

S3 Table. Summary of variants in each patient

Pat ID	BRCA1/2 pathogenic mutations	non-BRCA1/2 pathogenic mutations	Variants unknown significance	Detection method	Target coverage	TP53 coverage
OCA01	-	TP53 (c.97-1G>T)	-	Panel	2,876.0	2,613.9
OCA02	BRCA1 (c.928C>T, p.Gln310*)	TP53 (c.673-2A>T)	-	Panel	2,961.0	6,776.0
OCA03	-	TP53 (c.584T>C, p.Ile195Thr)	-	Panel	3,144.0	3,735.2
OCA04	-	TP53 (c.1009C>T, p.Arg337Cys)	BRCA2 (c.8626C>A, p.His2876Asn)	Panel	3,877.0	3,916.0
OCA05	-	TP53 (c.406C>T, p.Gln136*)	-	Panel	2,906.0	3,231.6
OCA06	-	TP53 (c.536A>G, p.His179Arg)	-	Panel	3,005.0	4,233.2
OCA07	BRCA1 (c.2048delA, p.Lys683Serfs*18)	TP53 (c.405C>G, p.Cys135Trp)	-	Panel	3,499.0	6,819.1
OCA08	-	TP53 (c.688_689insTGTA, p.Thr230Metfs*11)	-	Panel	3,729.0	3,574.0
OCA09	-	TP53 (c.497A>G, p.Tyr166Cys)	-	Panel	3,156.0	2,927.0
OCA10	-	TP53 (c.673-1G>A)	-	Panel	4,544.0	4,781.4
OCA11	-	TP53 (c.785G>T, p.Gly262Val)	-	Panel	3,665.0	3,915.4
OCA12	-	TP53 (c.452C>G, p.Pro151Arg)	ATM (c.701C>G, p.Ala234Gly)	Panel	4,204.0	5,910.5
OCA13	BRCA1 (c.3813dupT, p.Asn1272*)	TP53 (c.395A>G, p.Lys132Arg)	-	Panel	4,083.0	4,127.5
OCA14	BRCA2 (c.547delA, p.Ser183Valfs*2)	-	-	Panel	5,790.0	6,547.5
OCA15	-	TP53 (c.391A>T, p.Asn131Tyr)	-	Panel	2,945.0	3,398.2
OCA16	BRCA1 (c.969_970delAA, p.Ser324*)	TP53 (c.785G>T, p.Gly262Val)	-	Panel	3,765.0	3,564.9
OCA18	BRCA1 (c.3895C>T, p.Gln1299*)	TP53 (c.743G>A, p.Arg248Gln), TP53 (c.566C>T, p.Ala189Val)	-	Panel	3,511.0	7,567.9
OCA19	BRCA1 (c.1813delG, p.Ala605Hisfs*7)	-	-	Panel	2,706.0	4,152.1
Pat02	-	TP53 (c.774A>C, p.Glu258Asp)	-	WES	90.1	35.4
Pat03	-	-	FANCM (c.4751C>A, p.Thr1584Lys), PALB2 (c.3464C>G, p.Ser1155Cys)	WES	96.7	47.2
Pat05	BRCA2 (c.3860delA, p.Asn1287Ilefs*6)	TP53 (c.814G>C, p.Val272Leu)	-	WES	108.7	52.1
Pat06	-	TP53 (c.892G>T, p.Glu298*)	-	WES	102.9	73.8
Pat07	-	MSH2 (c.2633_2634delAG, p.Glu878Alafs*3)	FANCB (c.1837C>T, p.Arg613Cys), BRIP1 (c.3440delA, p.Asn1147Metfs*3)	WES	114.6	86.3

