

Supplementary Tables and Figures:

Supplemental Table 1: List of variants, including of known and unknown significance, from mutational profiling studies.

Supplemental Table 2: Comparison of patients and transplant characteristics in patients who had a myeloablative conditioning regimen and those who had a reduced intensity conditioning regimen.

Supplemental Table 3: Summary of factors that were found to be associated with non-relapse mortality in a univariate analysis.

Supplemental Table 4: Univariate analysis of impact on relapse-free survival of clinical characteristics and mutations.

Supplemental Table 5: Analysis of chimerism and *JAK2V617F* mutation in serial samples of 4 patients who relapsed post-transplant.

Supplemental Figure 1: Kaplan-Meier curves for Relapse Free Survival (RFS) by conditioning intensity, mutations and cytogenetic abnormalities. RFS (A) compared between myeloablative conditioning (MAC) and reduced intensity conditioning (RIC), (B) Presence or absence of high molecular risk (HMR) mutations (C) Related and unrelated donors (D) Presence or absence of *DNMT3A* (E) Presence or absence of *U2AF1* or *DNMT3A* (F) The combined effect of conditioning intensity and presence or absence of *U2AF1* and

Supplemental Figure 2: Multivariate analysis for relapse free survival shown by forest plot.

Supplemental Table 1

Chromosome	Start position	Ref allele	Alt allele	Sample	VAF	Depth	Gene	Protein change	Effect	Annotation
9	5073770	G	T	E-H-108024-T1-1-D1-1	0.45		981JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
6	152265352	C	T	E-H-108024-T1-1-D1-1	0.48		827ESR1	p.R269C	non_synonymous_codon	UNKNOWN
12	49434504	T	C	E-H-108024-T1-1-D1-1	0.49		692KMT2D	p.Q2350R	non_synonymous_codon	UNKNOWN
2	242065738	C	A	E-H-108024-T1-1-D1-1	0.5		839PASK	p.E864D	non_synonymous_codon	UNKNOWN
1	243663047	A	AT	E-H-108024-T1-1-D1-1	0.387		1185AKT3	p.*466fs*22	frameshift_variant	UNKNOWN
2	25469624	T	TC	E-H-108024-T1-1-D1-1	0.404		1087DNMT3A	p.K382fs*11	frameshift_variant	LIKELY
9	5073770	G	T	E-H-108024-T2-1-D1-1	0.55		1229JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
6	152265352	C	T	E-H-108024-T2-1-D1-1	0.47		869ESR1	p.R269C	non_synonymous_codon	UNKNOWN
12	49434504	T	C	E-H-108024-T2-1-D1-1	0.5		640KMT2D	p.Q2350R	non_synonymous_codon	UNKNOWN
2	242065738	C	A	E-H-108024-T2-1-D1-1	0.48		786PASK	p.E864D	non_synonymous_codon	UNKNOWN
1	243663047	A	AT	E-H-108024-T2-1-D1-1	0.378		1093AKT3	p.*466fs*22	frameshift_variant	UNKNOWN
2	25469624	T	TC	E-H-108024-T2-1-D1-1	0.414		982DNMT3A	p.K382fs*11	frameshift_variant	LIKELY
9	5073770	G	T	E-H-108025-T1-1-D1-1	0.77		1078JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
20	57484421	G	A	E-H-108025-T1-1-D1-1	0.1		1934GNAS	p.R202H	non_synonymous_codon	ONCOGENIC
1	43818306	T	A	E-H-108025-T1-1-D1-1	0.57		2027MPL	p.Y591N	non_synonymous_codon	LIKELY
1	45797950	T	C	E-H-108025-T1-1-D1-1	0.64		1840MUTYH	p.R271Q	non_synonymous_codon	UNKNOWN
11	69589593	T	C	E-H-108025-T1-1-D1-1	0.38		480FGF4	p.Y87C	non_synonymous_codon	UNKNOWN
1	78432377	C	A	E-H-108025-T1-1-D1-1	0.35		1855FUBP1	p.?	splice_site_variant	UNKNOWN
11	94192599	G	T	E-H-108025-T1-1-D1-1	0.45		1658MRE11A	p.A492D	non_synonymous_codon	UNKNOWN
2	240056036	G	A	E-H-108025-T1-1-D1-1	0.49		1824HDAC4	p.S400L	non_synonymous_codon	UNKNOWN
1	36937057	A	G	E-H-108025-T1-1-D1-1	0.61		782CSF3R	p.P421L	non_synonymous_codon	UNKNOWN
9	5073770	G	T	E-H-108025-T2-1-D1-1	0.84		844JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
20	57484421	G	A	E-H-108025-T2-1-D1-1	0.17		1530GNAS	p.R202H	non_synonymous_codon	ONCOGENIC
1	43818306	T	A	E-H-108025-T2-1-D1-1	0.55		1555MPL	p.Y591N	non_synonymous_codon	LIKELY
19	7132173	G	C	E-H-108025-T2-1-D1-1	0.46		809INSR	p.D946E	non_synonymous_codon	UNKNOWN
1	45797950	C	T	E-H-108025-T2-1-D1-1	0.62		1441MUTYH	p.R271Q	non_synonymous_codon	UNKNOWN
11	69589593	T	C	E-H-108025-T2-1-D1-1	0.41		431FGF4	p.Y87C	non_synonymous_codon	UNKNOWN
1	78432377	C	A	E-H-108025-T2-1-D1-1	0.42		1558FUBP1	p.?	splice_site_variant	UNKNOWN
11	94192599	G	T	E-H-108025-T2-1-D1-1	0.46		1316MRE11A	p.A492D	non_synonymous_codon	UNKNOWN
2	240056036	G	A	E-H-108025-T2-1-D1-1	0.5		1377HDAC4	p.S400L	non_synonymous_codon	UNKNOWN
1	36937057	G	A	E-H-108025-T2-1-D1-1	0.55		626CSF3R	p.P421L	non_synonymous_codon	UNKNOWN
9	5073770	G	T	E-H-108026-T1-1-D1-1	0.17		1134JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
2	141812795	G	T	E-H-108026-T1-1-D1-1	0.48		812LRP1B	p.G481E	non_synonymous_codon	UNKNOWN
16	70285799	G	A	E-H-108026-T1-1-D1-1	0.46		1061EXOSC6	p.P2L	non_synonymous_codon	UNKNOWN
19	1226555	C	T	E-H-108026-T1-1-D1-1	0.49		1077STK11	p.S404F	non_synonymous_codon	UNKNOWN
2	242065761	C	T	E-H-108026-T1-1-D1-1	0.49		1058PASK	p.D857N	non_synonymous_codon	UNKNOWN
21	36206711	G	T	E-H-108026-T1-1-D1-1	0.42		895RUNX1	p.M267I	non_synonymous_codon	ONCOGENIC
9	5073770	C	T	E-H-108026-T2-1-D1-1	0.27		1043JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
2	141812795	C	T	E-H-108026-T2-1-D1-1	0.49		828LRP1B	p.G481E	non_synonymous_codon	UNKNOWN
16	70285799	G	A	E-H-108026-T2-1-D1-1	0.47		1027EXOSC6	p.P2L	non_synonymous_codon	UNKNOWN
19	1226555	C	T	E-H-108026-T2-1-D1-1	0.47		1024STK11	p.S404F	non_synonymous_codon	UNKNOWN
2	242065761	C	T	E-H-108026-T2-1-D1-1	0.5		1057PASK	p.D857N	non_synonymous_codon	UNKNOWN
21	36206711	C	T	E-H-108026-T2-1-D1-1	0.44		805RUNX1	p.M267I	non_synonymous_codon	ONCOGENIC
9	135772998	CTG	C	E-H-108026-T2-1-D1-1	0.07		646TSC1	p.?	splice_site_variant	UNKNOWN
7	148515136	C	T	E-H-108027-T1-1-D1-1	0.47		1716EZH2	p.R358H	non_synonymous_codon	UNKNOWN
12	18552594	C	T	E-H-108027-T1-1-D1-1	0.45		968PIK3C2G	p.L669F	non_synonymous_codon	UNKNOWN
12	49425575	C	T	E-H-108027-T1-1-D1-1	0.48		1294KMT2D	p.V4305I	non_synonymous_codon	UNKNOWN
7	151927058	C	T	E-H-108027-T1-1-D1-1	0.072		1838KMT2C	p.A976T	non_synonymous_codon	UNKNOWN
20	31022402	TCACCACTGCCATAGAGAGCGCGC	T	E-H-108027-T1-1-D1-1	0.014		350ASXL1	p.E635fs*15	frameshift_variant	LIKELY
6	157099423	GCAA	G	E-H-108027-T1-1-D1-1	0.055		330ARID1B	p.Q131delQ	inframe_codon_loss	UNKNOWN
7	148515136	C	T	E-H-108027-T2-1-D1-1	0.47		1612EZH2	p.R358H	non_synonymous_codon	UNKNOWN
12	18552594	C	T	E-H-108027-T2-1-D1-1	0.44		819PIK3C2G	p.L669F	non_synonymous_codon	UNKNOWN
12	49425575	C	T	E-H-108027-T2-1-D1-1	0.47		1098KMT2D	p.V4305I	non_synonymous_codon	UNKNOWN
7	151927058	C	T	E-H-108027-T2-1-D1-1	0.066		1792KMT2C	p.A976T	non_synonymous_codon	UNKNOWN
20	31022402	TCACCACTGCCATAGAGAGCGCGC	T	E-H-108027-T2-1-D1-1	0.02		303ASXL1	p.E635fs*15	frameshift_variant	LIKELY
6	157099423	GCAA	G	E-H-108027-T2-1-D1-1	0.054		276ARID1B	p.Q131delQ	inframe_codon_loss	UNKNOWN
2	240011722	C	T	E-H-108028-T1-1-D1-1	0.49		1875HDAC4	p.A786T	non_synonymous_codon	UNKNOWN
18	10471956	C	A	E-H-108028-T1-1-D1-1	0.51		1297APCDD1	p.D224E	non_synonymous_codon	UNKNOWN
6	37138771	C	A	E-H-108028-T1-1-D1-1	0.47		1136PIM1	p.H680	non_synonymous_codon	UNKNOWN
1	162725036	A	T	E-H-108028-T1-1-D1-1	0.5		1266DDR2	p.T170S	non_synonymous_codon	UNKNOWN
17	63049685	T	C	E-H-108028-T1-1-D1-1	0.5		1022GNA13	p.I149V	non_synonymous_codon	UNKNOWN
5	35876524	C	G	E-H-108028-T1-1-D1-1	0.48		1257IL7R	p.T439S	non_synonymous_codon	UNKNOWN
12	438005	T	A	E-H-108028-T1-1-D1-1	0.47		1034KDM5A	p.Q855L	non_synonymous_codon	UNKNOWN
3	185191118	G	A	E-H-108028-T1-1-D1-1	0.49		1316MAP3K13	p.A667T	non_synonymous_codon	UNKNOWN
4	55955553	G	A	E-H-108029-T1-1-D1-1	0.46		1775KDR	p.T1131I	non_synonymous_codon	UNKNOWN
17	70119966	G	C	E-H-108029-T1-1-D1-1	0.5		822SOX9	p.S323T	non_synonymous_codon	UNKNOWN
X	76938680	T	G	E-H-108029-T1-1-D1-1	0.48		1635ATRX	p.K690Q	non_synonymous_codon	UNKNOWN
16	87393935	C	G	E-H-108029-T1-1-D1-1	0.44		1178FBXO31	p.I126M	non_synonymous_codon	UNKNOWN
7	151845975	C	T	E-H-108029-T1-1-D1-1	0.49		1202KMT2C	p.R4346K	non_synonymous_codon	UNKNOWN
8	37690649	G	A	E-H-108029-T1-1-D1-1	0.5		1632GPR124	p.G407S	non_synonymous_codon	UNKNOWN
1	46725738	C	T	E-H-108029-T1-1-D1-1	0.5		996RAD54L	p.P125L	non_synonymous_codon	UNKNOWN
16	2988272	C	T	E-H-108029-T1-1-D1-1	0.49		1294FLYWCH1	p.A621V	non_synonymous_codon	UNKNOWN
22	41537193	A	G	E-H-108029-T1-1-D1-1	0.48		1245EP300	p.N674D	non_synonymous_codon	UNKNOWN
19	42384773	G	A	E-H-108029-T1-1-D1-1	0.48		963CD79A	p.G179R	non_synonymous_codon	UNKNOWN

