

Table S1 The list of oncogenes

Oncogenes

A1CF
 ABL1
 ABL2
 ACKR3
 ACVR1
 AFF3
 AFF4
 AKT1
 AKT2
 AKT3
 ALK
 AR
 ARAF
 ARHGAP5
 ATF1
 BCL11A
 BCL2
 BCL2L12
 BCL3
 BCL6
 BCL9
 BIRC6
 BRAF
 BRD3
 BRD4
 CACNA1D
 CALR
 CARD11
 CCND1
 CCND2
 CCND3
 CCNE1
 CCR4
 CCR7
 CD28
 CD74
 CD79A
 CD79B
 CDH17
 CDK4
 CDK6
 CHD4
 CHST11
 CREB1
 CREB3L2
 CRLF2
 CRTC1
 CSF1R
 CSF3R
 CTNNA2
 CTNNB1
 CTNND2
 CXCR4
 CYSLTR2
 DDIT3
 DDR2
 DDX5
 DDX6
 DEK
 DGCR8
 EGFR
 ELK4
 ERBB2
 ERBB3
 ERG
 ETV1
 ETV4
 ETV5
 EWSR1
 FCGR2B
 FCRL4
 FEV
 FGFR1
 FGFR2
 FGFR3
 FGFR4
 FLI1
 FLT3
 FLT4
 FOXA1
 FOXP1
 FOXR1
 FSTL3
 FUBP1
 GATA2
 GLI1
 GNA11
 GNAQ
 GNAS
 GRM3
 H3F3A
 H3F3B
 HEY1
 HIF1A
 HIP1
 HIST1H3B
 HLF
 HMGA1
 HMGA2
 HNRNP2B1
 HOXA13
 HOXC11
 HOXC13
 HOXD11
 HOXD13
 HRAS
 IDH1
 IDH2
 IKBKB
 IL6ST
 IL7R
 JAK2
 JAK3
 JUN
 KAT6A
 KAT7
 KCNJ5
 KDM5A
 KDR
 KIT
 KMT2A
 KNSTRN
 KRAS
 LCK
 LMO1
 LMO2
 LPP
 LYL1
 MAF
 MAFB
 MALT1
 MAML2
 MAP2K1
 MAP2K2
 MAPK1
 MDM2
 MDM4
 MECOM
 MET
 MITF
 MLLT10
 MLLT4
 MN1
 MPL
 MSI2
 MTCP1
 MTOR
 MUC16
 MUC4
 MYB
 MYC
 MYCN
 MYD88
 MYOD1
 NCOA2
 NFATC2
 NPM1
 NR4A3
 NRAS
 NT5C2
 NTRK3
 NUP98
 NUTM1
 OLI2
 P2RY8
 PAX3
 PBX1
 PDCD1LG2
 PDGFB
 PDGFRA
 PDGFRB
 PIK3CA
 PIK3CB
 PIM1
 PLAG1
 PLAGL1
 POU2AF1
 POU5F1
 PPM1D
 PRDM16
 PREX2
 PRKACA
 PSIP1
 PTPN11
 RAC1
 RAF1
 RAP1GDS1
 RARA
 REL
 RET
 ROS1
 RSPO3
 SALL4
 SET
 SETBP1
 SF3B1
 SGK1
 SH3GL1
 SIX1
 SIX2
 SKI
 SMO
 SND1
 SOX2
 SRC
 SRSF2
 SRSF3
 SSX1
 SSX2
 SSX4
 STAT3
 STAT6
 STIL
 SYK
 TAF15
 TAL1
 TAL2
 TCF7L2
 TCL1A
 TEC
 TFE3
 TFEB
 TLX1
 TLX3
 TNC
 TNFRSF17
 TRIM27
 TRRAP
 TSHR
 U2AF1
 USP6
 USP8
 WAS
 WHSC1
 WHSC1L1
 WWTR1
 XPO1
 ZEB1
 ZNF521

Table S2 The list of tumor suppressor genes

Tumor suppressor genes (TSG)

