Supplementary Table 3. The frameshift mutations (insertion/deletion) in 66 MSI gastric carcinomas.

Sample	Gene	Function	Refseq ID	Exon	AA change	Chromosome	Start	Reference	Alteration	VAF
1	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-	G	0.0617
1	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.0812
1	GATA3	frameshift deletion	NM_002051	exon3	S142fs	chr10	8100452	G	-	0.0216
1	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.0859
1	ATM	frameshift insertion	NM_000051	exon36	A1812fs	chr11	108173695	-	T	0.0476
1	CHD4	frameshift deletion	NM_001273	exon3	K73fs	chr12	6711546	T	-	0.0633
1	KDM5A	frameshift deletion	NM_001042603	exon23	1199_1199del	chr12	416953	TT	-	0.0380
1	PRPF40B	frameshift deletion	NM_001031698	exon10	D222fs	chr12	50027729	C	-	0.0557
1	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C	-	0.0350
1	SH2B3	frameshift deletion	NM_005475	exon2	A162fs	chr12	111856434	C	-	0.0322
1	BRCA2	frameshift insertion	NM_000059	exon11	S1764fs	chr13	32913783	-	A	0.0471
1	PARP2	frameshift deletion	NM_005484	exon2	24_24del	chr14	20813115	AT	-	0.3060
1	IDH2	frameshift deletion	NM_002168	exon4	G145fs	chr15	90631918	C	-	0.0863
1	AXIN1	frameshift deletion	NM_003502	exon7	K641fs	chr16	347089	T	-	0.0240
1	CREBBP	frameshift deletion	NM_004380	exon31	P1946fs	chr16	3779211	G	-	0.1875
1	CTCF	frameshift deletion	NM_006565	exon3	K202fs	chr16	67645339	A	-	0.0312
1	CYLD	frameshift insertion	NM_015247	exon4	V55fs	chr16	50783773	-	G	0.0357
1	ERBB2	frameshift deletion	NM_004448	exon27	R1230fs	chr17	37884218	G	-	0.0258
1	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.0801
1	AXL	frameshift deletion	NM_021913	exon7	P290fs	chr19	41743933	C	-	0.0821
1	DNMT1	frameshift deletion	NM_001130823	exon24	M734fs	chr19	10262139	T	-	0.0769
1	MEF2B	frameshift deletion	NM_001145785	exon8	P273fs	chr19	19257144	G	-	0.0374
1	NOTCH3	frameshift deletion	NM_000435	exon13	P695fs	chr19	15296358	G	-	0.0701

1	CASP8	frameshift deletion	NM_001228	exon10	K474fs	chr2	202151246	A	-	0.0541
1	MSH2	frameshift insertion	NM_001258281	exon5	N176fs	chr2	47639633	-	CGGTTGTT	0.4638
1	EP300	frameshift insertion	NM_001429	exon25	E1364fs	chr22	41564789	-	A	0.0274
1	SMARCB1	frameshift deletion	NM_003073	exon4	F164fs	chr22	24143260	C	-	0.0744
1	FOXL2	frameshift deletion	NM_023067	exon1	P192fs	chr3	138664989	G	-	0.0293
1	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.1029
1	APC	frameshift deletion	NM_001127511	exon14	1444_1444del	chr5	112175676	AG	-	0.0341
1	CHD1	frameshift deletion	NM_001270	exon5	171_172del	chr5	98236963	TC	-	0.0315
1	FLT4	frameshift deletion	NM_182925	exon2	P30fs	chr5	180058748	G	-	0.0449
1	NSD1	frameshift deletion	NM_172349	exon12	K1260fs	chr5	176675269	A	-	0.0253
1	NOTCH4	frameshift deletion	NM_004557	exon18	P920fs	chr6	32178635	G	-	0.0312
1	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.0272
1	IKZF1	frameshift deletion	NM_006060	exon3	S17fs	chr7	50367244	C	-	0.0612
1	SMO	frameshift deletion	NM_005631	exon12	H692fs	chr7	128852004	C	-	0.0413
1	ABL1	frameshift deletion	NM_007313	exon11	T668fs	chr9	133759623	C	-	0.0216
1	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0380
1	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.0581
1	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.0821
1	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.0529
2	ARID1A	frameshift deletion	NM_006015	exon1	M274fs	chr1	27023716	G	-	0.1079
2	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-	G	0.1313
2	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T	-	0.1506
2	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A	-	0.1169
2	MRE11A	frameshift deletion	NM_005590	exon14	N511fs	chr11	94189473	T	-	0.1050
2	CHD4	frameshift deletion	NM_001273	exon3	K73fs	chr12	6711546	T	-	0.2083

2	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C		-	0.1152
2	IRS2	frameshift deletion	NM_003749	exon1	P1091fs	chr13	110435129	G		-	0.1103
2	FANCM	frameshift deletion	NM_020937	exon14	I861fs	chr14	45644540	A		-	0.0964
2	NTRK3	frameshift deletion	NM_001012338	exon10	357_358del	chr15	88678464	TC		-	0.1073
2	GRIN2A	frameshift deletion	NM_000833	exon14	Q1346fs	chr16	9857365	G		-	0.1237
2	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.1442
2	RNF43	frameshift deletion	NM_017763	exon9	G608fs	chr17	56435313	C		-	0.1399
2	SMARCA4	frameshift deletion	NM_001128844	exon4	M106fs	chr19	11096044	G		-	0.1254
2	ROBO1	frameshift deletion	NM_002941	exon16	F755fs	chr3	78710235	A		-	0.0909
2	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA		-	0.1123
2	NSD1	frameshift insertion	NM_172349	exon17	L1528fs	chr5	176696690	-		T	0.1219
2	RAD50	frameshift deletion	NM_005732	exon16	L863fs	chr5	131940562	A		-	0.1246
2	EPHB4	frameshift deletion	NM_004444	exon4	202_202del	chr7	100420095	CA		-	0.1160
2	SMO	frameshift deletion	NM_005631	exon1	R28fs	chr7	128829075	G		-	0.0346
2	PAX5	frameshift insertion	NM_016734	exon2	V26fs	chr9	37020768	-		C	0.1186
2	PTCH1	frameshift deletion	NM_000264	exon23	P1307fs	chr9	98209617	G		-	0.1305
2	SMARCA1	frameshift deletion	NM_003069	exon20	K834fs	chrX	128605245	T		-	0.1970
3	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T		-	0.1404
3	PTEN	frameshift deletion	NM_000314	exon8	T321fs	chr10	89720812	A		-	0.0980
3	BTG1	frameshift deletion	NM_001731	exon2	N163fs	chr12	92537884	T		-	0.0783
3	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A		-	0.1241
3	FGF7	frameshift deletion	NM_002009	exon2	E60fs	chr15	49716673	A		-	0.1688
3	NCOR1	frameshift deletion	NM_006311	exon37	1866_1866del	chr17	15964999	AG		-	0.0267
3	RAD51C	frameshift insertion	NM_058216	exon7	W305fs	chr17	56801409	-		G	0.1287
3	TP53	frameshift deletion	NM_000546	exon8	R267fs	chr17	7577137	C		-	0.2193

3	SETBP1	frameshift deletion	NM_015559	exon4	K339fs	chr18	42530320	A	-	0.0576
3	AXL	frameshift insertion	NM_021913	exon20	L810fs	chr19	41765552	-	G	0.0303
3	MSH2	frameshift deletion	NM_001258281	exon5	R161fs	chr2	47639588	A	-	0.0551
3	FLT4	frameshift deletion	NM_182925	exon8	P363fs	chr5	180055897	G	-	0.1158
3	NOTCH4	frameshift deletion	NM_004557	exon6	P324fs	chr6	32188370	G	-	0.0714
3	SMO	frameshift deletion	NM_005631	exon12	H692fs	chr7	128852004	C	-	0.1817
3	TNKS	frameshift deletion	NM_003747	exon16	K778fs	chr8	9592393	A	-	0.0460
3	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.2870
3	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.0348
3	BCORL1	frameshift insertion	NM_021946	exon12	S1679fs	chrX	129190010	-	C	0.0765
3	BCORL1	frameshift deletion	NM_021946	exon3	A387fs	chrX	129147908	C	-	0.1399
4	ARID1A	frameshift deletion	NM_006015	exon16	Y1324fs	chr1	27100176	C	-	0.2377
4	TNFRSF14	frameshift deletion	NM_003820	exon5	C165fs	chr1	2492097	C	-	0.1269
4	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A	-	0.2017
4	BRCA2	frameshift deletion	NM_000059	exon23	T3030fs	chr13	32954023	A	-	0.2381
4	RB1	frameshift deletion	NM_000321	exon27	Q912fs	chr13	49054155	A	-	0.0286
4	BCL2L2	frameshift deletion	NM_004050	exon4	F189fs	chr14	23778157	T	-	0.2309
4	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.2062
4	NKX2-1	frameshift deletion	NM_001079668	exon2	G115fs	chr14	36988309	C	-	0.0839
4	CREBBP	frameshift deletion	NM_004380	exon31	D2433fs	chr16	3777751	C	-	0.3394
4	CREBBP	frameshift insertion	NM_004380	exon31	P1946fs	chr16	3779210	-	G	0.2989
4	GRIN2A	frameshift deletion	NM_000833	exon14	S1341fs	chr16	9857380	T	-	0.0325
4	RNF43	frameshift deletion	NM_017763	exon7	262_263del	chr17	56438206	CT	-	0.2977
4	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.3795
4	TP53	frameshift deletion	NM_000546	exon6	I195fs	chr17	7578265	A	-	0.2584

4	JAK3	frameshift deletion	NM_000215	exon2	Q39fs	chr19	17955112	G		-	0.2427
4	MSH2	frameshift insertion	NM_001258281	exon5	R161fs	chr2	47639587	-		A	0.2365
4	MSH6	frameshift insertion	NM_000179	exon10	T1355fs	chr2	48033981	-		TTGA	0.7681
4	EPHA6	frameshift deletion	NM_001080448	exon1	P49fs	chr3	96533612	C		-	0.0239
4	ETV5	frameshift deletion	NM_004454	exon11	P361fs	chr3	185774991	G		-	0.2542
4	MLH1	frameshift deletion	NM_000249	exon7	K195fs	chr3	37053348	A		-	0.2216
4	PBRM1	frameshift deletion	NM_018313	exon11	355_358del	chr3	52675985	CTTCTTCA		-	0.0641
4	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA		-	0.0442
4	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-		G	0.2146
4	ADGRA2	frameshift deletion	NM_032777	exon11	G523fs	chr8	37691605	G		-	0.2687
4	MYC	frameshift deletion	NM_002467	exon3	K412fs	chr8	128753073	A		-	0.0962
4	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G		-	0.1550
4	NOTCH1	frameshift deletion	NM_017617	exon34	L2294fs	chr9	139391310	A		-	0.1883
5	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-	0.0955
5	TNKS2	frameshift deletion	NM_025235	exon24	E1019fs	chr10	93617249	A		-	0.0338
5	CHEK1	frameshift deletion	NM_001114121	exon7	E223fs	chr11	125505378	A		-	0.0478
5	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C		-	0.0261
5	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C		-	0.0638
5	SMARCA4	frameshift deletion	NM_001128844	exon6	P269fs	chr19	11097625	C		-	0.0200
5	SYK	frameshift deletion	NM_003177	exon2	Q31fs	chr9	93606273	G		-	0.0662
6	ARID1A	frameshift deletion	NM_006015	exon1	P145fs	chr1	27023327	C		-	0.1208
6	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-	0.1900
6	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-		C	0.1612
6	IGF1	frameshift insertion	NM_001111283	exon2	P50fs	chr12	102869492	-		A	0.0217
6	PRPF40B	frameshift deletion	NM_001031698	exon22	728_728del	chr12	50036776	CA		-	0.0778

6	CREBBP	frameshift insertion	NM_004380	exon31	H2384fs	chr16	3777897	-	G	0.0789
6	CREBBP	frameshift deletion	NM_004380	exon31	H2384fs	chr16	3777898	G	-	0.0410
6	CTCF	frameshift insertion	NM_006565	exon12	V688fs	chr16	67671654	-	A	0.0537
6	CTCF	frameshift deletion	NM_006565	exon3	G31fs	chr16	67644826	G	-	0.0994
6	PALB2	frameshift insertion	NM_024675	exon12	G1116fs	chr16	23619187	-	T	0.0581
6	NCOR1	frameshift deletion	NM_006311	exon9	K288fs	chr17	16052810	T	-	0.0693
6	TP53	frameshift deletion	NM_000546	exon4	P72fs	chr17	7579471	G	-	0.1281
6	NOTCH3	frameshift deletion	NM_000435	exon33	P2034fs	chr19	15272337	G	-	0.0379
6	SMARCA4	frameshift insertion	NM_001128844	exon16	A737fs	chr19	11121143	-	A	0.0621
6	U2AF2	frameshift deletion	NM_007279	exon6	L175fs	chr19	56173906	G	-	0.1176
6	ASXL1	frameshift deletion	NM_015338	exon12	643_643del	chr20	31022442	GG	-	0.0970
6	ATR	frameshift insertion	NM_001184	exon32	R1814fs	chr3	142217556	-	T	0.1022
6	FOXL2	frameshift deletion	NM_023067	exon1	P268fs	chr3	138664761	G	-	0.1319
6	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.2180
6	NOTCH1	frameshift deletion	NM_017617	exon34	P2485fs	chr9	139390736	G	-	0.1005
6	ATRX	frameshift deletion	NM_000489	exon9	R840fs	chrX	76938230	T	-	0.0942
7	CDC42	frameshift deletion	NM_001039802	exon5	C81fs	chr1	22412996	T	-	0.0714
7	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T	-	0.0889
7	GATA3	frameshift deletion	NM_002051	exon3	F234fs	chr10	8100728	C	-	0.0974
7	RET	frameshift deletion	NM_020975	exon4	V262fs	chr10	43600558	G	-	0.1498
7	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1458
7	MEN1	frameshift deletion	NM_130804	exon11	R521fs	chr11	64572093	G	-	0.1085
7	ARID2	frameshift deletion	NM_152641	exon9	F369fs	chr12	46231185	T	-	0.0933
7	CHD4	frameshift insertion	NM_001273	exon15	G744fs	chr12	6703706	-	C	0.0505
7	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.1073

7	AXIN1	frameshift deletion	NM_003502	exon8	H698fs	chr16	343582	G		-		0.1096
7	CREBBP	frameshift insertion	NM_004380	exon19	P1208fs	chr16	3807363	-		G		0.1226
7	BRCA1	frameshift deletion	NM_007300	exon10	K654fs	chr17	41245587	T		-		0.0616
7	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-		0.2406
7	AXL	frameshift deletion	NM_021913	exon2	P64fs	chr19	41726645	C		-		0.1160
7	DNMT1	frameshift deletion	NM_001130823	exon24	M734fs	chr19	10262139	T		-		0.1011
7	JAK3	frameshift deletion	NM_000215	exon3	P84fs	chr19	17954643	G		-		0.0692
7	NOTCH3	frameshift deletion	NM_000435	exon33	P2034fs	chr19	15272337	G		-		0.0736
7	ALK	frameshift insertion	NM_004304	exon16	W915fs	chr2	29451822	-		C		0.0935
7	IDH1	frameshift deletion	NM_005896	exon3	I5fs	chr2	209116263	T		-		0.1230
7	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-		G		0.0202
7	ATR	frameshift deletion	NM_001184	exon10	773_774del	chr3	142274740	TT		-		0.0728
7	SETD2	frameshift deletion	NM_014159	exon17	P2381fs	chr3	47084146	G		-		0.1238
7	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA		-		0.1366
7	PKHD1	frameshift deletion	NM_138694	exon66	K3921fs	chr6	51491817	T		-		0.0641
7	TNFAIP3	frameshift deletion	NM_006290	exon7	G455fs	chr6	138199945	G		-		0.0748
7	EPHB6	frameshift insertion	NM_004445	exon7	A250fs	chr7	142562308	-		G		0.1146
7	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G		-		0.2191
7	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G		-		0.0976
7	AR	frameshift deletion	NM_001011645	exon6	T269fs	chrX	66941758	C		-		0.0723
7	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C		-		0.1489
7	SMARCA1	frameshift deletion	NM_003069	exon17	M710fs	chrX	128621084	T		-		0.0913
8	ARID1A	frameshift insertion	NM_006015	exon18	Q1631fs	chr1	27101611	-		C		0.1245
8	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G		-		0.2047
8	SPEN	frameshift deletion	NM_015001	exon11	G2000fs	chr1	16258735	A		-		0.1502

