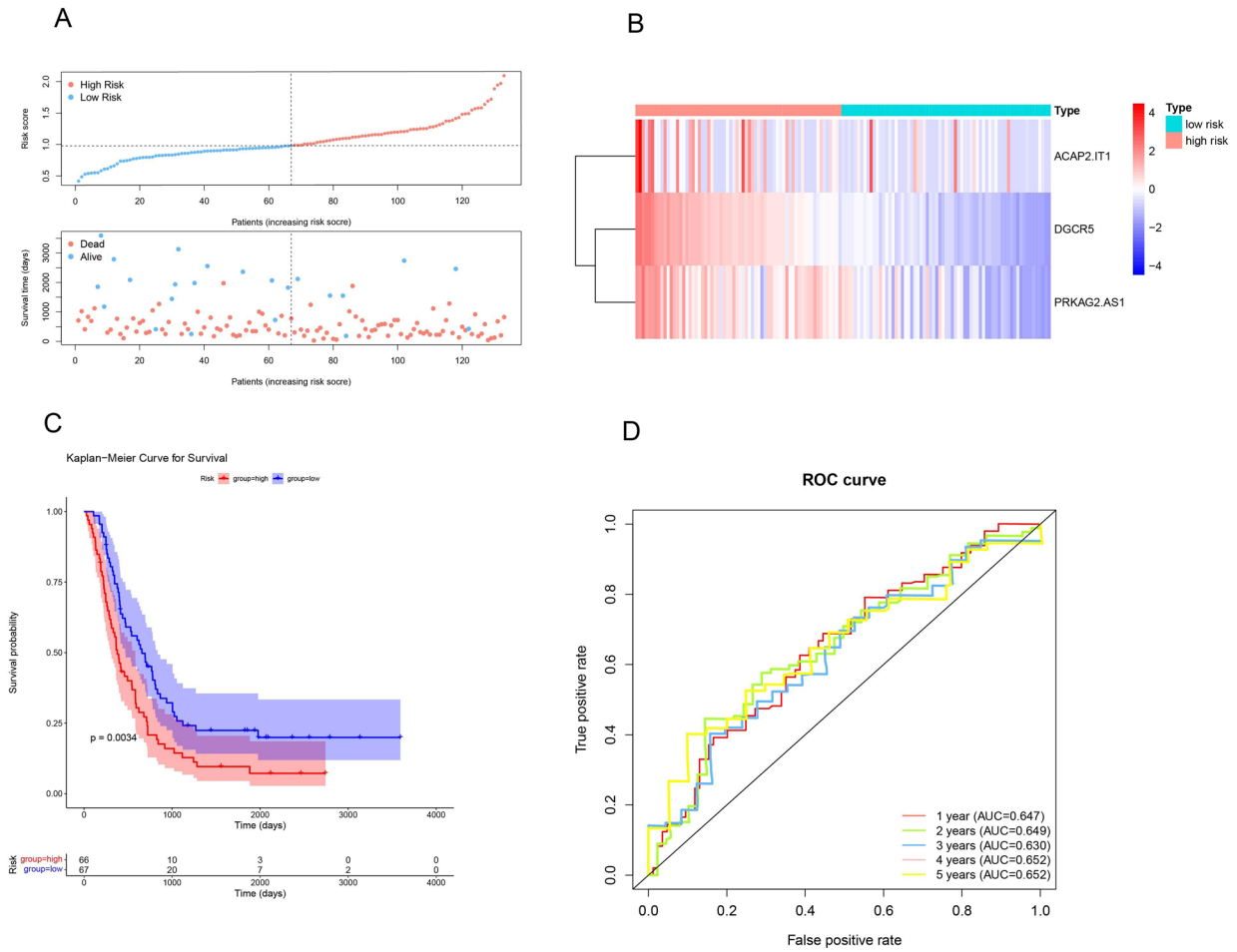

Figure S1 Validation of the angiogenesis-related lncRNA signature. (A-D) Validation of the angiogenesis-related lncRNA signature in the external validation set. AUC, area under the curve; lncRNAs, long noncoding RNAs; ROC, receiver operating characteristic.

https://dx.doi.org/10.21037/tcr-22-1592

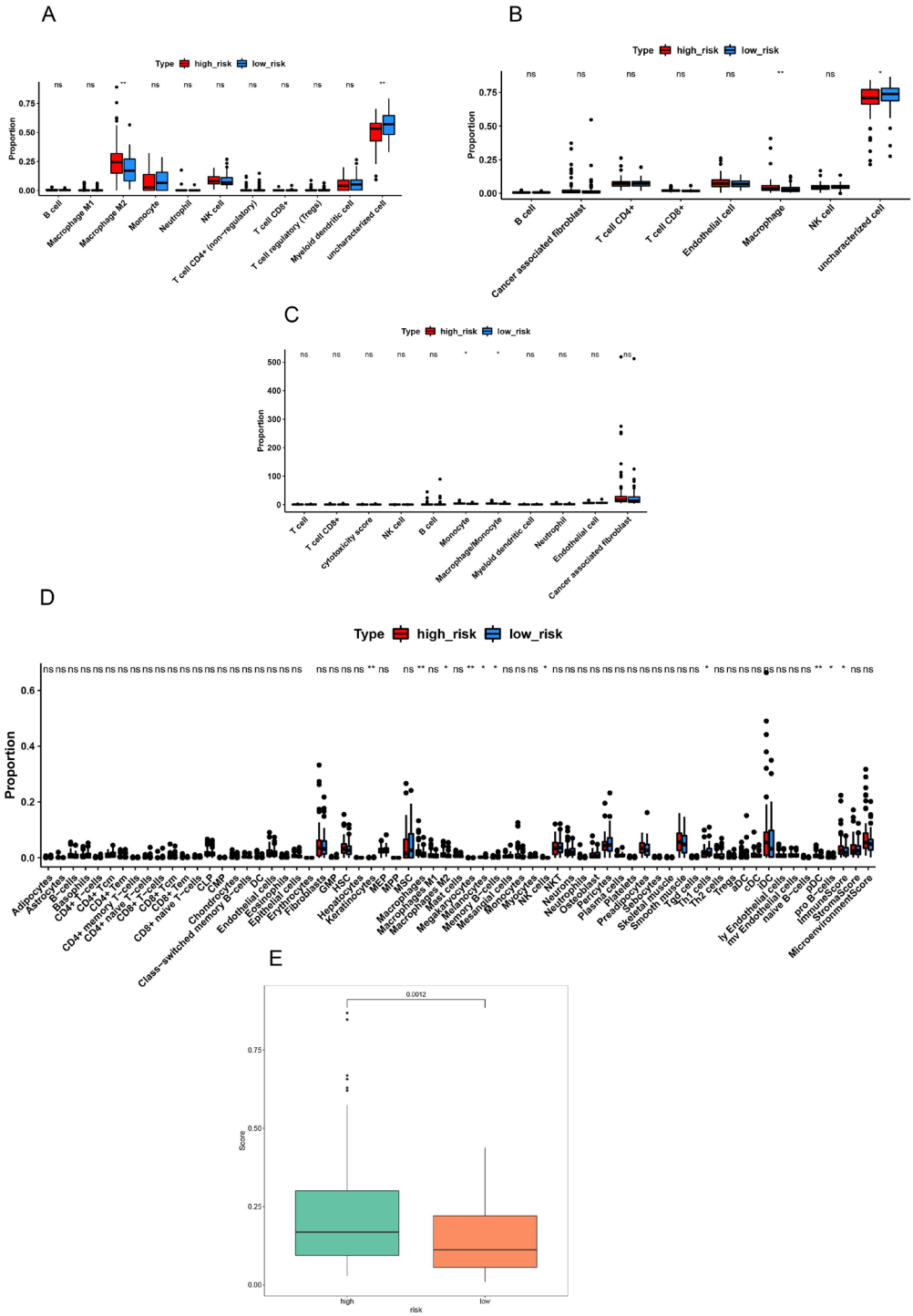

Figure S2 The relationship between the lncRNA signature and the immune microenvironment of GBM. (A-C) The results analyzed in the "immunedeconv" package showed significant differences in macrophage M2, uncharacterized cells, and macrophage/monocyte cells between the high- and low-risk groups (P<0.05). (D) Online database xCell analysis showed the difference in immune/nonimmune cells between the high- and low-risk groups (P<0.05). (E) The leukocyte fraction was significantly higher in the high-risk group than in the low-risk group (P<0.05). *, P<0.05; **, P<0.01. aDC, activated DCs; CLP, common lymphoid progenitor; CMP, common myeloid progenitors; cDC, conventional dendritic cell; DC, dendritic cell; GBM, glioblastoma multiforme; GMP, granulocyte-monocyte progenitor; HSC, hepatic stellate cell; iDC, immature dendritic cells; lncRNAs, long noncoding RNAs; ly, lymphatic; MEP, megakaryocyte erythroid progenitor; MPP, multipotent blood progenitors; MSC, mesenchymal stem cell; mv, microvascular; NK, natural killer; NKT, natural killer T; ns, no significance; pDC, plasmacytoid dendritic cell; Tcm, central memory T cell; Tem, effector memory T cell; Tgd, γ/δ T cell; Treg, T regulator cell.

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Table S1 The clinical information of TCGA-GBM cohorts

ID	fustat	futime	Vital	Age, year	Gender	Grade	IDH status	MGMT promoter status	Karnofsky Performance Score	Original subtype	riskScore	Risk	Group	Chemo_status	Radio_status
TCGA-02-0047	1	448	Dead	78	Male	G4	WT	Unmethylated	80	Proneural	0.652851	Low	Testing	Untreated	Treated
TCGA-02-0055	1	76	Dead	62	Female	G4	WT	Unmethylated	80	Mesenchymal	1.439318	High	Testing	Treated	Treated
TCGA-02-2483	0	466	Alive	43	Male	G4	Mutant	Methylated	80	G-CIMP	0.188503	Low	Training	Treated	Treated
TCGA-02-2485	0	470	Alive	53	Male	G4	WT	Unmethylated	80	Classical	0.532921	Low	Training	Treated	Treated
TCGA-02-2486	1	618	Dead	64	Male	G4	WT	Unmethylated	80	Mesenchymal	1.522593	High	Training	Treated	Treated
TCGA-06-0125	1	1448	Dead	63	Female	G4	WT	Methylated	60	Classical	0.332571	Low	Training	Treated	Treated
TCGA-06-0129	1	1024	Dead	30	Male	G4	Mutant	Methylated	100	G-CIMP	0.365485	Low	Training	Treated	Treated
TCGA-06-0130	1	394	Dead	54	Male	G4	WT	Unmethylated	80	Mesenchymal	2.657	High	Training	Treated	Treated
TCGA-06-0132	1	771	Dead	49	Male	G4	WT	NA	NA	Neural	0.614776	Low	Training	Treated	Treated
TCGA-06-0138	1	737	Dead	43	Male	G4	WT	NA	80	Neural	1.399154	High	Training	Treated	Treated
TCGA-06-0139	1	362	NA	40	Male	NA	NA	NA	NA	NA	1.300784	High	Training	NA	NA
TCGA-06-0141	1	313	Dead	62	Male	G4	WT	Unmethylated	80	Mesenchymal	1.666885	High	Testing	Treated	Treated
TCGA-06-0152	1	375	Dead	NA	NA	NA	NA	NA	NA	NA	2.295225	High	Training	Treated	Treated
TCGA-06-0156	1	178	Dead	57	Male	G4	Mutant	NA	NA	Proneural	1.485481	High	Training	Treated	Treated
TCGA-06-0157	1	97	Dead	63	Female	G4	WT	NA	40	Classical	0.751434	Low	Testing	Untreated	Treated
TCGA-06-0158	1	329	Dead	73	Male	G4	WT	NA	80	Classical	0.891303	Low	Testing	Treated	Treated
TCGA-06-0168	1	598	Dead	59	Female	G4	WT	NA	100	Mesenchymal	1.931492	High	Testing	Treated	Treated
TCGA-06-0171	1	399	Dead	NA	NA	NA	NA	NA	NA	NA	1.4283	High	Training	Treated	Treated
