

Table S1 Germline alterations identified and interpreted based on ACMG guidelines

Gene	exon	base	AA	dbSNP138	Zygoty	Classification
APC	exon16	c.T5465A	p.V1822D	rs459552	Heterozygous	Benign
ATM	exon40	c.A5948G	p.N1983S	rs659243	Homozygous	Benign
AXIN2	exon2	c.C148T	p.P50S	rs2240308	Heterozygous	Benign
BARD1	exon4	c.G1134C	p.R378S	rs2229571	Heterozygous	Benign
BARD1	exon1	c.C70T	p.P24S	rs1048108	Heterozygous	Benign
BARD1	exon6	c.G1519A	p.V507M	rs2070094	Heterozygous	Benign
BLM	exon13	c.C2603T	p.P868L	rs2227935	Heterozygous	Benign
BLM	exon21	c.G3961A	p.V1321I	rs7167216	Heterozygous	Benign
BMPR1A	exon3	c.C4A	p.P2T	rs3182217	Homozygous	Benign
BRCA1	exon10	c.A3113G	p.E1038G	rs16941	Heterozygous	Benign
BRCA1	exon15	c.A4837G	p.S1613G	rs1799966	Heterozygous	Benign
BRCA1	exon10	c.A3548G	p.K1183R	rs16942	Heterozygous	Benign
BRCA1	exon10	c.C2612T	p.P871L	rs799917	Heterozygous	Benign
BRCA2	exon15	c.G7522A	p.G2508S	rs80358978	Heterozygous	VUS
BRCA2	exon14	c.T7397C	p.V2466A	rs169547	Homozygous	Benign
BRIP1	exon19	c.T2755C	p.S919P	rs4986764	Homozygous	Benign
EPCAM	exon3	c.T344C	p.M115T	rs1126497	Heterozygous	Benign
FLCN	exon8	c.G907A	p.G303R	rs3744124	Heterozygous	Benign
MEN1	exon10	c.A1636G	p.T546A	rs2959656	Homozygous	Benign
MLH3	exon2	c.A2476G	p.N826D	rs175081	Homozygous	Benign
MSH2	exon7	c.C1255A	p.Q419K	rs63750006	Heterozygous	Likely benign
MSH2	exon12	c.A1886G	p.Q629R	rs61756468	Heterozygous	Likely benign
NBN	exon5	c.G553C	p.E185Q	rs1805794	Heterozygous	Benign
PALB2	exon4	c.A1676G	p.Q559R	rs152451	Heterozygous	Benign
PMS2	exon11	c.C1454A	p.T485K	rs1805323	Heterozygous	Benign
PMS2	exon15	c.G2570C	p.G857A	rs1802683	Heterozygous	Likely benign
PMS2	exon11	c.C1408T	p.P470S	rs1805321	Heterozygous	Benign
PMS2	exon10	c.A1103G	p.N368S	NA	Heterozygous	VUS
PMS2	exon11	c.A1621G	p.K541E	rs2228006	Homozygous	Benign
PTEN	intron1	c.154+1T>-	NA	rs71022512	Homozygous	Benign
PTEN	exon1	c.G10A	p.G4R	rs12573787	Heterozygous	Benign
PTEN	exon2	c.G194C	p.C65S	rs2943772	Homozygous	Benign
RAD51D	exon6	c.G494A	p.R165Q	rs4796033	Heterozygous	Benign
TP53	exon4	c.C215G	p.P72R	rs1042522	Heterozygous	Benign
TSC2	exon18	c.G1939A	p.D647N	rs45509392	Heterozygous	VUS
TP53	exon4	c.C215G	p.P72R	rs1042522	Heterozygous	Benign

Table S2 List of SNV mutations in this case

Chr	Position	Ref	Alt	Func.refGene	Gene	Transcript	Region	Nucleotide	Protein	Tumor_AF
chr1	887940	G	T	stopgain	NOC2L	NM_015658	exon10	c.C1043A	p.S348X	33.98