8	PTEN	frameshift insertion	NM_000314	exon5	Y155fs	chr10	89692981	-		G	0.1481
8	PTEN	frameshift insertion	NM_000314	exon8	T321fs	chr10	89720811	-		A	0.1761
8	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-	0.1611
8	CHEK1	frameshift deletion	NM_001114121	exon7	E223fs	chr11	125505378	A		-	0.1512
8	CHD4	frameshift deletion	NM_001273	exon19	K945fs	chr12	6701672	T		-	0.1548
8	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A		-	0.1472
8	BLM	frameshift insertion	NM_000057	exon6	I373fs	chr15	91303407	-		C	0.0481
8	CHD2	frameshift deletion	NM_001271	exon6	Q172fs	chr15	93480819	A		-	0.1583
8	NUTM1	frameshift deletion	NM_175741	exon2	M14fs	chr15	34640195	G		-	0.0362
8	CREBBP	frameshift insertion	NM_004380	exon31	P1946fs	chr16	3779210	-		G	0.1518
8	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-		A	0.1824
8	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.2593
8	CIC	frameshift deletion	NM_015125	exon10	R507fs	chr19	42794441	C		-	0.0520
8	NOTCH3	frameshift deletion	NM_000435	exon30	A1802fs	chr19	15276861	C		-	0.1962
8	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-		C	0.1381
8	MLH1	frameshift deletion	NM_000249	exon7	K195fs	chr3	37053348	A		-	0.1220
8	KIT	frameshift deletion	NM_000222	exon2	37_38del	chr4	55561719	CCAT		-	0.0372
8	NSD1	frameshift deletion	NM_172349	exon12	K1260fs	chr5	176675269	A		-	0.2523
8	ADGRA2	frameshift insertion	NM_032777	exon11	I522fs	chr8	37691604	-		G	0.1240
8	ATRX	frameshift deletion	NM_000489	exon19	Q1673fs	chrX	76888812	G		-	0.0709
9	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A		-	0.2270
9	KDM5A	frameshift insertion	NM_001042603	exon23	T1292fs	chr12	416675	-		T	0.1211
9	MDM2	frameshift deletion	NM_002392	exon11	P319fs	chr12	69233090	C		-	0.0713
9	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C		-	0.1501
9	FANCA	frameshift deletion	NM_000135	exon28	910_911del	chr16	89831345	AG		-	0.1223

9	CD79B	frameshift deletion	NM_000626	exon3	K93fs	chr17	62007586	T	-	0.1170
9	CDK12	frameshift insertion	NM_015083	exon14	W1450fs	chr17	37687471	-	G	0.1530
9	NCOR1	frameshift deletion	NM_006311	exon36	F1775fs	chr17	15965482	A	-	0.0230
9	TP53	frameshift deletion	NM_000546	exon11	K373fs	chr17	7572991	T	-	0.1188
9	SETBP1	frameshift deletion	NM_015559	exon2	G145fs	chr18	42281746	A	-	0.1014
9	AXL	frameshift deletion	NM_021913	exon7	P290fs	chr19	41743933	C	-	0.1280
9	MSH2	frameshift deletion	NM_001258281	exon5	R161fs	chr2	47639588	A	-	0.1459
9	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-	C	0.0556
9	EP300	frameshift insertion	NM_001429	exon14	L893fs	chr22	41546064	-	C	0.1411
9	PBRM1	frameshift insertion	NM_018313	exon8	N258fs	chr3	52682399	-	T	0.1413
9	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.1309
9	APC	frameshift insertion	NM_001127511	exon5	R223fs	chr5	112116592	-	GAGCACA	0.1524
9	CSF1R	frameshift deletion	NM_005211	exon12	R579fs	chr5	149441304	G	-	0.1481
9	FLT4	frameshift deletion	NM_182925	exon2	P30fs	chr5	180058748	G	-	0.1212
9	RAD50	frameshift insertion	NM_005732	exon17	N931fs	chr5	131944381	-	A	0.1455
9	FANCE	frameshift deletion	NM_021922	exon4	A308fs	chr6	35425715	C	-	0.1323
9	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.1084
9	ADGRA2	frameshift deletion	NM_032777	exon11	G523fs	chr8	37691605	G	-	0.1331
9	ABL1	frameshift deletion	NM_007313	exon11	T668fs	chr9	133759623	C	-	0.1255
9	BCOR	frameshift deletion	NM_017745	exon2	L7fs	chrX	39937164	G	-	0.1855
9	BCOR	frameshift deletion	NM_017745	exon4	284_285del	chrX	39933746	TGTC	-	0.2598
9	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.2416
10	ARID1A	frameshift insertion	NM_006015	exon20	V2084fs	chr1	27106640	-	C	0.1673
10	SPEN	frameshift deletion	NM_015001	exon11	E1157fs	chr1	16256205	A	-	0.0898
10	GATA3	frameshift insertion	NM_002051	exon3	F234fs	chr10	8100727	-	C	0.0629

10	FAT3	frameshift deletion	NM_001008781	exon1	L967fs	chr11	92088179	G	-	0.1520
10	CHD4	frameshift deletion	NM_001273	exon3	K73fs	chr12	6711546	T	-	0.1479
10	KDM5A	frameshift deletion	NM_001042603	exon12	E499fs	chr12	442811	C	-	0.1662
10	SH2B3	frameshift deletion	NM_005475	exon2	A162fs	chr12	111856434	C	-	0.0507
10	BRCA2	frameshift deletion	NM_000059	exon10	G602fs	chr13	32907421	A	-	0.1674
10	CHD2	frameshift insertion	NM_001271	exon33	M1388fs	chr15	93545433	-	A	0.1364
10	CREBBP	frameshift deletion	NM_004380	exon31	P1946fs	chr16	3779211	G	-	0.0625
10	CDK12	frameshift deletion	NM_015083	exon14	W1450fs	chr17	37687472	G	-	0.1521
10	NF1	frameshift deletion	NM_001042492	exon16	K613fs	chr17	29550577	A	-	0.0534
10	NF1	frameshift insertion	NM_001042492	exon18	T676fs	chr17	29553477	-	C	0.1224
10	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.2794
10	SOX9	frameshift insertion	NM_000346	exon3	H333fs	chr17	70119997	-	GT	0.1255
10	CD79A	frameshift insertion	NM_001783	exon3	P128fs	chr19	42383609	-	C	0.1543
10	CIC	frameshift deletion	NM_015125	exon20	S1595fs	chr19	42799300	C	-	0.2128
10	JAK3	frameshift deletion	NM_000215	exon3	P84fs	chr19	17954643	G	-	0.1125
10	NOTCH3	frameshift deletion	NM_000435	exon30	A1802fs	chr19	15276861	C	-	0.1240
10	CASP8	frameshift insertion	NM_001228	exon7	C220fs	chr2	202139625	-	G	0.1227
10	MYCN	frameshift deletion	NM_005378	exon2	T43fs	chr2	16082314	C	-	0.1031
10	EP300	frameshift insertion	NM_001429	exon31	Q2321fs	chr22	41574678	-	CC	0.1988
10	PBRM1	frameshift insertion	NM_018313	exon8	N258fs	chr3	52682399	-	T	0.1634
10	ROBO2	frameshift deletion	NM_002942	exon21	P1076fs	chr3	77657038	C	-	0.1591
10	FLT4	frameshift deletion	NM_182925	exon10	Q423fs	chr5	180053023	G	-	0.0224
10	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.0421
10	WISP3	frameshift deletion	NM_003880	exon3	F47fs	chr6	112382284	T	-	0.1424
10	EPHB4	frameshift deletion	NM_004444	exon6	R384fs	chr7	100417326	G	-	0.0543

10	ABL1	frameshift deletion	NM_007313	exon11	P802fs	chr9	133760024	C	-	0.1807
10	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0342
10	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.1468
10	ARAF	frameshift deletion	NM_001654	exon6	T181fs	chrX	47424734	C	-	0.1756
10	BCOR	frameshift deletion	NM_017745	exon4	G400fs	chrX	39933400	C	-	0.1628
10	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.1675
10	GATA1	frameshift deletion	NM_002049	exon6	G356fs	chrX	48652397	C	-	0.1622
11	ARID1A	frameshift deletion	NM_006015	exon1	W337fs	chr1	27023904	G	-	0.1650
11	ARID1A	frameshift deletion	NM_006015	exon15	1287_1287del	chr1	27099980	AG	-	0.1755
11	IKBKE	frameshift deletion	NM_014002	exon10	A346fs	chr1	206652330	C	-	0.1186
11	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T	-	0.1585
11	JAK1	frameshift deletion	NM_002227	exon9	P430fs	chr1	65325833	G	-	0.1695
11	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A	-	0.2995
11	CHD4	frameshift deletion	NM_001273	exon3	K73fs	chr12	6711546	T	-	0.1688
11	HNF1A	frameshift deletion	NM_000545	exon6	G375fs	chr12	121434361	C	-	0.1716
11	LRP6	frameshift deletion	NM_002336	exon21	P1459fs	chr12	12278302	G	-	0.1308
11	IGF1R	frameshift deletion	NM_000875	exon21	G1352fs	chr15	99500623	C	-	0.1716
11	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-	A	0.1624
11	ALOX12B	frameshift deletion	NM_001139	exon10	G450fs	chr17	7979987	C	-	0.1587
11	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-	C	0.1310
11	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.1448
11	ROBO1	frameshift deletion	NM_002941	exon18	S836fs	chr3	78706356	A	-	0.1534
11	ROBO2	frameshift insertion	NM_002942	exon21	P1075fs	chr3	77657037	-	C	0.1753
11	NSD1	frameshift deletion	NM_172349	exon12	K1260fs	chr5	176675269	A	-	0.1758
11	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.1568

11	KAT6A	frameshift deletion	NM_001099412	exon8	E429fs	chr8	41834604	C		-		0.1353
11	PTCH1	frameshift insertion	NM_000264	exon23	R1308fs	chr9	98209616	-		G		0.1663
11	PTCH1	frameshift deletion	NM_000264	exon23	P1307fs	chr9	98209617	G		-		0.0214
12	FGFR2	frameshift deletion	NM_022970	exon5	G183fs	chr10	123310879	C		-		0.0241
12	GATA3	frameshift insertion	NM_002051	exon3	Y133fs	chr10	8100424	-		C		0.0524
12	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A		-		0.0448
12	TNKS2	frameshift deletion	NM_025235	exon16	619_620del	chr10	93601946	AA		-		0.0460
12	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-		0.1439
12	ATM	frameshift deletion	NM_000051	exon3	V60fs	chr11	108098609	T		-		0.0927
12	FAT3	frameshift deletion	NM_001008781	exon1	V924fs	chr11	92088049	T		-		0.0423
12	MRE11A	frameshift deletion	NM_005590	exon14	N511fs	chr11	94189473	T		-		0.0654
12	CHD4	frameshift deletion	NM_001273	exon3	K73fs	chr12	6711546	T		-		0.0694
12	BRCA2	frameshift deletion	NM_000059	exon23	T3030fs	chr13	32954023	A		-		0.0627
12	FOXA1	frameshift insertion	NM_004496	exon2	S453fs	chr14	38060632	-		GG		0.0706
12	B2M	frameshift deletion	NM_004048	exon2	E67fs	chr15	45007753	A		-		0.0693
12	B2M	frameshift insertion	NM_004048	exon2	T91fs	chr15	45007824	-		C		0.0832
12	CHD2	frameshift deletion	NM_001271	exon6	Q172fs	chr15	93480819	A		-		0.0668
12	SMAD3	frameshift deletion	NM_001145102	exon4	P76fs	chr15	67459125	C		-		0.0495
12	RNF43	frameshift deletion	NM_017763	exon8	L311fs	chr17	56437531	G		-		0.2017
12	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-		0.0564
12	SETBP1	frameshift deletion	NM_015559	exon6	P1568fs	chr18	42643574	C		-		0.0591
12	JAK3	frameshift deletion	NM_000215	exon15	A660fs	chr19	17945961	C		-		0.0541
12	NOTCH3	frameshift insertion	NM_000435	exon30	A1802fs	chr19	15276860	-		C		0.0625
12	ALK	frameshift deletion	NM_004304	exon1	P158fs	chr2	30143052	G		-		0.0264
12	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-		G		0.0292

12	NCOA3	frameshift deletion	NM_006534	exon12	K619fs	chr20	46264985	A	-	0.0215
12	ZNF217	frameshift deletion	NM_006526	exon4	T1048fs	chr20	52188288	T	-	0.1243
12	EPHA3	frameshift deletion	NM_005233	exon15	P845fs	chr3	89499363	C	-	0.0395
12	MLH1	frameshift deletion	NM_000249	exon7	K195fs	chr3	37053348	A	-	0.1006
12	ROBO2	frameshift insertion	NM_002942	exon21	P1075fs	chr3	77657037	-	C	0.0378
12	ARID1B	frameshift insertion	NM_020732	exon6	P732fs	chr6	157405953	-	G	0.0779
12	PKHD1	frameshift deletion	NM_138694	exon32	F1531fs	chr6	51890015	A	-	0.0596
12	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.1004
12	TSC1	frameshift deletion	NM_000368	exon21	N891fs	chr9	135772951	T	-	0.0707
13	ARID1A	frameshift deletion	NM_006015	exon1	338_343del	chr1	27023908	GGCTGCGGCGGCGGCA	-	0.1815
13	ARID1A	frameshift deletion	NM_006015	exon20	P2139fs	chr1	27106804	C	-	0.0930
13	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1118
13	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C	-	0.2047
13	PRPF40B	frameshift insertion	NM_001031698	exon3	I53fs	chr12	50025257	-	C	0.1058
13	B2M	frameshift deletion	NM_004048	exon1	13_13del	chr15	45003781	CT	-	0.1598
13	CREBBP	frameshift deletion	NM_004380	exon16	I1084fs	chr16	3817721	T	-	0.1989
13	ALOX12B	frameshift deletion	NM_001139	exon8	L340fs	chr17	7982767	G	-	0.1649
13	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1738
13	RPTOR	frameshift insertion	NM_020761	exon33	G1298fs	chr17	78936812	-	TT	0.0332
13	STAT3	frameshift deletion	NM_003150	exon23	R728fs	chr17	40468879	G	-	0.1606
13	NOTCH3	frameshift deletion	NM_000435	exon2	P42fs	chr19	15308383	G	-	0.1611
13	SMARCA4	frameshift insertion	NM_001128844	exon4	G102fs	chr19	11096032	-	A	0.0450
13	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.1344
13	PLCG1	frameshift deletion	NM_002660	exon17	S612fs	chr20	39794869	C	-	0.1429
13	SF3A1	frameshift deletion	NM_005877	exon12	R642fs	chr22	30733706	G	-	0.2090