ABI1
 ACVR2A
 AMER1
 APC
 ARHGAP26
 ARHGEF10
 ARHGEF10L
 ARHGEF12
 ARID1A
 ARID1B
 ARID2
 ASXL1
 ASXL2
 ATM
 ATP2B3
 ATR
 ATRX
 AXIN1
 AXIN2
 B2M
 BAP1
 BARD1
 BAX
 BAZ1A
 BCL10
 BCOR
 BLM
 BRCA1
 BRCA2
 BRIP1
 BTG1
 BUB1B
 CAMTA1
 CARS
 CASC5
 CASP3
 CASP8
 CASP9
 CBFA2T3
 CBFB
 CBLB
 CCDC6
 CCNB1IP1
 CCNC
 CD274
 CDC73
 CDH1
 CDH10
 CDH11
 CDK12
 CDKN1B
 CDKN2A
 CDKN2C
 CDX2
 CEBPA
 CHD2
 CHEK2
 CITA
 CLTC
 CLTCL1
 CNBP
 CNOT3
 CNTNAP2
 CPEB3
 CREB3L1
 CSMD3
 CTCF
 CUL3
 CYLD
 DDX10
 DDX3X
 DICER1
 DNMT2
 DNMT3A
 DROSHA
 EBF1
 EED
 EIF3E
 ELF3
 ELL
 EP300
 EPS15
 ERCC2
 ERCC3
 ERCC4
 ERCC5
 ETNK1
 ETV6
 EXT1
 EXT2
 FAM46C
 FANCA
 FANCC
 FANCD2
 FANCE
 FANCF
 FANCG
 FAS
 FAT1
 FAT4
 FBLN2
 FBXO11
 FBXW7
 FEN1
 FH
 FHIT
 FLCN
 FUS
 GPC5
 GRIN2A
 HNF1A
 ID3
 IGF2BP2
 IKZF1
 KAT6B
 KDM5C
 KEAP1
 KLF6
 KMT2C
 LARP4B
 LEPROTL1
 LRIG3
 LRP1B
 LZTR1
 MAX
 MED12
 MEN1
 MGMT
 MLF1
 MLH1
 MSH2
 MSH6
 MUTYH
 MYH9
 N4BP2
 NAB2
 NBN
 NCOA4
 NCOR1
 NCOR2
 NDRG1
 NF1
 NF2
 NFKBIE
 NRG1
 NTHL1
 PALB2
 PBRM1
 PER1
 PHF6
 PHOX2B
 PIK3R1
 PML
 PMS2
 POLD1
 POLE
 POLG
 POT1
 PPARG
 PPP2R1A
 PPP6C
 PRDM1
 PRDM2
 PRF1
 PTCH1
 PTEN
 PTPN13
 PTPN6
 PTPRB
 PTPRC
 PTPRD
 PTPRK
 PTPRT
 RAD17
 RAD51B
 RANBP2
 RB1
 RBM10
 RFWB3
 RHOB
 RMI2
 RNF43
 ROBO2
 RPL10
 RPL22
 RPL5
 RSPO2
 SBDS
 SDHA
 SDHAF2
 SDHB
 SDHC
 SDHD
 SETD1B
 SETD2
 SFPQ
 SFRP4
 SH2B3
 SIRPA
 SLC34A2
 SMAD2
 SMAD3
 SMAD4
 SMARCA4
 SMARCB1
 SMARCD1
 SMARCE1
 SMC1A
 SOCS1
 SOX21
 SPEN
 SPOP
 STAG1
 STAG2
 STK11
 SUFU
 TET2
 TGFBR2
 TMEM127
 TNFAIP3
 TNFRSF14
 TPM3
 TRAF7
 TRIM33
 TSC1
 TSC2
 UBR5
 USP44
 VHL
 WIF1
 WNK2
 WRN
 XPA
 XPC
 YWHAE
 ZBTB16
 ZFX3
 ZMYM3
 ZNF278
 ZNF331
 ZNRF3
 ZRSR2

Table S3 The list of ambiguously annotated genes

Ambiguously annotated genes

APOBEC3B
ATP1A1
BCL9L
BCORL1
BMPR1A
BTK
CBLC
CDKN1A
CUX1
DAXX
DDB2
EPAS1
ERBB4
EZH2
FES
FOXL2
GATA1
GATA3
GPC3
IRS4
JAK1
KDM6A
KLF4
KMT2D
LEF1
MAP2K4
MAP3K1
MAP3K13
NFE2L2
NKX2-1
NOTCH2
PABPC1
POLQ
PTK6
QKI
RAD21
RECQL4
RHOA
TBX3
TERT
TP63