TCGA-06-0174	1	98	Dead	54	Male	G4	WT	NA	80	Proneural	0.48875	Low	Training	Treated	Treated
TCGA-06-0178	1	2681	Dead	38	Male	G4	Mutant	NA	NA	Neural	0.128263	Low	Training	Treated	Treated
TCGA-06-0184	1	2126	Dead	63	Male	G4	WT	NA	80	Mesenchymal	0.866013	Low	Training	Treated	Treated
TCGA-06-0187	1	828	Dead	69	Male	G4	WT	NA	60	Classical	2.225689	High	Training	Treated	Treated
TCGA-06-0190	1	317	Dead	NA	NA	NA	NA	NA	NA	NA	3.610125	High	Testing	Treated	Treated
TCGA-06-0210	1	225	Dead	NA	NA	NA	NA	NA	NA	NA	1.777131	High	Training	Untreated	Treated
TCGA-06-0211	1	360	Dead	NA	NA	NA	NA	NA	NA	NA	0.935453	Low	Training	Treated	Treated
TCGA-06-0219	1	22	Dead	67	Male	G4	WT	NA	NA	Neural	1.061894	Low	Training	Untreated	Untreated
TCGA-06-0221	1	603	Dead	NA	NA	NA	NA	NA	NA	NA	0.399837	Low	Training	Treated	Treated
TCGA-06-0238	1	405	Dead	46	Male	G4	WT	NA	80	Proneural	1.050777	Low	Training	Treated	Treated
TCGA-06-0644	1	384	Dead	71	Male	G4	WT	NA	80	Mesenchymal	4.145977	High	Training	Treated	Treated
TCGA-06-0645	1	175	Dead	55	Female	G4	WT	NA	NA	Mesenchymal	1.192949	High	Training	Untreated	Untreated
TCGA-06-0646	1	175	Dead	60	Male	G4	WT	NA	80	Proneural	2.316383	High	Training	Treated	Treated
TCGA-06-0649	1	64	Dead	73	Female	G4	WT	NA	NA	Neural	1.799702	High	Training	Untreated	Untreated
TCGA-06-0686	1	432	Dead	53	Male	G4	WT	NA	NA	Proneural	1.042948	Low	Training	Treated	Treated
TCGA-06-0743	1	803	Dead	69	Male	G4	WT	NA	100	Classical	0.587472	Low	Training	Treated	Treated
TCGA-06-0744	1	1426	Dead	66	Male	G4	WT	NA	80	Classical	0.261297	Low	Training	Treated	Treated
TCGA-06-0745	1	239	Dead	59	Male	G4	WT	NA	80	Proneural	1.980193	High	Training	Treated	Treated
TCGA-06-0747	1	82	Dead	53	Male	G4	WT	NA	80	Classical	1.717002	High	Training	Treated	Treated
TCGA-06-0749	1	82	Dead	50	Male	G4	WT	NA	NA	Neural	0.681388	Low	Training	Treated	Treated
TCGA-06-0750	1	28	Dead	43	Male	G4	WT	NA	80	Mesenchymal	2.488401	High	Testing	Untreated	Untreated
TCGA-06-0878	0	218	Alive	74	Male	G4	WT	Unmethylated	80	Mesenchymal	2.340513	High	Training	Treated	Treated
TCGA-06-0882	1	632	Dead	30	Male	G4	WT	Unmethylated	60	Neural	1.137865	High	Training	Treated	Treated
TCGA-06-1804	1	414	Dead	81	Female	G4	WT	Methylated	NA	Classical	0.878216	Low	Training	Untreated	Untreated
TCGA-06-2557	1	33	Dead	76	Male	G4	WT	Unmethylated	40	Mesenchymal	0.819007	Low	Training	Untreated	Untreated
TCGA-06-2558	1	380	Dead	75	Female	G4	WT	Unmethylated	60	Proneural	1.161375	High	Training	NA	Treated
TCGA-06-2559	1	150	Dead	83	Male	G4	WT	Methylated	60	Proneural	0.416095	Low	Training	Treated	Treated
TCGA-06-2561	1	537	Dead	53	Female	G4	WT	Unmethylated	80	Mesenchymal	2.49757	High	Testing	Treated	Treated
TCGA-06-2562	1	382	Dead	81	Male	G4	WT	Unmethylated	80	Mesenchymal	2.527492	High	Testing	Treated	Treated
TCGA-06-2563	0	932	Alive	72	Female	G4	WT	Methylated	80	Classical	0.527632	Low	Training	Treated	Treated
TCGA-06-2564	0	181	Alive	50	Male	G4	WT	Unmethylated	100	Classical	1.434918	High	Training	NA	Treated
TCGA-06-2565	1	506	Dead	59	Male	G4	WT	Methylated	100	Classical	0.394537	Low	Training	Treated	Treated
TCGA-06-2567	1	133	Dead	65	Male	G4	WT	Methylated	80	Neural	1.248933	High	Training	Treated	Treated
TCGA-06-2569	0	13	Alive	24	Female	G4	WT	Unmethylated	80	Mesenchymal	0.118833	Low	Training	NA	NA
TCGA-06-2570	0	958	Alive	21	Female	G4	Mutant	Methylated	100	G-CIMP	0.297724	Low	Testing	Treated	Treated
TCGA-06-5408	1	357	Dead	54	Female	G4	WT	Unmethylated	80	Classical	1.694289	High	Training	Treated	Treated
TCGA-06-5410	1	108	Dead	72	Female	G4	WT	Methylated	60	Mesenchymal	1.812995	High	Testing	Untreated	Untreated
