

Table S1

Gene	Chrom	Position (hg19)	Reference Variant	Variant	Variant Type	Variant effect	EXAC Allele Frequency
<i>AGAP6</i>	10	51768674	CAA	C	frameshift deletion	NM_001077665:exon8:c.790_791del;p.264_264del	0
<i>CELA1</i>	12	51740414	GAC	G	frameshift deletion	NM_001971:exon1:c.7_8del;p.3_3del	0
<i>CLDN16</i>	3	190106071	AG	A	frameshift deletion	NM_006580:exon1:c.164delG;p.R55fs	0
<i>CLSTN2</i>	3	140251317	CT	C	frameshift deletion	NM_022131:exon9:c.1497delT;p.A499fs	0
<i>CTU2</i>	16	88780634	AGGTGTG	A	frameshift deletion	NM_001012759:exon10:c.1097_1097del;p.366_366del	0
<i>DCHS2</i>	4	155244401	TTTTG	T	frameshift deletion	NM_001142552:exon8:c.4095_4098del;p.1365_1366del	0
<i>FANCD2</i>	3	10088406	TAGTA	T	frameshift deletion	NM_001018115:exon15:c.1278_1278del;p.426_426del	0
<i>GPRC5D</i>	12	13102481	AGGCATT GCCTTGTA AAG	A	frameshift deletion	NM_018654:exon1:c.821_837del;p.274_279del	3.45E-03
<i>HDGFRP2</i>	19	4499632	AAGCTGG CCGGGGA GG	A	frameshift deletion	NM_001001520:exon14:c.1721_1722del;p.574_574del	0
<i>LFNG</i>	7	2552881	AGATG	A	frameshift deletion	NM_001166355:exon2:c.139_142del;p.47_48del	0
<i>NOC3L</i>	10	96110026	CA	C	frameshift deletion	NM_022451:exon9:c.971delT;p.L324fs	8.24E-04
<i>OR10Q1</i>	11	57995644	GA	G	frameshift deletion	NM_001004471:exon1:c.703delT;p.S235fs	4.37E-04
<i>OR13C2</i>	9	107367391	ATGTT	A	frameshift deletion	NM_001004481:exon1:c.514_517del;p.172_173del	0
<i>OR5H6</i>	3	97983437	TA	T	frameshift deletion	NM_001005479:exon1:c.310delA;p.K104fs	0
<i>POLR3C</i>	1	145592761	TG	T	frameshift deletion	NM_006468:exon15:c.1533delC;p.A511fs	8.65E-04
<i>PRSS3</i>	9	33797930	GAC	G	frameshift deletion	NM_007343:exon3:c.476_477del;p.159_159del	0
<i>TGIF1</i>	18	3452222	CT	C	frameshift deletion	NM_170695:exon1:c.246delT;p.P82fs	0
<i>TSSC1</i>	2	3358354	CA	C	frameshift deletion	NM_003310:exon2:c.92delT;p.L31fs	0
<i>ZC3H8</i>	2	112988507	CTTCTT	C	frameshift deletion	NM_032494:exon8:c.859_863del;p.287_288del	1.98E-03
<i>ZFPM1</i>	16	88599700	CTCTG	C	frameshift deletion	NM_153813:exon10:c.1335_1338del;p.445_446del	0
<i>ZNF142</i>	2	219507409	TTGACA	T	frameshift deletion	NM_001105537:exon8:c.3825_3829del;p.1275_1277del	0

