

Table S1 List of potential tumor suppressors and oncogenes. Left; Tumor suppressors which are downregulated in HCC and whose higher expressions are associated with good survival of HCC patients from TCGA database are listed along with hazard ratio (HR), associated p-value and number of patients (N). Right; Oncogenes which are upregulated in HCC and whose higher expression are associated with poor survival of HCC patients from GEO dataset GSE31384 are listed along with hazard ratio (HR), associated p-value and number of patients (N).

Tumor Suppressor	HR	p-value	N	Oncogene	HR	p-value	N
RAMP3	0.43	2.63E-06	360	CDC20	2.62	1.41E-07	360
DNASE1L3	0.44	4.86E-06	360	HN1	2.52	3.8E-07	360
SOCS2	0.44	6.25E-06	360	CDCA8	2.47	5.63E-07	360
CRY2	0.45	1.03E-05	360	GTPBP4	2.40	1.34E-06	360
DMGDH	0.45	0.000012	360	NEIL3	2.32	3.14E-06	360
PPARGC1A	0.45	0.000015	360	KIF2C	2.26	5.81E-06	360
SLC2A2	0.47	2.29E-05	360	BIRC5	2.26	7.43E-06	360
CFHR3	0.47	3.25E-05	360	TRIP13	2.24	7.99E-06	360
HMGCS2	0.47	3.33E-05	360	SLC41A3	2.23	8.5E-06	360
PSD4	0.48	3.61E-05	360	CSTF2	2.21	9.28E-06	360
NDRG2	0.48	0.000040	360	SPATS2	2.18	1.55E-05	360
PON1	0.48	4.17E-05	360	TMEM106C	2.17	1.66E-05	360
FYN	0.48	4.28E-05	360	CENPA	2.16	2.05E-05	360
ITIH1	0.48	5.34E-05	360	EZH2	2.16	2.26E-05	360
SLC22A1	0.48	5.95E-05	360	SPC25	2.14	2.47E-05	360
ROBO4	0.49	6.02E-05	360	DR1	2.14	3.04E-05	360
CPEB3	0.49	0.000063	360	RAD54L	2.12	2.89E-05	360
GOT2	0.49	6.33E-05	360	CENPH	2.12	3.11E-05	360
DHRS1	0.50	0.000106	360	WDR53	2.11	3.48E-05	360
MGMT	0.50	0.000135	360	E2F8	2.10	3.66E-05	360
ADRA2B	0.51	0.000126	360	CENPL	2.10	0.000037	360
GNA14	0.51	0.000146	360	HMMR	2.09	3.91E-05	360
GIMAP7	0.51	0.000158	360	LIN9	2.08	5.35E-05	360
IQGAP2	0.51	0.000160	360	SF3B4	2.07	5.01E-05	360
TPPP2	0.51	0.000163	360	SMG5	2.07	0.000051	360
MYCT1	0.51	0.000163	360	MPV17	2.05	6.27E-05	360
UPB1	0.51	0.000166	360	TIPIN	2.05	7.21E-05	360
MASP1	0.52	0.000222	360	RAB10	2.04	6.39E-05	360
TMEM220	0.52	0.000239	360	SGOL2	2.04	6.94E-05	360
TAT	0.52	0.000254	360	CDC7	2.04	7.03E-05	360
ADH4	0.52	0.000259	360	KIAA0101	2.04	0.000076	360
ENG	0.52	0.000269	360	EEF1E1	2.04	9.68E-05	360
LIMS2	0.52	0.000290	360	KIFC1	2.02	8.92E-05	360
APOB	0.52	0.000296	360	PA2G4	2.02	0.000097	360
SLC10A1	0.52	0.000298	360	SKA1	2.01	0.000120	360
IL18RAP	0.52	0.000313	360	SGOL1	2.00	0.000118	360
GP6	0.52	0.000334	360	LAPTM4B	2.00	0.000159	360
CCDC69	0.53	0.000454	360	KIF15	1.99	0.000111	360
ASPA	0.53	0.000475	360	MRPS23	1.99	0.000126	360
CYP3A43	0.54	0.000542	360	CCNB1	1.99	0.000141	360
FTCD	0.54	0.000550	360	MAD2L1	1.98	0.000141	360
CYP2C19	0.54	0.000557	360	E2F6	1.98	0.000146	360
AFM	0.54	0.000557	360	MAPKAPK5	1.98	0.000148	360
ESR1	0.54	0.000561	360	NAT10	1.97	0.000143	360
GYS2	0.54	0.000574	360	CPSF3	1.97	0.000156	360
CYP2C9	0.54	0.000583	360	E2F7	1.97	0.000157	360
GABARAPL1	0.54	0.000597	360	CCNF	1.97	0.000161	360

