

Supplementary Table 1: Clinico-pathological demographics of CD133^{high} and CD133^{low} GBM

Brain Tumor ID	Age/Gender of Donor Patient	Pathology	CD133% in unsorted tumour	Survival Time from Diagnosis (months)
BT449	M/61	GBM	0	5
BT114	M/76	GBM	5.9	4
BT486	F/54	GBM	6.58	14
BT154	F/59	GBM	10.7	26
BT111	F/34	GBM	10.8	28
BT82	M/49	GBM	10.9	26
BT428	F/63	GBM	10.99	14
BT237	M/51	GBM	11.2	15
BT47	M/59	GBM	12.2	14
BT104	M/74	GBM	13.2	15
BT106	M/46	GBM	14.1	14
BT121	M/51	GBM	15.8	30
BT62	M/54	GBM	16.3	24
BT210	F/75	GBM	16.8	4
BT54	M/47	GBM	17	13
BT458	M/81	GBM	17.38	13
BT92	M/77	GBM	18.4	6
BT36	M/67	GBM	24.2	8
BT89	M/57	GBM	24.3	10
BT119	M/63	GBM	24.9	13
BT120	M/62	GBM	29.2	3
BT511	F/73	GBM	38.77	7
BT465	M/50	GBM	57.15	16
BT241*	F/68	recurrent GBM	2.6	23
BT566*	F/55	recurrent GBM	4.15	11

Supplementary Table 2: Positive and negative correlation probe sets present in CD133-signature

Positive correlation probe set			
Name	Description	Name	Description
204304_s_at	prominin 1, PROM1	201477_s_at	ribonucleotide reductase M1, RRM1
204023_at	replication factor C (activator 1) 4, 37kDa, RFC4	201292_at	topoisomerase (DNA) II alpha 170kDa, TOP2A
201088_at	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)	204618_s_at	GA binding protein transcription factor, beta subunit 2, GABPB2
202666_s_at	actin-like 6A, ACTL6A	202589_at	thymidylate synthetase, TYMS
218277_s_at	DEAH (Asp-Glu-Ala-His) box polypeptide 40, DHX40	222036_s_at	minichromosome maintenance complex component 4, MCM4
201973_s_at	chromosome 7 open reading frame 28A	201930_at	minichromosome maintenance complex component 6, MCM6
204252_at	cyclin-dependent kinase 2, CDK2	212836_at	polymerase (DNA-directed), delta 3, accessory subunit, POLD3
200087_s_at	transmembrane emp24 domain trafficking protein 2, TMED2	200829_x_at	zinc finger protein 207, ZNF207
209507_at	replication protein A3, 14kDa, RPA3	205690_s_at	BUD31 homolog (<i>S. cerevisiae</i>), BUD31
222077_s_at	Rac GTPase activating protein 1, RACGAP1	201180_s_at	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 3, GNAI3
218356_at	FtsJ homolog 2 (<i>E. coli</i>), FTSJ2	203344_s_at	retinoblastoma binding protein 8, RBBP8
212160_at	exportin, tRNA (nuclear export receptor for tRNAs), XPOT	212918_at	RecQ protein-like (DNA helicase Q1-like), RECQL
218622_at	nucleoporin 37kDa, NUP37	212698_s_at	septin 10, SEPT10
208310_s_at	chromosome 7 open reading frame 28A	200037_s_at	chromobox homolog 3 (HP1 gamma homolog, <i>Drosophila</i>)
203138_at	histone acetyltransferase 1, HAT1	212168_at	RNA binding motif protein 12, RBM12

