

Table S1: Clinical and molecular characteristics of patients included in this study

Dataset	TCGA RNA-Seq	CGGA RNA- Seq	CGGA microarray	REMBRAN DT	GTEX RNA-Seq
Formation					
Glioma tissue	697	325	306	381	0
Non-tumor tissue	5	20	0	0	200
Gender					
Male	288	122	121	126	
Female	394	203	180	221	
Unavailable	15	0	5	34	
Age(years)					
Means	60	43	43	Unavailable	
Range	14-89	8-81	13-70	Unavailable	
Survival status					
Alive	414	99	100	65	
Dead	235	219	187	281	
Unavailable	48	7	14	35	
Overall survival(month)					
Median	48,6	37.37	27.47	19.93	
Histology					
Astrocytoma	187	62			

Oligoastrocytoma	126	72	124	200	
Oligodendroglioma	186	52			
GBM	150	139	124	181	
Unavailable	48	4	3		
WHO grade					
II	254	109	122	92	
III	262	72	51	71	
IV	153	144	128	181	
Unavailable	28	0	5	38	
IDH-1 mutation status					
Mutant	414	175	134	0	
Wildtype	230	149	165	0	
Unavailable	53	1	2	381	
Chr.1p_19q.codeletion					
Codel	163	67	16	24	
Non-codel	482	250	76	150	
Unavailable	52	8	209	207	
TranscriptoMesenchymal.Subtype					
(GBM)					
Classical	47	49	16	0	
Mesenchymal	65	34	75	0	
Neural	10	15	12	0	
ProNeuralural	18	Unavailable	21	0	
Unavailable	10	41	0	181	

Table S2: Co-DEGs with HOXB5

Gene Symbol	log2FoldChange	pvalue	correlation	pvalue
ABCC3	2.534693257	2.29E-47	0.566437111	2.15869E-60
AC000110.1	2.111139066	2.16E-21	0.405987663	4.86044E-29
AC003092.1	3.761933692	1.02E-34	0.455428076	5.47653E-37
AC005083.1	1.75971524	9.47E-32	0.402312104	1.68446E-28
AC005795.1	1.933555508	5.76E-44	0.41733505	9.48789E-31
AC006126.4	2.256178574	3.47E-46	0.413179229	4.082E-30
AC006483.5	2.527493879	1.11E-39	0.425617384	4.86949E-32
AC009362.2	2.004445261	4.64E-38	0.400044267	3.59883E-28
AC010987.6	2.627864672	1.94E-30	0.449142343	6.6566E-36
AC012005.3	3.344614298	4.08E-24	0.46763925	3.67697E-39
AC012531.25	2.067449003	2.71E-17	0.418363166	6.59207E-31
AC017002.1	2.59729741	1.77E-35	0.435278524	1.37134E-33
AC017002.2	2.462771942	4.95E-33	0.494778732	2.56933E-44
AC022210.2	1.620989259	6.46E-41	0.451432222	2.69587E-36
AC064875.2	2.09996725	4.61E-40	0.472213279	5.35367E-40
AC074290.1	2.473530211	3.3E-11	0.416155758	1.43846E-30
AC093616.4	1.906437437	2.18E-47	0.478467504	3.66216E-41
AC093850.2	3.502583816	1.54E-60	0.443615383	5.73491E-35
AC096559.1	2.278366028	4.17E-52	0.429684909	1.09866E-32
AC133644.2	2.582451968	8.19E-56	0.491435389	1.17548E-43
ACTBP1	1.904081699	2.06E-37	0.41198207	6.19127E-30
ACTBP11	1.908813637	2.5E-46	0.484761023	2.32776E-42
ACTBP2	1.909524791	5.75E-46	0.508173007	4.89309E-47
ACTBP7	1.685938398	5.49E-41	0.438110526	4.71109E-34

ACTBP8	1.621849087	1.85E-32	0.400408988	3.18647E-28
ACTBP9	1.683143702	6.1E-39	0.445558087	2.70233E-35
ACTG1P11	1.745622936	5.84E-25	0.414817967	2.3017E-30
ACTG2	1.792376832	9.19E-33	0.435605053	1.21301E-33
ACTN4P1	1.839937073	9.94E-31	0.422786561	1.35621E-31
ACTR3P2	2.217832	1.13E-24	0.432392137	4.0326E-33
ADAM12	2.317933248	6.01E-65	0.543780695	6.92214E-55
ADAM33	1.521205873	1.43E-33	0.409846854	1.29607E-29
ADAMDEC1	1.879581103	1.73E-21	0.425078096	5.92318E-32
ADH5P2	1.962898593	1.1E-21	0.405092181	6.5888E-29
ADH5P4	1.5538554	2.59E-46	0.410640932	9.85318E-30
ADM	1.916991507	4.9E-40	0.481311362	1.06175E-41
AGAP2-AS1	2.638467158	1.11E-76	0.543770194	6.96139E-55
AGTR1	1.814518494	1.57E-43	0.407737412	2.67506E-29
AIM1	1.509519745	1.18E-40	0.483001331	5.05917E-42
ANGPT2	1.604112278	3.65E-47	0.532275746	3.01413E-52
ANPEP	1.985927071	5.01E-79	0.49618078	1.35113E-44
ANXA1	1.532582311	4.27E-27	0.528906096	1.71004E-51
ANXA2	1.884388644	4.87E-56	0.562874751	1.69139E-59
ANXA2P2	2.418369507	2.46E-57	0.553519105	3.3518E-57
AOX1	1.658805536	1.09E-37	0.448095361	1.00403E-35
AP000695.4	1.96936257	3.2E-48	0.413761331	3.33154E-30
APCDD1L	3.344711406	4.72E-51	0.442196964	9.9036E-35
APCDD1L-AS1	2.134600386	1.73E-51	0.404730217	7.44905E-29
APOL4	1.551090214	4.88E-27	0.447725936	1.16032E-35
AQP5	1.711876562	2.74E-20	0.416065474	1.48493E-30
ARSJ	1.615067204	4.02E-41	0.413811032	3.27419E-30

