

RBPs for prognosis signature prediction in GC

Table S1. Primer sequence used in this study

Gene name	Forward primer	Reverse primer
ACTB	5'-CACCATTGGCAATGAGCGGTTC-3'	5'-AGGTCTTTGCGGATGTCCACGT-3'
HNRNPL	5'-TCGATCACCACGGATGTTCTT-3'	5'-AAGCGTGTAGGCTTTGCGT-3'
PABPN1	5'-GGAGCTGGAAGCTATCAAAGC-3'	5'-CCTGGAGGTGGACTCATATTCA-3'
PCF11	5'-GTTGGAAGAGAGTATCTCACTGC-3'	5'-GCTAGACGTATTCACATTGGGG-3'
SNRPN	5'-GCCGAATCTTCATTGGCACCTTT-3'	5'-TCTTCACGCTCTGGTTGCTTCG-3'
EEF1A2	5'-CCATGTGTGTGGAGAGCTTCTC-3'	5'-TCTCCACGTTCTTGATGACGCC-3'
MRPS5	5'-CTGTGGAAGGCGCTTAGC-3'	5'-TTCACCAATGATCTGACCCCT-3'

Table S2. Differentially expressed RBPs

gene ID	Ensembl ID	logFC
MIF	ENSG00000240972	4.616325982
TOP2A	ENSG00000131747	3.780138749
PCLAF	ENSG00000166803	2.909026111
KIF11	ENSG00000138160	2.828095106
ANPEP	ENSG00000166825	2.592736520
OAS3	ENSG00000111331	2.532086750
GNL3L	ENSG00000130119	2.394930327
OAS2	ENSG00000111335	2.260364170
OAS1	ENSG00000089127	2.259666074
KPNA2	ENSG00000182481	2.191198016
TTK	ENSG00000112742	2.068519883
PCNA	ENSG00000132646	2.064532744
TUBA1C	ENSG00000167553	1.972380080
KIF18A	ENSG00000121621	1.917793746
CDKN2A	ENSG00000147889	1.902969785
ESPL1	ENSG00000135476	1.887876525
CPS1	ENSG00000021826	1.789897773
ESRP1	ENSG00000104413	1.788758090
PTBP3	ENSG00000119314	1.786968807
APOBEC3B	ENSG00000179750	1.685290903
PABPC3	ENSG00000151846	1.668353769
PABPC1	ENSG00000070756	1.660865269
SNRPB	ENSG00000125835	1.613898815
GAPDH	ENSG00000111640	1.584521653
MEX3D	ENSG00000181588	1.561257398
IFIT3	ENSG00000119917	1.557153351
IGF2BP2	ENSG00000073792	1.535325206
HELZ2	ENSG00000130589	1.532080365
BRCA1	ENSG00000012048	1.510973055
SNRPD1	ENSG00000167088	1.483109456
IGF2BP3	ENSG00000136231	1.477366070
ZC3HAV1L	ENSG00000146858	1.463111431
MOCOS	ENSG00000075643	1.452246364
APOBEC1	ENSG00000111701	1.415989122
CASK	ENSG00000147044	1.415410801
RPL28	ENSG00000108107	1.414092246
RNASE6	ENSG00000169413	1.395210872
TUBB	ENSG00000196230	1.373873340