Tumor Suppressor	HR	p-value	N
APOC1	0.54	0.000660	360
CSAD	0.54	0.000666	360
CAT	0.54	0.000681	360
CYB5D2	0.54	0.000684	360
SARDH	0.54	0.000710	360
CPN2	0.54	0.000720	360
ABCA9	0.54	0.000779	360
PTPRB	0.55	0.000741	360
IGFALS	0.55	0.000757	360
GIMAP8	0.55	0.000765	360
CYP2C8	0.55	0.000801	360
IVD	0.55	0.000829	360
MUT	0.55	0.000860	360
SPP2	0.55	0.000881	360
TMPRSS6	0.55	0.000945	360
DECR1	0.55	0.000989	360
TCF21	0.56	0.000986	360
N4BP2L1	0.56	0.001045	360
PIK3R1	0.56	0.001174	360
CCL23	0.56	0.001283	360
SLC31A1	0.56	0.001285	360
EOMES	0.56	0.001287	360
ADRA1A	0.56	0.001299	360
STARD5	0.56	0.001325	360
ETS2	0.56	0.001342	360
MMAA	0.56	0.001455	360
ETFDH	0.56	0.001458	360
CYP3A5	0.57	0.001433	360
GPT	0.57	0.001489	360
ANKRD24	0.57	0.001554	360
NTF3	0.57	0.001772	360
F9	0.57	0.001809	360
CCT6B	0.57	0.001925	360
LDB2	0.58	0.001949	360
FGB	0.58	0.002011	360
SLC41A2	0.58	0.002098	360
GPR182	0.58	0.002109	360
SLCO2B1	0.58	0.002148	360
C8B	0.58	0.002151	360
ZAP70	0.58	0.002189	360
HPX	0.58	0.002236	360
CYP4F12	0.58	0.002268	360
C2orf40	0.58	0.002348	360
ANGPTL1	0.58	0.002443	360
NKG7	0.58	0.002453	360
GHR	0.58	0.002509	360
FAM65C	0.58	0.002527	360
TAPT1	0.58	0.002580	360
FAHD2A	0.58	0.002589	360
SPRYD4	0.58	0.002671	360
SERPINA4	0.58	0.002739	360
SLC25A11	0.58	0.002854	360
ACOT12	0.59	0.002709	360

Oncogene	HR	p-value	N
STMN1	1.97	0.000188	360
MCM6	1.96	0.000181	360
NUF2	1.95	0.000193	360
ATIC	1.94	0.000215	360
TMCO3	1.93	0.000245	360
DLGAP5	1.93	0.000264	360
PIGU	1.93	0.000280	360
HJURP	1.92	0.000264	360
EFNA4	1.92	0.000276	360
NEDD1	1.92	0.000293	360
PPM1G	1.92	0.000366	360
CAD	1.91	0.000284	360
POLQ	1.91	0.000293	360
MCM7	1.91	0.000308	360
VPS26A	1.91	0.000336	360
CKAP5	1.90	0.000323	360
CSE1L	1.90	0.000343	360
TTK	1.89	0.000372	360
OIP5	1.89	0.000400	360
PSMD1	1.89	0.000459	360
RAB1F	1.88	0.000445	360
PLK1	1.88	0.000504	360
PTGES3	1.88	0.000508	360
KIF20A	1.87	0.000460	360
FSD1L	1.87	0.000479	360
KIF11	1.87	0.000500	360
SESTD1	1.87	0.000503	360
AGFG1	1.87	0.000534	360
ANLN	1.86	0.000505	360
MCM2	1.86	0.000512	360
EXO1	1.86	0.000532	360
HDAC2	1.86	0.000586	360
SRD5A3	1.86	0.000652	360
TRAIP	1.85	0.000596	360
RRP15	1.85	0.000671	360
ISY1	1.85	0.000715	360
SNRPD1	1.84	0.000654	360
RBM45	1.84	0.000697	360
RAD51AP1	1.83	0.000722	360
TRMT6	1.83	0.000735	360
VPS72	1.83	0.000790	360
FARSB	1.82	0.000781	360
MELK	1.82	0.000794	360
CHEK1	1.82	0.000809	360
RAE1	1.82	0.000817	360
VRK2	1.82	0.000820	360
PRR11	1.82	0.000829	360
MSH2	1.81	0.000928	360
CCNA2	1.81	0.000991	360
SNRPB2	1.81	0.000999	360
H2AFZ	1.81	0.001018	360
DPH2	1.80	0.000931	360
DEPDC1	1.80	0.000950	360