chr1	1535029	G	C	nonsynonymous	C1orf23	NM_001242659	exon1	c.C367G	p.R123G	40.74
chr1	13497715	G	C	nonsynonymous	PRAMEF17	NM_001099851	exon3	c.C1012C	p.E338Q	5.45
chr1	17668486	C	A	nonsynonymous	PAD4	NM_012387	exon7	c.C701A	p.P234H	30.37
chr1	26801075	G	C	nonsynonymous	HMG2	NM_005517	exon5	c.G154A	p.V52I	6.35
chr1	34677947	C	A	nonsynonymous	C10orf94	NM_032884	exon6	c.C1091T	p.P364L	31.95
chr1	36933744	G	T	nonsynonymous	CSF3R	NM_156039	exon13	c.C1655A	p.P552H	16.74
chr1	37324743	C	T	nonsynonymous	GRK3	NM_000831	exon7	c.G1070A	p.R37C	16.16
chr1	4629586	C	T	nonsynonymous	MAST2	NM_015112	exon1	c.C19T	p.R75C	26.09
chr1	75037154	C	T	nonsynonymous	ERICH3	NM_001002912	exon14	c.G4240A	p.E1414K	10.95
chr1	75055708	G	A	stopgain	ERICH3	NM_001002912	exon12	c.C1783T	p.E595X	9.02
chr1	75055726	C	T	nonsynonymous	ERICH3	NM_001002912	exon12	c.C1765A	p.P589T	10.09
chr1	84946676	G	A	nonsynonymous	PPF1	NM_025065	exon2	c.G266A	p.R89K	5.94
chr1	89401904	C	T	nonsynonymous	COB2L2	NM_001008661	exon14	c.C1327A	p.E443K	28.28
chr1	89845996	G	A	nonsynonymous	GBP6	NM_198460	exon6	c.G677A	p.R226H	9.18
chr1	92811452	C	A	nonsynonymous	RPAP2	NM_024813	exon11	c.C1669C	p.A557P	9.71
chr1	111439320	G	C	nonsynonymous	CDS5	NM_000560	exon6	c.C469A	p.P157T	37.5
chr1	111439321	C	A	nonsynonymous	CDS5	NM_000560	exon6	c.C470A	p.P157Q	37.98
chr1	111742343	C	A	nonsynonymous	DDND2D	NM_024901	exon2	c.G145T	p.G49W	11.01
chr1	117699283	C	A	nonsynonymous	VENCN1	NM_024626	exon3	c.C358T	p.V120L	25.55
chr1	152277258	G	C	nonsynonymous	FLG	NM_002016	exon3	c.C10104G	p.H3368Q	14.43
chr1	152586336	C	A	nonsynonymous	LCE3B	NM_178433	exon1	c.C50A	p.P17H	10.42
chr1	154685979	G	C	nonsynonymous	KCN3N3	NM_002249	exon7	c.C1860C	p.K820N	35.14
chr1	155178627	G	A	nonsynonymous	MTX1	NM_198883	exon1	c.G32A	p.R11H	5
chr1	161953743	G	T	nonsynonymous	QLFML2B	NM_015441	exon8	c.C1975A	p.Q659K	28.97
chr1	16690343	G	T	stopgain	MAEL	NM_003858	exon11	c.C1063T	p.G355X	15.05
chr1	176526264	G	C	nonsynonymous	PAPP2	NM_020318	exon2	c.G806T	p.R269L	14.47
chr1	196558711	C	A	nonsynonymous	CFH	NM_000186	exon8	c.C1126A	p.Q376K	11.83
chr1	206145464	G	A	nonsynonymous	FAM72C	NM_001287385	exon3	c.G241A	p.V81I	10
chr1	217787512	C	T	nonsynonymous	GDCH2C	NM_018040	exon3	c.G806A	p.G269E	18.84
chr1	227175244	G	T	nonsynonymous	ADTK3	NM_020247	exon3	c.G221T	p.G74V	25.46
chr1	234614023	G	A	nonsynonymous	TARBP1	NM_005646	exon1	c.C827T	p.A276V	6.98
