y	Y	Y	C	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*
Y*	Y	Y	Y	Y	Y*	Y*	-	Y	Y*	-	-	-	-	Y*	-
Y*	C	C	Y*	C*	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y*	Y*
R*	R	R	R	A	A	R	R*	R	A	R	R	R	R*	A*	R*
C*	Y*	Y*	NP	NP	low_cov	-	-	Y*	Y*	K*	-	C*	-	NP	NP
NP	NP	NP	R*	R*	NP	NP	NP	-	R*	A*	R	NP	NP	NP	NP
low_cov	Y	Y*	Y	Y*	-	Y*	-	NP	NP	-	-	Y	Y*	-	-
-	R*	R*	R	R*	-	-	-	-	-	-	-	-	-	-	-

-	Y	Y*	Y*	Y*	-	-	-	-	-	H*	Y*	Y*	Y*	Y*	Y*
T*	Y	Y	T*	T*	Y	Y*	Y*	Y	Y	Y	Y	Y*	Y	T*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R*	R	-	R	R*	-	-	R	R	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y	Y*	Y*	Y
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y
Y*	H*	H*	Y	Y	-	-	-	Y*	-	-	-	-	Y*	-	-
R*	-	R*	-	-	R	R	R	-	-	-	-	-	-	R	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	Y*	Y*	low_cov	Y*	-	-	-	-	-	NP	NP	-	-
M	M	M	A*	A	A*	M	M*	A*	A*	M	M	A*	A*	M	A*
-	low_cov	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
Y*	Y	Y	Y	Y*	T*	Y	T*	Y*	Y*	-	-	Y*	Y*	Y*	Y*
Y	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	R*	-	-	-	R*	-	-	-	R*	R	R	R*	R*	R*
-	-	-	Y	Y	-	-	-	-	-	-	-	-	Y*	-	Y*
-	R*	R*	R*	R*	-	-	-	R	R*	A	A*	-	R*	-	-
low_cov	A	R*	R*	R*	low_cov	R	R*	R*	R*	R*	R*	NP	NP	R*	A*
Y	H*	H*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	R*	NP	NP	low_cov	R	G*	R*	R*	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	T	Y	T*	Y*	Y*	-	-	Y*	Y*	Y*	Y*
Y	Y*	Y	Y*	Y*	Y	Y*	C*	Y*	Y*	Y*	Y*	Y*	C*	C*	Y*
low_cov	R*	R*	R	-	NP	NP	NP	-	-	-	-	R*	A	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
G*	R	R	R	-	NP	NP	NP	R*	G	R*	R*	R	G	R*	G
NP	NP	NP	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*	R	R
Y*	Y	Y	Y*	T	Y*	Y*	-	T	Y*	Y	Y*	Y*	T*	N*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	R	R	-	-
-	Y*	Y*	Y*	Y*	Y*	Y	Y	-	-	Y*	Y*	-	-	Y*	-
-	R*	R*	R*	R*	-	-	-	-	-	R*	R	R	R*	R*	R
-	-	-	K	K*	-	K*	G	-	-	-	-	-	-	K*	G
-	R*	R*	R	R*	-	R*	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	W*	W	W	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	W*	W*	-	W*	-	-	-	-	-	-	-	W	W*	W*	W
-	S*	S*	S	S*	-	-	-	-	-	S*	S	-	-	S*	-
R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R	R	R*	G	R*	R
-	R*	-	R*	R*	-	R*	R*	-	-	-	-	-	R*	R*	-
-	Y*	Y*	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-
Y	Y	Y	Y	H*	-	Y*	Y*	Y*	Y*	Y	Y	C	Y	Y	Y
R	low_cov	A*	A*	A*	R*	A*	A*	NP	NP	A*	A*	A*	R*	A*	A*
-	S*	S*	S	S*	-	S*	S*	S*	C	-	-	-	-	-	-
-	R	R	R	R	R*	R*	R*	R	R*	-	-	R	R*	R	R
-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	N*	H*	-	-	-	Y*	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y	-	-	-	Y*	Y*	-	-	-	-	-	-
-	R*	R*	R*	R*	-	-	-	R*	R*	-	-	-	-	-	-
-	R*	-	R	R	-	-	-	R*	R*	-	-	-	-	-	-
-	R*	R*	R	R*	-	-	-	R*	R*	-	-	-	-	-	-
-	R	R*	R	R	-	R*	-	R*	R	-	-	R	R	R	R
-	-	-	Y	Y	-	Y*	-	-	-	-	-	-	-	-	-
-	K*	W*	-	-	-	-	-	-	-	-	-	K*	-	-	-
R*	R	R	-	-	R*	R*	R	-	-	R	G	G	G*	R*	R
Y	Y	Y	-	-	Y	Y*	Y*	-	-	Y*	Y	Y*	Y*	Y	Y
-	-	-	Y	Y	-	Y*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R*	R	R	R	R	R*	-	-	R	R	R*	-
R*	R	R	-	R*	-	R*	R*	-	-	A	R	R*	A*	R	R
Y*	Y	Y*	Y	Y	H*	-	Y*	Y*	Y*	-	-	Y*	Y*	Y	Y
W*	W*	-	-	-	-	-	-	-	-	W	W	-	-	-	-
Y*	H*	H*	-	-	Y*	-	-	-	-	Y	Y	-	-	-	-
R*	R*	R*	-	-	R*	-	-	-	-	-	-	R*	R	R*	R
-	-	-	-	-	Y*	Y*	Y*	NP	NP	Y	Y*	-	-	-	-
-	H*	H*	-	Y*	-	-	-	-	Y*	Y*	Y	-	Y*	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	Y*	-
Y*	Y	Y	-	Y*	Y*	Y*	Y*	Y	Y	Y*	-	-	Y*	Y	Y
-	R	R*	R	R	-	R*	R*	-	-	R	R	-	-	-	-
NP	NP	NP	-	-	-	-	-	R*	R*	NP	NP	NP	NP	-	R*
Y*	Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	-
Y*	Y*	Y*	-	Y*	Y*	Y	Y	-	Y*	-	-	-	-	-	Y*
-	-	-	S*	S	-	-	R*	-	-	S*	S*	-	S*	S*	-
-	-	-	-	-	R*	R*	R*	-	-	-	-	R*	R*	R*	-
R*	R*	R*	R*	R*	-	-	-	-	-	-	-	-	R*	R*	-
Y	H*	H*	Y*	Y*	Y*	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y	Y
-	Y*	-	Y	Y	-	-	-	-	-	Y	Y	-	-	-	-
R	R	R	R	R	G*	G	G*	R	R	R	R	R	R*	R*	R
-	Y*	Y*	Y	Y*	-	-	-	-	-	Y	Y	-	-	Y*	Y*
-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y*	Y*	-	Y	Y	C	C	C	Y*
-	-	-	-	-	NP	NP	NP	-	-	S*	C*	-	-	NP	NP
-	R*	R*	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-	Y*
-	-	-	C	Y	-	-	-	-	-	-	-	NP	NP	Y*	Y
Y*	Y	Y*	-	Y*	Y*	-	Y*	-	Y*	Y*	-	-	-	Y*	Y*
-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	R*	R*
NP	NP	NP	Y*	Y*	low_cov	-	-	Y*	Y*	-	-	NP	NP	Y*	Y*
K*	R*	R*	R*	R*	K*	K*	K*	K*	K*	K*	K*	K*	D*	K*	D*
Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	-	-	-	R*	R*	R*	R	-	-	-	-	-	-	-	R*

Y*	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
-	S*	S*	S	S	-	S*	-	S	S	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	R*	-	NP	NP	NP	NP	-	-
K	K	K	-	-	K	G	K*	K	G	K	K	NP	NP	K	K
NP	NP	NP	NP	NP	NP	NP	NP	Y*	C	C*	C*	NP	NP	Y*	Y*
-	R*	R*	-	-	R*	R*	R*	-	-	-	-	-	-	R*	R
Y	H*	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	-
Y*	H*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y
R*	R	R	-	R*	R*	R*	-	R	R	R*	-	R*	R*	R*	-
-	Y*	Y*	Y*	Y*	-	H*	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	M*
low_cov	M*	M*	NP	NP	M*	-	M*	NP	NP	C*	M*	NP	NP	NP	NP
Y*	-	-	-	-	Y*	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	Y	Y*	Y*	-
low_cov	-	-	NP	NP	low_cov	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y*	Y	Y*	-	-	-	-	Y	Y*	-	-	-	-
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y
R*	-	-	-	-	R*	R*	R	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y*	Y*	Y*	-	Y*	Y	Y	Y*	Y*	Y*	Y*
R	R	R	R	R	R*	R*	-	-	-	R	R*	R*	R*	R*	R
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y
Y	Y	Y	Y	Y	Y*	Y*	-	-	-	Y	Y	Y*	Y*	Y*	Y
S	S	S	S*	S*	S	S*	S*	-	S*	S	S	S*	S*	S	S
W	W	W	T*	W*	W	W	W	W	W	T*	T*	W*	T	T	W
T*	Y*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	T*	Y*
S*	-	S*	S	S	S*	-	-	S	S	-	-	-	-	S*	S
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	-	-
R*	R*	R*	-	R*	R	R*	R	-	-	R	R	R*	-	-	-
NP	NP	NP	G*	G*	-	-	-	R*	R*	-	-	NP	NP	R*	R*
NP	NP	NP	K	K	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	R*	-	R	R	-	-	-	-
Y*	-	Y*	-	-	-	Y*	-	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	Y*	-
D*	-	-	-	-	R*	-	-	R*	R*	-	-	-	-	-	-
-	Y*	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
low_cov	Y*	Y*	Y	Y	-	Y*	-	Y	Y	-	-	Y*	Y*	-	-
NP	NP	NP	Y	Y*	-	-	-	-	-	-	-	NP	NP	-	-
K*	K*	K*	K*	B*	K*	K*	G	K*	K*	K*	K*	K*	K*	K*	K*
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
-	-	-	M	M	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
Y*	low_cov	Y*	C	C*	Y*	-	-	-	-	-	-	NP	NP	Y*	Y
NP	NP	NP	NP	NP	K*	K*	T*	NP	NP	T*	T*	K*	K*	K*	T
-	-	-	-	-	NP	NP	NP	NP	NP	M*	A*	NP	NP	-	M*
R*	R	R*	G*	R*	R*	R*	R*	-	-	-	-	R	R*	R*	R
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	R*	R*	R*	R	R	-	-	-	-	-	-	-	-
R*	R*	R*	R	R*	R*	R	R	R	R	-	-	-	-	-	-
K*	-	K*	K*	K	K*	K	K*	K	K	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	T	Y*	Y	Y
K*	K	K*	K*	K*	K	K	K*	K*	K	K	K*	K	K*	K*	K
-	-	-	-	-	R	R*	-	-	-	-	-	-	-	R*	-
-	S*	S*	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	-	-	Y	T	-	Y*	Y*	Y
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	R*	R*	R	R	-	R*	-	-	R*	R*	R*	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	R*	-	R*	R*	R*	R*	R	R	R	R*	R*	R*
K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y*	-	C*	C*	low_cov	Y*	Y*	NP	NP	Y	Y	Y*	Y*	Y*	Y*
Y*	H*	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
R*	R*	-	G*	G*	R*	R	R*	R*	R*	R	R	R*	R*	G	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	R*	G
K*	-	-	K*	K*	K	K	K	K*	K*	K	K*	NP	NP	K	K
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y
low_cov	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R	R*	R	R	R*	R*	R	R	R	R*	R*	R
Y*	Y	Y	Y*	T*	Y*	T	Y*	Y	Y*	Y*	Y*	Y*	T	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	Y	Y*	Y	Y*	Y	-	-	-	-	-	-	Y*	-
-	R*	R*	R*	R*	R*	R	R*	R*	R*	R	R	G	R*	-	R
S*	N*	N*	S	S*	S*	S	S	-	-	S*	-	S*	S*	-	H*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	NP	NP	R*	R*	R*	R*	G	R	R	NP	NP	R*	-
-	D*	R*	R	D*	-	K*	-	D*	K*	R*	R*	R*	R*	K*	-
R*	R	R*	R*	R*	-	-	R*	-	-	R	R	-	-	R*	R*
-	M*	M*	M	M*	M*	M	M	C	M*	M	M	-	M	M*	M*
R	R	R	R*	A	R	A	R*	R	R*	R*	R*	A	R*	A*	R*
Y*	-	Y*	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
-	Y	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-
NP	NP	NP	Y*	Y*	-	-	-	-	Y*	-	-	NP	NP	-	-
M	M*	M*	-	-	M*	-	-	-	-	C*	M*	M	M*	-	-
W	W	W	-	-	W	W	W	W	W	W*	W*	W	W	W*	W*
-	-	-	R*	R	-	R*	R*	R*	R*	-	-	-	-	-	K*
-	-	W*	W*	W	-	W*	-	W	W	-	-	-	-	-	-
Y*	H*	Y*	-	-	-	-	-	-	S*	-	-	Y	Y*	-	-
K	K*	K*	K*	K	K	K	K	K	K*	K	K	-	-	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	R*	R*
Y*	-	-	-	-	NP	NP	NP	-	Y*	-	-	-	-	-	Y*
-	R	R	R	R	-	R*	-	-	-	-	-	R	R*	R	R
R	R*	R*	-	-	R	R*	R	-	-	R	R	-	-	R*	R
-	V*	R*	-	R*	-	-	-	-	-	-	-	-	R*	-	-

-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R	R	R	R	R	R	G	R	R*	R*	R	R	R
S	-	S*	-	-	S*	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y
-	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R	R	R	R*	-	R	R	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
NP	NP	NP	Y*	Y*	C	C	C*	NP	NP	-	-	NP	NP	C*	C*
W*	W*	-	W	W	W*	W*	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
W*	W*	-	W	W	W*	W	T	W	W*	W*	W*	W*	W*	W*	W
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W	W	W	W	W*	W	T	W	W	W*	W*	W*	T	W*	W
R*	R	R	R	R	R	R	R	R	R	R	R*	R	R*	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	H*	-	-	Y*	Y*	-	Y	Y	-	-	S*	B*	-	-
Y*	H*	H*	Y	Y*	Y*	-	-	-	-	Y*	Y	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	NP	NP	NP	-	-	-	-	T*	T*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y*	Y*	C	Y*	Y*	Y*	-	-	H*	Y
-	V*	V*	R	R	R*	R*	R	-	-	R*	R	R	R	-	-
A*	A*	A*	NP	NP	NP	NP	NP	R*	R*	R*	R*	NP	NP	R*	R*
low_cov	R	R*	-	-	low_cov	R*	-	-	-	-	-	-	R*	R*	R*
Y	Y*	Y*	Y	Y	Y*	Y*	Y*	Y	Y	Y*	-	Y	Y*	-	Y*
Y*	Y	C*	C*	C	Y*	C	Y*	Y	Y	Y*	-	Y*	Y*	-	Y
low_cov	T*	K*	NP	NP	T*	K	T*	K*	-	-	-	NP	NP	K*	-
S*	S*	S*	-	-	S*	G	G	-	-	-	-	-	S*	-	-
R*	R*	R	-	-	R*	R	R	-	-	-	-	-	R*	-	-
R	R	R	R*	R	R*	R*	R	R*	R*	R	R*	R	R*	R*	R*
A*	A*	A*	A*	A	W	W	W*	-	-	-	-	NP	NP	W*	W
-	-	-	-	-	low_cov	R*	R*	-	-	-	-	-	-	-	-
Y	Y	Y	C	C	Y*	Y*	-	Y	Y	-	-	Y	Y*	Y*	-
NP	NP	NP	-	-	-	-	-	-	-	R*	G*	NP	NP	-	-
S*	-	S*	S	S*	S	S	S*	-	-	-	-	NP	NP	S*	S*
-	R*	R*	R*	R	R*	R	R*	G*	G	G*	G	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	G	S*	-	-
Y	Y	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	R*	R*	-	-	-	-	-	-	-	NP	NP	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	C	Y	Y	Y	Y*	Y*	Y*
-	V*	V*	-	-	R	R	R*	-	-	-	-	-	-	-	S*
R*	R	R	G*	R	R*	R*	R*	R	R*	R	G	R	R*	G	R*
M*	M	M	-	-	M	M	M	M	M	M*	-	M	M*	-	-
-	W*	W*	NP	NP	-	-	-	W*	-	W*	W*	NP	NP	W*	W*
A	R*	R*	R*	R*	R*	A	R*	A	A	A	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
C*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*	Y*
low_cov	R	R*	NP	NP	NP	NP	NP	-	R*	NP	NP	R*	R	R*	R*
-	-	-	T	Y*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	Y*	Y	Y*	-	-	-	-	NP	NP	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	R*	R	-	-	-	-	NP	NP	-	-
-	-	-	-	Y*	-	-	-	-	-	-	-	-	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	-	Y*	-	Y*	Y*	T	T	-	-	Y	-	-	-
C	Y	Y	Y*	C	C	Y*	Y*	Y	Y	Y*	Y*	Y	Y	Y	Y
Y	H*	H*	Y*	Y*	Y	Y*	Y*	Y	Y	Y*	Y*	Y	Y	-	-
Y	Y	Y*	-	-	Y	Y	Y*	Y	Y	-	-	Y	Y*	-	-
M*	M	M*	-	M*	M*	M	-	M	M	-	-	M	M*	-	-
R	R*	R	R*	G	R	R*	R*	R	R	R*	G	R	R*	R	R*
-	-	-	-	-	Y	Y	T	-	-	Y*	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	-	-	Y	Y	Y*	Y	Y	Y*	Y*	Y	Y	Y*	Y*
R*	R*	R*	-	-	R*	-	R*	R*	R*	-	-	R	R*	R*	-
K	D*	K*	-	-	K*	-	K*	-	-	-	-	-	-	K*	K
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	W*	-	R*	W*	-	-	-	-	-	-	-	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	S*	-
R	R*	R*	R*	R	R	R	R	R	R	R*	R*	R	R	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	H*	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K	K
S*	S*	S*	-	-	-	S*	-	S*	S*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	Y	Y	Y*	-	Y*	Y	Y	Y	Y	-	-	-	Y*	S*	-
M*	M*	-	M*	M	M	C	C*	M*	M*	M	M	-	-	-	-
-	Y*	Y*	-	Y*	Y*	-	-	-	-	-	-	Y*	Y*	Y*	Y
R*	R	R*	-	-	R	R	R	R	R	-	-	-	R*	R*	-
A*	R	R	-	R*	R*	A	A	R	R	A	A*	-	-	R	R
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	Y	Y	Y	Y	Y*	Y	Y*	Y	Y	Y*	Y*	-	-	Y*	Y
S	S	S	-	-	S*	S*	S	S	S*	S*	S*	-	S*	S*	S*
G*	R	R	-	-	G*	R	G	R	R	G	R*	-	R*	R	R
Y*	-	-	T	Y*	-	-	-	M*	-	-	-	-	-	-	-
-	R	R	-	-	-	R*	-	G*	G	-	-	-	-	-	-
NP	NP	NP	-	-	M*	M	A*	NP	NP	M*	-	-	-	M*	M*
-	R*	R*	-	-	-	R*	-	R*	R*	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	W*	-	W	W

