Supplementary Table 1 (A)

Mutations that were only identified by CCLE in the comparision of sequencing data of 1630 genes across 568 cell lines from CCLE and COSMIC .

Gene	Mutation [cell line]	Mutation [cell line]	Mutation [cell line]
ABI1	p.G331A [1] [A4FUK] p.D508V [1] [LNCAPCLONEFGC]	p.P416L [1] [HCC1954]	p.G331A [1] [JHOS4]
ABL1	p.Y234H [1] [639V]	p.R13K [1] [HCC2157]	
ABL2	p.R135Q [1] [LNCAPCLONEFGC]	p.Y399C [1] [NCIH1623]	p.E684K [1] [SNU1040]
AKAP9	p.E943G [1] [ISHIKAWAHERAKLIO02ER] p.S1848C [1] [MOLM13]	p.Q1352E [1] [J82] p.K677N [1] [NAMALWA]	p.R3712Q [1] [MKN7]
AKT1	p.R249W [1] [DMS114]	p.V145M [1] [SNU1040]	
AKT2	p.Y273H [1] [ISHIKAWAHERAKLIO02ER]	p.G161E [1] [VMRCLCD]	
ALK	p.M1478T [1] [KP3] p.G129V [1] [OVTOKO]	p.P236R [1] [MDAMB415] p.G103R [1] [SW900]	p.S553A [1] [NCIH2087]
APC	p.G470R [1] [CW2] p.S2260N [1] [JHH1]	p.S1567L [1] [HGC27] p.A2V [1] [SNGM]	p.G2211C [1] [HT] p.T2635P [1] [TT]
ARHGEF12	p.R993H [1] [HCT15]	p.L1174W [1] [T98G]	p.A624V [1] [TT]
ARID1A	p.D2277G [1] [MFE319]	p.P253S [1] [SHP77]	p.Q177H [1] [SUDHL5]
ARNT	p.T118A [1] [DAUDI] p.P706L [1] [JHH2] p.P706L [1] [SNU387] p.P706L [1] [YKG1]	p.P706L [1] [HSC4] p.P706L [1] [KYSE410] p.P706L [1] [SNU398]	p.P706L [1] [HUCCT1] p.P706L [1] [OSRC2] p.R235C [1] [TGBC11TKB]
ASPSCR1	p.S607F [1] [MDAMB361]	p.A95V [1] [REH]	
ATF1	p.I67F [1] [KM12]		
ATIC	p.L244F [1] [BHY]	p.K199E [1] [KOPN8]	p.K199E [1] [KYM1]
ATM	p.F2265L [1] [IPC298] p.K2515N [1] [PF382]	p.R924W [1] [KYSE410] p.D273N [1] [RD]	p.C107R [1] [LS411N]
ATRX	p.P609A [1] [BFTC905] p.S336P [1] [L1236]	p.P667L [1] [HCC1143] p.M2230T [1] [REH]	p.R1339M [1] [ISHIKAWAHERAKLIO02ER] p.P609A [1] [VMCUB1]
AXIN1	p.L202V [1] [HCC1599]	p.D495N [1] [KCL22]	p.P278L [1] [SW1783]
BAP1	p.R512L [1] [CALU6] p.G13D [1] [SNGM]	p.R208Q [1] [CW2]	p.R417M [1] [SNGM]
BCL11B	p.G207R [1] [COLO792]	p.S97I [1] [MEG01]	p.H528N [1] [NCIH2172]
BCL3	p.R216H [1] [EFO27]	p.A209T [1] [IGROV1]	p.G453D [1] [SNU1040]
BCL6	p.S512N [1] [SW48]		
BCL9	p.S1124P [1] [IGROV1]	p.G434A [1] [KMS11]	p.L883P [1] [SNGM]
BCR	p.E34D [1] [DB] p.S381N [1] [NCIH810] p.R55C [1] [SW948]	p.T875A [1] [LS411N] p.D1106N [1] [OAW28]	p.R22L [1] [MIAPACA2] p.D1106N [1] [ONS76]

BLM	p.P5H [1] [MOGGUVW] p.D64V [1] [SU8686]	p.S1209T [1] [OE33]	p.R818H [1] [PF382]
BMPR1A	p.T33S [1] [SJSA1]	p.W271R [1] [U87MG]	
BRAF	p.P74A [1] [MDAMB415]		
BRCA1	p.Q687P [1] [HT]		
BRCA2	p.D596H [1] [HT1080] p.A75P [1] [NCIH1341]	p.S3080Y [1] [HT115] p.V1306G [1] [SIMA]	p.G1529R [1] [MFE319] p.P2735S [1] [UACC257]
BRD3	p.G717R [1] [EFO27] p.E475K [1] [SNU175]	p.R278Q [1] [HCT15] p.A478T [1] [SNU81]	p.E496D [1] [KMS12BM] p.T544N [1] [TE4]
BRD4	p.D818Y [1] [647V] p.R510Q [1] [MELJUSO]	p.E844Q [1] [CAMA1] p.P904L [1] [MEWO]	p.N852H [1] [LS123] p.A751T [1] [SNGM]
BRIP1	p.S861C [1] [HCC1599]	p.Q944E [1] [JHH1]	p.P210H [1] [RPMI7951]
BUB1B	p.E409D [1] [LN18]	p.E409D [1] [NCIH2452]	p.N268D [1] [NUGC3]
C15orf55	p.V3F [1] [EM2] p.R231H [1] [SW900]	p.G613W [1] [IGROV1] p.L1056V [1] [UACC893]	p.A1104S [1] [NCIH2122]
CARD11	p.R891L [1] [CAL120] p.E566G [1] [NCIH358]	p.T670M [1] [CALU6]	p.P467S [1] [NCIH2110]
CARS	p.A408T [1] [CMLT1] p.P57L [1] [SF126]	p.Q695R [1] [KP1N] p.A555V [1] [SNU1040]	p.L321F [1] [NB1] p.L394M [1] [SW948]
CBFA2T3	p.Q267E [1] [KCL22] p.A512T [1] [NCIH1975]	p.E442K [1] [KYSE150]	p.R414Q [1] [KYSE180]
CBL	p.T426A [1] [IGROV1] p.V784M [1] [RL952]	p.S854L [1] [MDAMB415]	p.V784L [1] [NCIH2342]
CCDC6	p.S18N [1] [AGS]		
CCNB1IP1	p.S251R [1] [EN]		
CCND1	p.E122K [1] [HSC4]		
CCND3	p.I290K [1] [A4FUK] p.I290T [1] [SUDHL10]	p.I290T [1] [DOHH2]	p.P284L [1] [ST486]
CDH1	p.A298T [1] [CW2]	p.P94T [1] [LNCAPCLONEFGC]	
CDH11	p.L630H [1] [IGROV1] p.D790E [1] [RERFLCSQ1]	p.H161Y [1] [L363]	p.D794E [1] [MDAMB415]
CDK12	p.P250H [1] [HCT116]		
CDK4	p.K22Q [1] [ES2]	p.P110L [1] [LNCAPCLONEFGC]	
CDKN2A	p.P135L [1] [HSC4] p.S21T [1] [OVCAR4]	p.R128S [1] [LXF289]	p.R161L [1] [NAMALWA]
CDKN2C	p.L107V [1] [SH4]		
CDX2	p.K248E [1] [AM38] p.L201Q [1] [RPMI8226]	p.V306M [1] [MHHNB11]	p.V32I [1] [NCIH650]

Gene			
CHEK2	p.L269F [1] [NALM6]		
CIC	p.N702S [1] [KS1]	p.S694C [1] [LN229]	p.A1521T [1] [LOVO]
	p.R181W [1] [SNGM]	p.P1102L [1] [SNU1040]	p.N702S [1] [TE5]
CIITA	p.H239Y [1] [CA46]		
CLTC	p.Q1087H [1] [KYSE410]		
CLTCL1	p.A1306S [1] [DETROIT562]	p.T103N [1] [HCC2157]	p.E124K [1] [HCC2218]
	p.C151R [1] [ISHIKAWAHERAKLIO02ER]	p.L1527R [1] [LOUCY]	p.V1401I [1] [MHHNB11]
	p.M104I [1] [REH]	p.A1214T [1] [SNU175]	
COL1A1	p.N324H [1] [CALU3]	p.F1463L [1] [HCC1954]	p.A723T [1] [NCIH211]
CREBBP	p.S1598G [1] [ESS1]	p.P1952L [1] [HT115]	p.R1664C [1] [KM12]
	p.R2194Q [1] [LS411N]	p.W1472C [1] [NCIH1703]	p.H67R [1] [NCIH2009]
	p.P1952L [1] [OV56]	p.S1432P [1] [PF382]	p.N1813D [1] [SKMEL2]
	p.T244M [1] [SNGM]	p.R1091H [1] [SNU1040]	p.P2237T [1] [SNU175]
	p.Q2196L [1] [YH13]		
CTNNB1	p.R661Q [1] [639V]		
CYLD	p.W16R [1] [SNGM]		
DAXX	p.R717W [1] [42MGBA]		
DDX10	p.G578A [1] [769P]	p.N579S [1] [EB2]	
DDX6	p.V406A [1] [HCT15]	p.I209V [1] [S117]	
EGFR	p.Q71L [1] [HCC33]	p.R973Q [1] [ISHIKAWAHERAKLIO02ER]	p.A755D [1] [LOUNH91]
	p.E282K [1] [NCIH747]	p.L815F [1] [RS411]	p.R98Q [1] [SUDHL1]
ELF4	p.E303K [1] [HCC78]		
ELL	p.R316C [1] [CL34]	p.S319L [1] [CW2]	
ELN	p.G356S [1] [639V]	p.K107N [1] [BT549]	p.G693R [1] [HCC1428]
	p.G216V [1] [LOUNH91]		
EML4	p.D564N [1] [LOUCY]	p.T579K [1] [TE1]	
EP300	p.P595S [1] [EFO27]	p.P888S [1] [HCC2218]	p.G1778W [1] [LNCAPCLONEFGC]
	p.L2393V [1] [NB4]	p.A2251T [1] [NCIH2228]	p.E999Q [1] [OVCAR4]
	p.R2308H [1] [RL952]		
EPS15	p.D705N [1] [EN]		
ERBB2	p.R896H [1] [MFE319]		
ERCC2	p.E748K [1] [UACC812]		
ERCC3	p.L100F [1] [KARPAS620]		
ERCC4	p.K820E [1] [HCT15]	p.R463K [1] [OVISE]	
ERCC5	p.F1270L [1] [HCC1569]	p.L1023I [1] [LNCAPCLONEFGC]	p.E853K [1] [NCIH1568]
ETV1	p.L283M [1] [ISHIKAWAHERAKLIO02ER]		
EXT1	p.K4R [1] [COLO829]	p.A486V [1] [NB1]	p.R325Q [1] [TGBC11TKB]
EXT2	p.I748V [1] [LXF289]	p.I748V [1] [MOLT13]	p.T122M [1] [OPM2]

	p.T122M [1] [PC14]		
FANCA	p.P759S [1] [MEWO]	p.M569T [1] [PF382]	
FANCC	p.E218K [1] [MDAMB415]		
FANCD2	p.P87L [1] [OV56]	p.L700R [1] [SNGM]	
FANCE	p.G170W [1] [JHH7]	p.G340R [1] [NCIH716]	p.L331V [1] [PSN1]
FANCF	p.N244D [1] [PF382]		
FANCG	p.S302I [1] [NCIH1437]		
FEV	p.Q136K [1] [NB1]		
FGFR1	p.R424H [1] [HARA] p.V102I [1] [JEKO1] p.V102I [1] [NB1]	p.S125L [1] [HCC1395] p.R78H [1] [LNCAPCLONEFGC] p.V102I [1] [NUGC3]	p.T79A [1] [ISHIKAWAHERAKLIO02ER] p.V116I [1] [LS411N]
FGFR2	p.I643T [1] [A498] p.P814T [1] [PSN1]	p.C9S [1] [A498] p.C809Y [1] [RCHACV]	p.G89V [1] [CAL12T] p.P187S [1] [SNU1040]
FGFR3	p.V790M [1] [ES2]	p.V306I [1] [SNGM]	p.S773F [1] [SW780]
FHIT	p.M135T [1] [KURAMOCHI]		
FIP1L1	p.R481H [1] [IM95]	p.A455V [1] [SF126]	
FLT3	p.Y376C [1] [22RV1]		
FUS	p.A348T [1] [PF382]		
GAS7	p.A264S [1] [DU145]		
GATA1	p.P395L [1] [CORL23]	p.R317W [1] [SW1783]	
GATA2	p.G167S [1] [CMK] p.S464R [1] [NCIH1781] p.G468S [1] [SUPHD1]	p.P240S [1] [HCC1569] p.A411V [1] [PF382]	p.G273R [1] [MELJUSO] p.S261N [1] [SNU175]
GNAS	p.R632H [1] [JHH1]	p.R217C [1] [SKMEL1]	p.E747K [1] [SNU1040]
GOLGA5	p.Q557K [1] [HCC56] p.L556F [1] [LK2]	p.L556F [1] [HUCCT1]	p.L556F [1] [KCL22]
GOPC	p.A243T [1] [SNU1040]		
GPC3	p.P135T [1] [LNCAPCLONEFGC]		
GPHN	p.I53V [1] [UACC812]		
HIP1	p.L85M [1] [MFE296]	p.G852R [1] [NUGC4]	
HLF	p.D79N [1] [SNU1040]		
HMGA1	p.A70D [1] [LNCAPCLONEFGC]		
HOXC11	p.R71L [1] [SW48]		
HOXC13	p.A159T [1] [HCT15]		
HOXD13	p.A174T [1] [HT1080] p.N293K [1] [NCIH2342]	p.T111M [1] [IM95]	p.A157T [1] [NALM6]

IDH1	p.F32V [1] [ES2]		
IDH2	p.Q95R [1] [ISHIKAWAHERAKLIO02ER]	p.H358R [1] [SW1088]	
IKZF1	p.S364L [1] [A2780]	p.M518T [1] [LS411N]	p.R360H [1] [REH]
IL21R	p.R139C [1] [CADOES1]	p.R139C [1] [KP4]	p.R201W [1] [TT]
IL6ST	p.R345K [1] [639V]	p.K76E [1] [SKHEP1]	
IRF4	p.S238C [1] [HCT15]		
ITK	p.R448H [1] [IGROV1] p.Y422H [1] [SNU1040]	p.G271E [1] [KYSE520]	p.L104V [1] [NCIH1568]
JAK1	p.D82A [1] [EN]	p.I62V [1] [NCIH1915]	p.L166S [1] [SNU1040]
JAK2	p.V80M [1] [LS411N]		
JAK3	p.Q228R [1] [A172]		
KDM5A	p.S1066C [1] [KM12] p.R719C [1] [SNU1040]	p.R1282C [1] [KYSE520] p.K1168R [1] [T98G]	p.R606M [1] [NB1]
KDR	p.V1041L [1] [BECKER] p.E685G [1] [MOLT16]	p.G333V [1] [HS746T] p.I915V [1] [SKMEL30]	p.A1065T [1] [LNCAPCLONEFGC]
KIAA1549	p.P916H [1] [HCT15] p.Q1164K [1] [SCABER]	p.Q661R [1] [IGROV1]	p.V1314M [1] [RKO]
KRAS	p.G12D [1] [639V]	p.I171M [1] [SUDHL10]	
KTN1	p.Q1179H [1] [2313287]	p.I574V [1] [NCIH446]	p.R627C [1] [RCHACV]
LCK	p.R139Q [1] [KOPN8] p.Q328R [1] [SNUC5]	p.A143S [1] [LNCAPCLONEFGC]	p.A426T [1] [REH]
LIFR	p.N1096K [1] [BT20] p.S239N [1] [LNCAPCLONEFGC] p.I83V [1] [NCIH211]	p.D16N [1] [EFO21] p.N1096K [1] [ML1] p.W172C [1] [SNU1040]	p.I719L [1] [IGROV1] p.S151C [1] [NCIH209]
LMO2	p.K77R [1] [KCL22]		
LPP	p.P207L [1] [CGTHW1] p.R268W [1] [NCIH2126]	p.R415H [1] [HCC1143]	p.H590Y [1] [ISHIKAWAHERAKLIO02ER]
LYL1	p.R223G [1] [TT2609C02]		
MAF	p.A251T [1] [YAPC]		
MAFB	p.A130T [1] [CL34]	p.A176V [1] [NCIH1792]	p.P157L [1] [SNU1040]
MAML2	p.P370L [1] [GCT] p.M857V [1] [SKMEL1]	p.Q628L [1] [GI1]	p.T1074M [1] [S117]
MAP2K1	p.V211A [1] [PF382]		
MAP2K4	p.R145Q [1] [ISHIKAWAHERAKLIO02ER]		
MDM2	p.S4R [1] [NCIH2122]		
MDM4	p.E428K [1] [ISHIKAWAHERAKLIO02ER]	p.I19M [1] [LP1]	

MEN1	p.Y232H [1] [22RV1]	p.R485Q [1] [LOVO]	p.A242V [1] [NCIH209]
	p.G508D [1] [ONS76]		
MET	p.G24E [1] [TE441T]		
MITF	p.Q305H [1] [MM1S]		
MKL1	p.V441G [1] [5637]	p.N194S [1] [HCC1954]	p.G473R [1] [LS411N]
	p.R460L [1] [NCIH1793]	p.S439C [1] [SH4]	
MLH1	p.D132H [1] [HCC1428]	p.R217C [1] [RERFLCMS]	
MLL	p.V1433G [1] [EB2]	p.G3131S [1] [EBC1]	p.H3558R [1] [EN]
	p.G3131S [1] [IM95]	p.S2258G [1] [ISHIKAWAHERAKLIO02ER]	p.G3131S [1] [KURAMOCHI]
	p.G3131S [1] [NB1]	p.D3924Y [1] [NB1]	p.G3131S [1] [TE6]
	p.A3425V [1] [TGBC11TKB]	p.S759N [1] [UACC893]	p.I1827M [1] [UACC893]
MLL3	p.G892E [1] [CAKI1]	p.I862L [1] [COLO829]	p.P3082L [1] [HCC33]
	p.T831A [1] [HS766T]	p.R4725M [1] [ISHIKAWAHERAKLIO02ER]	p.T2605R [1] [LS411N]
	p.E3716K [1] [MDAMB415]	p.S888T [1] [NCIH1703]	p.D597H [1] [NCIH1781]
	p.E3406K [1] [NCIH209]	p.I1823T [1] [OVK18]	p.E3384G [1] [REH]
	p.R4595C [1] [RS411]	p.P860S [1] [SNU175]	p.G892E [1] [T47D]
	p.G892E [1] [T98G]		
MLLT1	p.R403H [1] [DND41]	p.A244V [1] [SNU1040]	
MLLT10	p.G483A [1] [MDAMB415]	p.D213E [1] [S117]	p.S842F [1] [SKNSH]
MLLT4	p.D1733N [1] [HT1376]	p.F744V [1] [ISHIKAWAHERAKLIO02ER]	p.L930P [1] [ISHIKAWAHERAKLIO02ER]
	p.P501L [1] [NCIH1436]	p.C964Y [1] [REH]	p.E1749A [1] [RL952]
	p.D1733N [1] [T47D]		
MLLT6	p.F532V [1] [ISHIKAWAHERAKLIO02ER]	p.R568Q [1] [ISHIKAWAHERAKLIO02ER]	p.S281F [1] [L540]
	p.C145Y [1] [MOLT13]	p.R475H [1] [NALM6]	p.S822C [1] [RERFLCKJ]
MN1	p.P594L [1] [DAUDI]	p.P121L [1] [JHH7]	p.M557V [1] [LOVO]
	p.L570Q [1] [MOGGUVW]	p.V719L [1] [MPP89]	p.P192L [1] [NALM6]
	p.G608C [1] [NCIH650]	p.G1131D [1] [NCIH716]	p.G840R [1] [RL952]
	p.R564W [1] [SNU1040]	p.A554V [1] [SNU1040]	p.P488L [1] [SNU1040]
	p.P668L [1] [SW1088]		
MPL	p.R537Q [1] [RL952]		
MSH2	p.F19L [1] [NCIH596]	p.Q419K [1] [SNU283]	p.Q419K [1] [TYKNU]
MSH6	p.V800L [1] [COLO829]	p.T1189I [1] [HCT15]	p.I1183T [1] [ISHIKAWAHERAKLIO02ER]
	p.E221D [1] [L363]	p.L1081F [1] [NCIH1781]	p.R1321G [1] [NCIH209]
	p.T1205I [1] [SNU1040]	p.E221D [1] [SW620]	
MSI2	p.Y129H [1] [EN]		
MSN	p.V188F [1] [RL]		
MYB	p.L300F [1] [HCC827]		
MYC	p.E54D [1] [RAJI]		
MYCL1	p.A125S [1] [NCIH2110]	p.M95I [1] [NCIH650]	
MYD88	p.S219C [1] [SUDHL6]		
MYH11	p.V1837I [1] [DAUDI]	p.R1740H [1] [DND41]	p.D1382N [1] [MDAMB453]
	p.L763P [1] [MOLT16]	p.R1869H [1] [NCIH1694]	p.S650Y [1] [NCIH1703]
	p.M1363L [1] [PF382]	p.T1553M [1] [SJSA1]	p.Q193E [1] [TE9]

MYH9	p.N1787S [1] [LNCAPCLONEFGC]	p.A27V [1] [LNCAPCLONEFGC]	p.G179D [1] [LS180]
	p.R755H [1] [PF382]	p.R1661H [1] [RKO]	p.E530K [1] [SNGM]
	p.K14E [1] [SNU1040]		
NACA	p.K1648R [1] [5637]	p.S1757P [1] [A253]	p.P649S [1] [A375]
	p.K1759E [1] [A673]	p.T1882R [1] [BFTC905]	p.P1225L [1] [CAS1]
	p.A1246V [1] [CMLT1]	p.P1503L [1] [COLO792]	p.P1343S [1] [COLO792]
	p.N1724T [1] [CW2]	p.A1171V [1] [CW2]	p.H215L [1] [DU145]
	p.I1716V [1] [EPLC272H]	p.A486V [1] [ESS1]	p.P131L [1] [G361]
	p.P1818S [1] [HCC1569]	p.V1858I [1] [HCT116]	p.W961L [1] [HCT15]
	p.T902I [1] [HCT15]	p.L158H [1] [HDMYZ]	p.P561S [1] [HT115]
	p.P471L [1] [HT115]	p.P1082H [1] [HUH7]	p.S617L [1] [JJN3]
	p.P1226L [1] [JM1]	p.P1320Q [1] [KASUMI1]	p.V1642E [1] [KCL22]
	p.P1628S [1] [KCL22]	p.P1029S [1] [KCL22]	p.P583T [1] [KNS42]
	p.T1058R [1] [KP2]	p.P649S [1] [KYSE180]	p.A1833T [1] [LCLC103H]
	p.P655S [1] [LS411N]	p.P1808L [1] [MEWO]	p.P1622L [1] [MFE319]
	p.T552A [1] [MFE319]	p.P426T [1] [MOLT16]	p.G816C [1] [NCIH1944]
	p.P1328L [1] [NCIH196]	p.G1300V [1] [NCIH2087]	p.S1236P [1] [NCIH2444]
	p.V371M [1] [NCIH526]	p.P1320A [1] [OAW28]	p.G1300V [1] [PANC1005]
	p.K1568R [1] [RERFLCMS]	p.S1650C [1] [RL952]	p.P48S [1] [RT112]
	p.P1329H [1] [SKMEL2]	p.P1772R [1] [SNU1040]	p.P1465S [1] [SNU1040]
	p.V34I [1] [SNU1040]	p.S713P [1] [SNU175]	p.L415I [1] [SNU81]
	p.G952E [1] [SUPHD1]	p.T500I [1] [SW1710]	p.I1716V [1] [TT]
	p.P1053S [1] [WM115]		
NCOA1	p.E905K [1] [CALU6]	p.S1373P [1] [HCC1954]	p.E587D [1] [NCIH82]
	p.N1332S [1] [T98G]		
NCOA2	p.N412T [1] [CADOES1]	p.T390P [1] [HS746T]	p.N412T [1] [KYSE180]
	p.M1452V [1] [SW1088]		
NCOA4	p.Q21K [1] [KALS1]		
NF1	p.I2058V [1] [DB]	p.Q1033R [1] [FUOV1]	p.F1037C [1] [FUOV1]
	p.E2231D [1] [ISHIKAWAHERAKLIO02ER]	p.Q1033R [1] [JHH2]	p.F1037C [1] [JHH2]
	p.Q1033R [1] [JHH6]	p.F1037C [1] [JHH6]	p.K798R [1] [JHOS2]
	p.T2805I [1] [LS411N]	p.Q1033R [1] [MDAMB468]	p.P1951Q [1] [MHHES1]
	p.Q1033R [1] [UACC893]	p.F1037C [1] [UACC893]	
NF2	p.E392K [1] [IGROV1]	p.T480M [1] [P31FUJ]	
NFKB2	p.D865N [1] [BT474]	p.S814G [1] [DND41]	p.A867V [1] [TOV21G]
NIN	p.G1414V [1] [CMLT1]	p.D520H [1] [EVSAT]	p.Q1811K [1] [HCC78]
	p.T1465I [1] [KCL22]	p.N1063T [1] [KP1N]	p.D1480Y [1] [NCIH2087]
	p.T22M [1] [SCC9]	p.R2052G [1] [SKUT1]	p.D35N [1] [SNU1040]
	p.S1965C [1] [THP1]		
NKX2-1	p.G270E [1] [DETROIT562]	p.Y204C [1] [IGROV1]	p.A289E [1] [NCIH1869]
	p.F41L [1] [PANC0813]		
NONO	p.Q25H [1] [REH]		
NOTCH1	p.G653C [1] [639V]	p.C600S [1] [639V]	p.A2452V [1] [A2780]
	p.L2457V [1] [ALLSIL]	p.L1593P [1] [ALLSIL]	p.E851G [1] [HCC44]
	p.Q184R [1] [HUH7]	p.Q1134R [1] [KNS62]	p.G1360S [1] [KYSE180]
	p.T865N [1] [LNCAPCLONEFGC]	p.Q1193H [1] [NCIH209]	p.T1883I [1] [NCIH23]
	p.P284L [1] [NCIH727]	p.E383K [1] [P12ICHIKAWA]	p.L1574P [1] [PF382]
	p.R1586C [1] [RKN]	p.G881S [1] [S117]	p.R2549C [1] [SKMEL30]
	p.C227Y [1] [SKUT1]	p.P1442L [1] [SNU1040]	
NOTCH2	p.G313D [1] [639V]	p.P365L [1] [DU145]	p.S1500R [1] [RL952]
	p.A2191T [1] [SNU1040]	p.R2105W [1] [U87MG]	