chr1	238053767	C	A	nonsynonymous	ZP4	NM_021186	exon1	c.C169T	p.A57S	13.64
chr1	243328887	G	T	stopgain	CEP170	NM_014812	exon13	c.C2375A	p.S792X	11.67
chr1	248616233	G	T	nonsynonymous	OR272	NM_001004136	exon1	c.G725T	p.C242F	21.11
chr1	24862293	G	T	nonsynonymous	OR275	NM_001004697	exon1	c.G404T	p.R135L	6.83
chr1	248722389	C	A	nonsynonymous	OR2729	NM_001004694	exon1	c.G404T	p.R135L	7.3
chr1	248801838	C	A	nonsynonymous	OR2735	NM_001001827	exon1	c.G722T	p.C241F	5.91
chr2	1426888	G	T	nonsynonymous	TPO	NM_000547	exon3	c.C166T	p.A56S	19.38
chr2	32641207	G	C	nonsynonymous	BIRC6	NM_016252	exon10	c.C2848C	p.D950H	28.82
chr2	43934613	C	A	nonsynonymous	PLEKH4H2	NM_172069	exon11	c.C1895A	p.S632Y	30.46
chr2	55126878	C	G	nonsynonymous	EML6	NM_001039753	exon21	c.C3083G	p.N1028C	12.23
chr2	69043463	G	T	nonsynonymous	ARHGAP25	NM_014882	exon6	c.G826T	p.D276Y	26.15
chr2	70524576	G	C	nonsynonymous	FAM136A	NM_003282	exon3	c.G262C	p.D88H	47.1
chr2	70524606	C	A	nonsynonymous	FAM136A	NM_003282	exon3	c.C322T	p.R281L	41.71
chr2	74701720	A	T	nonsynonymous	CCDC142	NM_032779	exon9	c.T2185A	p.W729R	13.32
chr2	75105876	C	A	nonsynonymous	HK2	NM_000189	exon1	c.C1093A	p.Q365K	13.27
chr2	79254957	T	G	nonsynonymous	REG3G	NM_198448	exon5	c.T358G	p.W120G	11.75
chr2	99438982	G	A	nonsynonymous	KIAA1211L	NM_207362	exon7	c.C1754T	p.S95L	16.53
chr2	105883916	C	A	nonsynonymous	TGFBRAP1	NM_004257	exon12	c.G2507T	p.G836V	10.23
chr2	105883917	C	T	nonsynonymous	TGFBRAP1	NM_004257	exon12	c.G2506A	p.G836S	15.89
chr2	141143512	C	A	nonsynonymous	LRP1B	NM_018557	exon67	c.G10481T	p.R3494L	21.88
chr2	155711605	G	T	nonsynonymous	KCNJ3	NM_002239	exon3	c.C1286T	p.K429I	28.73
chr2	158178192	T	C	nonsynonymous	ERMN	NM_001009959	exon4	c.A485G	p.N162S	35.14
chr2	163208875	C	A	nonsynonymous	GGA	NM_012198	exon3	c.C220A	p.G74K	12.2
chr2	173349924	C	T	stopgain	ITGA6	NM_000210	exon13	c.C1786T	p.R596X	14.62
chr2	179306433	T	A	other	PRKRA	NM_003690	intron5	c.515-2A>T	nil	5.14
chr2	179309165	G	A	nonsynonymous	PRKRA	NM_003690	exon4	c.C380T	p.P127L	51.12
chr2	179309229	T	A	other	PRKRA	NM_003690	intron3	c.317-1A>T	nil	8.38
chr2	179312231	C	G	other	PRKRA	NM_003690	intron3	c.317-1G>C	nil	7.11
chr2	179437465	T	G	nonsynonymous	TTN	NM_003319	exon154	c.A46199C	p.D1540A	29.97
chr2	179485014	A	T	nonsynonymous	TTN	NM_003319	exon76	c.C19039A	p.C6347S	34.17
chr2	179496928	G	T	nonsynonymous	TTN	NM_003319	exon64	c.C16498A	p.Q5500K	8.36
