

**S2 Table.** Sixty-three variants unknown significance in 77 patients

Pat ID	Gene	Chromosome	Position	HGVSc	HGVSp	Mutation type	mRNA	Ref	Alt	Gene ID	QUAL	Depth	Allele freq	Pathogenicity	Somatic/Germline	Methods for Somatic calls
OCA12	ATM	chr11	10811553	c.701C>G	p.Ala234Gly	Missense	NM_000051.3	C	G	472	4000	3926	0.344	VUS	Do not know	
Pat32	ATM	chr11	10812267	c.1741T>G	p.Leu581Val	Missense	NM_000051.3	T	G	472	554	45	0.47	<u>VUS</u>	Do not know	
Pat53	ATM	chr11	10815176	c.3467C>T	p.Thr1156Met	Missense	NM_000051.3	C	T	472	347	94	0.2	<u>VUS</u>	Somatic	Matched normal
Pat60	ATM	chr11	108155170	c.3963G>A	p.Met1321Ile	Missense	NM_000051.3	G	A	472	1891	173	0.49	<u>VUS</u>	Germline	Matched normal
Pat27	ATM	chr11	108173629	c.5369A>G	p.Asp1790Glu	Missense	NM_000051.3	A	G	472	150	56	0.2	VUS	Germline	Matched normal
Pat50	ATM	chr11	108206666	c.8246A>T	p.Lys2749Ile	Missense	NM_000051.3	A	T	472	616	58	0.48	<u>VUS</u>	Do not know	
Pat13	ATR	chr3	142285088	c.167T>C	p.Val56Ala	Missense	NM_001184.3	A	G	545	3243	101	0.97	VUS	Germline	Matched normal
Pat43	BARD1	chr2	215645670	c.928T>C	p.Ser310Pro	Missense	NM_000465.3	A	G	580	1633	111	0.52	VUS	Germline	Matched normal
Pat47	BARD1	chr2	215632249	c.1525A>G	p.Ile509Val	Missense	NM_000465.3	T	C	580	2709	152	0.48	<u>VUS</u>	Germline	Matched normal
Pat18	BRCA1	chr17	41258531	c.154C>T	p.Leu52Phe	Missense	NM_007294.3	G	A	672	301	22	0.59	<u>VUS</u>	Germline	Matched normal
Pat45	BRCA1	chr17	41246626	c.922A>T	p.Ser308Cys	Missense	NM_007294.3	T	A	672	3076	86	0.87	<u>VUS</u>	Germline	Matched normal
Pat21	BRCA1	chr17	41244377	c.3171T>G	p.Ser1057Arg	Missense	NM_007294.3	A	C	672	4753	173	0.92	VUS	Somatic	Matched normal
Pat13	BRCA2	chr13	32899267	c.371T>C	p.Met124Thr	Missense	NM_000059.3	T	C	675	390	29	0.59	<u>VUS</u>	Germline	Matched normal
Pat60	BRCA2	chr13	32900742	c.623T>G	p.Val208Gly	Missense	NM_000059.3	T	G	675	2912	110	0.95	<u>VUS</u>	Germline	Matched normal
Pat27	BRCA2	chr13	32914643	c.6151A>G	p.Asn2051Asp	Missense	NM_000059.3	A	G	675	911	33	0.85	<u>VUS</u>	Germline	Matched normal
Pat34	BRCA2	chr13	32914814	c.6322C>T	p.Arg2108Cys	Missense	NM_000059.3	C	T	675	1459	50	0.98	<u>VUS</u>	Germline	Matched normal
Pat41	BRCA2	chr13	32930651	c.7522G>A	p.Gly2508Ser	Missense	NM_000059.3	G	A	675	1895	81	0.89	<u>VUS</u>	Germline	Matched normal
Pat36	BRCA2	chr13	32931894	c.7633G>A	p.Val2545Ile	Missense	NM_000059.3	G	A	675	340	25	0.48	<u>VUS</u>	Do not know	
OCA04	BRCA2	chr13	32945231	c.8626C>A	p.His2876Asn	Missense	NM_000059.3	C	A	675	1138	765	0.312	VUS	Do not know	