-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-
G*	S	S	-	S*	G	S	S	S	S*	G	G	-	-	S*	S*
-	Y*	Y*	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
G*	G*	G*	G*	R*	G*	R*	R*	R*	R*	R*	G*	R*	G*	R*	R*
low_cov	-	-	-	-	R*	R*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	R*	G	-	-	-	-	-	-
Y	Y	Y	Y	Y	Y	Y	Y	-	Y*	Y	Y	C	C	Y*	Y*
R*	R*	R*	-	R*	-	R	-	R	R	-	-	R	R*	R*	R
R*	R	R*	R	R*	-	R*	-	R	R	R	R*	R	R*	G	R
-	-	-	-	-	-	R*	-	R	R*	-	-	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	Y*	Y*	-	-	-	Y*	Y*	-	Y*	Y	T*
K*	K*	K*	T	K*	K*	K*	K*	T	K*	T	T	T	K*	K*	K*
R*	R*	R*	-	-	-	R*	-	R	R	-	-	R	R	R*	R
Y*	Y	Y*	Y	Y*	Y	Y	Y*	T*	Y*	Y*	T*	T*	T*	Y*	Y*
Y	Y	Y	-	Y*	Y	Y	Y	Y*	Y	-	-	Y	Y*	Y	Y
T*	Y	Y	T*	T*	T*	T*	T*	T*	T*	Y*	T*	T	Y*	Y*	T
T	Y	T*	Y	T	Y*	T*	T	Y*	T*	Y*	Y*	T	T	Y*	T
S*	C	C*	C*	C*	low_cov	C*	C*	C*	C*	C*	C	NP	NP	S*	C*
R	R*	R*	-	-	R*	-	-	-	-	-	-	R*	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
M*	M*	M*	-	-	M*	-	-	-	-	-	-	-	-	M*	-
R	R	R	R*	-	R	R	R*	R*	R	R*	-	R	R	R*	R
-	Y*	Y*	Y	Y	Y*	Y*	-	-	-	T	Y	Y	Y*	H*	Y*
-	D*	W*	A	A	W*	W*	W*	W*	W*	-	-	-	-	Y*	-
Y*	-	-	-	-	Y*	Y	Y	-	-	-	-	Y	Y	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	Y*	-	-	-	low_cov	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	W*	W
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R*	R	R*	R	R*	-	-	-	-	-	-	R*	R*	-	R*
W*	W*	W*	NP	NP	NP	NP	NP	W*	W*	-	-	NP	NP	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	H*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	Y*	-	Y*	-	-	-	-	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
Y*	Y*	Y	Y*	Y	Y*	Y*	-	Y	Y	Y*	-	-	-	-	-
-	-	-	S	S	-	-	-	-	-	-	-	S*	-	-	-
-	Y*	Y*	Y*	Y*	-	Y*	-	Y	Y*	Y*	Y*	-	-	Y*	-
-	-	-	Y*	-	Y*	-	-	Y	Y*	-	-	-	-	-	-
R*	R*	R*	R*	R*	-	R*	R*	-	-	-	-	R*	R*	D*	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
R	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	V*	-	-	M*	-	-	-	-	-	-	-	-	-	Y*
-	Y*	Y*	-	Y*	-	Y*	-	Y	Y	-	-	-	-	-	-
R*	R*	-	-	R*	R	R	R*	-	-	-	-	-	R*	R*	-
R	R	R	R	R	R	R	R	R	R	A	R*	R	A	R	R
low_cov	M*	M*	NP	NP	NP	NP	NP	M*	M*	A*	A*	A*	A*	M*	M
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Y*	Y*	Y	-	-	-	-	-	-	-	-	Y*	-	-	-	-
R*	R*	R*	-	R*	-	-	-	R*	R*	R*	R*	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP
-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
R*	D*	D*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	V*	R*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	R*	R*	-	-	-	-	R*	R*	-	-
R	D*	D*	R	R	R	R	R	R	R	R*	R*	R	R	R*	R
K	N*	N*	K*	G	K	G	K	K*	K*	K*	K*	K	G	K	K
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	R*	R*	-	R*	R*	-	-	R	R*	R*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-
K*	K	K*	K*	K*	K*	-	K	K*	K*	K*	K*	T	K*	K*	K
Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	Y	Y	Y
-	M*	M*	M	M	M*	A	A	A*	A*	-	-	M	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G*	G*	R*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	R*	NP	NP	G	R*	R*	R*	R	R
-	K*	K*	K	K*	-	K*	-	K*	K*	-	-	K	K*	K*	K
G*	G*	G*	G*	R*	G*	R*	G*	G*	G	G*	G*	G*	G*	G*	R*
Y	Y	Y	Y	Y	Y	T	Y*	Y*	T	Y*	T	T	Y	Y*	Y
-	Y*	-	T*	Y*	-	Y*	-	-	Y*	-	-	NP	NP	T*	Y
-	-	-	S*	S*	-	-	S*	NP	NP	NP	NP	-	-	-	-
NP	NP	NP	G	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
NP	NP	NP	-	-	low_cov	-	-	-	-	NP	NP	-	-	Y	Y
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	W*	W*
Y	Y*	T*	Y*	T	Y*	Y	Y*	Y*	Y*	-	-	Y*	T*	Y*	Y*
-	H*	H*	-	-	-	Y*	Y*	-	-	-	-	Y*	-	Y	Y
G*	R	R*	R*	R*	-	R*	R	NP	NP	R*	G*	R	G	R	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	Y*
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	W*	W
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	NP	NP	R*	R*
NP	NP	NP	R*	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R*
G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	NP	NP	G*	G*
A	R	A	-	R*	R*	-	-	-	-	-	-	R*	R*	R	R
G	R	R	R	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	A
M*	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
R*	R*	R*	-	-	R*	R	R	R	R	-	-	R*	G	-	-
-	-	-	-	-	R*	R	R	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	M*	M*	-	-	M	C*	-	-
R*	R*	R	-	-	-	R*	-	R	R	-	-	A	A	-	-
-	-	-	-	-	-	A	R*	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	-	R*	-	R	R	-	-	R	R	-	-
low_cov	R*	R*	NP	NP	A*	R*	A*	-	-	R*	R	-	-	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-

low_cov	Y	Y	-	Y*	low_cov	Y*	-	C	C*	-	-	Y*	Y*	Y*	C*
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	R*	-
low_cov	S	S*	S*	S*	low_cov	G	S	S*	S*	S*	S*	S*	S*	S*	-
Y	low_cov	Y*	-	-	Y*	C	C	C*	C*	Y*	-	NP	NP	C*	Y*
-	Y*	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R	R*	R	R	R*	R	R*	R	R*	R	R*	R	-	R	R*
-	R*	-	R*	G	-	R*	-	R*	-	R*	R*	G	R*	R	R
Y*	Y*	Y*	-	-	Y	Y*	Y	-	-	Y	Y	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	M*	A
-	Y*	Y*	-	-	Y*	Y*	Y	-	-	Y	Y	-	-	-	-
NP	NP	NP	T*	T	Y*	Y*	-	T*	T*	T*	T*	NP	NP	Y*	T*
R*	R*	R*	R*	R*	R*	R*	R*	R*	G	G	R*	R*	R*	G	R*
S*	S*	S*	-	-	S	S	S*	-	-	S	S	-	-	-	-
-	Y*	Y	-	Y*	Y*	Y*	Y	-	-	Y*	Y	-	-	-	-
R*	R*	R	A	R	-	-	-	-	R*	R*	R	R	-	R*	R*
Y	H*	H*	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y
R	R	R	R	R	R	R	R	R*	R	R*	R*	R	R	R*	R*
R*	R*	R*	-	-	R	R	R	R	D*	R*	-	R	R	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	-	-	-	Y*	-	T*	Y*	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	B*	H*	-	-	-	Y*	-	-	-	-	-	Y*	Y*	-	-
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	S*	-	-	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
R*	W*	R*	-	-	-	-	-	-	-	W*	W*	-	-	R*	-
W*	W*	W*	-	-	W*	-	-	-	-	-	-	-	-	-	-
-	-	-	S*	-	-	-	-	-	-	-	S*	-	-	-	-
-	H*	Y*	-	-	-	M*	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	-	-	-	Y*	Y*	-
K*	K*	K*	-	-	K*	-	K*	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	R*	-
K*	K	K*	K	K*	K	K	K	-	-	-	-	K*	-	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	T	Y*	-	-	-	-
R*	R	R	-	-	R*	R*	-	R	R	-	-	R	R	-	R*
R*	R	R	-	-	-	-	-	R	R	-	-	R	R*	-	-
K*	K*	K*	-	K*	K*	K*	-	G	G*	-	-	K	G*	-	-
R*	R*	R	R*	R*	R	-	R*	-	-	-	-	-	-	R	R
-	Y*	Y	Y*	Y*	-	Y*	Y	-	-	-	-	-	Y*	Y*	Y
R*	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
R*	R	R*	-	-	R*	R*	-	A*	A	-	-	R*	R*	-	-
-	-	-	-	-	M*	-	-	-	-	-	Y*	-	-	-	-
R*	R	R	-	R*	R	R*	R*	R*	G*	R*	-	R	R	-	-
Y*	low_cov	Y*	Y	Y	Y	Y	-	T*	Y*	-	-	NP	NP	Y*	Y

low_cov	K*	-	K*	-	low_cov	K*	-	-	-	-	-	-	-	K*	-
R*	R	R	-	-	R	R*	-	R*	R*	-	-	R	R*	R*	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
Y*	Y*	-	-	-	Y*	Y*	-	Y	Y	-	-	Y	Y*	-	-
Y*	Y	Y	-	Y*	Y*	Y	-	Y*	Y*	-	-	Y	Y*	-	Y*
R*	R	R	-	-	R	R	R	A*	A*	-	-	R	R*	-	-
R	R	G*	G*	R*	R*	R	R*	-	-	R*	R*	NP	NP	R*	R
R*	R	R	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	W*	W*	W*	-	W*	-	-	NP	NP	-	-
low_cov	-	-	R*	-	-	-	-	-	-	K*	-	-	-	R*	-
R*	G	R*	-	-	R*	R*	-	R*	G*	R*	G*	-	-	G	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
S*	S*	-	NP	NP	-	-	-	NP	NP	-	-	-	-	-	-
R*	R*	R*	R*	R*	low_cov	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y	-	Y*	-	Y	T	Y*	Y*	Y*	T*	Y*	Y*
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	-	-
R	R*	R*	R*	R*	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	R*	R*	R*	-	-	-	-	-	-	R*	-
Y*	-	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	T*	T*	T*	Y	Y	Y*	T	T	T*	T*	T*	T*	T*	Y*
Y	Y	Y	Y	Y	Y*	Y*	-	T	Y	T*	T*	NP	NP	Y	T*
-	-	-	-	-	K*	K*	K*	K*	K*	-	-	NP	NP	-	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
R	R*	R*	-	-	R	R	R	R	R	-	-	-	R*	R*	R
K	K*	K*	-	-	K	K	T	-	-	-	-	K*	K*	K*	K
R*	G	R*	-	-	R*	R*	G*	G*	G*	R	R*	G*	G*	NP	NP
NP	NP	NP	-	-	R*	-	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-
W*	W*	W*	W	W*	W*	W*	-	W*	W	-	-	NP	NP	W*	W
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y	Y	Y*	Y*	-	Y*	Y	-	-	-	-	Y*	Y
Y*	Y*	Y*	Y*	Y	Y	Y	Y	-	-	-	-	-	Y*	Y*	Y*
R*	-	R*	G	R*	R*	R*	-	-	-	-	-	NP	NP	R*	R*
R	R	R	R	R	R	R	R	R*	R*	-	-	-	R*	R*	R*
low_cov	R	R*	R	-	-	-	-	R	R*	NP	NP	-	R*	R	R*
low_cov	Y*	Y*	Y*	Y*	low_cov	Y*	-	NP	NP	NP	NP	NP	NP	Y*	Y*
S*	S*	B*	B*	K*	S*	S*	-	S	S*	S*	S*	-	S*	S*	S
low_cov	Y*	-	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	Y*	Y*
D*	R*	R*	D*	R*	D*	R*	R*	R*	R*	D*	D*	R*	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	S*	-	-	-	-	-	-	-	S*	-	-	-
S	S*	S*	-	-	S*	S*	S*	S*	S*	S*	S*	S	S*	S*	S*
D*	R*	R*	R*	R*	R*	R*	R*	-	-	R	R*	-	-	R*	R*

Y*	-	Y*	Y	Y	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y	-	Y*	-	-	-	-	-	-	-	-	-
-	W*	W*	-	-	-	-	-	-	-	-	-	-	W*	-	-
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	R*	R*	A*	R*	NP	NP	R*	R*	A*	A*	A*	A*
-	-	-	-	-	-	K*	-	K	K	K	K	-	-	-	-
-	-	-	-	-	-	-	-	Y*	Y*	Y*	Y	NP	NP	-	-
-	Y*	Y*	-	-	-	Y*	Y*	Y	Y	Y	Y	-	-	-	-
-	Y	Y*	-	-	-	-	-	-	-	Y	Y	Y	Y*	-	-
-	-	-	G	S*	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y	Y*	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	-	-	-	-	C	S*
K*	-	-	NP	NP	K*	K*	-	K*	K*	K*	K*	K*	-	T	K
NP	NP	NP	NP	NP	K*	B*	K*	-	-	NP	NP	NP	NP	K*	-
R*	R	R	R	R*	R	R	R	R*	R*	R	R	R	R*	R*	R
Y*	Y	Y	-	-	Y*	-	-	-	Y*	-	-	-	-	-	-
R*	R	R	R*	R*	R*	R	R*	R*	R*	R*	R*	R*	R	V*	R*
-	-	-	R*	-	-	R*	-	R	R*	R*	R*	R*	-	-	-
Y*	T*	Y*	Y*	T*	T*	Y*	T*	T*	Y*	Y*	T*	Y*	Y*	H*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G*	G
G	R	R	R*	R*	R*	R*	-	R	-	R	R	R	R*	R	R
NP	NP	NP	-	-	R*	-	-	NP	NP	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	R*	R*	-	-	A*	A*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	-	-	-	-	-	R*	R*	-	-	K*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	low_cov	-	Y*	-	-	-	-	-	-	-	-
low_cov	S	S*	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	C	Y	C	C	Y	Y	Y	Y	Y	C	Y	Y
Y*	-	Y*	Y*	Y*	NP	NP	NP	Y*	Y*	C*	C*	NP	NP	Y*	Y*
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	R	R
S*	S*	S*	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	Y	Y	Y	Y*	Y	Y	Y*	Y	Y*	Y*	Y	Y*	Y*	-	Y*
W*	-	W*	-	-	-	-	-	-	-	-	-	-	-	W*	W
-	-	-	R*	R*	NP	NP	NP	-	R*	G*	G*	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y	C	C*	Y*	Y	C*	C*	C	Y*	-	-
Y	-	-	-	-	-	-	-	Y*	-	-	-	-	-	Y	Y
K*	-	K*	-	-	-	-	-	-	-	-	-	-	-	K	K*
R*	R*	R*	R	R*	R	R*	R	R	R*	R	R	-	-	R*	R
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y	Y	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	Y*	Y*	Y*	Y	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
Y*	Y	Y	Y*	Y	Y	Y	C*	Y	Y	Y	Y	Y	Y	Y*	Y

S*	S*	V*	-	-	S*	S*	-	S*	S*	-	-	S*	-	S	S
-	-	-	-	-	-	-	-	M*	M*	-	-	-	-	M*	M
-	-	-	-	-	-	-	-	K*	K*	-	-	-	-	K*	K
-	-	-	-	-	-	R*	-	R	R*	-	-	-	-	R	R
Y*	Y	Y	-	-	Y*	Y*	Y	-	-	Y	Y	-	-	-	-
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	G	R
R	R*	R*	R*	-	R*	R*	R*	R	R	R	R*	R*	R*	R*	R*
-	-	-	NP	NP	low_cov	-	-	-	-	K	K*	-	-	-	-
Y	Y	Y*	Y*	Y	Y	Y	Y*	Y	Y	Y*	Y*	Y	T*	Y	Y
-	S*	S*	S*	S*	-	S*	S*	S*	S*	-	-	-	-	-	S*
-	Y*	-	-	-	-	Y*	-	-	-	-	-	Y*	Y*	Y*	-
W*	W	W	W	W	W*	W*	W	-	-	W	W	W*	W*	W*	W
-	R*	R*	R	A	-	R	A	-	-	-	-	-	-	R*	R*
S*	S	S	S*	S*	S	S	S	S*	S*	S	S	S	S	B*	S*
-	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	-	-	-	-	T	Y
G*	G*	G*	R*	R*	R*	R*	G*	R*	G*	R*	R*	G	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
low_cov	M	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
Y*	C*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	C*	Y*	-	-	Y*	Y
Y*	C*	Y*	C*	C*	low_cov	Y	C*	Y	Y*	C*	C*	NP	NP	Y*	Y*
NP	NP	NP	NP	NP	C	C*	C*	NP	NP	NP	NP	NP	NP	M*	M*
M*	M*	M*	-	-	M*	-	-	-	-	-	-	-	-	-	-
R	R*	R	-	-	R	R	R	R	R	-	-	R	G	-	-
NP	NP	NP	C*	C*	low_cov	C*	C*	C*	C*	M*	-	C*	C*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	A*	A*
NP	NP	NP	T*	T*	K*	T*	T*	T*	T*	NP	NP	NP	NP	K*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*
C*	Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	C*	Y*	Y*
-	-	S*	-	-	Y*	-	-	Y*	-	S	S	-	-	S	S
Y*	-	-	-	-	-	-	Y*	-	-	Y	Y	-	-	Y*	Y*
R	R*	R*	-	-	R*	R*	R*	R*	R*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	Y*	C*	NP	NP	NP	NP	Y*	Y*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	-	-
NP	NP	NP	-	-	R*	R*	-	-	R*	R*	R*	NP	NP	-	-
Y	Y*	-	-	-	Y	Y	Y	Y	Y	Y	Y	-	Y*	-	-
NP	NP	NP	G	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	-	R*	A	A	A*	R	R*	A*	R*	A*	A*	R*	R*
Y	Y	Y	-	-	T	Y	Y*	Y*	T	T*	Y*	NP	NP	T	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	R*	-	-
-	Y*	-	Y	Y	Y	Y	Y*	-	-	Y	Y	Y*	Y	C	Y*
Y	Y*	Y*	Y*	H*	Y	Y*	Y*	Y*	C*	Y*	Y*	Y*	C	Y*	H*
R*	R	R	R*	R*	low_cov	R	R*	-	-	R*	-	R*	R*	-	-
NP	NP	NP	NP	NP	low_cov	R	A*	-	-	NP	NP	NP	NP	-	-
NP	NP	NP	C*	C*	C	C	C*	-	-	NP	NP	M	-	-	-
NP	NP	NP	-	-	low_cov	W*	A*	-	-	-	-	NP	NP	-	-
R*	R	R	-	-	-	-	-	-	-	-	-	NP	NP	-	-