TCGA-06-5411	1	254	Dead	51	Male	G4	WT	Unmethylated	80	Neural	1.247855	High	Training	Treated	Treated
TCGA-06-5412	1	138	Dead	78	Female	G4	WT	Methylated	80	Mesenchymal	2.91876	High	Testing	Treated	Treated
TCGA-06-5413	0	268	Alive	67	Male	G4	WT	Unmethylated	60	Neural	1.162171	Low	Training	Treated	Treated
TCGA-06-5414	0	273	Alive	61	Male	G4	WT	Unmethylated	80	Classical	1.9562	High	Training	Treated	Treated
TCGA-06-5416	0	204	Alive	23	Female	G4	NA	Unmethylated	80	Proneural	0.615482	Low	Testing	Treated	Treated
TCGA-06-5417	0	155	Alive	45	Female	G4	Mutant	Methylated	80	G-CIMP	0.282754	Low	Training	Treated	Treated
TCGA-06-5418	1	83	Dead	75	Female	G4	WT	Unmethylated	60	Mesenchymal	2.750282	High	Testing	Untreated	Untreated
TCGA-06-5856	1	114	Dead	58	Male	G4	WT	Unmethylated	NA	Classical	1.127737	Low	Training	Untreated	Untreated
TCGA-06-5858	0	187	Alive	45	Female	G4	WT	Unmethylated	100	Mesenchymal	0.496713	Low	Training	Treated	Treated
TCGA-06-5859	0	139	Alive	63	Male	G4	WT	Unmethylated	40	Neural	1.648324	High	Training	Treated	Treated
TCGA-08-0386	1	548	Dead	74	Male	G4	WT	NA	80	Neural	1.372743	High	Training	Treated	Treated
TCGA-12-0616	1	448	Dead	36	Female	G4	WT	NA	100	Proneural	0.709492	Low	Training	Treated	Treated
TCGA-12-0618	1	395	Dead	49	Male	G4	WT	NA	60	Proneural	0.793597	Low	Testing	Treated	Treated
TCGA-12-0619	1	1062	Dead	60	Male	G4	WT	NA	80	Mesenchymal	1.411514	High	Training	Treated	Treated
TCGA-12-0821	1	323	Dead	62	Male	G4	WT	Unmethylated	60	Neural	0.741342	Low	Training	Treated	Treated
TCGA-12-1597	1	675	Dead	62	Female	G4	WT	Unmethylated	80	Proneural	0.195243	Low	Training	Treated	Treated
TCGA-12-3650	1	333	Dead	46	Male	G4	WT	Unmethylated	80	Proneural	0.208942	Low	Training	Treated	Treated
TCGA-12-3652	1	1062	Dead	60	Male	G4	WT	Unmethylated	80	Classical	0.05865	Low	Training	Treated	Treated
TCGA-12-3653	1	442	Dead	34	Female	G4	WT	Unmethylated	80	Classical	0.817901	Low	Training	Treated	Treated
TCGA-12-5295	1	454	Dead	60	Female	G4	WT	Methylated	NA	Neural	0.497404	Low	Training	Treated	Treated
TCGA-12-5299	1	98	Dead	56	Female	G4	WT	Unmethylated	80	Classical	2.112583	High	Training	Treated	Treated
TCGA-14-0736	1	460	Dead	NA	NA	NA	NA	NA	NA	NA	1.362956	High	Training	Treated	Treated
TCGA-14-0781	1	29	Dead	49	Male	G4	WT	Unmethylated	NA	Mesenchymal	3.185952	High	Testing	Treated	Untreated
TCGA-14-0787	1	68	Dead	69	Male	G4	WT	Methylated	60	Classical	1.107037	Low	Testing	Treated	Untreated
TCGA-14-0789	1	342	Dead	54	Male	G4	WT	Methylated	40	Mesenchymal	2.359521	High	Training	Treated	Treated
TCGA-14-0790	1	419	Dead	64	Female	G4	WT	Methylated	60	Classical	0.57714	Low	Testing	Treated	Treated
TCGA-14-0817	1	164	Dead	69	Female	G4	WT	Unmethylated	60	Neural	0.538421	Low	Testing	Treated	NA
TCGA-14-0871	1	880	Dead	74	Female	G4	WT	Unmethylated	60	Mesenchymal	0.002077	Low	Training	Treated	Treated
TCGA-14-1034	1	485	Dead	NA	NA	NA	NA	NA	NA	NA	2.373282	High	Training	Treated	Treated
TCGA-14-1402	1	975	Dead	NA	NA	NA	NA	NA	NA	NA	1.201044	High	Training	Treated	Treated
TCGA-14-1823	1	543	Dead	58	Female	G4	WT	Methylated	80	Mesenchymal	1.176802	High	Training	Treated	Treated
TCGA-14-1825	1	232	Dead	70	Male	G4	WT	Unmethylated	80	Proneural	1.158547	High	Testing	Treated	Treated
TCGA-14-1829	0	218	Alive	57	Male	G4	WT	Unmethylated	60	Neural	0.748218	Low	Training	Treated	Treated
TCGA-14-2554	1	532	Dead	52	Female	G4	WT	Unmethylated	60	Neural	0.841839	Low	Training	Treated	Treated
TCGA-15-0742	1	419	Dead	65	Male	G4	WT	NA	80	Classical	1.222115	High	Testing	Treated	Treated
TCGA-15-1444	1	1537	Dead	21	Male	G4	Mutant	Methylated	NA	Proneural	0.274015	Low	Training	Treated	Treated