chr2	183066249	C	A	nonsynonymous	PDE1A	NM_001003683	exon11	c.C1090T	p.A964S	33.52
chr2	186671593	C	A	nonsynonymous	FSIP2	NM_173651	exon17	c.C17827A	p.Q5943K	22.22
chr2	215797412	G	T	nonsynonymous	ABCA12	NM_173076	exon53	c.C7734A	p.S2578R	16.56
chr2	225688340	C	T	nonsynonymous	DOCK10	NM_001290263	exon28	c.G3043A	p.E1015K	24.81
chr2	242147069	C	A	nonsynonymous	ANO7	NM_001001891	exon11	c.C1223A	p.A408D	30.69
chr2	386317	C	A	nonsynonymous	CHL1	NM_006614	exon9	c.C773A	p.T258N	48.02
chr3	33686384	C	T	nonsynonymous	CLASP2	NM_001207044	exon2	c.G28A	p.D10N	5.71
chr3	38592144	C	T	nonsynonymous	SCNSA	NM_000335	exon28	c.G5716A	p.V1906I	46.11
chr3	96706411	C	A	nonsynonymous	EPHA6	NM_001080448	exon3	c.C688A	p.H230N	59.89
chr3	97596090	G	A	nonsynonymous	CRYBG3	NM_153605	exon4	c.G6052A	p.A2018T	5.31
chr3	108822733	C	G	nonsynonymous	MORC1	NM_014429	exon4	c.C186C	p.M62I	45.03
chr3	108822736	G	T	nonsynonymous	MORC1	NM_014429	exon4	c.C183A	p.F61I	45.7
chr3	112997077	C	A	nonsynonymous	BOC	NM_033254	exon10	c.C1675A	p.Q559K	24.25
chr3	121421397	C	T	nonsynonymous	SOLGTR	NM_004487	exon11	c.C1435A	p.E479K	32.41
chr3	164905759	G	T	nonsynonymous	LUTK3	NM_014926	exon2	c.C2860A	p.L954I	59.44
chr3	185316217	G	T	nonsynonymous	SEN2	NM_021627	exon3	c.G175T	p.V59L	20.27
chr4	13383186	C	T	nonsynonymous	RAB28	NM_001017979	exon1	c.G424A	p.E142K	5.94
chr4	15964110	C	G	nonsynonymous	FGFBP2	NM_031950	exon5	c.G643C	p.A425P	48.91
chr4	38267514	A	T	nonsynonymous	TBD1D1	NM_015173	exon18	c.A3131T	p.Q1044L	46.46
chr4	39466679	C	T	nonsynonymous	LIAS	NM_194451	exon5	c.C407T	p.T136I	5.22
chr4	70361045	C	T	nonsynonymous	UGT2B4	NM_021139	exon1	c.G535A	p.A179T	53.59
chr4	91230123	T	C	nonsynonymous	CCSER1	NM_001145065	exon2	c.T688C	p.C230R	6.59
chr4	114274207	A	C	nonsynonymous	ANK2	NM_001148	exon38	c.A4433T	p.E1478V	5.11
chr4	138450809	G	A	nonsynonymous	PCDH18	NM_019035	exon1	c.C2434T	p.H812Y	24.66
chr4	151829486	C	A	nonsynonymous	LRBA	NM_001199282	exon11	c.C1493T	p.C498F	51.61
chr4	156864349	C	T	nonsynonymous	CTSO	NM_0010334	exon2	c.G203A	p.G68E	5.41
chr4	174216955	A	T	nonsynonymous	GALNT3	NM_017423	exon5	c.A926T	p.N309I	52.68
chr4	186065930	A	T	nonsynonymous	SLC25A4	NM_001151	exon4	c.A124T	p.S42C	44.22
chr5	41181623	G	C	stopgain	C6	NM_000065	exon7	c.C765G	p.V255X	37.71
chr5	78330334	G	A	stopgain	MGF1	NM_018046	exon2	c.G302A	p.W101X	7.02
chr5	79950727	G	A	nonsynonymous	ASH3	NM_002439	exon1	c.G181A	p.A61T	6.19
chr5	82948574	A	T	nonsynonymous	HAPLN1	NM_001884	exon3	c.T170A	p.V57D	56.02