19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGAACAGAAACGAAAAGAGGAGGAGG	A	E-H-108029-T1-1-D1-1	0.073	890CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
12	121880447	CCTT	C	E-H-108029-T1-1-D1-1	0.378	2307KDM2B	p.K932delK	inframe_codon_loss	UNKNOWN
14	102551254	C	CTTCTTT	E-H-108029-T1-1-D1-1	0.211	2353HSP90AA1	p.E370_E371insKE	inframe_codon_gain	UNKNOWN
4	187557962	T	C	E-H-108029-T2-1-D1-1	0.46	934FAT1	p.Y1250C	non_synonymous_codon	UNKNOWN
4	55955553	G	A	E-H-108029-T2-1-D1-1	0.44	1457KDR	p.T1131I	non_synonymous_codon	UNKNOWN
17	70119966	G	C	E-H-108029-T2-1-D1-1	0.49	564SOX9	p.S323T	non_synonymous_codon	UNKNOWN
X	76938680	T	G	E-H-108029-T2-1-D1-1	0.47	1301ATRX	p.K690Q	non_synonymous_codon	UNKNOWN
16	87393935	G	C	E-H-108029-T2-1-D1-1	0.47	959FBXO31	p.I126M	non_synonymous_codon	UNKNOWN
7	151845975	C	T	E-H-108029-T2-1-D1-1	0.47	988KMT2C	p.R4346K	non_synonymous_codon	UNKNOWN
8	37690649	G	A	E-H-108029-T2-1-D1-1	0.48	1332GPR124	p.G407S	non_synonymous_codon	UNKNOWN
1	46725738	C	T	E-H-108029-T2-1-D1-1	0.48	860RAD54L	p.P125L	non_synonymous_codon	UNKNOWN
22	41537193	A	G	E-H-108029-T2-1-D1-1	0.47	1071EP300	p.N674D	non_synonymous_codon	UNKNOWN
19	42384773	G	A	E-H-108029-T2-1-D1-1	0.42	790CD79A	p.G179R	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGAACAGAAACGAAAAGAGGAGGAGG	A	E-H-108029-T2-1-D1-1	0.089	762CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
12	121880447	CCTT	C	E-H-108029-T2-1-D1-1	0.389	1791KDM2B	p.K932delK	inframe_codon_loss	UNKNOWN
14	102551254	C	CTTCTTT	E-H-108029-T2-1-D1-1	0.213	1833HSP90AA1	p.E370_E371insKE	inframe_codon_gain	UNKNOWN
21	44514777	T	G	E-H-108030-T1-1-D1-1	0.34	1065UZAF1	p.Q157P	non_synonymous_codon	ONCOGENIC
15	90631934	C	T	E-H-108030-T1-1-D1-1	0.32	1378IDH2	p.R140Q	non_synonymous_codon	ONCOGENIC
6	94120273	T	C	E-H-108030-T1-1-D1-1	0.47	1092EPAH7	p.I260V	non_synonymous_codon	UNKNOWN
9	5073770	G	T	E-H-108031-T1-1-D1-1	0.16	927JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
7	151970858	C	T	E-H-108031-T1-1-D1-1	0.05	476KMT2C	p.G315D	non_synonymous_codon	LIKELY
13	25072339	A	C	E-H-108031-T1-1-D1-1	0.48	1514PARP4	p.V169G	non_synonymous_codon	UNKNOWN
12	46124998	A	G	E-H-108031-T1-1-D1-1	0.39	1049ARID2	p.?	splice_site_variant	UNKNOWN
7	80292448	C	T	E-H-108031-T1-1-D1-1	0.46	1483CD36	p.P191L	non_synonymous_codon	UNKNOWN
7	128851596	G	T	E-H-108031-T1-1-D1-1	0.47	890SMO	p.P641A	non_synonymous_codon	UNKNOWN
2	27462578	C	T	E-H-108031-T1-1-D1-1	0.48	1065CAD	p.P1803L	non_synonymous_codon	UNKNOWN
13	28808521	T	G	E-H-108031-T1-1-D1-1	0.49	1048FLT3	p.N541H	non_synonymous_codon	UNKNOWN
22	41513763	C	C	E-H-108031-T1-1-D1-1	0.5	834EP300	p.L223V	non_synonymous_codon	UNKNOWN
17	74732935	CGGCGGCTGTGGTGTGAGTCCGGGG	C	E-H-108031-T1-1-D1-1	0.262	432SRSF2	p.P95_R102delIPDSSHRSR	inframe_codon_loss	ONCOGENIC
14	36986875	T	TGCCCCCGCC	E-H-108031-T1-1-D1-1	0.099	964NXX2-1	p.G271_T272insGGG	inframe_codon_gain	UNKNOWN
20	31021271	CTG	C	E-H-108031-T1-1-D1-1	0.366	945ASXL1	p.Y425fs*12	frameshift_variant	LIKELY
9	5073770	G	T	E-H-108031-T2-1-D1-1	0.094	892JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
7	151970858	C	T	E-H-108031-T2-1-D1-1	0.065	429KMT2C	p.G315D	non_synonymous_codon	LIKELY
13	25072339	A	C	E-H-108031-T2-1-D1-1	0.46	1352PARP4	p.V169G	non_synonymous_codon	UNKNOWN
12	46124998	A	G	E-H-108031-T2-1-D1-1	0.32	977ARID2	p.?	splice_site_variant	UNKNOWN
7	80292448	C	T	E-H-108031-T2-1-D1-1	0.47	1342CD36	p.P191L	non_synonymous_codon	UNKNOWN
7	128851596	G	T	E-H-108031-T2-1-D1-1	0.48	855SMO	p.P641A	non_synonymous_codon	UNKNOWN
2	27462578	C	T	E-H-108031-T2-1-D1-1	0.5	950CAD	p.P1803L	non_synonymous_codon	UNKNOWN
22	41513763	C	G	E-H-108031-T2-1-D1-1	0.46	724EP300	p.L223V	non_synonymous_codon	UNKNOWN
9	87635170	T	G	E-H-108031-T2-1-D1-1	0.11	558NTRK2	p.I741S	non_synonymous_codon	UNKNOWN
9	135772998	CTG	C	E-H-108031-T2-1-D1-1	0.086	476TSC1	p.?	splice_site_variant	UNKNOWN
17	74732935	CGGCGGCTGTGGTGTGAGTCCGGGG	C	E-H-108031-T2-1-D1-1	0.243	419SRSF2	p.P95_R102delIPDSSHRSR	inframe_codon_loss	ONCOGENIC
14	36986875	T	TGCCCCCGCC	E-H-108031-T2-1-D1-1	0.1	902NXX2-1	p.G271_T272insGGG	inframe_codon_gain	UNKNOWN
20	31021271	CTG	C	E-H-108031-T2-1-D1-1	0.328	862ASXL1	p.Y425fs*12	frameshift_variant	LIKELY
12	133263886	C	G	E-H-108032-T1-1-D1-1	0.48	460POLE	p.G6R	non_synonymous_codon	UNKNOWN
2	25050456	G	A	E-H-108032-T1-1-D1-1	0.47	946DNMT3A	p.P101L	non_synonymous_codon	UNKNOWN
2	25468174	T	C	E-H-108032-T1-1-D1-1	0.47	762DNMT3A	p.N501S	non_synonymous_codon	UNKNOWN
2	202123028	C	G	E-H-108032-T1-1-D1-1	0.51	1038CASP8	p.P25R	non_synonymous_codon	UNKNOWN
8	37555584	T	TGCGCACCTCGGCGGCTCCAGCTGCTCCACCTGCAGCGCGCCGA	E-H-108032-T1-1-D1-1	0.119	2056ZNF703	p.A401_H402insFTHLGGSSCSTCSA	inframe_codon_gain	UNKNOWN
2	192011484	CT	C	E-H-108032-T1-1-D1-1	0.11	934STAT4	p.?	splice_site_variant	UNKNOWN
17	7578238	TC	C	E-H-108032-T1-1-D1-1	0.321	1314TP53	p.E204fs*43	frameshift_variant	LIKELY
2	58386928	G	GTAAT	E-H-108032-T1-1-D1-1	0.345	1715FANCL	p.T367fs*13	frameshift_variant	UNKNOWN
7	8018305	CAGTTA	C	E-H-108032-T1-1-D1-1	0.223	1505PMS2	p.L731fs*3	frameshift_variant	UNKNOWN
12	133263886	C	G	E-H-108032-T2-1-D1-1	0.079	76POLE	p.G6R	non_synonymous_codon	UNKNOWN
X	53222633	G	A	E-H-108032-T2-1-D1-1	0.46	153KDM5C	p.R1435C	non_synonymous_codon	UNKNOWN
22	46704656	C	T	E-H-108032-T2-1-D1-1	0.52	130GTSE1	p.S193F	non_synonymous_codon	UNKNOWN
5	149452916	C	T	E-H-108032-T2-1-D1-1	0.49	233CSF1R	p.D344N	non_synonymous_codon	UNKNOWN
11	22646984	C	T	E-H-108032-T2-1-D1-1	0.44	129FANCF	p.D125N	non_synonymous_codon	UNKNOWN
8	38282064	A	G	E-H-108032-T2-1-D1-1	0.5	220FGFR1	p.I331T	non_synonymous_codon	UNKNOWN
16	360035	G	T	E-H-108032-T2-1-D1-1	0.4	203AXIN1	p.H352N	non_synonymous_codon	UNKNOWN
19	41726667	G	A	E-H-108032-T2-1-D1-1	0.51	203AXL	p.R71Q	non_synonymous_codon	UNKNOWN
1	46509469	A	G	E-H-108032-T2-1-D1-1	0.5	213PIK3R3	p.L421P	non_synonymous_codon	UNKNOWN
5	44388710	CAAA	C	E-H-108032-T2-1-D1-1	0.041	242FGF10	p.F24delF	inframe_codon_loss	UNKNOWN
17	7578238	TC	T	E-H-108032-T2-1-D1-1	0.021	234TP53	p.E204fs*43	frameshift_variant	LIKELY
17	37673751	T	G	E-H-108033-T1-1-D1-1	0.037	1215CDK12	p.F969V	non_synonymous_codon	UNKNOWN
12	40715870	G	C	E-H-108033-T1-1-D1-1	0.44	1439LRRK2	p.R1735P	non_synonymous_codon	UNKNOWN
5	138147939	C	T	E-H-108033-T1-1-D1-1	0.45	1133CTNNA1	p.A179V	non_synonymous_codon	UNKNOWN
4	55138608	G	A	E-H-108033-T1-1-D1-1	0.49	880PDGFRA	p.G429R	non_synonymous_codon	UNKNOWN
4	187510037	A	A	E-H-108033-T1-1-D1-1	0.5	1697FAT1	p.N4492K	non_synonymous_codon	UNKNOWN
16	2636756	C	T	E-H-108033-T1-1-D1-1	0.44	847PDPK1	p.T402M	non_synonymous_codon	UNKNOWN
2	16082353	T	TGCCACGCCCCCGCTGTC	E-H-108033-T1-1-D1-1	0.166	2054MYCN	p.P63_S64insTPPLSP	inframe_codon_gain	UNKNOWN
4	41748013	CGCCGCGCTGCCGCG	C	E-H-108033-T1-1-D1-1	0.23	456PHOX2B	p.A256_A260delAAAAA	inframe_codon_loss	UNKNOWN
12	121878753	C	CA	E-H-108033-T1-1-D1-1	0.316	810KDM2B	p.C1159fs*91	frameshift_variant	UNKNOWN
9	139405665	CCCG	C	E-H-108033-T1-1-D1-1	0.375	1833NOTCH1	p.G842delG	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108034-T1-1-D1-1	0.93	999JAK2	p.V617F	non_synonymous_codon	ONCOGENIC