Tumor Suppressor	HR	p-value	N
DHX58	0.59	0.002785	360
SLC38A4	0.59	0.002843	360
IL33	0.59	0.002916	360
GFRA2	0.59	0.002919	360
IGF1	0.59	0.002940	360
RDH16	0.59	0.002947	360
FBLN5	0.59	0.003139	360
AKR1D1	0.59	0.003242	360
RNF125	0.59	0.003282	360
DBT	0.59	0.003348	360
FCGRT	0.59	0.003373	360
AVPR2	0.59	0.003402	360
SLCO1B1	0.59	0.003508	360
GLYATL1	0.59	0.003861	360
COLEC10	0.60	0.003631	360
GZMH	0.60	0.003701	360
FMO3	0.60	0.003869	360
STEAP4	0.60	0.003998	360
PON3	0.60	0.004098	360
APOC3	0.60	0.004123	360
HAGH	0.60	0.004127	360
MPDZ	0.60	0.004186	360
FAM149A	0.60	0.004186	360
SHPK	0.60	0.004294	360
DPYS	0.60	0.004474	360
ENPEP	0.60	0.004475	360
RHOB	0.60	0.004487	360
MYOM2	0.60	0.004527	360
DEPDC7	0.60	0.004532	360
KLF2	0.60	0.004540	360
AMDHD1	0.60	0.004574	360
PBLD	0.60	0.004876	360
KLRB1	0.60	0.004914	360
SLC17A2	0.60	0.004985	360
ADH1A	0.60	0.005012	360
GCDH	0.60	0.005016	360
ADHFE1	0.60	0.005255	360
GNMT	0.61	0.004836	360
APOA1	0.61	0.005015	360
HPN	0.61	0.005058	360
GADD45A	0.61	0.005166	360
ACAT1	0.61	0.005449	360
SELP	0.61	0.005557	360
CST7	0.61	0.005648	360
ACSM3	0.61	0.005693	360
C16orf45	0.61	0.005962	360
PDE7B	0.61	0.005966	360
GADD45G	0.61	0.006086	360
LECT2	0.61	0.006138	360
METTL7A	0.61	0.006147	360
FDX1	0.61	0.006232	360
ADAMTSL2	0.61	0.006236	360
AVPI1	0.61	0.006248	360