Pat09	BRCA2	chr13	32972800	c.10150C>T	p.Arg3384*	Stopgain	NM_000059.3	C	T	675	675	75	0.4	<u>VUS</u>	Germline	Matched normal & BRCA sanger

Pat55	BRIP1	chr17	59924476	c.613T>C	p.Phe205Leu	Missense	NM_032043.2	A	G	83990	1303	51	0.88	VUS	Germline	Matched normal
Pat08	BRIP1	chr17	59793364	c.2440C>T	p.Arg814Cys	Missense	NM_032043.2	G	A	83990	2603	111	0.9	VUS	Germline	Matched normal
Pat07	BRIP1	chr17	59760967	c.3440delA	p.Asn1147Metfs*3	Frameshift deletion	NM_032043.2	T	-	83990	224	53	0.29	VUS	Somatic	Matched normal
Pat60	CHEK2	chr22	29091133	c.1486G>C	p.Ala496Pro	Missense	NM_007194.3	C	G	11200	1177	40	0.98	VUS	Germline	Matched normal
Pat47	FANCA	chr16	89877351	c.412A>G	p.Thr138Ala	Missense	NM_000135.2	T	C	2175	1185	104	0.47	VUS	Germline	Matched normal
Pat19	FANCA	chr16	89838136	c.2101A>G	p.Lys701Glu	Missense	NM_000135.2	T	C	2175	372	46	0.39	VUS	Do not know	
Pat07	FANCB	chrX	14863068	c.1837C>T	p.Arg613Cys	Missense	NM_152633.3	G	A	2187	140	71	0.2	VUS	Somatic	Matched normal
Pat09	FANCB	chrX	14862803	c.1987A>G	p.Thr663Ala	Missense	NM_152633.3	T	C	2187	1320	113	0.46	VUS	Germline	Matched normal
Pat59	FANCC	chr9	97879669	c.1000C>T	p.Arg334Trp	Missense	NM_000136.2	G	A	2176	1481	109	0.59	VUS	Somatic	Matched normal
Pat19	FANCD2	chr3	10108987	c.2480A>C	p.Glu827Ala	Missense	NM_033084.4	A	C	2177	1523	158	0.41	VUS	Do not know	
Pat48	FANCE	chr6	35427198	c.1204C>T	p.Leu402Phe	Missense	NM_021922.2	C	T	2178	2670	151	0.66	VUS	Germline	Matched normal
Pat58	FANCG	chr9	35079514	c.8G>T	p.Arg3Leu	Missense	NM_004629.1	C	A	2189	1534	129	0.51	VUS	Do not know	
Pat21	FANCG	chr9	35077395	c.512G>A	p.Ser171Asn	Missense	NM_004629.1	C	T	2189	1987	164	0.5	VUS	Somatic	Matched normal
Pat29	FANCG	chr9	35076561	c.944G>A	p.Ser315Asn	Missense	NM_004629.1	C	T	2189	1122	105	0.45	VUS	Germline	Matched normal
Pat29	FANCI	chr15	89804853	c.326C>G	p.Ala109Gly	Missense	NM_001113378.1	C	G	55215	1339	123	0.41	VUS	Germline	Matched normal
Pat59	FANCI	chr15	89836203	c.2200A>G	p.Ser734Gly	Missense	NM_001113378.1	A	G	55215	222	22	0.41	VUS	Somatic	Matched normal
Pat23	FANCI	chr15	89856189	c.3706G>A	p.Val1236Ile	Missense	NM_001113378.1	G	A	55215	5357	216	0.89	VUS	Germline	Matched normal
Pat54	FANCI	chr15	89858603	c.3907G>A	p.Glu1303Lys	Missense	NM_001113378.1	G	A	55215	2340	77	0.8	VUS	Germline	Matched normal
Pat43	FANCM	chr14	45642337	c.2240A>G	p.His747Arg	Missense	NM_020937.3	A	G	57697	2494	180	0.61	VUS	Germline	Matched normal
Pat56	FANCM	chr14	45642337	c.2240A>G	p.His747Arg	Missense	NM_020937.3	A	G	57697	536	106	0.26	VUS	Do not know	
Pat52	FANCM	chr14	45650900	c.4378A>C	p.Ile1460Leu	Missense	NM_020937.3	A	C	57697	307	20	0.6	VUS	Do not know	