16	68855966	G	A	E-H-108034-T1-1-D1-1	0.47	1000CDH1	p.A592T	non_synonymous_codon	UNKNOWN
3	189607152	C	A	E-H-108034-T1-1-D1-1	0.5	2198TP63	p.P511T	non_synonymous_codon	UNKNOWN
19	15349652	C	T	E-H-108034-T1-1-D1-1	0.5	1040BRD4	p.A1308T	non_synonymous_codon	UNKNOWN
18	42531907	G	T	E-H-108034-T1-1-D1-1	0.45	976SETBP1	p.D868Y	non_synonymous_codon	ONCOGENIC
7	148506477	C	T	E-H-108034-T1-1-D1-1	0.43	1259EZH2	p.V679M	non_synonymous_codon	ONCOGENIC
12	40761466	G	A	E-H-108034-T1-1-D1-1	0.47	1364LRRK2	p.V2495I	non_synonymous_codon	UNKNOWN
9	87570239	C	T	E-H-108034-T1-1-D1-1	0.49	615NTRK2	p.P660L	non_synonymous_codon	UNKNOWN
12	57864519	C	T	E-H-108034-T1-1-D1-1	0.49	1229GLI1	p.P666S	non_synonymous_codon	UNKNOWN
1	120510113	G	T	E-H-108034-T1-1-D1-1	0.49	1489NOTCH2	p.Q466K	non_synonymous_codon	UNKNOWN
6	117686261	C	T	E-H-108034-T1-1-D1-1	0.47	1341ROS1	p.G1027D	non_synonymous_codon	UNKNOWN
12	472260	C	T	E-H-108034-T1-1-D1-1	0.47	963KDM5A	p.V181M	non_synonymous_codon	UNKNOWN
22	38369826	C	G	E-H-108034-T1-1-D1-1	0.51	695SOX10	p.E359D	non_synonymous_codon	UNKNOWN
11	92532829	G	A	E-H-108034-T1-1-D1-1	0.5	1724FAT3	p.G2217D	non_synonymous_codon	UNKNOWN
19	30308425	A	G	E-H-108035-T1-1-D1-1	0.5	1397CCNE1	p.I147V	non_synonymous_codon	UNKNOWN
X	66766350	G	GGGT	E-H-108035-T1-1-D1-1	0.136	641AR	p.G473_E474insG	inframe_codon_gain	UNKNOWN
17	74732959	G	C	E-H-108036-T1-1-D1-1	0.42	511SRSF2	p.P95R	non_synonymous_codon	ONCOGENIC
15	90631934	C	T	E-H-108036-T1-1-D1-1	0.42	12171DH2	p.R140Q	non_synonymous_codon	ONCOGENIC
1	115258747	C	T	E-H-108036-T1-1-D1-1	0.42	1186NRAS	p.G12D	non_synonymous_codon	ONCOGENIC
2	25967303	G	A	E-H-108036-T1-1-D1-1	0.42	419ASXL2	p.Q835*	stop_gained	UNKNOWN
20	40713470	G	A	E-H-108036-T1-1-D1-1	0.084	964PTPR1	p.R1349C	non_synonymous_codon	UNKNOWN
17	63554536	C	T	E-H-108036-T1-1-D1-1	0.5	809AXIN2	p.R68Q	non_synonymous_codon	UNKNOWN
5	180057235	C	A	E-H-108036-T1-1-D1-1	0.39	682FLT4	p.T168M	non_synonymous_codon	UNKNOWN
2	242066201	C	T	E-H-108036-T1-1-D1-1	0.48	820PASK	p.G710D	non_synonymous_codon	UNKNOWN
18	19154416	T	TCAA	E-H-108036-T1-1-D1-1	0.399	2082ESCO1	p.T129_E130insV	inframe_codon_gain	UNKNOWN
2	198266834	T	C	E-H-108037-T1-1-D1-1	0.38	1535SF3B1	p.K700E	non_synonymous_codon	ONCOGENIC
12	40697770	G	A	E-H-108037-T1-1-D1-1	0.48	1475LRRK2	p.S1204N	non_synonymous_codon	UNKNOWN
12	40702403	G	A	E-H-108037-T1-1-D1-1	0.47	1230LRRK2	p.Q1365R	non_synonymous_codon	UNKNOWN
11	92569867	G	T	E-H-108037-T1-1-D1-1	0.45	573FAT3	p.R3408W	non_synonymous_codon	UNKNOWN
2	58431344	C	A	E-H-108037-T1-1-D1-1	0.49	1041FANCL	p.T131I	non_synonymous_codon	UNKNOWN
3	89468520	T	C	E-H-108037-T1-1-D1-1	0.44	986EPA3	p.L685P	non_synonymous_codon	UNKNOWN
4	109004539	A	C	E-H-108038-T1-1-D1-1	0.43	642LEF1	p.V204G	non_synonymous_codon	UNKNOWN
17	41243509	T	C	E-H-108038-T1-1-D1-1	0.47	1848BRCA1	p.R1347G	non_synonymous_codon	UNKNOWN
16	23646939	T	C	E-H-108038-T1-1-D1-1	0.49	1665PALB2	p.S310G	non_synonymous_codon	UNKNOWN
14	103357665	A	T	E-H-108038-T1-1-D1-1	0.52	644TRAF3	p.T244S	non_synonymous_codon	UNKNOWN
12	122012485	T	C	E-H-108038-T1-1-D1-1	0.48	949KDM2B	p.D122N	non_synonymous_codon	UNKNOWN
6	149982876	C	T	E-H-108038-T1-1-D1-1	0.45	796LATS1	p.V1128I	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGAACAAAGAAACGCAAAAGAGGAGGAGGAG	A	E-H-108038-T1-1-D1-1	0.191	810CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
2	192011484	CT	C	E-H-108038-T1-1-D1-1	0.095	1086STAT4	p.?	splice_site_variant	UNKNOWN
5	131926964	A	G	E-H-108039-T1-1-D1-1	0.48	1287RAD50	p.K501E	non_synonymous_codon	UNKNOWN
2	190719607	G	A	E-H-108039-T1-1-D1-1	0.48	1218PMS1	p.E537K	non_synonymous_codon	UNKNOWN
12	7064576	C	A	E-H-108039-T1-1-D1-1	0.5	870PTPN6	p.N225K	non_synonymous_codon	UNKNOWN
19	13054627	AGGAGGATGATGAGGACAAAGATGAGGATGA	ATTGTC	E-H-108039-T1-1-D1-1	0.007	965CALR	p.K385fs*37	frameshift_variant	LIKELY
19	13054627	A	ATTGTC	E-H-108039-T1-1-D1-1	0.324	965CALR	p.K385fs*47	frameshift_variant	LIKELY
11	119148871	CAAAGGAACAATATGA	C	E-H-108039-T1-1-D1-1	0.291	670CBL	p.?	complex_change_in_transcript	UNKNOWN
4	106164861	ACT	A	E-H-108039-T1-1-D1-1	0.391	838TET2	p.Y1245fs*22	frameshift_variant	LIKELY
7	151882672	C	A	E-H-108040-T1-1-D1-1	0.17	1744KMT2C	p.A1685S	non_synonymous_codon	LIKELY
8	15480643	A	G	E-H-108040-T1-1-D1-1	0.42	907TUSC3	p.I65V	non_synonymous_codon	UNKNOWN
2	96810968	G	T	E-H-108040-T1-1-D1-1	0.53	126DUSP2	p.H42Q	non_synonymous_codon	UNKNOWN
14	95562235	G	C	E-H-108040-T1-1-D1-1	0.46	1194DICER1	p.N1674K	non_synonymous_codon	UNKNOWN
5	131911535	A	C	E-H-108040-T1-1-D1-1	0.49	1388RAD50	p.I94L	non_synonymous_codon	UNKNOWN
11	22646387	T	C	E-H-108040-T1-1-D1-1	0.5	2190FANCF	p.K324E	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGAACAAAGAAACGCAAAAGAGGAGGAGGAG	A	E-H-108040-T1-1-D1-1	0.253	908CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
9	5073770	G	T	E-H-108041-T1-1-D1-1	0.33	836JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
17	74732959	G	A	E-H-108041-T1-1-D1-1	0.38	521SRSF2	p.P95L	non_synonymous_codon	ONCOGENIC
15	90631934	C	T	E-H-108041-T1-1-D1-1	0.28	11981DH2	p.R140Q	non_synonymous_codon	ONCOGENIC
1	115258747	C	T	E-H-108041-T1-1-D1-1	0.1	1127NRAS	p.G12D	non_synonymous_codon	ONCOGENIC
1	120478125	A	C	E-H-108041-T1-1-D1-1	0.48	1073NOTCH2	p.F1209V	non_synonymous_codon	UNKNOWN
18	33754519	C	T	E-H-108041-T1-1-D1-1	0.43	533ELP2	p.A799V	non_synonymous_codon	UNKNOWN
19	30308425	A	G	E-H-108041-T1-1-D1-1	0.49	892CCNE1	p.I147V	non_synonymous_codon	UNKNOWN
2	96810968	G	C	E-H-108041-T1-1-D1-1	0.39	114DUSP2	p.H42Q	non_synonymous_codon	UNKNOWN
2	215657111	T	C	E-H-108041-T1-1-D1-1	0.46	1155BARD1	p.I92V	non_synonymous_codon	UNKNOWN
1	156845431	G	A	E-H-108041-T1-1-D1-1	0.47	887NTRK1	p.E492K	non_synonymous_codon	UNKNOWN
9	5073770	G	T	E-H-108042-T1-1-D1-1	0.25	677JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
17	17118598	C	T	E-H-108042-T1-1-D1-1	0.81	665FLCN	p.A445T	non_synonymous_codon	UNKNOWN
11	92623798	G	A	E-H-108042-T1-1-D1-1	0.5	885FAT3	p.G4430D	non_synonymous_codon	UNKNOWN
15	67482854	C	T	E-H-108042-T1-1-D1-1	0.48	551SMAD3	p.R420C	non_synonymous_codon	UNKNOWN
6	26156950	C	T	E-H-108042-T1-1-D1-1	0.44	735HIST1H1E	p.A111V	non_synonymous_codon	UNKNOWN
2	25463289	T	G	E-H-108042-T1-1-D1-1	0.3	374DNMT3A	p.Y735S	non_synonymous_codon	LIKELY
5	57752397	A	C	E-H-108042-T1-1-D1-1	0.48	609PLK2	p.D392E	non_synonymous_codon	UNKNOWN
10	98127958	C	T	E-H-108042-T1-1-D1-1	0.41	384TLL2	p.A979T	non_synonymous_codon	UNKNOWN
3	136062708	A	T	E-H-108042-T1-1-D1-1	0.48	584STAG1	p.S1138T	non_synonymous_codon	UNKNOWN
14	95562994	ATCC	A	E-H-108042-T1-1-D1-1	0.382	840DICER1	p.E1420delE	inframe_codon_loss	UNKNOWN
22	41573818	CAGGT	C	E-H-108042-T1-1-D1-1	0.232	1071EP300	p.G2037fs*96	frameshift_variant	UNKNOWN
4	106194058	AG	A	E-H-108042-T1-1-D1-1	0.332	720TET2	p.A1508fs*63	frameshift_variant	UNKNOWN
5	44305104	T	G	E-H-108043-T1-1-D1-1	0.49	826FGF10	p.H207P	non_synonymous_codon	UNKNOWN