RBPs for prognosis signature prediction in GC

PFN1	ENSG00000108518	1.358413240
EIF2AK2	ENSG00000055332	1.348743065
AKAP17A	ENSG00000197976	1.348467930
NUP155	ENSG00000113569	1.346807169
SRPK1	ENSG00000096063	1.342565885
PLP2	ENSG00000102007	1.325721311
IER5L	ENSG00000188483	1.322065329
EZH2	ENSG00000106462	1.321904566
NXT2	ENSG00000101888	1.315857633
ZNFX1	ENSG00000124201	1.311757002
RPL22L1	ENSG00000163584	1.310904721
CSTF2	ENSG00000101811	1.289547926
PRKDC	ENSG00000253729	1.274612839
CAPRIN1	ENSG00000135387	1.241542365
RPP25	ENSG00000178718	1.230962338
MAZ	ENSG00000103495	1.229319139
FAM120A	ENSG00000048828	1.226802301
RPS21	ENSG00000171858	1.213074227
RBM47	ENSG00000163694	1.207467660
SSR1	ENSG00000124783	1.195441405
RPL39	ENSG00000198918	1.187617993
TRUB1	ENSG00000165832	1.185852379
IFIT2	ENSG00000119922	1.178894453
PATL1	ENSG00000166889	1.175041875
RSRC1	ENSG00000174891	1.171468008
SNRPB2	ENSG00000125870	1.165931778
MBNL3	ENSG00000076770	1.160002237
AIMP2	ENSG00000106305	1.154779808
TWISTNB	ENSG00000105849	1.152455517
TOP1	ENSG00000198900	1.144230602
DDX21	ENSG00000165732	1.131260099
ESF1	ENSG00000089048	1.122798413
POLR2K	ENSG00000147669	1.120274125
SPATS2L	ENSG00000196141	1.118545281
ASCC3	ENSG00000112249	1.116554595
WARS	ENSG00000140105	1.114064564
ZC3H13	ENSG00000123200	1.112378830
CCRN4L	ENSG00000151014	1.103450358
CAPG	ENSG00000042493	1.101818965
ZC3HAV1	ENSG00000105939	1.095593967
WDR43	ENSG00000163811	1.094079041
CFL1	ENSG00000172757	1.085746608
CTU1	ENSG00000142544	1.085431328
RPL23A	ENSG00000198242	1.081272651
KIF2A	ENSG00000068796	1.081112037
EIF6	ENSG00000242372	1.080196789
CAD	ENSG00000084774	1.068402517
SNRPF	ENSG00000139343	1.067720608
MRPL14	ENSG00000180992	1.049919302

RBPs for prognosis signature prediction in GC

IQGAP1	ENSG00000140575	1.049011091
ADAT1	ENSG00000065457	1.042422536
TMPO	ENSG00000120802	1.027480113
ZFP36L2	ENSG00000152518	1.025828039
A1CF	ENSG00000148584	1.014459224
KPNA3	ENSG00000102753	1.006785997
MRPS35	ENSG00000061794	1.006056703
LSM12	ENSG00000161654	1.002559199
MAP1S	ENSG00000130479	1.001714153
OASL	ENSG00000135114	1.001636952
DALRD3	ENSG00000178149	-1.001342234
SFSWAP	ENSG00000061936	-1.010418679
LRRFIP2	ENSG00000093167	-1.011389492
ABCF3	ENSG00000161204	-1.011816163
UNKL	ENSG00000059145	-1.014432598
SRRM2	ENSG00000167978	-1.015113563
PCF11	ENSG00000165494	-1.016758059
HNRNPL	ENSG00000104824	-1.018949233
RNASEH2C	ENSG00000172922	-1.022081588
MRPS25	ENSG00000131368	-1.025229201
SF3B2	ENSG00000087365	-1.029326564
GKAP1	ENSG00000165113	-1.037233457
MCAM	ENSG00000076706	-1.038100851
FNBP4	ENSG00000109920	-1.047688101
RPL3	ENSG00000100316	-1.057609154
RPS25	ENSG00000118181	-1.057609297
HABP4	ENSG00000130956	-1.057770014
SMAD9	ENSG00000120693	-1.065737823
FAM98C	ENSG00000130244	-1.068728919
SRP68	ENSG00000167881	-1.072442698
DUS1L	ENSG00000169718	-1.075515232
DZIP1	ENSG00000134874	-1.078483833
PRDX2	ENSG00000167815	-1.082253175
ZCCHC24	ENSG00000165424	-1.094368459
KHNYN	ENSG00000100441	-1.098960912
CPEB1	ENSG00000214575	-1.100570707
SREK1	ENSG00000153914	-1.104776762
DGCR8	ENSG00000128191	-1.107347716
ZRSR1	ENSG00000212643	-1.111987204
EXOSC7	ENSG00000075914	-1.114726925
RNF214	ENSG00000167257	-1.120780664
DUSP1	ENSG00000120129	-1.122949224
RPUSD4	ENSG00000165526	-1.124053188
RPL24	ENSG00000114391	-1.124448919
PNN	ENSG00000100941	-1.128915968
YBX3	ENSG00000060138	-1.133205695
ENO3	ENSG00000108515	-1.133943228
TRMT2A	ENSG00000099899	-1.134265998
VAR52	ENSG00000137411	-1.136219092