Pat03	FANCM	chr14	45657062	c.4751C>A	p.Thr1584Lys	Missense	NM_020937.3	C	A	57697	570	39	0.62	VUS	Somatic	Matched normal
Pat32	MLH1	chr3	37035090	c.52C>G	p.Arg18Gly	Missense	NM_000249.3	C	G	4292	1397	133	0.47	VUS	Do not know	
Pat12	MLH3	chr14	75498844	c.3754A>G	p.Lys1252Glu	Missense	NM_001040108.1	T	C	27030	251	116	0.17	VUS	Somatic	Matched normal
Pat08	MSH6	chr2	48023174	c.599C>T	p.Ser200Leu	Missense	NM_000179.2	C	T	2956	743	85	0.44	VUS	Somatic	Matched normal

Pat27	MSH6	chr2	48026598	c.1476G>A	p.Met492Ile	Missense	NM_000179.2	G	A	2956	821	79	0.47	VUS	Germline	Matched normal
Pat55	MSH6	chr2	48028233	c.3111C>A	p.Phe1037Leu	Missense	NM_000179.2	C	A	2956	438	164	0.2	VUS	Somatic	Matched normal
Pat60	MSH6	chr2	48030631	c.3245C>T	p.Pro1082Leu	Missense	NM_000179.2	C	T	2956	2860	279	0.45	VUS	Germline	Matched normal
Pat58	MSH6	chr2	48033468	c.3772C>G	p.Gln1258Glu	Missense	NM_000179.2	C	G	2956	1075	71	0.52	VUS	Do not know	
Pat53	NBN	chr8	90990521	c.511A>G	p.Ile171Val	Missense	NM_002485.4	T	C	4683	392	62	0.31	VUS	Germline	Matched normal
Pat58	NBN	chr8	90965716	c.1601A>C	p.Asn534Thr	Missense	NM_002485.4	T	G	4683	107	70	0.13	VUS	Do not know	
Pat48	PALB2	chr16	23647149	c.718C>A	p.Pro240Thr	Missense	NM_024675.3	G	T	7972 8	2440	193	0.53	VUS	Germline	Matched normal
Pat48	PALB2	chr16	23632742	c.3054G>C	p.Glu1018Asp	Missense	NM_024675.3	C	G	7972 8	974	84	0.5	VUS	Germline	Matched normal
Pat03	PALB2	chr16	23614877	c.3464C>G	p.Ser1155Cys	Missense	NM_024675.3	G	C	7972 8	665	66	0.44	VUS	Somatic	Matched normal
Pat47	PMS2	chr7	6017389	c.2276-1G>C		splicing	NM_000535.6	C	G	5395	598	65	0.42	VUS	Somatic	Matched normal
Pat53	RAD50	chr5	13192453 8	c.1211A>G	p.Gln404Arg	Missense	NM_005732.3	A	G	1011 1	1137	129	0.4	VUS	Germline	Matched normal
Pat47	RAD50	chr5	13193899 3	c.2209C>G	p.Gln737Glu	Missense	NM_005732.3	C	G	1011 1	178	23	0.30	VUS	Germline	Matched normal
Pat13	RAD51 D	chr17	33428027	c.932T>A	p.Ile311Asn	Missense	NM_002878.3	A	T	5892	1015	40	0.93	VUS	Germline	Matched normal
Pat47	RAD52	chr12	1040434	c.138G>C	p.Arg46Ser	Missense	NM_134424.3	C	G	5893	863	42	0.76	VUS	Germline	Matched normal
Pat44	RAD52	chr12	1040408	c.164G>A	p.Arg55His	Missense	NM_134424.3	C	T	5893	461	51	0.4	VUS	Germline	Matched normal
Pat36	RAD54 B	chr8	95403925	c.1721G>A	p.Gly574Glu	Missense	NM_012415.3	C	T	2578 8	2279	272	0.39	VUS	Do not know	
Pat14	SLX4	chr16	3640200	c.3439G>A	p.Glu1147Lys	Missense	NM_032444.3	C	T	8446 4	69	73	0.12	VUS	Somatic	Matched normal
Pat54	SLX4	chr16	3632671	c.5177C>T	p.Ala1726Val	Missense	NM_032444.3	G	A	8446 4	2142	123	0.74	VUS	Germline	Matched normal