17	59760706	A	C	E-H-108053-T1-1-D1-1	0.46	1817BRIP1	p.F1234C	non_synonymous_codon	UNKNOWN
1	115258674	T	C	E-H-108053-T1-1-D1-1	0.33	1034NRAS	p.I36M	non_synonymous_codon	UNKNOWN
19	15367881	G	A	E-H-108053-T1-1-D1-1	0.51	1320BRD4	p.P482L	non_synonymous_codon	UNKNOWN
12	120791153	C	T	E-H-108053-T1-1-D1-1	0.56	773MSI1	p.A228T	non_synonymous_codon	UNKNOWN
17	37872145	C	T	E-H-108053-T1-1-D1-1	0.48	1712ERBB2	p.P489L	non_synonymous_codon	UNKNOWN
6	26056508	G	A	E-H-108053-T1-1-D1-1	0.48	1100HIST1H1C	p.A50V	non_synonymous_codon	UNKNOWN
17	63533533	A	G	E-H-108053-T1-1-D1-1	0.51	1422AXIN2	p.C541R	non_synonymous_codon	UNKNOWN
6	162622180	C	T	E-H-108053-T1-1-D1-1	0.47	1091PARK2	p.T173A	non_synonymous_codon	UNKNOWN
5	180052965	G	A	E-H-108053-T1-1-D1-1	0.48	1097FLT4	p.A442V	non_synonymous_codon	UNKNOWN
16	2134981	CCTT	C	E-H-108053-T1-1-D1-1	0.439	2003TSC2	p.F1510delF	inframe_codon_loss	UNKNOWN
13	48878084	CGCCGCCGCT	C	E-H-108053-T1-1-D1-1	0.337	786RB1	p.A16_A18delAA	inframe_codon_loss	UNKNOWN
2	25973089	CTTCTT	C	E-H-108053-T1-1-D1-1	0.35	1280ASXL2	p.K444fs*3	frameshift_variant	UNKNOWN
18	31326012	T	G	E-H-108054-T1-1-D1-1	0.49	1148ASXL3	p.L2067R	non_synonymous_codon	UNKNOWN
11	92623798	G	A	E-H-108054-T1-1-D1-1	0.5	1429FAT3	p.G4430D	non_synonymous_codon	UNKNOWN
17	30293198	G	T	E-H-108054-T1-1-D1-1	0.094	768SUZ12	p.G163V	non_synonymous_codon	LIKELY
10	89720772	G	A	E-H-108054-T1-1-D1-1	0.49	1580PTEN	p.R308H	non_synonymous_codon	UNKNOWN
7	148507444	A	T	E-H-108054-T1-1-D1-1	0.42	1377EZH2	p.F670L	non_synonymous_codon	UNKNOWN
2	242047665	G	A	E-H-108054-T1-1-D1-1	0.47	1514PASK	p.T1202M	non_synonymous_codon	UNKNOWN
7	30496374	G	A	E-H-108054-T1-1-D1-1	0.5	1013NOD1	p.A55V	non_synonymous_codon	UNKNOWN
7	30496518	C	T	E-H-108054-T1-1-D1-1	0.47	1147NOD1	p.S7N	non_synonymous_codon	UNKNOWN
18	32920196	G	A	E-H-108054-T1-1-D1-1	0.44	1346ZNF24	p.P140L	non_synonymous_codon	UNKNOWN
1	36932258	G	A	E-H-108054-T1-1-D1-1	0.46	1221CSF3R	p.P706L	non_synonymous_codon	LIKELY
12	56495798	C	T	E-H-108054-T1-1-D1-1	0.46	846ERBB3	p.H1330V	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGCCTTAAGGAGGAGGAAGAAGCAAGAAACGCAAGAGGAGGAGGAG	A	E-H-108054-T1-1-D1-1	0.264	897CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
8	41790755	C	CGCCTGTGGCTGCTGT	E-H-108054-T1-1-D1-1	0.19	395KAT6A	p.P1651_P1662nsQQQP	inframe_codon_gain	UNKNOWN
9	5073770	G	T	E-H-108055-T1-1-D1-1	0.41	1202JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
15	90631934	C	T	E-H-108055-T1-1-D1-1	0.45	1498DH2	p.R140Q	non_synonymous_codon	ONCOGENIC
17	17118598	C	T	E-H-108055-T1-1-D1-1	0.47	1195FLCN	p.A445T	non_synonymous_codon	UNKNOWN
X	63412863	C	T	E-H-108055-T1-1-D1-1	0.48	2162AMER1	p.A102T	non_synonymous_codon	UNKNOWN
11	76227206	C	T	E-H-108055-T1-1-D1-1	0.47	1589C11orf30	p.R512W	non_synonymous_codon	UNKNOWN
3	142269097	A	T	E-H-108055-T1-1-D1-1	0.48	1663ATR	p.N951K	non_synonymous_codon	UNKNOWN
7	148506435	T	A	E-H-108055-T1-1-D1-1	0.89	734EZH2	p.N693Y	non_synonymous_codon	UNKNOWN
7	151944991	T	C	E-H-108055-T1-1-D1-1	0.14	1593KMT2C	p.K843R	non_synonymous_codon	UNKNOWN
12	133253974	C	T	E-H-108055-T1-1-D1-1	0.48	2246POLE	p.R259H	non_synonymous_codon	UNKNOWN
1	45797914	C	T	E-H-108055-T1-1-D1-1	0.48	1549MUTYH	p.G283E	non_synonymous_codon	UNKNOWN
X	76777847	T	C	E-H-108055-T1-1-D1-1	0.45	1028ATRX	p.N2290S	non_synonymous_codon	UNKNOWN
X	110406896	A	G	E-H-108055-T1-1-D1-1	0.47	2050PAK3	p.N272S	non_synonymous_codon	UNKNOWN
11	3756555	CT	C	E-H-108055-T1-1-D1-1	0.095	497NUP98	p.?	splice_site_variant	UNKNOWN
20	31021156	C	CTTGT	E-H-108055-T1-1-D1-1	0.351	1015ASXL1	p.C387fs*24	frameshift_variant	LIKELY
5	149495360	G	A	E-H-108056-T1-1-D1-1	0.49	471PDGFRB	p.A1096V	non_synonymous_codon	UNKNOWN
15	88472622	G	A	E-H-108056-T1-1-D1-1	0.46	609NTRK3	p.R645C	non_synonymous_codon	UNKNOWN
1	206942010	G	T	E-H-108056-T1-1-D1-1	0.45	682LIL10	p.A170T	non_synonymous_codon	UNKNOWN
1	36932047	C	T	E-H-108056-T1-1-D1-1	0.47	840CSF3R	p.E835K	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGCCTTAAGGAGGAGGAAGAAGCAAGAAACGCAAGAGGAGGAGGAG	A	E-H-108056-T1-1-D1-1	0.197	714CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
11	3756555	CT	C	E-H-108056-T1-1-D1-1	0.098	410NUP98	p.?	splice_site_variant	UNKNOWN
20	31022286	T	TA	E-H-108056-T1-1-D1-1	0.08	566ASXL1	p.Y591fs*1	frameshift_variant	LIKELY
5	79506696	CGCTGCAGCG	C	E-H-108056-T1-1-D1-1	0.232	1398MSH3	p.A60_A62delAA	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108057-T1-1-D1-1	0.22	1097JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
8	128750527	T	C	E-H-108057-T1-1-D1-1	0.48	2071MYC	p.F22L	non_synonymous_codon	LIKELY
12	49443634	G	A	E-H-108057-T1-1-D1-1	0.49	797KMT2D	p.T1246M	non_synonymous_codon	UNKNOWN
7	128845589	C	T	E-H-108057-T1-1-D1-1	0.48	761SMO	p.R296C	non_synonymous_codon	UNKNOWN
12	121880447	CCTT	C	E-H-108057-T1-1-D1-1	0.368	2076KDM2B	p.K932delK	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108058-T1-1-D1-1	0.43	1379JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
8	128750527	T	C	E-H-108058-T1-1-D1-1	0.48	2345MYC	p.F22L	non_synonymous_codon	LIKELY
12	49443634	G	A	E-H-108058-T1-1-D1-1	0.47	954KMT2D	p.T1246M	non_synonymous_codon	UNKNOWN
20	31379479	G	A	E-H-108058-T1-1-D1-1	0.68	832DNMT3B	p.V296I	non_synonymous_codon	UNKNOWN
7	2565181	C	T	E-H-108058-T1-1-D1-1	0.48	1993LFGN	p.R239W	non_synonymous_codon	UNKNOWN
5	79974749	G	A	E-H-108058-T1-1-D1-1	0.48	749MSH3	p.V393M	non_synonymous_codon	UNKNOWN
2	141986957	C	A	E-H-108058-T1-1-D1-1	0.46	1614LRP1B	p.E215D	non_synonymous_codon	UNKNOWN
19	15350575	TCTC	T	E-H-108058-T1-1-D1-1	0.428	1379BRD4	p.E1113delE	inframe_codon_loss	UNKNOWN
7	82581487	T	TTTC	E-H-108058-T1-1-D1-1	0.766	1733PCLO	p.E2927_K2928nsE	inframe_codon_gain	UNKNOWN
17	30323836	A	T	E-H-108059-T1-1-D1-1	0.27	779SUZ12	p.D605V	non_synonymous_codon	UNKNOWN
12	124914179	C	T	E-H-108059-T1-1-D1-1	0.5	1135NCOR2	p.D377N	non_synonymous_codon	UNKNOWN
5	158158076	C	A	E-H-108059-T1-1-D1-1	0.44	954EBF1	p.?	splice_site_variant	UNKNOWN
13	103518693	G	A	E-H-108059-T1-1-D1-1	0.48	1023ERCC5	p.A761T	non_synonymous_codon	UNKNOWN
2	242066279	G	A	E-H-108059-T1-1-D1-1	0.52	765PASK	p.P684L	non_synonymous_codon	UNKNOWN
2	242080058	C	T	E-H-108059-T1-1-D1-1	0.47	737PASK	p.G103S	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGCCTTAAGGAGGAGGAAGAAGCAAGAAACGCAAGAGGAGGAGGAG	A	E-H-108059-T1-1-D1-1	0.225	717CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
4	106155665	GT	G	E-H-108059-T1-1-D1-1	0.213	1260TET2	p.S189fs*18	frameshift_variant	UNKNOWN
17	30264347	T	TCGG	E-H-108059-T1-1-D1-1	0.334	388SUZ12	p.A30_V31nsA	inframe_codon_gain	UNKNOWN
5	131931472	G	A	E-H-108060-T1-1-D1-1	0.48	1239RAD50	p.R726H	non_synonymous_codon	UNKNOWN
17	17131238	T	C	E-H-108060-T1-1-D1-1	0.46	1649FLCN	p.S72G	non_synonymous_codon	UNKNOWN
1	120611948	T	T	E-H-108060-T1-1-D1-1	0.2	81NOTCH2	p.A25T	non_synonymous_codon	UNKNOWN
7	148506161	A	G	E-H-108060-T1-1-D1-1	0.95	1157EZH2	p.?	splice_site_variant	LIKELY
2	209113113	G	A	E-H-108060-T1-1-D1-1	0.46	879DH1	p.R132C	non_synonymous_codon	ONCOGENIC