Oncogene	HR	p-value	N
DUSP12	1.80	0.001004	360
ITGB1BP1	1.80	0.001097	360
TMEM206	1.80	0.001197	360
KIAA1524	1.79	0.001080	360
APEX2	1.79	0.001109	360
AATF	1.79	0.001130	360
PRC1	1.79	0.001133	360
UBE2T	1.79	0.001206	360
BTF3L4	1.79	0.001213	360
EED	1.78	0.001206	360
GMPS	1.78	0.001254	360
HSF2BP	1.78	0.001260	360
PBK	1.78	0.001268	360
ZNF792	1.78	0.001287	360
NUP85	1.78	0.001303	360
SLC39A1	1.78	0.001319	360
HDAC1	1.78	0.001365	360
NDC80	1.77	0.001330	360
CCT4	1.77	0.001477	360
CKAP2L	1.77	0.001484	360
CEP55	1.77	0.001490	360
STIP1	1.76	0.001582	360
ARF4	1.76	0.001587	360
STIL	1.76	0.001595	360
ATP6V1E1	1.76	0.001614	360
SLC39A10	1.76	0.001774	360
PRIM1	1.75	0.001683	360
NUP205	1.75	0.001683	360
SNRPE	1.75	0.001685	360
GINS1	1.75	0.001749	360
CCDC34	1.75	0.001915	360
TOP2A	1.74	0.001849	360
CENPK	1.74	0.001865	360
CLIC1	1.74	0.001939	360
RRM2	1.74	0.001960	360
KIF14	1.73	0.002139	360
GTF3C2	1.73	0.002160	360
NME6	1.73	0.002175	360
PAK1IP1	1.73	0.002234	360
PIGC	1.73	0.002286	360
PTTG1	1.73	0.002290	360
MKI67	1.73	0.002326	360
SLC39A6	1.72	0.002374	360
CENPI	1.72	0.002381	360
ILF2	1.72	0.002418	360
NCAPG	1.72	0.002454	360
FAM83D	1.72	0.002473	360
EIF2S2	1.72	0.002491	360
XPOT	1.71	0.002564	360
ZNF605	1.71	0.002575	360
FLVCR1	1.71	0.002605	360
EME1	1.71	0.002667	360
ECT2	1.71	0.002705	360

Tumor Suppressor	HR	p-value	N
QDPR	0.61	0.006649	360
ACADS	0.61	0.006703	360
MAN2B2	0.61	0.006909	360
GFOD1	0.62	0.006531	360
LMO2	0.62	0.006596	360
XDH	0.62	0.006735	360
TK2	0.62	0.006991	360
NR1I2	0.62	0.007181	360
OIT3	0.62	0.007213	360
GPR146	0.62	0.007250	360
KBTBD11	0.62	0.007269	360
GPT2	0.62	0.007317	360
C5	0.62	0.007400	360
RANBP3L	0.62	0.007422	360
ADI1	0.62	0.007508	360
CYP27A1	0.62	0.007588	360
HGD	0.62	0.007617	360
F7	0.62	0.007711	360
PRICKLE1	0.62	0.007797	360
PROZ	0.62	0.007879	360
F2	0.62	0.007900	360
GRAMD1C	0.62	0.007910	360
CRHBP	0.62	0.007958	360
C1RL	0.62	0.007992	360
RBP4	0.62	0.008011	360
TTC36	0.62	0.008107	360
PGM1	0.62	0.008218	360
SLC46A3	0.62	0.008227	360
GAMT	0.62	0.008308	360
FARP2	0.62	0.008367	360
CYP8B1	0.62	0.008456	360
DENND1C	0.62	0.008842	360
ACBD4	0.63	0.008420	360
CD226	0.63	0.008949	360
CIDEB	0.63	0.008979	360
COBLL1	0.63	0.009022	360
SDS	0.63	0.009033	360
C1orf168	0.63	0.009170	360
PLAC9	0.63	0.009386	360
MSRA	0.63	0.009441	360
SLC16A4	0.63	0.009441	360
UROC1	0.63	0.009571	360
C7	0.63	0.009641	360
ADH1C	0.63	0.009685	360
TNFRSF1B	0.63	0.009696	360
ANO1	0.63	0.009768	360
GPM6A	0.63	0.010304	360
PIPOX	0.63	0.010580	360
CLDN14	0.63	0.010616	360
DHTKD1	0.63	0.011292	360
SLC25A42	0.63	0.011726	360
CBFA2T3	0.64	0.011022	360
GLYCTK	0.64	0.011116	360