13	SF3A1	frameshift insertion	NM_005877	exon13	L685fs	chr22	30733068	-	T	0.1154
13	PBRM1	frameshift deletion	NM_018313	exon18	K909fs	chr3	52637589	T	-	0.1262
13	FBXW7	frameshift deletion	NM_033632	exon11	I605fs	chr4	153245378	T	-	0.1442
13	FLT4	frameshift insertion	NM_182925	exon10	Q423fs	chr5	180053022	-	G	0.0793
13	FLT4	frameshift deletion	NM_182925	exon2	P30fs	chr5	180058748	G	-	0.1341
13	FANCE	frameshift deletion	NM_021922	exon4	A308fs	chr6	35425715	C	-	0.1118
13	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	GG	0.1257
13	NOTCH4	frameshift deletion	NM_004557	exon22	P1306fs	chr6	32169116	G	-	0.0826
13	PKHD1	frameshift deletion	NM_138694	exon32	F1531fs	chr6	51890015	A	-	0.1453
13	HOXA3	frameshift deletion	NM_153631	exon3	G60fs	chr7	27150081	C	-	0.0938
13	HOXA3	frameshift deletion	NM_153631	exon4	Q302fs	chr7	27147962	G	-	0.0302
13	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.1958
13	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.0442
13	ATRX	frameshift deletion	NM_000489	exon11	R1302fs	chrX	76920173	T	-	0.1508
13	BCORL1	frameshift deletion	NM_021946	exon3	K768fs	chrX	129149050	A	-	0.1635
14	ARID2	frameshift deletion	NM_152641	exon15	M877fs	chr12	46244537	G	-	0.0806
15	JUN	frameshift deletion	NM_002228	exon1	37_37del	chr1	59248633	CT	-	0.0556
15	ARID2	frameshift deletion	NM_152641	exon15	P850fs	chr12	46244454	C	-	0.1350
15	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C	-	0.0968
15	B2M	frameshift deletion	NM_004048	exon1	14_15del	chr15	45003786	TCTT	-	0.3758
15	MAP2K1	frameshift deletion	NM_002755	exon10	I343fs	chr15	66782062	A	-	0.0566
15	NTRK3	frameshift deletion	NM_001012338	exon13	F441fs	chr15	88669575	A	-	0.1140
15	PIK3C3	frameshift deletion	NM_002647	exon17	F622fs	chr18	39617680	T	-	0.0463
15	BRD4	frameshift deletion	NM_058243	exon5	Q256fs	chr19	15376248	G	-	0.1487
15	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-	C	0.0529

15	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-		GG	0.0466
15	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-		G	0.1150
15	SOX2	frameshift insertion	NM_003106	exon1	Q34fs	chr3	181430250	-		A	0.0650
15	APC	frameshift deletion	NM_001127511	exon12	K562fs	chr5	112164664	A		-	0.0983
15	APC	frameshift deletion	NM_001127511	exon14	P2030fs	chr5	112177435	A		-	0.1412
15	IGF2R	frameshift deletion	NM_000876	exon28	T1314fs	chr6	160485488	G		-	0.0579
15	TNFAIP3	frameshift insertion	NM_006290	exon7	T454fs	chr6	138199944	-		G	0.0348
15	HOXA3	frameshift deletion	NM_153631	exon4	Q302fs	chr7	27147962	G		-	0.1053
15	ADGRA2	frameshift deletion	NM_032777	exon11	G523fs	chr8	37691605	G		-	0.0284
15	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G		-	0.1704
15	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G		-	0.1380
15	PTCH1	frameshift deletion	NM_000264	exon23	P1307fs	chr9	98209617	G		-	0.1416
15	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C		-	0.1263
15	BCORL1	frameshift insertion	NM_021946	exon3	S530fs	chrX	129148336	-		C	0.2057
16	ARID1A	frameshift insertion	NM_006015	exon8	I908fs	chr1	27089766	-		T	0.1528
16	JAK1	frameshift deletion	NM_002227	exon5	K142fs	chr1	65339111	T		-	0.1176
16	PTEN	frameshift insertion	NM_000314	exon7	L265fs	chr10	89717769	-		A	0.1351
16	ATM	frameshift deletion	NM_000051	exon6	F212fs	chr11	108114817	T		-	0.1357
16	ARID2	frameshift deletion	NM_152641	exon15	G1138fs	chr12	46245318	G		-	0.1069
16	ARID2	frameshift deletion	NM_152641	exon15	S1435fs	chr12	46246211	A		-	0.2017
16	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-		A	0.1652
16	NCOR1	frameshift deletion	NM_006311	exon2	17_18del	chr17	16097832	TT		-	0.0259
16	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G		-	0.0223
16	GSK3B	frameshift deletion	NM_002093	exon10	F353fs	chr3	119582342	A		-	0.1729
16	FANCE	frameshift deletion	NM_021922	exon4	A308fs	chr6	35425715	C		-	0.1404

16	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.1861
16	KLF4	frameshift deletion	NM_004235	exon5	460_462del	chr9	110248086	GTCGCAT	-	0.1677
16	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.0306
17	NPM1	frameshift deletion	NM_002520	exon2	H40fs	chr5	170817114	C	-	0.0353
17	MYC	frameshift deletion	NM_002467	exon3	361_368del	chr8	128752922	GTCCTCGGACACCGAGGAGAAT	-	0.0661
18	ARID1A	frameshift insertion	NM_006015	exon1	W337fs	chr1	27023903	-	G	0.1535
18	SPEN	frameshift deletion	NM_015001	exon11	2540_2541del	chr1	16260355	CC	-	0.0293
18	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A	-	0.2787
18	ARID2	frameshift deletion	NM_152641	exon20	L1776fs	chr12	46287469	A	-	0.1628
18	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-	C	0.1600
18	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C	-	0.2080
18	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.1266
18	SMAD3	frameshift deletion	NM_001145102	exon4	P76fs	chr15	67459125	C	-	0.1782
18	CDH1	frameshift insertion	NM_004360	exon13	E689fs	chr16	68857432	-	T	0.1403
18	PALB2	frameshift deletion	NM_024675	exon4	N280fs	chr16	23647028	T	-	0.1611
18	BRCA1	frameshift insertion	NM_007300	exon9	K223fs	chr17	41247864	-	T	0.1614
18	NF1	frameshift insertion	NM_001042492	exon18	T676fs	chr17	29553477	-	C	0.1520
18	SOX9	frameshift deletion	NM_000346	exon3	E261fs	chr17	70119781	G	-	0.1382
18	INSR	frameshift insertion	NM_000208	exon7	D523fs	chr19	7168022	-	G	0.1818
18	JAK3	frameshift deletion	NM_000215	exon2	Q39fs	chr19	17955112	G	-	0.1620
18	CASP8	frameshift deletion	NM_001228	exon6	193_193del	chr2	202137430	AA	-	0.1676
18	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.2059
18	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.0223
18	EP300	frameshift deletion	NM_001429	exon16	L1019fs	chr22	41548269	A	-	0.0348
18	EP300	frameshift deletion	NM_001429	exon5	K418fs	chr22	41525977	A	-	0.0600

18	EPHB1	frameshift deletion	NM_004441	exon6	A433fs	chr3	134872994	C	-	0.2708
18	MLH1	frameshift deletion	NM_000249	exon13	T495fs	chr3	37070349	C	-	0.1704
18	NSD1	frameshift deletion	NM_172349	exon12	K1260fs	chr5	176675269	A	-	0.1735
18	ARID1B	frameshift deletion	NM_020732	exon1	G151fs	chr6	157099516	C	-	0.1661
18	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	GG	0.0291
18	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.1453
18	ROS1	frameshift insertion	NM_002944	exon10	Y363fs	chr6	117715401	-	A	0.1642
18	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.1231
18	WHSC1L1	frameshift deletion	NM_023034	exon17	S1025fs	chr8	38148038	T	-	0.1561
18	PAX5	frameshift insertion	NM_016734	exon2	V26fs	chr9	37020768	-	C	0.1552
18	TSC1	frameshift deletion	NM_000368	exon21	K907fs	chr9	135772902	T	-	0.1596
18	ARAF	frameshift deletion	NM_001654	exon2	G6fs	chrX	47422384	C	-	0.1658
18	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.0415
18	PAK3	frameshift deletion	NM_002578	exon17	L513fs	chrX	110459779	T	-	0.1545
18	SMARCA1	frameshift insertion	NM_003069	exon23	N983fs	chrX	128599578	-	T	0.1610
19	ARID1A	frameshift insertion	NM_006015	exon18	A1466fs	chr1	27101116	-	C	0.0980
19	MSH6	frameshift insertion	NM_000179	exon10	T1355fs	chr2	48033981	-	TTGA	0.2727
20	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.1598
20	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1119
20	MRE11A	frameshift deletion	NM_005590	exon14	N511fs	chr11	94189473	T	-	0.1635
20	ERBB3	frameshift substitution	NM_001982	exon4		chr12	56480407	GCT	GA	0.0568
20	KDM5A	frameshift deletion	NM_001042603	exon18	835_835del	chr12	430198	CT	-	0.0678
20	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1500
20	CDH2	frameshift deletion	NM_001792	exon3	109_109del	chr18	25593719	TT	-	0.1329
20	ERG	frameshift insertion	NM_001243432	exon9	R263fs	chr21	39764346	-	G	0.1045

20	EP300	frameshift deletion	NM_001429	exon27	K1468fs	chr22	41566525	A	-	0.0958
20	GATA2	frameshift deletion	NM_001145661	exon4	G200fs	chr3	128204842	C	-	0.1450
20	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.2227
20	NSD1	frameshift deletion	NM_172349	exon17	K1566fs	chr5	176696802	A	-	0.1374
20	TERT	frameshift deletion	NM_198253	exon1	Q34fs	chr5	1295005	G	-	0.0291
20	ARID1B	frameshift insertion	NM_020732	exon6	P732fs	chr6	157405953	-	G	0.1354
20	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.1227
20	RUNX1T1	frameshift deletion	NM_001198625	exon7	P64fs	chr8	93027002	G	-	0.1574
20	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.1840
21	PTCH2	frameshift deletion	NM_001166292	exon9	391_391del	chr1	45295116	AG	-	0.3250
21	CCNE1	frameshift deletion	NM_001238	exon6	122_122del	chr19	30308351	AC	-	0.1406
21	INSR	frameshift insertion	NM_000208	exon10	E725fs	chr19	7152795	-	T	0.1124
21	SLIT2	frameshift insertion	NM_004787	exon23	T801fs	chr4	20550166	-	C	0.1075
21	ROS1	frameshift deletion	NM_002944	exon39	C2067fs	chr6	117632216	C	-	0.1165
21	TRRAP	frameshift deletion	NM_001244580	exon49	E2404fs	chr7	98564719	A	-	0.1489
22	ARID1A	frameshift deletion	NM_006015	exon1	M274fs	chr1	27023716	G	-	0.1367
22	ARID1A	frameshift deletion	NM_006015	exon18	P1632fs	chr1	27101612	C	-	0.1415
22	ARID1A	frameshift deletion	NM_006015	exon3	H544fs	chr1	27057924	C	-	0.1402
22	GATA3	frameshift insertion	NM_002051	exon3	F234fs	chr10	8100727	-	C	0.0932
22	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1222
22	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.1000
22	B2M	frameshift deletion	NM_004048	exon1	13_13del	chr15	45003781	CT	-	0.2492
22	RARA	frameshift deletion	NM_000964	exon9	A438fs	chr17	38512402	C	-	0.1589
22	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.0959
22	CIC	frameshift deletion	NM_015125	exon20	S1595fs	chr19	42799300	C	-	0.2126

22	CIC	frameshift deletion	NM_015125	exon20	P1539fs	chr19	42799131	C	-	0.1384
22	NOTCH3	frameshift deletion	NM_000435	exon33	P2034fs	chr19	15272337	G	-	0.1190
22	TIPARP	frameshift deletion	NM_015508	exon4	I399fs	chr3	156413764	A	-	0.1300
22	RICTOR	frameshift insertion	NM_152756	exon30	A992fs	chr5	38952451	-	G	0.0568
22	ETV1	frameshift deletion	NM_004956	exon8	P138fs	chr7	13975473	G	-	0.1374
22	SEMA3E	frameshift deletion	NM_012431	exon10	F336fs	chr7	83032083	A	-	0.1320
22	ADGRA2	frameshift deletion	NM_032777	exon19	C1084fs	chr8	37699108	C	-	0.1086
22	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.0566
23	MUTYH	frameshift deletion	NM_012222	exon12	343_343del	chr1	45797481	CG	-	0.3667
23	LRP6	frameshift insertion	NM_002336	exon16	I1170fs	chr12	12291357	-	T	0.2564
23	AXIN1	frameshift insertion	NM_003502	exon6	D525fs	chr16	347931	-	C	0.1176
23	ALK	frameshift insertion	NM_004304	exon3	W290fs	chr2	29917800	-	G	0.2778
23	DAXX	frameshift insertion	NM_001350	exon3	L311fs	chr6	33288621	-	C	0.2941
24	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.2075
24	ACVR1B	frameshift deletion	NM_020328	exon1	R27fs	chr12	52345607	G	-	0.0526
24	TBX3	frameshift deletion	NM_016569	exon7	G529fs	chr12	115112154	C	-	0.1451
24	BRCA2	frameshift deletion	NM_000059	exon23	T3030fs	chr13	32954023	A	-	0.2562
24	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.0952
24	AXL	frameshift deletion	NM_021913	exon7	P290fs	chr19	41743933	C	-	0.1716
24	CIC	frameshift deletion	NM_015125	exon2	37_37del	chr19	42790965	GG	-	0.0334
24	ERCC2	frameshift insertion	NM_000400	exon12	L399fs	chr19	45864822	-	A	0.0758
24	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.0200
24	BCR	frameshift insertion	NM_004327	exon1	G146fs	chr22	23523585	-	C	0.1825
24	EP300	frameshift insertion	NM_001429	exon9	E606fs	chr22	41536199	-	A	0.0515
24	TET2	frameshift insertion	NM_001127208	exon11	T1959fs	chr4	106197542	-	G	0.0568

24	CHD1	frameshift deletion	NM_001270	exon28	K1320fs	chr5	98206409	T	-	0.1902
24	ETV1	frameshift deletion	NM_004956	exon8	166_166del	chr7	13975390	GG	-	0.0437
24	PTCH1	frameshift insertion	NM_000264	exon23	Y1316fs	chr9	98209592	-	G	0.1752
24	BCOR	frameshift deletion	NM_017745	exon4	854_854del	chrX	39932038	GC	-	0.1161
24	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.1353
25	NOTCH2	frameshift insertion	NM_024408	exon20	A1083fs	chr1	120480570	-	T	0.0502
25	EMSY	frameshift insertion	NM_020193	exon11	L550fs	chr11	76227321	-	G	0.1205
25	FANCF	frameshift insertion	NM_022725	exon1	N199fs	chr11	22646760	-	T	0.0686
25	WT1	frameshift deletion	NM_024424	exon1	P111fs	chr11	32456560	G	-	0.1604
25	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-	CC	0.0341
25	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-	C	0.0917
25	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C	-	0.1228
25	CDK8	frameshift deletion	NM_001260	exon8	I270fs	chr13	26970441	A	-	0.1100
25	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.0982
25	B2M	frameshift deletion	NM_004048	exon2	T91fs	chr15	45007825	C	-	0.0639
25	BLM	frameshift insertion	NM_000057	exon10	S754fs	chr15	91310207	-	A	0.1104
25	CREBBP	frameshift deletion	NM_004380	exon16	I1084fs	chr16	3817721	T	-	0.1250
25	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-	A	0.1167
25	CYLD	frameshift insertion	NM_015247	exon4	V55fs	chr16	50783773	-	G	0.1535
25	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1304
25	NOTCH3	frameshift deletion	NM_000435	exon33	P2034fs	chr19	15272337	G	-	0.1318
25	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-	CC	0.0309
25	ZNF217	frameshift insertion	NM_006526	exon1	T242fs	chr20	52198641	-	T	0.1262
25	ROBO1	frameshift insertion	NM_002941	exon23	N1082fs	chr3	78685050	-	T	0.1419
25	ROBO2	frameshift insertion	NM_002942	exon21	P1075fs	chr3	77657037	-	C	0.1232