17	59760706	A	C	E-H-108053-T1-1-D1-1	0.46	1817BRIP1	p.F1234C	non_synonymous_codon	UNKNOWN
1	115258674	T	C	E-H-108053-T1-1-D1-1	0.33	1034NBRAS	p.I36M	non_synonymous_codon	UNKNOWN
19	15367881	G	A	E-H-108053-T1-1-D1-1	0.51	1320BRD4	p.P482L	non_synonymous_codon	UNKNOWN
12	120791153	C	T	E-H-108053-T1-1-D1-1	0.56	773MSH1	p.A228T	non_synonymous_codon	UNKNOWN
17	37872145	T	T	E-H-108053-T1-1-D1-1	0.48	1712ERB2	p.P489L	non_synonymous_codon	UNKNOWN
6	26056508	G	A	E-H-108053-T1-1-D1-1	0.48	1100HIST1H1C	p.A50V	non_synonymous_codon	UNKNOWN
17	63533533	A	G	E-H-108053-T1-1-D1-1	0.51	1422AXIN2	p.C541R	non_synonymous_codon	UNKNOWN
6	162622180	T	C	E-H-108053-T1-1-D1-1	0.47	1091PARK2	p.T173A	non_synonymous_codon	UNKNOWN
5	180052965	G	A	E-H-108053-T1-1-D1-1	0.48	1097FLT4	p.A442V	non_synonymous_codon	UNKNOWN
16	2134981	CCTT	C	E-H-108053-T1-1-D1-1	0.439	2003TSC2	p.F1510delF	inframe_codon_loss	UNKNOWN
13	48878084	CGCCGCCGCT	C	E-H-108053-T1-1-D1-1	0.337	786RB1	p.A16_A18delAA	inframe_codon_loss	UNKNOWN
2	25973089	CTTCTT	C	E-H-108053-T1-1-D1-1	0.35	1280ASXL2	p.K444fs*3	frameshift_variant	UNKNOWN
18	31326012	T	G	E-H-108054-T1-1-D1-1	0.49	1148ASXL3	p.L2067R	non_synonymous_codon	UNKNOWN
11	92623798	G	A	E-H-108054-T1-1-D1-1	0.5	1429FAT3	p.G4430D	non_synonymous_codon	UNKNOWN
17	30293198	G	T	E-H-108054-T1-1-D1-1	0.094	768SUZ12	p.G163V	non_synonymous_codon	LIKELY
10	89720772	G	A	E-H-108054-T1-1-D1-1	0.49	1580PTEN	p.R308H	non_synonymous_codon	UNKNOWN
7	148507444	A	T	E-H-108054-T1-1-D1-1	0.42	1377EZH2	p.F670L	non_synonymous_codon	UNKNOWN
2	242047665	G	A	E-H-108054-T1-1-D1-1	0.47	1514PASK	p.T1202M	non_synonymous_codon	UNKNOWN
7	30496374	G	A	E-H-108054-T1-1-D1-1	0.5	1013NOD1	p.A55V	non_synonymous_codon	UNKNOWN
7	30496518	C	T	E-H-108054-T1-1-D1-1	0.47	1147NOD1	p.S7N	non_synonymous_codon	UNKNOWN
18	32920196	G	A	E-H-108054-T1-1-D1-1	0.44	1346ZNF24	p.P140L	non_synonymous_codon	UNKNOWN
1	36932258	A	A	E-H-108054-T1-1-D1-1	0.46	1221CSF3R	p.P706L	non_synonymous_codon	LIKELY
12	56485798	C	T	E-H-108054-T1-1-D1-1	0.46	846ERBB3	p.H1330Y	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGCAAGAAACGCAAAAGAGGAGGAGGAG	A	E-H-108054-T1-1-D1-1	0.264	897CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
8	41790755	C	CGGCTGTGGCTGCTGT	E-H-108054-T1-1-D1-1	0.19	395KAT6A	p.P1661_P1662nsQPPQP	inframe_codon_gain	UNKNOWN
9	5073770	G	T	E-H-108055-T1-1-D1-1	0.41	1202JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
15	90631934	C	T	E-H-108055-T1-1-D1-1	0.45	1498DH2	p.R140Q	non_synonymous_codon	ONCOGENIC
17	17118598	C	T	E-H-108055-T1-1-D1-1	0.47	1195FLCN	p.A445T	non_synonymous_codon	UNKNOWN
X	63412863	C	T	E-H-108055-T1-1-D1-1	0.48	2162AMER1	p.A102T	non_synonymous_codon	UNKNOWN
11	76227206	C	T	E-H-108055-T1-1-D1-1	0.47	1589C11orf30	p.R512W	non_synonymous_codon	UNKNOWN
3	142269097	A	T	E-H-108055-T1-1-D1-1	0.48	1663ATR	p.N951K	non_synonymous_codon	UNKNOWN
7	148506435	T	A	E-H-108055-T1-1-D1-1	0.89	734EZH2	p.N693Y	non_synonymous_codon	UNKNOWN
7	151944991	T	C	E-H-108055-T1-1-D1-1	0.14	1593KMT2C	p.K843R	non_synonymous_codon	UNKNOWN
12	133253974	C	C	E-H-108055-T1-1-D1-1	0.48	2246POLE	p.R259H	non_synonymous_codon	UNKNOWN
1	45797914	C	T	E-H-108055-T1-1-D1-1	0.48	1549MUTYH	p.G283E	non_synonymous_codon	UNKNOWN
X	76777847	T	A	E-H-108055-T1-1-D1-1	0.45	1028ATRX	p.N2290S	non_synonymous_codon	UNKNOWN
X	110406896	A	G	E-H-108055-T1-1-D1-1	0.47	2050PAK3	p.N272S	non_synonymous_codon	UNKNOWN
11	3756555	CT	C	E-H-108055-T1-1-D1-1	0.095	497NUP98	p.?	splice_site_variant	UNKNOWN
20	31021156	C	CTTGT	E-H-108055-T1-1-D1-1	0.351	1015ASXL1	p.C387fs*24	frameshift_variant	LIKELY
5	149495360	G	A	E-H-108056-T1-1-D1-1	0.49	471PDGFRB	p.A1096V	non_synonymous_codon	UNKNOWN
15	88472622	G	A	E-H-108056-T1-1-D1-1	0.46	869NTRK3	p.R645C	non_synonymous_codon	UNKNOWN
1	208942010	T	C	E-H-108056-T1-1-D1-1	0.45	862IL10	p.A170T	non_synonymous_codon	UNKNOWN
1	38932047	C	T	E-H-108056-T1-1-D1-1	0.47	840CSF3R	p.E835K	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGCAAGAAACGCAAAAGAGGAGGAGGAG	A	E-H-108056-T1-1-D1-1	0.197	714CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
11	3756555	CT	C	E-H-108056-T1-1-D1-1	0.098	410NUP98	p.?	splice_site_variant	UNKNOWN
20	31022286	T	TA	E-H-108056-T1-1-D1-1	0.08	566ASXL1	p.Y591fs*1	frameshift_variant	LIKELY
5	79950696	CGCTGCAGCG	C	E-H-108056-T1-1-D1-1	0.232	1398MSH3	p.A60_A62delAA	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108057-T1-1-D1-1	0.22	1097JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
8	128750527	T	C	E-H-108057-T1-1-D1-1	0.48	2071MYC	p.F22L	non_synonymous_codon	LIKELY
12	49443634	G	A	E-H-108057-T1-1-D1-1	0.49	797KMT2D	p.T1246M	non_synonymous_codon	UNKNOWN
7	128845589	C	T	E-H-108057-T1-1-D1-1	0.48	761SMO	p.R296C	non_synonymous_codon	UNKNOWN
12	121880447	CCTT	C	E-H-108057-T1-1-D1-1	0.368	2076KDM2B	p.K932delK	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108058-T1-1-D1-1	0.43	1379JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
8	128750527	T	C	E-H-108058-T1-1-D1-1	0.48	2345MYC	p.F22L	non_synonymous_codon	LIKELY
12	49443634	G	A	E-H-108058-T1-1-D1-1	0.47	954KMT2D	p.T1246M	non_synonymous_codon	UNKNOWN
20	31379479	G	A	E-H-108058-T1-1-D1-1	0.68	832DNMT3B	p.V296I	non_synonymous_codon	UNKNOWN
7	2565181	C	T	E-H-108058-T1-1-D1-1	0.48	1993LFNG	p.R239W	non_synonymous_codon	UNKNOWN
5	79974749	G	A	E-H-108058-T1-1-D1-1	0.48	749MSH3	p.V393M	non_synonymous_codon	UNKNOWN
2	141986957	C	A	E-H-108058-T1-1-D1-1	0.46	1614LRP1B	p.E215D	non_synonymous_codon	UNKNOWN
19	15350575	TCTC	T	E-H-108058-T1-1-D1-1	0.428	1379BRD4	p.E1113delE	inframe_codon_loss	UNKNOWN
7	82581487	T	TTTC	E-H-108058-T1-1-D1-1	0.766	1733PCLO	p.E2927_K2928nsE	inframe_codon_gain	UNKNOWN
17	30323836	A	T	E-H-108059-T1-1-D1-1	0.27	779SUZ12	p.D605V	non_synonymous_codon	UNKNOWN
12	124914179	C	T	E-H-108059-T1-1-D1-1	0.5	1135NCOR2	p.D377N	non_synonymous_codon	UNKNOWN
5	158158076	C	A	E-H-108059-T1-1-D1-1	0.44	954EBF1	p.?	splice_site_variant	UNKNOWN
13	103518693	G	A	E-H-108059-T1-1-D1-1	0.48	1023ERCC5	p.A761T	non_synonymous_codon	UNKNOWN
2	242066279	G	A	E-H-108059-T1-1-D1-1	0.52	765PASK	p.P684L	non_synonymous_codon	UNKNOWN
2	242080058	C	T	E-H-108059-T1-1-D1-1	0.47	737PASK	p.G103S	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGCAAGAAACGCAAAAGAGGAGGAGGAG	A	E-H-108059-T1-1-D1-1	0.225	717CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
4	106155665	GT	G	E-H-108059-T1-1-D1-1	0.213	1260TET2	p.S189fs*18	frameshift_variant	UNKNOWN
17	30264347	T	TCGG	E-H-108059-T1-1-D1-1	0.334	368SUZ12	p.A30_V31nsA	inframe_codon_gain	UNKNOWN
5	131931472	G	A	E-H-108060-T1-1-D1-1	0.48	1239RAD50	p.R726H	non_synonymous_codon	UNKNOWN
17	17131238	T	C	E-H-108060-T1-1-D1-1	0.46	1649FLCN	p.S72G	non_synonymous_codon	UNKNOWN
1	120611948	T	T	E-H-108060-T1-1-D1-1	0.2	81NOTCH2	p.A25T	non_synonymous_codon	UNKNOWN
7	148506161	A	G	E-H-108060-T1-1-D1-1	0.95	1157EZH2	p.?	splice_site_variant	LIKELY
2	209113113	G	A	E-H-108060-T1-1-D1-1	0.46	879IDH1	p.R132C	non_synonymous_codon	ONCOGENIC