Oncogene	HR	p-value	N
CDCA2	1.71	0.002706	360
SCML2	1.71	0.002711	360
CPSF6	1.71	0.002801	360
YWHAQ	1.71	0.002905	360
NARS	1.71	0.002933	360
RFC4	1.70	0.002938	360
LCLAT1	1.70	0.002954	360
CDC6	1.70	0.002957	360
BRIX1	1.70	0.003173	360
DAP3	1.70	0.003179	360
YEATS2	1.70	0.003355	360
SEC61G	1.69	0.003298	360
CEP250	1.69	0.003317	360
MASTL	1.69	0.003318	360
CHAF1B	1.69	0.003339	360
CDC123	1.69	0.003387	360
GRPEL2	1.69	0.003444	360
AURKB	1.69	0.003499	360
PDIA6	1.69	0.003532	360
PSMD14	1.68	0.003331	360
RAB23	1.68	0.003648	360
CCT7	1.68	0.003664	360
C17orf80	1.68	0.003717	360
CDC25A	1.68	0.003794	360
LMNB1	1.68	0.003822	360
CASP2	1.67	0.003937	360
PDCD10	1.67	0.003958	360
PPIH	1.67	0.003994	360
ANXA2	1.67	0.004087	360
HMGB2	1.67	0.004369	360
PPAT	1.66	0.004628	360
SART3	1.66	0.004629	360
RNASEH2A	1.66	0.004662	360
RIT1	1.66	0.004716	360
KIF2A	1.66	0.004785	360
NUP155	1.66	0.004829	360
SEH1L	1.66	0.005107	360
CDC73	1.66	0.005865	360
SUPT16H	1.65	0.004809	360
FEN1	1.65	0.004935	360
CENPE	1.65	0.004978	360
CDC25C	1.65	0.005063	360
NCL	1.65	0.005082	360
EFTUD2	1.65	0.005143	360
DARS2	1.65	0.005267	360
S100A10	1.65	0.005360	360
TBL1XR1	1.65	0.005755	360
UTP6	1.64	0.005210	360
NUP43	1.64	0.005316	360
CDCA4	1.64	0.005495	360
GLMN	1.64	0.005587	360
RUVBL1	1.64	0.005610	360
POLR3C	1.64	0.005627	360

Tumor Suppressor	HR	p-value	N
ABHD14B	0.64	0.011434	360
ALDH2	0.64	0.011643	360
SPSB3	0.64	0.011647	360
HGFAC	0.64	0.011770	360
CHST7	0.64	0.012011	360
CBR4	0.64	0.012632	360
EPM2A	0.64	0.012670	360
NPY1R	0.64	0.012757	360
RCAN1	0.64	0.012830	360
ASGR2	0.64	0.013039	360
CYP4V2	0.64	0.013047	360
C6	0.64	0.013393	360
ACSM5	0.64	0.013402	360
CHRNE	0.64	0.014125	360
POU6F1	0.64	0.014131	360
HDAC6	0.64	0.014730	360
SLC9A3R2	0.65	0.013994	360
CYP4F2	0.65	0.014041	360
GGT5	0.65	0.014402	360
LYRM5	0.65	0.014511	360
HAO1	0.65	0.014643	360
ECHS1	0.65	0.015438	360
KIAA0922	0.65	0.015584	360
HEBP1	0.65	0.015820	360
DLG2	0.65	0.016034	360
RIPK4	0.65	0.016353	360
DGAT2	0.65	0.017572	360
ZCCHC24	0.65	0.017861	360
ALDH8A1	0.65	0.018499	360
BMPER	0.65	0.018607	360
SERPINA10	0.66	0.017776	360
KLKB1	0.66	0.017786	360
OGDHL	0.66	0.017842	360
LDHD	0.66	0.018291	360
ACSM2A	0.66	0.018702	360
NCAN	0.66	0.019018	360
EPHX2	0.66	0.019345	360
MRPL54	0.66	0.019496	360
SPAG7	0.66	0.019670	360
HAO2	0.66	0.020178	360
PZP	0.66	0.020356	360
ABCA8	0.66	0.020442	360
ALDH9A1	0.66	0.020838	360
CBS	0.66	0.020855	360
SLC27A2	0.66	0.020891	360
ALPL	0.66	0.021447	360
ZNF18	0.66	0.021735	360
CFP	0.66	0.022201	360
CYP2E1	0.66	0.022258	360
SEC14L2	0.66	0.022323	360
NDST3	0.66	0.022481	360
FBP1	0.67	0.022517	360
SAT2	0.67	0.022959	360

