

**Supplementary Table 1. Mean, median, and standard error of sCD14 and sCD23 by Histology and Case/Control Status, San Francisco Bay Area Adult Glioma Study (1997-2006)**

<b>Serum CD14 concentration (ug/ml) means by case status and histology</b>							
<b>Case/Control Status</b>	<b>Histology*</b>	<b>N</b>	<b>Mean</b>	<b>StdErr</b>	<b>Med</b>	<b>Min</b>	<b>Max</b>
Control	NA	736	8.1	0.1	7.7	1.5	25.7
Case	All	1078	10.3	0.1	9.7	1.5	37.1
Case	GBM	617	10.7	0.2	9.9	2.7	37.1
Case	Astro	226	9.9	0.3	9.3	3.2	26.5
Case	Other	235	9.8	0.3	9.2	1.5	26.4
<b>Serum CD23 concentration (ng/ml) means by case status and histology</b>							
<b>Case/Control Status</b>	<b>Histology*</b>	<b>N</b>	<b>Mean</b>	<b>StdErr</b>	<b>Med</b>	<b>Min</b>	<b>Max</b>
Control	NA	727	3.6	0.1	2.6	0.1	38.7
Case	All	1064	2.7	0.1	2	0.0	22.3
Case	GBM	609	2.5	0.1	1.8	0.0	22.3
Case	Astro	224	2.9	0.2	2.3	0.1	17.6
Case	Other	231	3.0	0.2	2.5	0.2	14.0

\* GBM=glioblastoma, Astro=anaplastic astrocytoma, astrocytoma grade 2, and astrocytoma NOS, Other=oligodendroglioma, oligoastrocytoma, ependymoma, JPA, medulloblastoma, and other glioma.

**Supplementary Table 2. Spearman correlation between sCD14/sCD23 concentration and interval between diagnosis and blood draw among glioma cases, San Francisco Bay Area Adult Glioma Study (1997-2006)**

CaseType*	Outcome	Number	Correlation coefficient	P-value
All	sCD14	1078	-0.08	<0.01
GBM only	sCD14	617	-0.07	0.07
Non-GBM	sCD14	461	-0.07	0.13
All	sCD23	1064	<0.01	0.94
GBM only	sCD23	609	-0.04	0.39
Non-GBM	sCD23	455	<0.01	0.99

\* GBM=glioblastoma

**Supplementary Table 3. Glioma Case/Control Odds Ratios by sCD14 and sCD23 Quartiles Stratified by Temozolomide Use During Treatment, San Francisco Bay Area Adult Glioma Study Cases (2001-2006 Recruitment Period\*)**

Category	Outcome	Quartile	Number		OR** (95% CI)	P
			Cases	Controls		
Cases Taking Temozolomide at any point during initial treatment	sCD14 Quartiles	Quartile 1 (1.45-6.49)	91	184	1.00	
		Quartile 2 (6.50-7.65)	72	184	0.84 (0.58-1.24)	0.38
		Quartile 3 (7.66-9.26)	109	184	1.30 (0.91-1.86)	0.15
		Quartile 4 (9.27-37.14)	306	184	4.19 (3.01-5.82)	<0.01
	sCD23 Quartiles	Quartile 1 (0.03-1.57)	237	183	1.00	
		Quartile 2 (1.58-2.59)	123	181	0.56 (0.41-0.76)	<0.01
		Quartile 3 (2.61-4.41)	126	182	0.54 (0.40-0.73)	<0.01
		Quartile 4 (4.43-38.72)	83	181	0.36 (0.26-0.49)	<0.01
Cases Not Taking Temozolomide at any point during initial treatment	sCD14 Quartiles	Quartile 1 (1.45-6.49)	54	184	1.00	
		Quartile 2 (6.50-7.65)	36	184	0.70 (0.43-1.14)	0.15
		Quartile 3 (7.66-9.26)	48	184	1.01 (0.64-1.60)	0.96
		Quartile 4 (9.27-37.14)	139	184	3.42 (2.29-5.12)	<0.01
	sCD23 Quartiles	Quartile 1 (0.03-1.57)	103	183	1.00	
		Quartile 2 (1.58-2.59)	45	181	0.45 (0.30-0.68)	<0.01
		Quartile 3 (2.61-4.41)	69	182	0.68 (0.47-0.99)	<0.05
		Quartile 4 (4.43-38.72)	56	181	0.57 (0.38-0.84)	<0.01

\*Only subjects recruited in 2001 or later are included in this analysis because temozolomide became standard of care around this time.