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<i>C20orf197</i>	20	58645791	A	AG	frameshift insertion	NM_173644:exon4:c.210dupG :p.K70fs	2.97E-04
<i>CDCP2</i>	1	54605318	T	TG	frameshift insertion	NM_201546:exon4:c.1224dup C:p.M409fs	0
<i>HRNR</i>	1	152185812	C	CAG	frameshift insertion	NM_001009931:exon3:c.8292 _8293insCT:p.G2765fs	0
<i>KRTAP9-1</i>	17	39346626	G	GTGGGT	frameshift insertion	NM_001190460:exon1:c.488_ 489insTGGGT:p.C163fs	0
<i>PRUNE2</i>	9	79324134	GA	GGTGAC TGTTGC	frameshift insertion	NM_015225:exon8:c.3055_30 56insCTGCAACAGTCAC:p.S101 9fs	0
<i>PRUNE2</i>	9	79324153	G	GTTGC	frameshift insertion	NM_015225:exon8:c.3036_30 37insGCAA:p.Q1013fs	1.66E-05
<i>PTCHD2</i>	1	11579472	T	TC	frameshift insertion	NM_020780:exon8:c.1951dup C:p.A650fs	8.27E-06
<i>PTCHD3</i>	10	27702256	G	GC	frameshift insertion	NM_001034842:exon1:c.923d upG:p.G308fs	0
<i>ADAMTSL5</i>	19	1506031	G	A	nonsynonymous	NM_213604:exon12:c.C1399T: p.R467W	4.67E-03
<i>APC2</i>	19	1457002	G	C	nonsynonymous	NM_005883:exon9:c.G967C:p. G323R	0
<i>ATP8B4</i>	15	50223353	C	A	nonsynonymous	NM_024837:exon16:c.G1605T :p.L535F	1.72E-03
<i>AUTS2</i>	7	69064650	C	T	nonsynonymous	NM_001127232:exon1:c.C11T: p.P4L	7.22E-04
<i>BHLHB9</i>	X	102004875	T	C	nonsynonymous	NM_001142524:exon4:c.T952 C:p.C318R	4.78E-03
<i>BMP8B</i>	1	40254155	C	A	nonsynonymous	NM_001720:exon1:c.G3T:p.M 1I	0
<i>BTNL3</i>	5	180416029	A	G	nonsynonymous	NM_197975:exon1:c.A1G:p.M 1V	0
<i>C7orf72</i>	7	50175760	T	G	nonsynonymous	NM_001161834:exon5:c.T934 G:p.F312V	2.15E-03
<i>CALHM1</i>	10	105218160	C	T	nonsynonymous	NM_001001412:exon1:c.G349 A:p.V117I	1.11E-03
<i>CMYA5</i>	5	79024833	G	A	nonsynonymous	NM_153610:exon2:c.G245A:p. G82E	3.06E-04
<i>COL6A2</i>	21	47542052	C	T	nonsynonymous	NM_058174:exon19:c.C1552T: p.P518S	8.79E-03
<i>COL6A3</i>	2	238277379	C	T	nonsynonymous	NM_057166:exon7:c.G2906A: p.R969Q	0.01
<i>DNAJC5G</i>	2	27499675	G	A	nonsynonymous	NM_173650:exon3:c.G79A:p. G27S	0
<i>DOK3</i>	5	176931030	A	T	nonsynonymous	NM_024872:exon6:c.T1445A:p .L482Q	0
<i>GPR179</i>	17	36486848	C	G	nonsynonymous	NM_001004334:exon11:c.G26 04C:p.E868D	5.06E-03
<i>HIPK1</i>	1	114514635	G	C	nonsynonymous	NM_152696:exon15:c.G3203C :p.R1068T	4.12E-05