ASPN	1.74636513	2.65E-50	0.478818913	3.14461E-41
ATP5F1P6	2.341966746	2.93E-26	0.429213535	1.30692E-32
BDKRB2	2.066688647	1.86E-48	0.416325831	1.35481E-30
BZW1P2	1.535152564	6.2E-48	0.458177903	1.80636E-37
C10orf55	1.655558323	4.03E-43	0.427430739	2.51362E-32
C15orf48	2.469637692	4.07E-66	0.494284778	3.21995E-44
C5orf46	4.239506081	1E-42	0.426969203	2.9755E-32
C6orf141	2.209597308	6.63E-41	0.470972417	9.05577E-40
C6orf15	4.538803463	1.07E-36	0.50443556	2.88934E-46
CA3	2.7278584	2.09E-56	0.497737736	6.59502E-45
CA9	2.207625826	5.91E-35	0.450409248	4.04051E-36
CAPN6	3.479467801	1.41E-73	0.424168328	8.23609E-32
CARD16	1.552751636	3.98E-44	0.534685371	8.60709E-53
CASP4	1.506558338	4.13E-58	0.56750441	1.15932E-60
CATSPER1	1.571715196	1.05E-48	0.426087964	4.10322E-32
CCDC109B	1.76234652	6.15E-56	0.540437131	4.14663E-54
CCDC140	3.079740025	1.57E-18	0.454146854	9.15059E-37
CCR2	1.729600466	3.88E-29	0.405575748	5.59119E-29
CD163	2.044671312	5.21E-40	0.471762436	6.48185E-40
CD2	1.610692601	1.6E-30	0.478529394	3.56524E-41
CD248	2.114043909	1.64E-69	0.554989426	1.47602E-57
CD28	1.77078426	1.47E-47	0.429511583	1.17111E-32
CD300E	2.711575212	1.53E-73	0.432864347	3.38265E-33
CD3D	1.574569692	6.24E-29	0.420722076	2.84507E-31
CD52	1.624397473	1.13E-41	0.425909065	4.37932E-32
CD70	3.687664237	3.87E-92	0.414258956	2.79952E-30
CDC42P6	1.648350675	3.7E-41	0.427341314	2.59718E-32

CH507-513H4.5	1.532172125	6.39E-24	0.40005067	3.59115E-28
CH507-528H12.1	1.66289648	3.44E-11	0.401784766	2.01073E-28
CHCHD2P6	1.901269749	7.87E-65	0.499013361	3.65441E-45
CHI3L1	2.333911618	7.58E-26	0.507136186	8.02578E-47
CHI3L2	2.207935391	9.01E-40	0.443673086	5.60855E-35
CHRNA1	2.754319125	6.13E-56	0.401891443	1.94004E-28
CHRNA9	2.579361018	3.97E-41	0.442327237	9.41994E-35
CISH	1.527871061	5.48E-49	0.52941229	1.31918E-51
CLCF1	1.725303149	6.47E-41	0.519211106	2.26588E-49
CLEC12A	1.816872229	8.52E-32	0.432826045	3.43125E-33
CLEC5A	2.315088451	2.66E-43	0.483767774	3.60975E-42
CLIC1	1.648117548	3.97E-60	0.584650669	3.87529E-65
CLIC1P1	2.580720773	1.57E-33	0.465081135	1.06664E-38
COL15A1	1.787040627	6.43E-50	0.452812945	1.55796E-36
COL1A1	3.751080353	1.19E-108	0.544189592	5.55343E-55
COL1A2	3.120828202	2.55E-112	0.577609136	2.87417E-63
COL3A1	3.596033593	8.14E-107	0.559772785	9.9531E-59
COL4A1	1.982575278	1.23E-51	0.541837154	1.96436E-54
COL4A2	1.810754368	2.79E-52	0.541424443	2.44924E-54
COL5A1	2.892078239	1.7E-93	0.564636122	6.13124E-60
COL5A2	1.964290287	3.94E-62	0.538318494	1.27592E-53
COL6A2	3.09674486	7.55E-103	0.587343715	7.25905E-66
COL6A3	3.355674862	7.84E-101	0.522348498	4.74191E-50
COL8A1	2.171673876	1.64E-36	0.470450941	1.1287E-39
COLEC11	1.534487991	2.74E-37	0.422814016	1.34287E-31
CSDAP1	2.124701303	5.76E-32	0.418214556	6.94889E-31
CSTA	1.805996744	2.12E-38	0.497271068	8.17985E-45

CTA-520D8.2	1.70932826	1.95E-12	0.411808364	6.5761E-30
CTB-70G10.1	1.670691161	2.98E-16	0.408283142	2.21887E-29
CTC-548K16.1	2.080897502	3.57E-32	0.437127638	6.83383E-34
CTC-548K16.2	1.773965466	8.97E-37	0.430026956	9.68466E-33
CTD-2161E19.1	1.565271775	1.35E-42	0.436649631	8.18532E-34
CTD-2171N6.1	2.562447862	1.43E-39	0.435438572	1.29133E-33
CTD-2192J16.22	2.056841351	7.33E-61	0.515348976	1.5197E-48
CTD-2503O16.1	1.948653845	6.33E-16	0.403419608	1.16018E-28
CTD-2643K12.1	1.80898939	1.01E-25	0.406206708	4.51121E-29
CTD-3035D6.1	1.710242749	5.57E-45	0.448612314	8.19768E-36
CTHRC1	2.695972931	1.88E-88	0.566727878	1.82278E-60
CTNNAP1	1.537509782	4.53E-35	0.410265736	1.12168E-29
CXCL10	2.094976231	4.18E-31	0.487848695	5.8967E-43
CXCL11	2.063334778	1.84E-36	0.404856761	7.13635E-29
CXCL9	1.562028745	2.64E-22	0.445944332	2.32549E-35
CYTL1	1.5154677	4.32E-46	0.445281511	3.00878E-35
DCN	1.56438036	3.58E-50	0.420614327	2.95682E-31
DMBX1	2.548054111	3.37E-31	0.428575793	1.65217E-32
DMRTA2	1.941883468	1.22E-25	0.438980291	3.38633E-34
DNAH11	1.678233212	1.3E-34	0.409312069	1.55821E-29
DOK2	1.68091845	1.59E-47	0.474933718	1.67842E-40
DPEP1	1.917532834	1.27E-30	0.485473158	1.69802E-42
DPP4	2.154341908	4.84E-56	0.432510116	3.85946E-33
DPYD	1.584768298	5.25E-51	0.4994585	2.97228E-45
EBF2	1.713010745	2.32E-40	0.447437432	1.29895E-35
EIF3CL	1.72701947	6.24E-45	0.467028053	4.7463E-39
EIF4A1P10	1.78127222	5.34E-54	0.503682253	4.12181E-46