TCGA-16-0846	1	119	Dead	85	Male	G4	WT	Methylated	NA	Proneural	0.755751	Low	Training	Untreated	Untreated
TCGA-16-1045	1	883	Dead	49	Female	G4	WT	Methylated	NA	Mesenchymal	1.270922	High	Training	Treated	Treated
TCGA-19-0957	1	666	Dead	NA	NA	NA	NA	NA	NA	NA	1.280781	High	Training	Treated	Treated
TCGA-19-1389	1	141	Dead	NA	NA	NA	NA	NA	NA	NA	7.232813	High	Training	Treated	Treated
TCGA-19-1390	1	772	Dead	63	Female	G4	WT	Methylated	60	Proneural	0.409172	Low	Training	Untreated	Untreated
TCGA-19-1787	1	385	Dead	48	Male	G4	NA	Methylated	80	Mesenchymal	0.837618	Low	Training	Treated	Treated
TCGA-19-2619	0	294	Alive	55	Female	G4	WT	Methylated	40	Classical	0.958804	Low	Training	Treated	Treated
TCGA-19-2620	1	148	Dead	70	Male	G4	WT	Methylated	40	Neural	1.190592	Low	Training	Treated	Treated
TCGA-19-2624	1	5	Dead	51	Male	G4	WT	Unmethylated	NA	Proneural	1.668594	High	Training	Untreated	Untreated
TCGA-19-2625	1	124	Dead	76	Female	G4	WT	Unmethylated	NA	Classical	1.809246	High	Training	Untreated	Untreated
TCGA-19-2629	1	737	Dead	60	Male	G4	Mutant	Unmethylated	NA	G-CIMP	1.362137	High	Training	Treated	Treated
TCGA-19-4065	0	214	Alive	36	Male	G4	NA	Unmethylated	NA	NA	1.422923	High	Testing	Treated	Treated
TCGA-19-5960	1	455	Dead	56	Male	G4	WT	Unmethylated	80	Proneural	0.549375	Low	Training	Treated	Treated
TCGA-26-1442	0	953	Alive	43	Male	G4	Mutant	Methylated	80	G-CIMP	0.381778	Low	Training	Treated	Treated
TCGA-26-5132	0	286	Alive	74	Male	G4	WT	Methylated	60	Classical	0.617671	Low	Training	Treated	Treated
TCGA-26-5133	0	452	Alive	59	Male	G4	WT	Unmethylated	80	G-CIMP	0.172829	Low	Training	Treated	Treated
TCGA-26-5134	0	167	Alive	74	Male	G4	WT	Unmethylated	60	Proneural	2.073398	High	Testing	Untreated	Treated
TCGA-26-5135	1	270	Dead	72	Female	G4	WT	Methylated	NA	Proneural	1.246408	High	Training	NA	NA
TCGA-26-5136	1	577	Dead	78	Female	G4	WT	Methylated	NA	Mesenchymal	1.715617	High	Training	NA	NA
TCGA-26-5139	0	48	Alive	65	Female	G4	WT	Unmethylated	60	Mesenchymal	1.22691	High	Testing	Untreated	Untreated
TCGA-27-1830	1	154	Dead	57	Male	G4	WT	Unmethylated	80	Proneural	2.16978	High	Testing	Treated	Treated
TCGA-27-1831	1	505	Dead	66	Male	G4	WT	Unmethylated	80	Neural	1.09536	High	Training	Treated	Treated
TCGA-27-1832	1	300	Dead	59	Female	G4	WT	Unmethylated	100	Mesenchymal	1.670218	High	Training	Treated	Treated
TCGA-27-1834	1	1233	Dead	56	Male	G4	WT	Methylated	80	Neural	1.024834	Low	Training	Treated	Treated
TCGA-27-1835	1	648	Dead	53	Female	G4	WT	Methylated	80	Classical	0.853712	Low	Training	Treated	Treated
TCGA-27-1837	1	427	Dead	36	Male	G4	WT	Methylated	80	Classical	1.899875	High	Testing	Treated	Treated
TCGA-27-2519	1	550	Dead	48	Male	G4	WT	Unmethylated	80	Mesenchymal	2.957033	High	Training	Treated	Treated
TCGA-27-2521	1	510	Dead	34	Male	G4	Mutant	Methylated	80	G-CIMP	0.234014	Low	Testing	Treated	Treated
TCGA-27-2523	1	489	Dead	63	Male	G4	WT	Methylated	80	Classical	1.379457	High	Testing	Treated	Treated
TCGA-27-2524	1	231	Dead	56	Male	G4	WT	Unmethylated	80	Mesenchymal	0.494506	Low	Testing	Treated	Treated
TCGA-27-2526	1	87	Dead	79	Female	G4	WT	Unmethylated	40	Neural	0.764934	Low	Testing	Treated	Untreated
TCGA-27-2528	1	480	Dead	62	Male	G4	WT	Methylated	80	Classical	0.504031	Low	Testing	Treated	Treated
TCGA-28-1747	1	77	Dead	44	Male	G4	WT	Methylated	NA	Classical	1.26848	High	Testing	Treated	Treated
TCGA-28-1753	0	37	Alive	53	Male	G4	WT	Unmethylated	NA	Mesenchymal	1.321976	High	Testing	Untreated	Treated
TCGA-28-2509	0	145	Alive	77	Female	G4	WT	Methylated	80	Mesenchymal	0.62206	Low	Testing	Treated	Treated