NPM1	p.I138V [1] [639V]	p.K141R [1] [ISHIKAWAHERAKLIO02ER]	p.R277W [1] [SNU1040]
	p.A186V [1] [TYKNU]		
NR4A3	p.A17T [1] [SNU398]		
NRAS	p.Q61K [1] [SKNSH]		
NSD1	p.R1188S [1] [G401]	p.T1063A [1] [OVK18]	
NTRK1	p.V170A [1] [EVSAT]	p.R452C [1] [HCC1599]	p.V294L [1] [NCIH2141]
	p.D738N [1] [SNU398]	p.L26P [1] [SNU407]	p.D793A [1] [SNU449]
	p.P387L [1] [UACC257]		
NTRK3	p.G473C [1] [NCIH2171]	p.L5F [1] [NCIH520]	p.Y353H [1] [PF382]
	p.E158K [1] [SNU1040]		
NUMA1	p.S2047L [1] [CHL1]	p.R1743C [1] [CW2]	p.Q1170P [1] [MC116]
	p.S2047L [1] [NCIH1734]	p.Q565K [1] [SW1417]	
NUP214	p.G1983W [1] [CAL12T]	p.G1983W [1] [COLO679]	p.G1983W [1] [NCIH1563]
	p.G1983W [1] [NCIH1836]	p.G1983W [1] [NCIH2030]	p.G1983W [1] [SCABER]
	p.G1983W [1] [SW1088]	p.G1983W [1] [VMRCRCZ]	p.S579L [1] [ZR7530]
NUP98	p.M1122T [1] [639V]	p.R1733H [1] [FU97]	p.E1303G [1] [KARPAS299]
	p.E1303G [1] [MHHCALL4]		
OMD	p.Y51C [1] [REH]		
PAFAH1B2	p.S64P [1] [SNU407]		
PALB2	p.T787I [1] [IGROV1]		
PAX3	p.I191M [1] [MDAMB415]		
PAX5	p.L33V [1] [639V]	p.R11Q [1] [IGROV1]	p.E4D [1] [TE9]
PAX7	p.Q91H [1] [HCT15]	p.R158H [1] [REH]	
PAX8	p.R64K [1] [LNCAPCLONEFGC]	p.H377Y [1] [OVTOKO]	
PBX1	p.I204M [1] [MOLT16]		
PCM1	p.D27E [1] [A704]	p.A262T [1] [ABC1]	p.Q1864R [1] [CAL78]
	p.E920D [1] [HCC1143]	p.Y1176C [1] [HCC1599]	p.V1514A [1] [ISHIKAWAHERAKLIO02ER]
	p.A262T [1] [KURAMOCHI]	p.A262T [1] [KYM1]	p.D1842H [1] [NCIH2030]
	p.Q1864R [1] [NCIH2126]	p.A262T [1] [OVKATE]	p.T1279R [1] [SJSA1]
	p.N427T [1] [SW1463]		
PCSK7	p.N200S [1] [LNCAPCLONEFGC]		
PDE4DIP	p.H2179R [1] [2313287]	p.G2148V [1] [647V]	p.S2249F [1] [JHOS2]
	p.A2053G [1] [NCIH526]	p.A1183V [1] [SNGM]	p.D33Y [1] [SNU81]
	p.P1675T [1] [SW1710]		
PDGFB	p.R129H [1] [DETROIT562]	p.Q147K [1] [HS940T]	p.R3L [1] [LS513]
	p.E21A [1] [NCIH1836]		
PDGFRA	p.E93K [1] [AGS]	p.T266P [1] [ESS1]	p.S37G [1] [HT115]
	p.N232S [1] [IALM]	p.G133E [1] [KYSE510]	p.G179R [1] [MM1S]
	p.N232S [1] [PC14]	p.N232S [1] [THP1]	
PDGFRB	p.T882I [1] [HCC1395]	p.N718Y [1] [HCC38]	p.D166G [1] [ISHIKAWAHERAKLIO02ER]
	p.T88I [1] [MOLT16]	p.A168T [1] [SNU1040]	p.E133K [1] [SNU1040]

PER1	p.F889L [1] [BT474]	p.S842L [1] [HCC1395]	p.A416V [1] [HCC33]
	p.G432R [1] [HCT15]	p.S811F [1] [KM12]	p.A1108S [1] [L540]
	p.P766L [1] [MFE319]	p.Q896H [1] [MOLT16]	p.L898F [1] [NCIH2126]
	p.P871L [1] [NCIH2227]	p.R805C [1] [SNU1040]	p.R841H [1] [SW1271]
PHOX2B	p.S297L [1] [COLO792]		
PICALM	p.P584Q [1] [SIGM5]		
PIK3R1	p.L570P [1] [ISHIKAWAHERAKLIO02ER]		
PLAG1	p.Q350R [1] [ISHIKAWAHERAKLIO02ER]	p.P410L [1] [REH]	
PML	p.L713R [1] [HCT15]	p.R284C [1] [SW48]	
PMS1	p.S597R [1] [IGROV1]	p.R883C [1] [MFE319]	
PMS2	p.N335S [1] [CAS1]	p.N335S [1] [CPCN]	p.Q604R [1] [ISHIKAWAHERAKLIO02ER]
POU2AF1	p.S66F [1] [HT29]	p.R36Q [1] [SNGM]	
POU5F1	p.N214D [1] [TE8]		
PRCC	p.P138R [1] [CHAGOK1]	p.A40T [1] [OE19]	
PRDM16	p.T1224A [1] [22RV1]	p.M863V [1] [CAL51]	p.P937T [1] [DAUDI]
	p.P937A [1] [MDAMB468]	p.I807V [1] [NCIH1836]	p.D742Y [1] [NCIH2444]
PTEN	p.I67K [1] [LS180]	p.A34S [1] [MOGGUVW]	p.R173C [1] [REH]
PTPN11	p.R278K [1] [COLO792]	p.N275T [1] [NCIH146]	p.T553M [1] [NCIH2227]
PTPRC	p.S951L [1] [CL11]	p.P390S [1] [CW2]	p.N966K [1] [KARPAS299]
	p.R953W [1] [NCIH2110]	p.R660Q [1] [SUDHL4]	
RAC1	p.V104M [1] [DEL]	p.C18Y [1] [REH]	p.A59T [1] [RL952]
RAF1	p.C168Y [1] [NCIH1436]		
RALGDS	p.G145R [1] [NAMALWA]	p.A777T [1] [SHP77]	p.V780M [1] [SNGM]
	p.R166H [1] [WSUDLCL2]		
RANBP17	p.P97H [1] [CMLT1]		
RARA	p.P318R [1] [DMS79]	p.P172L [1] [SNU1040]	
RB1	p.A488V [1] [P31FUJ]		
RBM15	p.S103F [1] [KM12]	p.R732Q [1] [NCIH1436]	p.T737I [1] [PF382]
RECQL4	p.E883Q [1] [5637]	p.M989I [1] [EFO27]	p.P671T [1] [KP1N]
	p.S1157N [1] [NCIH1436]	p.N616S [1] [NCIH1568]	p.E823K [1] [NCIH1694]
	p.Y621C [1] [PF382]	p.E301K [1] [RERFGC1B]	p.P103L [1] [SKES1]
REL	p.R219C [1] [HCT116]	p.T433I [1] [MEG01]	p.T433I [1] [OVISE]
	p.T433I [1] [RERFGC1B]	p.D42Y [1] [SNU1040]	
RET	p.T1038A [1] [SNU175]		
ROS1	p.L1430M [1] [639V]	p.A1601D [1] [HCC1954]	p.R2096Q [1] [ISHIKAWAHERAKLIO02ER]
	p.T1963S [1] [ISHIKAWAHERAKLIO02ER]	p.G747V [1] [ISHIKAWAHERAKLIO02ER]	p.Y1353S [1] [JHH7]
	p.R2205I [1] [NCIH929]	p.Y1353S [1] [RERFGC1B]	

RPN1	p.H238Y [1] [ML1] p.L11V [1] [SUPB15]	p.S229N [1] [NCIH1436]	p.R263H [1] [REH]
RUNX1	p.M368V [1] [IM95]		
SDHD	p.S94F [1] [COLO792]		
SEPT6	p.R400C [1] [HCC827]		
SH3GL1	p.E49K [1] [BL41]	p.P268H [1] [ISHIKAWAHERAKLIO02ER]	p.R245Q [1] [SNU1040]
SLC45A3	p.S93F [1] [KYSE270]		
SMARCA4	p.Q1594R [1] [CMLT1] p.P1487Q [1] [SNGM]	p.R1323H [1] [HCC1143] p.A703V [1] [SW48]	p.R885C [1] [HCT15]
SMO	p.S354P [1] [SNU1040]		
SOX2	p.Q34H [1] [IM95]	p.P289S [1] [RPMI8402]	
SS18	p.P130L [1] [LNCAPCLONEFGC] p.A4G [1] [T98G]	p.S154L [1] [NCIH1563]	p.E15D [1] [SNU81]
SS18L1	p.V162I [1] [2313287]		
SSX1	p.L61Q [1] [HCC1187]		
SSX4	p.Y31F [1] [NCIH211]		
STAT3	p.T545I [1] [EN]	p.M99K [1] [HT144]	
STK11	p.L183V [1] [SNU1040]		
SUZ12	p.Y434C [1] [NCIH1944]		
TAF15	p.G207S [1] [SNGM]	p.G443E [1] [SNU1040]	
TAL1	p.G269D [1] [OE21]		
TCF12	p.G331V [1] [BV173]	p.R673G [1] [CW2]	p.Q657R [1] [ISHIKAWAHERAKLIO02ER]
TCL6	p.H69P [1] [BEN]	p.G78R [1] [NCIH1437]	
TERT	p.S206I [1] [CW2]	p.D1038N [1] [REH]	
TET2	p.S911L [1] [DAUDI] p.G450R [1] [OE19]	p.L328R [1] [NCIH1573] p.R144H [1] [SKNDZ]	p.L328R [1] [NCIH209] p.A728D [1] [SW1088]
TFE3	p.P19A [1] [SHP77]		
TFEB	p.E8K [1] [C3A] p.S223N [1] [RCHACV]	p.G371R [1] [NCIH446]	p.R107L [1] [NCIH661]
TFG	p.R385H [1] [MOLT13]		
THRAP3	p.A667T [1] [HARA]	p.R35Q [1] [MFE319]	
TLX1	p.A266S [1] [CORL23]	p.G112A [1] [NCIH1838]	
TLX3	p.A236T [1] [OVISE]	p.R222W [1] [SNU1040]	
TNFAIP3	p.A475T [1] [HCT15] p.A464T [1] [SNU1040]	p.A545V [1] [NCIH2141] p.A545V [1] [SW948]	p.R761H [1] [NCIH2171]

Gene			
TOP1	p.A705S [1] [LNCAPCLONEFGC]	p.T597M [1] [SNU1040]	p.E561K [1] [SUDHL6]
TP53	p.R290C [1] [CMLT1] p.M246V [1] [ISHIKAWAHERAKLIO02ER] p.N239S [1] [PF382]	p.R181C [1] [CMLT1] p.D49H [1] [ISHIKAWAHERAKLIO02ER] p.Y220C [1] [TE8]	p.S241F [1] [HCT15] p.V216L [1] [LCLC103H]
TPR	p.T1979P [1] [AN3CA] p.G2000C [1] [ISHIKAWAHERAKLIO02ER] p.D1959Y [1] [MDAMB231]	p.V1171I [1] [CAL851] p.V1171I [1] [JVM3] p.E1976G [1] [NCIH1838]	p.V331G [1] [HCC1187] p.L1033F [1] [KMRC20] p.T1979A [1] [SNU1040]
TRIM33	p.Q1046E [1] [NCIH2444]		
TRIP11	p.I1468R [1] [S117]	p.I1747V [1] [TE5]	
TSC1	p.T1047I [1] [NCIH2122]		
TSC2	p.S660N [1] [COLO668] p.E1435K [1] [ISHIKAWAHERAKLIO02ER] p.R1369W [1] [UMUC3]	p.P1458T [1] [DMS53] p.I1357L [1] [KOPN8]	p.N1006S [1] [ISHIKAWAHERAKLIO02ER] p.A357V [1] [ST486]
TSHR	p.R701C [1] [ISHIKAWAHERAKLIO02ER]		
USP6	p.M947T [1] [ISHIKAWAHERAKLIO02ER]		
WAS	p.P112R [1] [KOPN8]		
WHSC1	p.D560H [1] [C2BBE1]	p.D417N [1] [ISHIKAWAHERAKLIO02ER]	p.G325D [1] [SUDHL6]
WHSC1L1	p.P361S [1] [NCIH1437]	p.P1071L [1] [OV56]	
WRN	p.E510D [1] [CCK81] p.N166K [1] [HT1080] p.E510D [1] [SNU175]	p.I1183M [1] [CMK] p.S759F [1] [ISHIKAWAHERAKLIO02ER] p.E510D [1] [SNU423]	p.D460G [1] [HSC4] p.P504L [1] [NCIH1436]
WT1	p.G178R [1] [COLO792]	p.P129Q [1] [NCIH2291]	
XPC	p.S291C [1] [NCIH929]	p.A674V [1] [SNU1040]	
ZNF331	p.R197Q [1] [NCIH520]		
ZNF384	p.Q495H [1] [HCT15] p.Q498H [1] [SUPHD1]	p.A474T [1] [PANC0327]	p.P119S [1] [SNU1040]
ZNF521	p.S397L [1] [PF382]	p.Y441H [1] [SNU1040]	p.R3H [1] [SNU81]

Supplementary Table 1 (B)

Mutations that were only identified by COSMIC in the comparision of sequencing data of 1630 genes across 568 cell lines from CCLE and COSMIC

Gene	Mutation	Mutation	Mutation
ABI1	p.S305A [1] [DAUDI] p.G312S [1] [SW48]	p.T41A [1] [JVM3]	p.N388T [1] [LS411N]
ABL1	p.A1026T [1] [C32] p.G753V [1] [GI1] p.H552R [1] [HT] p.F747I [1] [RKO] p.R820W [1] [SNU175] p.E871K [1] [TGBC11TKB]	p.A922V [1] [CCK81] p.E527K [1] [HARA] p.N770S [1] [LNCAPCLONEFGC] p.T319A [1] [SNU1040] p.H396Q [1] [SNU423] p.P914L [1] [VMCUB1]	p.T700I [1] [COLO792] p.Y257C [1] [HCT116] p.P899S [1] [MHHCALL4] p.A898V [1] [SNU1040] p.G701S [1] [TGBC11TKB]
ABL2	p.C534W [1] [A2780] p.P9T [1] [KYSE450] p.G1122A [1] [ONS76]	p.S655P [1] [DAUDI] p.R632H [1] [LNCAPCLONEFGC] p.R941L [1] [OVTOKO]	p.A559S [1] [HCC1395] p.C22Y [1] [NCIH1836]
AKAP9	p.R3628Q [1] [22RV1] p.H1796R [1] [CA46] p.T1039A [1] [CL34] p.E451V [1] [DMS53] p.I336T [1] [G401] p.N3615S [1] [HT] p.D3015G [1] [JM1] p.I679L [1] [NCIH1651] p.H674Y [1] [NCIH2347] p.A1484P [1] [NCIH661] p.R661Q [1] [OVK18] p.K3234R [1] [RPMI7951] p.I662T [1] [SNU1040] p.E182G [1] [SNU475]	p.K1643M [1] [647V] p.E1933K [1] [CAL148] p.Q2032P [1] [CW2] p.T3701I [1] [DU145] p.R3241W [1] [HH] p.Q2742R [1] [HUPT3] p.M1323K [1] [KPNYN] p.E746V [1] [NCIH1755] p.I3281T [1] [NCIH460] p.V2002L [1] [NCIH661] p.K49E [1] [RKO] p.E2260Q [1] [SF126] p.R1129H [1] [SNU1040] p.A1098T [1] [SNUC5]	p.H574R [1] [BICR31] p.S994Y [1] [CAL851] p.Y2870C [1] [CW2] p.E1983Q [1] [FADU] p.K1169E [1] [HS940T] p.N187I [1] [JHH2] p.S2693G [1] [LNCAPCLONEFGC] p.E1008V [1] [NCIH1755] p.D234V [1] [NCIH596] p.Q2742R [1] [OVISE] p.R2028C [1] [RPMI7951] p.Q2742R [1] [SNGM] p.Q2742R [1] [SNU449]
AKT1	p.E40K [1] [ISHIKAWAHERAKLIO02ER]	p.Y215H [1] [MFE319]	p.A230T [1] [SNU1040]
AKT2	p.A232T [1] [CW2] p.R368C [1] [SNU1040]	p.K216T [1] [CW2] p.C60Y [1] [SNU1040]	p.T132M [1] [DU145]
ALK	p.L274P [1] [AN3CA] p.Q897L [1] [DAUDI] p.E949K [1] [KLE] p.N1353S [1] [NCIH1355] p.M1290I [1] [NCIH716] p.S235P [1] [SF126] p.M1223I [1] [SNU1040]	p.K1109N [1] [CAL51] p.T533A [1] [HCT15] p.P1298S [1] [KM12] p.K1518N [1] [NCIH1755] p.A206T [1] [PF382] p.T1312I [1] [SIGM5] p.R1436C [1] [SNU175]	p.T901A [1] [DAUDI] p.D1349N [1] [HT115] p.G1580V [1] [LOVO] p.Q450H [1] [NCIH1793] p.N941S [1] [SBC5] p.F1174L [1] [SKNSH] p.H281Q [1] [SNU449]
APC	p.T584I [1] [639V] p.E2617K [1] [EN] p.R1790K [1] [KMS11] p.R549S [1] [MDST8] p.A1358T [1] [NCIH1650] p.N813S [1] [SKMEL3] p.R1171H [1] [SNU1040] p.Y486C [1] [TGBC11TKB]	p.C1270R [1] [A498] p.F814C [1] [ESS1] p.E1209K [1] [LNCAPCLONEFGC] p.T1082S [1] [MFE280] p.A1225S [1] [OVCAR8] p.R94C [1] [SNU1040] p.S2129L [1] [SNU81]	p.N862K [1] [CMK] p.I1779M [1] [HCT15] p.A2778V [1] [LNCAPCLONEFGC] p.R1589H [1] [MOLT16] p.G253S [1] [P12ICHIKAWA] p.A759S [1] [SNU1040] p.S2575Y [1] [SW1990]
ARHGEF12	p.Q933E [1] [BT474] p.E1164K [1] [MEWO] p.T1221A [1] [SNU1040]	p.D308Y [1] [CMK] p.H1280P [1] [NCIH1876] p.A1466V [1] [SNU1040]	p.S694P [1] [KU1919] p.P1025S [1] [SNU1040] p.E64K [1] [SNU81]
ARID1A	p.G1848W [1] [AN3CA] p.T1302S [1] [HT1376]	p.S949P [1] [DAUDI] p.T1217I [1] [LNCAPCLONEFGC]	p.G444S [1] [HS746T] p.G1178A [1] [NCIH2110]

	p.S638I [1] [OE21]	p.T1514R [1] [P31FUJ]	p.A873T [1] [REH]
	p.A1885V [1] [SCC15]	p.S402L [1] [SNU1040]	p.P887T [1] [SNU1040]
	p.T1917A [1] [SNUC5]	p.V1982I [1] [THP1]	
ARNT	p.A687T [1] [COLO684]	p.V464M [1] [CW2]	p.V612I [1] [JVM2]
	p.P631L [1] [LK2]	p.I41V [1] [LS180]	p.V416M [1] [MOLT16]
	p.R379C [1] [SNU1040]		
ASPSCR1	p.S607F [1] [A375]	p.W496G [1] [BHY]	p.R478H [1] [CFPAC1]
	p.W496G [1] [DKMG]	p.R502Q [1] [EFO27]	p.R545W [1] [KP2]
	p.R301W [1] [MFE319]	p.L416S [1] [MOLT13]	p.S589C [1] [NCIH2342]
	p.A196T [1] [RCHACV]	p.R85H [1] [RL952]	p.T146M [1] [SKMEL2]
	p.R545W [1] [SNU407]	p.F344L [1] [SNU81]	p.Q55P [1] [SW1271]
	p.N69S [1] [SW1990]		
ATF1	p.S7N [1] [MDAMB361]		
ATIC	p.H584R [1] [CAOV3]	p.H584R [1] [DBTRG05MG]	p.Y558F [1] [LNCAPCLONEFGC]
	p.H584R [1] [LS180]	p.H584R [1] [SKUT1]	p.V548I [1] [SNU1040]
ATM	p.K1101E [1] [22RV1]	p.H1876Q [1] [5637]	p.K482Q [1] [BT20]
	p.R1618Q [1] [CAL78]	p.A1127V [1] [HCT116]	p.A2635G [1] [KYSE150]
	p.D2661N [1] [KYSE410]	p.N1005I [1] [MDAMB231]	p.F1896L [1] [MFE319]
	p.C1482R [1] [NCIH810]	p.M1967V [1] [PF382]	p.H448R [1] [SW837]
	p.Q1128E [1] [TE9]	p.R832C [1] [UACC812]	
ATRX	p.S747R [1] [CCK81]	p.P2462S [1] [DAUDI]	p.N2447T [1] [DAUDI]
	p.M2426L [1] [DAUDI]	p.N2419T [1] [DAUDI]	p.E155D [1] [DAUDI]
	p.T154A [1] [DAUDI]	p.E155D [1] [DND41]	p.T154A [1] [DND41]
	p.Q606E [1] [HCC38]	p.E723D [1] [MDAMB231]	p.D412G [1] [MG63]
	p.K1044N [1] [NAMALWA]	p.E155D [1] [OCIAML5]	p.T154A [1] [OCIAML5]
	p.K1169Q [1] [OCILY19]	p.A1272P [1] [OVISE]	p.I1271N [1] [OVISE]
	p.I2454T [1] [PF382]	p.S76P [1] [PF382]	p.I1894M [1] [RAJI]
	p.P1586A [1] [RPMI8402]	p.N564S [1] [U87MG]	p.S2017C [1] [UACC62]
	p.K1177N [1] [VMCUB1]		
AXIN1	p.V846I [1] [EB2]	p.E640K [1] [EFO27]	p.Q361R [1] [EN]
	p.Q108L [1] [JHH7]	p.D95G [1] [JHH7]	p.D94E [1] [JHH7]
	p.A277T [1] [KCL22]	p.E640K [1] [KM12]	p.R353H [1] [LOVO]
	p.R803C [1] [NCIH2110]	p.S511L [1] [SF126]	p.A804T [1] [SNU1040]
	p.A510T [1] [SNU175]	p.V535I [1] [TGBC11TKB]	
BAP1	p.S609G [1] [JEKO1]	p.I586V [1] [KMRC20]	p.R227H [1] [MOLT13]
	p.N515S [1] [SNUC5]	p.N299S [1] [SUPHD1]	p.K580R [1] [VMRCRCW]
BCL10	p.R232Q [1] [CA46]	p.T162M [1] [KPNYN]	p.T163A [1] [LNCAPCLONEFGC]
	p.R228H [1] [SNU1040]		
BCL11A	p.S627R [1] [CMLT1]	p.A80G [1] [DAUDI]	p.K634E [1] [DND41]
	p.A413T [1] [HCT15]	p.S696N [1] [JVM3]	p.A665T [1] [LNCAPCLONEFGC]
	p.S528N [1] [MEWO]	p.S696I [1] [NCIH1623]	p.P358S [1] [NCIH1876]
	p.Q681K [1] [NCIH2170]	p.G606C [1] [NCIH2172]	p.S679P [1] [NCIH2342]
	p.A80G [1] [OCIAML5]	p.N236D [1] [PF382]	p.F315L [1] [SNU81]
BCL11B	p.P666S [1] [AM38]	p.P697S [1] [CHAGOK1]	p.R822W [1] [CW2]
	p.A204T [1] [CW2]	p.M843I [1] [EB2]	p.Y800H [1] [HCC1569]
	p.R671C [1] [NCIH1435]	p.G580W [1] [NCIH2110]	p.T406M [1] [RCHACV]
	p.E553K [1] [RS411]	p.T812A [1] [SNU1040]	p.K825N [1] [VMRCLCD]
	p.A606E [1] [VMRCLCD]		
BCL2	p.E200D [1] [CW2]	p.P59A [1] [JM1]	p.G8E [1] [JM1]
	p.T7K [1] [JVM3]	p.A42V [1] [OCILY19]	p.V35M [1] [OCILY19]
	p.E13D [1] [OCILY19]	p.A60V [1] [RL]	p.D31H [1] [RL]
	p.P59T [1] [SUDHL4]	p.I48F [1] [SUDHL6]	p.P59A [1] [WSUDLCL2]

	p.E13D [1] [WSUDLCL2]	p.N11H [1] [WSUDLCL2]	
BCL3	p.P92L [1] [NCIH1355]	p.A308V [1] [SNU1040]	
BCL6	p.M501V [1] [EBC1] p.M454T [1] [TGBC11TKB]	p.P458S [1] [KYSE510]	p.A291V [1] [SNU1040]
BCL7A	p.S164N [1] [CW2]	p.P78L [1] [MFE319]	
BCL9	p.S591N [1] [CORL88] p.V1098M [1] [DAUDI] p.G1200A [1] [DAUDI] p.N1101S [1] [DND41] p.N832S [1] [OCIAML5] p.A226T [1] [SNU1040] p.V1098M [1] [SNU1040] p.M661L [1] [TT]	p.Q52P [1] [DAUDI] p.N1101S [1] [DAUDI] p.N832S [1] [DND41] p.R1238H [1] [LNCAPCLONEFGC] p.V1098M [1] [OCIAML5] p.P231L [1] [SNU1040] p.G1230R [1] [SNU1040] p.P467L [1] [WM115]	p.N832S [1] [DAUDI] p.A1190P [1] [DAUDI] p.V1098M [1] [DND41] p.Q52P [1] [OCIAML5] p.N1101S [1] [OCIAML5] p.A471V [1] [SNU1040] p.E1256G [1] [SNU1040]
BCR	p.E1143K [1] [42MGBA] p.M1119T [1] [BT474] p.D225A [1] [DB] p.A1095V [1] [HCT15] p.A1100T [1] [PF382] p.E1270D [1] [SNGM] p.R361C [1] [SNU1040]	p.M1119T [1] [A253] p.V189L [1] [CPCN] p.F923L [1] [EB2] p.R132P [1] [L363] p.E483V [1] [PL21] p.R162C [1] [SNU1040] p.R1133C [1] [SNU1040]	p.E1270D [1] [AM38] p.F176L [1] [CW2] p.S1219N [1] [HCC15] p.R1213W [1] [NCIH1693] p.R132P [1] [SCC15] p.R254C [1] [SNU1040]
BIRC3	p.N264I [1] [NCIH1876] p.R411K [1] [SNU182]	p.A165G [1] [SNU1040] p.R159I [1] [SNU81]	p.A17T [1] [SNU182]
BLM	p.S1094A [1] [8305C] p.M348I [1] [HSC4] p.S1368A [1] [NCIH1436] p.H457R [1] [SNU1040] p.P211S [1] [TE10]	p.K1009E [1] [CMK] p.K653T [1] [KM12] p.F479L [1] [NCIH1573] p.A920T [1] [SNU1040]	p.D153N [1] [DND41] p.I1367M [1] [LS180] p.I366T [1] [SKUT1] p.A196T [1] [T98G]
BMPR1A	p.Q304R [1] [HCC70] p.N373I [1] [KASUMI1] p.C110Y [1] [NUDUL1]	p.G351D [1] [HCT15] p.G300C [1] [LNCAPCLONEFGC]	p.A357T [1] [HGC27] p.Q304R [1] [NCIH23]
BRAF	p.R506G [1] [CCK81] p.I326V [1] [KYSE180] p.I326V [1] [P12ICHIKAWA] p.I326V [1] [TE1]	p.I326V [1] [EN] p.S727G [1] [MFE319] p.V120I [1] [SNU1040] p.I326T [1] [ZR7530]	p.E296K [1] [HCC2218] p.I326V [1] [NB1] p.S76P [1] [SNU1040]
BRCA1	p.D1398N [1] [BFTC905] p.E962K [1] [DU145] p.S663N [1] [HCT15] p.P1579S [1] [KM12] p.G890V [1] [NCIH1703] p.S1542C [1] [PANC0203] p.T539M [1] [SKNDZ]	p.Q1459P [1] [CAPAN2] p.D1546N [1] [GDM1] p.K1711R [1] [HT115] p.I1058V [1] [KYSE140] p.E1629V [1] [NCIH2066] p.I571T [1] [PANC1005] p.I1044V [1] [VMRCRCZ]	p.G401E [1] [CCK81] p.L30F [1] [HCC2157] p.S114T [1] [J82] p.N810T [1] [LS180] p.Q1299H [1] [NCIH2172] p.V271M [1] [RCC10RGB]
BRCA2	p.V1810I [1] [22RV1] p.V1810I [1] [CL34] p.R448C [1] [DAUDI] p.C2473Y [1] [EB2] p.T1520N [1] [HCC1599] p.S617P [1] [HT] p.K1565N [1] [KM12] p.S755F [1] [MELJUSO] p.G2044D [1] [NCIH1355] p.P2505L [1] [OVCAR4] p.T207A [1] [RS411] p.Y2789H [1] [SNU1040]	p.E1876K [1] [CALU6] p.K382Q [1] [COLO741] p.S3319F [1] [DAUDI] p.R18H [1] [EBC1] p.K644R [1] [HCC38] p.E2258K [1] [HT115] p.G1376E [1] [KYSE510] p.I332N [1] [MFE296] p.A938E [1] [NCIH1648] p.D1618E [1] [RCC10RGB] p.A737T [1] [SNU1040] p.V2966A [1] [SNU1040]	p.T1505I [1] [CCK81] p.V2014E [1] [CW2] p.G602E [1] [DND41] p.K1638Q [1] [HCC1428] p.A487V [1] [HCT15] p.S976T [1] [KG1] p.M965I [1] [MDAMB468] p.P1819S [1] [MHHES1] p.I1929V [1] [OCIM1] p.I1929V [1] [RERFLCKJ] p.A1996T [1] [SNU1040] p.A3012G [1] [SNU1040]