18	31325847	A	G	E-H-108070-T1-1-D1-1	0.48	897ASXL3	p.K2012R	non_synonymous_codon	UNKNOWN
12	46242680	G	T	E-H-108070-T1-1-D1-1	0.07	1501ARID2	p.E548*	stop_gained	UNKNOWN
14	68353784	G	T	E-H-108070-T1-1-D1-1	0.44	844RAD51B	p.V207L	non_synonymous_codon	UNKNOWN
12	115112299	G	A	E-H-108070-T1-1-D1-1	0.5	593TBX3	p.P481S	non_synonymous_codon	UNKNOWN
13	41134320	C	G	E-H-108070-T1-1-D1-1	0.51	1370FOXO1	p.Q436H	non_synonymous_codon	UNKNOWN
12	49422892	A	A	E-H-108070-T1-1-D1-1	0.44	769KMT2D	p.R4735W	non_synonymous_codon	UNKNOWN
17	63533026	G	G	E-H-108070-T1-1-D1-1	0.5	1816AXIN2	p.M623T	non_synonymous_codon	UNKNOWN
17	41244213	TCTTG	T	E-H-108070-T1-1-D1-1	0.366	1465BRCA1	p.Q1111fs*5	frameshift_variant	UNKNOWN
9	5073770	G	T	E-H-108071-T1-1-D1-1	0.2	1246JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
21	44514777	T	C	E-H-108071-T1-1-D1-1	0.11	1341U2AF1	p.Q157R	non_synonymous_codon	ONCOGENIC
4	55964925	G	A	E-H-108071-T1-1-D1-1	0.46	1630KDR	p.T771M	non_synonymous_codon	UNKNOWN
6	15520399	C	G	E-H-108071-T1-1-D1-1	0.45	1856JARID2	p.P1220A	non_synonymous_codon	UNKNOWN
3	189526156	G	C	E-H-108071-T1-1-D1-1	0.47	2335TP63	p.Q140H	non_synonymous_codon	UNKNOWN
9	22006147	C	T	E-H-108071-T1-1-D1-1	0.46	1185CDKN2B	p.D86N	non_synonymous_codon	UNKNOWN
17	56436023	G	A	E-H-108071-T1-1-D1-1	0.49	596RNF43	p.P372S	non_synonymous_codon	UNKNOWN
12	49425001	G	A	E-H-108071-T1-1-D1-1	0.48	1680KMT2D	p.A4496V	non_synonymous_codon	UNKNOWN
10	88676927	C	G	E-H-108071-T1-1-D1-1	0.45	1280BMPR1A	p.R238G	non_synonymous_codon	UNKNOWN
2	98930966	C	A	E-H-108071-T1-1-D1-1	0.48	1567TMEM127	p.A52S	non_synonymous_codon	UNKNOWN
20	31022402	TCACCCTGCCATAGAGAGCGGGC	T	E-H-108071-T1-1-D1-1	0.113	335ASXL1	p.E635fs*15	frameshift_variant	LIKELY
22	41574510	TCAG	T	E-H-108071-T1-1-D1-1	0.439	1589EP300	p.Q2268delQ	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108072-T1-1-D1-1	0.29	997JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
21	44514777	T	G	E-H-108072-T1-1-D1-1	0.35	1181U2AF1	p.Q157P	non_synonymous_codon	ONCOGENIC
2	211466932	G	A	E-H-108072-T1-1-D1-1	0.47	759CPS1	p.D578N	non_synonymous_codon	UNKNOWN
16	2611895	ACGAC	C	E-H-108072-T1-1-D1-1	0.213	3193PDPK1	p.D151fs*42	frameshift_variant	UNKNOWN
7	6037055	CTG	A	E-H-108072-T1-1-D1-1	0.086	706PMS2	p.?	splice_site_variant	UNKNOWN
20	31023519	GC	G	E-H-108072-T1-1-D1-1	0.33	889ASXL1	p.S1003fs*21	frameshift_variant	UNKNOWN
1	115258747	C	A	E-H-108073-T1-1-D1-1	0.23	1558NRAS	p.G12V	non_synonymous_codon	ONCOGENIC
7	82583427	G	A	E-H-108073-T1-1-D1-1	0.5	1570PCLO	p.P2281L	non_synonymous_codon	UNKNOWN
17	41226488	C	A	E-H-108073-T1-1-D1-1	0.47	1473BRCA1	p.S1533I	non_synonymous_codon	UNKNOWN
16	85952023	C	T	E-H-108073-T1-1-D1-1	0.49	1107IRF8	p.A201V	non_synonymous_codon	UNKNOWN
18	19154632	T	C	E-H-108073-T1-1-D1-1	0.48	1889ESCO1	p.N58S	non_synonymous_codon	UNKNOWN
2	58468447	A	G	E-H-108073-T1-1-D1-1	0.47	886FANCL	p.M1T	initiator_codon_change	UNKNOWN
10	129902839	C	C	E-H-108073-T1-1-D1-1	0.46	1630MKI67	p.R2422K	non_synonymous_codon	UNKNOWN
2	25469624	TC	T	E-H-108073-T1-1-D1-1	0.009	1224DNMT3A	p.K382fs*25	frameshift_variant	LIKELY
14	102551254	C	CTTCTTT	E-H-108073-T1-1-D1-1	0.223	2639HSP90AA1	p.E370_E371ins KE	inframe_codon_gain	UNKNOWN
16	3808050	CT	C	E-H-108073-T1-1-D1-1	0.091	757CREBBP	p.?	splice_site_variant	UNKNOWN
13	25077802	G	A	E-H-108074-T1-1-D1-1	0.47	1524PARP4	p.S38F	non_synonymous_codon	UNKNOWN
15	88678553	T	C	E-H-108074-T1-1-D1-1	0.51	568NTRK3	p.N328S	non_synonymous_codon	UNKNOWN
5	35871197	G	A	E-H-108074-T1-1-D1-1	0.49	995IL7R	p.R140Q	non_synonymous_codon	UNKNOWN
5	149502624	A	A	E-H-108074-T1-1-D1-1	0.52	563PDGFRB	p.V722F	non_synonymous_codon	UNKNOWN
7	6027128	G	C	E-H-108074-T1-1-D1-1	0.46	1440PMS2	p.A423G	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGACAAGAAACGCAAAAGGAGGAGGAG	A	E-H-108074-T1-1-D1-1	0.188	778CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
3	70008501	G	A	E-H-108075-T1-1-D1-1	0.059	844MITF	p.R364H	non_synonymous_codon	UNKNOWN
9	97869376	T	C	E-H-108075-T1-1-D1-1	0.48	573FANCC	p.H502R	non_synonymous_codon	UNKNOWN
6	117714393	T	C	E-H-108075-T1-1-D1-1	0.51	1047ROS1	p.Y419C	non_synonymous_codon	UNKNOWN
1	162745629	G	C	E-H-108075-T1-1-D1-1	0.36	1199DDR2	p.V682L	non_synonymous_codon	UNKNOWN
17	37864584	A	C	E-H-108075-T1-1-D1-1	0.46	807ERBB2	p.E79A	non_synonymous_codon	UNKNOWN
19	19256620	C	C	E-H-108075-T1-1-D1-1	0.53	422MEF2B	p.G365S	non_synonymous_codon	UNKNOWN
19	18271319	T	T	E-H-108075-T1-1-D1-1	0.47	1361PIK3R2	p.P121S	non_synonymous_codon	UNKNOWN
X	47426061	C	T	E-H-108075-T1-1-D1-1	0.47	1169ARAF	p.P194L	non_synonymous_codon	UNKNOWN
20	31022402	TCACCCTGCCATAGAGAGCGGGC	T	E-H-108075-T1-1-D1-1	0.032	250ASXL1	p.E635fs*15	frameshift_variant	LIKELY
19	13054567	AGAGGCTTAAGGAGGAGGAAGAACAAGAAACGCAAAAGGAGGAGGAG	A	E-H-108075-T1-1-D1-1	0.225	792CALR	p.L367fs*48	frameshift_variant	ONCOGENIC
9	5073770	G	T	E-H-108076-T1-1-D1-1	0.56	1464JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
8	15480643	A	G	E-H-108076-T1-1-D1-1	0.49	1155TUSC3	p.I65V	non_synonymous_codon	UNKNOWN
X	53222633	G	A	E-H-108076-T1-1-D1-1	1	584KDM5C	p.R1435C	non_synonymous_codon	UNKNOWN
9	93606540	T	A	E-H-108076-T1-1-D1-1	0.51	1586SYK	p.F120L	non_synonymous_codon	UNKNOWN
12	124950799	C	T	E-H-108076-T1-1-D1-1	0.48	1136NCOR2	p.E209K	non_synonymous_codon	UNKNOWN
6	26156632	C	T	E-H-108076-T1-1-D1-1	0.48	383HIST1H1E	p.A5V	non_synonymous_codon	UNKNOWN
8	41790761	TGGTGCTGTGGAGCGGTGGTGGC	T	E-H-108076-T1-1-D1-1	0.28	289KAT6A	p.P1652_P1659 delPPPPQP	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-108091-T1-1-D1-1	0.3	315JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
17	74732959	G	A	E-H-108091-T1-1-D1-1	0.28	356SRSF2	p.P95L	non_synonymous_codon	ONCOGENIC
X	70470277	C	T	E-H-108091-T1-1-D1-1	0.35	252ZMYM3	p.?	splice_site_variant	UNKNOWN
9	98209549	T	C	E-H-108091-T1-1-D1-1	0.47	765PTCH1	p.H1330R	non_synonymous_codon	UNKNOWN
16	68772239	G	A	E-H-108091-T1-1-D1-1	0.43	882CDH1	p.P30T	non_synonymous_codon	UNKNOWN
3	37045956	C	A	E-H-108091-T1-1-D1-1	0.46	477MLH1	p.C124Y	non_synonymous_codon	UNKNOWN
3	89448530	A	A	E-H-108091-T1-1-D1-1	0.46	340EPHA3	p.S498R	non_synonymous_codon	UNKNOWN
16	2611895	ACGAC	A	E-H-108091-T1-1-D1-1	0.189	3828POPK1	p.D151fs*42	frameshift_variant	UNKNOWN
7	151882672	C	A	E-H-108092-T1-1-D1-1	0.11	840KMT2C	p.A1885S	non_synonymous_codon	LIKELY
3	70014199	C	A	E-H-108092-T1-1-D1-1	0.47	638MITF	p.L455I	non_synonymous_codon	UNKNOWN
7	82584378	G	A	E-H-108092-T1-1-D1-1	0.49	1033PCLO	p.T1964M	non_synonymous_codon	UNKNOWN
6	15496670	A	G	E-H-108092-T1-1-D1-1	0.45	1139JARID2	p.N405S	non_synonymous_codon	UNKNOWN
6	162206861	G	G	E-H-108092-T1-1-D1-1	0.49	279PARK2	p.L272I	non_synonymous_codon	UNKNOWN
18	31324527	C	T	E-H-108092-T1-1-D1-1	0.45	495ASXL3	p.P1572L	non_synonymous_codon	UNKNOWN
5	158139272	T	C	E-H-108092-T1-1-D1-1	0.48	924EBF1	p.N480S	non_synonymous_codon	UNKNOWN
8	41794796	ATCT	A	E-H-108092-T1-1-D1-1	0.402	632KAT6A	p.E1109delE	inframe_codon_loss	UNKNOWN