Pat08	BRCA2 (c.5576_5579delTTAA, p.Ile1859Lysfs*3)	TP53 (c.916C>T, p.Arg306*)	BRIP1 (c.2440C>T, p.Arg814Cys), MSH6 (c.599C>T, p.Ser200Leu)	WES	100.0	38.6
Pat09		TP53 (c.734G>A, p.Gly245Asp)	BRCA2 (c.10150C>T, p.Arg3384*), FANCB (c.1987A>G, p.Thr663Ala)	WES	92.0	84.6
Pat10	BRCA1 (c.1716dupA, p.Ser573Ilefs*13)	TP53 (c.524G>A, p.Arg175His)	-	WES	91.6	64.7
Pat11	BRCA1 (c.390C>A, p.Tyr130*)	TP53 (c.395A>G, p.Lys132Arg)	-	WES	96.2	91.8
Pat12	-	ATR (c.2277delA, p.Ala760Leufs*11), TP53 (c.659A>G, p.Tyr220Cys)	MLH3 (c.3754A>G, p.Lys1252Glu)	WES	89.0	54.2
Pat13	-	TP53 (c.832C>A, p.Pro278Thr)	ATR (c.167T>C, p.Val56Ala), BRCA2 (c.371T>C, p.Met124Thr), RAD51D (c.932T>A, p.Ile311Asn)	WES	93.2	75.3
Pat14	-	MSH6 (c.3964G>T, p.Glu1322*), RAD50 (c.3247G>T, p.Glu1083*), TP53 (c.821T>G, p.Val274Gly)	SLX4 (c.3439G>A, p.Glu1147Lys)	WES	96.4	67.8
Pat15	-	TP53 (c.659A>G, p.Tyr220Cys)	-	WES	92.6	43.2
Pat16	-	TP53 (c.629delA, p.Asn210Thrfs*37)	-	WES	83.8	65.0
Pat17	-	FANCA (c.3720_3724delAAACA, p.Glu1240Aspfs*36), TP53 (c.153_174delACAATGGTTCACCTGAAGACCCA, p.Gln52Valfs*64)	-	WES	99.9	50.1
Pat18	-	TP53 (c.524G>A, p.Arg175His)	BRCA1 (c.154C>T, p.Leu52Phe)	WES	98.0	49.2
Pat19	-	-	FANCA (c.2101A>G, p.Lys701Glu), FANCD2 (c.2480A>C, p.Glu827Ala)	WES	97.8	50.2
Pat20	BRCA1 (c.3700_3704delTAAA, p.Val1234Glnfs*8)	TP53 (c.584T>C, p.Ile195Thr)		WES	97.2	64.2
Pat21	BRCA1 (c.4801A>T, p.Lys1601*)	RAD50 (c.1330G>T, p.Glu444*), TP53 (c.580C>T, p.Leu194Phe)	BRCA1 (c.3171T>G, p.Ser1057Arg), FANCG (c.512G>A, p.Ser171Asn)	WES	105.4	48.6
Pat22	-	TP53 (c.450_460delACCCCGCCCG, p.Pro151Hisfs*26)	-	WES	102.3	47.0
Pat23	BRCA1 (c.5339T>C, p.Leu1780Pro)	TP53 (c.916C>T, p.Arg306*)	FANCI (c.3706G>A, p.Val1236Ile)	WES	107.5	79.1
Pat24	-	TP53 (c.488A>G, p.Tyr163Cys)	-	WES	89.7	42.0
Pat25	-	TP53 (c.527G>T, p.Cys176Phe)	-	WES	107.0	49.6
Pat26	-	TP53 (c.1027G>T, p.Glu343*)	-	WES	94.2	41.1
Pat27	-	TP53 (c.742C>T, p.Arg248Trp)	ATM (c.5369A>G, p.Asp1790Glu), BRCA2 (c.6151A>G, p.Asn2051Asp), MSH6 (c.1476G>A, p.Met492Ile)	WES	85.5	41.3