25	CHD1	frameshift insertion	NM_001270	exon28	E1321fs	chr5	98206408	-	T	0.1636
25	IL7R	frameshift insertion	NM_002185	exon6	W264fs	chr5	35874636	-	A	0.1278
25	FANCE	frameshift insertion	NM_021922	exon4	A308fs	chr6	35425714	-	C	0.1184
25	HIST1H3B	frameshift insertion	NM_003537	exon1	K38fs	chr6	26032175	-	T	0.0305
25	EPHB6	frameshift deletion	NM_004445	exon18	P881fs	chr7	142568000	C	-	0.1307
25	EPHB6	frameshift insertion	NM_004445	exon7	A250fs	chr7	142562308	-	G	0.1123
25	SMO	frameshift deletion	NM_005631	exon12	H692fs	chr7	128852004	C	-	0.0519
25	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	GG	0.0483
25	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0274
25	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.1729
25	ARAF	frameshift deletion	NM_001654	exon9	T253fs	chrX	47426415	C	-	0.0261
25	BCOR	frameshift insertion	NM_017745	exon10	P1406fs	chrX	39921500	-	G	0.2334
26	ARID1A	frameshift deletion	NM_006015	exon1	G370fs	chr1	27024002	G	-	0.1533
26	ARID1A	frameshift deletion	NM_006015	exon20	P2139fs	chr1	27106804	C	-	0.1168
26	MCL1	frameshift insertion	NM_001197320	exon4	V178fs	chr1	150549912	-	G	0.0240
26	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1780
26	SMAD3	frameshift deletion	NM_001145102	exon4	P76fs	chr15	67459125	C	-	0.1720
26	SMAD3	frameshift insertion	NM_001145102	exon8	W275fs	chr15	67479831	-	G	0.0356
26	CREBBP	frameshift deletion	NM_004380	exon16	I1084fs	chr16	3817721	T	-	0.0414
26	PRSS8	frameshift deletion	NM_002773	exon3	Q42fs	chr16	31144689	G	-	0.1701
26	MYCN	frameshift deletion	NM_005378	exon3	A334fs	chr2	16085825	C	-	0.0738
26	EP300	frameshift insertion	NM_001429	exon31	S2346fs	chr22	41574751	-	C	0.0624
26	EWSR1	frameshift deletion	NM_005243	exon16	P621fs	chr22	29695771	C	-	0.0251
26	PBRM1	frameshift deletion	NM_018313	exon12	392_392del	chr3	52668743	TG	-	0.1544
26	PBRM1	frameshift deletion	NM_018313	exon23	Y1167fs	chr3	52610674	A	-	0.1216

26	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.2919
26	TET2	frameshift deletion	NM_001127208	exon7	1268_1268del	chr4	106180774	AGG	-	0.0313
26	CHD1	frameshift insertion	NM_001270	exon34	S1569fs	chr5	98193965	-	T	0.0500
26	ARID1B	frameshift deletion	NM_020732	exon7	780_786del	chr6	157431662	GCCTTGAGCCAGTCACCAAT	-	0.1971
26	DAXX	frameshift insertion	NM_001350	exon6	C629fs	chr6	33287212	-	G	0.1236
26	NOTCH4	frameshift insertion	NM_004557	exon28	Q1724fs	chr6	32164731	-	G	0.0213
26	PIK3CG	frameshift deletion	NM_002649	exon2	12_13del	chr7	106508042	GA	-	0.0211
26	ADGRA2	frameshift deletion	NM_032777	exon11	G523fs	chr8	37691605	G	-	0.0335
26	NOTCH1	frameshift deletion	NM_017617	exon34	P2485fs	chr9	139390736	G	-	0.1710
26	PTCH1	frameshift insertion	NM_000264	exon1	L39fs	chr9	98270529	-	C	0.0285
26	ATRX	frameshift insertion	NM_000489	exon17	T1582fs	chrX	76890149	-	T	0.1720
26	BCORL1	frameshift deletion	NM_021946	exon3	P642fs	chrX	129148672	C	-	0.3446
27	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-	G	0.1619
27	ARID1A	frameshift insertion	NM_006015	exon3	Q548fs	chr1	27057936	-	C	0.1370
27	ERBB3	frameshift deletion	NM_001982	exon2	74_78del	chr12	56477674	CTCCTTCCTGCAGGTTAGTGAGCCCACC	-	0.0446
27	MDM2	frameshift deletion	NM_002392	exon11	P319fs	chr12	69233090	C	-	0.1706
27	CYLD	frameshift deletion	NM_015247	exon16	E720fs	chr16	50825519	A	-	0.1378
27	BRCA1	frameshift deletion	NM_007300	exon10	K654fs	chr17	41245587	T	-	0.0394
27	MAP2K4	frameshift deletion	NM_003010	exon8	L293fs	chr17	12028676	G	-	0.0901
27	LRP1B	frameshift substitution	NM_018557	exon39		chr2	141459733	CCC	CA	0.0435
27	PAK7	frameshift deletion	NM_020341	exon4	K8fs	chr20	9624954	T	-	0.0683
27	SF3A1	frameshift deletion	NM_005877	exon6	292_292del	chr22	30738191	TG	-	0.0379
27	MITF	frameshift deletion	NM_001184967	exon4	C157fs	chr3	69988293	C	-	0.0391
27	PBRM1	frameshift insertion	NM_018313	exon26	P1313fs	chr3	52595976	-	G	0.1207
27	PBRM1	frameshift insertion	NM_018313	exon8	S244fs	chr3	52682442	-	T	0.1467

27	ROBO2	frameshift deletion	NM_002942	exon21	P1076fs	chr3	77657038	C	-	0.1069
27	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.2396
27	TET2	frameshift insertion	NM_001127208	exon8	L1332fs	chr4	106182957	-	AA	0.0833
27	CHD1	frameshift deletion	NM_001270	exon28	K1320fs	chr5	98206409	T	-	0.1294
27	IL7R	frameshift deletion	NM_002185	exon3	K119fs	chr5	35867541	A	-	0.1022
27	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.1933
27	IGF2R	frameshift insertion	NM_000876	exon48	R2380fs	chr6	160525778	-	G	0.0524
27	PMS2	frameshift deletion	NM_000535	exon11	K413fs	chr7	6027157	T	-	0.1004
27	TNKS	frameshift deletion	NM_003747	exon10	E553fs	chr8	9567544	A	-	0.1509
28	CDC42	frameshift deletion	NM_001039802	exon3	K5fs	chr1	22404984	A	-	0.0211
28	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0240
28	ROBO1	frameshift insertion	NM_002941	exon7	L302fs	chr3	78766438	-	C	0.0207
29	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.0217
29	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0207
29	NF1	frameshift deletion	NM_001042492	exon36	R1612fs	chr17	29592356	A	-	0.0306
29	PRKAR1A	frameshift deletion	NM_001276289	exon12	379_380del	chr17	66526579	CTGT	-	0.0262
29	SF3A1	frameshift deletion	NM_005877	exon4	191_191del	chr22	30741000	GC	-	0.0264
29	NPM1	frameshift deletion	NM_002520	exon2	H40fs	chr5	170817114	C	-	0.0284
30	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.0875
30	ARID1A	frameshift deletion	NM_006015	exon20	P1897fs	chr1	27106078	C	-	0.1074
30	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.0870
30	BRCA2	frameshift deletion	NM_000059	exon23	T3030fs	chr13	32954023	A	-	0.0632
30	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.1164
30	B2M	frameshift deletion	NM_004048	exon1	13_13del	chr15	45003781	CT	-	0.1336
30	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0259

30	RARA	frameshift deletion	NM_000964	exon9	G430fs	chr17	38512377	G		-	0.0505
30	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.0675
30	BARD1	frameshift insertion	NM_000465	exon4	K208fs	chr2	215645974	-		T	0.1186
30	MSH6	frameshift deletion	NM_000179	exon4	845_846del	chr2	48027657	TG		-	0.0642
30	ARID1B	frameshift insertion	NM_020732	exon20	V1792fs	chr6	157527651	-		A	0.0426
30	BRAF	frameshift insertion	NM_004333	exon17	Q709fs	chr7	140439613	-		G	0.1244
30	PMS2	frameshift deletion	NM_000535	exon6	204_205del	chr7	6038830	TGAT		-	0.0449
30	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-		GG	0.0201
30	PTCH1	frameshift insertion	NM_000264	exon1	L39fs	chr9	98270529	-		C	0.0795
30	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G		-	0.0756
31	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G		-	0.0553
31	SPEN	frameshift deletion	NM_015001	exon5	E390fs	chr1	16237722	A		-	0.0885
31	TNKS2	frameshift insertion	NM_025235	exon21	M907fs	chr10	93610998	-		G	0.0517
31	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C		-	0.0384
31	LRP6	frameshift deletion	NM_002336	exon20	E1407fs	chr12	12279718	C		-	0.0622
31	PRPF40B	frameshift deletion	NM_001031698	exon3	P44fs	chr12	50025229	C		-	0.1375
31	SH2B3	frameshift deletion	NM_005475	exon8	P521fs	chr12	111885939	C		-	0.0423
31	BRCA2	frameshift deletion	NM_000059	exon10	G602fs	chr13	32907421	A		-	0.0580
31	DIS3	frameshift deletion	NM_014953	exon3	M163fs	chr13	73352418	T		-	0.0535
31	HSP90AA1	frameshift deletion	NM_001017963	exon9	583_583del	chr14	102549986	CT		-	0.0529
31	GRIN2A	frameshift deletion	NM_000833	exon14	S1341fs	chr16	9857380	T		-	0.1698
31	RAD51C	frameshift deletion	NM_058216	exon2	G130fs	chr17	56772536	A		-	0.0855
31	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.1207
31	CIC	frameshift deletion	NM_015125	exon14	A1114fs	chr19	42796883	C		-	0.0418
31	JAK3	frameshift insertion	NM_000215	exon22	D1009fs	chr19	17941381	-		T	0.0503

31	IDH1	frameshift deletion	NM_005896	exon8	A305fs	chr2	209104664	G	-	0.0529
31	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-	C	0.1009
31	FOXL2	frameshift deletion	NM_023067	exon1	P268fs	chr3	138664761	G	-	0.0654
31	KLHL6	frameshift deletion	NM_130446	exon1	K46fs	chr3	183273305	T	-	0.1220
31	ROBO1	frameshift deletion	NM_002941	exon14	K625fs	chr3	78717124	T	-	0.0468
31	NSD1	frameshift insertion	NM_172349	exon24	F1905fs	chr5	176720890	-	C	0.0613
31	ARID1B	frameshift deletion	NM_020732	exon13	P1162fs	chr6	157505503	C	-	0.0405
31	IRF4	frameshift deletion	NM_002460	exon3	K133fs	chr6	395001	A	-	0.0889
31	PKHD1	frameshift deletion	NM_138694	exon47	2463_2464del	chr6	51735398	TT	-	0.0670
31	TNFAIP3	frameshift deletion	NM_006290	exon7	G455fs	chr6	138199945	G	-	0.0564
31	HOXA3	frameshift deletion	NM_153631	exon4	P309fs	chr7	27147939	G	-	0.0613
31	ADGRA2	frameshift insertion	NM_032777	exon1	S47fs	chr8	37654926	-	G	0.0558
31	ADGRA2	frameshift deletion	NM_032777	exon11	G523fs	chr8	37691605	G	-	0.0401
31	KAT6A	frameshift deletion	NM_001099412	exon8	E429fs	chr8	41834604	C	-	0.1068
31	RUNX1T1	frameshift deletion	NM_001198625	exon12	K377fs	chr8	92998419	T	-	0.0526
31	ZNF703	frameshift deletion	NM_025069	exon2	A411fs	chr8	37555652	G	-	0.0779
31	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0210
31	CUL4B	frameshift insertion	NM_003588	exon8	R369fs	chrX	119678367	-	AG	0.0909
32	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.1434
32	ARID1A	frameshift deletion	NM_006015	exon20	2249_2250del	chr1	27107136	AG	-	0.1561
32	SPEN	frameshift insertion	NM_015001	exon11	E2608fs	chr1	16260559	-	G	0.0926
32	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A	-	0.1676
32	ACVR1B	frameshift deletion	NM_020328	exon1	R27fs	chr12	52345607	G	-	0.0291
32	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-	C	0.1663
32	BRCA2	frameshift insertion	NM_000059	exon17	T2607fs	chr13	32936674	-	G	0.0662

32	B2M	frameshift deletion	NM_004048	exon2	T91fs	chr15	45007825	C	-	0.1883
32	IGF1R	frameshift insertion	NM_000875	exon21	L1316fs	chr15	99500515	-	C	0.1415
32	AXIN1	frameshift deletion	NM_003502	exon6	P432fs	chr16	348211	G	-	0.1751
32	CREBBP	frameshift insertion	NM_004380	exon14	A924fs	chr16	3820681	-	CT	0.0286
32	CREBBP	frameshift deletion	NM_004380	exon16	I1084fs	chr16	3817721	T	-	0.1316
32	CREBBP	frameshift deletion	NM_004380	exon31	P1946fs	chr16	3779211	G	-	0.2811
32	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-	A	0.1616
32	PALB2	frameshift insertion	NM_024675	exon8	V934fs	chr16	23635362	-	AC	0.2063
32	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0401
32	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1814
32	SOX9	frameshift insertion	NM_000346	exon3	E261fs	chr17	70119780	-	G	0.1907
32	BARD1	frameshift deletion	NM_000465	exon4	K171fs	chr2	215646085	T	-	0.1814
32	CHEK2	frameshift deletion	NM_001005735	exon9	F335fs	chr22	29099525	A	-	0.2727
32	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.1902
32	CHD1	frameshift deletion	NM_001270	exon6	K210fs	chr5	98236745	T	-	0.1364
32	PDGFRB	frameshift deletion	NM_002609	exon21	P950fs	chr5	149498364	G	-	0.1646
32	PIK3R1	frameshift deletion	NM_181523	exon2	K80fs	chr5	67522741	A	-	0.1551
32	TNKS	frameshift insertion	NM_003747	exon9	V505fs	chr8	9565939	-	A	0.1295
32	WHSC1L1	frameshift deletion	NM_023034	exon24	K1391fs	chr8	38133301	T	-	0.0967
32	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	GG	0.0772
32	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0341
32	FANCC	frameshift deletion	NM_000136	exon4	I89fs	chr9	98003011	T	-	0.1667
33	BRCA2	frameshift deletion	NM_000059	exon27	K3415fs	chr13	32972893	A	-	0.1409
33	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-	A	0.0935
33	TSC2	frameshift deletion	NM_000548	exon42	Q1779fs	chr16	2138522	C	-	0.0926