Oncogene	HR	p-value	N
COMMD2	1.64	0.005655	360
TAF6	1.64	0.005796	360
RIOK1	1.64	0.006393	360
PRMT3	1.63	0.005938	360
C5orf34	1.63	0.005950	360
TTLL4	1.63	0.006107	360
BTBD10	1.63	0.006212	360
NDRG3	1.63	0.006218	360
CCT2	1.63	0.006235	360
DTL	1.63	0.006310	360
LRRC42	1.63	0.006426	360
GOLT1B	1.63	0.006428	360
HNRNPR	1.63	0.006698	360
NCAPG2	1.63	0.006776	360
GPATCH4	1.63	0.006827	360
CENPQ	1.63	0.006852	360
IARS	1.62	0.006357	360
HSF2	1.62	0.006562	360
MYO19	1.62	0.006767	360
SNRPA	1.62	0.006956	360
APAF1	1.62	0.007059	360
CBFA2T2	1.62	0.007062	360
CDCA3	1.62	0.007063	360
PHOSPHO2	1.62	0.007526	360
DYNC1LI1	1.61	0.007658	360
POLA2	1.61	0.007696	360
YIF1B	1.61	0.007699	360
PSPH	1.61	0.007888	360
DRG1	1.61	0.007989	360
C5orf28	1.61	0.008004	360
KCMF1	1.61	0.008181	360
HSPA14	1.61	0.008197	360
XRN2	1.61	0.008724	360
HMGN4	1.60	0.008376	360
BRD8	1.60	0.008417	360
C17orf53	1.60	0.008698	360
PPIA	1.60	0.008704	360
XPR1	1.60	0.008720	360
DCTN2	1.60	0.008758	360
NKIRAS2	1.60	0.008762	360
TXNDC9	1.60	0.008795	360
STAM	1.60	0.008799	360
CBX1	1.60	0.009036	360
EIF4A3	1.60	0.009200	360
KIAA0100	1.59	0.008885	360
TDG	1.59	0.008978	360
FANCI	1.59	0.008983	360
TK1	1.59	0.009343	360
KPNB1	1.59	0.009446	360
NVL	1.58	0.010095	360
AURKA	1.58	0.010270	360
UBE2C	1.58	0.011131	360
AGBL5	1.57	0.010769	360

Tumor Suppressor	HR	p-value	N
DAO	0.67	0.023178	360
WFDC1	0.67	0.023474	360
ERRFI1	0.67	0.023666	360
CD247	0.67	0.023949	360
HAPLN2	0.67	0.023962	360
GLOD4	0.67	0.024175	360
AGXT	0.67	0.024443	360
IGFBP4	0.67	0.024604	360
CNGA1	0.67	0.024803	360
HAAO	0.67	0.025158	360
PCOLCE	0.67	0.025488	360
SUCLG2	0.67	0.025530	360
SLC27A5	0.67	0.025615	360
GBA3	0.67	0.025959	360
DBH	0.67	0.026083	360
C8A	0.67	0.026126	360
DNMT3L	0.67	0.026161	360
NOSTRIN	0.67	0.026431	360
ZCCHC6	0.67	0.027158	360
PHYHD1	0.67	0.027454	360
DLC1	0.67	0.027638	360
NR3C2	0.68	0.027902	360
SRD5A2	0.68	0.028050	360
CXCL2	0.68	0.028134	360
PCK2	0.68	0.028747	360
LAMB2	0.68	0.029266	360
AGXT2	0.68	0.029509	360
AKR7A3	0.68	0.029517	360
CD14	0.68	0.029733	360
ABCA6	0.68	0.030049	360
ADRA1B	0.68	0.030209	360
LTK	0.68	0.030644	360
MAMDC4	0.68	0.031178	360
ICAM3	0.68	0.031445	360
NTHL1	0.68	0.031607	360
CYP4A11	0.68	0.031680	360
HADH	0.68	0.031734	360
LEAP2	0.68	0.032371	360
SDPR	0.68	0.033183	360
FMO2	0.68	0.033340	360
LIME1	0.68	0.033797	360
MT1X	0.68	0.034117	360
TMBIM6	0.68	0.034229	360
F12	0.69	0.033348	360
PEX11G	0.69	0.033937	360
MAN1C1	0.69	0.034668	360
CYP4F3	0.69	0.037175	360
HABP2	0.69	0.037757	360
MACROD1	0.69	0.037923	360
MOGAT1	0.69	0.038079	360
MEIS3P1	0.69	0.038182	360
DCN	0.69	0.038297	360
CNDP1	0.69	0.038355	360