	p.S1597Y [1] [SNU81]	p.P1819S [1] [T98G]
BRD3	p.R244Q [1] [639V]	p.P188A [1] [BT483]
	p.E144V [1] [HT55]	p.L70Q [1] [KMH2]
	p.R34H [1] [SNU1040]	p.P23T [1] [SU8686]
BRD4	p.R444C [1] [639V]	p.A3T [1] [DAUDI]
	p.A292T [1] [LS411N]	p.M1320V [1] [NCIH520]
	p.H77Y [1] [RAJI]	p.T1212P [1] [SJRH30]
BRIP1	p.G809C [1] [639V]	p.N196S [1] [BFTC909]
	p.T132N [1] [DU145]	p.R798Q [1] [HT115]
	p.E339K [1] [MDAMB361]	p.V497A [1] [OAW42]
	p.R814C [1] [SNU1040]	p.K141E [1] [SNU1040]
	p.F1121V [1] [SNU81]	
BTG1	p.K162R [1] [DAUDI]	p.R86W [1] [DAUDI]
	p.R86W [1] [OCIAML5]	p.Y5H [1] [SUPHD1]
BUB1B	p.V618L [1] [A375]	p.V618L [1] [HCT15]
	p.R169K [1] [LK2]	p.V573M [1] [LNCAPCLONEFGC]
	p.E394G [1] [RD]	p.S543I [1] [SKOV3]
	p.R677H [1] [SW1783]	
C15orf55	p.R693I [1] [CCK81]	p.G587V [1] [DEL]
	p.V379L [1] [IM95]	p.K1005I [1] [KELLY]
	p.R43W [1] [NCIH1793]	p.Q968R [1] [NCIH2029]
	p.A489T [1] [PATU8902]	p.E400Q [1] [RL952]
	p.F841S [1] [SNU81]	p.E478K [1] [TC71]
CARD11	p.T360A [1] [CAL51]	p.G533R [1] [CW2]
	p.H651Q [1] [IGROV1]	p.N665I [1] [K562]
	p.E936Q [1] [MDAMB415]	p.A202S [1] [NCIH2347]
	p.N1061S [1] [PF382]	p.V740I [1] [SF126]
	p.P720L [1] [SNU1040]	p.S645L [1] [SNU1040]
CARS	p.F87L [1] [CCK81]	p.S19T [1] [EN]
	p.K104N [1] [NCIH2342]	p.T163R [1] [NCIH82]
	p.P570L [1] [SUPM2]	
CBFA2T3	p.P318S [1] [CCK81]	p.R366Q [1] [DU4475]
	p.V199M [1] [ECGI10]	p.H249Y [1] [HCC1806]
	p.P94L [1] [HGC27]	p.T71R [1] [HSC3]
	p.E312K [1] [MKN7]	p.G376E [1] [NCIH226]
	p.H359R [1] [SKMEL2]	p.R421H [1] [SNU1040]
CBFB	p.F32C [1] [LS180]	p.R151H [1] [SNU1040]
CBL	p.S403F [1] [KMS11]	p.Y700C [1] [MDAMB436]
	p.M487V [1] [SNU398]	
CCDC6	p.R246I [1] [CW2]	p.R271Q [1] [PF382]
	p.N16S [1] [SW1990]	
CCNB1IP1	p.C33Y [1] [22RV1]	p.R169H [1] [DANG]
CCND1	p.L244I [1] [AN3CA]	p.A30T [1] [LP1]
	p.R231C [1] [SNU1040]	p.S219N [1] [VCAP]
CCND3	p.A266V [1] [8305C]	p.E70G [1] [PF382]
CCNE1	p.T91M [1] [CAL51]	p.H211Y [1] [KMRC1]
	p.D83N [1] [NCIH23]	p.R240C [1] [SNU1040]

p.A10T [1] [DU145]	
p.P23H [1] [NCIH1755]	
p.E1339G [1] [HCT15]	
p.I360V [1] [PF382]	
p.A40T [1] [SNU1040]	
p.N933I [1] [CW2]	
p.G481D [1] [KYSE180]	
p.N666H [1] [RERFLCMS]	
p.R814C [1] [SNU175]	
p.Q36H [1] [L1236]	
p.Q181R [1] [KLE]	
p.P545S [1] [MEWO]	
p.S1010F [1] [SNU407]	
p.I743T [1] [G402]	
p.A21T [1] [KP4]	
p.S25F [1] [NCIH650]	
p.E782G [1] [SNU1040]	
p.H610R [1] [HCC1569]	
p.S603F [1] [LNCAPCLONEFGC]	
p.T525M [1] [PANC0203]	
p.Y1110C [1] [SNU1040]	
p.I1001V [1] [UACC812]	
p.K422E [1] [HCC1954]	
p.A273V [1] [RS411]	
p.E312K [1] [ECC10]	
p.E214K [1] [HCT15]	
p.T157A [1] [KCL22]	
p.P77L [1] [SJSA1]	
p.R368C [1] [SNU1040]	
p.R151H [1] [SNU407]	
p.S439G [1] [NCIH1563]	
p.A468V [1] [SNU1040]	
p.R226Q [1] [TE4]	
p.P287L [1] [NCIH1105]	
p.I205M [1] [KMS11]	
p.A378T [1] [SNU1040]	

CD79A	p.G6E [1] [CMLT1]	p.A10T [1] [HT115]	p.C106Y [1] [MDAMB231]
CD79B	p.W220R [1] [2313287]	p.N37I [1] [SNUC5]	
CDH1	p.V41E [1] [A253] p.H45L [1] [NCIH82] p.E410K [1] [TC71]	p.T115M [1] [KMH2] p.A818V [1] [REH]	p.G212E [1] [KPNYN] p.I96T [1] [SNU475]
CDH11	p.D596G [1] [DU145] p.P69T [1] [NCIH2227]	p.I359T [1] [FU97] p.A600S [1] [VMRCLCD]	p.S200G [1] [NCIH1876]
CDK12	p.K452T [1] [HCC202]	p.V1282L [1] [HCC2218]	p.R380H [1] [SNU1040]
CDK4	p.G247E [1] [LS411N]	p.G268E [1] [SUDHL10]	
CDK6	p.T121A [1] [IGROV1]		
CDKN2A	p.H83Y [1] [CALU3] p.D108G [1] [MFE319] p.H83Y [1] [OPM2] p.I154N [1] [SCC4] p.P81L [1] [UACC257]	p.D84Y [1] [DU145] p.D84V [1] [NCIH1703] p.A86D [1] [OV90] p.P114L [1] [SKMEL30]	p.A102V [1] [EFO27] p.F90L [1] [NCIH1915] p.G67V [1] [PC14] p.A127T [1] [SNU1040]
CDKN2C	p.K112R [1] [SNGM]		
CEBPA	p.H58Q [1] [KCL22]	p.C56W [1] [KCL22]	p.A274V [1] [SNU1040]
CHEK2	p.R181C [1] [639V] p.P85H [1] [LS411N] p.S73F [1] [SNU81]	p.A91T [1] [DND41] p.R181C [1] [OVCAR4] p.D470N [1] [SW620]	p.N290T [1] [HT115] p.R180H [1] [SNU407]
CHIC2	p.K46T [1] [HT115]	p.K65R [1] [IGROV1]	
CHN1	p.K159Q [1] [DAUDI] p.Q61R [1] [IGROV1] p.T185A [1] [SNU1040]	p.V146I [1] [DAUDI] p.T174A [1] [NCIH929]	p.L71F [1] [DBTRG05MG] p.V146I [1] [OCIAML5]
CIC	p.R507H [1] [AN3CA] p.F1342V [1] [CCK81] p.R30H [1] [IGROV1] p.E513K [1] [KYSE510] p.M931T [1] [OVK18] p.G365S [1] [SNU1040] p.S734L [1] [SNU475]	p.A578V [1] [CAKI1] p.A1062T [1] [DU145] p.A928T [1] [K562] p.S1378C [1] [MM1S] p.A1014V [1] [PC14] p.A699V [1] [SNU1040] p.R1321C [1] [SW1783]	p.S649P [1] [CAL62] p.S1306R [1] [EFO21] p.Y827H [1] [KYSE450] p.S385P [1] [NALM6] p.S431T [1] [RL952] p.L628P [1] [SNU407]
CIITA	p.P186S [1] [2313287] p.T588S [1] [CAL54] p.Y342C [1] [EN] p.L465M [1] [HCC56] p.T24A [1] [IM95] p.E853K [1] [KYSE180] p.A161T [1] [NCIH1963] p.Y463C [1] [P12ICHIKAWA] p.R580H [1] [SNU1040] p.R802Q [1] [TT]	p.G568S [1] [A204] p.G531A [1] [CORL279] p.R548W [1] [FU97] p.A562T [1] [HCT15] p.Q507E [1] [JHH1] p.E1002K [1] [LOXIMVI] p.R804Q [1] [NCIH446] p.G129S [1] [PF382] p.Y792H [1] [SNUC5] p.A894V [1] [UACC893]	p.R795Q [1] [ABC1] p.I1027T [1] [DU145] p.Q619R [1] [HCC15] p.P337L [1] [HH] p.A1086T [1] [KYSE150] p.P522T [1] [NCIH1436] p.C523S [1] [ONS76] p.A432T [1] [RL952] p.A813T [1] [SNUC5]
CLTC	p.G1658A [1] [CW2] p.R1429Q [1] [LNCAPCLONEFGC] p.K1535N [1] [SF295]	p.P1651S [1] [KM12] p.A1032V [1] [MOLT13] p.V1141I [1] [SNU1040]	p.Q976H [1] [KMH2] p.E1622K [1] [NCIH1299] p.L693Q [1] [WM115]
CLTCL1	p.Q1601H [1] [639V] p.V1592L [1] [HCC1569] p.R793H [1] [RL952]	p.S903R [1] [CCK81] p.V1592L [1] [MOLT16] p.R1620C [1] [SNU1040]	p.V1633M [1] [CMLT1] p.Y1324F [1] [NCIH650] p.R297H [1] [SNU1040]

COL1A1
p.G461C [1] [A2058]   p.A1050G [1] [BECKER]   p.E783K [1] [BHY]
p.R361G [1] [COLO684]   p.D1344N [1] [ECC12]   p.G824V [1] [HCC15]
p.D97Y [1] [HCC202]   p.P789S [1] [HT]   p.G923D [1] [HT55]
p.G1025E [1] [KM12]   p.K228N [1] [KYSE450]   p.A406V [1] [MOLT13]
p.G1157S [1] [NALM6]   p.E828K [1] [NCIH1563]   p.G1034V [1] [NCIH2126]
p.G962D [1] [PF382]   p.R1252H [1] [SNU1040]   p.A1042T [1] [SNU1040]
p.R865H [1] [SNU1040]   p.P102H [1] [SNU175]   p.G424S [1] [SW780]
p.A628T [1] [SW900]

CREB1
p.P264T [1] [BHY]   p.E8D [1] [DAUDI]   p.S178N [1] [JVM3]

CREB3L2
p.F391I [1] [2313287]   p.A74V [1] [DU145]   p.P469L [1] [HCT15]
p.R427G [1] [ONS76]   p.A499T [1] [RKO]   p.V361A [1] [SNU1040]

CREBBP
p.A533T [1] [AN3CA]   p.E1630K [1] [CAL51]   p.L734M [1] [CW2]
p.C1237Y [1] [DND41]   p.M2042T [1] [EN]   p.T878A [1] [EN]
p.N831S [1] [JHH1]   p.N2111S [1] [LU65]   p.I1038V [1] [NCIH1694]
p.N83T [1] [NCIH2122]   p.K68R [1] [OVK18]   p.A2281T [1] [PANC0813]
p.M866T [1] [RKO]   p.P2313L [1] [RPMI8402]   p.T999M [1] [SKUT1]
p.W1502L [1] [SNGM]   p.R2294W [1] [SNU1040]   p.R1851H [1] [SNU1040]
p.P800L [1] [SNU1040]   p.I1084V [1] [SW48]   p.S1680F [1] [SW780]

CSF3R
p.A576T [1] [22RV1]   p.T773A [1] [2313287]   p.R755Q [1] [CL34]
p.R367Q [1] [EFO27]   p.S651N [1] [KM12]   p.P286S [1] [MELJUSO]
p.T640A [1] [SW48]   p.R434I [1] [VMRCRCZ]

CTNNB1
p.V600L [1] [JJN3]   p.L385H [1] [LNCAPCLONEFGC]   p.S234A [1] [PF382]
p.R151H [1] [SNU1040]   p.H176Y [1] [T98G]

CYLD
p.I20S [1] [BT549]   p.T822N [1] [HUH7]   p.R397H [1] [NCIH1792]
p.V131A [1] [PF382]   p.R894Q [1] [PF382]   p.C856Y [1] [REH]
p.S54F [1] [TE11]

DAXX
p.R633W [1] [CMLT1]   p.S671P [1] [EN]   p.A4T [1] [HCT15]
p.R273W [1] [ISHIKAWAHERAKLIO02ER]   p.R182H [1] [KE37]   p.N153S [1] [PANC0813]
p.A226G [1] [SHP77]   p.A32T [1] [SNU1040]

DDB2
p.V127M [1] [LOVO]   p.V263I [1] [SUPHD1]

DDX10
p.V836M [1] [HCC1569]   p.S831N [1] [KM12]   p.H27R [1] [MCF7]
p.P535R [1] [NCIH1869]

DDX6
p.L67R [1] [HT]   p.L338W [1] [SNU81]

DEK
p.A7T [1] [HPAFII]

DICER1
p.D1244H [1] [EPLC272H]   p.V687A [1] [HCC1569]   p.A1174T [1] [HCT116]
p.S1280N [1] [HCT15]   p.R1607Q [1] [HT115]   p.N984I [1] [NAMALWA]
p.A1338V [1] [SNU1040]   p.P623S [1] [TE6]   p.K371R [1] [TOV21G]
p.P1653S [1] [UMUC3]

EGFR
p.Q408R [1] [CCK81]   p.S306L [1] [COLO679]   p.V323I [1] [CW2]
p.G682V [1] [DBTRG05MG]   p.A1118T [1] [FTC133]   p.L861Q [1] [KYSE270]
p.A702D [1] [KYSE510]   p.P672R [1] [KYSE70]   p.T1085N [1] [L540]
p.L469W [1] [MDAMB231]   p.T678M [1] [MDAMB361]   p.A1076T [1] [NALM6]
p.D1127N [1] [NCIH1568]   p.A750E [1] [NCIH1650]   p.R677C [1] [RCHACV]
p.G659R [1] [REH]   p.G614S [1] [RL952]   p.Q701R [1] [SHP77]
p.V738D [1] [SUDHL6]   p.V654M [1] [SW1116]   p.K327E [1] [TT]

EIF4A2
p.M401I [1] [CORL88]   p.I68V [1] [FU97]   p.G13D [1] [KM12]
p.A334G [1] [LNCAPCLONEFGC]   p.D308V [1] [SNU1040]   p.F228L [1] [TE9]

ELF4
p.Q274P [1] [647V]   p.R179Q [1] [HT55]   p.T88S [1] [HT55]
p.T421M [1] [MFE296]   p.P360S [1] [MFE319]

Gene			
ELL	p.R445H [1] [639V]	p.S600N [1] [SNU1040]	p.R467W [1] [SNU1040]
	p.A172T [1] [SNUC5]	p.A541P [1] [SUDHL1]	p.S498R [1] [SUDHL4]
	p.D464E [1] [VMCUB1]		
ELN	p.P667S [1] [697]	p.A450T [1] [AN3CA]	p.R721Q [1] [HCT116]
	p.P658T [1] [LOVO]	p.G552R [1] [MSTO211H]	p.K448M [1] [NCIH1836]
	p.G12V [1] [NCIH2342]	p.A447T [1] [TE9]	
EML4	p.R23H [1] [CMLT1]	p.D936E [1] [CORL23]	p.S502N [1] [CW2]
	p.D190G [1] [ISTMES1]	p.D976G [1] [MV411]	p.I227V [1] [P31FUJ]
EP300	p.W1466L [1] [CAL33]	p.G59S [1] [CMLT1]	p.N204D [1] [COLO783]
	p.M675L [1] [GI1]	p.A2259T [1] [HOS]	p.K1045N [1] [HT115]
	p.P1986L [1] [IM95]	p.P820L [1] [KMH2]	p.A105T [1] [LNCAPCLONEFGC]
	p.Q1313E [1] [MFE319]	p.E1514K [1] [NCIH1105]	p.F1090L [1] [NCIH524]
	p.C1385Y [1] [PF382]	p.P1986L [1] [RERFLCKJ]	p.Y1414C [1] [RL]
	p.P1986L [1] [SBC5]	p.P989S [1] [SKMEL2]	p.S719N [1] [SNU1040]
	p.P2146S [1] [SNU1040]	p.D1399N [1] [SNU81]	p.C1201Y [1] [VMCUB1]
EPS15	p.N735S [1] [5637]	p.F800L [1] [DAUDI]	p.P797S [1] [DAUDI]
	p.S315R [1] [RCM1]	p.S315R [1] [RERFLCSQ1]	p.S841N [1] [SNU175]
ERBB2	p.V1253M [1] [GCIY]	p.D1125E [1] [HT1080]	p.R678Q [1] [J82]
	p.V1253M [1] [KMS12BM]	p.S413L [1] [NCIN87]	p.F425L [1] [NCIN87]
	p.L436V [1] [NCIN87]	p.S1122T [1] [PF382]	p.R1048C [1] [RAJI]
	p.L796P [1] [RKO]	p.G518V [1] [RL952]	p.S335C [1] [SKMEL5]
	p.V777M [1] [SNU1040]	p.R1146W [1] [SNU175]	
ERCC2	p.R185Q [1] [A673]	p.V599A [1] [AN3CA]	p.R156Q [1] [BXPC3]
	p.S397I [1] [CCK81]	p.T31M [1] [CHP212]	p.V476I [1] [FADU]
	p.N238S [1] [GI1]	p.V207M [1] [JEKO1]	p.V182F [1] [MOGGUVW]
	p.R487W [1] [NALM6]	p.Y11H [1] [PANC0813]	p.Q629H [1] [RPMI8402]
	p.M724T [1] [SKHEP1]	p.A182V [1] [SKNFI]	p.E582G [1] [SNU1040]
	p.R234Q [1] [SNU1040]	p.L490F [1] [SNU175]	p.V218I [1] [SNUC5]
	p.N68S [1] [SW1990]		
ERCC4	p.T221A [1] [HCT116]	p.S412N [1] [KYSE140]	p.G80E [1] [KYSE180]
	p.R740C [1] [SNU1040]	p.A826V [1] [SNU1040]	p.A825G [1] [SNU182]
	p.V870I [1] [SNU407]		
ERCC5	p.A459T [1] [HS940T]	p.E696A [1] [IM95]	p.E152K [1] [KYSE270]
	p.S477A [1] [LS180]	p.S674F [1] [MDST8]	p.K1123R [1] [NCIH1869]
	p.A513T [1] [SW48]		
ERG	p.D213N [1] [DU145]	p.E117D [1] [L540]	p.R377H [1] [LS411N]
	p.V162I [1] [MFE319]	p.V58I [1] [SNU175]	
ETV1	p.N23T [1] [DAUDI]	p.A167T [1] [HCT15]	p.L79M [1] [NCIH2126]
	p.N23T [1] [OCIAML5]	p.T240A [1] [PATU8902]	p.I366N [1] [SNU1040]
	p.A102T [1] [SNU1040]		
ETV4	p.R387W [1] [CMLT1]	p.S58R [1] [MOLP8]	p.P117S [1] [NAMALWA]
	p.V448I [1] [OVKATE]	p.E451K [1] [RPMI8402]	p.R338W [1] [SNU1040]
	p.A137T [1] [SNU1040]	p.G480D [1] [SNU175]	
ETV5	p.T480A [1] [AN3CA]	p.C300G [1] [CAS1]	p.A175T [1] [MFE319]
	p.V301I [1] [NALM6]	p.S319C [1] [NCIH1563]	p.W371C [1] [SNU1040]
ETV6	p.R163M [1] [CMK]	p.R259L [1] [DU145]	p.S26T [1] [HCT15]
	p.D83E [1] [KYSE450]	p.P223L [1] [OV56]	p.Y314C [1] [PF382]
	p.N243D [1] [RKO]		
EWSR1	p.C543R [1] [AN3CA]	p.R455W [1] [CMLT1]	p.M294L [1] [DAUDI]

	p.M294L [1] [DND41]	p.Q229H [1] [FU97]	p.R603W [1] [KCL22]
	p.Q628P [1] [KURAMOCHI]	p.R486H [1] [MELHO]	p.E549D [1] [NCIH2141]
	p.G619A [1] [RAJI]		
EXT1	p.V66F [1] [DAUDI]	p.H48Q [1] [DAUDI]	p.L26V [1] [DAUDI]
EXT2	p.K617N [1] [EVSAT]	p.I459M [1] [HCC1569]	p.T457A [1] [LNCAPCLONEFGC]
	p.R64H [1] [LS411N]		
FANCA	p.E1106K [1] [8305C]	p.V677M [1] [A172]	p.E1351D [1] [BCPAP]
	p.A430V [1] [CCK81]	p.R1144Q [1] [DANG]	p.V580M [1] [FTC133]
	p.V48A [1] [IGROV1]	p.P805R [1] [KO52]	p.F1008L [1] [LK2]
	p.E369D [1] [LNCAPCLONEFGC]	p.R1084C [1] [LS180]	p.R1136G [1] [MFE319]
	p.L1143V [1] [REH]	p.R350Q [1] [RERFLCSQ1]	p.T1375A [1] [SNU175]
	p.S75G [1] [SNU407]	p.R350Q [1] [TYKNU]	p.K701E [1] [YAPC]
FANCC	p.A158V [1] [CW2]	p.I518T [1] [OVK18]	p.E265K [1] [OVK18]
	p.T319M [1] [SNU1040]	p.T503M [1] [SNU387]	p.R555Q [1] [SNU81]
	p.M350V [1] [SU8686]		
FANCD2	p.S271L [1] [CAL78]	p.S373L [1] [CAMA1]	p.I850V [1] [CMLT1]
	p.P1455S [1] [DND41]	p.S445C [1] [HCT15]	p.D662Y [1] [HEL]
	p.D645Y [1] [HH]	p.E827A [1] [KMS12BM]	p.K30E [1] [NAMALWA]
	p.L699V [1] [NCIH650]	p.Q626R [1] [PF382]	p.M267I [1] [RCHACV]
	p.Y468H [1] [SKM1]	p.S612P [1] [SNU1040]	p.V845A [1] [SNU1040]
	p.S1345F [1] [SNU1040]	p.F386L [1] [SUPHD1]	
FANCE	p.A433V [1] [639V]	p.E225K [1] [CAMA1]	p.L101P [1] [DND41]
	p.S154F [1] [EBC1]	p.R134H [1] [HUPT3]	p.Q161E [1] [NCIH1651]
	p.A243T [1] [SNU1040]	p.A360V [1] [SNU1040]	
FANCF	p.R122W [1] [CMLT1]	p.K324E [1] [KATOIII]	p.A353S [1] [LS180]
	p.T56M [1] [MFE296]		
FANCG	p.P319S [1] [HCT15]	p.R127H [1] [KMH2]	p.S540G [1] [SNU1040]
	p.R141C [1] [SNU283]	p.L445P [1] [SNU407]	
FBXW7	p.D90N [1] [CAL51]	p.G619R [1] [EN]	p.E65D [1] [HT115]
	p.N71D [1] [KCL22]		
FCGR2B	p.T118I [1] [CCK81]	p.T118I [1] [CORL23]	p.E144D [1] [HT55]
	p.M264K [1] [HUPT4]	p.A286V [1] [LNCAPCLONEFGC]	p.P47L [1] [MEWO]
	p.K162N [1] [NCIH441]	p.T118I [1] [RPMI8226]	p.S177L [1] [UACC812]
	p.S121R [1] [UACC893]		
FGFR1	p.S597F [1] [COLO792]	p.S124F [1] [KG1]	p.G567D [1] [LNCAPCLONEFGC]
	p.G194C [1] [MEG01]	p.R209H [1] [NCIH358]	
FGFR1OP	p.K63R [1] [DAUDI]	p.N196S [1] [NCIH524]	p.I174T [1] [PF382]
	p.S216I [1] [RCM1]	p.K63R [1] [SJRH30]	
FGFR2	p.G364E [1] [AU565]	p.R6C [1] [COLO792]	p.A315T [1] [ESS1]
	p.E163K [1] [MEWO]	p.A355S [1] [NCIH1623]	p.Y328S [1] [NCIH23]
	p.K401R [1] [RERFLCMS]	p.T341M [1] [RKN]	p.P559H [1] [SKOV3]
	p.L451I [1] [SNU1040]		
FGFR3	p.P62L [1] [COLO792]	p.A374T [1] [EFO27]	p.E332K [1] [KM12]
	p.T79S [1] [NCIH2009]	p.R359P [1] [NCIH526]	p.P778H [1] [SNUC5]
	p.G561S [1] [TE6]		
FH	p.D219N [1] [IGR37]	p.A314T [1] [KYSE410]	p.M259I [1] [NCIH1355]
	p.M454V [1] [SNU1040]		
FHIT	p.E133K [1] [CAL851]	p.H94R [1] [IGROV1]	p.T61M [1] [PL21]

	p.M82I [1] [SNU1040]		
FIP1L1	p.N289S [1] [DAUDI]	p.T266P [1] [ESS1]	p.S37G [1] [HT115]
	p.G133E [1] [KYSE510]	p.G179R [1] [MM1S]	p.G427D [1] [SNU1040]
	p.R483T [1] [TGBC11TKB]		
FLI1	p.A297T [1] [SNU1040]		
FLT3	p.A642V [1] [CGTHW1]	p.H746R [1] [IGROV1]	p.A445T [1] [JHH7]
	p.E293K [1] [KYSE510]	p.A443T [1] [MOLT13]	p.E716D [1] [RL952]
	p.T382S [1] [SAOS2]	p.A450V [1] [SKOV3]	p.S59A [1] [SKOV3]
	p.N122S [1] [SNUC5]		
FNBP1	p.A95T [1] [CMLT1]	p.A160T [1] [COLO792]	p.Q363P [1] [DAUDI]
	p.V100E [1] [SKOV3]	p.D144V [1] [SNGM]	
FOXP1	p.G30A [1] [A3KAW]	p.E674D [1] [A498]	p.M101V [1] [HSC2]
	p.P209S [1] [LOXIMVI]	p.Q184H [1] [NCIH2227]	p.M101V [1] [P31FUJ]
	p.Y565C [1] [SUPHD1]		
FUS	p.S165T [1] [UACC893]		
GAS7	p.Q277H [1] [HCC15]	p.D434N [1] [KYSE70]	p.A134T [1] [SNU407]
GATA1	p.P14A [1] [NCIH660]	p.A254E [1] [TOV21G]	
GATA2	p.H51Y [1] [KP3]	p.R337Q [1] [SNU1040]	
GMPS	p.R435T [1] [HUCCT1]	p.P673T [1] [OE33]	p.R320W [1] [REH]
	p.G20D [1] [SNU1040]		
GNAQ	p.R37H [1] [HCT116]	p.F228C [1] [HT115]	p.D23E [1] [KMH2]
GNAS	p.P335L [1] [A2780]	p.P219S [1] [AN3CA]	p.S305P [1] [BFTC905]
	p.A272E [1] [CPCN]	p.P336S [1] [CW2]	p.R547S [1] [DU145]
	p.I330V [1] [EB2]	p.D167H [1] [HCC78]	p.A364D [1] [J82]
	p.A314V [1] [KM12]	p.Q25H [1] [KPNYN]	p.D333E [1] [KYSE410]
	p.H41Y [1] [LNCAPCLONEFGC]	p.K635E [1] [LS411N]	p.K24T [1] [MOLP8]
	p.R562H [1] [MOLT16]	p.E350G [1] [NCIH2342]	p.E303K [1] [NCIH661]
	p.S96P [1] [PF382]	p.R232H [1] [RAJI]	p.A257T [1] [SNU1040]
	p.R544W [1] [SNU1040]	p.R232H [1] [SNU1040]	p.E140Q [1] [SW900]
GOLGA5	p.P58T [1] [A204]	p.G87A [1] [NCIH2009]	p.K199E [1] [NCIH460]
	p.D408V [1] [SKM1]	p.S453F [1] [SNU1040]	p.A629T [1] [SNU182]
GOPC	p.K167T [1] [HCC366]	p.S412N [1] [IGROV1]	
GPC3	p.A232P [1] [OVISE]	p.D534G [1] [SKUT1]	
GPHN	p.P251S [1] [DBTRG05MG]	p.H271N [1] [DEL]	p.S250G [1] [EN]
	p.H624N [1] [LNCAPCLONEFGC]	p.R350H [1] [NALM6]	
HIP1	p.T711P [1] [HCC38]	p.G773A [1] [KMH2]	p.Y135C [1] [LNCAPCLONEFGC]
	p.P108S [1] [LNCAPCLONEFGC]	p.D721E [1] [LOVO]	p.G766S [1] [PF382]
	p.R444Q [1] [SNU1040]	p.L342V [1] [SNU81]	
HIST1H4I	p.R79H [1] [SNU1040]	p.R79L [1] [TGBC11TKB]	
HLF	p.L126I [1] [DU145]		
HMGA1	p.R24G [1] [AM38]		
HMGA2	p.V88I [1] [RL952]	p.K93N [1] [TT2609C02]	