-	-	R*	S*	S	-	-	-	-	R*	-	-	-	-	-	-
R*	R*	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	W*	W	W	W	-	-	W*	-	-	-	-	-	-	W*	W
-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S*	S*	S*	-	-	S*	-	-	S*	S	G	S*	S*	S*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	G	R	R	G*	G	R*	R*	G	G*	R*	R	R*	G	R
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	-	-	NP	NP	-	-	NP	NP	-	-
W*	W	W*	-	-	W*	W*	-	W*	A	W	W*	W	W*	W*	-
R	G	R*	R	R	R	G	R*	G*	G	R	R*	R*	R*	R*	R
-	N*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R	R*	R*	R*	R*	-	-	-	-	NP	NP	-	-
C	Y	Y	Y	Y	C	Y	Y	C*	C*	Y	C*	Y	C	C	Y
NP	NP	NP	R*	R*	R*	-	-	-	-	-	-	-	-	-	-
low_cov	-	R*	R*	R*	low_cov	R*	R*	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	M*	-	M*	M	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	R*	G*	NP	NP	R*	G
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	R*	R*	-	-	-	R	R*	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	C	Y*	C	Y	Y	-	-	Y*	Y*	Y*	C
-	H*	M*	-	-	Y	Y*	Y	-	-	-	-	-	-	-	-
-	H*	N*	Y*	-	-	-	-	-	-	Y*	-	-	M*	-	-
R*	R	R	-	R*	R*	A	R*	R	R*	R*	R*	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	-	-	-	-	-	NP	NP	-	-	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
-	-	-	R	R*	R*	R	R	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T	T	Y	Y	Y	Y	Y	Y	T*	T*	T*	Y*	Y	Y*	Y	Y*
T*	T	T*	NP	NP	T	T	Y*	T*	Y*	T*	T*	T	Y*	T*	T*
C	M	C	M*	M*	C	M*	C*	M*	M*	M*	M*	M*	M*	C*	C*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	Y*	Y*	-	-	-	-	NP	NP	NP	NP
-	S*	S*	-	S*	-	-	-	-	-	-	-	-	-	B*	-
NP	NP	NP	R*	R*	-	-	-	-	-	-	-	-	-	R*	R
NP	NP	NP	-	-	low_cov	R*	G*	R*	R*	R*	R*	NP	NP	R*	-
R	R*	R*	R*	R*	R*	R	R*	-	-	-	-	-	-	R*	R
Y*	M*	M*	-	Y*	Y*	-	-	-	-	Y*	Y	-	Y*	-	Y*
NP	NP	NP	NP	NP	NP	NP	NP	G*	K*	NP	NP	NP	NP	K*	K*
low_cov	Y	Y*	NP	NP	low_cov	Y*	Y*	-	Y*	Y	Y*	T*	T*	Y*	-
C*	Y	Y	C*	Y*	C*	C*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	C*
-	Y*	Y*	-	-	-	Y*	Y	Y*	Y	-	-	-	-	Y*	-
R	R*	R*	R	R	-	R*	R*	R	R	-	-	-	-	-	-
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-

R*	R	R	R	A	R	R	R	R	R	R*	R*	A	R	R*	R*
R*	R*	R*	G*	G*	G*	G	R*	R	G	G*	R*	G*	G*	G	R
low_cov	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
A*	A*	A*	A*	R*	A*	A*	A*	R	R	A*	A*	A*	A*	A	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	A*	A*	A*	A*	A*	R*	A*	R*	A	A*	A*	NP	NP	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y*	Y*	Y*	Y*	Y*	-	-	-	-	Y*	Y*	Y	Y
Y	Y*	Y*	Y*	T	Y	Y	T	-	-	Y	Y	Y*	Y*	Y*	Y
A	A*	A*	A*	A*	A*	R*	A*	-	-	A	A*	NP	NP	R*	R
M*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G*	R*	G*	R*	G*	R*	R*	G*	R*	G*	G*	G*	R*	G*	R*
S	C	S*	S	S	S	S	S	S*	C	S*	-	S*	-	S*	S*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	-	R*	-	-	-	R*	-	R	R	R*	-	-	-	R	R
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
-	-	-	G	G	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
R	R	R	-	R*	R*	R*	-	R	R*	R	A	R*	R*	R	R
W*	W*	W*	H*	W*	W*	W*	-	W*	W*	-	-	M*	-	M*	M*
-	low_cov	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
-	N*	N*	Y	Y	-	-	Y*	Y*	-	-	-	-	-	-	B*
-	-	-	-	M*	M*	M	M	-	-	-	-	-	-	M*	M
-	low_cov	-	R*	R*	R*	R*	-	R*	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	W*	W*	-	-	B*	-	-	-	-	-	-	-	-	-	Y*
S*	V*	V*	S*	S	S*	S*	S*	S	S	-	S*	S*	S*	S*	S*
G	K	K	K	G	K	G	K	G	K*	G*	G	K	-	K	G*
-	-	-	-	W*	W*	-	W*	-	-	-	-	W	W*	-	-
NP	NP	NP	NP	NP	G*	G*	G*	NP	NP	NP	NP	NP	NP	G*	G*
C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	Y*
-	Y*	Y*	M*	M	-	M*	-	-	-	-	-	-	-	-	-
-	D*	K*	-	-	K	K*	K	-	-	K	K	K	K	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	R*	G*	NP	NP	R*	R*
-	V*	N*	M*	H*	-	M*	M*	M*	M*	-	M*	M*	M*	V*	M
-	H*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
NP	NP	NP	-	-	-	M*	-	M*	M*	-	-	M*	-	M*	M*
NP	NP	NP	-	R*	-	R*	-	-	-	NP	NP	NP	NP	-	-
Y*	-	-	Y*	Y*	Y*	Y	Y*	-	-	Y	T	Y*	-	-	-
-	R*	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R*	R*	R*	R*	R	R*	R*	R*	R*	R	R
R*	R	R	-	R*	-	-	-	-	-	-	-	-	-	R	R
-	-	-	-	-	S*	S*	S*	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y	Y*	-	-	T	Y	Y	Y*	-	-
NP	NP	NP	A*	A*	low_cov	A*	A*	NP	NP	A*	A*	NP	NP	A*	A*

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	-	-	-	R*	R*	R	R	-	-	R*	R*	R*	R*
R	-	-	-	-	R*	-	H*	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	W*	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
NP	NP	NP	C	Y*	NP	NP	NP	NP	NP	-	-	NP	NP	C*	C*
R	G	R	R	R*	R*	R*	R*	R*	G*	R*	-	R*	-	G*	R*
W	W	W	W	W	W*	W*	W*	W*	W*	-	-	-	-	T*	W*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	R*	A	R*	-	-	-	-	-	-	-	NP	NP	R*	R
Y	Y	Y	Y	Y	Y*	-	-	-	-	Y*	-	Y	T*	Y*	Y
G*	R	R	G*	G*	G*	R*	G*	R*	R*	G*	G*	R	R*	R	G*
Y*	Y*	Y*	T	T	-	-	-	-	-	Y*	-	NP	NP	Y*	Y
-	-	-	-	-	NP	NP	NP	A	A*	R*	A*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	R*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R	R	-	R*	-	-	-	-	-	R*	-	-	-
Y*	Y*	Y	Y	Y	-	Y*	Y*	-	-	Y*	Y*	T	Y*	Y	Y
Y	-	Y*	-	-	Y*	-	-	W*	-	-	-	-	-	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R	R*	R*	R	R*	-	-	-	-	-	-	-	A	R*	R	R
R	R	R	R*	-	R	R	G	R*	R*	R	R	R*	R*	R*	-
Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	V*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*
-	M*	M*	C	M*	-	-	-	M	M*	M*	-	-	M*	M*	M*
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
Y*	Y*	Y	-	Y*	-	Y*	-	Y	Y	-	-	Y*	Y*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
low_cov	-	R*	NP	NP	NP	NP	NP	R*	R	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
K*	K*	-	K*	K*	K*	-	-	-	-	-	-	K*	-	-	-
-	-	R*	-	-	-	-	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M
S*	S	S*	S	S*	S*	-	-	-	-	C*	C	C*	C*	C*	C*
low_cov	R*	R*	NP	NP	NP	NP	NP	NP	NP	A*	A*	NP	NP	R*	A*
Y*	H*	H*	-	Y*	-	-	Y*	Y*	-	Y*	-	Y*	Y*	Y*	-
G*	R*	R*	G*	G*	R*	G	R*	G	R*	G*	G*	G*	G*	G*	G*
-	R*	-	-	-	R*	R*	R*	-	-	-	-	R*	R*	R*	-
M*	M*	M*	M*	-	M	A	A	M	M*	-	-	NP	NP	-	-
-	R*	-	-	-	R*	-	-	-	-	-	-	NP	NP	R*	-
NP	NP	NP	A*	R*	A*	A*	A*	NP	NP	R*	A*	-	R*	R*	R
NP	NP	NP	M*	M*	M*	-	-	M*	M*	-	-	-	-	-	-
low_cov	R*	R*	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP
C	Y*	Y*	Y*	-	low_cov	-	-	-	-	-	-	Y*	Y*	-	-
Y	T	Y*	Y	Y	Y	T	T*	Y	Y*	T*	T	-	Y*	T	Y
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-

-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S*	S*	S	B*	C	S*	S*	S*	S*	S*	S*	S*	S*
-	M*	M	-	-	-	-	-	-	-	-	-	-	-	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
R	R	R	G*	G*	R*	G*	G*	R*	R*	R*	R*	G*	R*	R	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
Y	Y*	H*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y	Y	Y	Y*	C	H*	H*	Y*	C	Y*	Y*
-	H*	H*	Y	Y	Y*	Y*	Y*	-	-	Y*	-	-	-	Y*	Y
M*	-	M*	M*	M*	-	-	-	-	-	M*	M*	NP	NP	-	-
Y*	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R*	A	R	R	R	R*	R*	R*	R*	A	A	R*	R*
-	S*	S*	-	-	-	-	-	-	-	-	S*	-	S*	-	-
R*	-	-	-	-	R*	R*	-	G	R	R	R	-	-	-	-
-	Y	Y	Y	Y	Y*	-	Y*	-	Y*	-	-	-	Y*	Y*	Y*
S*	S*	S*	S	S	S	S	S	S	S	S	S	S	S*	-	-
-	Y	Y*	-	-	-	-	-	Y*	Y*	-	-	-	-	Y*	-
-	-	-	-	-	low_cov	M	C	-	-	NP	NP	NP	NP	-	-
R	R	R	R	R*	G	G	R*	R	R*	R	R	R*	G	R*	M*
-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	-	-	-	-	Y*	-
-	R*	R*	-	-	-	R*	R*	R	R	-	-	-	R*	-	-
-	S*	S*	-	-	-	V*	-	S	S*	-	-	-	-	-	-
-	M*	M*	-	-	low_cov	-	-	-	-	NP	NP	NP	NP	-	-
-	Y*	Y*	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-
NP	NP	NP	W*	T*	-	T	W*	NP	NP	T	T*	NP	NP	W*	H*
R	G*	G*	G*	G*	R	R	R	R*	G*	G*	G*	G*	G*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R*	R*	-	-
Y*	C*	C*	Y*	B*	Y*	Y	Y*	C	C*	Y*	Y*	Y*	Y*	Y*	Y*
Y	Y	C*	Y	Y	Y	Y	Y	Y*	C	Y	Y	C	C	Y*	Y*
G	G*	G*	G*	G*	R	R	R	R*	G*	G*	G*	R*	R*	D*	R*
-	-	-	-	-	-	-	-	-	-	R*	R	NP	NP	-	-
Y*	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	Y	Y*	Y*	Y
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R	R	R	R*	A	R	R*	R*	R*	A*	R*	-	R	R*	-	R
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R	R	R	-	-	-	-	R	R*	R	R
Y	Y	Y	Y*	C	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y*
Y	Y	Y	C*	Y*	Y	Y	Y	C*	Y	C*	Y*	Y	Y	Y	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R*	R	R*	R*	R*	R*	R*	R*	R*	R*	A	R*	R*

-	-	-	R	R	-	R	A	R	A	-	-	-	-	R*	R*
-	-	-	-	-	-	R*	R*	-	-	-	-	NP	NP	R*	A
Y	C*	Y	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	Y*	C*
R	A	R	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
-	R*	-	-	-	-	R*	-	R	R*	R	R*	-	-	-	-
low_cov	Y*	C*	NP	NP	NP	NP	NP	C*	C*	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	R*	A*	A	-	-	-	-	-	-	-	-
R*	R*	R*	-	R*	R*	R*	R*	-	-	R*	R*	R*	R*	R*	R*
-	H*	Y*	Y	Y	-	Y*	-	Y	Y	-	-	-	-	-	-
-	H*	Y*	Y	Y	-	Y*	-	Y	C	-	-	-	-	Y	Y
-	H*	H*	-	-	-	-	-	-	-	-	Y*	-	-	-	-
-	-	-	Y	Y	-	-	Y*	-	-	-	-	T	Y*	Y*	-
R*	R*	R*	R*	R*	R*	R	R*	-	-	R*	R*	R*	R*	-	-
-	H*	H*	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y	Y*	Y*	-	-
S	N*	N*	S*	S*	C	B*	S*	S	S*	N*	S	S	S*	N*	S*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
low_cov	Y*	C*	Y*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	C*	Y*
S	S*	B*	-	-	S*	R*	R*	R*	-	-	-	-	-	-	R*
NP	NP	NP	T*	T*	K*	-	K*	-	-	-	-	NP	NP	T*	T*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
S	S	G	S*	G*	S	S	S	S	S	S*	-	S*	S*	S*	S*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
A	R	R	A*	A*	R	R*	R*	-	-	-	R*	A*	A*	R*	R*
-	Y*	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-
M	M*	M*	-	-	M*	M	M*	M	M	-	M*	-	-	M*	-
-	-	-	-	-	-	-	R*	-	R*	-	-	R	R	-	-
Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	-	-	-	-
low_cov	R*	-	NP	NP	-	R*	-	R*	-	-	-	R*	R*	-	-
NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	-	-	NP	NP	-	-
-	B*	B*	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	Y*	T	-	-	-	-	-	-
R	R	G	G*	G	R	R	G	R*	R*	R*	G*	R	D*	R*	R*
-	R*	R*	-	-	R*	R*	-	R*	A*	-	-	-	-	-	-
Y*	Y	Y	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	W*	-	W	W*	-	-	-	-	-	-
R	R	R	-	R*	R*	R*	R*	R	R	R*	R	A	R*	R*	-
Y	Y	Y	-	Y*	Y*	Y	Y*	Y	Y	Y	Y	Y*	T	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	-	-	-	-	-	-	-	-	-	Y	C	W*	-
Y*	H*	H*	Y	Y	Y*	-	Y*	-	-	Y	Y	Y*	-	Y*	-
-	R	R	-	-	R*	R*	-	-	-	-	-	-	-	-	-
R*	V*	R*	R*	D*	R*	R	R	-	R*	R*	-	R*	-	R*	R*
-	Y	Y	-	Y*	Y*	Y	Y	M*	-	-	-	Y*	-	N*	Y*
Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y	-	-	Y	Y	Y*	-
Y*	Y*	Y	Y	Y	Y*	Y*	-	Y	Y*	-	-	Y	Y*	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	R*	R*	R*	-	NP	NP	NP	R*	R*	-	-	-	-	R*	A*
Y*	Y	Y	Y	Y	Y*	Y	Y*	Y	Y*	Y*	-	Y	Y	-	Y*
-	K	K	K	K	K*	K	K*	K	K	-	-	K	K	K*	-
-	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y*	Y*	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	-	K	K	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	H*	-	-	Y*	-	-	-	-	-	-	Y	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
Y	Y	Y	-	-	Y	Y	T*	Y	Y	Y	Y	Y	Y*	T*	T*
Y	Y	Y	C*	C*	Y	Y	Y*	Y	Y*	Y	Y	Y	Y	Y*	C*
Y	Y	Y	-	-	Y	Y	Y*	-	-	-	-	-	Y*	Y	Y*
-	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	G	R*	-	-	-	-	-	G*	G	-	-	-	R*
-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y
T*	Y*	Y*	T*	T*	T*	T*	T*	T*	T*	Y*	T*	T*	T*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	R*	R	-	R*	-	R	R	R	R*	-	-	-	-
K*	N*	B*	K*	K*	K*	K*	D*	K*	K	K*	K*	K*	K*	N*	N*
M*	M*	M*	-	-	-	-	-	-	-	M*	M*	Y	H*	-	-
R*	R*	R*	R	R	R*	R	R*	R	R	R	R	R	R	R*	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	Y*	C
Y*	Y	Y	Y*	Y*	-	-	-	-	-	Y	Y	C	Y	Y*	Y*
-	-	-	R*	R*	-	-	-	-	-	-	-	R	R*	R*	A
K*	K*	K	K*	K*	K*	K	K*	K	K	K	K	K*	K*	-	-
Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	-	-	-	Y	Y*	Y*	Y*
R	R	R	R	R	R	R	R*	R	R	R	R	G	G	R*	R*
Y*	Y*	-	Y*	Y*	Y*	Y*	-	-	Y*	-	-	NP	NP	Y*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	Y*	Y*	-	Y	Y	Y	Y	-	-	Y*	-
R*	R	R*	R*	-	-	R*	-	R	R	R	R	R*	R*	R	R
-	R*	R*	R	R	R*	-	-	-	-	-	-	R	R*	R	R*
Y*	Y*	-	-	-	Y*	Y*	-	Y	Y	Y	Y	-	-	-	-
NP	NP	NP	-	-	W*	A*	A*	A*	A*	W*	W*	-	-	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	R*	G	G*	G*	G*	R*	G	-	-	R*	R
NP	NP	NP	-	-	-	R*	R*	R*	R*	R	R*	-	-	-	R*
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	T*	Y*
Y*	Y	Y	-	-	Y	Y*	C*	C*	C*	-	-	Y*	-	Y	Y
-	R*	R*	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M*	M*	M	M*	M	M	M	M	M	M*	M*	-	M	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	M*	-	-	-	Y*	Y*	Y	-	-	-	-	M*	-	Y*	-
-	H*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	N*	N*	R*	R*	R*	R	R	R*	R	R*	A	R*	R*	R	R