Pat28	BRCA1 (c.5339T>C, p.Leu1780Pro)	TP53 (c.745A>G, p.Arg249Gly)	-	WES	93.2	57.3
Pat29	-	TP53 (c.700T>C, p.Tyr234His)	FANCG (c.944G>A, p.Ser315Asn), FANCI (c.326C>G, p.Ala109Gly)	WES	107.0	106.4
Pat30	-	TP53 (c.1035dupT, p.Glu346*)	-	WES	98.8	44.6
Pat31	-	TP53 (c.711G>C, p.Met237Ile)	-	WES	103.8	52.7
Pat32	-	-	ATM (c.1741T>G, p.Leu581Val), MLH1 (c.52C>G, p.Arg18Gly)	WES	99.9	65.4
Pat33	-	TP53 (c.770T>G, p.Leu257Arg)	-	WES	97.3	53.2
Pat34	-	-	BRCA2 (c.6322C>T, p.Arg2108Cys)	WES	97.2	46.9
Pat35	-	TP53 (c.659A>G, p.Tyr220Cys)	-	WES	104.4	72.7
Pat36	BRCA1 (c.3991C>T, p.Glu1331*)	TP53 (c.273G>A, p.Trp91*)	BRCA2 (c.7633G>A, p.Val2545Ile), RAD54B (c.1721G>A, p.Gly574Glu)	WES	98.6	71.4
Pat37	-	-	-	WES	91.3	70.2
Pat38	-	TP53 (c.818G>A, p.Arg273His)	-	WES	82.4	48.2
Pat39	-	TP53 (c.830G>T, p.Cys277Phe)	-	WES	92.4	65.6
Pat40	-	TP53 (c.916C>T, p.Arg306*)	-	WES	95.8	45.9
Pat41	BRCA1 (c.5496_5506delGGTGACCCGAGinsA, p.Val1833Serfs*7)	TP53 (c.114delA, p.Ala39Glnfs*5)	BRCA2 (c.7522G>A, p.Gly2508Ser)	WES	100.1	41.3
Pat42	BRCA1 (c.1112delC, p.Pro371Leufs*3)	TP53 (c.599delA, p.Asn200Ilefs*47)	-	WES	89.2	48.1
Pat43	-	TP53 (c.673dupG, p.Val225Glyfs*4)	BARD1 (c.928T>C, p.Ser310Pro), FANCM (c.2240A>G, p.His747Arg)	WES	97.5	78.5
Pat44	-	TP53 (c.395A>G, p.Lys132Arg)	RAD52 (c.164G>A, p.Arg55His)	WES	96.9	51.9
Pat45	BRCA1 (c.923_924delGC, p.Ser308Lysfs*11)	TP53 (c.584T>C, p.Ile195Thr)	BRCA1 (c.922A>T, p.Ser308Cys)	WES	103.7	53.5
Pat46	BRCA1 (c.390C>A, p.Tyr130*)	-	-	WES	114.1	54.4
Pat47	BRCA1 (c.4287C>A, p.Tyr1429*)	TP53 (c.920-2A>G)	BARD1 (c.1525A>G, p.Ile509Val), FANCA (c.412A>G, p.Thr138Ala), PMS2 (c.2276-1G>C), RAD50 (c.2209C>G, p.Gln737Glu), RAD52 (c.138G>C, p.Arg46Ser)	WES	95.2	35.6
Pat48	BRCA1 (c.3442G>T, p.Glu1148*)	-	FANCE (c.1204C>T, p.Leu402Phe), PALB2 (c.718C>A, p.Pro240Thr), PALB2 (c.3054G>C, p.Glu1018Asp)	WES	97.4	68.8

Pat49	BRCA1 (c.390C>A, p.Tyr130*)	TP53 (c.711G>A, p.Met237Ile)	-	WES	100.3	49.2
Pat50	-	-	ATM (c.8246A>T, p.Lys2749Ile)	WES	94.7	56.1
Pat51	-	-	-	WES	89.0	54.2
Pat52	-	TP53 (c.538G>A, p.Glu180Lys)	FANCM (c.4378A>C, p.Ile1460Leu)	WES	100.6	38.6
Pat53	-	ATR (c.5440delA, p.Arg1814Glufs*10), MSH2 (c.387_388delTC, p.Gln130Valfs*2), RAD50 (c.2165delA, p.Lys722Argfs*14), TP53 (c.637C>T, p.Arg213*)	ATM (c.3467C>T, p.Thr1156Met), NBN (c.511A>G, p.Ile171Val), RAD50 (c.1211A>G, p.Q404R)	WES	100.2	70.9
Pat54	BRCA2 (c.2567delA, p.Asn856Ilefs*2)	TP53 (c.701A>G, p.Tyr234Cys)	FANCI (c.3907G>A, p.Glu1303Lys), SLX4 (c.5177C>T, p.Ala1726Val)	WES	106.8	58.2
Pat55	BRCA1 (c.2359delG, p.Glu787Lysfs*5)	TP53 (c.578A>G, p.His193Arg)	BRIP1 (c.613T>C, p.Phe205Leu), MSH6 (c.3111C>A, p.Phe1037Leu)	WES	101.5	53.0
Pat56	-	-	FANCM (c.2240A>G, p.His747Arg)	WES	94.7	55.4
Pat57	-	TP53 (c.587G>C, p.Arg196Pro)	-	WES	85.1	64.7
Pat58	-	TP53 (c.578A>G, p.His193Arg)	FANCG (c.8G>T, p.Arg3Leu), MSH6 (c.3772C>G, p.Gln1258Glu), NBN (c.1601A>C, p.Asn534Thr)	WES	98.6	49.5
Pat59	-	-	FANCC (c.1000C>T, p.Arg334Trp), FANCI (c.2200A>G, p.Ser734Gly)	WES	90.2	56.2
Pat60	BRCA1 (c.3020delC, p.Ser1007*)	-	ATM (c.3963G>A, p.Met1321Ile), BRCA2 (c.623T>G, p.V208G), CHEK2 (c.1486G>C, p.Ala496Pro), MSH6 (c.3245C>T, p.Pro1082Leu)	WES	122.7	81.6
Pat61	-	TP53 (c.523C>G, p.Arg175Gly)	-	WES	123.2	96.9