RBPs for prognosis signature prediction in GC

IFRD1	ENSG00000006652	-1.136303582
LUC7L3	ENSG00000108848	-1.139296412
DDX42	ENSG00000198231	-1.156036735
KHDRBS3	ENSG00000131773	-1.164175577
PPWD1	ENSG00000113593	-1.166196155
RBM20	ENSG00000203867	-1.168551751
RBPMS	ENSG00000157110	-1.170810166
UPF3A	ENSG00000169062	-1.182980948
RPSA	ENSG00000168028	-1.183567962
TIMM44	ENSG00000104980	-1.204468629
RPL26	ENSG00000161970	-1.208759051
RPS16	ENSG00000105193	-1.214222057
MTERF4	ENSG00000122085	-1.214515832
FIP1L1	ENSG00000145216	-1.220495176
NSA2	ENSG00000164346	-1.221942663
DDX3Y-	ENSG00000067048	-1.229846910
RSRC2	ENSG00000111011	-1.236127166
NOL3	ENSG00000140939	-1.237009104
MRPS6	ENSG00000243927	-1.237231750
AKR1B1	ENSG00000085662	-1.237277781
C11orf58	ENSG00000110696	-1.245626594
PCBP4	ENSG00000090097	-1.251727031
EEF1D	ENSG00000104529	-1.253346870
RPLP1	ENSG00000137818	-1.256042596
CAPRIN2	ENSG00000110888	-1.260259924
ADARB1	ENSG00000197381	-1.263713353
WDR83	ENSG00000123154	-1.268084039
TRPT1	ENSG00000149743	-1.282488567
THOC1	ENSG00000079134	-1.283713908
ANG	ENSG00000214274	-1.292762298
NKX6-2	ENSG00000148826	-1.294552392
SPG20	ENSG00000133104	-1.296132917
HARS	ENSG00000170445	-1.299155062
EIF3L	ENSG00000100129	-1.315410291
MATR3	ENSG00000015479	-1.321112054
TOP3B	ENSG00000100038	-1.339719523
RPS4Y1	ENSG00000129824	-1.346938672
CSDC2	ENSG00000172346	-1.349408084
PTPRM	ENSG00000173482	-1.361638474
FGF2	ENSG00000138685	-1.369726811
QTRT1	ENSG00000213339	-1.373321530
L1CAM	ENSG00000198910	-1.379817265
SAFB	ENSG00000160633	-1.384041024
EIF1B	ENSG00000114784	-1.384679909
DDX26B	ENSG00000165359	-1.385280599
RPS13	ENSG00000110700	-1.387911154
HPSE2	ENSG00000172987	-1.394976075
RBM39	ENSG00000131051	-1.400040668
PTGS1	ENSG00000095303	-1.400657506