33	NF1	frameshift insertion	NM_001042492	exon28	A1268fs	chr17	29562724	-	GACT	0.0367
33	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0323
33	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1209
33	STAT3	frameshift deletion	NM_003150	exon5	G127fs	chr17	40491420	C	-	0.0904
33	MSH6	frameshift insertion	NM_000179	exon10	T1355fs	chr2	48033981	-	TTGA	0.7755
33	MSH6	frameshift insertion	NM_000179	exon10	X1361delinsX	chr2	48033998	-	GACT	0.7182
33	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-	CC	0.0808
33	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.1077
33	APC	frameshift insertion	NM_001127511	exon14	E1536fs	chr5	112175951	-	A	0.0991
33	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.0954
33	BRAF	frameshift deletion	NM_004333	exon10	P403fs	chr7	140482927	G	-	0.1625
33	TRRAP	frameshift deletion	NM_001244580	exon57	A2856fs	chr7	98576480	G	-	0.0242
33	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.0266
34	ARID1A	frameshift deletion	NM_006015	exon1	M274fs	chr1	27023716	G	-	0.0631
34	FGF23	frameshift insertion	NM_020638	exon3	L158fs	chr12	4479793	-	A	0.0943
34	CDK8	frameshift deletion	NM_001260	exon1	36_36del	chr13	26828885	AC	-	0.0892
34	TSC2	frameshift substitution	NM_000548	exon34		chr16	2134630	ACG	AT	0.1429
34	DOT1L	frameshift insertion	NM_032482	exon19	R635fs	chr19	2214577	-	AA	0.0847
34	ASXL1	frameshift deletion	NM_015338	exon12	A752fs	chr20	31022769	G	-	0.1698
34	EP300	frameshift deletion	NM_001429	exon31	G2105fs	chr22	41574028	G	-	0.1818
34	SETD2	frameshift insertion	NM_014159	exon3	R747fs	chr3	47163887	-	G	0.1087
34	TET2	frameshift deletion	NM_001127208	exon11	F1901fs	chr4	106197368	T	-	0.1935
34	NOTCH4	frameshift insertion	NM_004557	exon27	W1609fs	chr6	32165301	-	A	0.1000
34	IKZF1	frameshift deletion	NM_006060	exon4	E66fs	chr7	50444266	G	-	0.1940
34	GATA1	frameshift deletion	NM_002049	exon3	173_173del	chrX	48650547	TT	-	0.2264

35	ARID1A	frameshift deletion	NM_006015	exon16	Y1324fs	chr1	27100176	C		-	0.3575
35	CHD4	frameshift deletion	NM_001273	exon31	T1540fs	chr12	6690878	T		-	0.1867
35	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C		-	0.2327
35	BRCA2	frameshift deletion	NM_000059	exon11	Q1782fs	chr13	32913837	A		-	0.2229
35	BRCA2	frameshift deletion	NM_000059	exon11	K944fs	chr13	32911322	A		-	0.2111
35	AXIN1	frameshift deletion	NM_003502	exon4	P345fs	chr16	360055	G		-	0.2198
35	GRIN2A	frameshift deletion	NM_000833	exon14	S1341fs	chr16	9857380	T		-	0.2316
35	BRIP1	frameshift deletion	NM_032043	exon9	394_394del	chr17	59876620	TC		-	0.1075
35	ETV4	frameshift deletion	NM_001079675	exon7	P133fs	chr17	41610701	G		-	0.2775
35	NF1	frameshift deletion	NM_001042492	exon23	I1011fs	chr17	29557320	A		-	0.0514
35	NF1	frameshift deletion	NM_001042492	exon27	A1197fs	chr17	29560112	G		-	0.0267
35	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G		-	0.0320
35	RARA	frameshift deletion	NM_000964	exon9	A438fs	chr17	38512402	C		-	0.2068
35	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.1146
35	CIC	frameshift deletion	NM_015125	exon10	R507fs	chr19	42794441	C		-	0.2097
35	CIC	frameshift insertion	NM_015125	exon10	P722fs	chr19	42795085	-	AT		0.0493
35	CIC	frameshift insertion	NM_015125	exon14	A1114fs	chr19	42796882	-	C		0.1672
35	CIC	frameshift deletion	NM_015125	exon14	A1114fs	chr19	42796883	C		-	0.2240
35	FLT4	frameshift insertion	NM_182925	exon2	P30fs	chr5	180058747	-	G		0.1947
35	IGF2R	frameshift deletion	NM_000876	exon28	T1314fs	chr6	160485488	G		-	0.2259
35	NOTCH4	frameshift deletion	NM_004557	exon30	G1891fs	chr6	32163554	C		-	0.2540
35	PKHD1	frameshift deletion	NM_138694	exon32	F1531fs	chr6	51890015	A		-	0.1860
35	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G		-	0.1992
35	SMO	frameshift deletion	NM_005631	exon1	R28fs	chr7	128829075	G		-	0.2125
35	ADGRA2	frameshift deletion	NM_032777	exon9	R402fs	chr8	37690635	G		-	0.1667

35	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.0597
35	USP9X	frameshift deletion	NM_001039590	exon2	P26fs	chrX	40982957	C	-	0.2485
36	ARID1A	frameshift deletion	NM_006015	exon1	G370fs	chr1	27024002	G	-	0.1087
36	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-	G	0.1503
36	ARID2	frameshift insertion	NM_152641	exon20	L1776fs	chr12	46287468	-	A	0.2537
36	CHD4	frameshift insertion	NM_001273	exon35	E1671fs	chr12	6687683	-	T	0.0731
36	BRCA2	frameshift insertion	NM_000059	exon11	E705fs	chr13	32910606	-	C	0.0389
36	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.1823
36	B2M	frameshift deletion	NM_004048	exon1	13_13del	chr15	45003781	CT	-	0.1029
36	NUTM1	frameshift insertion	NM_175741	exon5	A343fs	chr15	34646682	-	C	0.1115
36	CREBBP	frameshift deletion	NM_004380	exon16	I1084fs	chr16	3817721	T	-	0.0582
36	NUP93	frameshift deletion	NM_014669	exon6	P172fs	chr16	56852600	C	-	0.0939
36	NF1	frameshift deletion	NM_001042492	exon17	L626fs	chr17	29552144	T	-	0.1549
36	NF1	frameshift deletion	NM_001042492	exon18	T676fs	chr17	29553478	C	-	0.1529
36	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.0433
36	NOTCH3	frameshift insertion	NM_000435	exon33	G2035fs	chr19	15272336	-	G	0.1570
36	ALK	frameshift deletion	NM_004304	exon14	G822fs	chr2	29456453	C	-	0.1282
36	LRP1B	frameshift deletion	NM_018557	exon52	R2777fs	chr2	141267566	G	-	0.1364
36	LRP1B	frameshift deletion	NM_018557	exon72	3685_3686del	chr2	141122305	AG	-	0.0683
36	LRP1B	frameshift insertion	NM_018557	exon90	S4529fs	chr2	140992428	-	A	0.0629
36	MSH6	frameshift insertion	NM_000179	exon10	T1355fs	chr2	48033981	-	TTGA	0.4286
36	APC	frameshift deletion	NM_001127511	exon14	1444_1444del	chr5	112175676	AG	-	0.1900
36	DOCK2	frameshift deletion	NM_004946	exon8	S218fs	chr5	169111246	C	-	0.1280
36	FLT4	frameshift insertion	NM_182925	exon13	E646fs	chr5	180048626	-	G	0.1368
36	CARD11	frameshift insertion	NM_032415	exon6	L253fs	chr7	2979490	-	T	0.0978

36	MYC	frameshift insertion	NM_002467	exon2	L121fs	chr8	128750824	-		G	0.0398
36	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-		G	0.0841
37	ARID1A	frameshift insertion	NM_006015	exon1	R47fs	chr1	27023035	-		G	0.0973
37	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-		G	0.0966
37	JAK1	frameshift deletion	NM_002227	exon5	K142fs	chr1	65339111	T		-	0.0577
37	TNFRSF14	frameshift insertion	NM_003820	exon8	S280fs	chr1	2494700	-		A	0.0281
37	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-	0.1314
37	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C		-	0.0579
37	LRP6	frameshift deletion	NM_002336	exon21	P1459fs	chr12	12278302	G		-	0.1053
37	AXIN1	frameshift deletion	NM_003502	exon10	K817fs	chr16	339452	T		-	0.1083
37	CBFB	frameshift deletion	NM_001755	exon1	F17fs	chr16	67063359	T		-	0.0541
37	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-		A	0.1318
37	NCOR1	frameshift insertion	NM_006311	exon9	L289fs	chr17	16052809	-		T	0.0929
37	NF1	frameshift insertion	NM_001042492	exon28	A1268fs	chr17	29562724	-		GACT	0.0240
37	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.1051
37	RNF43	frameshift insertion	NM_017763	exon9	P370fs	chr17	56436027	-		G	0.0880
37	MYCN	frameshift deletion	NM_005378	exon2	T43fs	chr2	16082314	C		-	0.2016
37	SMARCB1	frameshift deletion	NM_003073	exon7	L301fs	chr22	24167519	G		-	0.0728
37	MLH1	frameshift deletion	NM_000249	exon12	E448fs	chr3	37067433	G		-	0.0926
37	ROBO2	frameshift insertion	NM_002942	exon21	P1075fs	chr3	77657037	-		C	0.0603
37	ROBO2	frameshift deletion	NM_002942	exon21	P1076fs	chr3	77657038	C		-	0.1137
37	FGFR3	frameshift deletion	NM_001163213	exon8	F351fs	chr4	1804761	T		-	0.0407
37	FLT4	frameshift deletion	NM_182925	exon8	P363fs	chr5	180055897	G		-	0.0825
37	NPM1	frameshift deletion	NM_002520	exon2	H40fs	chr5	170817114	C		-	0.0389
37	NSD1	frameshift deletion	NM_172349	exon12	K1260fs	chr5	176675269	A		-	0.1591

37	ARID1B	frameshift deletion	NM_020732	exon20	K2003fs	chr6	157528284	G	-	0.1149
37	ESR1	frameshift deletion	NM_001122742	exon10	T585fs	chr6	152420068	G	-	0.0490
37	IGF2R	frameshift insertion	NM_000876	exon18	E835fs	chr6	160469564	-	A	0.1139
37	IGF2R	frameshift deletion	NM_000876	exon28	T1314fs	chr6	160485488	G	-	0.1126
37	BRAF	frameshift deletion	NM_004333	exon10	P403fs	chr7	140482927	G	-	0.1016
37	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.0260
37	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.0536
37	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.0386
37	USP9X	frameshift insertion	NM_001039590	exon3	E64fs	chrX	40988348	-	T	0.0377
38	AKT3	frameshift deletion	NM_181690	exon11	K417fs	chr1	243708813	T	-	0.0856
38	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1538
38	HNF1A	frameshift deletion	NM_000545	exon6	G375fs	chr12	121434361	C	-	0.1406
38	FANCM	frameshift deletion	NM_020937	exon14	Q1333fs	chr14	45645955	A	-	0.1399
38	B2M	frameshift insertion	NM_004048	exon2	W115fs	chr15	45007896	-	G	0.1277
38	CYLD	frameshift insertion	NM_015247	exon17	F766fs	chr16	50826564	-	A	0.0488
38	DOT1L	frameshift deletion	NM_032482	exon24	954_955del	chr19	2222030	CT	-	0.1495
38	EP300	frameshift deletion	NM_001429	exon14	877_877del	chr22	41546015	CT	-	0.0588
38	WISP3	frameshift insertion	NM_003880	exon5	W205fs	chr6	112389433	-	A	0.0495
38	EPHB6	frameshift insertion	NM_004445	exon6	P53fs	chr7	142561447	-	G	0.1016
38	EPHB6	frameshift deletion	NM_004445	exon7	S280fs	chr7	142562398	C	-	0.0406
38	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.2359
39	PTEN	frameshift deletion	NM_000314	exon7	L265fs	chr10	89717770	A	-	0.0549
39	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.0809
39	PGR	frameshift deletion	NM_000926	exon1	P424fs	chr11	100998531	G	-	0.1603
39	ACVR1B	frameshift insertion	NM_020328	exon2	C39fs	chr12	52369073	-	C	0.0719

39	FANCM	frameshift deletion	NM_020937	exon14	1152_1153del	chr14	45645413	GA	-	0.1215
39	BLM	frameshift deletion	NM_000057	exon19	K1216fs	chr15	91347484	A	-	0.0784
39	SRSF1	frameshift insertion	NM_006924	exon4	G233fs	chr17	56082815	-	A	0.0400
39	BCL2	frameshift deletion	NM_000633	exon2	G128fs	chr18	60985517	C	-	0.0518
39	CDH20	frameshift insertion	NM_031891	exon10	G620fs	chr18	59217421	-	C	0.0426
39	AXL	frameshift deletion	NM_021913	exon7	D277fs	chr19	41743896	C	-	0.1318
39	CEBPA	frameshift deletion	NM_004364	exon1	P23fs	chr19	33793253	G	-	0.1256
39	NOTCH3	frameshift insertion	NM_000435	exon3	A88fs	chr19	15303264	-	GT	0.0233
39	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.0317
39	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.0870
39	NOTCH4	frameshift insertion	NM_004557	exon30	G1891fs	chr6	32163553	-	C	0.1093
39	WHSC1L1	frameshift insertion	NM_023034	exon18	N1066fs	chr8	38146944	-	T	0.0873
39	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.1512
39	PTCH1	frameshift insertion	NM_000264	exon3	S181fs	chr9	98248010	-	G	0.0662
39	BCORL1	frameshift insertion	NM_021946	exon12	S1679fs	chrX	129190010	-	C	0.3115
40	ARID1A	frameshift deletion	NM_006015	exon1	Y222fs	chr1	27023560	C	-	0.0562
40	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.0719
40	TNKS2	frameshift deletion	NM_025235	exon20	D875fs	chr10	93609282	T	-	0.0887
40	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C	-	0.1220
40	RB1	frameshift deletion	NM_000321	exon16	483_483del	chr13	48954327	AT	-	0.0552
40	LTK	frameshift deletion	NM_002344	exon10	P422fs	chr15	41799840	G	-	0.0777
40	CTCF	frameshift deletion	NM_006565	exon3	L134fs	chr16	67645136	T	-	0.0752
40	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1043
40	AXL	frameshift insertion	NM_021913	exon9	N401fs	chr19	41745137	-	G	0.0420
40	BRD4	frameshift deletion	NM_058243	exon5	Q256fs	chr19	15376248	G	-	0.0297