HNRNPA2B1	p.W32L [1] [DB]	p.R226C [1] [HCC1569]	p.Y324C [1] [LS411N]
HOXA11	p.S164N [1] [DAUDI] p.E152K [1] [NCIH2228] p.A99T [1] [SNUC5]	p.E259A [1] [HT] p.P8H [1] [RCHACV]	p.G24A [1] [NCIH1436] p.C246Y [1] [REH]
HOXA13	p.Q333E [1] [KMH2] p.R10G [1] [TC71]	p.M211V [1] [KP4]	p.V16I [1] [SW780]
HOXA9	p.S171R [1] [MIAPACA2]		
HOXC11	p.P130T [1] [HARA] p.A29T [1] [SNU1040]	p.P130T [1] [PC14] p.G81S [1] [SNU1040]	p.R15C [1] [SNU1040]
HOXC13	p.R10H [1] [NALM6]		
HOXD11	p.G67S [1] [2313287] p.R283S [1] [NCIH2227]	p.P74S [1] [CW2] p.S33L [1] [RS411]	p.E284G [1] [LNCAPCLONEFGC]
HOXD13	p.N290K [1] [KYSE150]		
HRAS	p.G12D [1] [HS578T]	p.L171P [1] [PF382]	p.A11T [1] [RCHACV]
IDH2	p.S408R [1] [LS513]	p.S408R [1] [MELHO]	
IKZF1	p.T194M [1] [639V] p.S247N [1] [COLO668] p.W141R [1] [G402] p.R74C [1] [IPC298] p.I125V [1] [OCIAML5] p.P113T [1] [UACC62]	p.G106V [1] [AU565] p.Y321S [1] [COLO792] p.R74L [1] [HCC15] p.C150Y [1] [KCL22] p.D186Y [1] [OCIAML5]	p.G57E [1] [CHAGOK1] p.I125V [1] [DAUDI] p.R163C [1] [HT115] p.Q44H [1] [KYSE150] p.R69C [1] [PF382]
IL2	p.R140K [1] [CW2]	p.P54S [1] [MELHO]	
IL21R	p.S492N [1] [HCT116] p.G152D [1] [LS411N]	p.V245A [1] [KMH2] p.G439A [1] [MIAPACA2]	p.I98V [1] [KYSE150] p.M1V [1] [SNU407]
IL6ST	p.H822P [1] [DAUDI] p.R911W [1] [SNU1040]	p.S732L [1] [IM95]	p.V38A [1] [LNCAPCLONEFGC]
IRF4	p.E236K [1] [BT483]	p.G323R [1] [SNU1040]	p.S366A [1] [SNU81]
ITK	p.A191T [1] [HARA] p.Q373K [1] [SCABER]	p.K385N [1] [LNCAPCLONEFGC] p.L253F [1] [SNU81]	p.R394Q [1] [NCIH2196] p.G370C [1] [VMRCLCD]
JAK1	p.A193V [1] [2313287] p.A449T [1] [LOVO] p.M299T [1] [PF382]	p.I375V [1] [C2BBE1] p.L702M [1] [MHHNB11]	p.S102F [1] [ES2] p.F516S [1] [ONS76]
JAK2	p.V617F [1] [CMK] p.N1129S [1] [SNU1040]	p.L905P [1] [PF382] p.Y96H [1] [SUPHD1]	p.V563I [1] [SNU1040] p.T108A [1] [SW1990]
JAK3	p.P37A [1] [CCK81] p.H1113R [1] [HCT15] p.G153S [1] [NCIH1436] p.R180Q [1] [OCIM1] p.R403H [1] [SNU1040]	p.T321N [1] [DAOY] p.V469L [1] [KYSE140] p.L471F [1] [NCIH1573] p.H645Y [1] [RPMI7951]	p.R395C [1] [HCC1419] p.M1097L [1] [LN229] p.E698K [1] [NCIH661] p.L1073I [1] [SKMEL24]
JAZF1	p.R223Q [1] [IGROV1] p.H103R [1] [RKO]	p.R102C [1] [LS180]	p.R223G [1] [NCIH596]
JUN	p.H87R [1] [CHAGOK1]		
KDM5A	p.I1708L [1] [DAUDI]	p.V1697D [1] [DAUDI]	p.D1156E [1] [DAUDI]

	p.M1154I [1] [DAUDI]	p.M132I [1] [DAUDI]	p.R519K [1] [GRANTA519]
	p.S1507L [1] [HCC1395]	p.E44D [1] [HCC2218]	p.M540V [1] [JIMT1]
	p.D1661N [1] [LCLC103H]	p.C345R [1] [LNCAPCLONEFGC]	p.Y720H [1] [NCIH526]
	p.D1156E [1] [OCIAML5]	p.M1154I [1] [OCIAML5]	p.S691P [1] [PF382]
	p.R1217W [1] [SNGM]	p.Q1468H [1] [SNU1040]	p.Q281K [1] [T84]
	p.R1157H [1] [TOV21G]	p.G1695R [1] [TYKNU]	
KDM6A	p.I591V [1] [DAUDI]	p.Q647P [1] [DAUDI]	p.S651L [1] [DAUDI]
	p.I724T [1] [DAUDI]	p.H733Q [1] [DAUDI]	p.M754V [1] [DAUDI]
	p.T755M [1] [DAUDI]	p.T794P [1] [DAUDI]	p.A806T [1] [DAUDI]
	p.M866I [1] [DAUDI]	p.N204S [1] [DND41]	p.M754V [1] [DND41]
	p.T755M [1] [DND41]	p.T794P [1] [DND41]	p.A1312T [1] [EN]
	p.T181A [1] [NCIH2405]	p.Q647P [1] [OCIAML5]	p.S651L [1] [OCIAML5]
	p.I724T [1] [OCIAML5]	p.H733Q [1] [OCIAML5]	p.T755M [1] [OCIAML5]
	p.T794P [1] [OCIAML5]	p.A806T [1] [OCIAML5]	p.E745K [1] [SKUT1]
	p.N1204T [1] [SNGM]	p.W321L [1] [SW48]	
KDR	p.G255R [1] [DEL]	p.D558A [1] [DMS53]	p.S925F [1] [HCT15]
	p.A853V [1] [IGROV1]	p.S26G [1] [KM12]	p.A750T [1] [MFE319]
	p.V567M [1] [PANC0203]	p.L31P [1] [SKNAS]	p.A1030V [1] [SNU1040]
	p.R725H [1] [SNU1040]	p.S153T [1] [SNU175]	p.A342V [1] [UACC257]
KIAA1549	p.A1471V [1] [2313287]	p.K565E [1] [A101D]	p.T1726A [1] [A204]
	p.A1218E [1] [A498]	p.P204S [1] [COLO679]	p.R1162M [1] [DB]
	p.E342K [1] [ECGI10]	p.K1307E [1] [HCC1806]	p.T948A [1] [HCC202]
	p.M1869I [1] [HH]	p.S1689I [1] [HOS]	p.A1681P [1] [HSC3]
	p.A1530T [1] [KCL22]	p.P1452H [1] [KMH2]	p.L988F [1] [KMH2]
	p.S664F [1] [LN229]	p.Y1515H [1] [LNCAPCLONEFGC]	p.P1674S [1] [MELHO]
	p.R1473W [1] [MFE319]	p.R477H [1] [NCIH2172]	p.A488S [1] [NCIH23]
	p.S1751L [1] [OPM2]	p.L443V [1] [PC14]	p.R477H [1] [RCHACV]
	p.H1834N [1] [RL]	p.P428S [1] [SKMEL2]	p.D336N [1] [SKMEL30]
	p.V1879M [1] [SNU1040]	p.P361L [1] [SNU1040]	p.Y368H [1] [SNU175]
	p.V1879M [1] [SNU423]	p.P1879L [1] [SNU449]	p.A1681P [1] [SNU81]
	p.R477H [1] [SNUC5]	p.P893L [1] [SW1783]	p.P636S [1] [TE6]
KIT	p.T232M [1] [2313287]	p.D910Y [1] [AM38]	p.A701S [1] [BV173]
	p.D159N [1] [HDLM2]	p.G510A [1] [KMH2]	p.D266N [1] [KYSE270]
	p.T232M [1] [KYSE450]	p.Q21P [1] [LU65]	p.K626R [1] [MDAMB415]
	p.R946P [1] [NCIH650]	p.T520S [1] [SIGM5]	
KRAS	p.G12D [1] [ISHIKAWAHERAKLIO02ER]	p.M188V [1] [KP4]	p.Q61H [1] [SJSA1]
KTN1	p.T631A [1] [AM38]	p.S243N [1] [CW2]	p.T631A [1] [ECC12]
	p.Q481P [1] [FU97]	p.T631A [1] [FU97]	p.T631A [1] [HUPT4]
	p.T631A [1] [IALM]	p.T631A [1] [KMS12BM]	p.T631A [1] [MOLP8]
	p.K1077R [1] [NCIH1048]	p.T631A [1] [NUGC3]	p.L841I [1] [OVK18]
	p.T631A [1] [RERFGC1B]	p.A91V [1] [RL952]	p.A342T [1] [SNU1040]
	p.T631A [1] [TE5]	p.T631A [1] [TE6]	
LASP1	p.A215P [1] [JHH7]	p.V232M [1] [LOVO]	p.D217N [1] [OE19]
	p.R197H [1] [SNU1040]	p.G132C [1] [SNU175]	p.A66V [1] [TOV21G]
LCK	p.T87S [1] [CORL95]	p.E467D [1] [CW2]	p.E448Q [1] [KYSE510]
LCP1	p.T150M [1] [OVCAR8]		
LHFP	p.A169T [1] [LS180]	p.H55N [1] [NCIH2087]	p.Q60K [1] [T84]
LIFR	p.N1035H [1] [BV173]	p.V81A [1] [EB2]	p.H528Y [1] [HCT15]
	p.R932H [1] [HT115]	p.V658I [1] [KYSE70]	p.V658I [1] [LU65]
	p.L493F [1] [NCIH460]	p.D602G [1] [PF382]	p.V380I [1] [RL952]
	p.N426D [1] [SNU1040]	p.E319K [1] [SNU81]	
LMO1	p.E160K [1] [HT115]		

LPP	p.G62R [1] [CW2] p.K540N [1] [LS411N] p.P342R [1] [SW1088]	p.G197R [1] [GI1] p.G336V [1] [SHP77]	p.P407S [1] [KMS11] p.R22W [1] [SNU407]
LYL1	p.T273P [1] [HT]	p.R131W [1] [KM12]	
MAF	p.A51T [1] [CL34] p.S354N [1] [OCIAML5]	p.D40N [1] [CL34] p.S354N [1] [S117]	p.S354N [1] [DAUDI]
MAFB	p.A309V [1] [HCT15] p.S74N [1] [SNU1040]	p.L239M [1] [KM12]	p.I274F [1] [ONS76]
MALT1	p.H778R [1] [BFTC909] p.R296Q [1] [SNU81]	p.M732T [1] [SBC5]	p.P768S [1] [SNU1040]
MAML2	p.S421N [1] [CW2] p.T459A [1] [HCT15] p.R552C [1] [MHHCALL4]	p.S1010P [1] [EFM19] p.S226N [1] [KM12] p.R207C [1] [SNU81]	p.I700V [1] [HCC1569] p.P304H [1] [LNCAPCLONEFGC] p.N1154S [1] [SUDHL1]
MAP2K1	p.V85I [1] [DND41] p.K185T [1] [LS411N] p.Q56P [1] [SW1573]	p.Q56P [1] [KPNYN] p.A158T [1] [SKOV3]	p.Q56P [1] [LNCAPCLONEFGC] p.R160K [1] [SKOV3]
MAP2K2	p.V86L [1] [CAS1] p.P298L [1] [NCIH647]	p.R238W [1] [COLO680N] p.I115V [1] [SNU1040]	p.P301A [1] [MDAMB361] p.E148Q [1] [TE11]
MAP2K4	p.P338L [1] [HCC1569]		
MAX	p.R60Q [1] [CAL51]	p.R33Q [1] [CAMA1]	
MDM2	p.L315F [1] [COLO741]	p.E204G [1] [MOLT13]	p.S425N [1] [SAOS2]
MDM4	p.S127T [1] [DAUDI] p.R87C [1] [JHH1] p.I130F [1] [OCIAML5]	p.I130F [1] [DAUDI] p.R87C [1] [KYSE70] p.Q135R [1] [OCIAML5]	p.Q135R [1] [DAUDI] p.S127T [1] [OCIAML5]
MDS2	p.G61E [1] [FU97] p.R80C [1] [SJRH30]	p.G61E [1] [JEKO1]	p.P67H [1] [MDAMB415]
MEN1	p.R131C [1] [NCIH2342]	p.G156S [1] [NCIH596]	p.R456H [1] [SNU1040]
MET	p.P472S [1] [CHL1] p.A954V [1] [LNCAPCLONEFGC] p.D946H [1] [MDAMB415] p.V122D [1] [SNU1040]	p.E493K [1] [CHL1] p.W1338L [1] [LOUCY] p.P366S [1] [MEWO] p.V1007I [1] [TE9]	p.M636V [1] [HUPT3] p.E34K [1] [LS513] p.V13L [1] [NCIH1838]
MITF	p.V320I [1] [5637] p.Y18C [1] [HUH7] p.P75A [1] [OCIAML5] p.V251M [1] [SNU1040]	p.S52T [1] [DAUDI] p.Y253C [1] [KMH2] p.T94M [1] [PF382]	p.P91A [1] [DAUDI] p.T403P [1] [L1236] p.R40H [1] [SNU1040]
MKL1	p.N741Y [1] [AGS] p.S335L [1] [OCIAML2] p.R813H [1] [SNU1040]	p.C783Y [1] [MFE319] p.P647S [1] [RD] p.L642R [1] [SNU283]	p.S744L [1] [NCIH2009] p.P656H [1] [RL952] p.A801T [1] [TGBC11TKB]
MLF1	p.M1K [1] [ECC10]	p.H158Y [1] [RPMI8402]	
MLH1	p.V152M [1] [CW2] p.L582V [1] [KATOIII] p.L400V [1] [NCIH2342] p.V201A [1] [SAOS2]	p.A120S [1] [HCT15] p.G189D [1] [LNCAPCLONEFGC] p.G373A [1] [NCIH660]	p.A586V [1] [IGROV1] p.R659L [1] [MEWO] p.R10L [1] [RMGI]
MLL	p.A1122D [1] [CMLT1]	p.V2335A [1] [COLO741]	p.E898D [1] [DAUDI]

p.V917A [1] [DAUDI]   p.A922G [1] [DAUDI]   p.T958A [1] [DAUDI]
p.T972N [1] [DAUDI]   p.T993A [1] [DAUDI]   p.S3107P [1] [DAUDI]
p.S2105R [1] [DND41]   p.D1573N [1] [HCC56]   p.D2840E [1] [HCT15]
p.M2418V [1] [HSC2]   p.E1725D [1] [KATOIII]   p.T3510A [1] [KM12]
p.W3649L [1] [LNCAPCLONEFGC]   p.T401K [1] [MDAMB231]   p.A3440T [1] [MM1S]
p.K2434E [1] [NCIH1836]   p.N524S [1] [NMCG1]   p.T2269A [1] [PF382]
p.L2874F [1] [SNGM]

MLL3   p.S321N [1] [8505C]   p.L998F [1] [A2058]   p.Q982E [1] [A2058]
p.C394Y [1] [A3KAW]   p.S842Y [1] [A673]   p.C394Y [1] [AM38]
p.A970T [1] [AN3CA]   p.C1090F [1] [BEN]   p.S2472G [1] [C2BBE1]
p.P871H [1] [CAL12T]   p.S349R [1] [CAL33]   p.T316N [1] [CAL51]
p.E3924K [1] [CORL88]   p.A312E [1] [CORL88]   p.R4608H [1] [CORL95]
p.C748Y [1] [CW2]   p.A561T [1] [CW2]   p.C394Y [1] [CW2]
p.I331V [1] [CW2]   p.N3923T [1] [DAUDI]   p.P1426T [1] [DAUDI]
p.T3279A [1] [DND41]   p.G315V [1] [DU145]   p.C362F [1] [EB2]
p.D332G [1] [EB2]   p.T831S [1] [ECC10]   p.S769L [1] [ECC10]
p.P792T [1] [ECC12]   p.S321N [1] [ECC12]   p.D355V [1] [EFM192A]
p.S2585F [1] [EVSAT]   p.A1531V [1] [FTC133]   p.S763L [1] [FUOV1]
p.R866W [1] [GCIY]   p.C394Y [1] [GCIY]   p.C394Y [1] [GMS10]
p.A878V [1] [HARA]   p.P801H [1] [HCC15]   p.A779T [1] [HCC15]
p.C391Y [1] [HCC15]   p.E1096D [1] [HCC1569]   p.R380H [1] [HCC1806]
p.P1141S [1] [HCC70]   p.A779T [1] [HCC70]   p.G363D [1] [HCT116]
p.S3543N [1] [HCT15]   p.M741T [1] [HGC27]   p.H367L [1] [HS746T]
p.H850P [1] [HSC3]   p.V749A [1] [HT115]   p.F357L [1] [HT115]
p.C394Y [1] [HUPT4]   p.K2797E [1] [IGROV1]   p.C391F [1] [IM95]
p.C394Y [1] [JEKO1]   p.C394Y [1] [JHH1]   p.C394Y [1] [KALS1]
p.R907Q [1] [KG1]   p.Y4161S [1] [KMH2]   p.S321N [1] [KMRC1]
p.D355V [1] [KO52]   p.C394Y [1] [KU1919]   p.P2485S [1] [KYSE150]
p.S321N [1] [KYSE150]   p.S769L [1] [KYSE180]   p.G972E [1] [KYSE410]
p.C394Y [1] [KYSE510]   p.A779V [1] [LN18]   p.G964D [1] [LOUCY]
p.A286E [1] [LOUNH91]   p.K2797R [1] [LOVO]   p.S1883P [1] [MEWO]
p.G972R [1] [MEWO]   p.P787L [1] [MEWO]   p.P335R [1] [MHHNB11]
p.M741T [1] [MOLM13]   p.C394Y [1] [MOLM13]   p.M3329I [1] [MOLT13]
p.N393K [1] [NAMALWA]   p.K2797R [1] [NCIH1048]   p.T361I [1] [NCIH1048]
p.G900V [1] [NCIH1437]   p.Y366N [1] [NCIH1437]   p.A976T [1] [NCIH1793]
p.S349R [1] [NCIH2030]   p.P986A [1] [NCIH2066]   p.L378V [1] [NCIH2081]
p.T360N [1] [NCIH2087]   p.A976T [1] [NCIH211]   p.T361I [1] [NCIH2110]
p.V4703I [1] [NCIH2170]   p.P840A [1] [NCIH2342]   p.C748F [1] [NCIH441]
p.A286E [1] [NCIH508]   p.S978C [1] [NCIH520]   p.K843R [1] [NCIH522]
p.I991N [1] [NCIH69]   p.V920L [1] [NCIH69]   p.H322N [1] [NCIH69]
p.K992N [1] [NCIH810]   p.P377T [1] [NCIH810]   p.C359R [1] [NCIH810]
p.A314P [1] [NMCG1]   p.L326V [1] [NUGC3]   p.N393S [1] [OCIAML5]
p.L1794V [1] [OVCAR4]   p.S321N [1] [OVISE]   p.C394Y [1] [PC14]
p.R4594G [1] [PF382]   p.Q2394R [1] [PF382]   p.C394Y [1] [RKN]
p.K2797R [1] [RKO]   p.C391Y [1] [RKO]   p.V692D [1] [RL]
p.V962A [1] [RL952]   p.A976T [1] [RT4]   p.T376I [1] [SCABER]
p.C344S [1] [SKHEP1]   p.P3644S [1] [SKNSH]   p.S321N [1] [SKUT1]
p.R4597H [1] [SNU1040]   p.S777N [1] [SNU1040]   p.E712G [1] [SNU1040]
p.D3457N [1] [SNU175]   p.C298Y [1] [SNU407]   p.R3077C [1] [SNU81]
p.L804V [1] [SUPB15]   p.P2468S [1] [SUPHD1]   p.V4115G [1] [SW1088]
p.D4103N [1] [SW1088]   p.V405M [1] [SW1088]   p.A286E [1] [SW1710]
p.M796I [1] [SW48]   p.P309L [1] [SW837]   p.H330N [1] [T98G]
p.E1521K [1] [TE8]   p.S1336C [1] [TE9]   p.A374V [1] [TGBC11TKB]
p.C394Y [1] [THP1]   p.P871T [1] [UACC257]   p.P1141S [1] [VMCUB1]

MLLT1   p.P127H [1] [22RV1]   p.P113L [1] [A2058]   p.L539F [1] [CW2]
p.N520I [1] [HCT15]   p.P156S [1] [LNCAPCLONEFGC]   p.R504Q [1] [REH]
p.R548C [1] [SNU1040]

MLLT10   p.S142P [1] [CMLT1]   p.D213E [1] [DAUDI]   p.T286A [1] [DAUDI]
p.T310A [1] [DAUDI]   p.D385E [1] [EFO21]   p.S219F [1] [HCC78]
p.V117I [1] [HCT15]   p.A1036V [1] [HCT15]   p.G602W [1] [JHH7]
p.S494L [1] [MDAMB361]   p.Q657R [1] [OPM2]   p.M21T [1] [PF382]

	p.D155V [1] [SKM1]	p.R173H [1] [SNU81]	p.I167V [1] [VMRCRCZ]
MLLT3	p.T351M [1] [CMLT1]	p.R298G [1] [COLO684]	p.E231D [1] [DAUDI]
	p.E231D [1] [DND41]	p.P265A [1] [OCIAML5]	p.E231D [1] [OCIAML5]
	p.F89L [1] [SW1463]		
MLLT4	p.R224Q [1] [639V]	p.S1023L [1] [639V]	p.V1357A [1] [CCK81]
	p.L286V [1] [CMK]	p.A1646D [1] [HCT15]	p.P1602L [1] [IPC298]
	p.L358M [1] [ISTMES1]	p.R829S [1] [KMH2]	p.Y1481C [1] [LNCAPCLONEFGC]
	p.A76V [1] [NCIH1436]	p.L1541V [1] [RCHACV]	p.T1430S [1] [RPMI8226]
	p.K311R [1] [SNGM]	p.Y406H [1] [SNU1040]	p.T1195M [1] [SNU1040]
	p.A1331T [1] [SNU1040]	p.I524V [1] [SNU423]	p.R976H [1] [SNUC5]
MLLT6	p.G691S [1] [CAL851]	p.R659L [1] [DU145]	
MN1	p.A1091T [1] [HARA]	p.A54V [1] [HT115]	p.M1229K [1] [KM12]
	p.G821S [1] [KYSE150]	p.G42R [1] [LS180]	p.P121R [1] [NCIH650]
	p.P1099S [1] [SNU1040]	p.G900S [1] [SNU1040]	p.A837T [1] [SNU1040]
	p.R73P [1] [SUDHL1]	p.Q1193R [1] [TE8]	
MPL	p.L582P [1] [AN3CA]	p.P372T [1] [CMLT1]	p.G238D [1] [KM12]
	p.V501L [1] [LNCAPCLONEFGC]	p.L571P [1] [MFE319]	p.A490G [1] [NCIH2452]
	p.D128E [1] [SJRH30]	p.R123Q [1] [SNU81]	p.W4R [1] [SUDHL1]
	p.A21S [1] [SW1463]		
MSH2	p.R243Q [1] [CL40]	p.Q910K [1] [DMS114]	p.S723F [1] [HCC1599]
	p.M688I [1] [HUPT3]	p.S124F [1] [KMH2]	p.M688I [1] [LU65]
	p.M663T [1] [MFE319]	p.R382H [1] [NCIH1755]	p.T788S [1] [SKUT1]
MSH6	p.A1055T [1] [A704]	p.P1087A [1] [CHAGOK1]	p.A1055T [1] [CW2]
	p.R644T [1] [EB2]	p.G685S [1] [FTC133]	p.D1255N [1] [HCC1395]
	p.V800A [1] [HT]	p.G141D [1] [MEG01]	p.T1085N [1] [NCIH1581]
	p.R1068Q [1] [OCILY19]	p.T727S [1] [OVCAR8]	p.A1055T [1] [SNU1040]
MSN	p.Q480H [1] [DAUDI]	p.L218M [1] [IGROV1]	p.A148T [1] [NCIH1048]
MTCP1	p.G3E [1] [NCIH2228]	p.R36H [1] [T47D]	
MUC1	p.T204A [1] [EN]	p.P134A [1] [HCC2157]	p.P3L [1] [HCT116]
	p.G32C [1] [HCT15]	p.R206Q [1] [HT115]	p.G89D [1] [KYSE70]
	p.T197S [1] [LS411N]	p.P122L [1] [NCIH1563]	p.P82S [1] [NCIH1568]
	p.S28I [1] [OE19]	p.R235H [1] [PF382]	p.L108P [1] [RKO]
	p.V201F [1] [RPMI8226]	p.L196H [1] [SNU1040]	p.R235C [1] [SW620]
MUTYH	p.R361C [1] [AN3CA]	p.T461A [1] [CCK81]	p.Q335R [1] [LOUCY]
	p.S343L [1] [NCIH1693]	p.P331A [1] [OAW28]	p.R434Q [1] [RPMI8226]
	p.V231M [1] [SF295]	p.Y177H [1] [SJSA1]	p.G53R [1] [SNU1040]
	p.A330S [1] [SNU175]		
MYB	p.H219Y [1] [IGROV1]	p.P316Q [1] [NCIH1648]	p.M620I [1] [NCIH661]
	p.T570A [1] [SNU1040]		
MYC	p.S203N [1] [A3KAW]	p.V7M [1] [EB2]	p.S344T [1] [GI1]
	p.V5A [1] [NAMALWA]	p.S6R [1] [NUDUL1]	p.S182T [1] [NUDUL1]
	p.C300Y [1] [PF382]	p.P2S [1] [RAJI]	p.V5A [1] [RAJI]
	p.T8S [1] [ST486]	p.Q10H [1] [SUDHL8]	
MYCL1	p.P250L [1] [FUOV1]		
MYCN	p.I277F [1] [639V]	p.L61P [1] [AN3CA]	p.G103C [1] [CW2]
	p.P57H [1] [HCT15]	p.P237L [1] [RT112]	p.E270Q [1] [ZR7530]
MYD88	p.D288E [1] [HS766T]	p.R301C [1] [SNU1040]	p.V52M [1] [SNUC5]
	p.K128N [1] [SNUC5]	p.A146T [1] [SW1088]	