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HNRNPUL2	ENSG00000214753	-1.416150565
NXF1	ENSG00000162231	-1.417490958
EWSR1	ENSG00000182944	-1.419740147
PRPF39	ENSG00000185246	-1.425456258
RPL10	ENSG00000147403	-1.447258173
PCBP2	ENSG00000197111	-1.450334238
RPS27A	ENSG00000143947	-1.455386974
DDX17	ENSG00000100201	-1.456848495
CTIF	ENSG00000134030	-1.485382424
RAP1GAP2	ENSG00000132359	-1.501150227
NDRG1	ENSG00000104419	-1.501476804
WDR61	ENSG00000140395	-1.505101600
EIF2B4	ENSG00000115211	-1.514657591
SUGP2	ENSG00000064607	-1.517801795
GATB	ENSG00000059691	-1.537233085
DRG2	ENSG00000108591	-1.545938156
SDHA	ENSG00000073578	-1.575015171
SPARCL1	ENSG00000152583	-1.591361752
METTL3	ENSG00000165819	-1.595485901
HNRNPH1	ENSG00000169045	-1.599533276
WIPF3	ENSG00000122574	-1.600966650
MRPS5	ENSG00000144029	-1.619964609
SRSF9	ENSG00000111786	-1.621080801
WDR19	ENSG00000157796	-1.629942646
EPHB6	ENSG00000106123	-1.634397189
RPL34	ENSG00000109475	-1.638581769
HIP1R	ENSG00000130787	-1.642950635
EIF3G	ENSG00000130811	-1.643036820
REXO2	ENSG00000076043	-1.647302960
KIAA0391	ENSG00000100890	-1.652030440
CLK4	ENSG00000113240	-1.700558827
LARP6	ENSG00000166173	-1.742770428
TUT1	ENSG00000149016	-1.750415458
PDCD4	ENSG00000150593	-1.751064128
MYEF2	ENSG00000104177	-1.795808329
EIF4A2	ENSG00000156976	-1.809176877
AFF3	ENSG00000144218	-1.817523556
CLASRP	ENSG00000104859	-1.842135493
PABPN1	ENSG00000100836	-1.857077442
SNRPN	ENSG00000128739	-1.864782066
PAN2	ENSG00000135473	-1.869587528
PRPF40B	ENSG00000110844	-1.948260521
PPAN	ENSG00000130810	-1.960202878
AKAP8L	ENSG00000011243	-1.982599571
RPL9	ENSG00000163682	-1.996051867
ZGPAT	ENSG00000197114	-1.996446683
VKORC1	ENSG00000167397	-2.005882106
PSMD9	ENSG00000110801	-2.045059573
SARS2	ENSG00000104835	-2.049979488
ARHGEF28	ENSG00000214944	-2.054174771

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SIDT2	ENSG00000149577	-2.086031483
LUC7L	ENSG00000007392	-2.094979656
CLK1	ENSG00000013441	-2.095794644
RASD1	ENSG00000108551	-2.119030825
SNRNP70	ENSG00000104852	-2.129182590
RBM6	ENSG00000004534	-2.129798401
PAIP2B	ENSG00000124374	-2.152251356
OBSL1	ENSG00000124006	-2.158659894
LAMA2	ENSG00000196569	-2.170359947
SRSF5	ENSG00000100650	-2.172722112
MRPL46	ENSG00000259494	-2.175444195
RBM5	ENSG00000003756	-2.175649321
GLTSCR2	ENSG00000105373	-2.190032289
U2AF1L4	ENSG00000161265	-2.198950647
ZMAT5	ENSG00000100319	-2.255857690
PTRH1	ENSG00000187024	-2.281115845
HSPB8	ENSG00000152137	-2.319452253
RBPM52	ENSG00000166831	-2.360506693
RPS19BP1	ENSG00000187051	-2.366509504
EEF1A2	ENSG00000101210	-2.374326718
CIRBP	ENSG00000099622	-2.384140637
IPO4	ENSG00000196497	-2.386449010
NDRG2	ENSG00000165795	-2.389290213
AZGP1	ENSG00000160862	-2.451177416
APOBEC2	ENSG00000124701	-2.492289244
CELF6	ENSG00000140488	-2.502476247
CTAGE5	ENSG00000150527	-2.578420036
MRPL38	ENSG00000204316	-2.595650246
RBM4	ENSG00000173933	-2.833868810
MRPS24	ENSG00000062582	-3.126963746
AARSD1	ENSG00000266967	-3.369139778
ANKHD1	ENSG00000131503	-3.478214046
PSMA6	ENSG00000100902	-3.515921976
MYH11	ENSG00000133392	-3.624940586
RPL17	ENSG00000265681	-3.650876147
TXNDC5	ENSG00000239264	-3.664767164
RNASEK	ENSG00000219200	-3.756526270
AKAP2	ENSG00000241978	-3.918699989
RNASE4	ENSG00000258818	-4.379672757
SARNP	ENSG00000205323	-4.519438989
EIF4A1	ENSG00000161960	-5.240499775
ARL6IP4	ENSG00000182196	-6.028148457
EEF1G	ENSG00000254772	-7.938209368