EIF4A1P2	1.661650694	3.3E-49	0.467458778	3.96505E-39
EMILIN2	1.641199344	1.96E-45	0.528478728	2.12819E-51
EMP3	1.980690522	4.84E-40	0.573208802	4.02113E-62
EN1	2.239735445	1.27E-26	0.505489823	1.75477E-46
ESM1	2.652507745	3.92E-49	0.492776669	6.39964E-44
EXOC3L2	2.173362476	5.74E-64	0.538132154	1.40796E-53
F13A1	3.027968522	1.07E-80	0.427601183	2.36165E-32
FABP5	2.125970364	8.48E-44	0.501901541	9.51221E-46
FABP5P1	2.511947806	2.79E-26	0.466894399	5.01844E-39
FABP5P10	2.687417725	1.25E-24	0.450945942	3.26822E-36
FABP5P7	2.481050493	1.24E-29	0.447121434	1.46969E-35
FAM20A	1.985371152	1.92E-58	0.518640032	3.00691E-49
FAUP1	1.54655199	3.96E-39	0.450772921	3.49969E-36
FBLIM1	1.759739054	5.82E-63	0.511895587	8.16344E-48
FBXO39	1.975518096	4.03E-40	0.447821722	1.11762E-35
FCGBP	1.727763611	6.77E-35	0.460140543	8.13399E-38
FCGR2B	2.686141506	1.14E-68	0.544648158	4.33613E-55
FCGR2C	1.942688541	2.48E-44	0.464378108	1.42707E-38
FCN3	1.804218161	1.33E-57	0.439160339	3.16223E-34
FKBP9P1	2.080672766	5.01E-78	0.527109832	4.27961E-51
FMOD	3.306317655	3.98E-92	0.573246201	3.93262E-62
FOXB1	2.12173471	4.29E-18	0.41811377	7.2017E-31
FOXD2	1.748169488	2.17E-46	0.426956377	2.98947E-32
FP236383.9	2.371291557	6.19E-10	0.40638196	4.2498E-29
FTH1P10	1.893185253	6.22E-43	0.477914733	4.65232E-41
FTH1P11	1.657658499	8.84E-44	0.47742965	5.73745E-41
FTH1P2	1.577171707	6.42E-42	0.480202347	1.72312E-41

FTH1P4	1.618544755	2.08E-38	0.43812706	4.68166E-34
FTLP17	2.199624854	2.79E-32	0.404122968	9.1488E-29
FTLP2	2.080956712	1.73E-52	0.490433359	1.8481E-43
FTLP3	2.280239424	1.13E-52	0.532650843	2.48153E-52
FTLP5	2.459848732	6.35E-36	0.411516601	7.27648E-30
G0S2	2.112231986	2.86E-39	0.472524779	4.69029E-40
GABRR1	2.725479648	3.71E-45	0.400513637	3.07704E-28
GALNT5	2.858223008	9.74E-42	0.4990193	3.64436E-45
GAPDHP38	1.904712632	1.54E-40	0.442172016	9.99899E-35
GAPDHP40	1.712747587	2.35E-41	0.472693708	4.36534E-40
GAPDHP44	1.561110985	3.79E-33	0.41949522	4.4081E-31
GAPDHP60	1.831413413	5.3E-38	0.482066184	7.62867E-42
GAPDHP61	1.628935018	8.96E-35	0.400305097	3.29891E-28
GAPDHP63	1.69422406	5.13E-42	0.512510175	6.06106E-48
GAPDHP65	1.669745673	1.4E-41	0.493353971	4.92198E-44
GAPDHP70	1.695992252	1.05E-28	0.403813401	1.01578E-28
GAPDHP72	1.805338236	1.32E-39	0.461650962	4.38636E-38
GATA3	1.591314455	3.19E-30	0.419744447	4.03354E-31
GATA4	3.184227848	6.06E-42	0.481453284	9.97824E-42
GBP5	1.732869452	3.74E-41	0.472413795	4.91673E-40
GDF15	2.357785055	1.44E-49	0.581502544	2.69199E-64
GPR1	2.142981813	4.64E-25	0.426464019	3.57781E-32
GPR157	1.53904312	9.25E-50	0.522276192	4.91687E-50
GPRC5A	1.552346032	1.41E-24	0.454952297	6.62836E-37
GPX1P1	1.620038287	3.94E-28	0.41069708	9.66377E-30
GPX8	2.479509966	1.43E-66	0.619994624	2.95334E-75
GUCA2A	1.904517137	1.27E-13	0.408005477	2.44043E-29

H19	3.718976671	2.1E-61	0.505129708	2.08106E-46
H3F3AP4	1.644197997	7.23E-46	0.473044795	3.75974E-40
H3F3AP6	1.846951373	9.84E-42	0.431546615	5.5202E-33
HIST1H2BH	2.375914571	9E-33	0.433504949	2.6639E-33
HIST1H3F	1.51056825	0.000000259	0.423519138	1.04139E-31
HIST1H3G	1.816765614	1.03E-20	0.47863836	3.40075E-41
HIST2H2AA4	2.99947797	2.01E-21	0.429558347	1.15111E-32
HK3	1.638471445	1.57E-51	0.456627866	3.37965E-37
HMGA2	3.595583968	4.13E-58	0.564961272	5.08049E-60
HMGB1P45	1.863556006	5.89E-15	0.40397842	9.60693E-29
HMGN2P4	1.736011853	3.31E-49	0.471970796	5.93381E-40
HMGN2P5	2.186296251	4.8E-53	0.517004099	6.74295E-49
HNRNPLP1	1.782107018	6.17E-33	0.40350673	1.12658E-28
HOTAIR	3.783917931	3.3E-31	0.607054224	2.10232E-71
HOTAIR_4	1.84698271	0.00000749	0.459003919	1.29195E-37
HOTAIR_5	1.510138573	0.000296175	0.415708769	1.6835E-30
HOTAIRM1	2.260080344	5.85E-51	0.536329412	3.6388E-53
HOXA-AS2	2.958849173	1.16E-39	0.603898183	1.72013E-70
HOXA-AS3	2.211752888	6.95E-16	0.541866647	1.93361E-54
HOXA1	2.050504779	3.67E-36	0.511833648	8.41186E-48
HOXA10	1.645200741	1.54E-12	0.507120918	8.08438E-47
HOXA10-AS	2.93326535	7.79E-17	0.443194368	6.74635E-35
HOXA2	2.995224934	3.57E-28	0.557398805	3.81566E-58
HOXA3	2.69601902	7.84E-25	0.580827218	4.06868E-64
HOXA4	2.583964753	5.65E-23	0.54445341	4.81681E-55
HOXA5	2.311257352	5.23E-21	0.544436365	4.86132E-55
HOXA6	2.122393491	7.8E-13	0.535429262	5.83352E-53