chr5	89971213	C	T	nonsynonymous	ADGRV1	NM_032119	exon24	c.C5264T	p.A488I	48.81
chr5	90085588	T	C	nonsynonymous	ADGRV1	NM_032119	exon69	c.T1396C	p.S1755V	5.7
chr5	127647633	G	T	nonsynonymous	FBN2	NM_001999	exon38	c.C4892A	p.T1831N	55.56
chr5	140559284	G	T	nonsynonymous	PCDH8	NM_001920	exon1	c.G1669T	p.C557Y	17.07
chr5	31952180	C	A	nonsynonymous	C4A	NM_007293	exon3	c.C1040A	p.S347Y	53.51
chr5	31984918	C	A	nonsynonymous	C4B_2	NM_001242823	exon9	c.C1040A	p.S347Y	51.98
chr5	32009651	C	T	nonsynonymous	TNXB	NM_019105	exon43	c.C12524A	p.S4175N	43.28
chr5	32009661	C	T	nonsynonymous	TNXB	NM_019105	exon43	c.C12514A	p.D1472N	44.99
chr5	32010126	C	T	nonsynonymous	TNXB	NM_019105	exon41	c.G12218A	p.R4073H	27.58
chr5	38913317	C	G	nonsynonymous	DNAH8	NM_001206927	exon80	c.C12082G	p.L4028V	35.41
chr5	44271964	C	A	nonsynonymous	AARS2	NM_020745	exon14	c.G1961T	p.G654V	31.26
chr5	56031711	G	T	nonsynonymous	COL21A1	NM_030820	exon7	c.C1271A	p.P424H	37.28
chr5	56482114	T	C	nonsynonymous	DST	NM_001723	exon24	c.A6151G	p.R2051G	38.77
chr5	63990035	T	C	nonsynonymous	LGSN	NM_016571	exon4	c.A1421G	p.Q474R	32.81
chr5	94128975	C	A	nonsynonymous	ENPH4	NM_001288629	exon1	c.G85T	p.A29S	58.72
chr5	132211577	C	T	stopgain	EPHA7	NM_006208	exon5	c.C2704T	p.Q902X	10.95
chr5	155123238	C	T	nonsynonymous	SCAF8	NM_014892	exon7	c.C740T	p.A274V	7.78
chr7	11022682	G	A	nonsynonymous	PHF14	NM_014660	exon3	c.C796T	p.G266V	16.99
chr7	11500304	C	T	nonsynonymous	THSD7A	NM_015204	exon11	c.G2590T	p.G864W	57.29
chr7	19748495	C	A	nonsynonymous	TWISTNB	NM_001002926	exon1	c.G145T	p.V49L	16
chr7	20782633	G	A	nonsynonymous	ABC85	NM_178559	exon16	c.G1825A	p.G808D	21.53
chr7	44185152	C	G	nonsynonymous	GCK	NM_000162	exon9	c.G1197C	p.E399D	43.55
chr7	44185187	C	G	nonsynonymous	GCK	NM_000162	exon9	c.G1162A</		

Table S3 List of indel mutations found in this case

Chr	Position	Ref	Alt	Func.refGene	Gene	Transcript	Region	Nucleotide	Protein	Tumor_AF
chr3	128620156	-	T	frameshift	ACAD9	NM_014049	exon8	c.846_847insT	p.E283*	55.53
chr5	40769535	T	-	frameshift	PRKAA1	NM_006251	exon5	c.579delA	p.E194fs*2	16.92
chr6	139167795	C	-	frameshift	ECT2L	NM_001077706	exon8	c.884delC	p.R296Gfs*8	50.85
chr9	21974689	CCGACCGTAACTATTCGGTGCGTTGGGCAGCGCCC	-	frameshift	CDKN2A	NM_000077	exon1	c.104_138del	p.G35Efs*73	11.11
chr9	39149837	C	-	frameshift	CNTNAP3	NM_033655	exon10	c.1615delG	p.D539Tfs*4	10.04