9	5073770	G		T	E-H-108093-T1-1-D1-1	0.75	437JAK2	p.V617F	non_synonymous_codon	ONCOGENIC	
3	41267276	A		G	E-H-108093-T1-1-D1-1	0.49	873CTNNB1	p.N287S	non_synonymous_codon	UNKNOWN	
19	15308365	G		A	E-H-108093-T1-1-D1-1	0.47	733NOTCH3	p.P48L	non_synonymous_codon	UNKNOWN	
12	46244127	A		G	E-H-108093-T1-1-D1-1	0.5	1019ARID2	p.S741G	non_synonymous_codon	UNKNOWN	
10	105202030	C		T	E-H-108093-T1-1-D1-1	0.45	955PDCD11	p.R1590C	non_synonymous_codon	UNKNOWN	
2	29917736	C		T	E-H-108093-T1-1-D1-1	0.47	462ALK	p.R311H	non_synonymous_codon	UNKNOWN	
2	25464544	C		T	E-H-108093-T1-1-D1-1	0.45	1044DNMT3A	p.V657M	non_synonymous_codon	UNKNOWN	
9	97912338	G		A	E-H-108093-T1-1-D1-1	0.53	359FANCC	p.R185*	stop_gained	UNKNOWN	
1	193181534	A		G	E-H-108093-T1-1-D1-1	0.44	936CDC73	p.I361V	non_synonymous_codon	UNKNOWN	
20	31022286	T		TA	E-H-108093-T1-1-D1-1	0.454	269ASXL1	p.Y591fs*1	frameshift_variant	LIKELY	
17	74732959	G		A	E-H-108094-T1-1-D1-1	0.46	781SRSF2	p.P95L	non_synonymous_codon	ONCOGENIC	
7	151945330	G		T	E-H-108094-T1-1-D1-1	0.043	1151KMT2C	p.S730Y	non_synonymous_codon	LIKELY	
1	45797950	C		T	E-H-108094-T1-1-D1-1	0.47	1393MUTYH	p.R271Q	non_synonymous_codon	UNKNOWN	
X	1538003	G		T	E-H-108094-T1-1-D1-1	0.49	245ASMTL	p.A417E	non_synonymous_codon	UNKNOWN	
21	36206818	G		A	E-H-108094-T1-1-D1-1	0.47	1019RUNX1	p.R232W	non_synonymous_codon	UNKNOWN	
21	36231791	T		C	E-H-108094-T1-1-D1-1	0.43	1166RUNX1	p.D198G	non_synonymous_codon	ONCOGENIC	
2	215645751	C		G	E-H-108094-T1-1-D1-1	0.48	858BARD1	p.A283P	non_synonymous_codon	UNKNOWN	
2	242695381	G		A	E-H-108094-T1-1-D1-1	0.5	960D2HGDH	p.A420T	non_synonymous_codon	UNKNOWN	
9	6981115	G		A	E-H-108094-T1-1-D1-1	0.46	257KDM4C	p.R371Q	non_synonymous_codon	UNKNOWN	
19	1220590	C		T	E-H-108094-T1-1-D1-1	0.5	1186STK11	p.P203L	non_synonymous_codon	UNKNOWN	
1	16256519	C		T	E-H-108094-T1-1-D1-1	0.5	1299SPEN	p.P1262S	non_synonymous_codon	UNKNOWN	
17	56787352	G		A	E-H-108094-T1-1-D1-1	0.48	387RAD51C	p.?	splice_site_variant	UNKNOWN	
9	5073770	G		T	E-H-108095-T1-1-D1-1	0.41	381JAK2	p.V617F	non_synonymous_codon	ONCOGENIC	
1	160323977	A		T	E-H-108095-T1-1-D1-1	0.51	720NCSTN	p.N417Y	non_synonymous_codon	UNKNOWN	
10	63852620	C		T	E-H-108095-T1-1-D1-1	0.39	897ARID5B	p.S1133L	non_synonymous_codon	UNKNOWN	
6	112020756	T		C	E-H-108095-T1-1-D1-1	0.46	480FYN	p.K272R	non_synonymous_codon	UNKNOWN	
7	151962158	C		T	E-H-108095-T1-1-D1-1	0.052	852KMT2C	p.W383*	stop_gained	UNKNOWN	
4	153303478	G		A	E-H-108095-T1-1-D1-1	0.47	684FBXW7	p.P4S	non_synonymous_codon	UNKNOWN	
1	155874261	C		T	E-H-108095-T1-1-D1-1	0.25	662RIT1	p.M107I	non_synonymous_codon	UNKNOWN	
12	15654604	A		T	E-H-108095-T1-1-D1-1	0.48	598PTPRO	p.N238Y	non_synonymous_codon	UNKNOWN	
6	138202173	G		A	E-H-108095-T1-1-D1-1	0.47	727TNFAIP3	p.R697K	non_synonymous_codon	UNKNOWN	
10	63700129	T		C	E-H-108095-T1-1-D1-1	0.49	368ARID5B	p.L155P	non_synonymous_codon	UNKNOWN	
6	108985481	A		A	E-H-108095-T1-1-D1-1	0.054	1286FOXO3	p.S482N	non_synonymous_codon	UNKNOWN	
3	128205835	G		A	E-H-108095-T1-1-D1-1	0.47	596GATA2	p.P14S	non_synonymous_codon	UNKNOWN	
2	141751640	G		C	E-H-108095-T1-1-D1-1	0.46	495LRP1B	p.H856Q	non_synonymous_codon	UNKNOWN	
20	31022402	G	TCACCACCTGCCATAGAGAGCGCGGC	T	E-H-108095-T1-1-D1-1	0.263	186ASXL1	p.E635fs*15	frameshift_variant	LIKELY	
X	15840858	A		AT	E-H-108095-T1-1-D1-1	0.833	257ZRSR2	p.E316fs*1	frameshift_variant	LIKELY	
9	5073770	G		T	E-H-108096-T1-1-D1-1	0.46	385JAK2	p.V617F	non_synonymous_codon	ONCOGENIC	
2	25966129	C		T	E-H-108096-T1-1-D1-1	0.5	719ASXL2	p.S1026N	non_synonymous_codon	UNKNOWN	
17	59924505	A		G	E-H-108096-T1-1-D1-1	0.48	475BRIP1	p.L195P	non_synonymous_codon	UNKNOWN	
1	120468201	A		T	E-H-108096-T1-1-D1-1	0.48	584NOTCH2	p.L1413H	non_synonymous_codon	UNKNOWN	
17	41243840	A		C	E-H-108096-T1-1-D1-1	0.45	598BRCA1	p.N1236K	non_synonymous_codon	UNKNOWN	