Supplementary Table 2 continued

Name	Description	Name	Description
204140_at	tyrosylprotein sulfotransferase 1, TPST1	212082_s_at	myosin, light chain 6, alkali, smooth muscle and non-muscle
200934_at	DEK oncogene (DNA binding), DEK	214039_s_at	lysosomal associated protein transmembrane 4 beta, LAPTM4B
200044_at	splicing factor, arginine/serine-rich 9, SFRS9	201202_at	proliferating cell nuclear antigen, PCNA
202016_at	mesoderm specific transcript homolog (mouse), MEST	217832_at	synaptotagmin binding, cytoplasmic RNA interacting protein, SYNCRIP
202503_s_at	KIAA0101, KIAA0101	202306_at	polymerase (RNA) II (DNA directed) polypeptide G, POLR2G
201558_at	RAE1 RNA export 1 homolog (S. pombe), RAE1	203202_at	KRR1, small subunit (SSU) processome component, homolog (yeast), KRR1
206102_at	GIN5 complex subunit 1 (Psf1 homolog), GIN51	208716_s_at	transmembrane and coiled-coil domains 1, TMCO1
209674_at	cryptochrome 1 (photolyase-like), CRY1	218403_at	TP53 regulated inhibitor of apoptosis 1, TRIAP1
212074_at	unc-84 homolog A (C. elegans), UNC84A	219350_s_at	diablo homolog (Drosophila), DIABLO
221509_at	density-regulated protein, DENR	200943_at	high-mobility group nucleosome binding domain 1, HMGN1
219258_at	TIMELESS interacting protein, TIPIN	222140_s_at	G protein-coupled receptor 89B
205644_s_at	small nuclear ribonucleoprotein polypeptide G, SNRPG	200944_s_at	high-mobility group nucleosome binding domain 1, HMGN1
213951_s_at	PSMC3 interacting protein, PSMC3IP	219479_at	KDEL (Lys-Asp-Glu-Leu) containing 1, KDELC1
202710_at	blocked early in transport 1 homolog (S. cerevisiae), BET1	204807_at	transmembrane protein 5, TMEM5

Supplementary Table 2 continued

Name	Description	Name	Description
201398_s_at	translocation associated membrane protein 1	202567_at	small nuclear ribonucleoprotein D3 polypeptide 18kDa, SNRPD3
213134_x_at	BTG family, member 3, BTG3	212460_at	chromosome 14 open reading frame 147, C14orf147
202918_s_at	MOB1, Mps One Binder kinase activator-like 3 (yeast), MOBKL3	218979_at	RMI1, RecQ mediated genome instability 1, homolog (S. cerevisiae), RMI1
219216_at	Ewing tumor-associated antigen 1, ETAA1		

Negative correlation probe set			
Name	Description	Name	Description
208327_at	cytochrome P450, family 2, subfamily A, polypeptide 13, CYP2A13	221432_s_at	solute carrier family 25, member 28, SLC25A28
206109_at	fucosyltransferase 1 (galactoside 2-alpha-L-fucosyltransferase, H blood group), FUT1	213717_at	LIM domain binding 3, LDB3
213569_at	CDNA FLJ43739 fis, clone TESTI2015375	210267_at	NIPA-like domain containing 3, NPAL3
206926_s_at	interleukin 11, IL11	211383_s_at	WD repeat domain 37, WDR37
220555_s_at	PDZ domain containing 7, PDZD7	212660_at	PHD finger protein 15, PHF15
216180_s_at	synaptojanin 2, SYNJ2	211096_at	pre-B-cell leukemia homeobox 2, PBX2
210448_s_at	purinergic receptor P2X, ligand-gated ion channel, 5, P2RX5	219150_s_at	centaurin, alpha 1, CENTA1
204735_at	phosphodiesterase 4A, cAMP-specific (phosphodiesterase E2 dunce homolog, Drosophila), PDE4A	204155_s_at	KIAA0999 protein

Supplementary Table 2 continued

Name	Description	Name	Description
220778_x_at	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6B, SEMA6B	206882_at	solute carrier family 1 (high affinity aspartate/glutamate transporter), member 6, SLC1A6
221583_s_at	potassium large conductance calcium-activated channel, subfamily M, alpha member 1, KCNMA1	205451_at	forkhead box O4, FOXO4

Supplementary Table 3: Drug targets acquired from CD133 gene signature connectivity map