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	-
-	W*	-	-	-	-	-	-	-	-	-	-	R*	R	-	-
NP	NP	NP	-	Y*	Y*	Y*	Y*	NP	NP	Y*	Y*	Y	-	T	Y
R	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	-	R*	-
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
R*	R	R	R*	R	R	R	R	R*	R*	R*	R*	R	R	R*	R*
R	R*	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*	R*	R*
K*	N*	D*	K*	-	-	K	-	K	K	K	K*	K*	K*	K*	-
-	H*	H*	-	Y*	-	Y*	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y*
R	R	R	R*	A	R	R	R	R*	R*	R	R*	R	D*	R*	R*
R	R*	R*	-	-	R*	R*	-	R	R	R*	R*	-	-	R*	-
NP	NP	NP	K	K*	low_cov	-	-	-	-	-	-	-	-	K*	K
-	-	-	K	K	-	-	-	-	-	-	-	-	-	K*	K
Y*	Y*	Y*	-	Y*	Y*	Y*	-	Y*	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
-	K*	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	R	R	-	-	-	-	-	-	-	-	-	R*	R
S*	-	-	-	-	S*	S*	-	S*	S	C	S*	-	-	S*	-
R	R*	R*	-	-	R	R	R	-	-	-	-	-	R*	K*	-
-	K	D*	-	K*	-	-	-	K*	-	-	-	K	K*	K	K*
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	R*	-
S	S*	S*	-	-	S*	S*	-	S	S	-	-	S	S*	C*	C*
-	-	-	-	-	-	-	-	-	-	R	A	-	-	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	-	-	-	-
-	H*	H*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	Y*	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y*	H*	Y	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y	T	T	Y
-	K*	K*	K*	K*	K*	-	K*	K*	K*	K*	-	K*	K*	K*	K*
-	K	K	K*	K*	K*	K	K*	K*	K	K*	K*	K*	T	K*	K
M	V*	V*	M	M	M	V*	M	V*	V*	M	M	M	M	V*	V*
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y	Y*	Y	Y
M*	M*	V*	M*	M*	M	M*	M	M*	M	M*	-	M	M*	V*	M
R	R	R	G	R	R	R	G	G	R*	R	G	G	G	G	R*
-	R*	R*	-	R*	R*	R*	R*	R*	R*	-	R*	R*	R*	R*	R*
-	R*	R*	-	R*	-	R*	-	-	-	R*	-	-	-	R*	-
-	D*	N*	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	H*	Y*	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y
-	S*	S*	S*	S*	-	-	-	-	-	-	-	-	-	S*	-
K	N*	K	K	K*	K	K	K	K	K	K	K*	K*	K	K*	K
-	Y*	Y*	Y*	-	Y*	-	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*
R*	R*	R*	R	R	-	R*	R*	-	-	-	-	R*	R*	R*	R
-	-	-	-	-	S	S	S	-	-	-	-	S	S*	S*	S
Y*	low_cov	-	-	-	-	-	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	R*	R	R*	-	-	-	-	-	-	-	-
M*	-	-	M	M*	M*	M*	-	-	-	M*	-	-	-	-	-
M	M	A	M	M	M*	-	-	M	A	M	-	M	M*	M	M
S*	S	S*	S*	S	S*	S	S*	S	S	S	C	NP	NP	S*	S*

Y*	-	-	Y	Y*	Y*	Y*	-	-	-	Y*	-	-	Y*	-	-
C	Y	Y	Y	Y*	C	Y	C	Y	C	Y	-	Y	Y*	Y*	Y
R*	R*	R*	R	R	R	R	R	R	R*	R	R	R*	R	R*	R
Y*	Y*	Y*	Y	Y	Y	Y	Y	-	-	Y*	Y	Y	Y*	Y*	Y
R*	R	R	R	R*	R*	R	R	-	-	R	R	R	G	R*	R*
R*	R	R	R*	G	R	R	R	-	-	R	R	R	R	R*	R
-	M*	M*	C*	C*	C	M	M*	-	-	M	M	NP	NP	M*	M
-	Y*	Y*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
S	S	S	S	S	S	S	S	S	S	S	S	S	S*	S	S
NP	NP	NP	Y*	C*	Y*	Y	C*	NP	NP	Y*	Y	NP	NP	Y*	Y*
-	S*	S*	-	S*	-	S*	-	-	-	-	-	S*	S*	-	-
Y	Y	Y	Y	Y	Y	Y	Y	-	M*	Y	Y	T	Y	Y	Y
Y*	H*	Y	Y	Y	Y*	Y	Y	-	Y*	Y	Y	Y	Y	Y*	Y
R*	R*	R*	R	R	R	R*	R*	-	-	R	R	R	R*	R*	R*
R*	R	R	R	R	R	R	R	R*	-	R	R	R	R*	R*	R
R*	R	R	R	R	R	R	R	-	-	R	R	R	V*	R*	R*
-	Y*	H*	-	-	-	-	-	-	-	Y*	-	-	-	-	-
R*	R	R	A	R*	R*	-	-	-	-	-	-	-	S*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R	R	R*	R*	R*	R*	R*	-	R*	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
R	R*	R*	-	-	R*	-	-	-	-	-	-	R*	-	R*	A
Y*	Y*	Y*	-	Y*	Y*	Y*	-	-	-	-	-	-	Y*	-	-
NP	NP	NP	Y	Y*	Y*	-	Y*	-	-	-	-	NP	NP	-	Y
-	-	-	R	R	-	-	-	-	-	-	-	-	-	R	R
R*	R	R	R*	R	R*	R	R	R	R*	G*	G*	-	-	-	-
-	K*	K*	-	K	-	-	-	-	-	K*	K	-	-	K*	K
-	-	-	R	R	-	R*	-	A	A	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	-	-	-	NP	NP	-	-	NP	NP	-	-
-	S*	-	S	S	-	S*	-	G*	S	-	-	S*	-	-	-
-	N*	N*	-	-	-	H*	M*	-	Y*	M*	-	-	M*	N*	M*
K*	low_cov	-	NP	NP	K*	-	-	NP	NP	K*	K*	NP	NP	K*	K*
Y*	Y	Y*	Y	Y	Y*	Y*	Y*	T	Y	Y	Y	Y	Y*	Y*	Y*
-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	M*	-	-	-	-	M	M	M*	M*	M*	M
-	R	R	-	-	-	-	-	-	-	R	R	A	R	R	R
Y*	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y*	-	-	Y	Y*	Y*	-
R*	R*	R*	R*	-	R*	-	-	-	-	R	R*	R*	R*	R*	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	R	R*	R*	R*
K	K*	K*	-	-	K*	K*	-	T*	T*	K	T*	K	K*	K	K
Y	Y*	Y*	-	-	Y*	Y*	-	Y*	Y	Y	Y	Y	Y	Y	Y
-	R*	R*	R*	R	R*	R*	R*	-	-	-	-	R*	R*	R*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	R*
S	S*	S*	-	-	S*	S*	-	S	S	S	S	S	S*	S*	S
low_cov	R*	R*	G*	G*	low_cov	R*	R*	R*	R*	NP	NP	G*	G*	G*	G*
-	low_cov	-	-	-	-	-	-	T	Y*	-	-	-	-	-	-
-	-	-	R*	R*	R*	-	R*	-	-	-	-	-	-	R*	R*
R*	R*	R*	R*	R	R*	R	R*	R*	R*	R*	R	R*	G	R	R

Y	Y	Y	Y	Y	Y*	Y	Y	-	Y*	Y	Y	Y*	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	R	-	-	-	-	R*	R*	-	R*
Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	-
R*	R*	-	-	-	R	R*	R*	-	-	-	-	R*	R*	R*	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	C	Y*	C	Y*	Y*	Y*	-	-
C	Y*	Y*	Y*	Y*	C*	Y*	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
NP	NP	NP	-	-	C*	Y	Y*	-	-	-	-	NP	NP	-	Y*
R*	R*	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y	Y	Y	-	-	-	-	Y	Y*	Y*	Y
Y	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	Y	Y*	-	Y
Y*	Y*	H*	-	-	Y	Y*	Y	-	-	-	-	Y	Y*	Y*	Y
-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-	-
K*	G	K	K*	-	low_cov	K*	K*	K	K*	K*	K*	K*	K*	K*	K
Y	Y*	Y*	Y*	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*
R	R	R	-	R*	R	R*	R*	-	-	-	-	G	R*	R	R*
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	-	-	R
Y*	Y*	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R*	R*	R	-	R*	-	R*	R	R*	-	-
-	-	-	R	R	-	-	-	-	-	G	G	G	R*	-	-
Y	H*	Y*	-	-	Y*	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	-	Y*	-	Y*	Y
R*	V*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
Y	Y	C	C*	C*	Y	Y	Y*	C*	C*	C*	C*	NP	NP	C*	C*
low_cov	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
S*	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	-	-	M*	-	-	-	-	-	-	-	-
-	R*	R*	R	R	-	-	-	-	-	R	G*	G	G	R*	-
-	R*	R*	-	-	-	-	K*	-	-	-	-	-	-	-	-
R*	R*	-	R	R*	R*	R	R	A	A	-	-	-	-	-	-
S*	S*	S*	-	-	-	-	-	-	-	-	-	S*	-	-	-
-	M*	M*	-	-	-	M*	-	M	M	M	M	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	R*	-	-	-
M*	H*	M*	M	M	-	-	-	Y*	-	M	M	-	-	M*	M
-	Y*	-	Y	Y*	-	-	-	-	-	T	Y*	-	-	Y*	Y
-	-	-	R*	R*	low_cov	-	-	-	-	R*	G*	NP	NP	R*	R
NP	NP	NP	R	R*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R	R	R	-	-	R*	R	G	-	-	G	R*	R*	R	R*	R*
R*	R*	R	G	R	R*	R	R	R*	R	R	R	R	R*	R*	R*
M*	-	-	-	-	-	R*	R*	-	R*	-	-	-	R*	M*	M
-	-	Y*	-	-	-	-	-	Y*	Y	Y	Y	Y	Y*	-	-
-	-	-	-	-	-	-	R*	-	-	-	-	K	K*	-	-
T*	T*	T*	Y*	Y*	Y	Y	Y	T*	T*	T*	T*	Y	Y*	T*	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-

NP	NP	NP	-	R*	NP	NP	NP	NP	NP	NP	NP	NP	-	-
M	M	M	A*	A*	M*	M*	-	A*	A*	M	M*	M	M	A*	M*
-	Y*	Y*	-	-	-	Y*	-	Y*	Y	Y	Y	Y	Y*	C	Y*
-	W*	-	-	-	-	K*	-	K	K	-	-	-	W*	-	-
T	K	K	T	T	K	K	K*	T	T*	K	K	T	T	K*	K*
-	W*	W*	-	-	W*	W*	-	W*	W	W	W	W	W*	W	W*
-	Y*	Y*	-	-	-	Y*	-	Y*	T	T	Y	Y	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
Y*	Y*	Y*	C*	C*	Y*	-	-	-	-	-	-	NP	NP	C*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-
-	S*	S*	-	-	-	S*	-	S*	S	S	S	S	S*	S	S*
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	-	R*	R*	R	R	-	-	R	A	A	R	R*	-
-	Y*	Y*	-	-	-	-	-	-	-	T*	T*	T*	Y*	-	-
-	-	-	-	-	-	Y*	-	Y	C	-	-	-	-	Y	Y
-	R*	R*	R*	R*	-	R*	R*	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	H*	Y	-	Y*	Y*	Y*	-	Y	Y*	Y	Y	Y	Y	Y*	Y*
-	-	-	-	-	-	K*	-	K*	G	-	-	-	-	G*	G
NP	NP	NP	-	-	NP	NP	NP	-	-	A*	A*	NP	NP	R*	R*
W	W	W	W*	T	W	-	-	W*	W*	W*	-	W*	W*	W*	T
-	-	-	-	-	-	-	-	-	-	-	-	S	S*	-	-
W	W	W	T*	T	W	W*	W*	W*	W	W*	-	T	T	W*	W*
-	R*	R*	-	-	-	-	-	-	-	R*	R*	R*	R*	-	-
S*	-	R*	-	S	S	S*	S*	-	-	-	-	-	-	R*	-
M*	M*	M*	M*	M*	M*	H*	M*	C*	M*	M*	M*	M*	M*	M*	M*
R	R	R	R*	R*	R	R	R*	G*	G*	R	R	R	R*	R*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
NP	NP	NP	-	-	-	-	-	NP	NP	NP	NP	NP	NP	Y*	Y
-	R*	-	-	-	-	R*	-	R	R	-	-	-	-	R*	R
-	-	-	-	-	W*	W	W	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	R	R*	R	R*	R	R*	R	R	R	R*	-
low_cov	-	-	-	-	low_cov	Y*	-	Y*	C*	-	-	-	-	-	-
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
C	Y*	C	C	C	Y*	Y	-	C	C	-	-	Y*	C*	Y*	Y*
NP	NP	NP	A	A*	low_cov	-	-	NP	NP	-	-	NP	NP	A*	A*
-	low_cov	-	-	-	Y	Y	T*	Y*	Y*	T*	T*	NP	NP	-	-
-	R*	R*	-	-	-	R	-	R*	G	R	R	R	R	R*	R
-	low_cov	-	D*	W*	-	-	-	W*	W*	NP	NP	W*	W*	W*	D*
A	R	R	R*	A	R	-	-	-	-	-	-	-	R*	R*	A*
-	-	-	-	-	-	-	-	G	K	-	-	-	-	K*	G*
R*	R*	R*	-	-	R	R	R	-	S*	-	-	R*	R*	R*	-
-	-	-	-	-	-	M*	-	M	M*	A	M	-	-	M*	M*
NP	NP	NP	A	A*	W*	W*	-	A*	A*	-	-	A*	A*	A*	A*
-	Y*	-	-	-	-	Y*	-	C*	C	C	Y	Y*	Y*	C*	C*
NP	NP	NP	R*	R*	-	-	-	NP	NP	R*	-	NP	NP	R*	R*
Y	Y	Y	Y*	C	Y	Y*	Y	Y*	Y	C	C	Y	C	Y*	Y
-	-	-	-	-	R*	-	R	NP	NP	-	-	-	-	-	-

Y*	-	-	Y	Y*	Y*	Y	Y*	-	-	-	-	Y*	-	-	-
Y	Y*	Y*	Y	Y*	Y	Y	Y	-	-	-	-	-	-	W*	-
-	-	-	-	-	R*	R*	-	R	R	-	-	-	-	-	-
W*	H*	H*	Y	Y	B*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	B*	Y*	Y
Y*	T*	Y*	Y	Y*	T*	T*	T*	Y	Y*	T*	T*	T*	Y*	T*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R*	-	-	-	R*	R*	-	R	R	R	R	-	-	R*	R
-	-	-	-	-	-	W*	-	W	W	-	-	-	-	-	-
R*	R	R	-	R*	R	R*	R	R	R*	R	R*	R	R*	D*	R*
-	R	R	-	-	-	-	-	-	-	-	-	-	-	R*	-
Y	Y	Y	T*	T	Y	Y	T*	-	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	Y*	-	-	K*	K*	-	K*	K	-	-	-	-	-	-
low_cov	-	-	A*	A	low_cov	R*	A	-	-	R	R	NP	NP	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	Y*	T
R	R	R	G	R	R	R	R	-	-	R	R	R	R*	R*	R
NP	NP	NP	-	-	NP	NP	NP	Y*	-	-	-	NP	NP	Y*	Y*
NP	NP	NP	NP	NP	low_cov	-	-	R*	-	NP	NP	NP	NP	R*	R*
W*	W*	W*	W	W*	-	-	-	-	-	-	-	W*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
R*	-	-	R	R	R	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	low_cov	Y*	T*	-	-	Y*	Y*	-	-	-	-
-	-	-	Y	Y	-	-	-	-	-	-	Y*	-	-	-	-
-	Y*	Y*	-	-	Y*	Y	Y*	-	-	Y	Y*	-	-	-	-
-	-	-	M	M*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	NP	NP	-	-	-	NP	NP	-	-	-	-	-	-
Y	H*	H*	-	-	Y	Y*	Y	-	-	Y*	Y	-	-	-	-
-	-	-	-	-	low_cov	-	-	Y	Y*	-	-	-	Y*	Y*	C
R*	-	-	-	-	-	-	-	R*	R*	R*	G*	R*	R*	G*	G*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y
-	-	-	-	-	-	R*	R*	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	Y*	Y*	C	Y*	NP	NP	Y*	Y*
-	R*	R*	R*	R*	-	-	R*	-	R*	R*	R*	-	-	S*	S
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	-	-
S*	S	S	-	-	R*	V*	-	-	-	C	S*	S	S	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R*	-	-	-	-	-	-
G	G	G	G	G*	R	R*	G*	R*	R*	-	-	G*	R*	R	R
Y*	Y*	Y*	-	-	Y*	Y	Y	-	-	-	-	-	-	Y*	Y
Y*	H*	Y*	Y	Y*	-	Y*	Y*	-	Y*	Y*	-	-	Y*	Y*	-
-	R	R	R	R*	R*	R*	R*	R*	R*	R*	-	-	R*	G	R*
-	R*	R*	-	R*	-	R*	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	H*	Y*	-	-	Y*	-	Y*	Y	Y*	Y*	-	Y*	Y*	Y*	Y
-	Y*	-	Y	Y*	Y*	Y	Y*	Y	Y	-	-	-	-	-	-