40	NOTCH3	frameshift deletion	NM_000435	exon5	G249fs	chr19	15302611	C	-	0.0323
40	PDK1	frameshift deletion	NM_002610	exon7	S271fs	chr2	173433511	C	-	0.0355
40	PIK3R1	frameshift deletion	NM_181523	exon2	K80fs	chr5	67522741	A	-	0.0444
40	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.0550
40	TNFAIP3	frameshift deletion	NM_006290	exon9	D756fs	chr6	138202351	C	-	0.0268
40	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.0265
40	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0614
41	GATA3	frameshift insertion	NM_002051	exon3	F234fs	chr10	8100727	-	C	0.1979
41	PTEN	frameshift deletion	NM_000314	exon5	F145fs	chr10	89692949	T	-	0.1951
41	PGR	frameshift deletion	NM_000926	exon1	R10fs	chr11	100999774	G	-	0.0882
41	LRP6	frameshift deletion	NM_002336	exon21	G1454fs	chr12	12278318	C	-	0.0879
41	PRPF40B	frameshift deletion	NM_001031698	exon3	I53fs	chr12	50025258	C	-	0.2065
41	B2M	frameshift deletion	NM_004048	exon1	14_15del	chr15	45003786	TCTT	-	0.2531
41	BLM	frameshift insertion	NM_000057	exon3	S186fs	chr15	91293055	-	A	0.1881
41	CTCF	frameshift deletion	NM_006565	exon12	V688fs	chr16	67671655	A	-	0.2209
41	NF1	frameshift insertion	NM_001042492	exon28	A1268fs	chr17	29562724	-	GACT	0.0230
41	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0336
41	SOX9	frameshift deletion	NM_000346	exon3	E261fs	chr17	70119781	G	-	0.2162
41	PIK3C3	frameshift deletion	NM_002647	exon17	F622fs	chr18	39617680	T	-	0.1612
41	STAT4	frameshift insertion	NM_001243835	exon19	L568fs	chr2	191898649	-	G	0.1847
41	ATR	frameshift deletion	NM_001184	exon16	Q1108fs	chr3	142266601	T	-	0.0223
41	ETV5	frameshift deletion	NM_004454	exon11	P361fs	chr3	185774991	G	-	0.0336
41	GATA2	frameshift deletion	NM_001145661	exon4	G200fs	chr3	128204842	C	-	0.2265
41	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.0321
41	APC	frameshift insertion	NM_001127511	exon14	K1444fs	chr5	112175675	-	AG	0.2347

41	FGFR4	frameshift deletion	NM_002011	exon13	R566fs	chr5	176522601	C	-	0.2309
41	WHSC1L1	frameshift deletion	NM_023034	exon6	T419fs	chr8	38187222	T	-	0.0209
41	ABL1	frameshift deletion	NM_007313	exon2	E79fs	chr9	133729550	A	-	0.2107
41	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.3512
42	SPEN	frameshift insertion	NM_015001	exon11	R2103fs	chr1	16259042	-	G	0.0960
42	PARP2	frameshift deletion	NM_005484	exon2	S47fs	chr14	20813185	G	-	0.1090
43	ARID1A	frameshift insertion	NM_006015	exon18	Q1631fs	chr1	27101611	-	C	0.0625
43	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-	G	0.0217
43	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.0390
43	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1006
43	ETV6	frameshift deletion	NM_001987	exon4	140_141del	chr12	12006452	AC	-	0.0240
43	MDM2	frameshift deletion	NM_002392	exon11	P319fs	chr12	69233090	C	-	0.0267
43	PRPF40B	frameshift insertion	NM_001031698	exon3	I53fs	chr12	50025257	-	C	0.0395
43	BRCA2	frameshift deletion	NM_000059	exon23	T3030fs	chr13	32954023	A	-	0.0239
43	FGF7	frameshift deletion	NM_002009	exon4	Q183fs	chr15	49776664	A	-	0.0334
43	GRIN2A	frameshift deletion	NM_000833	exon14	S1341fs	chr16	9857380	T	-	0.0357
43	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.0488
43	DOT1L	frameshift deletion	NM_032482	exon11	T306fs	chr19	2207634	G	-	0.0203
43	LRP1B	frameshift insertion	NM_018557	exon74	K3764fs	chr2	141115651	-	T	0.0284
43	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.0203
43	SETD2	frameshift deletion	NM_014159	exon14	2064_2064del	chr3	47103755	TC	-	0.0203
43	SETD2	frameshift insertion	NM_014159	exon3	N571fs	chr3	47164413	-	T	0.0347
43	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.0348
43	DOCK2	frameshift deletion	NM_004946	exon1	A2fs	chr5	169064335	C	-	0.0284
43	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-	G	0.0240

43	WISP3	frameshift insertion	NM_003880	exon5	W205fs	chr6	112389433	-	A	0.0228
43	SEMA3E	frameshift deletion	NM_012431	exon11	K421fs	chr7	83029447	T	-	0.0307
43	SEMA3E	frameshift deletion	NM_012431	exon9	L314fs	chr7	83034823	A	-	0.0221
43	KAT6A	frameshift insertion	NM_001099412	exon18	K1330fs	chr8	41791748	-	T	0.0237
43	WWP1	frameshift deletion	NM_007013	exon19	K689fs	chr8	87460443	A	-	0.0228
43	PTCH1	frameshift deletion	NM_000264	exon15	N837fs	chr9	98229448	T	-	0.0272
43	AMER1	frameshift deletion	NM_152424	exon2	F173fs	chrX	63412648	A	-	0.0323
43	ATRX	frameshift deletion	NM_000489	exon9	R840fs	chrX	76938230	T	-	0.0350
43	KDM6A	frameshift deletion	NM_021140	exon28	R1363fs	chrX	44969407	A	-	0.0314
43	USP9X	frameshift deletion	NM_001039590	exon35	K1917fs	chrX	41075569	A	-	0.0399
44	CDC42	frameshift deletion	NM_001039802	exon3	K5fs	chr1	22404984	A	-	0.0244
44	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0239
44	NF1	frameshift deletion	NM_001042492	exon21	S807fs	chr17	29556054	C	-	0.0200
44	NF1	frameshift insertion	NM_001042492	exon28	A1268fs	chr17	29562724	-	GACT	0.0224
44	ABL1	frameshift substitution	NM_007313	exon6		chr9	133748361	TGTA	TCAGATCTCGT	0.0936
44	GNAQ	frameshift deletion	NM_002072	exon7	319_320del	chr9	80336360	CTGT	-	0.0374
45	ARID1A	frameshift deletion	NM_006015	exon16	Y1324fs	chr1	27100176	C	-	0.0200
45	FUBP1	frameshift deletion	NM_003902	exon1	P10fs	chr1	78444659	G	-	0.1585
45	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T	-	0.1899
45	JAK1	frameshift deletion	NM_002227	exon9	P430fs	chr1	65325833	G	-	0.1723
45	SPEN	frameshift deletion	NM_015001	exon11	H3315fs	chr1	16262680	C	-	0.1820
45	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1232
45	PGR	frameshift insertion	NM_000926	exon1	A260fs	chr11	100999023	-	C	0.1694
45	ARID2	frameshift deletion	NM_152641	exon2	K35fs	chr12	46123837	A	-	0.1826
45	ARID2	frameshift deletion	NM_152641	exon20	L1776fs	chr12	46287469	A	-	0.1858

45	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-	C	0.0376
45	BRCA2	frameshift substitution	NM_000059	exon24		chr13	32954278	AACAGGTAATGCACAATATAGTTAAT	ACAGGTAATGCACAATATAGTTAA	0.0997
45	BRCA2	frameshift deletion	NM_000059	exon24	K3083fs	chr13	32954273	A	-	0.2210
45	BRIP1	frameshift deletion	NM_032043	exon8	G344fs	chr17	59878722	C	-	0.0312
45	NCOR1	frameshift insertion	NM_006311	exon23	P1035fs	chr17	15989668	-	G	0.1716
45	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.3013
45	LRP1B	frameshift deletion	NM_018557	exon8	N403fs	chr2	141819648	T	-	0.1929
45	CDKN2B	frameshift deletion	NM_004936	exon2	G124fs	chr9	22006032	C	-	0.1876
45	PAX5	frameshift deletion	NM_016734	exon8	P321fs	chr9	36882050	G	-	0.2019
46	ARID1A	frameshift deletion	NM_006015	exon1	Y222fs	chr1	27023560	C	-	0.2251
46	ARID1A	frameshift deletion	NM_006015	exon15	G1267fs	chr1	27099920	G	-	0.0346
46	BRCA2	frameshift deletion	NM_000059	exon10	G602fs	chr13	32907421	A	-	0.2743
46	CDH1	frameshift deletion	NM_004360	exon3	R124fs	chr16	68835781	C	-	0.1989
46	GRIN2A	frameshift deletion	NM_000833	exon14	S1341fs	chr16	9857380	T	-	0.1429
46	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.1815
46	NSD1	frameshift insertion	NM_172349	exon14	F1364fs	chr5	176684083	-	C	0.0420
46	PKHD1	frameshift deletion	NM_138694	exon67	H3944fs	chr6	51484274	G	-	0.1639
46	CDKN2A	frameshift deletion	NM_058195	exon2	R90fs	chr9	21971133	G	-	0.2877
46	CDKN2A	frameshift deletion	NM_058195	exon2	R88fs	chr9	21971137	T	-	0.0201
47	ARID1A	frameshift insertion	NM_006015	exon20	G1847fs	chr1	27105930	-	G	0.1888
47	NTRK1	frameshift deletion	NM_001007792	exon14	R547fs	chr1	156846308	C	-	0.1790
47	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1979
47	FAT3	frameshift deletion	NM_001008781	exon9	A2407fs	chr11	92533399	C	-	0.0651
47	B2M	frameshift deletion	NM_004048	exon1	13_13del	chr15	45003781	CT	-	0.2807
47	CHD2	frameshift deletion	NM_001271	exon6	Q172fs	chr15	93480819	A	-	0.2011

47	CDH1	frameshift insertion	NM_004360	exon3	R124fs	chr16	68835780	-	C	0.1564
47	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0221
47	RNF43	frameshift deletion	NM_017763	exon5	P192fs	chr17	56440643	G	-	0.1652
47	DNMT1	frameshift deletion	NM_001130823	exon24	M734fs	chr19	10262139	T	-	0.1690
47	ROBO2	frameshift insertion	NM_002942	exon21	P1075fs	chr3	77657037	-	C	0.1533
47	FBXW7	frameshift insertion	NM_033632	exon12	S668fs	chr4	153244155	-	C	0.0795
47	PKHD1	frameshift insertion	NM_138694	exon58	V3196fs	chr6	51612828	-	T	0.1837
47	WISP3	frameshift insertion	NM_003880	exon5	W205fs	chr6	112389433	-	A	0.1406
47	EPHB6	frameshift deletion	NM_004445	exon7	S280fs	chr7	142562398	C	-	0.1686
47	ABL1	frameshift deletion	NM_007313	exon11	P802fs	chr9	133760024	C	-	0.1554
48	PARP4	frameshift insertion	NM_006437	exon21	Y839fs	chr13	25030526	-	G	0.0209
48	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0357
48	APC	frameshift deletion	NM_001127511	exon12	559_560del	chr5	112164657	AG	-	0.3073
48	ITK	frameshift insertion	NM_005546	exon16	R581fs	chr5	156675969	-	C	0.0532
49	FLT3	frameshift insertion	NM_004119	exon16	C681fs	chr13	28602327	-	C	0.0680
49	TP53	frameshift deletion	NM_000546	exon7	M246fs	chr17	7577543	C	-	0.1225
49	TNFAIP3	frameshift deletion	NM_006290	exon7	387_387del	chr6	138199741	TG	-	0.0621
49	HGF	frameshift insertion	NM_000601	exon1	I24fs	chr7	81399218	-	G	0.0441
50	NOTCH2	frameshift deletion	NM_024408	exon34	P2303fs	chr1	120458436	G	-	0.1549
50	SPEN	frameshift deletion	NM_015001	exon11	R2103fs	chr1	16259043	G	-	0.2569
50	SPEN	frameshift insertion	NM_015001	exon11	K2669fs	chr1	16260741	-	G	0.1064
50	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1528
50	KDM5A	frameshift deletion	NM_001042603	exon14	649_650del	chr12	438021	TT	-	0.2090
50	RAD52	frameshift insertion	NM_134424	exon8	Q220fs	chr12	1025870	-	A	0.0690
50	CBFB	frameshift deletion	NM_001755	exon1	21_22del	chr16	67063373	GA	-	0.0356

50	CTCF	frameshift deletion	NM_006565	exon12	V688fs	chr16	67671655	A	-	0.2566
50	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-	A	0.1912
50	CDK12	frameshift deletion	NM_015083	exon14	1401_1401del	chr17	37687324	TT	-	0.3085
50	CDK12	frameshift deletion	NM_015083	exon3	665_666del	chr17	37646873	ACTC	-	0.2651
50	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.2602
50	RNF43	frameshift deletion	NM_017763	exon9	G608fs	chr17	56435313	C	-	0.1911
50	TP53	frameshift insertion	NM_000546	exon5	P152fs	chr17	7578474	-	G	0.2085
50	AXL	frameshift insertion	NM_021913	exon6	Q261fs	chr19	41737202	-	T	0.2887
50	BRD4	frameshift deletion	NM_058243	exon14	H1021fs	chr19	15353819	G	-	0.2120
50	MSH6	frameshift deletion	NM_000179	exon5	T1102fs	chr2	48030692	T	-	0.1429
50	ATR	frameshift deletion	NM_001184	exon32	R1814fs	chr3	142217557	T	-	0.1212
50	MLH1	frameshift insertion	NM_000249	exon16	A586fs	chr3	37089034	-	C	0.3333
50	SLIT2	frameshift deletion	NM_004787	exon13	D405fs	chr4	20525467	C	-	0.1731
50	FGFR4	frameshift insertion	NM_002011	exon13	G582fs	chr5	176522648	-	A	0.0380
50	RUNX1T1	frameshift deletion	NM_001198625	exon12	394_394del	chr8	92998369	GG	-	0.1688
50	USP9X	frameshift deletion	NM_001039590	exon28	1366_1366del	chrX	41055854	AG	-	0.2597
51	NTRK1	frameshift insertion	NM_001007792	exon9	A306fs	chr1	156843580	-	A	0.0338
51	RET	frameshift insertion	NM_020975	exon3	P129fs	chr10	43597837	-	A	0.0625
51	CCND2	frameshift insertion	NM_001759	exon5	D276fs	chr12	4409131	-	AC	0.0699
51	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C	-	0.0396
51	MDM2	frameshift insertion	NM_002392	exon11	T469fs	chr12	69233541	-	T	0.0787
51	NFKBIA	frameshift deletion	NM_020529	exon5	275_275del	chr14	35871682	TC	-	0.0515
51	NOTCH3	frameshift insertion	NM_000435	exon30	Q1830fs	chr19	15276775	-	T	0.0498
51	BCL6	frameshift insertion	NM_001130845	exon5	S359fs	chr3	187447118	-	T	0.0633
52	PRPF40B	frameshift insertion	NM_001031698	exon26	G875fs	chr12	50037919	-	GT	0.1449