Compound	Description	Relevant cancer research	Reference
Thioridazine	Antipsychotic, phenothiazine	Targets neoplastic cells in human leukemia Induces apoptosis of cervical and endometrial cancer cells	1, 2
Trifluoperazine	Antipsychotic, phenothiazine, calmodulin inhibitor	Inhibits cancer stem cell growth (CD44/CD133) in lung cancer	3
Prochlorperazine	Antipsychotic, antiemetic, D2 (dopamine) receptor antagonist	-	
Mebendazole	Anthelmintic	Inhibits cancer cell growth and metastasis in adrenocortical carcinoma Leads to mitotic arrest and apoptosis in lung cancer Causes apoptosis in chemoresistant melanoma cells	4 - 7
Morantel	Anthelmintic	-	
Pyrvinium	Anthelmintic, Wnt/beta catenin signaling inhibitor	Inhibits Wnt signaling in and proliferation of colon cancer cells	8
L-cycloserine	Antibiotic, GABA-T inhibitor, cAMP and CREB inhibitor	GABA negatively regulates proliferation of neural stem cells	9
Antimycin A	Antibiotic, mitochondrial ETC inhibitor	Inhibits growth of lung cancer (Calu-6 cell line)	10
Fenoprofen	Non-steroidal anti-inflammatory	Reduces survival of prostate cancer cells	11
Chlorzoxazone	Muscle relaxant	-	
Ifenprodil	NMDA receptor antagonist	-	
Zimeldine	Serotonin uptake inhibitor anti-depressant	Inhibits the proliferation of prostate carcinoma cell lines (PC-3, DU-145 and LNCaP)	12
Sulfamethoxypyridazine	Antibacterial	-	

Supplementary Table 3 continued

Compound	Description	Relevant cancer research	Reference
Meticrane	Diuretic	Identified as molecule of interest in treatment of nasopharyngeal carcinoma	13
D-cycloserine	Antibiotic, partial NMDA receptor antagonist	-	

Supplementary Table 4: qRT-PCR Primers

Gene	Primer sequence
CD133	5' GTGCCTGGGGCTGCTGTTTA 3' 5' CCATTTTCCTTCTGTCGCTGG 3'
Axin 2	5'TGGAGCCGGCTGCGCTTTGAT 3' 5'CTGGGGTCCGGGAGGCAAGTC 3'
GAPDH	5'TGCACCACCAACTGCTTAGC 3' 5'GGCATGGACTGTGGTCATGAG3'

Supplementary Table 5: Genes used to complete network analysis

CUL3	SCYL3	CHST5	PROM1	BUD31	FLJ14668	RAMP3	STT3A	PPP4C	FANCG
GALNT1	TAX1BP1	PRKRA	POLR2G	KRR1	SEC61B	MKI67	MTCH2	VEGF	TDO2
ZNF764	FLJ20628	DYNLT1	KPNA2	BET1	CSGLCA-T	G6PC3	CDCA4	CASP2	KIF4A
ORC5L	C11ORF57	KATNA1	DIABLO	POLD3	CHEK1	MCM3	C17ORF71	ANKRD57	ISG20L2
CA3	DDX47	MRPS33	TPST1	GABPB2	GOSR2	ZDHHC4	MAPK7	C6ORF145	PSMD2
ANKRD6	COPS8	SMARCE1	TMCO1	RPA3	HEXB	STAT3	LDHA	SCUBE2	KCTD5
ACADL	MRPS10	EI24	RECQL	TRIAP1	DNAJC10	C7ORF49	CRSP2	AURKA	COMMD4
UNC50	LSM1	SRBD1	GIN51	GNAI3	APITD1	CDC25B	PDIA5	EIF2B1	PLK1
BBS4	FANCF	NUP153	C7ORF28A	C7ORF28A	SS18	PFN1	NRBP1	OSMR	PRCC
EED	IFT52	GIN53	BTG3	RACGAP1	LRRC59	PRC1	PPFIA1	MPHOSPH9	KIAA0286
USP39	PPP4R1	FTSJ2	SNRPD3	RBM12	FANCA	COQ2	FLJ21908	CEP55	GCS1
KLHL7	CXCR7	MEST	HMG1	MYL6	CENPE	CDC6	RPN2	CDCA8	CENPM
METTL9	POT1	DHX40	PCNA	TIPIN	NUP85	CALU	KIF23	SDCBP	PMS2
DARS	IGSF3	DENR	KDELC1	RAE1	ORMDL2	PTBP1	CEPT1	SNF8	C2ORF28
DNAJB9	ATP5J2	TRAM1	MCM6	BMP1	FKBP9	STX2	ZNF84	SMC1A	WDR45L
SHFM1	ZNF435	PREI3	SYNCRIP	TOR3A	STC1	C16ORF59	UBE2I	RGS16	CTDSP2
RFC5	KIAA0895	GPR89A	RMI1	LARP4	RAP1B	PDIA4	WBSCR16	COPZ1	HEATR2
PRIM2A	C18ORF10	TMED2	RRM1	TMPO	LYK5	EVC	AEBP1	HLA-A	SHMT2
KLHL20	YES1	DEK	RBBP8	ATP6V0A2	EIF2AK1	TMED9	FOSL2	MSN	CHFR
CEP76	SP3	ZNF207	HAT1	YKT6	DERL2	MALT1	SEC22B	KNTC2	E2F8
SLC16A1	DERA	CRY1	MCM4	HSPA5	NEK2	LMNB2	CYP20A1	PSMC2	FAM111A
RRAGD	MOSPD1	XPOT	LAPTM4B	GNS	LMAN2L	DHX8	MYD88	FXR1	EIF3S9
SRR	ADH5	SFRS9	CBX3	ABCF2	CCDC59	BTG1	ZRF1	XAB1	RBM28
C14ORF147	SH3BGR	TOP2A	CDK2	NUSAP1	C12ORF5	FGFR1	PRIM1	BIRC5	ODF2
SLC25A13	RHEB	ACTL6A	TYMS	C21ORF45	C17ORF62	CTNNA1	EWSR1	TIMELESS	KIAA1009
DAAM1	RWDD1	KIAA0101	UNC84A	ACTG1	C7ORF24	EZH2	RHBDD3	HSP90B1	TUBB
PGRMC2	TTC30A	RFC4	PSMC3IP	KDELR2	CLK2	MCM5	GORASP2	PPGB	FADD
KHDRBS1	TMEM5	NUP37	SNRPG	CASP6	GATAD1	NCAPG2	PSMD9	CENPA	FAM62A