MYH11	p.L1456F [1] [BL41]	p.A1204V [1] [G402]	p.R910Q [1] [HCC1569]
	p.E986D [1] [KS1]	p.V252I [1] [MFE319]	p.K1284Q [1] [NCIH2087]
	p.K979N [1] [NCIH716]	p.A1616T [1] [NUGC3]	p.C823Y [1] [RL952]
	p.A815T [1] [SNU1040]	p.D10N [1] [SNU1040]	
MYH9	p.A5P [1] [AU565]	p.L1394P [1] [ISHIKAWAHERAKLIO02ER]	p.M809T [1] [L1236]
	p.Q1501H [1] [MOGGUVW]	p.Q1314H [1] [NCIH2066]	p.S364Y [1] [ONS76]
	p.R1124H [1] [PF382]	p.R1612Q [1] [SNU1040]	p.R693H [1] [SNU1040]
	p.A363V [1] [SNU1040]	p.R802W [1] [SNU175]	
MYST4	p.E1081D [1] [8305C]	p.V1180A [1] [AGS]	p.S1229G [1] [BFTC905]
	p.E741A [1] [BT20]	p.D1077E [1] [BT20]	p.S1850F [1] [CAL29]
	p.P1241H [1] [CAL51]	p.E1096K [1] [COLO792]	p.A1976V [1] [CW2]
	p.N364S [1] [DAUDI]	p.C381S [1] [DAUDI]	p.D394H [1] [DAUDI]
	p.I413T [1] [DAUDI]	p.T416S [1] [DAUDI]	p.S1717N [1] [DAUDI]
	p.T2030S [1] [DAUDI]	p.G2044A [1] [DAUDI]	p.C381S [1] [DND41]
	p.D394H [1] [DND41]	p.I413T [1] [DND41]	p.T416S [1] [DND41]
	p.D1415Y [1] [EFM19]	p.Y1274C [1] [EN]	p.M2002V [1] [EN]
	p.P496L [1] [GCT]	p.T1525I [1] [HCT116]	p.L945I [1] [HCT15]
	p.K1250N [1] [HCT15]	p.K1490N [1] [HCT15]	p.A1635V [1] [HCT15]
	p.P1973S [1] [HCT15]	p.E1081D [1] [HS940T]	p.K1243R [1] [KP3]
	p.S1229G [1] [KS1]	p.S423C [1] [L428]	p.A1563V [1] [LS411N]
	p.V1748I [1] [LS513]	p.V1545I [1] [LXF289]	p.E1206K [1] [MDAMB453]
	p.S1625N [1] [MEWO]	p.E1373G [1] [MFE319]	p.Q1916H [1] [NCIH1435]
	p.E1081D [1] [NCIH1436]	p.Q1628K [1] [NCIH1755]	p.G656R [1] [NCIH1975]
	p.G1134C [1] [NCIH23]	p.N364S [1] [OCIAML5]	p.C381S [1] [OCIAML5]
	p.D394H [1] [OCIAML5]	p.I413T [1] [OCIAML5]	p.T416S [1] [OCIAML5]
	p.G2044A [1] [OCIAML5]	p.E1081D [1] [P31FUJ]	p.E1081D [1] [PANC0203]
	p.T1960A [1] [PF382]	p.S189G [1] [RL952]	p.L547I [1] [SCC4]
	p.S417T [1] [SIGM5]	p.A35V [1] [SNU1040]	p.A1403T [1] [SNU1040]
	p.R1033G [1] [SNU423]	p.P1126T [1] [SUDHL10]	p.A114T [1] [TE11]
	p.M311L [1] [TE4]	p.S1770G [1] [TOV21G]	p.R594T [1] [ZR7530]
	p.S1924Y [1] [ZR7530]		
NACA	p.R77W [1] [KYSE410]	p.V190A [1] [SNU1040]	
NCOA1	p.N585S [1] [EN]	p.P1180L [1] [JHH2]	p.G1423E [1] [MIAPACA2]
	p.N1244S [1] [NCIH1792]	p.Y533D [1] [OCUM1]	p.R35L [1] [RPMI7951]
	p.V519I [1] [SKMEL1]	p.L1366F [1] [SUPHD1]	
NCOA2	p.D714E [1] [DAUDI]	p.I427M [1] [DAUDI]	p.S420G [1] [DAUDI]
	p.N401S [1] [DAUDI]	p.T390A [1] [DAUDI]	p.G941S [1] [HARA]
	p.V256A [1] [HCC1569]	p.A14E [1] [HS746T]	p.P823Q [1] [LNCAPCLONEFGC]
	p.Y1148C [1] [NCIH1876]	p.A231T [1] [NCIH1876]	p.E718V [1] [PF382]
	p.S533P [1] [SNU1040]	p.R491H [1] [SNU1040]	
NCOA4	p.D554E [1] [DEL]	p.R52W [1] [IGROV1]	p.S396C [1] [NCIH2227]
	p.E219G [1] [SNU1040]		
NF1	p.E1720D [1] [A4FUK]	p.K1385R [1] [DAUDI]	p.V2096L [1] [EJM]
	p.D2635Y [1] [KALS1]	p.N1054H [1] [KG1]	p.S1470N [1] [KYSE150]
	p.M376I [1] [LNCAPCLONEFGC]	p.L585V [1] [MELJUSO]	p.N1054H [1] [MIAPACA2]
	p.E1720D [1] [MOLM13]	p.K1385R [1] [OCIAML5]	
NF2	p.A489P [1] [MPP89]	p.P135L [1] [SNGM]	
NFKB2	p.L20W [1] [EPLC272H]	p.L653P [1] [MC116]	p.D714N [1] [PANC0813]
	p.A286T [1] [SNU1040]	p.R339Q [1] [SNU1040]	p.R685H [1] [SNU1040]
NIN	p.R845C [1] [2313287]	p.H1148Y [1] [CAL62]	p.N1889S [1] [CAPAN1]
	p.R1639Q [1] [FTC133]	p.D383Y [1] [HT55]	p.N87S [1] [KMH2]
	p.S826F [1] [KYSE270]	p.Q923R [1] [LNCAPCLONEFGC]	p.C197F [1] [LP1]
	p.G1632V [1] [LS1034]	p.G844E [1] [NCIH1568]	p.R2058S [1] [NCIH1651]

	p.K1253R [1] [SHP77]	p.A1747V [1] [SNU1040]	p.A1666V [1] [SNU1040]
	p.T1145A [1] [SNU1040]	p.G283E [1] [SNU1040]	p.R952K [1] [SNUC5]
NONO	p.A404T [1] [MDST8]	p.I192V [1] [OVK18]	p.D422G [1] [SNU1040]
	p.R287H [1] [SNU175]		
NOTCH1	p.R2096H [1] [639V]	p.G2246R [1] [BT483]	p.H2126Q [1] [C3A]
	p.P2439L [1] [CCK81]	p.G1320R [1] [CW2]	p.R1963S [1] [DND41]
	p.S2216L [1] [EFO21]	p.R2096C [1] [EN]	p.G1216D [1] [HCC1954]
	p.D620Y [1] [HCC2157]	p.G1196R [1] [HCT116]	p.P916L [1] [HCT116]
	p.G1196R [1] [KCL22]	p.R2264Q [1] [KP2]	p.M2057T [1] [KYSE450]
	p.G115D [1] [KYSE450]	p.E851K [1] [MDAMB361]	p.N816Y [1] [NCIH1651]
	p.Q1194H [1] [NCIH1666]	p.N1485S [1] [NCIH1755]	p.R880Q [1] [NCIH2030]
	p.D1874Y [1] [NCIH2227]	p.P2098L [1] [RCHACV]	p.S2524L [1] [REH]
	p.S458P [1] [REH]	p.Q2344R [1] [RKO]	p.T2372S [1] [RPMI8226]
	p.M1961T [1] [SNU1040]	p.C988W [1] [SNU1040]	p.R1855H [1] [SNU175]
	p.G1789S [1] [SW48]		
NOTCH2	p.T89M [1] [DMS273]	p.R72C [1] [EHEB]	p.C41S [1] [HCT116]
	p.A88V [1] [HCT15]	p.Q1634E [1] [HSC2]	p.S1445N [1] [KM12]
	p.M2005V [1] [LS411N]	p.P919T [1] [MDAMB436]	p.R318H [1] [NALM6]
	p.N2465S [1] [SCABER]	p.R65Q [1] [SNGM]	p.Y2264C [1] [SNU1040]
	p.C482Y [1] [SNU1040]	p.C79R [1] [SNU1040]	p.A1903V [1] [SNU175]
	p.C2328R [1] [SNU407]	p.R1895H [1] [TE11]	p.V1759A [1] [U87MG]
NPM1	p.R277W [1] [IGROV1]	p.N210S [1] [KALS1]	
NR4A3	p.E169K [1] [FTC133]	p.M428I [1] [KYSE150]	p.Q332R [1] [LNCAPCLONEFGC]
	p.G176S [1] [RCHACV]	p.N79D [1] [SNU1040]	
NRAS	p.Q61R [1] [HS940T]	p.Q61K [1] [JJN3]	p.Q61R [1] [KMH2]
	p.Q61K [1] [KYSE270]	p.Q61K [1] [NCIH1876]	p.Q61K [1] [SJSA1]
	p.Q61K [1] [SW1088]		
NSD1	p.A1260S [1] [CHAGOK1]	p.A487V [1] [CL34]	p.M1038V [1] [COLO680N]
	p.N586S [1] [CORL88]	p.N88S [1] [DAUDI]	p.E101A [1] [DAUDI]
	p.T109S [1] [DAUDI]	p.C158G [1] [DAUDI]	p.T197P [1] [DAUDI]
	p.K204E [1] [DAUDI]	p.T109S [1] [DND41]	p.C158G [1] [DND41]
	p.T197P [1] [DND41]	p.Q1302R [1] [HCC1569]	p.W2625C [1] [HCT15]
	p.R1844K [1] [HSC2]	p.H515L [1] [HT]	p.S131T [1] [JHH6]
	p.A1843V [1] [KCL22]	p.A1779S [1] [L363]	p.N674S [1] [LU65]
	p.E176K [1] [MOLT13]	p.T2356M [1] [MOLT13]	p.I652V [1] [NCIH650]
	p.P1006S [1] [NCIH841]	p.N88S [1] [OCIAML5]	p.T109S [1] [OCIAML5]
	p.C158G [1] [OCIAML5]	p.R389T [1] [OCIAML5]	p.G1536S [1] [PF382]
	p.M1094T [1] [RKO]	p.E657D [1] [SCC4]	p.H1991Y [1] [SNU1040]
	p.A1649T [1] [SNU398]	p.R1079K [1] [SNU81]	p.S2338R [1] [TT]
NTRK1	p.A107V [1] [2313287]	p.R314H [1] [639V]	p.M671T [1] [FTC133]
	p.T434M [1] [KYSE150]	p.V420M [1] [LOXIMVI]	p.R33W [1] [NCIH1048]
	p.A454V [1] [NCIH1944]	p.P149L [1] [NCIH650]	p.R28W [1] [SNUC5]
NTRK3	p.N714S [1] [A204]	p.V451I [1] [CAL51]	p.T490M [1] [CAPAN2]
	p.P586S [1] [DAUDI]	p.E566D [1] [DAUDI]	p.D535N [1] [HCT15]
	p.Q249L [1] [KP2]	p.H610Y [1] [KYSE270]	p.G595D [1] [MDST8]
	p.T404M [1] [NALM6]	p.S215G [1] [NCIH1435]	p.V307L [1] [NCIH1437]
	p.Y555C [1] [NCIH2030]	p.H677Y [1] [NCIH2087]	p.E223D [1] [NCIH727]
	p.M567T [1] [PF382]	p.T734I [1] [SNU1040]	p.R645H [1] [SNU1040]
	p.R343Q [1] [SNU175]	p.R89H [1] [SNU81]	p.R306C [1] [SW1783]
	p.G587R [1] [TGBC11TKB]		
NUMA1	p.R454Q [1] [CL11]	p.T1851A [1] [HCC366]	p.T1057M [1] [HCT15]
	p.L789V [1] [KLE]	p.D231N [1] [LNCAPCLONEFGC]	p.S682A [1] [NB4]
	p.S2082R [1] [NCIH1563]	p.R180H [1] [RCHACV]	p.R1877H [1] [SNU1040]
	p.A627T [1] [SNU1040]	p.R1490H [1] [SW48]	p.G493E [1] [TE4]

p.P402L [1] [TYKNU]

NUP214	p.P1591S [1] [CMLT1] p.V1609I [1] [HCC1806] p.T533A [1] [KYM1] p.L1320F [1] [NCIH2170] p.R815Q [1] [SNU1040] p.A1656P [1] [YAPC]	p.P1986L [1] [CMLT1] p.M1487V [1] [IGROV1] p.V562M [1] [LS411N] p.I570V [1] [NCIH841] p.A1302V [1] [SNU1040]	p.H928L [1] [CW2] p.M363V [1] [KARPAS299] p.E225G [1] [MFE319] p.S898L [1] [SKLMS1] p.A1254T [1] [TOV21G]
NUP98	p.A450V [1] [8MGBA] p.T456S [1] [DAUDI] p.Q296P [1] [DAUDI] p.F357V [1] [KYSE450] p.D1242E [1] [RCHACV] p.T99A [1] [TC71]	p.A210V [1] [CMLT1] p.S375T [1] [DAUDI] p.F130I [1] [FUOV1] p.T168N [1] [NCIH647] p.E1783K [1] [SUPHD1]	p.T459I [1] [DAUDI] p.I308L [1] [DAUDI] p.R834S [1] [IGROV1] p.T456M [1] [NUGC3] p.R599H [1] [SW1573]
OLIG2	p.N125K [1] [CW2] p.S88A [1] [OCUM1] p.T151M [1] [TGBC11TKB]	p.V8M [1] [FUOV1] p.S88A [1] [RKO]	p.P141H [1] [JHH7] p.D18H [1] [RL952]
OMD	p.G52R [1] [CMLT1]	p.E102D [1] [DAUDI]	p.Y97N [1] [DAUDI]
PAFAH1B2	p.N70H [1] [MDAMB436]		
PALB2	p.S652N [1] [BFTC905] p.C933S [1] [DND41] p.T720A [1] [HDLM2] p.Y743C [1] [JHOS4] p.Q460R [1] [KP2] p.S64L [1] [MIAPACA2] p.Y743C [1] [TYKNU]	p.T733A [1] [CCK81] p.L199F [1] [EN] p.A590V [1] [HT] p.S310G [1] [KARPAS620] p.Q460R [1] [KYSE140] p.Q460R [1] [RERFLCKJ]	p.H553Y [1] [CMLT1] p.E645K [1] [HCC78] p.E554K [1] [HT115] p.Y743C [1] [KMS11] p.V560L [1] [MCF7] p.A491T [1] [SKUT1]
PAX3	p.R270C [1] [DU145]	p.R56C [1] [SNGM]	p.R271C [1] [SU8686]
PAX5	p.L366I [1] [DMS79] p.S269L [1] [MDAMB453]	p.R197H [1] [DU145] p.S292N [1] [RCHACV]	p.D227H [1] [MCF7] p.A271T [1] [SNU175]
PAX7	p.A282V [1] [BV173] p.G412S [1] [KU1919] p.G412S [1] [OPM2] p.Y495C [1] [TE6]	p.G412S [1] [FUOV1] p.A354G [1] [NCIH446] p.Y495C [1] [SNU175] p.G412S [1] [TE8]	p.G17W [1] [HCT116] p.G412S [1] [ONS76] p.K486R [1] [SW1271] p.A395V [1] [TGBC11TKB]
PAX8	p.P2T [1] [EN] p.A189T [1] [SNU1040] p.D273N [1] [UACC893]	p.Y95H [1] [HCC1569] p.L208Q [1] [SUDHL8] p.P346L [1] [VMRCLCD]	p.P235S [1] [MEWO] p.G338R [1] [SW837]
PBX1	p.S391I [1] [CW2]	p.A365V [1] [HCC1569]	
PCM1	p.G1759R [1] [FADU] p.R28S [1] [NCIH2196] p.P1106S [1] [RERFGC1B]	p.V1763I [1] [MFE319] p.P80S [1] [OSRC2] p.R163G [1] [SNU1040]	p.R1907P [1] [MPP89] p.L856P [1] [PF382] p.T949I [1] [SNU1040]
PCSK7	p.Q393H [1] [AU565] p.G603R [1] [NCIH1703] p.D221N [1] [SNU1040]	p.G614D [1] [HCT15] p.E733K [1] [NCIH358]	p.G358E [1] [HUPT3] p.I385S [1] [NCIH660]
PDE4DIP	p.R622Q [1] [22RV1] p.R32S [1] [CA46] p.M472T [1] [CL11] p.D132V [1] [CW2] p.R490W [1] [ECC10] p.M1254V [1] [HCC1569] p.P2100T [1] [HCT15] p.P42S [1] [HSC3]	p.D997G [1] [AMO1] p.N2174S [1] [CAL12T] p.H445Y [1] [COLO679] p.R901G [1] [DAUDI] p.V361A [1] [EN] p.L1994R [1] [HCC56] p.R10G [1] [HDMYZ] p.E67G [1] [HT]	p.S9C [1] [BEN] p.H152R [1] [CAL851] p.D103G [1] [COLO684] p.R6H [1] [DND41] p.E354K [1] [ESS1] p.R524C [1] [HCC56] p.Q2074H [1] [HGC27] p.A124V [1] [HT29]

	p.R1199H [1] [IGROV1]	p.E798G [1] [IGROV1]	p.R194W [1] [IGROV1]
	p.N1455D [1] [IM95]	p.R490W [1] [KNS42]	p.V379I [1] [KNS62]
	p.L1781F [1] [LNCAPCLONEFGC]	p.V109M [1] [LOUCY]	p.C1901F [1] [LS123]
	p.S989P [1] [LS411N]	p.R1148T [1] [MCF7]	p.S203L [1] [MDAMB231]
	p.R1881C [1] [MDAMB361]	p.S552Y [1] [MDAMB415]	p.E947K [1] [MFE296]
	p.D1985N [1] [MFE319]	p.T2098A [1] [MHHNB11]	p.E468D [1] [MHHNB11]
	p.Y80S [1] [MOLP8]	p.H441Y [1] [MONOMAC6]	p.R1226H [1] [NALM6]
	p.R34Q [1] [NCIH1436]	p.I76V [1] [NCIH1581]	p.P326L [1] [NCIH1650]
	p.L2005H [1] [NCIH2110]	p.G2150R [1] [NCIH2141]	p.P2141T [1] [NCIH2172]
	p.E1147K [1] [NCIH226]	p.I206V [1] [NCIH2342]	p.R60G [1] [NCIH2342]
	p.E122K [1] [NCIH441]	p.L2282M [1] [NCIH446]	p.S2309R [1] [NCIH460]
	p.P134H [1] [NCIH508]	p.T46P [1] [NUGC4]	p.Q2037R [1] [PF382]
	p.E1464G [1] [PF382]	p.P30A [1] [RKN]	p.C8Y [1] [RL952]
	p.R855Q [1] [RS411]	p.I303F [1] [SCC9]	p.P1675S [1] [SF295]
	p.G2064E [1] [SH4]	p.R60Q [1] [SKLU1]	p.T125K [1] [SKM1]
	p.L353S [1] [SKMEL1]	p.R1912Q [1] [SNU1040]	p.R1343Q [1] [SNU1040]
	p.P1203L [1] [SNU1040]	p.R1021M [1] [SNU1040]	p.E564G [1] [SNU1040]
	p.S529P [1] [SNU1040]	p.G156D [1] [SNU1040]	p.A94V [1] [SNU1040]
	p.V349L [1] [SNU175]	p.A2303T [1] [SNU407]	p.N2302T [1] [SNUC5]
	p.A124V [1] [T98G]	p.Q2075H [1] [TC71]	p.R490W [1] [TE6]
	p.S2213G [1] [UACC812]	p.R478H [1] [UACC812]	p.E152D [1] [VMRCRCW]
PDGFB	p.P26L [1] [AN3CA]	p.E237V [1] [CAL78]	p.A58V [1] [HDLM2]
PDGFRA	p.G614E [1] [CHL1]	p.N35D [1] [COLO668]	p.D173N [1] [HT115]
	p.V484M [1] [HT144]	p.K630N [1] [KMRC1]	p.G426V [1] [MCF7]
	p.S348Y [1] [NCIH1105]	p.A491T [1] [NCIH1876]	p.T99S [1] [NCIH211]
	p.L710M [1] [NCIH2172]	p.L324F [1] [NCIH2228]	p.S285T [1] [OCIM1]
	p.P6Q [1] [SHP77]	p.R487H [1] [SNU1040]	
PDGFRB	p.R853W [1] [22RV1]	p.P345Q [1] [CHAGOK1]	p.I679N [1] [CW2]
	p.A916V [1] [HCC1806]	p.V311I [1] [HH]	p.V84M [1] [KMS11]
	p.E312K [1] [LK2]	p.T369M [1] [LS180]	p.R256W [1] [TOV21G]
PER1	p.P859H [1] [22RV1]	p.R1195W [1] [HCC1419]	p.G513V [1] [HCC202]
	p.P737L [1] [HCT15]	p.P260A [1] [JHOS4]	p.D746A [1] [KARPAS299]
	p.R15G [1] [KCL22]	p.R576P [1] [LS513]	p.M1231I [1] [NCIH1693]
	p.R1140H [1] [PF382]	p.K735E [1] [PF382]	p.R243C [1] [SKUT1]
	p.A999V [1] [SNU1040]	p.R246W [1] [SNU175]	p.E1252K [1] [SNU407]
	p.S654C [1] [SW1088]	p.S1207N [1] [SW48]	p.M918V [1] [T98G]
	p.M1152V [1] [TT]		
PHOX2B	p.R158C [1] [MOLT16]	p.D177G [1] [NALM6]	p.R154C [1] [NCIH2228]
	p.A187D [1] [RERFLCSQ1]		
PICALM	p.S645P [1] [RKO]	p.P360S [1] [SNU1040]	p.L106V [1] [SW948]
PIK3CA	p.F666L [1] [EN]	p.E545K [1] [HSC4]	p.R770Q [1] [HT115]
	p.E542K [1] [NCIH1563]	p.C420R [1] [OVISE]	p.K111E [1] [SW1573]
PIK3R1	p.R557Q [1] [AN3CA]	p.K561Q [1] [AN3CA]	p.N260S [1] [EN]
	p.D464E [1] [GAMG]	p.R461G [1] [ISHIKAWAHERAKLIO02ER]	p.Y470D [1] [ISHIKAWAHERAKLIO02ER]
	p.D10H [1] [KYSE520]	p.N527Y [1] [NB1]	p.Y14F [1] [NCIH841]
	p.L647P [1] [SNU1040]	p.Y580D [1] [SUDHL6]	
PIM1	p.C158Y [1] [REH]	p.T23A [1] [SKOV3]	
PLAG1	p.Q66H [1] [DAUDI]	p.I65T [1] [DAUDI]	p.Y54F [1] [DAUDI]
	p.T28S [1] [DAUDI]	p.V18A [1] [DAUDI]	p.Y54F [1] [DND41]
	p.T28S [1] [DND41]	p.V18A [1] [DND41]	p.L398F [1] [EBC1]
	p.D115N [1] [HCC2218]	p.E448K [1] [KYSE150]	p.Q66H [1] [OCIAML5]
	p.I65T [1] [OCIAML5]	p.Y54F [1] [OCIAML5]	p.T28S [1] [OCIAML5]
	p.V18A [1] [OCIAML5]		

PML	p.P525L [1] [A704]	p.A300V [1] [CCK81]	p.R424K [1] [COLO792]
	p.A271T [1] [CW2]	p.G738V [1] [DMS114]	p.P526T [1] [EN]
	p.A802T [1] [ES2]	p.P624S [1] [HSC2]	p.S388T [1] [HSC3]
	p.R680W [1] [HT115]	p.A125V [1] [IGROV1]	p.C57Y [1] [KCL22]
	p.L711M [1] [KM12]	p.Q646L [1] [KNS62]	p.R737W [1] [LP1]
	p.E794V [1] [MOLT13]	p.Y305C [1] [NALM6]	p.P696S [1] [NALM6]
	p.G789V [1] [NCIH1734]	p.P813L [1] [NCIH2172]	p.E363K [1] [NCIH2342]
	p.R648C [1] [NCIH358]	p.V265I [1] [OVK18]	p.R670H [1] [SKMEL5]
	p.E423D [1] [SNU1040]	p.V532I [1] [SNU1040]	p.V545M [1] [SNU1040]
	p.R656C [1] [SNU1040]	p.L674S [1] [SNU407]	p.A601T [1] [SW620]
	p.P67R [1] [TE9]	p.G727E [1] [WM115]	
PMS1	p.P749T [1] [CAS1]	p.A304S [1] [DU145]	p.R500M [1] [EFO27]
	p.N371T [1] [JHH7]	p.S467L [1] [MELHO]	p.T465A [1] [SNUC5]
PMS2	p.E710D [1] [MDAMB453]	p.A572T [1] [NALM6]	p.D60E [1] [NCIH520]
	p.L594F [1] [NCIH69]	p.S587N [1] [SKMEL2]	p.A725V [1] [SNU1040]
	p.A129V [1] [SNU1040]	p.H88Y [1] [SW1271]	
POU2AF1	p.P15S [1] [DU145]		
POU5F1	p.R33W [1] [KATOIII]	p.S336L [1] [SNGM]	
PPARG	p.V90I [1] [2313287]		
PRCC	p.E281D [1] [DAUDI]	p.T297A [1] [HCC1419]	p.S209L [1] [HCT116]
PRDM16	p.R970K [1] [A4FUK]	p.Q187H [1] [BCPAP]	p.C1225Y [1] [CW2]
	p.G651C [1] [HCT15]	p.A7V [1] [IGROV1]	p.L716M [1] [JJN3]
	p.G651S [1] [KARPAS620]	p.S475F [1] [KM12]	p.A724V [1] [KM12]
	p.G638C [1] [LNCAPCLONEFGC]	p.A509T [1] [MC116]	p.P526S [1] [NCIH716]
	p.S889Y [1] [OCIAML5]	p.M43V [1] [OCIM1]	p.L260V [1] [REH]
	p.D1101Y [1] [RL952]	p.T686M [1] [SNU1040]	p.F729S [1] [SNU1040]
	p.A643S [1] [SNUC5]	p.D236N [1] [SUDHL1]	
PRKAR1A	p.T163I [1] [KYSE180]	p.D33N [1] [PF382]	
PTEN	p.L186M [1] [A2058]	p.R130P [1] [AN3CA]	p.W274L [1] [BT549]
	p.T286N [1] [CAS1]	p.Q245H [1] [MOLT16]	p.C211S [1] [OSRC2]
	p.T232A [1] [SNU1040]	p.C250R [1] [SNU1040]	
PTPN11	p.A72S [1] [GDM1]		
PTPRC	p.S571Y [1] [639V]	p.A129P [1] [A4FUK]	p.T72S [1] [HCC1143]
	p.E228A [1] [HCC1143]	p.E1068D [1] [HCT15]	p.E327K [1] [HSC4]
	p.I1165T [1] [IGROV1]	p.R415G [1] [KP4]	p.A379T [1] [LK2]
	p.E327K [1] [LU65]	p.T215S [1] [NCIH1838]	p.R515H [1] [OV56]
	p.R181H [1] [SNU1040]	p.I382S [1] [SNU81]	p.C331Y [1] [SUDHL6]
	p.K37T [1] [SW1088]	p.E327K [1] [TE9]	
RAC1	p.D11E [1] [MDST8]	p.A159V [1] [SKUT1]	p.N52I [1] [SNU423]
RAD21	p.V94I [1] [639V]	p.G408E [1] [DMS53]	p.R450H [1] [HT115]
	p.D343N [1] [KMS12BM]	p.E415K [1] [KYSE70]	p.L567F [1] [LS411N]
	p.S466A [1] [NCIH1048]	p.R554S [1] [SJSA1]	
RAF1	p.A629S [1] [CAL51]	p.V226I [1] [CHAGOK1]	p.P614L [1] [FADU]
	p.A389P [1] [HT144]	p.I330V [1] [SNUC5]	
RALGDS	p.P407L [1] [CAL148]	p.F592Y [1] [CMLT1]	p.A356V [1] [FTC133]
	p.N640S [1] [NALM6]	p.R239C [1] [NCIH1915]	p.E472G [1] [OAW28]
	p.S235P [1] [OVK18]	p.R452Q [1] [PF382]	p.R553Q [1] [RERFGC1B]
	p.R883Q [1] [RS411]	p.Y525H [1] [SNU1040]	p.E472K [1] [SUPHD1]
	p.P554S [1] [SW1417]	p.A603T [1] [TGBC11TKB]	