R*	R	R	-	-	R*	R*	-	R*	R*	R*	-	R*	R*	R*	R
Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y*	-	Y*	Y*	Y*	Y
Y*	H*	Y*	Y	Y	Y*	Y*	Y*	-	Y*	Y*	Y*	Y*	Y	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-
-	D*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	H*	Y*	M*	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	V*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	-	R*	R	R	R	R*	R*	R	R*	G	G	R*	R
-	R	R*	R*	R*	-	R	R*	R	R	-	R*	R*	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	R*	R*	-	R*	-	-	-	R	R*	-	-	-	-	-	-
-	Y*	Y*	Y	Y	-	-	-	Y*	Y*	Y	Y	Y*	-	-	-
NP	NP	NP	-	-	W*	-	-	-	W*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	A	R*	R*	R
C*	C*	C*	M*	M	C*	C*	C*	C*	C*	C*	C*	NP	NP	C*	M*
R	R	R	R*	A	R	R	R*	R	R	R	R	R	R*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M	M	M*	M	M	M	M*	M*	M*	M*	M*	M	M*	M*	M
R*	R	R	-	R*	R	R*	-	-	-	-	-	R*	R	R*	-
-	R	R	-	-	-	-	-	-	-	-	-	R*	R*	-	-
-	Y*	Y*	-	-	-	-	Y*	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	W	W
-	R*	R*	-	R*	-	-	-	-	-	R*	-	R*	R*	R*	-
NP	NP	NP	T*	T	Y	Y	Y*	Y	Y*	Y*	-	NP	NP	-	-
Y	Y	Y	Y	Y	Y*	Y*	-	Y	Y	Y*	Y*	Y	Y*	-	-
NP	NP	NP	-	-	Y*	Y	C*	Y*	Y	C	C*	Y	C*	Y*	Y*
Y	Y*	Y*	-	-	Y*	Y	C	-	-	Y*	C	C	Y*	Y	C
Y	Y*	Y*	Y*	Y*	Y*	C	Y*	H*	C*	Y	Y	C	Y	Y*	Y*
R*	-	R*	R	R	-	R*	-	-	-	-	-	-	-	-	-
W	W	W	W	W	T	W	W	W	W	W*	-	W*	W*	W*	W*
low_cov	M	M*	M*	M*	low_cov	M*	M*	M*	C*	M	M	C*	M*	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	S	S	S*	C*	low_cov	S*	C	S*	S*	S*	S*	NP	NP	-	-
-	M*	-	-	-	-	M*	-	M*	M	M	M	C	C*	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
NP	NP	NP	NP	NP	low_cov	-	R*	NP	NP	NP	NP	NP	NP	NP	NP
R*	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
K*	D*	K*	-	-	K*	-	-	-	-	-	-	K*	K*	-	-
R*	low_cov	-	-	-	R*	-	-	-	-	-	-	NP	NP	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	-	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
R*	R*	R*	-	S*	-	-	-	-	-	-	-	-	-	-	-
S*	S*	S*	-	-	S*	-	-	-	-	-	-	-	-	-	-
W*	W*	W*	W*	W	W*	W*	-	A*	A*	-	-	A	A	-	-
-	M*	V*	-	Y*	-	Y*	-	-	-	Y	Y*	-	-	-	-
-	H*	H*	-	Y*	Y*	Y	Y	Y	Y	-	-	-	-	Y*	Y
-	-	-	-	-	-	S*	-	S	S	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R*

R*	N*	R*	R*	R*	R*	V*	V*	R*	R	R*	R*	R*	R*	N*	V*
Y*	C	C	Y*	Y*	Y	Y	Y	NP	NP	Y	Y	C	Y*	Y*	Y
S*	S	S*	S*	C	-	S*	S*	S*	S*	S*	S*	S*	C*	N*	S*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-
M	M	M*	M*	M*	M*	M*	A	M*	M*	A	A	M*	M*	M	V*
R	R	R	R*	R	R	R	R	G*	G	R	R	R	R*	R*	R
Y*	Y	Y	Y	Y*	Y	Y	C	Y*	Y*	Y*	Y*	Y	Y	C	Y
V*	S	C	S*	C	S*	S*	B*	S*	S*	S	S	S*	S*	S*	B*
R*	R	R	R	R	R*	R*	R*	-	R*	-	-	R	R	R*	-
low_cov	-	-	-	-	low_cov	-	-	-	-	R	R	-	-	-	-
-	R*	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
C*	Y*	Y*	Y*	C*	C*	Y*	Y*	Y*	Y*	C*	C*	C*	Y*	Y*	Y*
-	Y*	Y*	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	Y*
Y	H*	H*	-	-	Y	Y*	Y	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	Y*	-	-	-	-	-	-	-	-
Y*	H*	H*	-	Y*	Y	Y	Y	Y*	Y*	-	-	Y*	Y*	Y*	Y
Y*	Y	H*	Y*	Y	C*	C	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y*
R*	R	R	R*	R*	R*	R	R*	R*	R*	R*	G	R*	R*	R*	R*
Y*	N*	H*	-	Y*	-	Y*	Y*	-	Y*	-	-	Y*	Y*	N*	Y*
R*	V*	R*	-	-	V*	R*	R*	R	R	-	-	-	-	-	-
K*	K*	K*	K*	K*	K	K	K	K	K	-	-	K*	K*	K*	K
R*	D*	D*	-	R*	-	R*	R*	-	-	-	-	-	R*	R*	-
-	R*	R*	-	-	R*	R*	R*	-	-	-	-	-	-	-	-
S*	S*	S	-	S*	S*	S*	-	-	-	-	-	S*	S*	-	Y*
-	-	-	K	K	-	-	-	-	-	K	K	K*	K*	-	-
-	Y*	Y*	-	-	-	Y*	-	-	-	Y*	Y*	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	V*	R*	R*	R	R	R	-	-	R	R	R	R*	A	R*
Y	H*	Y	Y*	Y*	Y	C	Y	Y*	Y*	C	C	Y*	Y*	Y*	Y*
-	-	Y*	Y	Y	Y*	Y*	-	Y*	T*	-	-	-	-	Y*	Y*
Y*	Y*	Y	Y	Y	Y*	Y	Y*	C*	Y	Y*	-	-	-	Y*	Y
Y*	Y*	Y*	Y	Y	Y*	Y*	-	T*	T*	Y*	-	-	Y*	Y*	Y*
S	-	-	S	S*	S*	S*	-	C*	C*	-	-	-	-	S*	S
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	R*	-	-
NP	NP	NP	-	-	NP	NP	NP	M*	M*	A*	A*	NP	NP	M*	M*
-	R*	R*	-	-	R*	G	G	R	R*	G	G*	G	R*	G*	R
A*	R*	R*	A*	A*	A*	A	A*	R	R	A*	A*	A*	A*	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	Y*	-
-	-	-	NP	NP	-	-	-	-	-	-	-	NP	NP	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
-	low_cov	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
K*	W*	-	-	-	K*	K*	K	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	-	-	-	-	R	R	R	-	-	-	-	-	-	-	-
NP	NP	NP	S*	S	-	-	-	S*	G	-	-	-	-	S*	S*
-	-	-	M	M*	-	-	-	-	-	-	-	-	-	-	-
M*	M	M*	M	M	M*	M*	M*	M	M	-	-	M	M*	M*	M

R*	low_cov	-	R*	-	low_cov	-	-	-	-	NP	NP	-	-	R*	R
NP	NP	NP	Y*	Y*	-	-	-	-	-	Y*	C	-	-	Y*	Y*
S	B*	S	S	S	S*	S*	-	S	S	S	S*	S	S	S	S
NP	NP	NP	Y*	Y	-	-	-	-	-	C*	C*	-	-	C*	Y
R	R*	R*	G*	R*	R	G	R	R	G	G*	G*	R	G*	R*	R*
Y*	Y	Y	Y	Y	Y*	Y*	-	Y	Y	Y	Y*	Y	Y	Y*	Y
NP	NP	NP	-	S*	-	-	-	-	-	S*	C	-	-	S*	S
-	Y*	-	Y*	Y*	-	-	-	-	-	-	-	-	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	Y	Y*	Y*	M*	-	NP	NP	NP	NP	Y*	-
NP	NP	NP	Y*	Y	-	-	-	-	-	NP	NP	NP	NP	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	S*	-	S	S	-	-	-	-	-	-	-	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
R*	-	-	R*	-	R	R	R	R	R	-	-	R*	-	-	-
Y*	Y*	Y*	-	-	Y*	-	-	-	-	Y	Y	-	-	-	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
K*	-	-	-	-	-	K	K*	K	K*	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	Y*	Y
R*	R	R	R	R	R	R	R	R*	R	R	R	R	R	D*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	H*	H*	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y	Y
NP	NP	NP	T*	T*	K	T	T*	NP	NP	T*	T*	K*	K*	T	K
R	R*	R*	A	R*	R	R	V*	R	V*	R*	V*	V*	A	R*	R
R	R	R	R*	G*	R	G	R*	R*	R*	G	R*	R	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
G	R	R	G*	R*	G	R	R	R*	R	R	R*	R	R*	R*	R
NP	NP	NP	NP	NP	Y*	Y	Y*	NP	NP	NP	NP	NP	NP	-	Y*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	Y*	NP	NP	NP	-	-	-	-	C	C*	Y*	Y*
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	T*	T*	T*	T*	Y*	Y
-	-	-	K*	-	-	K*	-	K	K*	-	-	-	-	-	K*
Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	-	-	-	-	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G*	R	R	R*	R*	G*	R*	G*	R*	R*	R*	-	R*	R*	R*	G*
S	S	S	S*	S*	S*	S	-	S	S	S*	-	S	S*	S*	-
R	R*	R*	-	-	R*	R*	R*	R	R	-	-	R	R*	R*	R
low_cov	R	R	NP	NP	low_cov	R*	R*	R*	D*	NP	NP	NP	NP	R*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-
R*	R	R	R	G	-	R	-	R	R	-	-	R	R*	R*	G*
-	-	-	-	-	S*	S*	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	R	R*

Y	Y	Y*	Y	C*	Y	Y*	-	C*	Y*	Y*	C	NP	NP	Y*	Y*
-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-
low_cov	Y*	Y	Y	Y*	NP	NP	NP	-	-	Y*	Y*	NP	NP	-	Y
-	H*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*
R*	R	R	G*	R	R*	G*	R*	R*	G*	R	R*	R*	R*	G	R*
R	R*	R*	R*	R*	D*	R*	R*	R*	R*	R*	R*	R	R	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	T*	T*	Y	Y*	T	T*	T	Y	Y	Y*	Y*	Y*	T*
-	K*	K*	-	-	-	K*	-	K	K*	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	M
-	-	-	-	-	-	-	-	-	-	-	-	M	M*	-	-
Y*	-	-	NP	NP	-	-	-	-	-	-	-	Y	T*	-	-
Y*	Y*	Y*	Y*	Y*	Y	Y*	Y	Y*	-	Y*	Y*	Y*	Y*	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	V*	V*	-	-	-	-	V*	-	-	-	-	-	-	-	R*
-	Y*	Y*	-	Y*	-	Y*	Y*	-	-	-	-	Y*	Y*	-	-
T	Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*
-	-	-	-	-	-	Y*	-	T*	T	T*	T*	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R	R	-	M*	-	-	-	-	-	-	M*	-	-
K*	K	K	K	K	K*	K	K*	G*	K	G*	K*	K*	K*	G	K
R*	R	R	R*	R	R*	R*	-	R*	R*	R*	R*	-	-	R	R
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	S	S	S	-	-	-	-	-	-	S*	S
NP	NP	NP	NP	NP	G*	G	G*	G*	G*	G*	G*	NP	NP	G	G
R*	R*	R*	-	-	-	-	K*	-	-	-	-	R*	-	-	D*
Y*	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y*	Y*	-
NP	NP	NP	-	-	-	-	-	-	-	R*	R*	NP	NP	R*	A*
-	R*	R*	-	-	R	R	R*	R	R*	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	M
-	R*	R*	-	R*	-	R*	R*	-	-	-	-	R*	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	R*	NP	NP	A*	A*
Y*	-	-	-	Y*	-	Y*	-	-	-	-	-	Y*	Y*	Y	Y
-	M*	-	-	M*	-	-	-	-	-	M	M	-	-	-	-
G*	G*	S*	G*	G*	G*	S*	S*	G*	S*	S*	G*	G*	G*	G*	G*
-	Y*	-	-	-	-	Y*	-	-	-	-	-	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	Y*	Y*	-	Y*	-	-	Y*	Y*	-	Y*	-	-	-	Y*	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	G*	R*	G*	G*	G*	R*
-	-	-	NP	NP	-	-	-	NP	NP	-	-	-	-	-	-
-	W	W*	-	-	-	W*	-	A*	A*	-	-	NP	NP	W*	A*
A*	A*	A*	NP	NP	NP	NP	NP	A*	A*	R*	A	A*	A*	A*	A*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	T	T	Y	Y	T*	-	-	Y*	T*	-	Y*	Y*	-
R*	D*	V*	-	-	-	-	-	-	-	R*	R	-	-	S*	-

-	Y*	Y*	-	-	Y*	Y*	Y*	-	-	-	Y*	Y*	Y*	Y*	-
-	H*	H*	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-
R*	R*	R	R	R	-	R*	-	R	R*	R	R	R*	R*	R*	R
-	H*	Y	Y	Y	-	Y*	-	-	Y*	Y*	Y*	Y	Y	-	Y*
-	R*	V*	-	-	-	-	-	-	-	-	-	-	-	-	-
R	-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-
R*	R	R	G*	R*	low_cov	D*	G	R	G	R	R*	-	R*	R*	R*
-	H*	H*	-	M*	-	-	-	-	-	-	-	M*	-	H*	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	Y	Y*	-	Y*	Y*	-
-	R	R	R	R*	-	R	-	R	R	R	R	R*	R*	R*	A*
Y*	Y	Y	C	C	-	Y*	-	Y	Y	Y*	C	Y	Y	Y*	Y*
-	M*	H*	-	-	-	-	-	-	-	-	-	-	-	Y*	-
Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y*	Y*	B*	Y*	Y	Y*
-	Y	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-
-	R	R	R*	R*	R	R	R	-	-	-	-	R*	R*	A	R
R	R*	R*	R	R	R	R	R	R	R	R	R	R*	R*	R*	R
R	R	R	R*	R	R*	R	R*	R*	R*	R	R	R	R	R	R
Y	Y	Y	H*	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	Y	Y*	Y	Y*
R*	R	R	-	-	R*	-	-	-	-	R*	R	R*	R*	D*	R*
-	R*	-	-	-	-	R*	-	R*	R	-	-	-	-	R*	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	-	Y*	-	Y*	Y*	-	-	Y*	-	-	-
-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
low_cov	R	R*	R*	R*	low_cov	R*	R*	-	-	NP	NP	R*	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
C*	Y*	Y*	Y*	Y*	C*	C	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	Y*
S	S	S	-	-	-	-	-	-	-	S	G	S*	S*	S	S*
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R*	-	-	-	-	-	-	-	-	-	-	-	R*	-
R*	R*	-	-	-	-	-	-	-	-	A	A	R*	-	A*	R*
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	S*	S*	-	S	-	S*	-	G	-	S	S*	NP	NP	S*	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	Y*	Y*	-	Y*	-	Y*	Y	-	-	-	-	-	-
NP	NP	NP	A	A*	low_cov	-	-	M*	M	-	-	NP	NP	-	-
R*	R*	R	A	A	R*	R*	R*	A	R	R	R*	A	R*	R*	-
NP	NP	NP	W*	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	W*	W*
R*	-	-	A*	R*	R*	-	R*	R*	R*	R*	-	NP	NP	-	-
NP	NP	NP	R*	R*	low_cov	R	G*	R*	R*	R	G*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
Y*	-	-	Y	Y	-	Y*	-	Y	T	-	-	-	-	-	-
R*	R	R	-	-	R*	R	G	R	R*	R	R	R	R*	R*	R
-	D*	D*	-	R*	-	-	R*	-	-	-	D*	-	R*	R*	R*
-	-	-	-	-	low_cov	-	-	-	-	-	-	-	-	M*	M
Y	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	-	-	Y*	-	Y*	Y*
-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	-	-	-	Y	Y*
-	-	-	M	M	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	NP	NP	-	-

Y	Y	Y	Y*	Y*	Y	Y	Y	-	Y*	Y	Y	C	C	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	Y*	Y	Y	T*	-	Y*	Y*	Y	T*	T*	-	-
Y*	Y	Y	Y*	Y	Y*	Y	Y	Y*	-	Y	Y	Y	T	Y*	-
-	-	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R*	-	-	R	R	A	-	-	R*	R	R*	-	-	-
R*	R	R	-	R*	R*	-	-	-	-	R	R	-	-	-	-
-	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP	NP	NP
-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	T	K*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
S	S	S	B*	-	S	S*	S*	Y*	S*	S	S	S	G	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
R*	R	R	-	-	R*	R*	R*	-	R*	-	-	-	R*	-	-
-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y	Y*	-	-	Y*	Y*	-	Y*	-	-
Y*	Y	Y*	-	-	Y*	-	-	-	-	Y*	Y*	T	Y*	-	-
M	M	M	-	M*	M	A	M*	-	-	M	M	M*	M*	M*	M*
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-
C*	Y*	Y	NP	NP	C*	C*	C*	NP	NP	-	Y*	NP	NP	-	-
NP	NP	NP	-	-	low_cov	G	G*	NP	NP	G	S*	NP	NP	NP	NP
-	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
-	-	-	Y*	T*	-	-	-	-	-	Y	T*	-	-	-	-
-	R*	R*	-	-	-	-	R*	-	-	-	-	R*	-	-	-
-	-	-	-	-	-	-	-	Y*	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
C*	B*	C*	S*	C*	C*	C*	C*	C*	C*	C*	S*	S	S	S*	S
-	R*	R*	-	R*	K*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
R	R*	R	R	V*	R*	R*	-	G	R	R	R	R*	V*	V*	R
-	W*	W*	-	-	W*	-	-	-	W*	-	-	-	W*	-	-
K	-	K*	G	K*	-	-	-	-	-	-	-	-	-	K*	K
W	-	W*	T	W	W*	-	-	W	W*	W*	-	NP	NP	W*	W*
-	Y*	-	-	-	low_cov	Y*	-	Y	Y*	Y	Y*	Y*	-	-	-
S*	-	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	S*	S*	S*
K	K*	K*	G	K	K*	K*	-	K*	G	K	K*	NP	NP	K	K
-	Y*	-	-	Y*	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
Y*	M*	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	-
-	R*	R*	-	R*	-	-	R*	-	-	-	-	R*	-	-	-
-	-	-	-	-	low_cov	-	-	-	-	-	-	S*	-	-	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	R*	R	R*	R*	A	R*	-	-	R*	R*