TCGA-28-2513	0	222	Alive	69	Female	G4	WT	Unmethylated	80	Mesenchymal	1.92776	High	Training	Treated	Treated
TCGA-28-2514	0	160	Alive	45	Male	G4	WT	Unmethylated	60	Classical	0.965132	Low	Testing	Treated	Treated
TCGA-28-5204	1	454	Dead	72	Male	G4	WT	Unmethylated	80	Neural	1.43423	High	Training	Treated	Treated
TCGA-28-5207	1	343	Dead	71	Male	G4	WT	Unmethylated	70	Mesenchymal	0.694985	Low	Training	Treated	Treated
TCGA-28-5208	1	544	Dead	52	Male	G4	WT	Methylated	70	Mesenchymal	0.692142	Low	Training	Treated	Treated
TCGA-28-5209	0	442	Alive	66	Female	G4	WT	Methylated	NA	Mesenchymal	0.991533	Low	Training	Treated	Treated
TCGA-28-5215	1	335	Dead	62	Female	G4	WT	Methylated	90	Mesenchymal	1.282325	High	Training	Treated	Treated
TCGA-28-5216	0	415	Alive	52	Male	G4	WT	Unmethylated	80	Mesenchymal	0.722184	Low	Training	Treated	Treated
TCGA-28-5218	1	157	Dead	63	Male	G4	WT	Unmethylated	NA	Mesenchymal	2.771369	High	Training	Treated	Treated
TCGA-28-5220	1	388	Dead	67	Male	G4	WT	Unmethylated	90	Classical	0.849586	Low	Testing	Treated	Treated
TCGA-32-1970	1	468	Dead	59	Male	G4	WT	Unmethylated	NA	Classical	1.171662	Low	Training	Treated	Treated
TCGA-32-1980	1	36	Dead	72	Male	G4	WT	Unmethylated	NA	Neural	1.090867	Low	Testing	Untreated	Untreated
TCGA-32-1982	1	142	Dead	76	Female	G4	WT	Methylated	80	Neural	1.070619	Low	Testing	NA	NA
TCGA-32-2615	1	485	Dead	62	Male	G4	WT	Unmethylated	80	Mesenchymal	1.534527	High	Training	Treated	Treated
TCGA-32-2616	1	224	Dead	48	Female	G4	NA	Methylated	NA	Mesenchymal	3.066059	High	Training	Treated	Treated
TCGA-32-2632	1	269	Dead	80	Male	G4	WT	Unmethylated	NA	Mesenchymal	0.618968	Low	Training	NA	NA
TCGA-32-2634	0	693	Alive	82	Male	G4	WT	Methylated	NA	Proneural	0.794593	Low	Testing	Treated	Treated
TCGA-32-2638	1	766	Dead	67	Male	G4	WT	Methylated	NA	Classical	0.912361	Low	Testing	Treated	Treated
TCGA-32-4213	0	604	Alive	47	Female	G4	WT	Methylated	NA	Mesenchymal	1.083649	Low	Testing	Treated	Treated
TCGA-32-5222	1	585	Dead	66	Male	G4	WT	Methylated	NA	Proneural	0.390526	Low	Training	Treated	Treated
TCGA-41-2571	1	26	Dead	89	Male	G4	WT	Unmethylated	60	Proneural	1.338354	High	Testing	Treated	Untreated
TCGA-41-2572	1	406	Dead	67	Male	G4	WT	Unmethylated	NA	Classical	0.649637	Low	Testing	Treated	Treated
TCGA-41-3915	1	360	Dead	48	Male	G4	WT	Methylated	NA	Mesenchymal	0.995506	Low	Testing	Treated	Treated
TCGA-41-4097	1	6	Dead	63	Female	G4	WT	Unmethylated	NA	Mesenchymal	1.602511	High	Training	Untreated	Untreated
TCGA-41-5651	1	460	Dead	59	Female	G4	WT	Methylated	NA	Proneural	0.904324	Low	Training	Treated	Treated
TCGA-76-4925	1	146	Dead	76	Male	G4	WT	Methylated	100	Proneural	2.303884	High	Testing	Treated	Treated
TCGA-76-4926	1	138	Dead	68	Male	G4	WT	Unmethylated	80	Classical	1.401941	High	Training	Treated	Treated
TCGA-76-4927	1	535	Dead	58	Male	G4	WT	Unmethylated	80	Neural	2.548667	High	Testing	NA	NA
TCGA-76-4928	1	94	Dead	85	Female	G4	WT	Methylated	80	Classical	2.979728	High	Training	Treated	Treated
TCGA-76-4929	1	111	Dead	76	Female	G4	WT	Methylated	80	Neural	1.769521	High	Training	NA	NA
TCGA-76-4931	1	279	Dead	70	Female	G4	WT	Unmethylated	80	Classical	1.213032	High	Training	Treated	Treated
TCGA-76-4932	1	1458	Dead	50	Female	G4	WT	Methylated	80	Proneural	0.669549	Low	Training	Treated	Treated

GBM, glioblastoma multiforme; G-CIMP, glioma CpG island methylator phenotype; NA, not available; TCGA, The Cancer Genome Atlas; WT, wild type; IDH, isocitrate dehydrogenase.

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Table S2 The clinical information of CGGA cohorts