HOXA7	1.931864719	4.54E-14	0.50495329	2.26222E-46
HOXA9	2.645466133	1.13E-23	0.528899962	1.71542E-51
HOXB-AS1	2.922197798	7.75E-83	0.563748752	1.02306E-59
HOXB-AS2	4.795404768	4.23E-54	0.635633933	3.68997E-80
HOXB-AS3	5.383223573	2.58E-85	0.690266317	9.4186E-100
HOXB13	4.711505467	7.04E-79	0.550059662	2.2718E-56
HOXB2	3.566281515	1.15E-115	0.671469594	1.5479E-92
HOXB3	4.134629734	2.64E-119	0.706993585	1.178E-106
HOXB4	3.913548299	1.14E-93	0.670607815	3.21976E-92
HOXB6	3.614103658	2.93E-119	0.637742699	7.65723E-81
HOXB7	3.128995601	6.26E-112	0.645220116	2.62305E-83
HOXB8	6.291691348	8.85E-121	0.675076603	7.02487E-94
HOXB9	3.812119416	2.94E-65	0.594866901	6.1972E-68
HOXC-AS1	2.706265867	6.08E-18	0.57393612	2.60706E-62
HOXC-AS2	2.900770274	1.43E-27	0.559155307	1.41322E-58
HOXC-AS3	3.044354128	3.35E-33	0.589397008	2.0029E-66
HOXC10	3.082855655	3.48E-29	0.612127845	6.81591E-73
HOXC11	3.601363791	9.49E-31	0.600754388	1.36391E-69
HOXC13	3.467267127	2.06E-26	0.605340678	6.60083E-71
HOXC13-AS	4.51303929	2.26E-39	0.582245947	1.70657E-64
HOXC4	1.517085934	1.05E-31	0.49939892	3.05568E-45
HOXC5	2.251958966	1.49E-22	0.462006763	3.79079E-38
HOXC6	2.860864786	1.47E-37	0.57295211	4.68442E-62
HOXC8	2.827990558	1.64E-27	0.553302466	3.78102E-57
HOXC9	2.425435952	3.16E-17	0.597933359	8.57494E-69
HOXD10	2.279173239	2.64E-20	0.538847336	9.64508E-54
HOXD11	2.242637179	8.01E-13	0.604954114	8.53647E-71

HOXD12	1.727352804	9.75E-11	0.492218454	8.24508E-44
HOXD13	2.542099428	8.41E-18	0.551849192	8.46583E-57
HP	3.759628358	1.43E-70	0.448676021	7.99519E-36
HPD	1.658337624	9.97E-30	0.423654226	9.91812E-32
HS3ST3B1	1.801826454	1.48E-31	0.491181824	1.31827E-43
HSBP1P2	2.572353003	2.15E-27	0.405572959	5.59649E-29
HSPA7	1.657414103	1.5E-32	0.474871685	1.7236E-40
HSPA8P5	1.683752271	1.82E-40	0.439429343	2.85453E-34
HSPA8P9	1.695511342	5.22E-40	0.425789929	4.57333E-32
HSPB1P2	1.621371823	3.17E-38	0.455488034	5.34625E-37
HSPD1P6	1.78525117	2.97E-43	0.482105693	7.49763E-42
HSPE1P7	1.962402287	3.8E-29	0.41602839	1.50444E-30
HTRA3	1.833784544	5.31E-47	0.512099297	7.39668E-48
IBSP	3.494669791	6.34E-43	0.469281833	1.84684E-39
IDO1	2.673032172	2.99E-34	0.48291602	5.2526E-42
IFITM9P	1.842906618	3.99E-25	0.423440155	1.07151E-31
IGF2BP1	2.88533448	3.57E-45	0.46372942	1.86569E-38
IGF2BP2	2.057627076	9.42E-38	0.536091529	4.12275E-53
IGF2BP3	2.080185917	5.8E-29	0.492289689	7.98296E-44
IGFBP2	2.407866201	5.55E-53	0.591280162	6.09879E-67
IGFBP3	1.788891691	5.03E-40	0.447678633	1.182E-35
IL13RA2	2.148568923	2.56E-33	0.402719046	1.46903E-28
IL21-AS1	1.98344551	2.34E-19	0.416808873	1.1426E-30
IL2RA	3.687650623	3.57E-80	0.487591251	6.6155E-43
IL7R	1.660877946	1E-39	0.421088342	2.49557E-31
ISL2	1.62816202	6.77E-23	0.443048863	7.13552E-35
ITGA4	1.524263766	1.08E-49	0.455565505	5.18246E-37

ITGA5	1.515446118	8.67E-57	0.553952585	2.63301E-57
ITGB1P1	2.002060657	2.8E-58	0.468107564	3.02267E-39
ITGB3	1.64408399	2.41E-45	0.469988499	1.37172E-39
ITGBL1	1.709293712	1.15E-35	0.435467536	1.27735E-33
KCNE4	1.674960451	7.1E-55	0.494233663	3.29597E-44
KCNJ15	2.364322596	1.79E-59	0.445446638	2.82191E-35
KDELR3	2.105072818	5.91E-67	0.563365171	1.27587E-59
KRT18	1.626172172	9.84E-41	0.473122793	3.63696E-40
KRT75	3.023824228	4.53E-36	0.428930907	1.45008E-32
KRT8	1.843170267	7.36E-45	0.484235331	2.93672E-42
KRT80	1.996601005	3.65E-33	0.421311952	2.30348E-31
LAMB1	1.800306607	2.66E-62	0.507434449	6.96212E-47
LAMP3	1.532855638	7.24E-44	0.461649559	4.38888E-38
LBX1	2.875846716	2.74E-29	0.508462585	4.26019E-47
LBX1-AS1	2.768287249	7.98E-30	0.471986475	5.89448E-40
LDHAP1	2.466280931	8.2E-20	0.455078811	6.3005E-37
LDLRAD2	1.723884328	1.64E-45	0.519524263	1.93978E-49
LEF1-AS1	1.62158662	1.04E-53	0.549897068	2.48423E-56
LGALS1	1.592124762	2.2E-61	0.568992444	4.85441E-61
LGALS3	1.815672061	4.59E-48	0.521842064	6.1106E-50
LIF	2.527679106	2.65E-55	0.521765837	6.34811E-50
LILRA5	2.015858598	2.69E-42	0.423760496	9.5446E-32
LINC00152	2.363983367	1.87E-69	0.553601371	3.20181E-57
LINC00475	1.992554322	2.83E-24	0.479620251	2.22016E-41
LINC00908	2.550472376	3.05E-54	0.458309655	1.71243E-37
LINC01096	2.724392214	4.6E-24	0.442498685	8.81894E-35
LINC01198	2.394270197	3E-16	0.521041377	9.11642E-50