\*\* Odds ratios were adjusted for age (continuous), race (white/non-white), gender, education (college vs no college), and smoking (ever vs never).

**Supplementary Table 4. Temozolomide (TMZ) Use at Any Point During Initial Treatment and sCD14/sCD23 Results, San Francisco Bay Area Adult Glioma Study Cases (2001-2006 Recruitment Period\*)**

	In sCD14 (GBM** Cases)						In sCD14 (Non-GBM* Cases)					
Category	N	Mean	Median	Std Error	p-value**		N	Mean	Median	Std Error	p-value***	
TMZ Given	406	2.27	2.27	0.02			172	2.23	2.22	0.03		
No TMZ Given	99	2.29	2.31	0.04	0.60		178	2.17	2.19	0.03	0.20	
	In sCD23 (GBM** Cases)						In sCD23 (Non-GBM** Cases)					
Category	N	Mean	Median	Std Error	p-value**		N	Mean	Median	Std Error	p-value***	
TMZ Given	398	0.52	0.60	0.05			171	0.76	0.89	0.07		
No TMZ Given	99	0.55	0.51	0.09	0.76		174	0.79	0.98	0.07	0.61	

\*Only subjects recruited in 2001 or later are included in this analysis because temozolomide became standard of care around this time.

\*\* GBM=glioblastoma

\*\*\* T-test comparing means within strata of those receiving TMZ to those not receiving TMZ.

**Supplementary Table 5. Comparison of In sCD14/sCD23 Levels by Dexamethasone Use Reported at Blood Draw, San Francisco Bay Area Adult Glioma Study (1997-2006)**

Category	Series**	In sCD14 (GBM Cases)					In sCD14 (Non-GBM Cases)				
		N	Mean	Median	Std Error	p-value*	N	Mean	Median	Std Error	p-value*
Cases Taking Dexamethasone at Blood Draw	3	283	2.30	2.32	0.03		96	2.20	2.21	0.05	
Cases not Taking Dexamethasone at Blood Draw	3	222	2.25	2.23	0.03	0.23	254	2.20	2.20	0.02	0.97
Cases Taking Dexamethasone at Blood Draw	2	55	2.29	2.31	0.05		20	2.22	2.27	0.07	
Cases not Taking Dexamethasone at Blood Draw	2	57	2.37	2.33	0.05	0.24	91	2.27	2.29	0.04	0.58
Category	Series**	In sCD23 (GBM Cases)					In sCD23 (Non-GBM Cases)				
		N	Mean	Median	Std Error	p-value*	N	Mean	Median	Std Error	p-value*
Cases Taking Dexamethasone at Blood Draw	3	282	0.39	0.43	0.05		95	0.52	0.60	0.10	
Cases not Taking Dexamethasone at Blood Draw	3	215	0.70	0.73	0.06	0.0002	250	0.87	1.02	0.05	0.0008
Cases Taking Dexamethasone at Blood Draw	2	55	0.48	0.40	0.13		20	0.53	0.50	0.21	
Cases not Taking Dexamethasone at Blood Draw	2	57	0.54	0.64	0.13	0.74	90	0.69	0.82	0.08	0.43

\* T-test comparing means within strata of those receiving Dexamethasone/Decadron to those not receiving these medications.

\*\* Series: 2=Using only cases recruited during Series 2 (1997-2000), 3=Using only cases recruited during Series 3 (2001-2006).