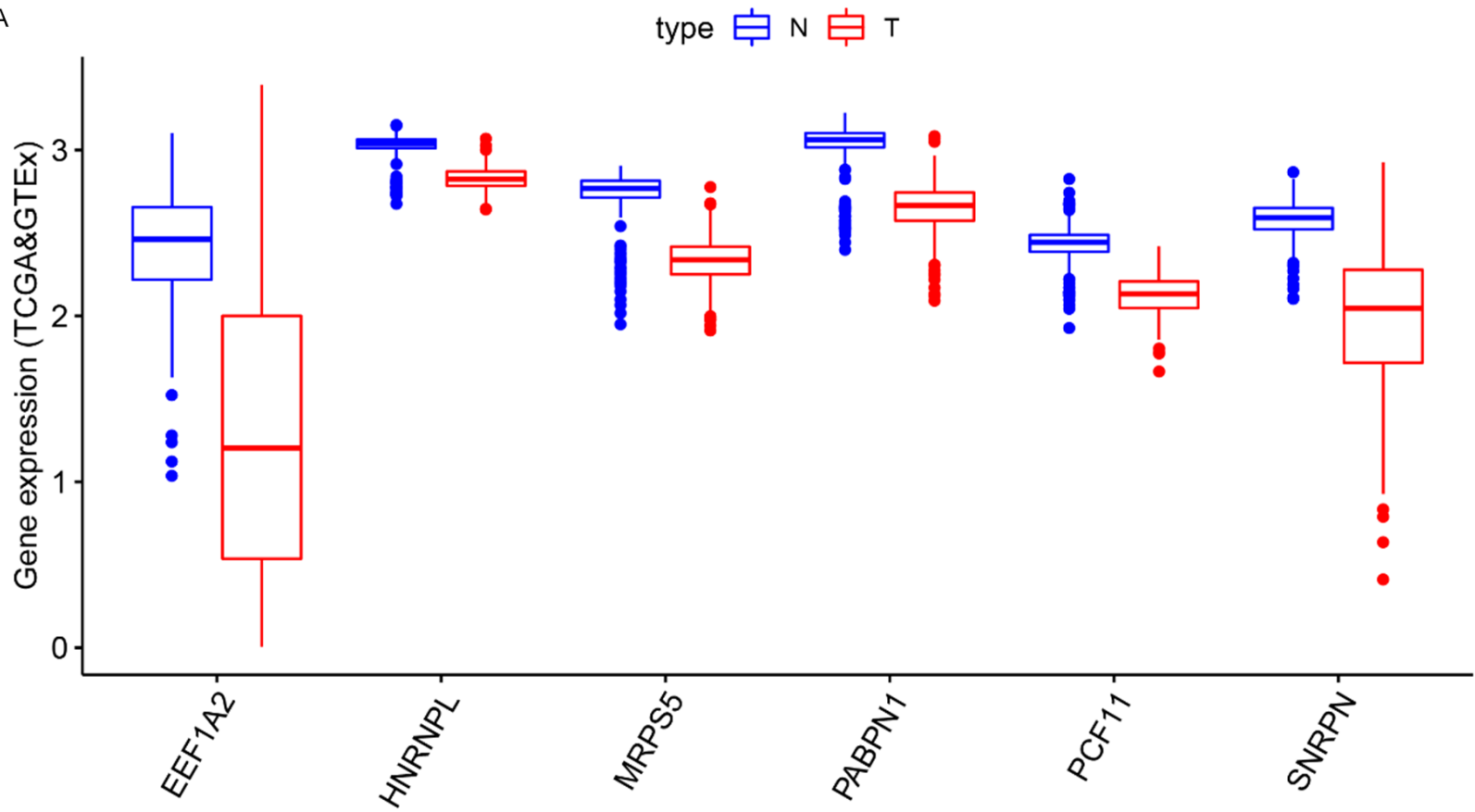
RBPs for prognosis signature prediction in GC