LINC01272	1.952038262	4.07E-47	0.456681465	3.30741E-37
LINC01342	2.110383591	5.38E-15	0.464497274	1.35842E-38
LINC01426	1.982734263	3.67E-54	0.532092553	3.31409E-52
LINC01579	1.619718275	1.32E-21	0.497306883	8.04586E-45
LOX	2.509880781	9.36E-72	0.542019235	1.78201E-54
LOXL1	2.668341745	1.71E-86	0.570348126	2.18784E-61
LOXL1-AS1	1.973865452	5.45E-50	0.465065549	1.07355E-38
LOXL2	1.735181065	5.02E-53	0.489321439	3.04806E-43
LOXL4	1.599080332	1E-37	0.430393262	8.45963E-33
LRRC15	3.175960796	5.33E-62	0.430533616	8.03208E-33
LSP1	1.566968798	1.97E-41	0.50359463	4.29547E-46
LTF	4.019656355	4.14E-67	0.490870882	1.51706E-43
LUM	3.044748344	1.75E-101	0.53378395	1.37718E-52
LYZ	1.953217131	1.65E-41	0.473102593	3.66837E-40
MACC1	1.514449391	5.66E-33	0.501903925	9.5016E-46
MAGED4B	1.627947552	2.53E-29	0.411067601	8.50112E-30
MAP1LC3C	2.031642667	7.86E-35	0.476894709	7.22699E-41
MAP3K7CL	1.606761964	2.29E-41	0.529357003	1.35713E-51
MDK	1.507682001	3.59E-48	0.4965823	1.12337E-44
MEOX2	2.241275874	6.16E-27	0.45564575	5.01804E-37
MESTP2	1.700420862	5.39E-10	0.405950677	4.92199E-29
MESTP4	2.548312169	2.45E-26	0.440211038	2.11891E-34
METTL7B	1.957594705	1.9E-35	0.51410661	2.78858E-48
MFAP2	2.218165179	8.33E-46	0.474215126	2.28247E-40
MGP	1.644273529	4.32E-30	0.487005111	8.59285E-43
MIR155HG	1.517241094	4.83E-37	0.527757762	3.07591E-51
MMP11	2.271572087	8E-84	0.584496671	4.26281E-65

MMP19	1.97253556	5.09E-39	0.460904468	5.95421E-38
MMP9	3.217558002	5.72E-63	0.546034455	2.04754E-55
MOCOS	1.593122697	1.34E-47	0.409220439	1.60811E-29
MPZL2	1.508199431	6.08E-40	0.489318917	3.05151E-43
MSNP1	2.413531105	6.7E-45	0.451444952	2.68231E-36
MSR1	1.607728223	1.7E-42	0.479272442	2.58257E-41
MUC3A	1.511701825	1.72E-27	0.453593197	1.14156E-36
MXRA5	2.162401014	3.09E-55	0.480885196	1.27915E-41
MYL6P3	2.363212795	2.3E-30	0.418986164	5.28353E-31
MYO1G	1.633089293	3.32E-49	0.484834476	2.25332E-42
NAMPT	1.811988391	7.1E-64	0.51309922	4.55356E-48
NGFR	1.586044439	1.76E-38	0.409183441	1.62871E-29
NKX2-5	2.360786575	3.56E-26	0.455971258	4.40252E-37
NKX3-2	1.937695091	2.35E-35	0.403504698	1.12735E-28
NME2P1	1.663032862	5.57E-45	0.461946042	3.88643E-38
NNMT	2.872304785	1.21E-59	0.549104261	3.83871E-56
NOX4	1.895607507	8.23E-61	0.53389836	1.29752E-52
NSUN7	1.709810361	3.6E-44	0.495339506	1.98763E-44
OCIAD2	1.971210247	6.74E-47	0.491658147	1.06278E-43
OR51E1	2.780563045	6.94E-53	0.43939786	2.88895E-34
OR7E101P	2.289286057	7.53E-11	0.400625439	2.96423E-28
OTP	2.165535822	4.6E-19	0.505174614	2.03729E-46
P4HA3	1.555700643	1.16E-46	0.424670556	6.8666E-32
PAX3	3.003232172	3.83E-26	0.49741935	7.6391E-45
PCNAP3	2.136858638	2.57E-18	0.404794423	7.28874E-29
PCOLCE	2.685827133	5.75E-103	0.620852203	1.61666E-75
PDLIM1	1.761857774	1.01E-52	0.568173035	7.84446E-61

PDLIM4	1.672846979	8.1E-29	0.461227529	5.21707E-38
PDPN	2.150944635	2.09E-42	0.530524583	7.44706E-52
PFN1P1	1.857644014	4.16E-44	0.474416791	2.09397E-40
PGK2	2.140097691	5.24E-17	0.416879488	1.11448E-30
PHLDA2	2.725049693	4.97E-78	0.49239973	7.59421E-44
PI3	4.481767182	4.04E-83	0.432283761	4.19842E-33
PIK3CD-AS2	1.930311344	3.72E-49	0.464465438	1.37644E-38
PINLYP	1.536544146	1.99E-38	0.474673229	1.87643E-40
PITX1	2.454557756	2.22E-45	0.478961549	2.95587E-41
PITX2	4.647896994	2.08E-95	0.421649157	2.04116E-31
PKIB	1.631493723	2.37E-37	0.475521356	1.30464E-40
PKMP1	1.969339046	3.83E-49	0.470390557	1.15783E-39
PLA2G2A	4.715737439	2.12E-54	0.506182604	1.26325E-46
PLAT	1.816505339	2.1E-53	0.541196429	2.76635E-54
PLAU	2.111983884	7.02E-59	0.549323933	3.40306E-56
PLAUR	1.780958246	3.4E-58	0.530635558	7.0333E-52
PLEK2	2.051977777	1.6E-57	0.508896007	3.46168E-47
PLIN2	1.560367718	2.46E-66	0.509034037	3.24005E-47
PLP2	1.74285706	2.06E-51	0.563304967	1.32084E-59
PODNL1	2.25245332	5.6E-71	0.463183386	2.33681E-38
POSTN	3.695794729	5.15E-54	0.559838348	9.589E-59
POTEE	2.361621478	1.2E-34	0.447871672	1.09597E-35
POTEF	1.95894702	2.04E-37	0.453467367	1.20033E-36
POTEI	2.138427204	1.13E-30	0.446732458	1.71067E-35
PPIAP31	1.968284916	2.88E-47	0.476463718	8.70139E-41
PRAC2	5.022226992	4.67E-67	0.505806365	1.51023E-46
PRAME	3.271622911	3.19E-54	0.47148434	7.29229E-40