Supplementary Table 5 continued

TK1	C13ORF34	KNTC1	COPB1	GNL3	SRP19	PDIA6	HNRPR	ZNF588	CGI-115
BTN2A2	PPIC	CRSP6	CCDC99	SMC4	HMG2	MAD2L1	YTHDF2	KIAA1794	KIF15
CANT1	TUBG1	USP1	PCID1	TMEM45A	SEC24A	CNIH4	C4ORF15	HSPD1	FUSIP1
CPD	ECT2	XPO1	CKAP2	JTV1	GGH	PBK	H2AFZ	HOXA10	CCNA2
C7ORF42	TPX2	DTL	MRPS18A	KRT10	HOXA5	SRPRB	DPM1	ACLY	CASP3
VCP	RFC2	TRIM24	DHFR	PSMA1	FBXO5	RPL26L1	HSPE1	G3BP	SF3B1
PGM3	RRM2	RAD54B	SFRS1	NOL11	PSMA2	NUFIP1	ITGB3BP	NGLY1	GALNT10
SLC2A10	RAD51AP1	MIS12	MLF1IP	RBM13	ZNF143	INTS12	RNF138	MSH6	PLA2G4A
FOXM1	PLA2G2A	SUZ12	TARS	GRB14	ADNP	SPCS3	UBE2N	LBR	NUP160
MELK	LMNB1	CARF	BZW2	TUBB2B	PPM1D	SAP30	TRMT5	NUP88	BZW1
SDF2L1	BLMH	SRP72	DHX15	HS2ST1	CKS2	NDUFB5	PTGES3	MFN1	ARF4
H2AFV	MAD1L1	SMC2	SFRS10	LYPLA1	C1ORF9	C5ORF15	ITGA6	ALG6	EIF4E2
RALY	SLC35A2	RBBP4	COIL	SNRPF	SMN1	EIF4G2	HMGB2	IGF2BP3	NUP54
DBF4	VPS54	C12ORF41	CDC7	SHQ1	EPS8	SNRPA1	FASTKD3	TDG	

Supplementary Table 6: Molecular Subtypes of GBM samples used

Sample ID	Subtype
BT 241	Mesenchymal
BT 428	Proneural
BT 458	Classical
BT 459	Proneural
BT 465	Proneural
BT 486	Classical
BT 566	Mesenchymal
BT 624	<i>nd</i>

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