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<i>KIR3DL2</i>	19	55378166	G	A	nonsynonymous	NM_006737:exon9:c.G1348A:p.G450S	2.30E-03
<i>MGA</i>	15	41989088	G	A	nonsynonymous	NM_001080541:exon3:c.G1880A:p.R627Q	0
<i>MYLK4</i>	6	2678541	C	T	nonsynonymous	NM_001012418:exon10:c.G953A:p.C318Y	1.85E-03
<i>NOTCH3</i>	19	15276238	T	C	nonsynonymous	NM_000435:exon31:c.A5756G:p.E1919G	0
<i>OSGIN1</i>	16	83992895	A	G	nonsynonymous	NM_182981:exon3:c.A98G:p.Y33C	1.52E-03
<i>PIGC</i>	1	172410967	G	A	nonsynonymous	NM_153747:exon2:c.C796T:p.P266S	0
<i>POF1B</i>	X	84563220	C	T	nonsynonymous	NM_024921:exon10:c.G960A:p.M320I	9.07E-05
<i>RGS22</i>	8	100994172	T	C	nonsynonymous	NM_001286692:exon22:c.A3317G:p.E1106G	3.72E-03
<i>SLC3A2</i>	11	62649421	G	T	nonsynonymous	NM_001013251:exon2:c.G481T:p.G161C	8.48E-04
<i>SLCO5A1</i>	8	70667793	C	T	nonsynonymous	NM_030958:exon4:c.G1124A:p.R375Q	4.17E-03
<i>STXBP5L</i>	3	121126425	G	T	nonsynonymous	NM_014980:exon24:c.G2995T:p.A999S	9.43E-04
<i>TRAPPC10</i>	21	45483598	C	T	nonsynonymous	NM_003274:exon7:c.C970T:p.P324S	1.98E-04
<i>UBASH3A</i>	21	43836715	T	A	nonsynonymous	NM_001001895:exon5:c.T718A:p.Y240N	6.60E-05
<i>ZC3H13</i>	13	46541962	C	T	nonsynonymous	NM_015070:exon15:c.G3998A:p.R1333H	0
<i>ZDHHC14</i>	6	158094126	G	A	nonsynonymous	NM_024630:exon9:c.G1439A:p.R480H	2.51E-05
<i>ZNF318</i>	6	43307399	G	A	nonsynonymous	NM_014345:exon10:c.C4337T:p.P1446L	6.33E-03
<i>PIWIL3</i>	22	25124143	C	T	splicing	NM_001255975:exon16:c.1905+1G>A	5.35E-03
<i>PKP2</i>	12	32955491	C	G	splicing	NM_004572:exon12:c.2146-1G>C	4.94E-05
<i>SLC24A2</i>	9	19550134	C	G	splicing	NM_020344:exon8:c.1479+1G>C	0
<i>CABLES1</i>	18	20715874	G	T	stopgain	NM_001100619:exon1:c.G148T:p.E50X	0
<i>CCDC66</i>	3	56591278	T	TGGGGT AAGCA	stopgain	NM_001141947:exon1:c.8_9insGGGGTAAGCA:p.L3_G4delinsLGX	0
<i>CEP104</i>	1	3761541	G	A	stopgain	NM_014704:exon6:c.C496T:p.R166X	2.47E-05
<i>FUT1</i>	19	49253809	G	A	stopgain	NM_000148:exon4:c.C730T:p.Q244X	0
<i>GLP2R</i>	17	9745887	G	A	stopgain	NM_004246:exon4:c.G458A:p.W153X	0

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<i>HS3ST6</i>	16	1962046	CG	TA	stopgain	NM_001009606:exon2:c.480delC:p.Y160X	0
<i>LGALS8</i>	1	236702209	CA	TG	stopgain	NM_201543:exon5:c.166delA:p.M56X	0
<i>OBSCN</i>	1	228550291	C	T	stopgain	NM_001271223:exon91:c.C21547T:p.R7183X	0
<i>OR2T35</i>	1	248801602	T	TCA	stopgain	NM_001001827:exon1:c.957_958insTG:p.I320_R321delinsX	0
<i>PITRM1</i>	10	3208567	T	TGCACG CTAGGG AAGAGA GAGGA ATG	stopgain	NM_001242309:exon3:c.175_176insCATTCTCTCTCTCCCTAGCGTGC:p.Q59_F60delinsPFLSLPX	0
<i>PKHD1L1</i>	8	110477066	C	T	stopgain	NM_177531:exon49:c.C8005T:p.Q2669X	1.33E-03
<i>PREX2</i>	8	68993013	AT	GC	stopgain	NM_025170:exon17:c.1819delT:p.L607X	0
<i>PSG11</i>	19	43529026	CA	TG	stopgain	NM_002785:exon2:c.246delT:p.Y82X	0
<i>STAP2</i>	19	4328755	G	C	stopgain	NM_017720:exon6:c.C507G:p.Y169X	0
<i>TAS2R31</i>	12	11183035	C	T	stopgain	NM_176885:exon1:c.G900A:p.W300X	9.53E-03
<i>ZNF729</i>	19	22498942	GT	CC	stopgain	NM_001242680:exon4:c.2724delT:p.C908X	0