PRDM13	3.346778782	3.75E-38	0.459920758	8.89648E-38
PRF1	1.830123429	1.48E-53	0.479764094	2.08548E-41
PRKCDBP	1.503864186	7.59E-47	0.49418068	3.37666E-44
PSMA6P2	1.94793982	6.73E-27	0.414441661	2.62609E-30
PSMD12P	2.165496632	1.18E-24	0.40647825	4.11261E-29
PTMAP2	1.552405785	5.47E-46	0.507533144	6.64196E-47
PTPN22	1.819926117	1.89E-53	0.54359289	7.65846E-55
PTTG3P	2.263559961	1.5E-26	0.405949562	4.92386E-29
PTX3	2.666123341	1.45E-68	0.515961782	1.12543E-48
RAB42	1.616287038	5.42E-48	0.542982396	1.06331E-54
RAET1K	1.934767421	1.18E-25	0.478539547	3.54959E-41
RANP1	1.842534672	7.68E-48	0.477635631	5.24897E-41
RARRES1	2.085190265	9.85E-64	0.463631043	1.94299E-38
RARRES2	2.192556112	4.58E-44	0.49357079	4.45926E-44
RBP1	1.829546805	3.61E-39	0.522070039	5.45169E-50
RHAG	2.639191733	2.65E-26	0.427383147	2.55776E-32
RNASE2	1.593252447	5.21E-31	0.401826339	1.98288E-28
RP1-258N20.3	1.838567828	5.52E-21	0.424156047	8.27276E-32
RP11-112J1.1	1.674384426	5.36E-42	0.454435601	8.15244E-37
RP11-118D22.3	2.200005544	8.61E-26	0.414516976	2.55773E-30
RP11-124N14.3	2.249511276	1.41E-41	0.466853704	5.10434E-39
RP11-145H9.3	1.714634163	2.48E-28	0.403667893	1.06693E-28
RP11-214O1.3	2.116151385	1.27E-24	0.408734913	1.90019E-29
RP11-219I21.1	2.513600095	2.91E-26	0.417466151	9.05803E-31
RP11-234A1.1	1.635461352	9.09E-47	0.478722817	3.27845E-41
RP11-253E3.1	1.755055913	1.61E-45	0.413181372	4.07895E-30
RP11-254B13.1	1.569340987	7.74E-41	0.433235549	2.94559E-33

RP11-270C12.3	1.911742173	1.46E-46	0.456036125	4.28912E-37
RP11-2F9.3	2.342398766	1.13E-24	0.421034181	2.54444E-31
RP11-301G19.1	2.829802357	4.68E-21	0.436039816	1.03E-33
RP11-309L24.6	1.699183743	8.55E-16	0.410365046	1.08386E-29
RP11-334L9.1	1.790946126	3.89E-53	0.508251983	4.71176E-47
RP11-357H14.16	2.512206278	1.02E-21	0.459846593	9.16945E-38
RP11-36C20.1	1.693245349	9.66E-45	0.473955537	2.55009E-40
RP11-372E1.1	1.710912986	2.15E-39	0.41232151	5.50251E-30
RP11-378G13.2	1.672313732	9.42E-35	0.422277405	1.62889E-31
RP11-380J14.1	3.316506579	5.1E-34	0.492057293	8.87005E-44
RP11-386I14.3	2.253104067	2.78E-26	0.427722108	2.25939E-32
RP11-389O22.4	1.859050931	7.66E-27	0.401319801	2.34983E-28
RP11-401L13.4	1.501080968	6.1E-40	0.426023551	4.20059E-32
RP11-403P14.1	2.470794071	3E-24	0.442794192	7.87096E-35
RP11-42A4.1	2.950689722	1.55E-19	0.434353372	1.93991E-33
RP11-435O5.2	1.725200511	1.42E-33	0.425481407	5.11621E-32
RP11-443P15.2	2.040440002	2.38E-23	0.424738252	6.70017E-32
RP11-447H19.1	1.881682215	9.95E-42	0.409893578	1.27536E-29
RP11-522B15.3	1.885304399	2E-40	0.430786883	7.31406E-33
RP11-522B15.6	2.041775702	7.92E-33	0.430441662	8.30971E-33
RP11-524D16__A.3	1.805958174	6.54E-35	0.484270285	2.89172E-42
RP11-61L23.2	1.675867332	1.77E-38	0.455065431	6.33439E-37
RP11-632F7.1	1.878079007	3.09E-38	0.431073045	6.57909E-33
RP11-671J11.5	2.274396256	1.33E-23	0.434299372	1.97952E-33
RP11-680H20.1	1.592474317	8.93E-52	0.512788088	5.29642E-48
RP11-696D21.2	1.867203137	5.7E-37	0.418375742	6.56272E-31
RP11-69L16.5	1.944468503	3.16E-42	0.445950712	2.31973E-35

RP11-742B18.1	3.782366641	6.94E-47	0.519671286	1.80321E-49
RP11-761N21.2	1.674162586	7.07E-38	0.453188125	1.34171E-36
RP11-793K1.1	1.998944498	3.64E-16	0.414272926	2.78587E-30
RP11-803D5.1	1.634518752	8.57E-28	0.408256315	2.23938E-29
RP11-806H10.4	1.763319053	1.48E-33	0.402894023	1.385E-28
RP11-829H16.2	2.306032801	1.56E-33	0.402118945	1.79739E-28
RP3-340B19.2	1.81341457	3.42E-44	0.456738303	3.23247E-37
RP3-431P23.5	2.47479806	3.13E-48	0.442921396	7.49468E-35
RP3-452M16.1	2.174206655	2.71E-20	0.402675852	1.49054E-28
RP3-510D11.2	1.516522987	1.83E-39	0.48227808	6.95152E-42
RP4-592A1.2	1.86624535	9.21E-46	0.451366492	2.767E-36
RP4-725G10.3	2.138680502	4.25E-28	0.453600271	1.13834E-36
RP5-1056L3.3	1.510045376	1.68E-39	0.467678535	3.61707E-39
RP5-1106E3.1	1.948415043	1.07E-27	0.427958678	2.07186E-32
RP5-1172A22.1	2.432202554	1E-25	0.434227229	2.03369E-33
RP6-218J18.2	1.589052908	7.71E-30	0.40818846	2.29209E-29
RPL10AP2	1.603708443	3.77E-43	0.408319322	2.19151E-29
RPL12P4	1.734975328	1.19E-34	0.453466129	1.20093E-36
RPL24P8	1.779098831	4.28E-45	0.473717629	2.82259E-40
RPL31P11	1.789106648	8.49E-36	0.410008954	1.22561E-29
RPL37P2	1.718440957	5.29E-39	0.419541299	4.33635E-31
RPL38P3	2.312420072	2.06E-19	0.420899037	2.67054E-31
RPL5P1	1.697755032	2.68E-42	0.42598406	4.26141E-32
RPL5P34	1.850797221	7.46E-49	0.490189	2.06323E-43
RPL5P4	1.620704193	1.81E-42	0.460172552	8.02849E-38
RPLP0P6	1.54002047	6.21E-37	0.436819033	7.67849E-34
RPS10P3	1.822135352	2.3E-38	0.423549387	1.03008E-31