CGGA_ID	futime	fustat	Grade	Gender	Age, year	Radio_status	Chemo_status	IDH_mutation_status	1p19q_codeletion_status	MGMTp_methylation_status	riskScore	Risk
CGGA_139	694	1	WHO IV	Male	59	1	1	Mutant	Non-codel	Un-methylated	13700.63	High
CGGA_1017	768	1	WHO IV	Female	29	1	0	Wild type	Non-codel	Un-methylated	11912.59	High
CGGA_1420	364	1	WHO IV	Male	60	1	1	Wild type	Non-codel	Methylated	4484.713	High
CGGA_1571	412	0	WHO IV	Female	43	1	1	Mutant	Non-codel	Methylated	4224.402	High
CGGA_P112	834	1	WHO IV	Male	65	1	1	Wild type	Non-codel	NA	2151.044	High
CGGA_1769	1854	0	WHO IV	Female	49	0	1	Wild type	Non-codel	Methylated	1029.878	High
CGGA_1750	250	1	WHO IV	Female	52	1	1	Wild type	Non-codel	Methylated	418.5919	High
CGGA_1501	222	1	WHO IV	Male	58	1	1	NA	Non-codel	Methylated	132.9349	High
CGGA_1452	468	1	WHO IV	Male	53	1	1	Wild type	Non-codel	Methylated	72.22825	High
CGGA_1840	1179	0	WHO IV	Female	58	1	1	Wild type	Non-codel	Methylated	69.06815	High
CGGA_1534	27	1	WHO IV	Female	58	0	0	Mutant	Non-codel	Un-methylated	63.15978	High
CGGA_1500	108	1	WHO IV	Female	45	1	1	Wild type	Non-codel	Un-methylated	57.82887	High
CGGA_1740	363	1	WHO IV	Female	50	0	0	Wild type	Non-codel	Methylated	47.16943	High
CGGA_1735	813	1	WHO IV	Male	54	1	1	Wild type	Non-codel	Un-methylated	41.02415	High
CGGA_P15	723	1	WHO IV	Male	49	1	1	NA	Non-codel	NA	38.15733	High
CGGA_1870	1556	0	WHO IV	Male	62	1	1	Mutant	Codel	Un-methylated	28.15274	High
CGGA_P22	406	1	WHO IV	Male	62	1	1	Wild type	Non-codel	NA	20.47522	High
CGGA_1041	3593	0	WHO IV	Male	58	1	1	Wild type	Non-codel	Un-methylated	20.21255	High
CGGA_1539	2462	0	WHO IV	Male	61	1	1	Mutant	Non-codel	Methylated	16.24608	High
CGGA_1690	592	1	WHO IV	Male	60	1	1	Wild type	Non-codel	Un-methylated	13.95259	High
CGGA_1472	1025	1	WHO IV	Male	34	0	0	NA	Non-codel	Methylated	13.74482	High
CGGA_1548	1054	1	WHO IV	Male	53	1	1	Wild type	Non-codel	Un-methylated	12.62223	High
CGGA_1326	322	1	WHO IV	Male	45	1	0	Mutant	Non-codel	Un-methylated	10.999	High
CGGA_1380	291	1	WHO IV	Male	46	1	1	Wild type	Non-codel	Methylated	9.251914	High
CGGA_P100	268	1	WHO IV	Male	67	NA	NA	Wild type	Non-codel	NA	8.716854	High
CGGA_1476	299	1	WHO IV	Female	53	0	0	Wild type	Non-codel	Methylated	8.392699	High
CGGA_1698	388	1	WHO IV	Female	55	0	0	Wild type	Non-codel	Methylated	8.193378	High
CGGA_1371	2791	0	WHO IV	Male	68	1	1	Wild type	Non-codel	Methylated	7.660351	High
CGGA_1727	1980	0	WHO IV	Male	48	1	1	Mutant	Non-codel	Un-methylated	7.116809	High
CGGA_1749	401	1	WHO IV	Female	44	1	1	Wild type	Non-codel	Un-methylated	7.100204	High
CGGA_1713	332	1	WHO IV	Male	62	1	1	Wild type	Non-codel	Methylated	7.097641	High
CGGA_1529	583	1	WHO IV	Male	63	NA	NA	Wild type	Non-codel	Un-methylated	6.668938	High
CGGA_1826	44	1	WHO IV	Female	70	0	0	Wild type	Non-codel	Methylated	5.82109	High
CGGA_1444	378	1	WHO IV	Female	68	1	1	Wild type	Non-codel	Methylated	5.733422	High
CGGA_1382	284	1	WHO IV	Male	57	1	1	Wild type	Non-codel	Methylated	5.623735	High
CGGA_1236	191	1	WHO IV	Female	47	0	0	Wild type	Non-codel	Methylated	5.590901	High
CGGA_1521	205	1	WHO IV	Female	63	1	1	Wild type	Non-codel	Methylated	5.174618	High
CGGA_509	623	1	WHO IV	Male	38	1	0	Wild type	Non-codel	Un-methylated	4.994979	High
CGGA_1559	603	1	WHO IV	Male	63	0	1	Mutant	Codel	Methylated	4.888849	High
CGGA_1728	917	1	WHO IV	Male	45	1	1	Mutant	Non-codel	Un-methylated	4.797313	High
CGGA_1595	2363	0	WHO IV	Female	34	1	1	NA	Non-codel	Un-methylated	4.706975	High
CGGA_1103	585	1	WHO IV	Female	35	1	1	Mutant	Non-codel	Methylated	4.328651	High
CGGA_1172	3131	0	WHO IV	Female	36	1	1	Mutant	Non-codel	Methylated	4.297041	High
CGGA_1256	2557	0	WHO IV	Female	52	1	1	NA	Non-codel	Methylated	4.012705	High