52	SH2B3	frameshift insertion	NM_005475	exon7	A452fs	chr12	111885579	-	GG	0.1163
52	BRCA2	frameshift deletion	NM_000059	exon14	2467_2468del	chr13	32929391	TG	-	0.3944
52	IRS2	frameshift deletion	NM_003749	exon1	1237_1238del	chr13	110434689	GC	-	0.2347
52	PRSS8	frameshift deletion	NM_002773	exon3	Q42fs	chr16	31144689	G	-	0.1261
52	RARA	frameshift deletion	NM_000964	exon3	D93fs	chr17	38504668	C	-	0.4000
52	AKT2	frameshift deletion	NM_001626	exon12	G396fs	chr19	40741245	C	-	0.2357
52	BRD4	frameshift deletion	NM_058243	exon14	H1021fs	chr19	15353819	G	-	0.2500
52	CD79A	frameshift deletion	NM_001783	exon3	P129fs	chr19	42383610	C	-	0.2673
52	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.1774
52	MYCN	frameshift deletion	NM_005378	exon2	T43fs	chr2	16082314	C	-	0.1642
52	MITF	frameshift deletion	NM_001184967	exon9	A313fs	chr3	70008505	A	-	0.1628
52	PBRM1	frameshift insertion	NM_018313	exon17	I709fs	chr3	52643770	-	T	0.4091
52	ROBO2	frameshift deletion	NM_002942	exon5	227_228del	chr3	77542408	TC	-	0.2759
52	PDGFRA	frameshift deletion	NM_006206	exon16	773_775del	chr4	55146645	GTTAG	-	0.2419
52	FGFR4	frameshift deletion	NM_002011	exon13	R566fs	chr5	176522601	C	-	0.1720
52	ADGRA2	frameshift insertion	NM_032777	exon8	N336fs	chr8	37689016	-	G	0.1562
52	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.1531
52	BRD3	frameshift insertion	NM_007371	exon8	P426fs	chr9	136907011	-	GT	0.0625
52	MED12	frameshift insertion	NM_005120	exon7	S294fs	chrX	70341445	-	C	0.1493
53	MTOR	frameshift insertion	NM_004958	exon48	L2246fs	chr1	11182109	-	CG	0.0826
53	SPEN	frameshift insertion	NM_015001	exon12	Q3450fs	chr1	16263979	-	A	0.0870
53	RAB35	frameshift insertion	NM_006861	exon5	Q141fs	chr12	120536669	-	A	0.0822
53	SMARCB1	frameshift substitution	NM_003073	exon1		chr22	24129371	GCT	GA	0.0395
53	PBRM1	frameshift insertion	NM_018313	exon22	R1148fs	chr3	52613085	-	A	0.0738
53	SETD2	frameshift deletion	NM_014159	exon3	238_238del	chr3	47165412	CA	-	0.1197

53	APC	frameshift substitution	NM_001127511	exon7		chr5	112151237	TCTAGTAGCACACACTCTGCACCTC	TT	0.2542
53	ARID1B	frameshift deletion	NM_020732	exon15	1248_1249del	chr6	157511226	CC	-	0.1029
53	KDM5C	frameshift insertion	NM_004187	exon12	L576fs	chrX	53239616	-	A	0.1333
54	ABL2	frameshift insertion	NM_001136000	exon13	A802fs	chr1	179077644	-	A	0.0258
54	MTOR	frameshift insertion	NM_004958	exon34	L1599fs	chr1	11204781	-	G	0.0452
54	MRE11A	frameshift deletion	NM_005590	exon4	N65fs	chr11	94219209	A	-	0.0526
54	CHD2	frameshift insertion	NM_001271	exon3	L79fs	chr15	93467724	-	G	0.0358
54	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0253
54	NF1	frameshift deletion	NM_001042492	exon23	I1011fs	chr17	29557320	A	-	0.0316
54	NF1	frameshift deletion	NM_001042492	exon27	A1197fs	chr17	29560112	G	-	0.0275
54	NF1	frameshift insertion	NM_001042492	exon28	A1268fs	chr17	29562724	-	GACT	0.0323
54	NF1	frameshift deletion	NM_001042492	exon35	K1538fs	chr17	29588765	G	-	0.0486
54	SMAD4	frameshift insertion	NM_005359	exon6	A241fs	chr18	48584550	-	T	0.0450
54	DOT1L	frameshift insertion	NM_032482	exon16	S510fs	chr19	2211812	-	G	0.0213
54	RAC1	frameshift insertion	NM_018890	exon4	R87fs	chr7	6438328	-	T	0.0485
55	ARID1A	frameshift deletion	NM_006015	exon1	W337fs	chr1	27023904	G	-	0.1154
55	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.2128
55	GATA3	frameshift deletion	NM_002051	exon3	F234fs	chr10	8100728	C	-	0.1579
55	PGR	frameshift deletion	NM_000926	exon1	P509fs	chr11	100998275	G	-	0.1473
55	ERBB3	frameshift deletion	NM_001982	exon28	1260_1261del	chr12	56495590	TG	-	0.1209
55	IDH2	frameshift insertion	NM_002168	exon5	G190fs	chr15	90631701	-	CA	0.0645
55	AXIN1	frameshift deletion	NM_003502	exon6	G508fs	chr16	347983	C	-	0.1329
55	AXIN1	frameshift deletion	NM_003502	exon7	K641fs	chr16	347089	T	-	0.1285
55	JAK3	frameshift insertion	NM_000215	exon8	C360fs	chr19	17952261	-	A	0.0332
55	STK11	frameshift deletion	NM_000455	exon6	G279fs	chr19	1221314	C	-	0.0656

55	LRP1B	frameshift deletion	NM_018557	exon40	T2119fs	chr2	141459362	T	-	0.1716
55	EP300	frameshift insertion	NM_001429	exon14	Q884fs	chr22	41546037	-	T	0.1136
55	FANCD2	frameshift deletion	NM_001018115	exon10	260_261del	chr3	10083391	GA	-	0.2609
55	TGFBR2	frameshift insertion	NM_001024847	exon6	M475fs	chr3	30715691	-	G	0.0962
55	PIK3R1	frameshift insertion	NM_181523	exon2	R79fs	chr5	67522740	-	A	0.1429
55	ESR1	frameshift deletion	NM_001122742	exon3	F97fs	chr6	152129338	C	-	0.0430
55	IGF2R	frameshift deletion	NM_000876	exon28	T1314fs	chr6	160485488	G	-	0.1204
55	IGF2R	frameshift deletion	NM_000876	exon39	T1929fs	chr6	160501260	C	-	0.2134
55	SMO	frameshift deletion	NM_005631	exon12	P688fs	chr7	128851990	C	-	0.1270
56	SPEN	frameshift deletion	NM_015001	exon11	P2519fs	chr1	16260290	C	-	0.5949
56	GATA3	frameshift deletion	NM_002051	exon6	K376fs	chr10	8115780	A	-	0.2917
56	AXIN1	frameshift insertion	NM_003502	exon6	H541fs	chr16	347885	-	GT	0.0483
56	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1613
56	RPTOR	frameshift deletion	NM_020761	exon20	S755fs	chr17	78867528	C	-	0.0789
56	TP53	frameshift insertion	NM_000546	exon4	L35fs	chr17	7579584	-	G	0.2703
56	RICTOR	frameshift deletion	NM_152756	exon10	282_282del	chr5	38975683	AG	-	0.4884
56	BRAF	frameshift insertion	NM_004333	exon10	P403fs	chr7	140482926	-	G	0.2029
56	CARD11	frameshift deletion	NM_032415	exon13	R555fs	chr7	2968323	G	-	0.1020
56	TRRAP	frameshift deletion	NM_001244580	exon55	2758_2758del	chr7	98574607	GA	-	0.2740
56	ABL1	frameshift deletion	NM_007313	exon11	P802fs	chr9	133760024	C	-	0.1923
56	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.1048
56	BCOR	frameshift deletion	NM_017745	exon4	P574fs	chrX	39932877	G	-	0.3113
57	ARID1A	frameshift deletion	NM_006015	exon1	M274fs	chr1	27023716	G	-	0.1020
57	ARID1A	frameshift insertion	NM_006015	exon1	G369fs	chr1	27024001	-	G	0.1618
57	ARID1A	frameshift deletion	NM_006015	exon1	G284fs	chr1	27023744	G	-	0.0427

57	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-		0.2381
57	BRCA2	frameshift deletion	NM_000059	exon23	T3030fs	chr13	32954023	A		-		0.1550
57	B2M	frameshift deletion	NM_004048	exon1	13_13del	chr15	45003781	CT		-		0.1860
57	ALOX12B	frameshift insertion	NM_001139	exon10	L451fs	chr17	7979986	-		C		0.2294
57	NCOR1	frameshift insertion	NM_006311	exon29	R1279fs	chr17	15975518	-		T		0.0621
57	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-		0.1371
57	BRD4	frameshift deletion	NM_058243	exon16	P1143fs	chr19	15350486	G		-		0.1904
57	MEF2B	frameshift deletion	NM_001145785	exon9	P315fs	chr19	19256769	G		-		0.1676
57	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C		-		0.1419
57	SETD2	frameshift insertion	NM_014159	exon3	N1396fs	chr3	47161938	-		T		0.1829
57	MAP3K1	frameshift deletion	NM_005921	exon14	S1077fs	chr5	56178258	A		-		0.1342
57	RAD50	frameshift deletion	NM_005732	exon17	K932fs	chr5	131944382	A		-		0.1545
57	ESR1	frameshift deletion	NM_001122742	exon6	P325fs	chr6	152265522	G		-		0.1456
57	IGF2R	frameshift deletion	NM_000876	exon12	509_510del	chr6	160464226	AG		-		0.1946
57	WISP3	frameshift insertion	NM_003880	exon5	W205fs	chr6	112389433	-		A		0.1439
57	KAT6A	frameshift insertion	NM_001099412	exon3	L110fs	chr8	41906167	-		AC		0.0444
57	GNAQ	frameshift insertion	NM_002072	exon5	G208fs	chr9	80409490	-		C		0.1503
57	AMER1	frameshift deletion	NM_152424	exon2	P465fs	chrX	63411772	G		-		0.3095
57	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C		-		0.3205
57	KDM6A	frameshift insertion	NM_021140	exon16	N569fs	chrX	44922845	-		T		0.2464
57	USP9X	frameshift deletion	NM_001039590	exon16	S730fs	chrX	41025328	C		-		0.1983
58	ARID1A	frameshift deletion	NM_006015	exon18	P1467fs	chr1	27101117	C		-		0.1207
58	ARID1A	frameshift deletion	NM_006015	exon20	E1783fs	chr1	27105737	A		-		0.1324
58	RET	frameshift deletion	NM_020975	exon19	A1046fs	chr10	43622120	C		-		0.1053
58	SUFU	frameshift deletion	NM_016169	exon1	A22fs	chr10	104263974	C		-		0.1137

58	CDX2	frameshift insertion	NM_001265	exon3	V306fs	chr13	28537277	-	C	0.1161
58	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0297
58	PRKAR1A	frameshift deletion	NM_001276289	exon8	215_217del	chr17	66521990	CAAAG	-	0.0870
58	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.2008
58	CDH2	frameshift deletion	NM_001792	exon11	N568fs	chr18	25568526	T	-	0.1235
58	CDH20	frameshift deletion	NM_031891	exon11	N685fs	chr18	59221577	C	-	0.0984
58	AXL	frameshift insertion	NM_021913	exon7	V289fs	chr19	41743932	-	C	0.1546
58	BARD1	frameshift deletion	NM_000465	exon4	K171fs	chr2	215646085	T	-	0.1042
58	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.0822
58	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.0715
58	FLT4	frameshift deletion	NM_182925	exon10	Q423fs	chr5	180053023	G	-	0.0994
58	ETV1	frameshift deletion	NM_004956	exon8	P138fs	chr7	13975473	G	-	0.0940
58	WHSC1L1	frameshift deletion	NM_023034	exon12	714_714del	chr8	38172266	AG	-	0.0430
58	ABL1	frameshift deletion	NM_007313	exon11	P802fs	chr9	133760024	C	-	0.0883
58	PAX5	frameshift deletion	NM_016734	exon2	V26fs	chr9	37020769	C	-	0.0942
58	BCORL1	frameshift deletion	NM_021946	exon3	K768fs	chrX	129149050	A	-	0.1310
58	USP9X	frameshift deletion	NM_001039590	exon2	P26fs	chrX	40982957	C	-	0.0646
59	ARID1A	frameshift insertion	NM_006015	exon1	D322fs	chr1	27023860	-	G	0.1061
59	GATA3	frameshift deletion	NM_002051	exon3	F234fs	chr10	8100728	C	-	0.0814
59	IGF1R	frameshift insertion	NM_000875	exon11	A759fs	chr15	99465451	-	G	0.0730
59	IGF1R	frameshift insertion	NM_000875	exon3	S290fs	chr15	99434783	-	G	0.0298
59	LTK	frameshift insertion	NM_002344	exon17	P692fs	chr15	41797015	-	G	0.1458
59	CTCF	frameshift insertion	NM_006565	exon3	A201fs	chr16	67645338	-	A	0.0945
59	GRIN2A	frameshift insertion	NM_000833	exon14	H1071fs	chr16	9858189	-	G	0.0813
59	ERBB2	frameshift deletion	NM_004448	exon21	R844fs	chr17	37881339	G	-	0.1151

59	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1097
59	RNF43	frameshift deletion	NM_017763	exon9	659_659del	chr17	56435161	CC	-	0.0450
59	DOT1L	frameshift insertion	NM_032482	exon24	L956fs	chr19	2222035	-	C	0.0276
59	INSR	frameshift insertion	NM_000208	exon7	D523fs	chr19	7168022	-	G	0.0794
59	NOTCH3	frameshift deletion	NM_000435	exon24	P1343fs	chr19	15288710	G	-	0.1500
59	NOTCH3	frameshift deletion	NM_000435	exon33	P2153fs	chr19	15271981	G	-	0.0943
59	LRP1B	frameshift deletion	NM_018557	exon81	4129_4129del	chr2	141081589	AT	-	0.1277
59	PLCG1	frameshift deletion	NM_002660	exon17	T618fs	chr20	39794887	C	-	0.4031
59	FBXW7	frameshift deletion	NM_033632	exon3	189_189del	chr4	153271211	TT	-	0.1585
59	DOCK2	frameshift insertion	NM_004946	exon2	A24fs	chr5	169081433	-	C	0.0637
59	TNKS	frameshift deletion	NM_003747	exon9	K506fs	chr8	9565940	A	-	0.0833
59	BRD3	frameshift deletion	NM_007371	exon2	P24fs	chr9	136918529	G	-	0.0249
59	FANCC	frameshift deletion	NM_000136	exon8	F258fs	chr9	97897697	A	-	0.1582
59	BCORL1	frameshift deletion	NM_021946	exon3	231_232del	chrX	129147441	CC	-	0.2540
59	TBX22	frameshift insertion	NM_001109878	exon2	E46fs	chrX	79277905	-	G	0.1408
60	PARP1	frameshift deletion	NM_001618	exon10	A483fs	chr1	226567719	C	-	0.1111
60	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.1852
60	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C	-	0.1267
60	CDH5	frameshift insertion	NM_001795	exon5	V227fs	chr16	66423324	-	TA	0.0355
60	PALB2	frameshift deletion	NM_024675	exon2	Q36fs	chr16	23649392	T	-	0.1028
60	PRSS8	frameshift insertion	NM_002773	exon4	F162fs	chr16	31144056	-	GG	0.0441
60	RNF43	frameshift deletion	NM_017763	exon3	R117fs	chr17	56448298	G	-	0.0613
60	RNF43	frameshift deletion	NM_017763	exon7	272_273del	chr17	56438176	CA	-	0.0779
60	EPHA3	frameshift deletion	NM_005233	exon15	P845fs	chr3	89499363	C	-	0.3191
60	FGFR3	frameshift insertion	NM_001163213	exon14	A621fs	chr4	1807796	-	AA	0.0457