-	Y*	Y*	-	-	-	-	-	-	-	-	-	W*	-	W*	W*
Y	Y*	Y*	-	-	Y	Y	Y	-	-	-	-	-	Y*	-	-
S*	N*	N*	-	-	S*	S	S	-	Y*	-	Y*	-	-	Y*	-
-	-	Y*	-	-	-	-	-	-	-	-	-	NP	NP	-	-
T*	K	K	T*	T*	T*	K	T*	-	-	K*	T*	T*	T*	T*	T*
-	Y*	Y*	Y*	Y	-	-	-	-	-	-	Y*	-	-	Y*	Y
Y	H*	Y*	-	-	Y	Y	Y	-	-	-	Y*	-	Y*	Y*	-
-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	-
R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	R*	-	-	-	R*	D*	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	K	K	-	-	-	-	-	-	-	-	-	-	-
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	S*	S	S	S	S	S*	S*	-	-	S	S	-	S*	S	S*
NP	NP	NP	C*	C*	M*	M*	M*	-	-	M*	M*	NP	NP	M*	C*
T*	T	T*	T*	T*	NP	NP	NP	Y*	Y*	T*	T*	T*	T*	T*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	K	T*	T*	T	NP	NP	NP	K*	K*	T*	T*	T*	T*	K*	T
T	Y*	Y	Y*	Y*	Y*	Y	T	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*
-	R*	R*	-	-	-	R*	-	R	R*	-	-	-	R*	-	-
-	R*	R*	R*	R*	-	R*	R*	R	V*	R*	R*	R*	R*	R*	-
R	R	R	R*	G	R*	R	R	R	R	R*	R	R	R*	R*	R
-	-	-	-	-	-	M*	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R*	-	R	R*	-	-	-	-	-	-
-	-	-	-	-	-	Y*	-	Y	Y*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-
R*	R*	R*	R*	R*	-	R*	-	R*	R*	R*	R	-	-	-	-
-	S*	-	S	S	-	S*	-	S	S*	S	S	R*	-	S	S
W*	N*	N*	-	D*	W*	K*	-	W*	N*	N*	-	D*	K*	K*	D*
R*	-	-	-	-	R*	R*	R*	-	-	R*	R*	R	D*	-	-
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-
NP	NP	NP	Y*	Y	Y*	Y*	Y*	-	-	Y*	Y*	C*	C*	Y*	Y*
-	R	R	R*	A*	R*	R*	R	R*	-	R*	-	R*	R*	R	R*
Y*	Y*	Y*	Y	Y	Y	Y*	Y*	-	-	-	-	Y*	-	Y*	Y*
A	R	R	R	A	R*	R	A	-	-	R	R	R*	R*	R*	R*
Y	Y	Y	Y	Y*	Y*	Y*	Y	-	-	Y	Y	Y*	T*	Y*	Y
Y*	-	-	-	-	Y	Y*	Y	-	-	-	-	-	M*	-	-
-	-	-	-	-	low_cov	-	S	-	-	-	-	NP	NP	-	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
T	K	K	NP	NP	T	T	K*	K*	K*	K*	K	K*	T	T	K*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	S*	S
Y*	Y*	Y*	Y*	-	C*	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
Y*	Y*	Y*	-	-	Y*	Y	Y*	Y	Y	Y	Y	-	-	Y*	Y*
-	H*	Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-
Y	H*	Y	Y*	Y*	Y*	Y*	Y	Y	T	Y	Y	-	-	T	Y*
low_cov	Y	Y	-	Y*	Y*	Y*	Y	Y*	C*	Y	Y	Y*	Y*	Y*	Y*
NP	NP	NP	-	-	A*	W	W*	A*	A*	W	W*	NP	NP	A*	A*
R*	-	-	A	R	R*	-	R*	-	-	R	R*	-	-	R	R

NP	NP	NP	C*	C*	C	C*	C	C*	C*	C	C*	-	-	Y*	C*
-	R*	R*	-	-	-	R*	-	R	R	-	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
-	-	-	-	-	-	R*	-	R	R*	-	-	-	-	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	R*	R
R*	R*	R*	G*	G*	G*	G*	G*	G*	G*	R	R*	R*	R*	R	R
NP	NP	NP	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*
-	Y*	-	-	-	-	-	-	Y*	-	-	-	NP	NP	-	Y*
-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-	Y*	Y*
R	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y	Y	Y	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	Y*	Y*	-	-	-	-	-	Y*
-	-	-	-	-	S*	S*	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	R*	R	-	-	-	-	-	-
-	M*	M*	-	-	-	Y*	-	Y	Y*	Y*	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	Y*	Y*	-	-	NP	NP	T*	T
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
M	M	M	M	M	M	M	M	M	M*	M	M	M	M*	M*	H*
-	H*	H*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R*	R*	-	R*	R*	R	R	-	R*	R*	R*	R*	-
M	M*	M*	M	M*	M*	-	-	-	-	-	-	-	-	M*	-
-	-	-	-	-	-	Y*	-	-	-	-	-	M	M*	-	-
-	-	-	-	-	-	Y*	-	Y*	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y*	Y*	Y	Y	Y*	Y*	T*	Y	Y	Y	Y	Y	Y*
R	R	R*	R*	R	R	R	R	-	-	R	R	R*	R*	R*	A*
-	R*	R*	-	-	-	-	R*	R*	-	-	-	-	-	-	-
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-
R	R	R	R*	R	R	R	R	-	R*	R	R	R	R	R	R
-	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	-	Y*	-	-	-	-	Y*	-	-	Y	Y	Y*	-
-	Y*	Y	-	Y*	-	Y*	-	-	-	-	-	Y	Y*	-	-
-	-	-	-	-	Y*	Y	T	-	-	-	-	-	-	Y*	Y
C	S	N*	-	S*	S*	S*	-	S	S	R*	-	S*	B*	B*	C
Y*	H*	Y*	-	Y*	-	-	-	-	-	-	-	Y*	-	Y*	Y
Y*	Y	Y	-	-	Y*	Y*	-	Y	Y	-	-	Y	Y*	Y*	Y
-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	T*	-	-
Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y	Y	Y	Y	Y
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	low_cov	-	R*	-	-	-	-	-	-	-	R*
-	Y*	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-
low_cov	Y	Y*	NP	NP	low_cov	-	Y	-	-	-	-	-	-	Y	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
low_cov	S*	-	NP	NP	-	-	-	S*	S*	-	-	-	S*	S	-
-	-	-	-	-	-	M*	-	M*	M*	-	-	NP	NP	Y*	-
-	-	-	-	-	-	Y*	-	Y	Y	Y*	-	Y	Y*	-	Y*

low_cov	S	S*	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R	R	R	-	-	R*	R*	-	R	R	G	R	R*	R*	-	-
-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y*	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	NP	NP	low_cov	-	-	-	-	NP	NP	NP	NP	-	-
R	R*	R	R	R	R	R	R	R*	R*	R*	R*	R	R	R*	R
R	R*	R*	R*	-	R	R*	R*	R*	-	R	R	-	R*	R	R
Y*	Y	Y	C*	C*	C*	C*	C*	C*	C*	Y	Y	Y	Y*	Y*	Y*
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	Y*	Y*	-	-	-	-	Y	Y*	-	-
-	Y*	Y*	-	-	Y*	Y*	-	Y	Y	-	-	Y	Y*	-	-
-	Y*	Y	-	-	-	-	-	-	-	Y*	Y	-	-	-	-
NP	NP	NP	T*	T*	low_cov	T*	T*	T*	T*	Y	Y*	Y*	Y*	T*	T*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	S
-	-	-	-	-	-	R*	-	R	R	-	-	-	-	-	-
-	R*	R*	R*	R	-	R*	R	-	-	-	-	R	R	R	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	R*	R*	-
-	-	-	W	W*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	R*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	S*	-	S	S*	-	-	S*	S*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
Y*	Y*	Y*	C	Y*	C*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T*	Y*	Y*	Y*	Y*	T*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	H*
NP	NP	NP	G*	S*	NP	NP	NP	G*	S*	S*	S*	NP	NP	S*	S*
-	S*	S*	-	-	-	-	-	-	-	-	-	-	S*	-	-
-	H*	H*	-	M*	-	-	-	-	-	-	-	-	-	M*	-
-	-	-	-	-	-	-	-	-	-	-	-	Y	Y*	-	-
-	R*	-	-	-	-	-	-	-	-	R*	-	R*	R*	-	-
NP	NP	NP	Y*	C*	C*	C*	C*	C*	C*	Y	Y	Y	Y*	C*	C*
-	W*	W*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	Y*	Y*	-	-	-	-
-	-	-	-	-	-	Y*	-	Y*	Y	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	S	S
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
C*	C*	C*	Y*	Y*	C	C*	C*	Y*	Y*	Y*	Y*	NP	NP	Y*	Y*
Y*	Y	Y	-	Y*	Y*	Y	Y*	Y	Y	Y	Y*	Y	C	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-
T	Y	Y	-	Y*	Y	Y	Y	Y*	Y*	Y	Y	Y	T	Y*	-
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-

K*	K*	K*	-	-	K*	K*	-	K	K	-	-	K	K*	-	-
-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	-	Y*	-	-	-	Y*	-	Y	Y	-	-	Y	-	-	Y*
-	R*	R*	-	R*	-	-	R*	-	-	R	R*	R*	R*	-	-
-	W	W	-	-	W*	W*	-	W	W	W	W	W	W*	-	-
T*	Y	Y	T*	T	T*	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y*	Y*
W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	W*	H*
-	-	-	-	-	low_cov	Y*	-	Y*	Y*	-	-	Y*	-	-	-
-	R*	R*	-	-	-	-	-	-	-	R	R*	-	-	-	-
NP	NP	NP	A*	A*	A*	A*	A*	NP	NP	NP	NP	A*	A*	A*	A*
Y*	-	-	-	-	NP	NP	NP	Y*	-	Y	Y*	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	Y	Y	Y	Y*	-	-
-	-	Y*	-	-	-	Y*	-	Y	Y	-	-	M	M*	-	-
-	-	-	-	-	Y*	-	-	-	Y*	-	-	Y	Y*	-	-
R*	-	-	-	-	-	-	-	K	-	-	-	-	-	-	-
R*	R*	R*	R*	-	R*	R*	R*	R	R	R	R*	R	R*	-	R*
-	Y	Y	-	-	-	Y*	Y*	-	Y*	Y	Y*	Y*	Y*	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	R*	-	R*	-	-	-	-	-	-
W*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y*	Y*	Y*	-	Y*	-	Y*	T*	-	-	NP	NP	-	-
NP	NP	NP	A*	A*	A	A	A*	W	W*	A*	A*	NP	NP	A*	A*
-	S*	S	C	S*	-	S*	S*	S	S*	-	-	S*	-	S*	S*
R*	-	-	R*	R*	-	-	-	-	-	A	A*	-	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	K	-	-	-
M*	M*	M*	-	-	-	-	-	-	-	-	-	-	-	C	M*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	R*	-
R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	R*	-	R	R	-	-	-	-	R	R
M*	A	M*	NP	NP	NP	NP	NP	NP	NP	A*	A*	NP	NP	M*	A
Y*	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	Y*	-	Y*	-	-	-	-	-	Y*	Y
G	low_cov	-	R*	R*	NP	NP	NP	-	-	-	-	NP	NP	R*	R
Y*	H*	Y*	Y*	Y*	Y*	Y*	Y*	-	-	-	Y*	Y	T	Y*	Y
-	K*	K*	-	-	-	-	-	-	-	-	-	-	-	T	K
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-
-	Y	Y	C	Y*	-	-	-	-	-	-	-	Y*	Y*	Y*	Y*
W*	W*	W*	-	-	W*	W	W	A*	W	W	A	W*	W*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	N*	N*	-	-	-	Y*	-	Y	Y*	-	-	-	-	H*	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	R*	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	R*	R*	R	R	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y	Y*	Y*	Y*	Y	-	-	-	-	Y*	-	-	-
Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	C*	C*	Y*	-	-	-
C*	Y*	Y*	Y*	Y*	C	Y*	Y*	Y*	Y*	Y*	C	Y*	Y*	C	Y*
R*	R	R*	R	R	R*	R*	-	R	R*	-	-	-	-	NP	NP
-	-	-	-	-	-	S*	-	S	S*	-	-	-	-	S	S
C*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*
-	R*	R*	-	-	-	-	-	-	-	-	R*	S*	S	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R	R*	R*	-	-	R*	A*	NP	NP	-	-
-	R*	R*	R	R	-	-	-	-	-	-	-	-	-	R*	-
M*	M*	M*	M	M	-	M*	-	M*	M	-	-	-	-	M*	M
M*	M	M	M	M	M	M	M*	M	M	-	-	M	M	M*	M
Y*	Y*	Y*	Y	Y	Y*	Y*	-	Y	Y*	T	T	Y	Y	Y*	Y
R*	R	R*	R	R	R*	R*	-	R	R	G*	G*	G	G*	R*	R
-	R*	R*	-	-	-	low_cov	-	NP	NP	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	-	-	-	-	low_cov	-	-	NP	NP	-	-	NP	NP	-	-
K*	K	K	K	K*	K*	K*	-	K	K	K*	K*	K	K	K*	K
Y*	-	-	Y*	Y*	-	-	-	Y*	Y*	NP	NP	NP	NP	Y*	Y*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	Y*
NP	NP	NP	R*	R	-	-	-	R*	G	G*	G*	G*	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	R	R	-	-	-	R	R	R*	A	R	R*	R	R
-	-	-	-	-	-	-	-	-	-	-	-	K	K*	-	-
-	M*	M*	-	M*	-	M*	-	-	M*	M*	M*	M*	M*	M*	-
-	-	M*	-	-	-	-	-	-	-	-	-	M	M*	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	C	Y*	-	-
Y*	Y*	-	-	Y*	Y	Y	Y	Y	Y*	C	C*	-	-	-	-
Y*	Y*	Y*	-	-	Y*	Y	Y*	Y*	T	Y*	Y	-	-	-	Y*
Y*	Y	Y	Y*	T*	low_cov	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	T	Y
NP	NP	NP	NP	NP	NP	NP	NP	-	R*	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	M*	-	M	M*	-	-	-	-	-	-
low_cov	R*	R*	G*	G*	low_cov	R*	G*	NP	NP	R*	R*	G*	G*	R*	G*
NP	NP	NP	NP	NP	-	Y*	Y*	T*	Y*	-	-	-	Y*	T*	T*
R*	R	R*	G*	G	-	R	R*	R*	R*	-	-	R	R	R	R*
S*	V*	S*	S	S	S*	S*	S*	S*	S*	S*	S*	S	S	S*	-
Y*	H*	H*	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	Y*
NP	NP	NP	C*	C*	C	S*	S*	C*	C*	NP	NP	C*	C*	C*	C*
-	Y	Y*	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-
-	Y*	Y*	-	Y*	-	-	Y*	-	-	-	-	Y*	-	-	-
-	-	-	-	-	Y*	Y*	Y	-	-	-	-	-	-	-	-
low_cov	S	S	NP	NP	S*	S*	S*	G	S*	S*	S*	S*	G	S*	G*
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	M*	-	-	-	-	-	-	-	-	-	-	-	M*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R

NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
-	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	K*	K
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
R*	R*	R*	R	R	-	-	-	-	-	-	-	R	R	R*	-
R*	R	R	R	R	R*	R*	-	R	R	-	-	R	R*	R*	-
M*	M*	M*	M	M*	-	-	-	-	-	-	-	M*	M*	-	-
-	-	H*	-	-	-	-	-	-	-	Y	Y	Y	Y	-	-
-	S*	S	-	-	-	-	-	-	-	-	-	S*	-	S*	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	NP	NP	C*	Y*	NP	NP	C	C
-	R*	R*	-	-	-	R*	-	-	-	-	-	R*	-	R*	R*
Y*	Y	Y	-	-	Y*	Y	Y	Y	Y*	-	-	Y	Y*	Y*	K*
-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-
-	S*	S*	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	-	-	-	-	R*	-	R*	A*	R	A	R*	R*	NP	NP
Y*	H*	Y*	-	Y*	-	-	-	-	-	-	-	-	Y*	-	-
Y*	C	C*	C*	Y*	C	Y*	Y*	Y*	C*	Y*	Y*	Y*	C*	Y*	Y*
R*	R*	R*	R	R*	R*	R*	R	R	R*	R*	R*	R*	-	R*	-
NP	NP	NP	A*	A	low_cov	-	-	NP	NP	NP	NP	NP	NP	NP	NP
R*	A*	R*	-	-	-	R*	-	A*	A*	R	A	R*	R*	NP	NP
-	S*	S*	S*	S*	S*	S*	S	S	S	S*	S*	S*	-	-	-
G*	G*	G*	G*	G*	R*	G*	G	G*	G*	G*	G*	G*	G*	R*	R*
Y*	-	-	-	-	Y*	Y*	Y*	-	-	-	-	-	-	-	-
-	Y*	Y*	-	-	Y*	Y*	Y	-	Y*	Y*	Y*	-	Y*	-	-
S	S	S	S	S	S	S*	S*	S*	S*	S*	S*	S*	-	S*	S
R	R	R	-	R*	R	R*	A*	A*	A*	A*	A*	A*	A	A*	A*
R*	R*	R*	A*	A	-	R*	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	C	Y	C	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Y*	Y*	Y*	-	-	T	Y*	T	Y	T	T*	Y*	T	T	Y*	Y*
M*	M	M*	-	-	M	M	M	-	Y*	M	M	-	-	M*	M*
Y*	N*	H*	Y*	Y*	Y*	-	Y*	-	Y*	Y*	-	Y*	Y*	Y*	-
low_cov	Y*	Y*	NP	NP	low_cov	C*	C*	NP	NP	NP	NP	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	R
S*	S*	S	C	S	S*	-	S*	-	-	-	-	-	-	-	-
-	R*	R*	NP	NP	-	-	-	-	-	-	-	NP	NP	R*	-
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-
S	S	S	S	S*	G	S*	S*	S*	S*	S*	S*	-	-	B*	S
-	Y*	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y*	Y	Y*	Y*	-	-	-	Y*	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
low_cov	S*	B*	-	S*	-	S*	B*	S*	S	-	-	-	K*	-	-
S*	B*	Y*	-	-	Y*	Y	Y	Y	Y	-	-	-	-	-	-
-	H*	N*	-	-	-	Y*	Y*	Y	Y	-	-	-	-	Y*	Y
Y*	Y*	Y*	Y*	Y*	Y*	T	Y*	Y*	Y*	Y	T	-	-	Y*	Y*
R*	R*	R*	R*	R*	R*	R*	R*	-	-	R*	-	R*	R*	R*	-
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-