Table S3. GO and KEGG enrichment analysis of differentially expressed RBPs

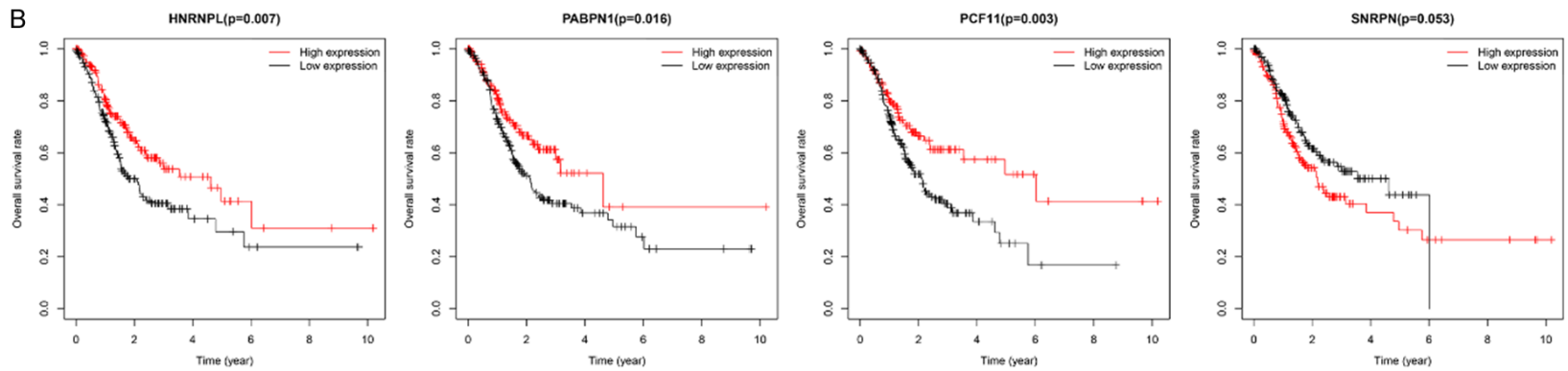
Category	Enrichment term	P Value	FDR
GO enrichment analysis for up-regulation RBPs			
GOTERM_BP_DIRECT	response to virus	5.92E-09	8.80E-06
GOTERM_BP_DIRECT	defense response to virus	2.02E-07	3.00E-04
GOTERM_BP_DIRECT	negative regulation of viral genome replication	2.01E-06	2.98E-03
GOTERM_BP_DIRECT	RNA splicing	2.53E-06	3.76E-03
GOTERM_BP_DIRECT	type I interferon signaling pathway	2.11E-05	3.13E-02
GOTERM_CC_DIRECT	cytoplasm	4.17E-09	5.07E-06
GOTERM_CC_DIRECT	nucleus	4.69E-09	5.70E-06
GOTERM_CC_DIRECT	nucleoplasm	3.06E-08	3.72E-05
GOTERM_CC_DIRECT	cytosol	6.98E-08	8.49E-05
GOTERM_CC_DIRECT	nucleolus	1.37E-07	1.67E-04
GOTERM_MF_DIRECT	poly(A) RNA binding	1.88E-23	2.37E-20
GOTERM_MF_DIRECT	RNA binding	4.66E-09	5.88E-06
GOTERM_MF_DIRECT	2'-5'-oligoadenylate synthetase activity	6.04E-07	7.62E-04
GOTERM_MF_DIRECT	double-stranded RNA binding	9.09E-07	1.15E-03
GOTERM_MF_DIRECT	nucleotide binding	1.78E-05	2.25E-02
GO enrichment analysis for down-regulation RBPs			
GOTERM_BP_DIRECT	translational initiation	6.11E-17	1.67E-13
GOTERM_BP_DIRECT	mRNA processing	6.56E-16	9.99E-13
GOTERM_BP_DIRECT	mRNA splicing, via spliceosome	4.56E-14	6.82E-11
GOTERM_BP_DIRECT	SRP-dependent cotranslational protein targeting to membrane	3.34E-13	5.01E-10
GOTERM_BP_DIRECT	RNA processing	5.23E-13	7.83E-10
GOTERM_BP_DIRECT	nuclear-transcribed mRNA catabolic process, nonsense-mediated decay	5.78E-13	8.66E-10
GOTERM_BP_DIRECT	translation	5.26E-12	7.88E-09
GOTERM_BP_DIRECT	RNA splicing	6.36E-12	9.53E-09
GOTERM_BP_DIRECT	viral transcription	6.21E-11	9.31E-08
GOTERM_BP_DIRECT	rRNA processing	2.65E-09	3.97E-06
GOTERM_BP_DIRECT	mRNA 3'-end processing	8.52E-06	1.28E-02
GOTERM_BP_DIRECT	mRNA splice site selection	1.85E-05	2.76E-02
GOTERM_BP_DIRECT	mitochondrial translation	2.40E-05	3.59E-02
GOTERM_CC_DIRECT	nuclear speck	2.56E-12	3.17E-09
GOTERM_CC_DIRECT	nucleoplasm	2.08E-11	2.57E-08
GOTERM_CC_DIRECT	ribosome	2.47E-10	3.06E-07
GOTERM_CC_DIRECT	nucleus	1.23E-08	1.52E-05
GOTERM_CC_DIRECT	cytoplasm	1.86E-07	2.30E-04
GOTERM_CC_DIRECT	U2-type prespliceosome	2.87E-07	3.56E-04
GOTERM_CC_DIRECT	nucleolus	5.27E-07	6.53E-04
GOTERM_CC_DIRECT	U1 snRNP	5.32E-07	6.59E-04
GOTERM_CC_DIRECT	cytosolic large ribosomal subunit	2.27E-06	2.82E-03
GOTERM_CC_DIRECT	cytosolic small ribosomal subunit	3.91E-06	4.84E-03
GOTERM_MF_DIRECT	RNA binding	9.73E-34	1.25E-30
GOTERM_MF_DIRECT	poly(A) RNA binding	6.65E-32	8.54E-29
GOTERM_MF_DIRECT	nucleotide binding	5.33E-18	6.85E-15
GOTERM_MF_DIRECT	structural constituent of ribosome	6.10E-11	7.83E-08
GOTERM_MF_DIRECT	mRNA binding	3.95E-08	5.07E-05
GOTERM_MF_DIRECT	nucleic acid binding	8.76E-08	1.13E-04
KEGG enrichment analysis for dysregulated RBPs			
KEGG PATHWAY	Ribosome	1.20E-17	1.51E-15
KEGG PATHWAY	RNA transport	9.46E-10	5.96E-08
KEGG PATHWAY	Spliceosome	5.83E-08	2.45E-06
KEGG PATHWAY	mRNA surveillance pathway	1.23E-07	3.87E-06
KEGG PATHWAY	RNA degradation	3.62E-05	9.11E-04
KEGG PATHWAY	Ribosome biogenesis in eukaryotes	1.37E-04	2.88E-03
KEGG PATHWAY	Aminoacyl-tRNA biosynthesis	1.66 E-04	2.99E-03
KEGG PATHWAY	Influenza A	5.53 E-04	8.70E-03

