

Supplementary Table 1 | List of 150 genes of panel sequencing

	Gene Symbol		Gene Symbol		Gene Symbol
1	ACVR2A	51	FAT1	101	NTRK1
2	AKT1	52	FBXW7	102	NTRK2
3	AKT2	53	FGF19	103	NTRK3
4	ALK	54	FGFR1	104	PALB2
5	APC	55	FGFR2	105	PDCD1LG2
6	AR	56	FGFR3	106	PDGFRA
7	ARAF	57	FLT1	107	PDGFRB
8	ARID1A	58	FLT3	108	PIK3CA
9	ARID2	59	FLT4	109	PIK3R1
10	ATM	60	GATA3	110	PREX2
11	ATR	61	GLI3	111	PTCH1
12	AXIN1	62	GNA11	112	PTEN
13	BARD1	63	GNAQ	113	PTK2
14	BCL2L11	64	GNAS	114	PTPN11
15	BIRC5	65	HNF1A	115	RAD50
16	BRAF	66	HRAS	116	RAF1
17	BRCA1	67	IDH1	117	RB1
18	BRCA2	68	IDH2	118	RBM10
19	BRIP1	69	IRS2	119	RET
20	C11orf30	70	JAK2	120	RICTOR
21	CBL	71	JAK3	121	RIT1
22	CCND1	72	KDR	122	RNF43
23	CCND2	73	KEAP1	123	ROS1
24	CCNE1	74	KIT	124	RUNX1T1
25	CD274	75	KMT2A	125	SETD2
26	CDH1	76	KRAS	126	SLIT2
27	CDK12	77	LRP1B	127	SMAD2
28	CDK4	78	MAP2K1	128	SMAD3
29	CDK6	79	MAP2K2	129	SMAD4
30	CDKN1B	80	MAP2K4	130	SMARCA2
31	CDKN2A	81	MAP3K1	131	SMARCA4
32	CHEK1	82	MCL1	132	SMO
33	CHEK2	83	MET	133	SOX2
34	CREBBP	84	MLH1	134	SPEN
35	CRKL	85	MRE11A	135	SPTA1
36	CTNNB1	86	MSH2	136	SRC
37	CYP2C19	87	MSH6	137	STK11
38	CYP2D6	88	MTOR	138	TBX3
39	DDR2	89	MYC	139	TCF7L2
40	DPYD	90	MYCL	140	TERT
41	EGFR	91	MYCN	141	TGFBR2
42	EP300	92	NF1	142	TP53
43	EPHB1	93	NFE2L2	143	TPMT
44	ERBB2	94	NKX2-1	144	TSC1
45	ERBB3	95	NOTCH1	145	TSC2
46	ERBB4	96	NOTCH2	146	UGT1A1
47	ERRF1	97	NOTCH3	147	VEGFA
48	ESR1	98	NRAS	148	VHL
49	EZH2	99	NRG1	149	ZNF217
50	FAM135B	100	NRG3	150	ZNF703