**Supplementary Table 6. Case/Control Odds Ratios by sCD14 and sCD23 Quartiles Stratified by Dexamethasone Use Reported at Blood Draw, San Francisco Bay Area Adult Glioma Study (1997-2006)**

Category	Outcome	Quartile (ug/mL)	Number		OR* (95% CI)	P
			Cases	Controls		
Cases Taking Dexamethasone at Blood Draw	sCD14 Quartiles	Quartile 1 (1.45-6.49)	84	184	1.00	
		Quartile 2 (6.50-7.65)	48	184	0.60 (0.38-0.93)	0.02
		Quartile 3 (7.66-9.26)	67	184	0.84 (0.55-1.27)	0.39
		Quartile 4 (9.27-37.14)	255	184	3.62 (2.53-5.16)	<0.01
	sCD23 Quartiles	Quartile 1 (0.03-1.57)	226	183	1.00	
		Quartile 2 (1.58-2.59)	93	181	0.43 (0.31-0.60)	<0.01
		Quartile 3 (2.61-4.41)	74	182	0.37 (0.26-0.53)	<0.01
		Quartile 4 (4.43-38.72)	59	181	0.25 (0.17-0.36)	<0.01
Cases not Taking Dexamethasone at Blood Draw	sCD14 Quartiles	Quartile 1 (1.45-6.49)	90	184	1.00	
		Quartile 2 (6.50-7.65)	82	184	0.93 (0.65-1.34)	0.70
		Quartile 3 (7.66-9.26)	128	184	1.54 (1.10-2.17)	0.01
		Quartile 4 (9.27-37.14)	324	184	4.43 (3.22-6.09)	<0.01
	sCD23 Quartiles	Quartile 1 (0.03-1.57)	211	183	1.00	
		Quartile 2 (1.58-2.59)	128	181	0.61 (0.45-0.82)	<0.01
		Quartile 3 (2.61-4.41)	158	182	0.65 (0.49-0.88)	<0.01
		Quartile 4 (4.43-38.72)	115	181	0.53 (0.39-0.73)	<0.01
Cases Taking Dexamethasone at Blood Draw (Glioblastoma Cases Only)	sCD14 Quartiles	Quartile 1 (1.45-6.49)	58	184	1.00	
		Quartile 2 (6.50-7.65)	36	184	0.62 (0.39-0.99)	<0.05
		Quartile 3 (7.66-9.26)	47	184	0.82 (0.52-1.28)	0.38
		Quartile 4 (9.27-37.14)	197	184	3.91 (2.69-5.69)	<0.01
	sCD23 Quartiles	Quartile 1 (0.03-1.57)	175	183	1.00	
		Quartile 2 (1.58-2.59)	70	181	0.41 (0.29-0.58)	<0.01
		Quartile 3 (2.61-4.41)	56	182	0.31 (0.21-0.45)	<0.01
		Quartile 4 (4.43-38.72)	36	181	0.20 (0.13-0.30)	<0.01
Cases not Taking Dexamethasone at Blood Draw (Glioblastoma Cases Only)	sCD14 Quartiles	Quartile 1 (1.45-6.49)	36	184	1.00	
		Quartile 2 (6.50-7.65)	30	184	0.83 (0.49-1.41)	0.49
		Quartile 3 (7.66-9.26)	63	184	1.78 (1.12-2.84)	0.02
		Quartile 4 (9.27-37.14)	150	184	4.65 (3.01-7.17)	<0.01
	sCD23 Quartiles	Quartile 1 (0.03-1.57)	106	183	1.00	
		Quartile 2 (1.58-2.59)	59	181	0.57 (0.39-0.84)	<0.01
		Quartile 3 (2.61-4.41)	61	182	0.58 (0.40-0.85)	<0.01
		Quartile 4 (4.43-38.72)	46	181	0.44 (0.29-0.66)	<0.01

\* Odds ratios were adjusted for age (continuous), race (white/non-white), gender, education (college vs no college), and smoking (ever vs never).



**Supplementary Table 7a. Mean, median, and Std error of ln sCD14 by Medication Category (includes only medications being taken at time of blood draw) and GBM status, San Francisco Bay Area Adult Glioma Study (1997-2006)**