RPS15AP11	1.674342595	1.15E-43	0.409649324	1.38737E-29
RPS18P12	2.126320235	3.77E-45	0.48046017	1.53991E-41
RPS19P1	2.021491039	5.07E-40	0.42657997	3.42969E-32
RPS3AP26	1.699244951	1.69E-45	0.44165168	1.22098E-34
RPS3AP6	1.828568525	3.53E-46	0.456549571	3.48801E-37
RPS4XP1	1.513685219	6.67E-38	0.41025316	1.12656E-29
RPS7P10	1.566194263	1.23E-43	0.460433386	7.21787E-38
RPSAP15	1.756574763	2.94E-46	0.454809035	7.02009E-37
RPSAP52	2.858038837	3.7E-41	0.447514388	1.26044E-35
S100A11	1.520103798	8.18E-48	0.529890857	1.03176E-51
S100A11P2	2.564219223	3.89E-28	0.428781493	1.53194E-32
S100A4	2.163315862	9.6E-61	0.559268334	1.32546E-58
S100A8	1.83159407	7.56E-33	0.411611935	7.03987E-30
S100A9	1.977821372	4.71E-40	0.435798609	1.12786E-33
SAA1	6.323766529	1.29E-123	0.517030043	6.65737E-49
SAA2	5.702008015	3.29E-144	0.434199898	2.05459E-33
SAA2-SAA4	5.614019333	4.44E-42	0.428034217	2.01529E-32
SDC1	1.780289517	9.41E-50	0.481400371	1.0212E-41
SEC61G	2.365812978	2.98E-59	0.51006258	1.97706E-47
SEMA3F	1.695286881	9.91E-67	0.513850696	3.15902E-48
SERBP1P1	1.504721094	2.39E-37	0.403593474	1.09408E-28
SERPINA5	2.535680043	9.44E-52	0.494979583	2.34376E-44
SERPINE1	2.139017563	7.95E-41	0.47115987	8.36568E-40
SERPINH1	1.743931485	4.42E-70	0.605366336	6.48904E-71
SFRP4	1.736409725	1.52E-44	0.469765881	1.50657E-39
SH2D2A	1.656417649	1.43E-50	0.503002214	5.67599E-46
SH2D4A	1.721691114	1.56E-39	0.5335529	1.55316E-52

SHOX2	1.997460314	2.19E-20	0.530960368	5.949E-52
SIT1	1.578889587	3.42E-32	0.410004653	1.22743E-29
SLAMF1	1.593453858	6.46E-28	0.414715626	2.38577E-30
SLAMF8	1.537572189	6.36E-39	0.448784705	7.66114E-36
SLC25A3P2	1.9126261	6.29E-28	0.400259621	3.34936E-28
SMIM3	1.689241008	2.3E-73	0.552462326	6.02823E-57
SNAI2	1.83889855	1.42E-61	0.524439217	1.65703E-50
SNRPEP4	2.152518417	1.9E-65	0.503224554	5.11264E-46
SNRPGP10	2.093573	7.28E-49	0.503597626	4.28941E-46
SOCS2	1.694412504	8.12E-50	0.480505051	1.51005E-41
SOCS2-AS1	1.720358299	1.19E-52	0.450915208	3.3082E-36
SOCS3	1.587472065	5.34E-28	0.46494603	1.12807E-38
SPAG17	2.049031895	1.5E-36	0.413058206	4.25789E-30
SPAG4	1.773710592	6.13E-50	0.50622427	1.23849E-46
SPINK8	1.619017583	1.79E-45	0.41610747	1.46313E-30
SPOCD1	1.566359977	8.83E-21	0.410390654	1.07432E-29
SPON2	1.860351196	1.88E-46	0.505739918	1.55859E-46
SPRY1	1.595300545	3.1E-58	0.556047636	8.15909E-58
SPRY4	1.551856669	1.77E-37	0.495726105	1.66478E-44
SRPX2	2.270423623	1.35E-59	0.548732035	4.70701E-56
STAC	1.710618291	4.76E-21	0.441236529	1.43158E-34
STC1	2.713948887	9.32E-68	0.502115007	8.60708E-46
STEAP1	1.630145513	1.78E-37	0.412510311	5.15283E-30
STEAP3	1.812636517	3.58E-50	0.534716448	8.46852E-53
STRA6	1.687352711	1.07E-45	0.424841	6.45517E-32
TAGLN2	1.708382199	2.69E-59	0.596235588	2.57009E-68
TAGLN2P1	2.633183249	4.65E-46	0.508640462	3.91246E-47

TFPI2	2.487985215	1.16E-60	0.412973769	4.38504E-30
TGFBI	2.12064217	1.55E-58	0.475192449	1.50229E-40
THBS1	2.386017816	2.88E-60	0.421212919	2.38668E-31
TIMP1	2.713556952	7.32E-68	0.60243447	4.52348E-70
TMEM71	1.686064074	5E-44	0.483899323	3.40626E-42
TMSB4XP1	2.272955559	1.49E-50	0.442906968	7.53645E-35
TMSB4XP2	2.440490883	1E-46	0.42089758	2.67194E-31
TMSB4XP4	2.289347877	6.65E-65	0.544572058	4.51801E-55
TMSB4XP8	2.224753305	2.36E-51	0.529395333	1.33071E-51
TNFAIP6	2.398594179	9.24E-66	0.540206114	4.68911E-54
TNFAIP8	1.598024916	4.91E-58	0.536160235	3.97675E-53
TNFRSF11B	1.798689423	5.36E-37	0.507108866	8.13093E-47
TNFRSF12A	1.783049503	3.3E-41	0.538045625	1.47381E-53
TNFRSF9	1.711939337	2.27E-46	0.440965204	1.58829E-34
TNFSF14	2.138410677	6.19E-48	0.446012661	2.26448E-35
TPI1P1	1.598915758	1.64E-40	0.471735307	6.55681E-40
TPT1P14	2.126335398	2.37E-21	0.406248849	4.44694E-29
TPT1P4	1.774954161	7.92E-55	0.508962694	3.35278E-47
TPT1P9	2.067350578	1.16E-55	0.493004978	5.76888E-44
TRDC	3.434634003	3E-78	0.418506387	6.26538E-31
TREM1	2.762927001	1.36E-57	0.451053731	3.13177E-36
TREML3P	1.860936269	1.01E-24	0.401392219	2.29352E-28
TRMT112P6	1.648506288	1.18E-37	0.439475151	2.80517E-34
TRPM8	2.377561125	3.69E-36	0.490354399	1.91506E-43
TUBA1C	1.899426948	1.03E-65	0.571422045	1.16061E-61
TUBAP2	1.741315252	3.58E-47	0.494273893	3.23599E-44
TUBBP6	2.270896384	8.02E-34	0.409672903	1.37615E-29