RANBP17	p.N1049S [1] [HCC1569]	p.T482A [1] [HCT15]	p.I307F [1] [HT115]
	p.S155F [1] [MDAMB415]	p.M347T [1] [SKMEL24]	p.A405V [1] [SNU1040]
	p.L428F [1] [SNU283]		
RAP1GDS1	p.L603F [1] [CW2]	p.L156M [1] [DAUDI]	p.M463I [1] [KMH2]
	p.R83P [1] [RPMI8402]		
RARA	p.S55P [1] [CAKI1]	p.C143Y [1] [CW2]	p.A392T [1] [EN]
	p.R370H [1] [ME1]	p.A40T [1] [RL952]	p.R126Q [1] [SNU1040]
	p.R394W [1] [SNU1040]	p.E3D [1] [SNU81]	p.D323N [1] [TE10]
RB1	p.D421N [1] [DND41]	p.F684C [1] [EJM]	p.G310E [1] [KE37]
	p.G310E [1] [REH]	p.Q575H [1] [SNU1040]	p.T601S [1] [SNU1040]
	p.S758L [1] [SNU1040]		
RBM15	p.V9M [1] [HUPT3]	p.L22P [1] [ISHIKAWAHERAKLIO02ER]	p.V9M [1] [JHH6]
	p.T65S [1] [KALS1]	p.V9M [1] [KNS42]	p.T65S [1] [MKN1]
	p.S77P [1] [OAW28]	p.K830N [1] [OE21]	p.V9M [1] [RCM1]
	p.T65S [1] [RERFLCSQ1]		
RECQL4	p.E295K [1] [BT483]	p.E423K [1] [CAMA1]	p.E928A [1] [CCK81]
	p.S256G [1] [CCK81]	p.R1182H [1] [COLO684]	p.R1017G [1] [CW2]
	p.F1108L [1] [HCC1569]	p.E714V [1] [HCT15]	p.A204G [1] [HCT15]
	p.R482C [1] [HT115]	p.P210R [1] [IPC298]	p.R262Q [1] [KYSE270]
	p.A954V [1] [LNCAPCLONEFGC]	p.P92L [1] [MOLT16]	p.G1105R [1] [NB1]
	p.S178F [1] [NCIH1573]	p.P169T [1] [NCIH2227]	p.Q972R [1] [PF382]
	p.V397F [1] [PF382]	p.P92L [1] [RAJI]	p.Q1114H [1] [RKO]
	p.S256I [1] [SKM1]	p.R1038H [1] [SKMEL28]	p.S862L [1] [SKUT1]
	p.R248C [1] [SNU1040]	p.E1094D [1] [SNU175]	
REL	p.T553I [1] [CW2]	p.I354T [1] [NCIH2342]	p.M477I [1] [SNU175]
	p.S440L [1] [SNU81]		
RET	p.T492N [1] [A704]	p.A680T [1] [CA46]	p.R77H [1] [CL34]
	p.V438I [1] [CL34]	p.N1084S [1] [DAUDI]	p.P1091A [1] [DAUDI]
	p.L1101V [1] [DAUDI]	p.N1084S [1] [DND41]	p.V804M [1] [DU145]
	p.N151S [1] [HCC33]	p.R114H [1] [KU1919]	p.A217V [1] [KYSE70]
	p.R77H [1] [LNCAPCLONEFGC]	p.A498V [1] [NCIH2228]	p.A281V [1] [NCIH522]
	p.T152P [1] [NUGC4]	p.N1084S [1] [OCIAML5]	p.P1091A [1] [OCIAML5]
	p.L1101V [1] [OCIAML5]	p.M1109T [1] [SKMES1]	p.L318M [1] [SNU1040]
ROS1	p.S1303N [1] [2313287]	p.A642S [1] [A3KAW]	p.N2213K [1] [CADOES1]
	p.R560H [1] [CAL29]	p.N1105D [1] [HCC1569]	p.H2310R [1] [ISHIKAWAHERAKLIO02ER]
	p.Y164H [1] [KALS1]	p.L590P [1] [KYSE410]	p.K991N [1] [LNCAPCLONEFGC]
	p.T147A [1] [LU65]	p.V332I [1] [MFE319]	p.D725N [1] [OVKATE]
	p.R1311Q [1] [SNU81]	p.D725N [1] [SNU81]	p.V1223F [1] [TGBC11TKB]
	p.D725N [1] [YAPC]	p.Q1091E [1] [ZR7530]	
RPL22	p.I70N [1] [KMH2]	p.E108V [1] [LNCAPCLONEFGC]	p.S66N [1] [SNU1040]
RPN1	p.D460Y [1] [HGC27]	p.P223T [1] [HUCCT1]	p.R278C [1] [OCUM1]
	p.T403A [1] [OE19]		
RUNX1	p.G69R [1] [ABC1]	p.R207Q [1] [CAL78]	p.M267I [1] [HCT116]
	p.Q264R [1] [HCT15]	p.G309D [1] [SNU1040]	p.R207Q [1] [SNU1040]
SBDS	p.V130M [1] [SNU1040]		
SDHC	p.S19N [1] [RL952]		
SDHD	p.L131R [1] [KYM1]	p.I31V [1] [SNU1040]	p.I40M [1] [TE9]
SEPT6	p.V37L [1] [BEN]	p.T292A [1] [DAUDI]	p.R147G [1] [HS578T]

p.N428K [1] [SKUT1]

SET	p.D235E [1] [CA46]	p.E250K [1] [COLO680N]	p.E250D [1] [EPLC272H]
	p.E254V [1] [SNU1040]		
SFPQ	p.E290D [1] [IGROV1]	p.D406N [1] [NCIH2172]	p.A318G [1] [SNU1040]
SH3GL1	p.A284T [1] [EBC1]	p.K252N [1] [FADU]	p.R227Q [1] [NCIH1793]
	p.A284T [1] [P31FUJ]	p.S216L [1] [RERFLCKJ]	p.R78W [1] [SNGM]
	p.R245W [1] [SNU1040]	p.D169N [1] [SNU1040]	p.R65W [1] [SNU1040]
	p.A247V [1] [SNU175]	p.A24D [1] [TGBC11TKB]	
SLC45A3	p.R251W [1] [FADU]	p.W78C [1] [HCC1419]	p.L237F [1] [HCC33]
	p.R251W [1] [MDAMB231]	p.V321I [1] [NALM6]	p.V304A [1] [REH]
	p.R85H [1] [SNU1040]		
SMARCA4	p.R1356W [1] [A2780]	p.R885H [1] [CAL51]	p.M27I [1] [CCK81]
	p.V420A [1] [CCK81]	p.P647L [1] [CCK81]	p.R1445W [1] [CCK81]
	p.E1364A [1] [CW2]	p.D1418E [1] [DAUDI]	p.S1409T [1] [DND41]
	p.G603D [1] [EN]	p.G44E [1] [HDLM2]	p.N173H [1] [HT115]
	p.E1211V [1] [IGROV1]	p.D1416N [1] [IGROV1]	p.N944K [1] [KYSE150]
	p.L921F [1] [L428]	p.R726H [1] [LNCAPCLONEFGC]	p.A136V [1] [NUGC3]
	p.L1138P [1] [PF382]	p.R167Q [1] [RL952]	p.R167W [1] [RS411]
	p.A322T [1] [SNGM]	p.G256R [1] [SNU1040]	p.A778V [1] [SNU1040]
	p.R905H [1] [SNU1040]	p.A379T [1] [SNU175]	p.R466C [1] [SNU407]
	p.P647L [1] [VMRCRCW]		
SMARCB1	p.R373G [1] [DND41]	p.R377H [1] [RCC10RGB]	p.R377H [1] [TC71]
SMO	p.P698S [1] [GCT]	p.S574C [1] [HCC1419]	p.T640A [1] [HCT15]
	p.E194K [1] [HT115]	p.A729T [1] [KOPN8]	p.G191D [1] [LS411N]
	p.V157M [1] [OCIAML3]	p.Y322H [1] [SNGM]	p.V195L [1] [SNU407]
SOCS1	p.M119T [1] [KM12]	p.L162R [1] [L1236]	p.R193C [1] [LN229]
	p.K118M [1] [TOV21G]		
SOX2	p.D176E [1] [DAUDI]	p.L119V [1] [HCT116]	
SS18	p.P96R [1] [A704]	p.G137R [1] [LNCAPCLONEFGC]	p.H118L [1] [NCIH2347]
SS18L1	p.T111M [1] [CHAGOK1]	p.P352L [1] [CORL23]	p.Y355C [1] [EFO27]
	p.A158T [1] [NCIH2141]	p.G392R [1] [RD]	p.G126W [1] [RKN]
	p.A215T [1] [SNGM]	p.A322V [1] [SW1417]	p.M145I [1] [TE5]
SSX1	p.G136W [1] [BEN]	p.E149G [1] [BT474]	
SSX4	p.A77S [1] [EM2]	p.K74N [1] [MSTO211H]	p.Y31F [1] [NCIH211]
STAT3	p.A555D [1] [LNCAPCLONEFGC]	p.T178P [1] [LS411N]	p.E434K [1] [NCIH2087]
	p.L358V [1] [NUGC4]	p.V291A [1] [PF382]	p.R729H [1] [SNU1040]
STAT5B	p.R290W [1] [AN3CA]	p.V46I [1] [DAUDI]	p.R295M [1] [HCT15]
	p.Q220H [1] [HCT15]	p.G576C [1] [LS411N]	p.V227M [1] [NALM6]
	p.V46I [1] [OCIAML5]		
STK11	p.S216F [1] [8505C]	p.Y49D [1] [A2058]	p.G56V [1] [CHAGOK1]
	p.D194Y [1] [DMS53]	p.I46T [1] [LS180]	p.G196R [1] [LU65]
	p.G242W [1] [NCIH1563]	p.S216F [1] [NCIH1573]	p.K62N [1] [NCIH1944]
	p.K78N [1] [NCIH1944]	p.M392I [1] [NCIH2030]	p.L105S [1] [SNU1040]
SUFU	p.K272R [1] [ISHIKAWAHERAKLIO02ER]	p.R289Q [1] [PF382]	p.E260K [1] [SNU1040]
	p.E367G [1] [SNU1040]	p.A14S [1] [VMRCLCD]	
SUZ12	p.E335D [1] [HT115]	p.N698S [1] [LCLC103H]	p.A66T [1] [MFE280]

p.V730A [1] [PF382]

SYK	p.R497S [1] [A498] p.N358I [1] [PF382]	p.T73P [1] [CL40] p.S3N [1] [SNU1040]	p.K363N [1] [HCC1599]
TAF15	p.R187H [1] [EB2]	p.Q73E [1] [MDAMB361]	p.R553G [1] [SNU1040]
TAL1	p.P277T [1] [639V] p.T305M [1] [RMGI]	p.T313A [1] [MFE319] p.P14H [1] [RMGI]	p.P171L [1] [NCIH1915] p.G36S [1] [RPMI8402]
TAL2	p.T66M [1] [SNU423]		
TCEA1	p.K15R [1] [CW2]		
TCF12	p.I51M [1] [CW2]	p.T540A [1] [LN18]	p.N662Y [1] [NCIH1436]
TCF3	p.G451S [1] [CAL148] p.P530R [1] [LS411N] p.K522Q [1] [RCC10RGB]	p.G437R [1] [JVM2] p.A453T [1] [LS411N] p.T508M [1] [SNU1040]	p.E532K [1] [KCL22] p.P479A [1] [NCIH810] p.D395N [1] [TE8]
TCL1A	p.E40Q [1] [EJM]		
TERT	p.T866A [1] [639V] p.R960H [1] [DAOY] p.V640M [1] [LS411N] p.A789T [1] [SNU175]	p.D836G [1] [AN3CA] p.V886A [1] [EM2] p.R926L [1] [ONS76] p.E1056K [1] [TE6]	p.R731Q [1] [CMLT1] p.E484K [1] [HCT116] p.V639I [1] [RL952]
TET2	p.P851S [1] [22RV1] p.G1684A [1] [BEN] p.R1253T [1] [DMS53] p.P1575L [1] [HEL] p.S795G [1] [LNCAPCLONEFGC] p.V1812L [1] [MFE319] p.P29L [1] [NCIH2066] p.R1404Q [1] [NUGC3] p.D1425G [1] [PANC0813] p.R571H [1] [RPMI8402] p.D1277Y [1] [SUDHL5]	p.Y1589C [1] [5637] p.A1810T [1] [CCK81] p.A1443S [1] [EVSAT] p.H658P [1] [HT] p.R881G [1] [MDAMB453] p.R1261H [1] [NALM6] p.N483D [1] [NCIH2172] p.K1905T [1] [OVK18] p.G678D [1] [RKO] p.S1203R [1] [SIGM5] p.L1329M [1] [SW48]	p.P1316L [1] [AGS] p.V1978M [1] [COLO680N] p.H1717N [1] [HCC38] p.K1947N [1] [HT115] p.R1261C [1] [MELJUSO] p.T1980I [1] [NCIH2030] p.R123C [1] [NCIH661] p.G1754S [1] [OVKATE] p.D1981G [1] [RKO] p.S1611Y [1] [SNU81] p.P465L [1] [U2OS]
TFE3	p.P674L [1] [COLO792] p.N486Y [1] [HT55] p.G613V [1] [SKNSH]	p.G611E [1] [HCC2218] p.S449F [1] [MEWO] p.P609L [1] [SNU398]	p.T722I [1] [HT1080] p.P379L [1] [RS411] p.T444A [1] [ZR7530]
TFEB	p.N239S [1] [HCC1569]	p.F425L [1] [NCIH1563]	p.R465W [1] [RL952]
TFG	p.A251D [1] [KM12]	p.Q294H [1] [KPNYN]	p.V192A [1] [SNU1040]
TFPT	p.Q115R [1] [HCT15] p.H35D [1] [MC116]	p.R111W [1] [IALM] p.P183L [1] [RPMI8402]	p.R87W [1] [IGROV1]
TFRC	p.R174H [1] [22RV1] p.T104A [1] [HUCCT1] p.E114D [1] [PATU8902] p.D204A [1] [SUDHL5] p.T104A [1] [TE4]	p.T104A [1] [ECC10] p.T104A [1] [KURAMOCHI] p.V690I [1] [SNU1040] p.I202L [1] [SUDHL5]	p.T376N [1] [FUOV1] p.V598M [1] [LCLC97TM1] p.R121H [1] [SNU1040] p.G661R [1] [SW48]
THRAP3	p.G902R [1] [CHL1]	p.A525G [1] [HCC1569]	p.M453I [1] [SKMES1]
TLX1	p.L276Q [1] [HT55]	p.H10Y [1] [IPC298]	
TLX3	p.V287L [1] [8305C] p.V287L [1] [ISHIKAWAHERAKLIO02ER] p.V287L [1] [QGP1]	p.K211R [1] [CW2] p.V287L [1] [KYSE510] p.G40S [1] [REH]	p.T206M [1] [DND41] p.R138C [1] [PF382] p.A208V [1] [SNU1040]

TMPRSS2	p.Q276R [1] [CAL12T] p.L91P [1] [T98G]	p.G141S [1] [H4]	p.V64F [1] [MDAMB436]
TNFAIP3	p.D285V [1] [DMS53] p.N170S [1] [MFE319] p.R706Q [1] [OVK18] p.A523T [1] [SNGM]	p.E366D [1] [IM95] p.M669T [1] [MFE319] p.A328T [1] [PF382] p.L92F [1] [SUPHD1]	p.P294A [1] [JHH7] p.G432A [1] [NCIH2110] p.R701H [1] [RKO] p.R569Q [1] [TOV21G]
TNFRSF17	p.H19Q [1] [JJN3]		
TOP1	p.H81R [1] [HSC2] p.R405W [1] [SNU1040] p.E517K [1] [SNU1040]	p.D156Y [1] [HT115] p.Y426C [1] [SNU1040] p.K150N [1] [SNU81]	p.E710D [1] [OCUM1] p.R434Q [1] [SNU1040]
TP53	p.E180G [1] [A253] p.G389W [1] [AN3CA] p.Y103F [1] [COLO205] p.R273H [1] [EN] p.R283C [1] [HCC2218] p.R273H [1] [HT] p.R337L [1] [KMS12BM] p.K120N [1] [KYSE70] p.A74S [1] [MFE319] p.R273H [1] [MOLT13] p.C242F [1] [NCIH1755] p.R273H [1] [NCIH2405] p.V31I [1] [OCUM1] p.C176W [1] [SHP77] p.G360V [1] [SU8686] p.R273H [1] [SW620] p.F113V [1] [YH13]	p.C135R [1] [A704] p.R249S [1] [BT549] p.A347P [1] [COLO668] p.R273H [1] [FTC133] p.V218L [1] [HCC827] p.R273H [1] [HT29] p.R273H [1] [KP1N] p.V122L [1] [L428] p.P47R [1] [ML1] p.R273H [1] [MONOMAC6] p.R273H [1] [NCIH1793] p.R273H [1] [NCIH508] p.R181C [1] [REH] p.R110L [1] [SKNDZ] p.R273H [1] [SUDHL1] p.R110L [1] [TE11]	p.Y126D [1] [A704] p.M133K [1] [CMK] p.C124R [1] [EFO21] p.A74P [1] [HCC1419] p.V216L [1] [HS940T] p.R213L [1] [HT55] p.I195T [1] [KYSE180] p.R273H [1] [MDAMB468] p.R110P [1] [MOGGUVW] p.D324A [1] [NCIH146] p.R273H [1] [NCIH1975] p.F341C [1] [NUDUL1] p.W53L [1] [RERFLCSQ1] p.D48N [1] [SNU1040] p.P309S [1] [SW620] p.F113C [1] [UMUC3]
TPM3	p.T241M [1] [FTC133] p.R40L [1] [NCIH524]	p.Q44L [1] [HCC44] p.A263T [1] [REH]	p.A4D [1] [LNCAPCLONEFGC]
TPM4	p.A155V [1] [HT115]	p.A22T [1] [MOLT16]	p.A22E [1] [SW1271]
TPR	p.R1408K [1] [CAL148] p.L792F [1] [JHH7] p.M1257I [1] [NCIH2023] p.K957R [1] [NCIH716]	p.R1530H [1] [GI1] p.R1530H [1] [LN229] p.S1759F [1] [NCIH2087] p.T2302A [1] [REH]	p.L1187F [1] [HCC15] p.R1530H [1] [ME1] p.V4G [1] [NCIH2087] p.T1678A [1] [REH]
TRIM33	p.T1078S [1] [DAUDI] p.T1078S [1] [OCIAML5] p.V632A [1] [SNU1040]	p.Q1064K [1] [DAUDI] p.Q1064K [1] [OCIAML5] p.L1071V [1] [SNU175]	p.A1058G [1] [DAUDI] p.A1058G [1] [OCIAML5] p.K1012E [1] [SW1088]
TRIP11	p.Q1397H [1] [A549] p.G136S [1] [KASUMI1] p.D204N [1] [RCHACV] p.E281K [1] [SNU175]	p.T305I [1] [HCT15] p.L214P [1] [MSTO211H] p.A880T [1] [REH] p.I1809N [1] [TGBC11TKB]	p.T955A [1] [JHH2] p.R1571H [1] [OVK18] p.A880T [1] [SNU1040] p.V296I [1] [YKG1]
TSC1	p.R692Q [1] [8505C] p.A84T [1] [HSC3] p.E78K [1] [SNU1040]	p.G378R [1] [CAL54] p.L203W [1] [KM12]	p.G1034C [1] [DU145] p.A344S [1] [SNU1040]
TSC2	p.I606V [1] [769P] p.S970C [1] [DAUDI] p.R1745C [1] [KM12] p.V963M [1] [NB1] p.A1195V [1] [SKUT1] p.R1159Q [1] [SNU1040] p.A1349V [1] [VMRCLCD]	p.R1713H [1] [CMLT1] p.V241I [1] [HCC1428] p.R1245Q [1] [MOLT13] p.H798Y [1] [NCIH1975] p.A555T [1] [SNU1040] p.A1622T [1] [SNU1040]	p.G1472D [1] [CW2] p.Y285H [1] [HCT15] p.R1409Q [1] [NALM6] p.A1169T [1] [SBC5] p.R988C [1] [SNU1040] p.R1409Q [1] [TE10]
TSHR	p.E35A [1] [CMLT1]	p.H63R [1] [EFO27]	p.D727G [1] [HT115]

	p.S271N [1] [KP4]	p.L649M [1] [MDAMB361]	p.V597I [1] [MFE319]
	p.P16H [1] [NCIH596]	p.L122F [1] [SNU1040]	p.A522D [1] [SNU1040]
	p.A538T [1] [SNU1040]	p.R17S [1] [SNU175]	p.S243F [1] [SNUC5]
TTL	p.A88T [1] [CMLT1]	p.K106R [1] [EBC1]	p.A373V [1] [LS411N]
	p.V351M [1] [PF382]	p.S76Y [1] [SNU81]	
USP6	p.R1024Q [1] [BFTC909]	p.E202Q [1] [BT483]	p.K131R [1] [BXPC3]
	p.R1202G [1] [HCC2157]	p.V1140L [1] [KMH2]	p.G354E [1] [KYSE70]
	p.H143Y [1] [MDST8]	p.P863S [1] [MEWO]	p.I276L [1] [NCIH660]
	p.R943H [1] [PF382]	p.G1278D [1] [PF382]	p.S1168I [1] [SNU175]
	p.D486Y [1] [SUDHL6]	p.D23E [1] [TE4]	p.H224R [1] [TE8]
	p.P1160L [1] [TE9]		
WAS	p.Q437K [1] [MDAMB231]	p.D493N [1] [SNU1040]	p.R268W [1] [SNU407]
WHSC1	p.H528Q [1] [BHY]	p.G232S [1] [CMLT1]	p.V435I [1] [DBTRG05MG]
	p.E1363Q [1] [EVSAT]	p.S637L [1] [GRANTA519]	p.V1333A [1] [HCC56]
	p.H528Q [1] [KYSE270]	p.S946R [1] [MELJUSO]	p.S643G [1] [PF382]
	p.K1347N [1] [RERFLCSQ1]	p.N640K [1] [SAOS2]	
WHSC1L1	p.K916R [1] [DAUDI]	p.N894S [1] [DAUDI]	p.V625A [1] [DAUDI]
	p.N37H [1] [DAUDI]	p.C868F [1] [DB]	p.A458V [1] [DEL]
	p.V625A [1] [DND41]	p.A1303V [1] [HCC1569]	p.D1264H [1] [LS1034]
	p.T556A [1] [MV411]	p.K199N [1] [RPMI8226]	p.G1267D [1] [SNU1040]
WIF1	p.A180T [1] [IGROV1]	p.R217Q [1] [SW1783]	p.A354T [1] [SW48]
WRN	p.H945N [1] [BT474]	p.L363P [1] [DB]	p.D468V [1] [EFO27]
	p.R499I [1] [HT115]	p.K590R [1] [HT115]	p.S105Y [1] [LNCAPCLONEFGC]
	p.L495F [1] [MOLT13]	p.I239L [1] [NCIH1048]	p.R741Q [1] [NCIH1836]
	p.K1249Q [1] [SKNDZ]	p.V641I [1] [SNU1040]	p.N500S [1] [SNU81]
	p.S1333C [1] [SUDHL8]	p.M930I [1] [SW1271]	p.E106D [1] [TGBC11TKB]
WT1	p.P181T [1] [A3KAW]	p.S136R [1] [DU145]	
XPA	p.E159G [1] [FTC133]	p.D70H [1] [MM1S]	p.A60T [1] [SNU175]
XPC	p.G404V [1] [BEN]	p.F37L [1] [EN]	p.A152V [1] [JHH1]
	p.D68V [1] [KYSE150]	p.L184M [1] [LS411N]	p.S225N [1] [NUGC3]
	p.S460T [1] [PF382]	p.Y803H [1] [RCHACV]	p.R240H [1] [SNU1040]
ZNF331	p.E59G [1] [L1236]	p.P382L [1] [LNCAPCLONEFGC]	p.R142H [1] [PF382]
ZNF384	p.R365Q [1] [SNU1040]	p.N9S [1] [SNU1040]	
ZNF521	p.K426Q [1] [BV173]	p.Q54H [1] [DEL]	p.Q1044K [1] [FU97]
	p.V284I [1] [HT1080]	p.G1056W [1] [LNCAPCLONEFGC]	p.P1111L [1] [MEWO]
	p.S1069Y [1] [NAMALWA]	p.R937Q [1] [NCIH2052]	p.S526A [1] [SKMEL30]
	p.S1142G [1] [SNGM]		

Supplementary Table 2

Sequencing cold spots (larger than 100bp) in cancer consensus and kinase genes identified from sequencing data of 10 CCLE whole exome sequencing files (not hydrid capture).