Oncogene	HR	p-value	N
TMEM185B	1.57	0.010892	360
AHSA1	1.57	0.010909	360
EIF2B1	1.57	0.010948	360
CAPRIN1	1.57	0.011326	360
USP39	1.57	0.011433	360
FAM127A	1.57	0.011633	360
MCM3	1.57	0.011790	360
PPIL1	1.57	0.011832	360
HPS3	1.57	0.011865	360
DCK	1.57	0.011943	360
C1orf112	1.57	0.012041	360
CENPJ	1.57	0.012256	360
TIPRL	1.56	0.012443	360
ENAH	1.56	0.012609	360
THOC7	1.56	0.012750	360
PSMA1	1.56	0.012911	360
FUBP1	1.56	0.012954	360
ME2	1.56	0.013071	360
MND1	1.56	0.013186	360
HNRNPM	1.56	0.013966	360
MRPL9	1.55	0.013449	360
KIF20B	1.55	0.013582	360
WDR70	1.55	0.013644	360
DCLRE1B	1.55	0.013685	360
GINS4	1.55	0.014129	360
TAF1B	1.55	0.014140	360
ZNF346	1.55	0.014159	360
DENND5A	1.55	0.014233	360
TLCD1	1.55	0.014264	360
NUP37	1.55	0.014333	360
SSB	1.55	0.014599	360
ASF1B	1.55	0.014772	360
PUS7	1.55	0.014790	360
CDV3	1.55	0.014868	360
EDC3	1.54	0.014938	360
NME7	1.54	0.015014	360
SENP1	1.54	0.015112	360
DCAF16	1.54	0.015162	360
TMEM147	1.54	0.015659	360
TULP3	1.54	0.015857	360
DDX1	1.54	0.015888	360
UTP14A	1.54	0.015923	360
WDR12	1.54	0.016064	360
TSEN15	1.54	0.016187	360
GMFB	1.54	0.016854	360
HTRA2	1.54	0.017197	360
CKS2	1.53	0.016398	360
RFWD3	1.53	0.016498	360
ACTR5	1.53	0.016509	360
CCT6A	1.53	0.016572	360
NAT9	1.53	0.016783	360
TPRKB	1.53	0.016788	360
ZNF84	1.53	0.016812	360

Tumor Suppressor	HR	p-value	N
ABHD6	0.69	0.038451	360
JDP2	0.69	0.038514	360
ORM1	0.69	0.038851	360
ALAS1	0.69	0.038976	360
BAZ2B	0.69	0.039518	360
FOXF1	0.69	0.039601	360
SLC25A34	0.69	0.039896	360
NAT2	0.69	0.040466	360
MST1	0.69	0.040503	360
LHPP	0.69	0.040578	360
CA5A	0.69	0.041395	360
HELQ	0.69	0.042232	360
TTR	0.69	0.042664	360
CDC37L1	0.70	0.042164	360
FGA	0.70	0.042482	360
ADH6	0.70	0.042544	360
CFB	0.70	0.042802	360
PCK1	0.70	0.043572	360
HPD	0.70	0.043575	360
INMT	0.70	0.043603	360
FCN2	0.70	0.043875	360
EFCAB6	0.70	0.044216	360
SIRT5	0.70	0.044363	360