-	R*	R*	-	-	-	-	-	-	-	-	-	R	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	Y	T*	T	-	Y*	-	-	-	-	-	-	-	-	-
-	R*	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
R*	R	R	R*	R	R*	-	-	-	-	R*	-	R*	-	-	R*
S	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	Y	Y*	Y	Y*	Y*	Y*	Y*	C*	Y*	-	Y*	Y	Y*
Y	Y*	Y	C	C	Y*	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	T*	Y	Y*	-	-	-	-	-	-	-	-	-	-
K*	Y*	Y*	-	-	Y	Y	Y	Y	Y	Y	Y	-	Y*	Y	Y
-	V*	-	-	-	-	-	-	-	M*	-	-	-	-	M*	-
Y	Y	Y	Y*	C	Y	Y	Y	Y	Y	Y*	-	Y	Y	Y*	Y*
S	N*	N*	S*	S	S	V*	V*	N*	V*	S*	S*	V*	N*	V*	V*
-	Y*	Y*	-	-	Y*	Y*	Y	-	-	Y	Y	-	-	Y*	Y
Y*	H*	H*	Y*	-	Y*	-	Y*	-	-	Y*	-	Y*	Y*	Y*	-
R	R*	R*	R	R	R	R	R	R	R	R	R	R*	R	R*	R
Y*	H*	H*	-	-	-	-	Y*	-	-	-	-	-	-	-	-
-	R*	-	-	-	-	-	-	-	-	-	-	R*	-	-	-
-	M*	M*	-	-	Y*	Y	Y	-	-	-	-	-	-	-	-
R*	R	R	R*	A	R	R	R*	-	-	R	R*	R*	R*	R*	R*
R*	R	R	R	A	R	R	R*	-	-	R	R	R	R*	R*	R
-	Y*	-	-	-	Y*	Y	Y*	-	-	-	-	-	-	Y*	-
-	R*	R*	-	R*	-	-	-	-	K*	-	-	-	-	-	-
NP	NP	NP	NP	NP	-	R*	R*	-	-	R*	R*	NP	NP	-	-
low_cov	-	-	-	-	low_cov	-	-	-	-	Y	Y*	-	-	-	-
NP	NP	NP	NP	NP	R*	-	-	-	-	NP	NP	NP	NP	NP	NP
R*	R*	R*	-	-	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*	R*
-	-	-	-	-	R*	R*	R*	R*	-	R*	R*	-	R*	-	R*
-	Y*	-	-	-	-	Y*	-	-	-	-	-	Y*	-	-	-
-	Y*	-	-	-	Y*	Y*	Y*	Y*	-	Y*	Y*	-	Y*	-	Y*
Y*	Y*	Y*	-	-	-	Y*	-	Y	Y	Y	Y	-	-	Y*	Y
-	Y*	Y*	-	-	-	-	-	-	-	Y	Y	-	-	-	-
low_cov	-	S*	NP	NP	low_cov	-	S*	NP	NP	S*	S*	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	C*	C
-	M*	M*	-	-	-	-	-	-	Y*	-	-	-	-	-	-
R	R	R	R*	R	R*	R	R	R	R	-	-	-	-	R*	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	C*	Y*	C*	C*	C*	C*	Y*
R	R	R	R	R*	R*	R*	R*	-	-	R	R*	R	R*	R*	-
R*	G	R*	R*	R*	R*	R*	R*	R	R*	R*	R*	NP	NP	R*	R*
G*	R*	R*	G*	R*	G*	G	R*	R*	G	G	G*	NP	NP	R*	G*
R	R	R	R	R	R*	G*	R*	R	R*	R	-	-	-	R*	R*
-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	K*	K*	K	K	K	T*	T	K*	T*	K*	-	-	-	K*	K*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	-	R*	R	-	-	R	-	NP	NP	R*	R

-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y	Y*	Y	C*	Y*	Y*	C	C*	Y*	Y*	Y*	-
R	R	R	A*	A*	R	R*	R	A*	A	R	R	R	R*	R*	R*
Y*	Y*	H*	-	Y*	Y*	Y	Y*	-	Y*	-	-	Y*	Y*	Y	Y*
A*	R	R	R*	R	A*	R	R	R*	R*	R*	R*	R*	R	R*	R*
Y	Y*	H*	-	-	Y	Y	Y	-	-	Y	Y	-	-	Y	Y*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y	Y
NP	NP	NP	NP	NP	low_cov	Y*	-	C*	Y*	-	-	NP	NP	C*	Y
R	A	R	-	R*	R	R	R*	R	R	-	-	R*	R*	R*	R*
R*	R	R*	-	-	R*	R*	R*	R	R	R*	-	-	-	-	-
Y*	N*	H*	Y*	Y*	Y*	Y*	N*	Y*	Y*	Y*	Y*	Y*	H*	H*	Y*
Y*	Y	Y	-	Y*	Y*	Y	Y*	-	Y*	Y*	-	Y*	Y*	Y*	Y
R*	R*	R*	-	R*	R*	R*	R*	R	R*	-	-	R*	R*	R*	R*
-	-	-	M*	M*	NP	NP	NP	-	M*	-	M*	M*	-	V*	-
NP	NP	NP	T*	K*	low_cov	K*	K*	NP	NP	T*	K*	NP	NP	-	-
C*	M	C	C*	C*	C*	C	C*	C*	C*	C*	C*	C*	C*	-	M
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	C	Y
NP	NP	NP	Y*	T*	T*	T*	T*	T*	T*	T*	T*	NP	NP	T*	Y*
low_cov	R*	-	-	-	-	-	-	-	-	-	-	-	-	R	R
-	-	-	-	-	-	Y*	-	Y*	Y*	Y	Y	Y*	Y*	-	-
NP	NP	NP	NP	NP	low_cov	-	-	NP	NP	NP	NP	NP	NP	-	-
-	S	S	-	S*	low_cov	S*	-	S	S*	-	-	-	-	-	-
-	Y*	Y*	-	-	Y*	Y*	Y	-	-	-	-	Y*	Y*	-	-
C	S*	S*	S*	S*	C	S*	C*	S*	C*	S*	S*	C*	S*	S*	S*
R*	R*	R*	R*	R*	R*	R*	R*	-	-	-	-	R	R*	R*	R*
R*	R	R	G*	G	R*	R	R*	G*	R*	G	G*	G	R*	G*	R
G*	R*	R	NP	NP	low_cov	R*	G*	G*	G*	G*	G*	G*	G*	G*	R*
-	R	R	-	-	-	R*	-	G	R*	-	-	-	-	R*	-
R*	R	R	G*	R*	G	G	R*	R*	R*	R*	G*	R*	G	R*	R*
Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
-	V*	V*	-	-	S*	S*	S	-	-	-	-	S	S*	-	-
-	Y*	Y*	-	-	-	-	-	Y	Y*	-	-	-	-	Y*	-
-	Y*	Y*	-	Y*	-	B*	Y	-	-	-	-	Y*	Y	-	-
-	-	-	Y	T	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	-	-
-	R*	-	-	-	-	R*	-	R	G	-	-	-	-	-	-
K*	K*	K*	-	K*	K	K*	K*	-	-	-	-	K	K	-	-
R	R*	R*	R	R	R	R	R*	R*	R*	R	R	R	R*	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y*	-	-	-	-	-	-	-	-	Y	Y*	Y*	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	-	-	-	-	-	-	-	-	-	-	-	S*	-	-
NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	V*	N*	R	R	R	R	R*	R*	R*	R	R	R*	R*	R	R*
-	R*	R*	-	R*	-	R*	-	R*	R*	-	R*	R*	R*	R*	-
low_cov	M	M*	M*	-	-	-	M*	NP	NP	M*	M*	M*	M*	-	-
R	R	R	R	R	A	A	R	R	R	R	R	A	R*	R*	-
K*	D*	K	K	K	K	K	K*	K*	K*	K	K	B*	K*	K	K*

Y*	-	-	Y*	Y*	Y*	Y*	Y*	-	-	Y*	Y	Y*	-	-	-
S*	V*	S	S*	S*	-	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*
R	R*	R*	R	R*	R	R*	R*	-	-	R	R	R	R	R*	-
-	-	-	S	S*	-	-	-	S*	-	-	-	-	-	-	-
Y*	H*	H*	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-
NP	NP	NP	R	R*	R*	A	A*	-	R*	R*	R	NP	NP	A*	A*
Y*	Y*	Y	Y*	Y*	Y*	-	-	-	-	Y	Y	NP	NP	Y*	-
R*	R*	-	R*	R*	R*	R*	-	R	A	R	R	-	-	-	-
Y	Y	Y	Y	Y	Y	Y*	Y	Y*	Y*	Y	Y	T*	Y*	T	Y*
S*	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R*	-	-	R*	R*	-	R	R*	R*	A*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R
Y*	H*	H*	-	Y*	Y	Y*	Y	-	Y*	-	-	Y*	-	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R*	R	R*	R	R	R	R	R	R	R*	R*	R	R	R	R*
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y*	C	Y*	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	R*	-	R*	R
-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	M*
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	-	-	-	-	Y*	-	-	-	-	-	-	-	-	Y*	Y
-	Y*	-	Y	Y	-	Y*	-	Y	Y	Y*	Y*	-	-	Y*	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	-	S*	-	S*	-	-	C	-	C	S*	-	-	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	S*
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	-	Y	Y	Y	Y	Y*	Y*	Y	Y*	Y*	-	-
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	R	R
-	W*	W*	-	-	-	-	-	W	W*	-	-	W	W*	-	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
W	W*	W	-	-	W*	A	W*	A	W*	W*	W*	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-
S*	S	S	-	-	S*	S	S	B*	S*	C	C	S*	S*	S*	S*
-	R*	R*	-	R*	-	R*	-	R	R	R*	-	-	-	-	D*
Y	Y	Y	Y	Y	Y	Y	Y*	Y	Y	Y*	Y*	T	T*	Y*	Y*
-	R*	-	R*	R	-	-	-	-	-	-	-	-	-	-	-
M	M*	M*	M	M*	M	M	M*	-	-	-	-	-	M*	M*	M
Y*	Y*	Y*	Y	Y*	Y*	Y	T	-	-	-	-	-	-	Y*	Y*
-	S	S*	S	S	-	-	-	-	-	-	-	-	-	-	-
Y	Y	Y	-	-	Y	Y	C	Y	Y	Y*	C	Y*	C	Y*	Y
M*	M*	-	M*	-	M	M	C	M	M	-	-	C	M*	M*	M*
R*	-	-	R*	R*	R*	R*	A*	-	-	NP	NP	NP	NP	R*	R*
R*	R	R	-	R*	-	-	R*	-	-	-	R*	-	-	R*	-
-	-	-	-	-	-	-	-	-	-	Y	Y	NP	NP	-	-
Y	-	Y*	Y	Y*	Y	T	Y*	Y	Y*	-	-	Y	Y*	Y	Y
R	R	R*	R*	A	R	A	A	R	R*	R	R	A	A*	R*	R

-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
Y	Y*	Y*	Y*	C	Y	Y	Y*	-	-	-	-	-	-	Y	Y*
R	R	R	-	-	-	-	-	-	-	R*	-	-	-	-	-
-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	Y*
Y*	Y*	Y*	-	-	Y*	Y*	-	-	-	-	-	Y*	-	-	-
K	K	K	K*	K	K*	-	-	-	K*	-	-	K	K	K*	-
low_cov	R*	R*	NP	NP	NP	NP	NP	R*	R*	NP	NP	-	-	-	-
-	R*	R*	-	-	-	-	-	-	R*	-	-	-	-	-	-
-	V*	V*	S*	S*	R*	-	R*	B*	-	-	-	-	-	-	-
K*	K*	-	-	-	K*	-	-	-	-	-	-	-	-	-	-
-	R*	R*	-	-	-	-	-	R*	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	R*	-	R*	R*	-	A	R*	-	-
R*	R	R	R	R	R	R	R*	R*	R	-	-	R	R*	R*	R
Y*	Y*	Y*	Y	Y	-	Y*	Y*	-	-	Y	C	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	-	-	-	-	R*	-	-	-	-	-	-	R	-	-	-
Y*	Y	Y*	-	Y*	-	Y*	-	Y*	Y*	-	-	Y*	-	-	-
K*	K	K	K*	K*	K*	K*	-	K	K	-	-	K	K*	-	-
NP	NP	NP	S*	-	S*	-	-	S	-	-	-	S*	S*	-	-
-	R*	R*	-	R*	-	-	-	-	-	-	-	R*	R*	R*	R
V*	R*	R*	-	-	R	R	R	R	R	R	R	-	-	-	S*
low_cov	R	G	R	-	-	R*	R*	R*	R*	R*	R*	-	-	N*	R*
-	R*	-	-	-	-	-	R*	-	-	-	-	-	R*	R*	R
R*	R	R	R	R	R	R	R	R*	A	R	R	R*	R*	R*	R
-	R*	R*	-	-	-	-	-	-	-	-	-	-	R*	R*	R*
H*	Y	Y	Y*	Y*	Y	Y	Y	Y*	Y*	Y	Y*	Y*	Y*	T*	Y
T*	Y	Y	Y	Y	T	Y	Y*	Y	T	Y*	Y*	Y*	-	Y	Y
R*	R*	R*	-	-	R	R*	R	R	R	R	R	-	-	-	S*
-	D*	K*	-	-	-	K*	-	-	R*	-	-	-	-	K	K*
-	K*	-	-	-	-	K*	-	-	-	-	-	-	K*	K*	K
Y*	B*	B*	Y	Y	Y*	C*	Y*	C*	Y*	Y	Y	Y*	Y*	Y*	C*
B*	Y*	B*	-	-	S	S*	B*	-	S*	S*	S*	-	S*	Y*	B*
Y*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	R	R*	R	R	R*	R*	R	R*	R*	R	R	R*	-	R*	R
S*	S*	S*	-	-	S	S*	V*	S*	S*	S*	S*	-	S*	-	S*
-	-	R*	-	-	-	-	-	-	-	-	-	-	-	R*	R
R*	R*	R	R	R	R*	R*	R	R	R	R	R*	R*	R*	R*	R*
-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y*	Y	Y*	Y*	Y	Y*	Y*	Y*	Y*	Y*	Y	Y	Y
-	-	-	-	-	-	-	R*	-	-	K*	-	-	-	-	-
-	Y*	Y*	-	-	-	Y*	-	-	-	-	-	-	-	-	-
Y	Y	H*	-	H*	Y*	Y	Y*	H*	Y*	H*	Y*	-	H*	M*	H*
S*	S	S	S	S*	S*	S	S	S	S	S*	S*	S*	S*	S*	-
G	K*	K*	G	G	G	G	G*	K	K*	K	K	K	K*	-	-
R*	R	R	R	R	R	R*	R*	-	R*	R*	R*	R	R*	R*	-
-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	-	-	C*	C	S*	S	S	S*	-	R*	S*	-	S

-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M*	M*	M	M	M	M	M	M	-	-	-	-	M	M*	M*	M
-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y	Y	Y*	Y*	Y	Y*
low_cov	low_cov	-	-	-	low_cov	-	-	-	-	-	-	-	-	-	-
-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
V*	-	-	-	-	S	S	S	-	-	-	-	-	-	-	-
-	-	-	R	R*	-	-	-	-	-	-	-	-	-	-	-
R	R*	R*	-	R*	R	R	R	R	R	R	R	D*	R*	R*	R
Y*	Y	Y*	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y
Y	Y*	Y	-	-	Y*	-	-	Y*	Y*	-	-	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	R*	-	-	-	R	R	-	-	-	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	NP	NP	NP	NP	-	-
NP	NP	NP	-	-	NP	NP	NP	-	-	-	-	NP	NP	-	-
-	Y*	Y*	Y*	Y*	-	Y*	C*	NP	NP	-	-	NP	NP	-	Y
R*	R*	R*	R*	R*	R*	R*	G*	R*	R*	R*	R*	R*	R*	G*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	B*	Y*
-	V*	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S*	S*	S	S	-	S*	S*	-	S*	S*	S*	S*	S*	S*	-
-	M*	M*	M	M*	M*	M	M*	-	-	-	-	A	M*	M*	A
low_cov	R*	R*	-	-	NP	NP	NP	-	-	-	-	NP	NP	NP	NP
R	R*	R	R*	R	R	R	R	-	-	-	-	R	R*	R	R
-	low_cov	-	-	-	-	-	-	-	-	-	-	R	A*	-	-
-	R*	R*	-	-	-	R*	-	-	-	-	-	-	-	-	-
-	D*	R*	W*	R*	-	R*	-	-	-	-	-	D*	R*	H*	W*
Y*	Y*	Y*	-	-	Y*	Y*	Y*	-	-	Y*	Y*	-	-	-	-
-	K	K*	-	-	-	-	-	-	-	-	-	K	K	-	K*
Y*	Y*	Y*	Y	Y	-	Y*	-	T*	T*	-	-	Y*	-	Y	Y
R	R*	R	-	-	-	R*	-	R	R	-	-	R	R	R*	-
Y	Y	Y	Y	Y	Y	Y	C	-	-	Y*	Y*	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-
NP	NP	NP	-	-	-	R*	R*	-	-	R*	-	NP	NP	-	-
-	R*	-	R	R	-	-	-	-	-	R	R	-	-	-	-
low_cov	T*	T*	T*	T*	NP	NP	NP	NP	NP	NP	NP	NP	NP	T*	Y
-	-	-	-	-	-	Y*	-	Y	Y	-	-	Y	Y*	Y*	-
-	D*	D*	K*	K*	Y*	K*	K*	K*	K*	K	K	K	K	K*	K
-	-	-	-	-	R*	R*	-	A	R	-	-	R	R	R*	R
NP	NP	NP	-	-	-	-	-	-	-	NP	NP	-	-	W*	W
low_cov	-	-	-	-	low_cov	-	-	NP	NP	NP	NP	C*	Y*	Y*	C
-	H*	H*	-	Y*	-	-	Y*	-	Y*	-	Y*	Y*	-	S*	-
-	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	V*	V*	-	-	-	R*	R*	-	R*	-	R*	R*	R*	R*	R*
-	H*	H*	-	Y*	-	Y*	-	Y	Y	Y	Y	Y*	Y*	-	-
-	R*	R*	R*	R*	-	R*	-	-	R*	R	R	NP	NP	-	-
-	Y*	Y*	-	Y*	-	-	-	-	-	Y*	Y	-	-	Y*	-

low_cov	-	R*	-	-	R*	R*	-	R*	R*	R*	A*	-	-	R*	R*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W*	W*	W*	-	-	W	W*	W	W*	W*	-	-	W*	W*	W*	W*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	R*	R*	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	S*	S
-	Y*	Y*	-	-	Y	Y	T*	-	-	Y	Y*	-	-	Y	Y
-	S*	S*	-	-	S*	S*	S	-	-	S*	S*	-	-	S*	S*
-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-	-
-	-	-	NP	NP	-	-	-	NP	NP	-	-	-	-	NP	NP
-	M*	-	-	-	-	-	-	-	-	-	-	M*	-	-	-
Y*	-	T*	-	-	Y*	Y	T*	Y*	Y*	Y*	T	Y*	-	Y*	Y
-	low_cov	-	-	-	low_cov	Y*	Y*	-	-	-	-	-	-	-	-
C	low_cov	S*	-	-	C*	C	C*	S*	S*	S	C*	S	-	C*	S
NP	NP	NP	-	-	-	-	-	-	Y*	-	-	NP	NP	Y*	Y*

ufficient coverage to make a call.