geneSymbol	Chromosome	start	end	width coldspot	transcriptId	Exon Number	GC Content	Mean Read Cover of Coldspot
AAK1	2	69746086	69746241	156	ENST00000406297	11	0.653846154	1.669871795
AATK	17	79095991	79096471	481	ENST00000326724	11	0.756756757	1.903950104
AATK	17	79096994	79097143	150	ENST00000326724	10	0.673333333	1.247333333
AATK	17	79101592	79101710	119	ENST00000326724	5	0.621848739	2.434453782
ACSL3	2	223785672	223785786	115	ENST00000421680	1	0.408695652	1.064347826
ACVR1B	12	52376470	52376592	123	ENST00000541224	5	0.495934959	0
ADCK1	14	78294197	78294314	118	ENST00000556048	3	0.559322034	0
ADCK2	7	140395827	140395985	159	ENST00000483369	8	0.597484277	0.018867925
ADRBK1	11	67053864	67053995	132	ENST00000526285	14	0.575757576	0.159090909
AFF1	4	87970804	87970914	111	ENST00000514970	1	0.612612613	0.045045045
AFF3	2	100722242	100722484	243	ENST00000415384	1	0.576131687	0.06255144
AFF3	2	100720864	100720980	117	ENST00000415384	3	0.717948718	2.152991453
AKAP9	7	91630162	91630286	125	ENST00000356239	8	0.256	1.552
ALDH2	12	112213409	112213524	116	ENST00000548536	2	0.49137931	0
ALDH2	12	112204787	112204900	114	ENST00000261733	1	0.745614035	2.235087719
ALK	2	29443854	29444103	250	ENST00000453137	4	0.536	0.7328
ALPK3	15	85360412	85360826	415	ENST00000258888	1	0.804819277	0.530843373
AMHR2	12	53822680	53822794	115	ENST00000257863	7	0.617391304	1.51826087
APC	5	112043415	112043579	165	ENST00000507379	1	0.696969697	0.397575758
ARHGAP26	5	142437466	142437606	141	ENST00000443045	3	0.517730496	1.204255319
ARID1A	1	27022895	27023383	489	ENST00000324856	1	0.781186094	0.611860941
ARID1A	1	27023835	27024031	197	ENST00000324856	1	0.796954315	1.260406091
ASPSCR1	17	79967808	79967928	121	ENST00000584454	8	0.603305785	0
ATF1	12	51181991	51182108	118	ENST00000549612	2	0.56779661	0
ATIC	2	216176866	216176997	132	ENST00000427397	1	0.787878788	0.867424242
AURKC	19	57742617	57742757	141	ENST00000601799	1	0.617021277	1.827659574
AXIN1	16	348136	348251	116	ENST00000262320	5	0.698275862	2.169827586
BCL3	19	45252048	45252303	256	ENST00000164227	1	0.8203125	0.83125
BCR	22	23523366	23523508	143	ENST00000305877	1	0.853146853	1.065734266
BCR	22	23585005	23585129	125	ENST00000398512	2	0.576	0
BIRC3	11	102197460	102197582	123	ENST00000527309	3	0.56097561	0
BLK	8	11418274	11418706	433	ENST00000526097	1	0.579676674	0.792840647
BMP2K	4	79697698	79697834	137	ENST00000335016	1	0.781021898	1.732846715
BRAF	7	140624366	140624503	138	ENST00000288602	1	0.775362319	0.992028986
BRCA2	13	32970128	32970229	102	ENST00000470094	4	0.539215686	0

Gene	Chr	Start	End	Length	Transcript	Count	Value1	Value2
BRD2	6	32939372	32939753	382	ENST00000496118	2	0.628272251	0.511780105
BRD2	6	32937023	32937129	107	ENST00000496118	1	0.663551402	0.122429907
BRD2	6	32946867	32946971	105	ENST00000395287	10	0.571428571	0
BRD4	19	15353821	15354018	198	ENST00000263377	13	0.732323232	0.952525253
BRIP1	17	59816592	59816771	180	ENST00000584322	4	0.461111111	0
BRSK1	19	55795811	55795946	136	ENST00000309383	1	0.683823529	0.688235294
BRSK1	19	55795334	55795449	116	ENST00000590333	2	0.681034483	0.38362069
BRSK2	11	1481730	1481953	224	ENST00000528841	20	0.669642857	2.125
BRSK2	11	1481778	1481953	176	ENST00000382179	20	0.755681818	2.063068182
BUB1B	15	40458560	40458671	112	ENST00000558715	3	0.607142857	0
CAMK2B	7	44265362	44265512	151	ENST00000425809	1	0.622516556	0.29602649
CAMK2B	7	44284488	44284614	127	ENST00000421607	7	0.645669291	0.061417323
CAMK2B	7	44363410	44363522	113	ENST00000415369	1	0.654867257	0.074336283
CAMK2G	10	75579290	75579403	114	ENST00000322680	17	0.675438596	0.915789474
CAMTA1	1	6867043	6867148	106	ENST00000467404	2	0.490566038	0
CBFA2T3	16	88943384	88943560	177	ENST00000268679	12	0.768361582	2.284745763
CCND2	12	4406923	4407116	194	ENST00000536537	3	0.56185567	0
CD8A	2	87017956	87018071	116	ENST00000538832	1	0.74137931	2.364655172
CDC42BPB	14	103523336	103523510	175	ENST00000361246	1	0.668571429	1.962285714
CDC42BPB	14	103411511	103411668	158	ENST00000558867	1	0.607594937	0.943037975
CDC42BPG	11	64600703	64600808	106	ENST00000342711	24	0.70754717	1.385849057
CDH1	16	68772200	68772314	115	ENST00000261769	2	0.695652174	0.48
CDK10	16	89753997	89754119	123	ENST00000502547	2	0.609756098	0
CDK10	16	89753857	89753956	100	ENST00000511415	2	0.58	0.032
CDK11B	1	1581134	1581245	112	ENST00000340677	4	0.455357143	0.480357143
CDK13	7	39990241	39991058	818	ENST00000181839	1	0.754278729	0.706601467
CDK16	X	47082495	47082710	216	ENST00000276052	1	0.564814815	0.061111111
CDK16	X	47088258	47088390	133	ENST00000520141	4	0.586466165	2.327067669
CDK2	12	56364382	56364525	144	ENST00000553376	6	0.569444444	0.379166667
CDK20	9	90582377	90582574	198	ENST00000325303	8	0.621212121	2.646969697
CDK9	9	130548077	130548348	272	ENST00000373265	1	0.808823529	0.192647059
CDKL2	4	76517330	76517453	124	ENST00000307465	10	0.419354839	0
CDKL2	4	76517003	76517109	107	ENST00000307465	11	0.420560748	0
CDKL3	5	133622064	133622250	187	ENST00000435240	7	0.438502674	0
CDKL3	5	133655049	133655188	140	ENST00000265334	5	0.385714286	1.282142857
CDKL4	2	39403136	39403237	102	ENST00000451199	4	0.431372549	0.074509804
CDX2	13	28542775	28542932	158	ENST00000381020	1	0.740506329	2.098734177
CEBPA	19	33792559	33793320	762	ENST00000498907	1	0.776902887	0.159711286
CHEK1	11	125495656	125495907	252	ENST00000427383	1	0.619047619	0.077380952
CHEK2	22	29126408	29126536	129	ENST00000382580	2	0.534883721	0.343410853
CHN1	2	175711608	175711859	252	ENST00000295497	1	0.412698413	1.820238095

CIC	19	42775936	42778729	2794	ENST00000572681	1	0.672870437	0.456120258
CLK1	2	201728824	201728949	126	ENST00000434813	1	0.658730159	0.103968254
CLK3	15	74907796	74908239	444	ENST00000395066	1	0.777027027	1.183783784
CLK4	5	178047566	178047674	109	ENST00000522556	2	0.366972477	0
CREB3L2	7	137592998	137593182	185	ENST00000330387	5	0.691891892	1.482162162
CREB3L2	7	137607336	137607513	178	ENST00000420629	2	0.404494382	0
CREBBP	16	3779176	3779285	110	ENST00000262367	31	0.763636364	2.398181818
CRLF2	X	1317790	1318008	219	ENST00000381566	5	0.566210046	0.063926941
CRTC1	19	18794513	18794638	126	ENST00000321949	1	0.626984127	0.697619048
CSNK1D	17	80207307	80207432	126	ENST00000314028	7	0.722222222	1.564285714
CSNK1E	22	38694096	38694209	114	ENST00000451964	5	0.657894737	0.197368421
DAPK2	15	64214934	64215542	609	ENST00000558069	9	0.569786535	0.074876847
DAPK2	15	64283427	64283550	124	ENST00000561162	2	0.564516129	0
DAPK2	15	64203305	64203415	111	ENST00000558064	2	0.54954955	0
DMPK	19	46273739	46273898	160	ENST00000458663	15	0.7	2.278125
DNM2	19	10943974	10944136	163	ENST00000591818	2	0.441717791	1.090184049
DYRK1B	19	40317482	40317627	146	ENST00000323039	8	0.760273973	1.301369863
DYRK2	12	68045307	68045438	132	ENST00000542503	1	0.386363636	0
DYRK4	12	4699496	4699606	111	ENST00000542744	4	0.477477477	0.175675676
EIF2AK1	7	6063497	6063745	249	ENST00000536084	14	0.510040161	0.797991968
EIF2AK1	7	6067557	6067686	130	ENST00000426957	5	0.538461538	0
EIF2AK1	7	6066066	6066183	118	ENST00000422786	1	0.652542373	1
EIF2AK3	2	88926639	88926792	154	ENST00000303236	1	0.792207792	0.636363636
EPHA10	1	38218548	38218898	351	ENST00000373048	5	0.794871795	0.294586895
EPHA6	3	97364963	97365154	192	ENST00000514100	10	0.489583333	0
EPHA6	3	96533718	96533852	135	ENST00000389672	1	0.533333333	2.22
EPHB3	3	184280024	184280141	118	ENST00000330394	1	0.805084746	0.213559322
EPS15	1	51924187	51924405	219	ENST00000371727	9	0.534246575	0
ERBB2	17	37869406	37869522	117	ENST00000578502	4	0.547008547	0
ETV5	3	185801958	185802069	112	ENST00000422039	5	0.392857143	0
EZH2	7	148533914	148534092	179	ENST00000483012	3	0.480446927	0.079888268
FANCA	16	89882547	89882963	417	ENST00000567943	1	0.815347722	0.770503597
FANCA	16	89839679	89839792	114	ENST00000389301	22	0.631578947	0.93245614
FANCA	16	89844765	89844870	106	ENST00000567510	4	0.566037736	0
FANCE	6	35420323	35420570	248	ENST00000229769	1	0.790322581	0.574193548
FBXO11	2	48132628	48132859	232	ENST00000403359	1	0.771551724	1.090948276
FEV	2	219846389	219846652	264	ENST00000295727	3	0.78030303	0.381818182
FGFR1OP	6	167412901	167413002	102	ENST00000349556	1	0.696078431	0.347058824
FGFR3	4	1806548	1806696	149	ENST00000481110	9	0.66442953	1.318120805
FH	1	241682891	241683022	132	ENST00000366560	1	0.704545455	0.549242424
FOXL2	3	138664845	138665051	207	ENST00000330315	1	0.743961353	1.520289855

FOXL2	3	138664596	138664725	130	ENST00000330315	1	0.838461538	1.190769231
FOXO1	13	41239919	41240349	431	ENST00000379561	1	0.786542923	0.56612529
FOXO3	6	108882665	108882793	129	ENST00000343882	1	0.775193798	2.357364341
FSTL3	19	680274	680489	216	ENST00000166139	3	0.777777778	0.681018519
GPHN	14	67648137	67648287	151	ENST00000556240	2	0.516556291	0.066225166
GRK1	13	114438041	114438336	296	ENST00000335678	7	0.557432432	0.075337838
GRK1	13	114435857	114436058	202	ENST00000335678	6	0.599009901	0.000990099
GRK1	13	114434192	114434316	125	ENST00000335678	5	0.616	0.0624
GRK4	4	2966970	2967234	265	ENST00000442472	2	0.562264151	0.12754717
GSK3A	19	42746424	42746617	194	ENST00000222330	1	0.804123711	0.743814433
GUCY2D	17	7906366	7906836	471	ENST00000254854	1	0.779193206	1.063906582
HIPK1	1	114471944	114472154	211	ENST00000426820	1	0.592417062	0.297156398
HMGA1	6	34212675	34213392	718	ENST00000395004	3	0.633704735	0.559192201
HMGA2	12	66219051	66219161	111	ENST00000354636	1	0.711711712	2.606306306
HNF1A	12	121434659	121434799	141	ENST00000543427	5	0.475177305	1.346099291
HOXA13	7	27239208	27239550	343	ENST00000222753	1	0.827988338	0.452186589
HOXC11	12	54369261	54369415	155	ENST00000243082	2	0.606451613	0.603870968
HOXC13	12	54332783	54333017	235	ENST00000243056	1	0.791489362	1.889361702
HOXD11	2	176972336	176972864	529	ENST00000249504	1	0.799621928	0.402646503
HOXD13	2	176957619	176957798	180	ENST00000392539	1	0.783333333	0.267222222
HSPB8	12	119658519	119658757	239	ENST00000541798	4	0.355648536	0
IDH2	15	90645508	90645622	115	ENST00000330062	1	0.765217391	1.84
IGF1R	15	99478545	99478655	111	ENST00000268035	17	0.54954955	1.065765766
IKBKB	8	42188725	42188949	225	ENST00000522147	2	0.595555556	0.473777778
IKZF1	7	50435704	50436068	365	ENST00000413698	3	0.419178082	0.036986301
INSR	19	7293803	7293902	100	ENST00000302850	1	0.83	1.086
IRAK1	X	153276391	153276567	177	ENST00000444230	5	0.508474576	0.080225989
IRAK3	12	66590660	66590808	149	ENST00000545837	2	0.369127517	0
IRAK3	12	66583085	66583212	128	ENST00000261233	1	0.7578125	2.3015625
JAZF1	7	28060172	28060331	160	ENST00000420835	1	0.45625	0
KDM5A	12	497399	497506	108	ENST00000536014	1	0.342592593	0.122222222
KDM6A	X	44919854	44920009	156	ENST00000382899	13	0.435897436	0.165384615
KDM6A	X	44965787	44965894	108	ENST00000431196	2	0.407407407	0
KIAA1549	7	138665829	138666015	187	ENST00000422774	1	0.839572193	0.054545455
KSR1	17	25915220	25915413	194	ENST00000577823	3	0.56185567	0.38556701
KSR1	17	25950538	25950671	134	ENST00000578981	2	0.447761194	1.258208955
LASP1	17	37054665	37054772	108	ENST00000318008	4	0.527777778	0.596296296
LATS1	6	150038985	150039170	186	ENST00000458696	1	0.725806452	0.211827957
LATS2	13	21562477	21562617	141	ENST00000382592	3	0.794326241	1.734042553
LIMK1	7	73497365	73497509	145	ENST00000418310	1	0.593103448	0
LMO2	11	33890892	33891132	241	ENST00000257818	2	0.780082988	0.121576763

Gene	Chr	Start	End	Length	Transcript	Count	Value1	Value2
LMTK3	19	49002459	49003076	618	ENST00000270238	12	0.74433657	1.041100324
LMTK3	19	49001889	49002277	389	ENST00000270238	12	0.784061697	0.984318766
LMTK3	19	48997026	48997366	341	ENST00000270238	13	0.835777126	0.705865103
LMTK3	19	49000887	49001102	216	ENST00000270238	12	0.759259259	1.498148148
LRIG3	12	59313781	59314016	236	ENST00000320743	1	0.745762712	2.022881356
LRRK1	15	101514009	101514172	164	ENST00000284395	2	0.762195122	1.723170732
LTK	15	41803418	41803544	127	ENST00000263800	7	0.803149606	1.772440945
LYL1	19	13210209	13210398	190	ENST00000264824	3	0.768421053	2.453684211
MAF	16	79633066	79633422	357	ENST00000326043	1	0.865546218	0.425770308
MALT1	18	56338876	56339084	209	ENST00000345724	1	0.779904306	0.055023923
MAML2	11	96074547	96074791	245	ENST00000440572	1	0.640816327	0.795510204
MAML2	11	95825212	95825409	198	ENST00000440572	2	0.545454545	2.506060606
MAP2K2	19	4090596	4090706	111	ENST00000262948	11	0.603603604	3.381981982
MAP2K3	17	21191303	21191403	101	ENST00000529517	2	0.643564356	0
MAP2K4	17	11924204	11924318	115	ENST00000353533	1	0.826086957	0.42
MAP2K7	19	7974640	7974781	142	ENST00000397979	2	0.732394366	1.762676056
MAP3K1	5	56111401	56111882	482	ENST00000399503	1	0.790456432	0.574273859
MAP3K10	19	40719574	40719789	216	ENST00000253055	9	0.800925926	0.740277778
MAP3K15	X	19533094	19533379	286	ENST00000338883	1	0.825174825	0.587762238
MAP3K6	1	27692770	27693088	319	ENST00000357582	1	0.808777429	0.558934169
MAP3K9	14	71275777	71275888	112	ENST00000381250	1	0.758928571	1.486607143
MAP4K4	2	102487956	102488147	192	ENST00000350878	20	0.5625	0.386979167
MAP4K4	2	102472439	102472600	162	ENST00000302217	9	0.5	0.17345679
MAP4K4	2	102413726	102413845	120	ENST00000350878	1	0.491666667	0.0725
MAPK4	18	48230900	48231199	300	ENST00000588540	2	0.53	0
MAPK4	18	48255843	48256037	195	ENST00000400384	5	0.78974359	1.391282051
MAPK7	17	19285234	19285338	105	ENST00000299612	2	0.628571429	2.747619048
MAPK7	17	19281840	19281943	104	ENST00000581260	1	0.692307692	0.001923077
MAPK9	5	179706796	179707036	241	ENST00000397072	2	0.547717842	0.029460581
MARK2	11	63636226	63636381	156	ENST00000543674	1	0.506410256	0
MARK3	14	103957289	103957444	156	ENST00000556744	3	0.493589744	0.070512821
MARK4	19	45801072	45801212	141	ENST00000262891	15	0.70212766	1.858865248
MAST2	1	46269568	46269744	177	ENST00000361297	1	0.779661017	0.062711864
MAST3	19	18260111	18260327	217	ENST00000262811	27	0.792626728	1.329493088
MAST4	5	65892625	65892846	222	ENST00000403625	1	0.779279279	1.3
MATK	19	3782816	3782935	120	ENST00000588983	3	0.608333333	0.8975
MDS2	1	23966879	23967039	161	ENST00000374555	4	0.49689441	0
MED12	X	70361080	70361220	141	ENST00000333646	43	0.624113475	0.939716312
MINK1	17	4793517	4793726	210	ENST00000571207	10	0.538095238	0.880952381
MINK1	17	4784427	4784552	126	ENST00000347992	4	0.531746032	0.48015873
MINK1	17	4762508	4762623	116	ENST00000574453	2	0.431034483	0

MINK1	17	4793918	4794030	113	ENST00000347992	14	0.610619469	1.639823009
MKNK1	1	47037089	47037211	123	ENST00000371946	7	0.601626016	0
MKNK2	19	2041839	2041939	101	ENST00000250896	10	0.693069307	2.045544554
MLK4	1	233463775	233464139	365	ENST00000366623	1	0.77260274	2.463561644
MLL	11	118307286	118307405	120	ENST00000354520	1	0.891666667	0.801666667
MLL2	12	49426589	49427023	435	ENST00000301067	39	0.570114943	1.442988506
MLL2	12	49432642	49432772	131	ENST00000301067	34	0.557251908	2.459541985
MLLT10	10	21840745	21840850	106	ENST00000377091	3	0.594339623	0
MLLT10	10	21845769	21845871	103	ENST00000377100	3	0.359223301	1.723300971
MLLT4	6	168366616	168366950	335	ENST00000485634	1	0.570149254	0.195522388
MLLT4	6	168366519	168366725	207	ENST00000351017	32	0.68115942	0.972463768
MLLT4	6	168366823	168366956	134	ENST00000515794	1	0.544776119	0.058955224
MLLT6	17	36878250	36878480	231	ENST00000325718	17	0.744588745	1.038961039
MN1	22	28194677	28194894	218	ENST00000302326	1	0.71559633	2.88440367
MN1	22	28195457	28195669	213	ENST00000302326	1	0.680751174	1.900938967
MNX1	7	156802516	156802919	404	ENST00000252971	1	0.853960396	0.419059406
MOK	14	102692622	102692745	124	ENST00000193029	2	0.596774194	0.913709677
MSI2	17	55363245	55363373	129	ENST00000442934	1	0.364341085	0.004651163
MUC1	1	155160959	155161428	470	ENST00000425082	3	0.787234043	0.720851064
MYB	6	135523552	135523807	256	ENST00000316528	14	0.578125	0
MYCL1	1	40366486	40366643	158	ENST00000372815	2	0.64556962	1.882911392
NCKIPSD	3	48723070	48723188	119	ENST00000294129	1	0.739495798	2.221848739
NCKIPSD	3	48720336	48720445	110	ENST00000294129	2	0.618181818	2.111818182
NCOA4	10	51573300	51573416	117	ENST00000431200	1	0.427350427	0
NDRG1	8	134297000	134297139	140	ENST00000522738	2	0.564285714	0.107142857
NDRG1	8	134267530	134267643	114	ENST00000522377	8	0.473684211	0
NEK4	3	52783708	52783845	138	ENST00000233027	8	0.608695652	0
NEK4	3	52781346	52781467	122	ENST00000487068	3	0.557377049	0.043442623
NEK9	14	75593445	75593624	180	ENST00000238616	1	0.7	2.805555556
NF1	17	29422226	29422387	162	ENST00000579081	1	0.75308642	0.969135802
NFIB	9	14116180	14116345	166	ENST00000397581	9	0.542168675	0
NFIB	9	14116207	14116345	139	ENST00000380953	9	0.539568345	0
NFIB	9	14398523	14398630	108	ENST00000380934	1	0.435185185	0
NFKB2	10	104159361	104159475	115	ENST00000189444	13	0.747826087	1.784347826
NIN	14	51223378	51223575	198	ENST00000245441	16	0.424242424	1.890909091
NKX2-1	14	36986634	36986864	231	ENST00000354822	3	0.766233766	1.061471861
NOTCH1	9	139399125	139399227	103	ENST00000277541	26	0.757281553	2.914563107
NPR1	1	153651585	153651822	238	ENST00000368680	1	0.756302521	1.928151261
NR4A3	9	102590911	102591122	212	ENST00000330847	2	0.806603774	1.143396226
NRBP2	8	144922878	144923006	129	ENST00000442628	1	0.728682171	0.341860465
NRBP2	8	144922279	144922401	123	ENST00000442628	2	0.609756098	0.198373984

NRBP2	8	144922279	144922386	108	ENST00000530347	1	0.62962963	0.198148148
NRBP2	8	144917608	144917712	105	ENST00000530123	4	0.685714286	1.863809524
NRBP2	8	144922101	144922202	102	ENST00000442628	3	0.588235294	0.234313725
NRK	X	105192632	105192751	120	ENST00000540278	1	0.483333333	0
NRK	X	105167372	105167474	103	ENST00000243300	18	0.339805825	1.711650485
NSD1	5	176656766	176656875	110	ENST00000375350	2	0.581818182	0
NT5C2	10	104860571	104860680	110	ENST00000552185	5	0.609090909	2.411818182
OBSCN	1	228399786	228400144	359	ENST00000284548	1	0.77994429	1.365738162
OBSCN	1	228526554	228526727	174	ENST00000284548	68	0.637931034	1.931034483
OBSCN	1	228559048	228559189	142	ENST00000366707	69	0.774647887	2.704225352
OBSCN	1	228522893	228522999	107	ENST00000284548	61	0.710280374	1.745794393
OBSCN	1	228566020	228566121	102	ENST00000366707	79	0.745098039	2.395098039
OBSCN	1	228465206	228465306	101	ENST00000493813	2	0.613861386	2.135643564
OLIG2	21	34399683	34400142	460	ENST00000333337	1	0.767391304	0.476086957
PAFAH1B2	11	117015009	117015134	126	ENST00000304808	1	0.761904762	0.164285714
PAFAH1B2	11	117042338	117042462	125	ENST00000530272	5	0.488	0.0592
PAK4	19	39663558	39663779	222	ENST00000358301	2	0.689189189	2.56981982
PBRM1	3	52592265	52592429	165	ENST00000296302	26	0.612121212	0
PBX1	1	164529060	164529250	191	ENST00000340699	1	0.617801047	1.65026178
PCM1	8	17847368	17847488	121	ENST00000325083	25	0.347107438	1.251239669
PDE4DIP	1	145014068	145014313	246	ENST00000493130	4	0.483739837	0.123577236
PDPK1	16	2588620	2588763	144	ENST00000492021	2	0.597222222	0.039583333
PER1	17	8047390	8047586	197	ENST00000583559	3	0.588832487	0.605076142
PER1	17	8047902	8048029	128	ENST00000354903	18	0.609375	1.7265625
PIM3	22	50355090	50355271	182	ENST00000360612	4	0.752747253	1.158241758
PINK1	1	20960042	20960241	200	ENST00000321556	1	0.785	0.813
PKDCC	2	42275340	42275811	472	ENST00000294964	1	0.800847458	0.402542373
PKMYT1	16	3018318	3018516	199	ENST00000431515	9	0.497487437	0.179396985
PKMYT1	16	3022636	3022755	120	ENST00000431515	8	0.641666667	0.055833333
PKMYT1	16	3025983	3026090	108	ENST00000574415	3	0.648148148	0.861111111
PKN1	19	14581914	14582238	325	ENST00000592960	2	0.603076923	0.121230769
PKN1	19	14552152	14552255	104	ENST00000242783	2	0.740384615	1.976923077
PLK3	1	45266136	45266345	210	ENST00000372201	1	0.747619048	1.483333333
PPP2R1A	19	52693350	52693547	198	ENST00000454220	1	0.686868687	1.216666667
PPP2R1A	19	52694298	52694420	123	ENST00000477989	2	0.617886179	0.082926829
PRKACA	19	14203389	14203655	267	ENST00000590853	3	0.524344569	0.11835206
PRKCH	14	61793711	61793899	189	ENST00000553830	1	0.587301587	0.029100529
PRKCZ	1	2013760	2013899	140	ENST00000481140	1	0.435714286	0
PRKDC	8	48872533	48872686	154	ENST00000314191	1	0.714285714	1.922727273
PRKX	X	3631129	3631294	166	ENST00000262848	1	0.759036145	1.944578313
PTK2	8	141672747	141672914	168	ENST00000522950	1	0.43452381	0

PTK2	8	141930913	141931012	100	ENST00000517887	1	0.5	0.046
PTK7	6	43100447	43100577	131	ENST00000471863	7	0.580152672	1.598473282
PTK7	6	43044622	43044724	103	ENST00000481273	1	0.631067961	0.081553398
PTPRC	1	198663147	198663310	164	ENST00000413409	3	0.524390244	0
PXK	3	58318716	58318817	102	ENST00000302779	1	0.666666667	0.790196078
RABEP1	17	5187179	5187364	186	ENST00000575991	2	0.456989247	0.040860215
RAD51B	14	69077723	69077964	242	ENST00000487861	10	0.512396694	0.069834711
RALGDS	9	135996359	135996541	183	ENST00000372047	1	0.759562842	0.445901639
RALGDS	9	136006339	136006470	132	ENST00000372062	1	0.681818182	0.188636364
RARA	17	38497749	38497867	119	ENST00000394086	1	0.806722689	1.139495798
RB1	13	48878049	48878185	137	ENST00000267163	1	0.759124088	0.416058394
RIOK2	5	96501971	96502075	105	ENST00000511293	2	0.380952381	0
RMI2	16	11439329	11439477	149	ENST00000312499	1	0.805369128	0.714765101
RMI2	16	11410636	11410741	106	ENST00000381820	1	0.58490566	0.010377358
RNF213	17	78313001	78313800	800	ENST00000508628	26	0.58875	0.306875
RNF213	17	78305806	78306431	626	ENST00000456466	20	0.49201278	0.003514377
RNF213	17	78309961	78310304	344	ENST00000456466	22	0.505813953	0.104360465
RNF213	17	78301616	78301789	174	ENST00000456466	18	0.448275862	0.122413793
RNF213	17	78298830	78298998	169	ENST00000456466	17	0.473372781	0
RNF213	17	78307905	78308070	166	ENST00000456466	21	0.578313253	0
RNF213	17	78311633	78311797	165	ENST00000508628	25	0.503030303	0
RNF213	17	78302128	78302277	150	ENST00000456466	19	0.433333333	0
RNF213	17	78252563	78252709	147	ENST00000508628	3	0.551020408	0.119047619
RNF213	17	78311386	78311526	141	ENST00000508628	24	0.553191489	0
RNF43	17	56434527	56434648	122	ENST00000581868	6	0.590163934	1.582786885
RPN1	3	128369383	128369482	100	ENST00000296255	1	0.72	2.196
RPS6KA1	1	26857236	26857343	108	ENST00000525525	2	0.601851852	0
RPS6KA1	1	26870566	26870669	104	ENST00000366866	2	0.615384615	0.320192308
RPS6KA4	11	64127635	64127834	200	ENST00000294261	3	0.69	1.986
RPS6KA5	14	91518667	91518806	140	ENST00000556594	2	0.571428571	0
RUNX1	21	36164526	36164654	129	ENST00000300305	8	0.744186047	3.363565891
RUNX1T1	8	93107575	93107695	121	ENST00000436581	1	0.561983471	0.343801653
RYK	3	133969267	133969437	171	ENST00000460933	1	0.777777778	1.397660819
RYK	3	133969267	133969435	169	ENST00000296084	2	0.781065089	1.413017751
SBK1	16	28331942	28332168	227	ENST00000341901	3	0.823788546	0.742731278
SBK2	19	56041384	56041690	307	ENST00000344158	3	0.755700326	1.143322476
SDHAF2	11	61204233	61204394	162	ENST00000536250	2	0.487654321	0.058024691
SDHD	11	111963804	111963921	118	ENST00000526592	4	0.584745763	0
SEPT5	22	19704801	19704968	168	ENST00000431124	1	0.660714286	0.173809524
SETBP1	18	42456530	42456718	189	ENST00000426838	3	0.502645503	0
SETBP1	18	42643402	42643518	117	ENST00000282030	5	0.820512821	1.577777778