Medication Category	ln sCD14 (GBM Cases (n=505))				ln sCD14 (Non-GBM Cases Only (n=350))				ln sCD14 (Controls Only (n=451))			
	N	Mean	Median	Std Error	N	Mean	Median	Std Error	N	Mean	Median	Std Error
Chemotherapy drug or strong immunosuppresant (all)	99	2.21	2.23	0.04	45	2.16	2.18	0.07	3	2.00	1.86	0.16
Temozolomide (also included in chemotherapy category)	94	2.21	2.23	0.04	39	2.18	2.18	0.07	0	NA	NA	NA
Antibiotic or Antiviral with some immunologic effects	41	2.14	2.16	0.06	16	2.19	2.20	0.12	20	2.04	2.02	0.06
NSAID drug, antiInflammatory	41	2.31	2.26	0.06	21	2.22	2.16	0.09	68	2.00	2.03	0.03
Antihistamine, antileukotriene, or other allergy medication	26	2.32	2.31	0.08	15	2.46	2.50	0.13	22	2.02	1.96	0.06
Drug likely not affecting immune system	466	2.29	2.29	0.02	310	2.23	2.24	0.02	232	2.07	2.06	0.02
Steroid medication (not inhaled) (includes dexamethasone)	287	2.30	2.32	0.03	98	2.20	2.21	0.05	4	2.10	2.13	0.11
Dexamethasone/Decadron only	283	2.30	2.32	0.03	96	2.20	2.21	0.05	0	NA	NA	NA



**Supplementary Table 8. Comparisons of mean, median, standard error, and range of ln sCD14/sCD23 values by IgE categories for cases and controls, San Francisco Bay Area Adult Glioma Study (1997-2006)**

Case/Control Status	IgE Category*	ln sCD14					ln sCD23				
		N	Mean	Median	Std Error	Range	N	Mean	Median	Std Error	Range
Control	Normal	317	2.07	2.07	0.02	1.11-3.25	311	1.00	1.00	0.05	(-1.17 -- 3.66)
Control	Borderline	253	2.02	2.01	0.02	0.37-3.09	252	0.94	0.92	0.05	(-2.12 -- 3.09)
Control	Elevated	166	2.04	2.02	0.02	1.28-2.85	164	0.89	0.90	0.06	(-1.51 -- 2.78)
Kruskal-Wallis p-value**		p=0.13					p=0.52				
Case	Normal	592	2.26	2.27	0.02	0.98-3.62	583	0.66	0.75	0.04	(-3.51 -- 3.03)
Case	Borderline	312	2.22	2.19	0.02	0.41-3.26	308	0.62	0.68	0.05	(-2.30 -- 3.11)
Case	Elevated	171	2.32	2.34	0.03	1.06-3.37	170	0.47	0.46	0.07	(-2.04 -- 2.62)
Kruskal-Wallis p-value**		p=0.01					p=0.05				

\* IgE category values: Normal=<25, Borderline=25-99.9, Elevated=100+ .

\*\* Kruskal-Wallis test examining the association between IgE category and ln sCD14/sCD23 values.

**Supplementary Table 9a. In sCD14 medians by number of allergies reported, San Francisco Bay Area Adult Glioma Stu**

Case Status	# Allergies Reported	#	Mean	Median	Std Dev	Minimum	Maximum
Controls	0	105	2.08	2.04	0.26	1.65	2.92
	1	144	2.03	2.05	0.26	1.07	3.09
	2	140	2.03	2.02	0.30	0.37	2.72
	3 or more	347	2.05	2.03	0.28	1.10	3.25
Population-based Cases	0	124	2.25	2.26	0.41	0.98	2.93
	1	147	2.24	2.28	0.40	1.00	3.34
	2	94	2.32	2.30	0.36	1.53	3.31
	3 or more	239	2.24	2.26	0.40	1.06	3.61

\* Allergy analysis includes only population-based subjects because of differences in questionnaires for clinic and population-based

**Supplementary Table 9b. In sCD23 medians by number of allergies reported, San Francisco Bay Area Adult Glioma Stu**

Case Status	# Allergies Reported	#	Mean	Median	Std Dev	Minimum	Maximum
Control	0	102	0.83	0.85	0.74	-0.87	3.09
	1	140	1.04	0.99	0.85	-1.17	3.66
	2	141	0.92	0.90	0.89	-2.12	2.92
	3 or more	344	0.97	0.97	0.78	-1.51	3.17
Population-based Cases	0	123	0.55	0.58	0.91	-2.30	2.99
	1	145	0.67	0.79	0.91	-1.77	3.00
	2	94	0.76	0.89	0.94	-3.51	2.49
	3 or more	236	0.65	0.72	0.82	-1.97	2.62

\* Allergy analysis includes only population-based subjects because of differences in questionnaires for clinic and population-based

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