CGGA_1135	1244	1	WHO IV	Male	40	1	1	Wild type	Non-codel	Un-methylated	3.93855	High
CGGA_1433	394	1	WHO IV	Female	72	1	1	Wild type	Non-codel	Un-methylated	3.805769	High
CGGA_1596	205	1	WHO IV	Male	63	1	1	Wild type	Non-codel	Methylated	3.545952	High
CGGA_1812	780	1	WHO IV	Male	65	NA	NA	Wild type	Non-codel	Un-methylated	3.488737	High
CGGA_1807	247	1	WHO IV	Female	65	NA	NA	Wild type	Non-codel	Methylated	3.417393	High
CGGA_1694	624	1	WHO IV	Male	55	1	1	Wild type	Non-codel	Un-methylated	3.370004	High
CGGA_831	546	1	WHO IV	Female	55	1	1	Wild type	Non-codel	Un-methylated	3.303636	High
CGGA_1564	190	1	WHO IV	Male	48	1	1	Wild type	Non-codel	Un-methylated	3.265481	High
CGGA_1392	473	1	WHO IV	Male	62	1	1	Wild type	Non-codel	Un-methylated	3.045552	High
CGGA_1138	411	1	WHO IV	Male	54	1	1	Wild type	Non-codel	Un-methylated	2.848698	High
CGGA_1626	696	1	WHO IV	Male	66	1	1	Wild type	Non-codel	Un-methylated	2.770323	High
CGGA_1744	1936	0	WHO IV	Male	51	1	1	NA	Non-codel	Methylated	2.629381	High
CGGA_1546	223	1	WHO IV	Male	56	0	1	Wild type	Non-codel	Un-methylated	2.525209	High
CGGA_1551	347	1	WHO IV	Female	50	1	1	NA	Non-codel	Un-methylated	2.402468	High
CGGA_1543	723	1	WHO IV	Male	57	1	0	Mutant	Non-codel	Un-methylated	2.376964	High
CGGA_1612	718	1	WHO IV	Male	68	1	1	Wild type	Non-codel	Un-methylated	2.305388	High
CGGA_1075	398	1	WHO IV	Male	72	1	1	Wild type	Non-codel	Un-methylated	2.159129	High
CGGA_1601	710	1	WHO IV	Male	66	1	1	Wild type	Non-codel	Methylated	2.100128	High
CGGA_1391	426	0	WHO IV	Male	62	1	1	Wild type	Non-codel	Un-methylated	2.08978	High
CGGA_1764	710	1	WHO IV	Male	33	1	1	Mutant	Non-codel	Un-methylated	2.067779	High
CGGA_1833	494	1	WHO IV	Female	60	1	1	Wild type	Non-codel	Methylated	1.932302	High
CGGA_1901	540	1	WHO IV	Male	60	1	1	Wild type	Non-codel	Methylated	1.841542	High
CGGA_1817	399	1	WHO IV	Female	72	1	1	Wild type	Non-codel	Methylated	1.841531	Low
CGGA_1036	806	1	WHO IV	Male	41	1	1	Wild type	Non-codel	Methylated	1.840055	Low
CGGA_1537	97	1	WHO IV	Male	73	0	0	Wild type	Non-codel	Methylated	1.832147	Low
CGGA_1451	438	1	WHO IV	Female	45	1	1	Wild type	Non-codel	Un-methylated	1.768326	Low
CGGA_1134	59	1	WHO IV	Female	56	0	1	Wild type	Non-codel	Methylated	1.720361	Low
CGGA_1650	1283	1	WHO IV	Male	36	1	1	Mutant	Non-codel	Methylated	1.696587	Low
CGGA_1708	1122	1	WHO IV	Female	54	1	1	Wild type	Non-codel	Methylated	1.693432	Low
CGGA_1586	232	1	WHO IV	Female	55	1	1	Wild type	Non-codel	Un-methylated	1.619538	Low
CGGA_1354	530	1	WHO IV	Female	40	1	1	Wild type	Non-codel	Methylated	1.56303	Low
CGGA_1410	825	1	WHO IV	Female	27	1	1	Wild type	Non-codel	Methylated	1.554541	Low
CGGA_P609	726	0	WHO IV	Female	19	1	1	Wild type	Non-codel	Un-methylated	1.509591	Low
CGGA_1478	542	1	WHO IV	Female	72	1	1	Wild type	Non-codel	Methylated	1.490135	Low
CGGA_1441	1882	1	WHO IV	Male	70	1	1	Wild type	Non-codel	Methylated	1.488041	Low
CGGA_1758	414	1	WHO IV	Female	45	1	1	Wild type	Non-codel	Methylated	1.444681	Low
CGGA_P102	1269	1	WHO IV	Male	30	1	1	Mutant	Non-codel	NA	1.422524	Low
CGGA_1613	250	0	WHO IV	Male	53	1	1	Wild type	Non-codel	Methylated	1.401937	Low
CGGA_1699	2088	0	WHO IV	Female	41	0	1	Mutant	NA	Un-methylated	1.388717	Low
CGGA_1457	312	1	WHO IV	Male	60	1	1	Wild type	Non-codel	Methylated	1.306695	Low
CGGA_1644	173	1	WHO IV	Male	48	1	1	Wild type	Non-codel	Methylated	1.280691	Low
CGGA_1418	287	1	WHO IV	Female	73	1	1	Wild type	NA	Un-methylated	1.246618	Low
CGGA_1597	174	1	WHO IV	Male	58	1	0	Wild type	Non-codel	Methylated	1.234466	Low
CGGA_1106	420	1	WHO IV	Male	37	1	0	Wild type	Non-codel	Methylated	1.233681	Low