SETD2	3	47164734	47166038	1305	ENST00000409792	3	0.417624521	0.185900383
SFPQ	1	35657823	35658272	450	ENST00000357214	1	0.784444444	0.865777778
SGK494	17	26937496	26937717	222	ENST00000301037	12	0.540540541	0
SGK494	17	26938161	26938271	111	ENST00000301037	11	0.540540541	0.387387387
SH2B3	12	111856125	111856337	213	ENST00000341259	1	0.779342723	1.604694836
SH2B3	12	111872672	111872835	164	ENST00000551001	1	0.615853659	0.046341463
SH2B3	12	111856531	111856681	151	ENST00000341259	1	0.761589404	1.433774834
SH2B3	12	111872706	111872831	126	ENST00000538307	1	0.611111111	0.06031746
SIK3	11	116738662	116738805	144	ENST00000445177	15	0.5625	0.085416667
SIK3	11	116820849	116820972	124	ENST00000415541	4	0.524193548	0
SIK3	11	116969010	116969131	122	ENST00000375300	1	0.868852459	0.450819672
SMARCA4	19	11097142	11097269	128	ENST00000344626	3	0.7109375	1.859375
SMG1	16	18875324	18875466	143	ENST00000389467	24	0.51048951	1.439160839
SMO	7	128828993	128829323	331	ENST00000249373	1	0.773413897	0.520845921
SOCS1	16	11349145	11349335	191	ENST00000332029	1	0.717277487	2.610471204
SPEG	2	220313131	220313683	553	ENST00000312358	4	0.763110307	1.149728752
SPEG	2	220349351	220349794	444	ENST00000312358	30	0.754504505	1.662162162
SPEG	2	220361531	220361838	308	ENST00000412982	5	0.655844156	0.05487013
SPEG	2	220299739	220300036	298	ENST00000312358	1	0.771812081	1.633557047
SPEG	2	220313718	220313993	276	ENST00000312358	4	0.757246377	1.286231884
SPEG	2	220348190	220348350	161	ENST00000312358	30	0.813664596	1.947826087
SPEG	2	220362442	220362583	142	ENST00000412982	6	0.61971831	0.10915493
SPEG	2	220362773	220362911	139	ENST00000412982	7	0.64028777	0.194244604
SPEG	2	220361077	220361204	128	ENST00000412982	4	0.5859375	0.09921875
SRC	20	36012700	36012806	107	ENST00000358208	1	0.775700935	2.239252336
SRPK1	6	35887842	35888031	190	ENST00000507909	1	0.578947368	1.371578947
SRPK1	6	35858672	35858818	147	ENST00000512445	2	0.43537415	2.310884354
SRPK2	7	104946883	104947018	136	ENST00000465112	3	0.426470588	0
SRPK2	7	105029691	105029817	127	ENST00000482897	1	0.708661417	0.091338583
SRPK3	X	153045681	153045940	260	ENST00000489426	1	0.642307692	0.000769231
SS18	18	23661191	23661329	139	ENST00000582792	3	0.532374101	0
SS18	18	23660279	23660387	109	ENST00000585121	3	0.412844037	0
SS18L1	20	60739201	60739302	102	ENST00000331758	7	0.666666667	1.328431373
SSX2	X	52727836	52727981	146	ENST00000336777	6	0.479452055	0
STK11	19	1227592	1227856	265	ENST00000586243	5	0.777358491	0.107924528
STK17A	7	43622936	43623048	113	ENST00000319357	1	0.778761062	2.25840708
STK3	8	99895875	99895984	110	ENST00000523601	1	0.445454545	0.037272727
STK35	20	2082528	2082821	294	ENST00000381482	1	0.721088435	0
STK35	20	2124430	2124542	113	ENST00000400064	2	0.637168142	0.104424779
STK39	2	169103738	169103881	144	ENST00000355999	1	0.826388889	0.500694444
SUZ12	17	30264266	30264539	274	ENST00000322652	1	0.726277372	1.096350365

Gene	Chr	Start	End	Length	Transcript	Count	Value1	Value2
TAF1	X	70748392	70748575	184	ENST00000437147	15	0.505434783	0.132608696
TAL1	1	47691115	47691383	269	ENST00000294339	1	0.791821561	0.27732342
TAOK2	16	30002766	30002889	124	ENST00000279394	18	0.653225806	2.189516129
TBCK	4	107183255	107183369	115	ENST00000273980	3	0.417391304	0
TBCK	4	107172238	107172351	114	ENST00000503832	2	0.342105263	0.020175439
TERT	5	1294913	1295104	192	ENST00000296820	1	0.78125	0.7015625
TERT	5	1293919	1294040	122	ENST00000296820	2	0.647540984	3.021311475
TET2	4	106196205	106197676	1472	ENST00000380013	9	0.47486413	0.109375
TET2	4	106193721	106194075	355	ENST00000380013	8	0.45915493	0
TET2	4	106164727	106164935	209	ENST00000380013	4	0.555023923	0.008133971
TET2	4	106180776	106180926	151	ENST00000380013	5	0.490066225	0.065562914
TET2	4	106190767	106190904	138	ENST00000380013	7	0.514492754	0.044202899
TFEB	6	41659011	41659209	199	ENST00000343317	1	0.537688442	1.104020101
TLX1	10	102891505	102891667	163	ENST00000370196	1	0.766871166	1.567484663
TNFRSF17	16	12060877	12061000	124	ENST00000562385	3	0.548387097	0
TNIK	3	170943323	170943424	102	ENST00000468757	1	0.411764706	0
TNK1	17	7292290	7292403	114	ENST00000311668	12	0.614035088	3.003508772
TNK1	17	7287465	7287572	108	ENST00000311668	5	0.75	2.385185185
TNK1	17	7287289	7287391	103	ENST00000311668	5	0.747572816	2.851456311
TNK2	3	195622924	195623097	174	ENST00000427576	1	0.695402299	0
TNK2	3	195603482	195603607	126	ENST00000411741	1	0.706349206	0.35952381
TNNI3K	1	74867523	74867641	119	ENST00000534020	4	0.43697479	0
TP53RK	20	45317766	45317908	143	ENST00000372102	1	0.755244755	1.611888112
TPM4	19	16187376	16187507	132	ENST00000300933	1	0.712121212	1.508333333
TPM4	19	16191763	16191885	123	ENST00000588410	1	0.520325203	0.06097561
TRIB1	8	126443145	126443504	360	ENST00000311922	1	0.769444444	1.09
TRIM28	19	59056125	59056464	340	ENST00000253024	1	0.791176471	0.130588235
TRIM33	1	115053298	115053697	400	ENST00000358465	1	0.7625	0.893
TRIO	5	14143835	14143991	157	ENST00000344204	1	0.808917197	0.068789809
TTBK1	6	43252721	43253114	394	ENST00000259750	14	0.766497462	1.783248731
TTN	2	179560592	179560879	288	ENST00000342992	110	0.402777778	0.998958333
TWF1	12	44199846	44200048	203	ENST00000547459	1	0.753694581	1.840394089
TWF1	12	44200024	44200150	127	ENST00000325127	1	0.771653543	1.871653543
TWF1	12	44199327	44199440	114	ENST00000546662	2	0.438596491	1.154385965
TYK2	19	10468140	10468367	228	ENST00000529370	15	0.561403509	0.761403509
TYK2	19	10480433	10480553	121	ENST00000530829	2	0.58677686	0
TYK2	19	10473234	10473333	100	ENST00000264818	8	0.65	2.371
TYRO3	15	41851456	41851579	124	ENST00000263798	1	0.790322581	0.139516129
ULK1	12	132406286	132406728	443	ENST00000542419	2	0.566591422	0.322573363
ULK2	17	19764255	19764368	114	ENST00000580118	2	0.535087719	0
ULK3	15	75135345	75135446	102	ENST00000440863	1	0.725490196	1.844117647

VHL	3	10183532	10183646	115	ENST00000256474	1	0.713043478	1.174782609
WEE1	11	9595481	9595830	350	ENST00000450114	1	0.762857143	1.895714286
WEE1	11	9595907	9596056	150	ENST00000450114	1	0.773333333	0.670666667
WNK1	12	974276	974530	255	ENST00000530271	9	0.568627451	0.103529412
WNK2	9	95947212	95947618	407	ENST00000297954	1	0.805896806	0.23022113
WT1	11	32456507	32456786	280	ENST00000332351	1	0.771428571	1.749642857
ZRSR2	X	15819397	15819637	241	ENST00000380308	4	0.543568465	0

Supplementary Table 3

New mutations detected by CRUK Manchester Institute sequencing that were not reported by either CCLE or COSMIC

Cell line

H2122

Gene	Mutation	%GC
DSTYK	p.G9S	0.75
GLI3	p.P940T	0.7
KIAA1549	p.T503M	0.47
MKL1	p.P391L	0.65
TTN	p.E4839G	0.45

H2087

Gene	Mutation	%GC
AATK	p.L97V	0.69
BCL11B	p.R229L	0.74
CDK7	p.A2V	0.6
EIF4G1	p.A1389V	0.58
GATA2	p.P125T	0.67
PGR	p.W473C	0.29
SIRT1	p.P37L	0.8
TBX22	p.T64R	0.56

H2009

Gene	Mutation	%GC
AXL	p.S511R	0.58
EGFR	p.N650S	0.48
F12	p.L260Q	0.73
FLNC	p.T1406N	0.54
MN1	p.G671A	0.75
PAK4	p.E119Q	0.76
PRKD1	p.L7P	0.83
RUNX1T1	p.V61F	0.46

H1437

Gene	Mutation	%GC
APBB1IP	p.P600T	0.86
CASC5	p.P1900L	0.4
DCLK1	p.P429H	0.5
MAX	p.T72S	0.38
MLLT1	p.D492N	0.65
RECQL4	p.E711K	0.56

Supplemental Table 4

Proportion of missense mutations exclusively reported by one institute (CCLE or COSMIC) that were subsequently found by CRUK MI sequencing.

	H2009	H2087	H1437	H2122	Total	%
Exclusive mutations detected by CRUK MI	25	37	13	13	88	72.13
Exclusive mutations NOT detected by CRUK MI	6	10	11	7	34	27.87

Supplementary Table 5:

Sequencing statistics for CRUK MI sequencing. Average read depth calculated using the Lander / Waterman equation.

Sample	totalReads	Mapped Reads		Average Read Depth	Unmapped Reads	
H2009	73410860	72432478	98.67%	142x	80531	0.11%
H1437	88063156	86823722	98.59%	170x	142014	0.16%
H2122	65234672	64126504	98.30%	126x	165621	0.25%
H2087	67953460	66863736	98.40%	131x	189300	0.28%

Read Length	100bp
SureSelect XT Human All Exon V4 Target Size	51Mb

Supplementary Table 6

List of kinase and Cancer Census genes that were analysed to identify sequencing cold-spots in 10 CCLE whole exome sequencing files

AAK1	AURKC	CAMKV	CDK9
AATK	AXIN1	CAMTA1	CDKL1
ABI1	AXL	CANT1	CDKL2
ABL1	BAP1	CARD11	CDKL3
ABL2	BCKDK	CARS	CDKL4
ACSL3	BCL10	CASC5	CDKL5
ACSL6	BCL11A	CASK	CDKN2A
ACVR1	BCL11B	CBFA2T3	CDKN2C
ACVR1B	BCL2	CBFB	CDX2
ACVR1C	BCL3	CBL	CEBPA
ACVR2A	BCL6	CBLB	CHCHD7
ACVR2B	BCL7A	CBLC	CHEK1
ACVRL1	BCL9	CCDC6	CHEK2
ADCK1	BCOR	CCNB1IP1	CHIC2
ADCK2	BCR	CCND1	CHN1
ADCK3	BIRC3	CCND2	CHUK
ADCK4	BLK	CCND3	CIC
ADCK5	BLM	CCNE1	CIITA
ADRBK1	BMP2K	CD274	CIT
ADRBK2	BMPR1A	CD74	CLK1
AFF1	BMPR1B	CD79A	CLK2
AFF3	BMPR2	CD79B	CLK3
AFF4	BMX	CD8A	CLK4
AKAP9	BRAF	CDC42BPA	CLP1
AKT1	BRCA1	CDC42BPB	CLTC
AKT2	BRCA2	CDC42BPG	CLTCL1
AKT3	BRD2	CDC42EP1	CNBP
ALDH2	BRD3	CDC7	CNOT3
ALK	BRD4	CDC73	COL1A1
ALPK1	BRDT	CDH1	COX6C
ALPK2	BRIP1	CDH11	CREB1
ALPK3	BRSK1	CDK1	CREB3L1
AMHR2	BRSK2	CDK10	CREB3L2
ANKK1	BTG1	CDK11B	CREBBP
APC	BTK	CDK12	CRLF2
ARAF	BUB1	CDK13	CRTC1
ARHGAP26	BUB1B	CDK14	CRTC3
ARHGEF12	C15orf55	CDK15	CSF1R
ARID1A	C2orf44	CDK16	CSF3R
ARID2	C9orf96	CDK17	CSK
ARNT	CAMK1	CDK18	CSNK1A1
ASPSCR1	CAMK1D	CDK19	CSNK1A1L
ASXL1	CAMK1G	CDK2	CSNK1D
ATF1	CAMK2A	CDK20	CSNK1E
ATIC	CAMK2B	CDK3	CSNK1G1
ATM	CAMK2D	CDK4	CSNK1G2
ATR	CAMK2G	CDK5	CSNK1G3
ATRX	CAMK4	CDK6	CSNK2A1
AURKA	CAMKK1	CDK7	CSNK2A2
AURKB	CAMKK2	CDK8	CTNNB1

CXCR7	EPHA7	FGFR3	HIP1
CYLD	EPHA8	FGFR4	HIPK1
DAPK1	EPHB1	FGR	HIPK2
DAPK2	EPHB2	FH	HIPK3
DAPK3	EPHB3	FHIT	HIPK4
DAXX	EPHB4	FIP1L1	HIST1H3B
DCLK1	EPHB6	FLCN	HIST1H4I
DCLK2	EPS15	FLI1	HLF
DCLK3	ERBB2	FLT1	HMGA1
DDB2	ERBB3	FLT3	HMGA2
DDIT3	ERBB4	FLT4	HMGN2P46
DDR1	ERC1	FNBP1	HNF1A
DDR2	ERCC2	FOXL2	HNRNPA2B1
DDX10	ERCC3	FOXO1	HOOK3
DDX5	ERCC4	FOXO3	HOXA11
DDX6	ERCC5	FOXO4	HOXA13
DEK	ERG	FOXP1	HOXA9
DICER1	ERN1	FRK	HOXC11
DMPK	ERN2	FSTL3	HOXC13
DNM2	ETV1	FUBP1	HOXD11
DNMT3A	ETV4	FUS	HOXD13
DSTYK	ETV5	FYN	HRAS
DUX4	ETV6	GAK	HSP90AA1
DYRK1A	EWSR1	GAS7	HSP90AB1
DYRK1B	EXT1	GATA1	HSPB8
DYRK2	EXT2	GATA2	HUNK
DYRK3	EZH2	GATA3	ICK
DYRK4	EZR	GMPS	IDH1
EBF1	FAM123B	GNA11	IDH2
ECT2L	FAM22A	GNAQ	IGF1R
EEF2K	FAM22B	GNAS	IKBKB
EGFR	FAM46C	GOLGA5	IKBKE
EIF2AK1	FANCA	GOPC	IKZF1
EIF2AK2	FANCC	GPC3	IL2
EIF2AK3	FANCD2	GPHN	IL21R
EIF2AK4	FANCE	GRK1	IL6ST
EIF4A2	FANCF	GRK4	IL7R
ELF4	FANCG	GRK5	ILK
ELK4	FAS	GRK6	INSR
ELL	FASTK	GRK7	INSRR
ELN	FBXO11	GSG2	IRAK1
EML4	FBXW7	GSK3A	IRAK2
EP300	FCGR2B	GSK3B	IRAK3
EPHA1	FCRL4	GUCY2C	IRAK4
EPHA10	FER	GUCY2D	IRF4
EPHA2	FES	GUCY2F	ITK
EPHA3	FEV	H3F3A	JAK1
EPHA4	FGFR1	HCK	JAK2
EPHA5	FGFR1OP	HERPUD1	JAK3
EPHA6	FGFR2	HEY1	JAZF1

JUN	MAP2K5	MDM2	MYH11
KALRN	MAP2K6	MDM4	MYH9
KAT6A	MAP2K7	MDS2	MYLK
KAT6B	MAP3K1	MECOM	MYLK2
KCNJ5	MAP3K10	MED12	MYLK3
KDM5A	MAP3K11	MELK	MYLK4
KDM5C	MAP3K12	MEN1	MYO3A
KDM6A	MAP3K13	MERTK	MYO3B
KDR	MAP3K15	MET	NACA
KDSR	MAP3K19	MGMT	NCKIPSD
KIAA1549	MAP3K2	MINK1	NCOA1
KIF5B	MAP3K3	MITF	NCOA2
KIT	MAP3K4	MKL1	NCOA4
KLF4	MAP3K5	MKNK1	NDRG1
KLF6	MAP3K6	MKNK2	NEK1
KLK2	MAP3K7	MLF1	NEK10
KRAS	MAP3K8	MLH1	NEK11
KSR1	MAP3K9	MLK4	NEK2
KSR2	MAP4K1	MLKL	NEK3
KTN1	MAP4K2	MLL	NEK4
LASP1	MAP4K3	MLL2	NEK5
LATS1	MAP4K4	MLL3	NEK6
LATS2	MAP4K5	MLLT1	NEK7
LCK	MAPK1	MLLT10	NEK8
LCP1	MAPK10	MLLT11	NEK9
LHFP	MAPK11	MLLT3	NF1
LIFR	MAPK12	MLLT4	NF2
LIMK1	MAPK13	MLLT6	NFE2L2
LIMK2	MAPK14	MLTK	NFIB
LMO1	MAPK15	MN1	NFKB2
LMO2	MAPK3	MNX1	NIM1
LMTK2	MAPK4	MOK	NIN
LMTK3	MAPK6	MOS	NKX2-1
LPP	MAPK7	MPL	NLK
LRIG3	MAPK8	MSH2	NLRP2
LRRK1	MAPK9	MSH6	NONO
LRRK2	MAPKAPK2	MSI2	NOTCH1
LTK	MAPKAPK3	MSN	NOTCH2
LYL1	MAPKAPK5	MST1R	NPM1
LYN	MARK1	MST4	NPR1
MAF	MARK2	MTCP1	NPR2
MAFB	MARK3	MTOR	NR4A3
MAK	MARK4	MUC1	NRAS
MALAT1	MAST1	MUSK	NRBP1
MALT1	MAST2	MUTYH	NRBP2
MAML2	MAST3	MYB	NRK
MAP2K1	MAST4	MYC	NSD1
MAP2K2	MASTL	MYCL1	NT5C2
MAP2K3	MATK	MYCN	NTRK1
MAP2K4	MAX	MYD88	NTRK2

NTRK3	PIK3R1	PRKG2	RPS6KA1
NUAK1	PIK3R4	PRKX	RPS6KA2
NUAK2	PIM1	PRPF4B	RPS6KA3
NUMA1	PIM2	PRRX1	RPS6KA4
NUP214	PIM3	PSIP1	RPS6KA5
NUP98	PINK1	PSKH1	RPS6KA6
OBSCN	PKDCC	PSKH2	RPS6KB1
OGG1	PKMYT1	PTCH1	RPS6KB2
OLIG2	PKN1	PTEN	RPS6KC1
OMD	PKN2	PTK2	RPS6KL1
OXSR1	PKN3	PTK2B	RUNX1
P2RY8	PLAG1	PTK6	RUNX1T1
PAFAH1B2	PLK1	PTK7	RYK
PAK1	PLK2	PTPN11	SBDS
PAK2	PLK3	PTPRC	SBK1
PAK3	PLK4	PXK	SBK2
PAK4	PML	RABEP1	SCYL1
PAK6	PMS1	RAC1	SCYL2
PAK7	PMS2	RAD21	SCYL3
PALB2	PNCK	RAD51B	SDC4
PASK	POT1	RAF1	SDHAF2
PATZ1	POU2AF1	RALGDS	SDHB
PAX3	POU5F1	RANBP17	SDHC
PAX5	PPARG	RAP1GDS1	SDHD
PAX7	PPP2R1A	RARA	SEPT5
PAX8	PRCC	RB1	SEPT6
PBK	PRDM1	RBM15	SET
PBRM1	PRDM16	REL	SETBP1
PBX1	PRF1	RET	SETD2
PCM1	PRG4	RHOH	SF3B1
PCSK7	PRKAA1	RIOK1	SFPQ
PDCD1LG2	PRKAA2	RIOK2	SGK1
PDE4DIP	PRKACA	RIOK3	SGK2
PDGFB	PRKACB	RIPK1	SGK223
PDGFRA	PRKACG	RIPK2	SGK3
PDGFRB	PRKAR1A	RIPK3	SGK494
PDIK1L	PRKCA	RIPK4	SH2B3
PDK1	PRKCB	RMI2	SH3GL1
PDK2	PRKCD	RNASEL	SIK1
PDK3	PRKCE	RNF213	SIK2
PDK4	PRKCG	RNF43	SIK3
PDPK1	PRKCH	ROCK1	SLC34A2
PEAK1	PRKCI	ROCK2	SLC45A3
PER1	PRKCQ	ROR1	SLK
PHF6	PRKCZ	ROR2	SMAD4
PHKG1	PRKD1	ROS1	SMARCA4
PHKG2	PRKD2	RPL10	SMARCB1
PHOX2B	PRKD3	RPL22	SMARCE1
PICALM	PRKDC	RPL5	SMG1
PIK3CA	PRKG1	RPN1	SMO

SNRK
SNX29
SOCS1
SOX2
SPECC1
SPEG
SRC
SRGAP3
SRMS
SRPK1
SRPK2
SRPK3
SRSF2
SRSF3
SS18
SS18L1
SSX1
SSX2
SSX4
STAT3
STAT5B
STIL
STK10
STK11
STK16
STK17A
STK17B
STK19
STK24
STK25
STK3
STK31
STK32A
STK32B
STK32C
STK33
STK35
STK36
STK38
STK38L
STK39
STK4
STK40
STRADA
STRADB
STYK1
SUFU
SUZ12
SYK
TAF1

TAF15
TAF1L
TAL1
TAL2
TAOK1
TAOK2
TAOK3
TBCK
TBK1
TBL1XR1
TCEA1
TCF12
TCF3
TCF7L2
TCL1A
TEC
TEK
TERT
TESK1
TESK2
TET1
TET2
TEX14
TFE3
TFEB
TFG
TFPT
TFRC
TGFBR1
TGFBR2
THRAP3
TIE1
TLK1
TLK2
TLX1
TLX3
TMPRSS2
TNFAIP3
TNFRSF14
TNFRSF17
TNIK
TNK1
TNK2
TNNI3K
TOP1
TP53
TP53RK
TPM3
TPM4
TPR

TRAF7
TRIB1
TRIB2
TRIB3
TRIM24
TRIM27
TRIM28
TRIM33
TRIO
TRIP11
TRPM6
TRPM7
TRRAP
TSC1
TSC2
TSHR
TSSK1B
TSSK2
TSSK3
TSSK4
TSSK6
TTBK1
TTBK2
TTK
TTL
TTN
TWF1
TWF2
TXK
TYK2
TYRO3
U2AF1
UBR5
UHMK1
ULK1
ULK2
ULK3
ULK4
USP6
VHL
VRK1
VRK2
VRK3
VTI1A
WAS
WEE1
WEE2
WHSC1
WHSC1L1
WIF1

WNK1
WNK2
WNK3
WNK4
WRN
WT1
WWTR1
XPA
XPC
XPO1
YES1
YWHAE
ZAP70
ZBTB16
ZMYM2
ZNF331
ZNF384
ZNF521
ZRSR2

Supplementary Table 7: Read coverage in CCLE Hybrid Capture at midpoint of 20 largest coldspots

Read coverage in CCLE Hybrid Capture data at the midpoint of 20 largest cold-spots identified in CCLE 10 lung whole exome sequencing files (not hybrid capture).

Cold-spot	Chr	Start	End	Coldspot midpoint location	Cell line (number of reads)									
					DMS153	H2286	DV90	H1944	CORL95	H1373	H1184	HLF-A	JL1	HCC78
TET2	4	106196205	106197676	4:106196941	0	0	1	0	0	0	0	n/a	0	0
CDK13	7	39990241	39991058	7:39990650	0	1	1	0	1	0	0	n/a	0	1
CEBPA	19	33792559	33793320	19:33792940	0	0	0	0	0	0	0	n/a	0	0
LMTK3	19	49002459	49003076	19:49002768	0	0	0	0	0	0	0	n/a	0	1
SPEG	2	220313131	220313683	2:220313407	0	4	0	2	0	2	0	n/a	0	0
HOXD11	2	176972336	176972864	2:176972600	0	0	0	0	0	0	0	n/a	0	0
ARID1A	1	27022895	27023383	1:27023139	0	0	0	0	0	0	0	n/a	0	0
MAP3K1	5	56111401	56111882	5:56111642	0	0	0	0	0	1	0	n/a	0	0
AATK	17	79095991	79096471	17:79096231	0	0	0	0	0	0	0	n/a	0	0
GUCY2D	17	7906366	7906836	17:7906601	1	0	0	0	0	2	0	n/a	0	1
OLIG2	21	34399683	34400142	21:34399913	0	0	0	0	0	0	0	n/a	0	0
SFPQ	1	35657823	35658272	1:35658048	0	0	1	0	0	0	0	n/a	0	0
CLK3	15	74907796	74908239	15:74908018	0	0	0	0	0	0	0	n/a	0	0
SPEG	2	220349351	220349794	2:220349573	0	3	0	0	0	0	0	n/a	2	1
FOXO1	13	41239919	41240349	13:41240134	0	0	0	0	0	0	0	n/a	0	0
ALPK3	15	85360412	85360826	15:85360619	0	0	0	0	0	0	0	n/a	0	0
WNK2	9	95947212	95947618	9:95947415	0	0	0	0	0	0	0	n/a	0	0
MNX1	7	156802516	156802919	7:156802718	0	0	0	0	0	0	0	n/a	0	0
TRIM33	1	115053298	115053697	1:115053498	1	2	2	0	0	0	0	n/a	0	1
TTBK1	6	43252721	43253114	6:43252918	0	0	0	1	0	0	0	n/a	0	0

HLF-A hybrid capture read data not available