RBPs for prognosis signature prediction in GC

A



B



RBPs for prognosis signature prediction in GC

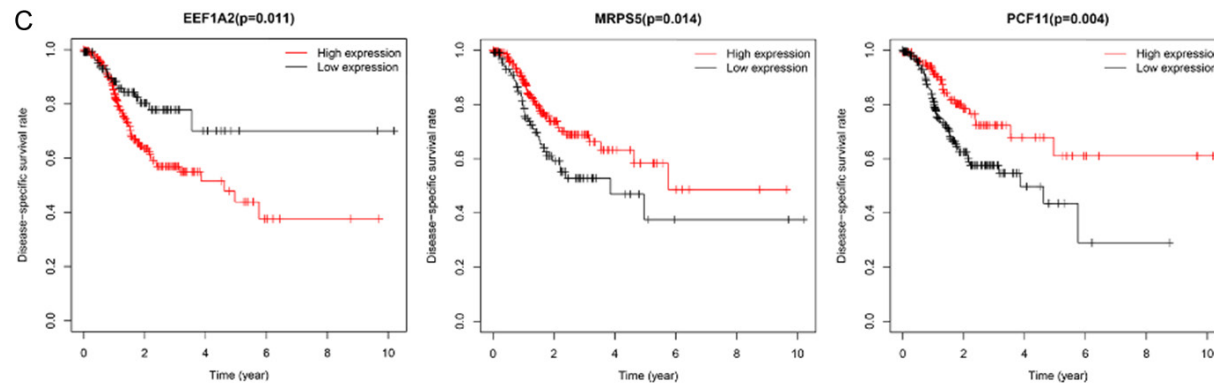


Figure S1. TCGA combined with GTEx database to analyze the expression and prognosis of OS and DSS-related hub RBP. A. The expression of six hub RBPs in gastric cancer tissues was lower than that in normal tissues. B. The relationship between OS-related hub RBPs and the overall survival. C. The relationship between DSS-related hub RBPs and disease-specific survival.