CGGA_P178	1442	0	WHO IV	Female	52	1	1	Wild type	NA	Methylated	1.228416	Low
CGGA_P28	107	1	WHO IV	Male	61	0	0	Wild type	Non-codel	NA	1.223842	Low
CGGA_1462	174	1	WHO IV	Male	49	1	1	Wild type	Non-codel	Methylated	1.204831	Low
CGGA_1542	184	0	WHO IV	Male	26	1	1	Mutant	NA	Un-methylated	1.18985	Low
CGGA_1426	133	1	WHO IV	Female	50	1	1	Wild type	Non-codel	Un-methylated	1.160183	Low
CGGA_1706	2068	0	WHO IV	Male	60	1	1	Wild type	Non-codel	NA	1.155537	Low
CGGA_1681	346	1	WHO IV	Female	58	1	1	Wild type	Codel	Methylated	1.143278	Low
CGGA_1142	1005	1	WHO IV	Male	60	1	1	Wild type	Non-codel	Un-methylated	1.089902	Low
CGGA_1678	657	1	WHO IV	Male	51	1	1	Wild type	NA	Methylated	1.056915	Low
CGGA_1402	2742	0	WHO IV	Male	30	1	1	Wild type	Non-codel	Methylated	1.03731	Low
CGGA_1736	938	1	WHO IV	Female	57	1	1	Wild type	Non-codel	Un-methylated	0.995717	Low
CGGA_1353	1022	1	WHO IV	Male	65	1	1	Wild type	Non-codel	Un-methylated	0.980293	Low
CGGA_1560	459	1	WHO IV	Female	35	1	1	Mutant	Non-codel	Methylated	0.967865	Low
CGGA_1365	253	1	WHO IV	Male	55	1	1	Wild type	NA	Methylated	0.950972	Low
CGGA_1866	127	1	WHO IV	Male	68	1	1	Wild type	Non-codel	Un-methylated	0.90668	Low
CGGA_1819	1005	1	WHO IV	Male	55	0	1	Wild type	Non-codel	Methylated	0.902441	Low
CGGA_P160	219	1	WHO IV	Female	72	1	1	Wild type	Non-codel	NA	0.898032	Low
CGGA_1467	866	1	WHO IV	Male	58	1	0	Mutant	NA	Un-methylated	0.865512	Low
CGGA_1767	86	1	WHO IV	Male	63	0	0	Wild type	NA	Methylated	0.863224	Low
CGGA_1687	2118	0	WHO IV	Male	14	1	1	Wild type	Non-codel	Un-methylated	0.859015	Low
CGGA_P143	261	1	WHO IV	Female	66	1	1	Wild type	Non-codel	NA	0.853727	Low
CGGA_1461	226	1	WHO IV	Female	60	1	1	Wild type	Non-codel	Un-methylated	0.832466	Low
CGGA_1666	249	1	WHO IV	Male	60	1	1	Wild type	NA	Methylated	0.816079	Low
CGGA_1282	1116	1	WHO IV	Female	33	1	1	Wild type	Non-codel	Un-methylated	0.813022	Low
CGGA_1086	1977	1	WHO IV	Female	65	1	1	Wild type	NA	Methylated	0.810788	Low
CGGA_1635	332	1	WHO IV	Female	43	1	1	Wild type	NA	Un-methylated	0.802611	Low
CGGA_1491	246	1	WHO IV	Male	29	1	1	Mutant	Non-codel	Un-methylated	0.786287	Low
CGGA_1709	415	1	WHO IV	Male	47	1	1	Wild type	Non-codel	Un-methylated	0.770231	Low
CGGA_1503	777	1	WHO IV	Male	47	1	1	Wild type	NA	Un-methylated	0.76868	Low
CGGA_1425	640	1	WHO IV	Female	22	1	1	Wild type	Codel	Methylated	0.713432	Low
CGGA_P116	305	1	WHO IV	Male	58	1	NA	Wild type	NA	NA	0.70161	Low
CGGA_1403	679	1	WHO IV	Female	43	1	1	Wild type	Non-codel	Methylated	0.701189	Low
CGGA_P136	842	1	WHO IV	Female	41	1	1	Wild type	NA	NA	0.695196	Low
CGGA_1780	1826	0	WHO IV	Female	57	0	1	Wild type	NA	NA	0.684277	Low
CGGA_1634	366	1	WHO IV	Female	26	0	0	Wild type	Non-codel	Methylated	0.681855	Low
CGGA_1422	204	1	WHO IV	Male	76	1	1	Wild type	NA	Un-methylated	0.680168	Low
CGGA_1494	269	1	WHO IV	Male	21	1	1	Wild type	NA	Methylated	0.678442	Low
CGGA_P205	583	1	WHO IV	Male	66	1	1	Wild type	NA	NA	0.639481	Low
CGGA_P180	260	1	WHO IV	Male	47	1	1	Mutant	NA	NA	0.63623	Low
CGGA_1481	131	1	WHO IV	Male	55	0	0	Wild type	NA	Methylated	0.63525	Low
CGGA_1486	184	1	WHO IV	Male	45	1	1	Wild type	NA	Methylated	0.631435	Low
CGGA_1378	378	1	WHO IV	Male	47	1	1	Wild type	NA	Un-methylated	0.61457	Low
CGGA_1722	349	1	WHO IV	Female	60	1	1	Wild type	NA	Un-methylated	0.610515	Low
CGGA_P25	147	1	WHO IV	Male	64	1	1	Wild type	NA	NA	0.599144	Low
CGGA_P164	1553	0	WHO IV	Male	27	1	1	Wild type	NA	NA	0.594725	Low

CGGA, Chinese Glioma Genome Atlas; Codel, codeletion; NA, not available; WHO, World Health Organization; IDH, isocitrate dehydrogenase.

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