Supplemental Table-5

chr	pos	type	known	ensembl_id	gene_name	coding	ensembl prediction
7	140449150	SNP	known	ENSG00000157764	BRAF	exonic	
7	140453154	SNP	novel	ENSG00000157764	BRAF	exonic	NON_SYNONYMOUS_CODING
7	140426257	SNP	known	ENSG00000157764	BRAF	exonic	
7	55277387	SNP	known	ENSG00000146648	EGFR	exonic	
7	55268916	SNP	known	ENSG00000146648	EGFR	exonic	
7	55214348	SNP	known	ENSG00000146648	EGFR	exonic	
7	55277626	SNP	known	ENSG00000146648	EGFR	exonic	
7	55276094	SNP	known	ENSG00000146648	EGFR	exonic	
7	55249063	SNP	known	ENSG00000146648	EGFR	exonic	
7	55238268	SNP	known	ENSG00000146648	EGFR	exonic	
7	55187090	SNP	known	ENSG00000146648	EGFR	exonic	
7	55229255	SNP	known	ENSG00000146648	EGFR	exonic	NON_SYNONYMOUS_CODING
7	55238464	SNP	known	ENSG00000146648	EGFR	exonic	
7	55276010	SNP	known	ENSG00000146648	EGFR	exonic	
7	55266417	SNP	known	ENSG00000146648	EGFR	exonic	
7	55249057	SNP	novel	ENSG00000146648	EGFR	exonic	
7	55276144	SNP	known	ENSG00000146648	EGFR	exonic	
7	55268346	SNP	novel	ENSG00000146648	EGFR	exonic	
7	55278852	SNP	known	ENSG00000146648	EGFR	exonic	
7	55275910	SNP	known	ENSG00000146648	EGFR	exonic	
7	55276280	SNP	known	ENSG00000146648	EGFR	exonic	
7	55177608	SNP	known	ENSG00000146648	EGFR	exonic	
7	55277751	SNP	known	ENSG00000146648	EGFR	exonic	
7	55274084	SNP	known	ENSG00000146648	EGFR	exonic	

7	55238253	SNP	known	ENSG00000146648	EGFR	exonic	
7	55233089	SNP	known	ENSG00000146648	EGFR	exonic	NON_SYNONYMOUS_CODING
7	55238087	SNP	known	ENSG00000146648	EGFR	exonic	
7	55187053	SNP	known	ENSG00000146648	EGFR	exonic	
7	55275482	SNP	known	ENSG00000146648	EGFR	exonic	
13	28874695	SNP	known	ENSG00000102755	FLT1	exonic	
13	28875434	SNP	known	ENSG00000102755	FLT1	exonic	
13	28896979	SNP	known	ENSG00000102755	FLT1	exonic	
13	28964198	SNP	novel	ENSG00000102755	FLT1	exonic	
13	28876214	SNP	known	ENSG00000102755	FLT1	exonic	
13	28893642	SNP	novel	ENSG00000102755	FLT1	exonic	
13	28875789	SNP	known	ENSG00000102755	FLT1	exonic	
4	55972946	SNP	known	ENSG00000128052	KDR	exonic	NON_SYNONYMOUS_CODING
4	55991731	SNP	known	ENSG00000128052	KDR	exonic	
4	55979558	SNP	known	ENSG00000128052	KDR	exonic	NON_SYNONYMOUS_CODING
4	55972974	SNP	known	ENSG00000128052	KDR	exonic	NON_SYNONYMOUS_CODING
4	55991717	SNP	novel	ENSG00000128052	KDR	exonic	
12	25360559	SNP	known	ENSG00000133703	KRAS	exonic	
12	25398281	SNP	novel	ENSG00000133703	KRAS	exonic	NON_SYNONYMOUS_CODING
12	25359841	SNP	known	ENSG00000133703	KRAS	exonic	
12	25361756	SNP	known	ENSG00000133703	KRAS	exonic	
12	25359227	SNP	known	ENSG00000133703	KRAS	exonic	
12	25398262	SNP	novel	ENSG00000133703	KRAS	exonic	NON_SYNONYMOUS_CODING
12	25398284	SNP	novel	ENSG00000133703	KRAS	exonic	NON_SYNONYMOUS_CODING
12	25362552	SNP	known	ENSG00000133703	KRAS	exonic	
12	25362777	SNP	novel	ENSG00000133703	KRAS	exonic	
12	25361142	SNP	known	ENSG00000133703	KRAS	exonic	
12	25362217	SNP	known	ENSG00000133703	KRAS	exonic	
12	25361646	SNP	known	ENSG00000133703	KRAS	exonic	
3	178955783	SNP	known	ENSG00000121879	PIK3CA	exonic	
3	178954702	SNP	novel	ENSG00000121879	PIK3CA	exonic	
3	178957783	SNP	known	ENSG00000121879	PIK3CA	exonic	
10	89731297	SNP	known	ENSG00000171862	PTEN	exonic	

10	*89729772*	*SNP*	*known*	*ENSG00000171862*	*PTEN*	*exonic*
10	*89727212*	*SNP*	*novel*	*ENSG00000171862*	*PTEN*	*exonic*
10	*89726745*	*SNP*	*known*	*ENSG00000171862*	*PTEN*	*exonic*

Red labeled rows were excluded from comparison analysis between primary tumor and hepatic met

polyphen2 pred	›2 probabili	snp_id	alleles	pt1_livermeta	pt1_primary_CRC_tumor	pt2_livermeta	pt2_primary_crc	pt3_control	pt3_livermeta	pt3_primary_crc	pt4_livermeta	pt4_primary	pt5_livermeta	pt5_primary_crc	pt6_livermeta	pt6_primary_CRCtumor	pt7_control	pt7_livermeta	pt7_primary_CRC_tumor	pt8_livermeta
		rs9648696	T/C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y
probably damaging	0.999		T/C	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs3829814	A/G	R	R	-	-	R	R	G*	-	R*	R	R*	-	-	R	R*	R	-
		rs940810	C/T	Y	Y	Y*	Y*	Y*	-	-	-	-	T*	T	-	-	Y	Y	Y	-
		rs2293347	C/T	-	-	Y*	-	-	-	-	-	Y*	-	-	-	-	-	-	-	Y*
		rs2072454	C/T	Y	Y	Y	Y	Y	Y*	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*
		rs3800826	C/G	-	S*	S	S	S	S*	G	S	S	-	-	S	S*	-	-	S*	S*
		rs2280653	A/G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs1050171	G/A	R	R	R*	R*	R*	R*	R*	R*	R*	R*	R*	D*	R*	R*	R*	R*	D*
		rs10228436	G/A	-	-	R	R	R	R	R	R	R	-	-	R*	R	R*	-	R*	R
		rs11238352	T/C	C*	Y*	C*	C*	Y*	Y*	C	C*	Y*	C*	C*	C*	Y*	C*	Y*	C*	Y*
benign	0	rs2227983	G/A	-	-	R*	R	R*	R*	R*	R*	R*	-	-	R*	R*	-	-	-	R
		rs10277413	T/G	-	K*	K	K	K	K*	K	K	K	K*	-	K*	K*	-	-	K*	K
		rs940811	A/G	R	R	G*	R*	G	R*	R*	R*	R*	R*	G*	R*	G*	R*	G*	R*	R*
		rs1140475	T/C	Y	Y*	C	C*	C*	Y*	C*	Y*	Y	Y*	C	Y*	Y*	C*	C*	Y*	Y*
			C/T	-	-	-	-	-	-	-	-	-	-	-	Y*	-	-	-	-	-
		rs884420	C/T	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	-
			C/G	-	-	-	-	-	S*	-	-	-	-	-	H*	-	-	-	-	Y*
		rs7334	C/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs17290785	C/T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs884419	G/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs77018704	G/A	-	-	-	-	-	-	-	-	-	R	R*	-	-	-	-	-	S*
		rs76138885	T/C	-	-	-	-	-	H*	-	Y	Y	-	-	-	-	-	-	-	-
		rs884225	T/C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		rs17290225	G/A/T	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
		rs17290169	C/T	-	-	-	-	-	H*	-	-	Y*	-	-	Y	Y	-	-	-	Y*
		rs10258429	C/T	-	-	-	-	-	H*	-	-	-	-	-	-	-	-	-	-	-
		rs12667668	C/A	-	-	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs884904	G/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs3209052	T/C	Y*	Y*	Y*	-	Y*	Y*	Y	Y	Y	-	Y*	Y*	Y*	Y*	Y*	Y*	Y*
		rs55875014	G/C	-	-	-	S*	-	S*	S*	-	S*	-	-	-	-	-	-	-	-
		rs56314249	C/T	-	-	-	-	-	-	-	-	-	-	-	M*	Y*	-	-	-	-
			C/T	-	-	-	-	-	-	-	-	-	Y	T	-	-	-	-	-	-
		rs7326277	T/C	-	-	-	-	Y	Y*	Y	Y*	Y	-	-	-	-	-	-	-	-
			A/G	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	R
		rs9554314	A/C	-	-	-	-	M*	M	M	M	M	-	-	-	-	-	-	-	-
probably damaging	0.999	rs34231037	A/G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP
		rs7667298	T/C	Y	Y	C*	Y*	-	Y*	-	Y	Y	Y*	Y	Y	Y*	Y*	Y*	Y*	Y*
probably damaging	0.97	rs2305948	C/T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
benign	0	rs1870377	T/A	-	-	NP	NP	W*	A	W*	NP	NP	NP	NP	NP	NP	-	-	-	NP
			G/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		rs61764367	G/C	S	S	S*	-	-	-	-	-	-	-	-	NP	NP	-	-	-	-
probably damaging	0.994		C/T	-	-	-	-		-	-	-	-	-	-	-	-		-	-	-
		rs13096	T/C	-	-	NP	NP	-	-	-	Y*	Y*	C*	Y*	NP	NP	NP	NP	NP	NP
		rs61763590	C/A	-	-	-	-	-	-	-	-	-	-	-	M*	M*	-	-	-	-
		rs61764372	A/T	-	-	-	-	-	-	-	W	W	-	-	-	-	-	-	-	-
probably damaging	0.969		C/A	-	-	M*	-	-	-	-	-	-	M*	M	-	-	-	-	M*	-
possibly damaging	0.585		C/G	-	-	-	-		-	-	-	S	-	-	-	-		Y	Y*	-
		rs712	A/C	-	-	M*	M*	-	-	-	M	M	M*	M	C*	C*	NP	NP	NP	M
			A/G	R*	R*	-	-	w_co	R*	R*	R*	R*	R*	-	NP	NP	NP	NP	NP	NP
		rs7973450	A/G	R*	R	-	-	R	G*	G*	R*	R*	G	R*	NP	NP	NP	NP	NP	NP
		rs9266	A/G	-	R*	R*	R	R*	-	-	R	R	R	R	R	R*	R*	-	R*	R
		rs7960917	T/C	Y	Y	Y*	-	Y	Y	Y*	Y	Y	Y	Y	-	H*	-	-	Y*	-
		rs6443626	T/C	Y*	Y	-	-	Y*	Y*	Y*	Y*	Y*	-	-	-	-	NP	NP	NP	Y*
			G/A	-	-	-	-	-	-	-	-	-	-	-	R	R*	-	-	-	-
		rs3976507	C/T	Y*	Y	-	-	-	Y*	Y*	Y*	Y*	-	-	Y*	Y*	Y*	Y*	Y*	Y*
		rs473354	C/T	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-

rs41284074	*A/G*	-	-	NP	NP	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	-	NP
	T/C	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
rs701848	*T/C*	-	-	C*	C*	NP	NP	NP	Y*	Y*	-	-	NP	NP	NP	NP	NP	NP

tastasis, because sequenced healthy tissue also revealed this variation and therefore was interpreted as 'bac

pt8_primary_CRCtumor	pt9_livermeta	pt9_primary_tumor_CRC	pt10_livermeta	pt10_primary	pt11_control	pt11_livermeta	pt11_primary_CRC_tumor	pt12_livermeta	pt12_primary_CRC_tumor	pt13_livermeta	pt13_primary_CRC_tumor	pt14_livermeta	pt14_primary_CRC_tumor	pt15_control	pt15_livermeta_CRC	pt15_primary_CRC_tumor	pt16_livermeta_T04_8616	pt16_primary_CRC_tumor	pt17_control	pt17_livermeta	pt17_primary_CRC_tumor	pt18_livermeta	pt18_primary_CRC_tumor	pt19_livermeta	pt19_primary_CRC_tumor	pt20_livermeta	pt20_primary_CRC_tumor	pt21_livermeta
Y*	-	-	-	-	-	-	-	Y*	-	-	-	Y*	-	-	-	-	Y*	Y*	-	Y*	Y*	-	-	Y*	Y	Y*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R*	G	G	R*	R	R*	R*	R*	-	-	NP	NP	R*	R*	R*	R*	-	-	-	-	R	R	G*	G*	-	-	NP	NP	R*
-	Y	Y	-	-	Y*	Y	Y	Y*	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y	Y	Y*	-	-	-	-	-	-	-	-	-
-	Y*	-	-	Y*	-	-	-	M*	-	Y*	Y*	Y*	Y*	-	M*	M*	-	-	Y*	Y	Y*	Y	Y	Y	Y	-	-	Y*
Y*	Y	Y	Y	Y	Y	Y	Y	H*	Y*	H*	Y*	H*	H*	Y*	H*	H*	Y	Y	Y	Y	Y*	Y	Y	Y*	Y	Y	Y	Y
S	-	-	NP	NP	S	-	S*	S	S	S	S	S*	S*	S*	S*	S*	S*	S*	S*	S	S	-	-	-	-	S	S*	S*
-	-	-	-	-	-	-	-	-	-	R*	R*	R*	R	-	-	-	-	-	R	R	R*	R*	R	R	R	-	-	R*
R*	R	R	R*	R*	R	R	A	D*	R	R	R	R	R	R	R	R	R*	R*	R	R	R*	R*	R*	R*	R*	R	R	R
R*	-	R*	-	R*	-	R*	R*	R*	-	R	R	R*	R	R*	R*	R*	R	R*	R	R	A	-	-	R	R	A	A*	R*
Y*	Y*	C*	Y*	C*	C*	C*	C*	C*	C*	C*	C*	C*	C*	w_co	C*	C*	C*	C*	w_co	Y*	C*	Y*	Y*	C*	C*	C*	C*	Y*
R	-	-	-	-	-	R*	-	R	R*	R	R*	R*	R	R*	R	R*	R*	-	w_co	R*	R*	-	-	R	R	R*	R*	-
K	-	-	-	K*	K*	K*	K*	K	K*	K	K	K*	G	K*	K	K	K	K	K	K	G	-	-	K	K	G	G	K*
R*	R*	G	G*	R*	G*	R*	G*	R*	R*	R*	G*	R*	G*	G*	R*	R*	R*	G*	G*	G*	R*	R*	R*	R	R	R*	G*	R
Y*	Y*	Y*	C*	Y*	C	C*	C	Y*	Y*	Y*	C*	Y*	Y*	C*	Y*	Y*	Y*	Y*	C*	C*	Y*	Y*	C*	Y	Y	C*	C*	Y*
-	-	-	-	-	-	-	-	M*	-	-	-	M*	M*	-	M*	M*	Y	Y*	-	-	-	-	-	Y*	-	-	-	-
-	-	-	-	-	-	-	-	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	S	S	-	-	-	-	-	S*	-	S*	-	S*	S*	-	S*	S*	-	-	-	-	-	-	-	-	-	-	-	-
-	M	M	M*	M*	-	-	-	M*	-	M*	M*	M*	M*	M*	M*	-	-	-	-	M	M*	A*	A	M	M	M	-	M*
-	-	-	Y*	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R*	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S*	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	Y	Y*	Y*	-	-	-	-	Y*	-	-	-	-	Y*	-	Y*	-	-	-	-	-	-	-	-	-	-	Y	-	-

-	-	-	-	-	-	-	R*	-	-	R*	-	R*	-	-	R*	-	-	-	-	R*	-	-	-	-	-	R*	-	-
-	-	-	-	-	-	Y*	Y*	H*	Y*	M*	-	H*	-	-	H*	Y*	-	Y*	-	-	Y*	-	Y*	Y*	Y*	Y*	Y*	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-
-	M	M	M*	M	M	-	M	M*	M	-	-	-	M*	M*	M*	M*	M*	-	-	-	-	-	-	-	-	-	-	-	-
-	R	R	R*	R*	-	-	-	-	-	-	-	R*	R*	-	R*	-	-	-	-	-	-	-	-	-	-	-	R	-	R*
Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y	Y*	Y*	Y*	Y*	-	-	Y*	Y*	-	Y*	Y*	Y*	Y*	Y*	Y	Y*	-	-	-	-	Y*
-	-	-	-	-	-	S*	C	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	NP	NP	NP	NP	-	-	S
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-	-	-
-	-	-	Y*	Y*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	Y*	Y	Y*	-	-	-	-	-
Y*	-	-	-	-	Y	Y	Y	-	-	-	-	-	-	Y*	-	-	-	-	Y*	Y*	-	Y	Y	-	-	-	-	Y
R	-	-	-	R*	R	R	R	R*	-	-	-	R*	R*	-	R*	-	R*	R	R*	R	R	G	R*	R*	R*	-	-	-
-	-	-	-	-	M*	M	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	M*	-	-	-	-	M*
NP	G	R*	-	-	NP	NP	NP	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	-
Y*	Y	Y*	Y*	Y	-	Y	Y*	Y*	Y*	Y*	C	C	Y*	-	Y	Y*	C	C	Y*	Y	Y	Y	Y	Y*	Y*	Y*	C	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y*	-	Y	Y	-	-	-	-	-
NP	NP	NP	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
-	-	-	-	-	-	-	-	R*	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	Y	Y		-	-	-	-	-	-	Y	Y*	-
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	NP	NP	C*
-	-	-	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	-	-	Y*
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M*	-	-	-	-	-	Y*	-	-	-	-	-	-	-
-	-	-	M*	M		-	-	Y*	-	-	-	-	-		Y*	-	-	-		-	-	-	-	-	-	-	-	-
-	NP	NP	NP	NP	C	M*	C*	-	C*	C	M*	NP	NP	M	w_co	M*	-	-	M	M*	M*	M	M*	M*	M*	NP	NP	-
NP	-	-	-	-	-	-	-	NP	NP	-	-	NP	NP	NP	NP	NP	G	G	w_co	-	-	R*	G*	R*	R	NP	NP	R*
NP	-	-	R*	-	NP	NP	NP	R*	R*	-	-	R*	-	-	-	-	G*	G*	-	-	-	NP	NP	R	R	-	-	G*
R	R	R	R*	R	R	R	G	R	G	R	R	R	R	R	R	R	-	R*	R	R	R*	R	R	R	R	R*	R*	R*
Y*	-	-	-	Y*	-	Y*	-	Y*	-	-	-	Y*	Y*	-	Y*	Y*	Y	Y	-	Y*	-	Y	Y	Y	Y	-	-	Y
-	Y*	Y*	NP	NP	-	-	-	-	-	Y*	-	NP	NP	H*	-	-	-	-	Y*	Y*	Y*	-	-	-	-	Y*	-	-
-	-	-	-	-	-	R*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B*	Y*	Y*	-	-	-	-	-	Y*	-	Y*	Y*	Y*	-	-	Y*	-	-	-	Y*	Y*	Y*	-	-	-	-	Y*	Y*	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	NP	NP	NP	-	-	Y	Y	Y*	-	-	-	-	-	-	-

NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	w_co	-	-	-	-	NP	NP	NP	NP	R*
NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
NP	NP	NP	NP	NP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	-	-	-	Y*	Y*	NP	NP	NP	NP	NP	NP	-

ckground'.

pt21_primary_CRC_tumor , , R* - Y* Y - R* R* R* Y* R* K* R* Y* , - , M* , , , , ,

- Y* - - - Y* S - - Y - M - Y - - - - - Y - - - - M R* R R Y - - - -

R
NP
-