TWIST1	1.597628234	6.85E-40	0.478864286	3.08331E-41
ULBP1	1.965257996	5.59E-41	0.40308189	1.30008E-28
VDR	2.081733372	6.38E-58	0.439115234	3.21695E-34
VEGFA	1.72804618	2E-40	0.50003107	2.27762E-45
VNN2	1.629966684	5.26E-45	0.460259812	7.74772E-38
WI2-87327B8.2	2.774507046	2.04E-42	0.462313317	3.34248E-38
WISP1	2.828866307	9.36E-72	0.49646712	1.1845E-44
YBX1P1	1.55375861	5.93E-41	0.478316573	3.90962E-41

Table S3 : Pearson correlation and Differential analysis of GSVA score and HOXB5 expression

Description	logFC	adj.P.Val	correlation	pvalue	Category
HALLMARK_ALLOGRAFT_REJECTION	0.3090565	5.31E-10	0.415295396	1.95E-30	Hallmark
HALLMARK_ANGIOGENESIS	0.3979313	8.73E-17	0.537022936	2.53E-53	Hallmark
HALLMARK_APOPTOSIS	0.2418842	1.23E-09	0.425308731	5.45E-32	Hallmark
HALLMARK_COAGULATION	0.2574321	1.27E-10	0.428367266	1.78E-32	Hallmark
HALLMARK_EPITHELIAL_MESENCHYMAL_TRANSITION	0.3989590	1.78E-17	0.5456735	2.49E-55	Hallmark
HALLMARK_GLYCOLYSIS	0.2884762	2.62E-15	0.517700502	4.78E-49	Hallmark
HALLMARK_HYPOXIA	0.2232514	3.78E-09	0.400775785	2.82E-28	Hallmark
HALLMARK_IL2_STAT5_SIGNALING	0.2397348	6.87E-10	0.405754512	5.26E-29	Hallmark
HALLMARK_IL6_JAK_STAT3_SIGNALING	0.3119962	5.49E-10	0.422099749	1.74E-31	Hallmark
HALLMARK_INTERFERON_ALPHA_RESPONSE	0.3468251	9.63E-10	0.411233172	8.03E-30	Hallmark
HALLMARK_INTERFERON_GAMMA_RESPONSE	0.3445828	1.05E-10	0.435737325	1.15E-33	Hallmark
HALLMARK_MTORC1_SIGNALING	0.2703398	5.09E-11	0.435434884	1.29E-33	Hallmark
KEGG_ALANINE_ASPARTATE_AND_GLUTAMATE_META BOLISM	0.2700671	5.66E-11	0.415212478	2E-30	KEGG
KEGG_ALLOGRAFT_REJECTION	0.3754055	4.14E-09	0.415010125	2.15E-30	KEGG
KEGG_AMINO_SUGAR_AND_NUCLEOTIDE_SUGAR_META BOLISM	0.2990338	3.45E-11	0.446476751	1.89E-35	KEGG
KEGG_DNA_REPLICATION	0.4033733	3.1E-11	0.408412806	2.12E-29	KEGG
KEGG_ECM_RECEPTOR_INTERACTION	0.3729333	3.98E-17	0.520962351	9.48E-50	KEGG
KEGG_GLUTATHIONE_METABOLISM	0.3096912	1.08E-13	0.443110049	6.97E-35	KEGG
KEGG_GLYCOSAMINOGLYCAN_DEGRADATION	0.4311635	3.53E-19	0.520501791	1.19E-49	KEGG
KEGG_GRAFT_VERSUS_HOST_DISEASE	0.3654993	6.19E-09	0.401445698	2.25E-28	KEGG

KEGG_LONG_TERM_DEPRESSION	0.3155913	6.42E-15	0.471551278	7.09E-40	KEGG
KEGG_LONG_TERM_POTENTIATION	0.3167061	1.15E-12	0.460543835	6.9E-38	KEGG
KEGG_MISMATCH_REPAIR	0.3930648	4.14E-11	0.41812651	7.17E-31	KEGG
KEGG_N_GLYCAN_BIOSYNTHESIS	0.3252188	1.35E-11	0.437416702	6.13E-34	KEGG
KEGG_OTHER_GLYCAN_DEGRADATION	0.2829410	0.000000106	0.406196019	4.53E-29	KEGG
KEGG_P53_SIGNALING_PATHWAY	0.2584562	1.67E-10	0.433874091	2.32E-33	KEGG
KEGG_PHOSPHATIDYLINOSITOL_SIGNALING_SYSTEM	0.2880162	1.41E-11	0.411303783	7.83E-30	KEGG
KEGG_PROTEASOME	0.3510412	4.87E-10	0.419499728	4.4E-31	KEGG
KEGG_TASTE_TRANSDUCTION	0.2829437	5.22E-14	0.491901361	9.52E-44	KEGG

Table S4: The Univariate Cox results of HOXB5 in validation set

Dataset	Patient	HR	Low_CI	high_CI	pvalue
CGGA RNA-Seq	315	1.181	1.06	1.316	0.0026
CGGA microarray	285	1.233	1.106	1.352	<0.001
REMBRANDT	284	2.399	1.465	3.929	<0.001

Table S5: Pearson correlation between HOXB5 expression and immune infiltration anglicized by MCP-counter

Cell	correlation	P value
Endothelial cells	0.24934784	2.44E-11
Fibroblasts	0.55458652	1.85E-57

T cells	0.4155549	1.78E-30
CD8 T cells	0.37100396	3.62E-24
Cytotoxic lymphocytes	0.08362733	2.73E-02
B lineage	0.22531962	1.79E-09
NK cells	0.26777346	6.56E-13
Monocytic lineage	0.27901691	6.26E-14
Myeloid dendritic cells	0.36901963	6.57E-24
Neutrophils	0.34885192	2.24E-21