60	CHD1	frameshift insertion	NM_001270	exon5	K172fs	chr5	98236962	-	TC	0.1207
60	IRF4	frameshift deletion	NM_002460	exon7	A320fs	chr6	401637	C	-	0.1186
60	TNFAIP3	frameshift deletion	NM_006290	exon7	599_599del	chr6	138200377	GG	-	0.0585
60	CARD11	frameshift insertion	NM_032415	exon10	R451fs	chr7	2974254	-	G	0.0847
60	SMO	frameshift deletion	NM_005631	exon12	H692fs	chr7	128852004	C	-	0.1094
60	TNKS	frameshift deletion	NM_003747	exon9	K506fs	chr8	9565940	A	-	0.1524
61	ARID1A	frameshift insertion	NM_006015	exon20	L2279fs	chr1	27107226	-	T	0.1329
61	JAK1	frameshift deletion	NM_002227	exon9	P430fs	chr1	65325833	G	-	0.1673
61	KDM5A	frameshift deletion	NM_001042603	exon1	G8fs	chr12	498235	C	-	0.1481
61	PRPF40B	frameshift insertion	NM_001031698	exon3	I53fs	chr12	50025257	-	C	0.1682
61	CHD2	frameshift deletion	NM_001271	exon6	Q172fs	chr15	93480819	A	-	0.1913
61	AXIN1	frameshift deletion	NM_003502	exon6	G508fs	chr16	347983	C	-	0.0274
61	GRIN2A	frameshift deletion	NM_000833	exon14	S1341fs	chr16	9857380	T	-	0.1844
61	GNA13	frameshift insertion	NM_006572	exon1	E82fs	chr17	63052467	-	CG	0.2225
61	RNF43	frameshift deletion	NM_017763	exon3	R117fs	chr17	56448298	G	-	0.1801
61	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.1586
61	STAT3	frameshift insertion	NM_003150	exon23	R728fs	chr17	40468878	-	G	0.1429
61	CD79A	frameshift deletion	NM_001783	exon3	P129fs	chr19	42383610	C	-	0.2927
61	LRP1B	frameshift deletion	NM_018557	exon35	G1891fs	chr2	141526868	C	-	0.1040
61	XPO1	frameshift insertion	NM_003400	exon15	L555fs	chr2	61719518	-	A	0.1918
61	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.1885
61	CHEK2	frameshift deletion	NM_001005735	exon5	G221fs	chr22	29121024	C	-	0.0647
61	EP300	frameshift deletion	NM_001429	exon14	T841fs	chr22	41545907	C	-	0.1767
61	EP300	frameshift deletion	NM_001429	exon27	K1468fs	chr22	41566525	A	-	0.1324
61	EPHA3	frameshift deletion	NM_005233	exon11	S644fs	chr3	89468398	A	-	0.2029

61	KLHL6	frameshift deletion	NM_130446	exon6	L454fs	chr3	183210486	G	-	0.1737
61	RAF1	frameshift insertion	NM_002880	exon16	K579fs	chr3	12626414	-	G	0.1535
61	FBXW7	frameshift deletion	NM_033632	exon12	G667fs	chr4	153244156	C	-	0.1637
61	FANCE	frameshift deletion	NM_021922	exon2	L136fs	chr6	35423683	G	-	0.1448
61	GNAQ	frameshift deletion	NM_002072	exon7	319_320del	chr9	80336360	CTGT	-	0.0539
61	PAK3	frameshift deletion	NM_002578	exon10	R241fs	chrX	110406912	A	-	0.2537
62	ABL2	frameshift deletion	NM_001136000	exon13	K718fs	chr1	179077894	T	-	0.0546
62	ARID1A	frameshift deletion	NM_006015	exon1	G284fs	chr1	27023744	G	-	0.0783
62	ARID1A	frameshift deletion	NM_006015	exon1	T292fs	chr1	27023769	C	-	0.1201
62	ARID1A	frameshift deletion	NM_006015	exon3	P549fs	chr1	27057937	C	-	0.0408
62	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T	-	0.0827
62	JAK1	frameshift insertion	NM_002227	exon5	K142fs	chr1	65339110	-	T	0.0652
62	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A	-	0.0558
62	ATM	frameshift deletion	NM_000051	exon49	G2382fs	chr11	108199804	A	-	0.0769
62	HNF1A	frameshift deletion	NM_000545	exon4	P289fs	chr12	121432118	C	-	0.1775
62	RB1	frameshift deletion	NM_000321	exon13	K417fs	chr13	48951087	A	-	0.0766
62	RB1	frameshift deletion	NM_000321	exon19	K652fs	chr13	49030479	A	-	0.0798
62	CHD2	frameshift deletion	NM_001271	exon6	Q172fs	chr15	93480819	A	-	0.0615
62	AXIN1	frameshift insertion	NM_003502	exon2	S235fs	chr16	396323	-	T	0.0299
62	CTCF	frameshift deletion	NM_006565	exon3	K202fs	chr16	67645339	A	-	0.0736
62	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0234
62	NF1	frameshift deletion	NM_001042492	exon27	A1197fs	chr17	29560112	G	-	0.0225
62	RNF43	frameshift deletion	NM_017763	exon5	P192fs	chr17	56440643	G	-	0.0840
62	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C	-	0.0971
62	CDH20	frameshift insertion	NM_031891	exon1	V62fs	chr18	59157970	-	A	0.0420

62	DNMT1	frameshift deletion	NM_001130823	exon4	P129fs	chr19	10291084	G		-		0.0530
62	JAK3	frameshift insertion	NM_000215	exon3	P84fs	chr19	17954642	-		G		0.0927
62	DNMT3A	frameshift insertion	NM_175629	exon4	Q110fs	chr2	25505430	-		C		0.0898
62	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C		-		0.0997
62	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-		G		0.0840
62	ATR	frameshift deletion	NM_001184	exon10	773_774del	chr3	142274740	TT		-		0.0691
62	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA		-		0.1135
62	HOXA3	frameshift insertion	NM_153631	exon4	Q302fs	chr7	27147961	-		G		0.0618
62	RUNX1T1	frameshift deletion	NM_001198625	exon12	K377fs	chr8	92998419	T		-		0.0367
62	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C		-		0.1450
62	KDM6A	frameshift deletion	NM_021140	exon27	1335_1335del	chrX	44966780	AAGT		-		0.1508
63	ARID1A	frameshift deletion	NM_006015	exon1	M274fs	chr1	27023716	G		-		0.0755
63	ARID1A	frameshift deletion	NM_006015	exon16	Y1324fs	chr1	27100176	C		-		0.0794
63	JAK1	frameshift deletion	NM_002227	exon19	K860fs	chr1	65306997	T		-		0.0687
63	JAK1	frameshift insertion	NM_002227	exon5	K142fs	chr1	65339110	-		T		0.0669
63	JAK1	frameshift insertion	NM_002227	exon9	P430fs	chr1	65325832	-		G		0.0623
63	PTEN	frameshift insertion	NM_000314	exon7	L265fs	chr10	89717769	-		A		0.0678
63	PTEN	frameshift insertion	NM_000314	exon8	E288fs	chr10	89720711	-		A		0.0900
63	ARID2	frameshift insertion	NM_152641	exon15	P1085fs	chr12	46245161	-		C		0.0251
63	BRCA1	frameshift deletion	NM_007300	exon10	K654fs	chr17	41245587	T		-		0.0878
63	SETBP1	frameshift insertion	NM_015559	exon6	S1567fs	chr18	42643573	-		C		0.0667
63	AXL	frameshift insertion	NM_021913	exon7	V289fs	chr19	41743932	-		C		0.0908
63	LRP1B	frameshift deletion	NM_018557	exon76	3869_3870del	chr2	141110564	CA		-		0.0551
63	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-		CC		0.0516
63	MSH6	frameshift insertion	NM_000179	exon5	T1085fs	chr2	48030639	-		C		0.0350

63	EPHB1	frameshift deletion	NM_004441	exon5	F418fs	chr3	134851848	C	-	0.0642
63	SETD2	frameshift insertion	NM_014159	exon8	T1652fs	chr3	47143009	-	AA	0.0536
63	TGFBR2	frameshift deletion	NM_001024847	exon4	150_150del	chr3	30691872	AA	-	0.1480
63	FGFR4	frameshift deletion	NM_002011	exon10	437_438del	chr5	176520466	TC	-	0.0811
63	NPM1	frameshift deletion	NM_002520	exon2	H40fs	chr5	170817114	C	-	0.0290
63	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0623
63	PTCH1	frameshift deletion	NM_000264	exon22	P1202fs	chr9	98211549	G	-	0.0761
63	ARAF	frameshift deletion	NM_001654	exon2	G6fs	chrX	47422384	C	-	0.0789
63	ATRX	frameshift deletion	NM_000489	exon11	R1302fs	chrX	76920173	T	-	0.0839
63	BCORL1	frameshift deletion	NM_021946	exon12	S1679fs	chrX	129190011	C	-	0.0790
63	USP9X	frameshift deletion	NM_001039590	exon4	K106fs	chrX	40990783	A	-	0.0678
64	ARID1A	frameshift insertion	NM_006015	exon18	V1561fs	chr1	27101401	-	C	0.1339
64	ARID1A	frameshift deletion	NM_006015	exon20	G1848fs	chr1	27105931	G	-	0.1624
64	CHEK1	frameshift insertion	NM_001114121	exon7	W231fs	chr11	125505403	-	A	0.1343
64	FAT3	frameshift deletion	NM_001008781	exon1	K636fs	chr11	92087184	A	-	0.0202
64	FANCM	frameshift deletion	NM_020937	exon19	K1586fs	chr14	45657067	A	-	0.0219
64	FANCI	frameshift deletion	NM_001113378	exon2	E11fs	chr15	89790910	A	-	0.0441
64	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0219
64	RARA	frameshift deletion	NM_000964	exon9	A438fs	chr17	38512402	C	-	0.0258
64	TP53	frameshift deletion	NM_000546	exon11	K382fs	chr17	7572963	T	-	0.1581
64	MSH6	frameshift deletion	NM_000179	exon5	T1085fs	chr2	48030640	C	-	0.1734
64	NFE2L2	frameshift deletion	NM_006164	exon5	Y229fs	chr2	178096646	A	-	0.0784
64	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	GG	0.0344
64	ASXL1	frameshift insertion	NM_015338	exon12	G642fs	chr20	31022441	-	G	0.0340
64	CTNNB1	frameshift deletion	NM_001904	exon4	90_90del	chr3	41266472	GA	-	0.1253

64	EPHB6	frameshift deletion	NM_004445	exon7	G251fs	chr7	142562309	G		-	0.1542
64	PMS2	frameshift insertion	NM_000535	exon11	D414fs	chr7	6027156	-		T	0.0859
64	PMS2	frameshift deletion	NM_000535	exon7	Y268fs	chr7	6036958	A		-	0.0406
65	ARID1A	frameshift deletion	NM_006015	exon12	K1071fs	chr1	27097622	A		-	0.1491
65	ARID1A	frameshift deletion	NM_006015	exon3	H544fs	chr1	27057924	C		-	0.0313
65	RET	frameshift deletion	NM_020975	exon18	K994fs	chr10	43620371	A		-	0.1142
65	TNKS2	frameshift deletion	NM_025235	exon16	T619fs	chr10	93601946	A		-	0.1367
65	ATM	frameshift deletion	NM_000051	exon3	V60fs	chr11	108098609	T		-	0.1438
65	FAT3	frameshift insertion	NM_001008781	exon1	V924fs	chr11	92088048	-		T	0.1383
65	SH2B3	frameshift deletion	NM_005475	exon2	S18fs	chr12	111856002	C		-	0.2139
65	BRCA2	frameshift deletion	NM_000059	exon11	A1689fs	chr13	32913559	A		-	0.1353
65	BRCA2	frameshift insertion	NM_000059	exon24	V3082fs	chr13	32954272	-		A	0.2054
65	PARP2	frameshift deletion	NM_005484	exon16	L572fs	chr14	20825919	T		-	0.0957
65	B2M	frameshift deletion	NM_004048	exon2	E67fs	chr15	45007753	A		-	0.1591
65	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A		-	0.0208
65	RNF43	frameshift deletion	NM_017763	exon9	G659fs	chr17	56435161	C		-	0.2644
65	CIC	frameshift deletion	NM_015125	exon11	P959fs	chr19	42795886	C		-	0.1348
65	CIC	frameshift insertion	NM_015125	exon14	A1114fs	chr19	42796882	-		C	0.1304
65	XPO1	frameshift deletion	NM_003400	exon5	K104fs	chr2	61729435	T		-	0.0547
65	EP300	frameshift deletion	NM_001429	exon27	K1468fs	chr22	41566525	A		-	0.1377
65	EP300	frameshift deletion	NM_001429	exon31	Q2122fs	chr22	41574081	G		-	0.1454
65	ATR	frameshift deletion	NM_001184	exon4	F256fs	chr3	142281476	A		-	0.1614
65	MAP3K1	frameshift deletion	NM_005921	exon14	S1077fs	chr5	56178258	A		-	0.1257
65	FANCE	frameshift insertion	NM_021922	exon4	A308fs	chr6	35425714	-		C	0.1268
65	IGF2R	frameshift insertion	NM_000876	exon28	T1314fs	chr6	160485487	-		G	0.1376

65	IGF2R	frameshift deletion	NM_000876	exon28	T1314fs	chr6	160485488	G	-	0.1746
65	PMS2	frameshift deletion	NM_000535	exon11	K413fs	chr7	6027157	T	-	0.1159
65	SMO	frameshift deletion	NM_005631	exon12	H692fs	chr7	128852004	C	-	0.1589
65	ADGRA2	frameshift deletion	NM_032777	exon19	C1084fs	chr8	37699108	C	-	0.1386
65	AMER1	frameshift deletion	NM_152424	exon2	L546fs	chrX	63411530	A	-	0.2219
65	BCORL1	frameshift deletion	NM_021946	exon3	R72fs	chrX	129146963	G	-	0.2133
65	BTK	frameshift deletion	NM_000061	exon12	F352fs	chrX	100613345	A	-	0.2667
65	USP9X	frameshift deletion	NM_001039590	exon35	G1877fs	chrX	41075449	G	-	0.2510
66	ARID1A	frameshift insertion	NM_006015	exon12	N1070fs	chr1	27097621	-	A	0.1226
66	ARID1A	frameshift deletion	NM_006015	exon7	Q799fs	chr1	27088788	G	-	0.0532
66	ARID1A	frameshift deletion	NM_006015	exon9	G914fs	chr1	27092719	G	-	0.0737
66	SPEN	frameshift insertion	NM_015001	exon11	E812fs	chr1	16255169	-	A	0.0962
66	HNF1A	frameshift insertion	NM_000545	exon4	G288fs	chr12	121432117	-	C	0.1170
66	B2M	frameshift insertion	NM_004048	exon2	T91fs	chr15	45007824	-	C	0.0861
66	NUTM1	frameshift insertion	NM_175741	exon2	T121fs	chr15	34640515	-	AG	0.0303
66	NF1	frameshift deletion	NM_001042492	exon19	K757fs	chr17	29554253	A	-	0.0216
66	SETBP1	frameshift deletion	NM_015559	exon4	K419fs	chr18	42530560	A	-	0.0514
66	BRD4	frameshift insertion	NM_058243	exon5	Q256fs	chr19	15376247	-	G	0.0589
66	SMARCA4	frameshift insertion	NM_001128844	exon6	V268fs	chr19	11097624	-	C	0.0742
66	ZNF217	frameshift deletion	NM_006526	exon1	N55fs	chr20	52199202	T	-	0.0739
66	ELMO1	frameshift deletion	NM_001206480	exon6	128_128del	chr7	37298815	GA	-	0.0552
66	EPHB6	frameshift deletion	NM_004445	exon6	G54fs	chr7	142561448	G	-	0.1037
66	BRD3	frameshift insertion	NM_007371	exon2	P24fs	chr9	136918528	-	G	0.0891

AA, amino acid; dbSNP, single nucleotide polymorphism database; VAF, variant allele frequency; NA, not assessable