Oncogene	HR	p-value	N
ATP7A	1.53	0.016904	360
LBR	1.53	0.016974	360
LYAR	1.53	0.017027	360
CCNB2	1.53	0.017152	360
TKT	1.53	0.017253	360
UTP18	1.53	0.017262	360
TIMELESS	1.53	0.017437	360
FASTKD3	1.53	0.017725	360
POLR3F	1.53	0.017976	360
SSR3	1.53	0.018008	360
HAT1	1.52	0.017937	360
CDC23	1.52	0.018227	360
STT3A	1.52	0.018969	360
PDSS1	1.52	0.019231	360
H2AFY	1.52	0.019370	360
PRKAG1	1.52	0.019405	360
RHEB	1.52	0.019661	360
ENOPH1	1.52	0.01968	360
VPS35	1.51	0.019845	360
CDK2	1.51	0.020123	360
GTPBP2	1.51	0.020138	360
BUB3	1.51	0.020205	360
CPSF4	1.51	0.021305	360
RPIA	1.51	0.021343	360
WDYHV1	1.51	0.021679	360
B4GALT3	1.51	0.021691	360
GARS	1.51	0.021956	360
TMEM69	1.5	0.021586	360
FANCF	1.50	0.021597	360
ANAPC7	1.50	0.021732	360
TCHP	1.50	0.022475	360
DVL3	1.50	0.022594	360
PSMB5	1.50	0.023292	360
PCNA	1.50	0.023368	360
ASF1A	1.50	0.024190	360
CPNE1	1.50	0.024210	360
RNASEH1	1.49	0.024661	360
DEDD	1.49	0.024884	360
NAE1	1.49	0.025059	360
DPF2	1.49	0.025342	360
UBE2O	1.49	0.025871	360
AGPS	1.49	0.026993	360
H3F3A	1.49	0.027916	360
FIGNL1	1.48	0.026747	360
SLC38A6	1.48	0.026822	360
PRKDC	1.48	0.027270	360
POLE2	1.48	0.027450	360
SQLE	1.48	0.027924	360
CNOT10	1.48	0.028151	360
DNMT1	1.48	0.028350	360
SNX5	1.48	0.028626	360
C4orf46	1.48	0.028647	360
METTL6	1.48	0.028813	360

Oncogene	HR	p-value	N
DEK	1.48	0.029079	360
TPR	1.48	0.029757	360
SF3B1	1.48	0.030374	360
WDSUB1	1.47	0.029298	360
TOPBP1	1.47	0.029425	360
COPS7B	1.47	0.029550	360
SLC4A1AP	1.47	0.030062	360
EIF2B4	1.47	0.030141	360
NOL11	1.47	0.030726	360
ITGB3BP	1.47	0.030981	360
PTPDC1	1.47	0.031169	360
ACTR10	1.47	0.031329	360
TMCO1	1.47	0.031575	360
NCBP2	1.47	0.032696	360
PRKAA2	1.46	0.031617	360
MSTO1	1.46	0.032622	360
NPC1	1.46	0.033519	360
CNIH4	1.46	0.033581	360
CALU	1.46	0.033855	360
VPS8	1.46	0.033884	360
DYNLL1	1.46	0.034200	360
NUP107	1.46	0.034907	360
MCM5	1.46	0.035083	360
ADSL	1.46	0.035761	360
ANO10	1.45	0.035167	360
ARL8B	1.45	0.036124	360
ZFP64	1.45	0.036236	360
SDF2	1.45	0.036270	360
DNM1L	1.45	0.036374	360
RAP2A	1.45	0.036384	360
TFRC	1.45	0.036514	360
SAP130	1.45	0.036524	360
VPS45	1.45	0.037381	360
WDR55	1.45	0.037390	360
TTC27	1.45	0.037794	360
EXOSC2	1.45	0.038312	360
LARP4B	1.45	0.038348	360
SETDB1	1.45	0.038623	360
FAF1	1.45	0.039699	360
CDK5	1.45	0.039762	360
WNK1	1.44	0.039692	360
DLG5	1.44	0.039994	360
RBM12B	1.44	0.040101	360
EIF2S3	1.44	0.040317	360
C2orf44	1.44	0.040466	360
CSNK2A1	1.44	0.042146	360
UBAP2L	1.44	0.044350	360
VRK1	1.43	0.043041	360
POLR2H	1.43	0.043964	360
CHRAC1	1.43	0.044215	360