

Table S1: Overview of targeted amplicon sequencing results

Sample	Mapped reads	Reads on target	Coverage depth	Uniform -ity (%)	Coverage (%)				# of somatic mutation		
					1x	20x	100x	500x	Nonsynon	Synon	Total
T1	8890187	95.7	539.8	85.3	99.3	95.7	86.3	39.3	43	7	50
T2	6627223	95.9	410.3	83.8	99.0	94.2	81.3	29.1	44	8	52

Nonsynon, non-synonymous mutations; synon, synonymous mutations.

Figure S1: Ion Ampliseq Comprehensive Cancer Panel gene list.

ABL1	BLNK	CSMD3	FAM123B	HRAS	LRP1B	MYC	PDGFRB	RHOH	TCF3
ABL2	BMPR1A	CTNNA1	FANCA	HSP90AA1	LTF	MYCL1	PER1	RNASEL	TCF7L1
ACVR2A	BRAF	CTNNB1	FANCC	HSP90AB1	LTK	MYCN	PGAP3	RNF2	TCF7L2
ADAMTS20	BRD3	CYLD	FANCD2	ICK	MAF	MYD88	PHOX2B	RNF213	TCL1A
AFF1	BRIP1	CYP2C19	FANCF	IDH1	MAFB	MYH11	PIK3C2B	ROS1	TET1
AFF3	BTK	CYP2D6	FANCG	IDH2	MAGEA1	MYH9	PIK3CA	RPS6KA2	TET2
AKAP9	BUB1B	DAXX	FAS	IGF1R	MAGI1	NBN	PIK3CB	RRM1	TFE3
AKT1	CARD11	DCC	FBXW7	IGF2	MALT1	NCOA1	PIK3CD	RUNX1	TGFBFR2
AKT2	CASC5	DDB2	FGFR1	IGF2R	MAML2	NCOA2	PIK3CG	RUNX1T1	TGM7
AKT3	CBL	DDIT3	FGFR2	IKBKB	MAP2K1	NCOA4	PIK3R1	SAMD9	THBS1
ALK	CCND1	DDR2	FGFR3	IKBKE	MAP2K2	NF1	PIK3R2	SBDS	TIMP3
APC	CCND2	DEK	FGFR4	IKZF1	MAP2K4	NF2	PIM1	SDHA	TLR4
AR	CCNE1	DICER1	FH	IL2	MAP3K7	NFE2L2	PKHD1	SDHB	TLX1
ARID1A	CD79A	DNMT3A	FLCN	IL21R	MAPK1	NFKB1	PLAG1	SDHC	TNFAIP3
ARID2	CD79B	DPYD	FLI1	IL6ST	MAPK8	NFKB2	PLCG1	SDHD	TNFRSF14
ARNT	CDC73	DST	FLT1	IL7R	MARK1	NIN	PLEKHG5	SEPT9	TNK2
ASXL1	CDH1	EGFR	FLT3	ING4	MARK4	NKX2-1	PML	SETD2	TOP1
ATF1	CDH11	EML4	FLT4	IRF4	MBD1	NLRP1	PMS1	SF3B1	TP53
ATM	CDH2	EP300	FN1	IRS2	MCL1	NOTCH1	PMS2	SGK1	TPR
ATR	CDH20	EP400	FOXL2	ITGA10	MDM2	NOTCH2	POT1	SH2D1A	TRIM24
ATRX	CDH5	EPHA3	FOXO1	ITGA9	MDM4	NOTCH4	POU5F1	SMAD2	TRIM33
AURKA	CDK12	EPHA7	FOXO3	ITGB2	MEN1	NPM1	PPARG	SMAD4	TRIP11
AURKB	CDK4	EPHB1	FOXP1	ITGB3	MET	NRAS	PPP2R1A	SMARCA4	TRRAP
AURKC	CDK6	EPHB4	FOXP4	JAK1	MITF	NSD1	PRDM1	SMARCB1	TSC1
AXL	CDK8	EPHB6	FZR1	JAK2	MLH1	NTRK1	PRKAR1A	SMO	TSC2
BAI3	CDKN2A	ERBB2	G6PD	JAK3	MLL	NTRK3	PRKDC	SMUG1	TSHR
BAP1	CDKN2B	ERBB3	GATA1	JUN	MLL2	NUMA1	PSIP1	SOCS1	UBR5
BCL10	CDKN2C	ERBB4	GATA2	KAT6A	MLL3	NUP214	PTCH1	SOX11	UGT1A1
BCL11A	CEBPA	ERCC1	GATA3	KAT6B	MLLT10	NUP98	PTEN	SOX2	USP9X
BCL11B	CHEK1	ERCC2	GDNF	KDM5C	MMP2	PAK3	PTGS2	SRC	VHL
BCL2	CHEK2	ERCC3	GNA11	KDM6A	MN1	PALB2	PTPN11	SSX1	WAS
BCL2L1	CIC	ERCC4	GNAQ	KDR	MPL	PARP1	PTPRD	STK11	WHSC1
BCL2L2	CKS1B	ERCC5	GNAS	KEAP1	MRE11A	PAX3	PTPRT	STK36	WRN
BCL3	CMPK1	ERG	GPR124	KIT	MSH2	PAX5	RAD50	SUFU	WT1
BCL6	COL1A1	ESR1	GRM8	KLF6	MSH6	PAX7	RAF1	SYK	XPA

Figure S2: Uncropped version of immunoblots shown in Figure 4A.