chr9	43844279	G	-	frameshift	CNTNAP3B	NM_001201380	exon10	c.1613delG	p.D539Tfs*4	10.06
chr11	124095689	T	-	frameshift	OR8G2	NM_001291438	exon1	c.292delT	p.F98Lfs*2	9.84
chr12	10225980	ACTCAGAGTAGCTCTGAG	-	nonframeshift	CLEC1A	NM_016511	exon5	c.557_574del	p.S186_E191del	35.79
chr12	113327841	G	-	frameshift	RPH3A	NM_014954	exon17	c.1564delG	p.T524Pfs*68	49.04
chr15	42041004	-	C	frameshift	MGA	NM_001080541	exon15	c.4756dupC	p.S1587Kfs*10	51.19

Table S4 List of copy number variations in this case

ID	Gene	Variant type	Copy number
1	AARS2	amplification	3.68
2	ACTB	amplification	3.68
3	ADCY1	amplification	3.95
4	AHCYL2	amplification	3.34
5	AKR1B1	amplification	3.12
6	ARHGAP35	deletion	0.82
7	ASXL1	amplification	3.49
8	BCR	amplification	3.25
9	CARD11	amplification	3.68
10	CCND1	amplification	3.01
11	CCND3	amplification	3.73
12	CDH1	amplification	3.01
13	CREB3L2	amplification	3.12
14	CTTN	amplification	3.09
15	CUX1	amplification	4.25
16	DAXX	amplification	3.17
17	DIDO1	amplification	3.21
18	DIS3L2	amplification	3.15
19	FGF3	amplification	3.01
20	FGF4	amplification	3.01
21	FOXA2	amplification	3.72
22	FRG1B	amplification	3.49
23	GNAS	amplification	3.10
24	HLA-A	amplification	4.19
25	HLA-B	amplification	4.19
26	HLA-C	amplification	4.19
27	HSP90AA1	amplification	3.34
28	HSP90AB1	amplification	3.68
29	IKZF1	deletion	0.92
30	INTS1	amplification	3.68
31	KIAA1549	amplification	3.12
32	KIFC3	amplification	3.12
33	LUC7L2	amplification	3.12
34	MCM7	amplification	3.28
35	MDC1	amplification	4.19
36	MMP2	amplification	3.13
37	MUC16	amplification	3.36
38	MUC4	amplification	3.45
39	NFKBIE	amplification	3.68
40	PIM1	amplification	6.24
41	PLAG1	amplification	3.34
42	PLCG1	amplification	3.44
43	PMS2	amplification	3.68
44	POU5F1	amplification	4.19
45	PRRC2A	amplification	4.19
46	PTPRT	amplification	3.44
47	RAC1	amplification	3.68
48	ROBO2	deletion	0.81
49	SALL4	amplification	4.03
50	SDC4	amplification	3.31
51	SDHA	amplification	3.11
52	SIRPA	amplification	3.32
53	SLC3A2	amplification	3.19
54	SMARCA4	amplification	3.06
55	SMARCB1	amplification	3.25
56	SMO	amplification	3.34
57	SMOX	amplification	3.32
58	SND1	amplification	3.34
59	SS18L1	amplification	3.21
60	SVIL	amplification	3.08
61	TERT	amplification	3.11
62	TFDP1	amplification	3.11
63	TFEB	amplification	3.73
64	TRIM24	amplification	3.12
65	TRIM27	amplification	4.19
66	TRRAP	amplification	3.92
67	TSHZ2	amplification	3.10
68	VEGFA	amplification	3.68
69	ZMYND8	amplification	3.31