X	1553938	G	GCGACA	G	E-H-108096-T1-1-D1-1	0.279	566ASMTL	p.V125fs*114	frameshift_variant	UNKNOWN	
X	53225873	CT		C	E-H-108096-T1-1-D1-1	0.288	747KDM5C	p.E992fs*14	frameshift_variant	UNKNOWN	
9	5073770	G		T	E-H-108097-T1-1-D1-1	0.29	425JAK2	p.V617F	non_synonymous_codon	ONCOGENIC	
21	44514777	T		G	E-H-108097-T1-1-D1-1	0.3	574UZAF1	p.Q157P	non_synonymous_codon	ONCOGENIC	
15	90631934	C		T	E-H-108097-T1-1-D1-1	0.33	1111IDH2	p.R140Q	non_synonymous_codon	ONCOGENIC	
18	31326012	T		G	E-H-108097-T1-1-D1-1	0.49	534ASXL3	p.L2067R	non_synonymous_codon	UNKNOWN	
17	78896624	C		T	E-H-108097-T1-1-D1-1	0.51	751RPTOR	p.A874V	non_synonymous_codon	UNKNOWN	
14	95574253	C		T	E-H-108097-T1-1-D1-1	0.47	597DICER1	p.A872T	non_synonymous_codon	UNKNOWN	
13	41134019	G		A	E-H-108097-T1-1-D1-1	0.46	721FOXO1	p.R537C	non_synonymous_codon	UNKNOWN	
8	37555584	T		T	TGCGACCTCGGCGGCTCCAGCTGCTCCACCTGCAGCGCGCGGA	E-H-108097-T1-1-D1-1	0.105	2529ZNF703	p.A401_H402ins PTHLGGSSCST CSA	inframe_codon_gain	UNKNOWN
1	27023908	G		G	GGCTCGCGCGCGCGCA	E-H-108097-T1-1-D1-1	0.133	368ARID1A	p.A349_S350ins AAAAA	inframe_codon_gain	UNKNOWN
9	5073770	G		T		E-H-108098-T1-1-D1-1	0.057	404JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
7	151945349	A		T		E-H-108098-T1-1-D1-1	0.038	796KMT2C	p.K724*	stop_gained	UNKNOWN
5	158250313	T		C		E-H-108098-T1-1-D1-1	0.46	246EBF1	p.T217A	non_synonymous_codon	UNKNOWN
2	242795126	G		A		E-H-108098-T1-1-D1-1	0.49	759PDCD1	p.P28L	non_synonymous_codon	UNKNOWN
2	74327798	G		A		E-H-108098-T1-1-D1-1	0.47	1284TET3	p.V1160I	non_synonymous_codon	UNKNOWN
12	121879010	C		T		E-H-108098-T1-1-D1-1	0.53	413KDM2B	p.R1104H	non_synonymous_codon	UNKNOWN
5	149504392	G		A		E-H-108098-T1-1-D1-1	0.54	552PDGFRB	p.R604C	non_synonymous_codon	UNKNOWN
1	16258302	A		G		E-H-108099-T1-1-D1-1	0.48	943SPEN	p.N1856S	non_synonymous_codon	UNKNOWN
3	142274770	T		C		E-H-108099-T1-1-D1-1	0.48	234ATR	p.K764E	non_synonymous_codon	UNKNOWN
3	89390971	G		T		E-H-108099-T1-1-D1-1	0.48	395EPHA3	p.S346I	non_synonymous_codon	UNKNOWN
5	44305104	T		G		E-H-108100-T1-1-D1-1	0.5	1023FGF10	p.H207P	non_synonymous_codon	UNKNOWN
7	128850925	G		T		E-H-108100-T1-1-D1-1	0.46	320SMO	p.M591R	non_synonymous_codon	UNKNOWN
13	32893271	A		G		E-H-108100-T1-1-D1-1	0.51	721BRCA2	p.Y42C	non_synonymous_codon	UNKNOWN
8	15397977	C		T		E-H-108100-T1-1-D1-1	0.5	1985TUSC3	p.A13V	non_synonymous_codon	UNKNOWN
1	45798269	T		C		E-H-108100-T1-1-D1-1	0.47	1055MUTYH	p.I220V	non_synonymous_codon	UNKNOWN
3	176743286	C		T		E-H-108100-T1-1-D1-1	0.41	678TBL1XR1	p.*515*	stop_retained_variant	UNKNOWN
7	82581484	G		GTTT		E-H-108100-T1-1-D1-1	0.761	1190PCLO	p.K2928_P2929insK	inframe_codon_gain	UNKNOWN
6	108882393	G	GGCGGGCGGGCGCGCAAGATGGCAGAGGCCCGCTTCCC CGCCCCGCTCTCTCCGCTCGAAGTGGAGCTGGACCCGAGTTGCGAGCCCCAGAGCCGTCGCGATCCTGACTGGCCCTGCAAGGCCG GAGCTCCAAGCGAGCCCTGCCAAGCCTCGGGGGAGACGGCCCGCACTCCATGATCCCCGAGGAG GAGGACGATGAAGACGACGAGGACGGCGGGGACGGCCGCTGGCCATGGCGATCGCCGGCGG OSCGGGAGCGCGCAAGCTGGCTCGGGCTGCTCCTTGGAGACTGGCCCGGCTGCTGGCAGCCGG AGGGCAAGACCCGGTCTGGCCAGCCACCGC	G	E-H-108100-T1-1-D1-1	0.005	1109FOXO3	p.?	initiator_codon_change	UNKNOWN	
2	198266832		TTTCTGCTGC		TGGA	E-H-108100-T1-1-D1-1	0.056	538SF3B1	p.E697_K700delinsDP	inframe_variant	UNKNOWN
9	5073770	G		T		E-H-108101-T1-1-D1-1	0.93	381JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
2	27465608	G		C		E-H-108101-T1-1-D1-1	0.5	890CAD	p.V2115L	non_synonymous_codon	UNKNOWN
11	69458678	C		G		E-H-108101-T1-1-D1-1	0.52	448CCND1	p.L165V	non_synonymous_codon	UNKNOWN

4	109088713	C	G	E-H-108109-T1-1-D1-1	0.5	1102LEF1	p.E71Q	non_synonymous_codon	UNKNOWN
11	92532000	A	G	E-H-108109-T1-1-D1-1	0.49	768FAT3	p.I1941V	non_synonymous_codon	UNKNOWN
7	128852155	C	A	E-H-108109-T1-1-D1-1	0.49	2181SMO	p.P743T	non_synonymous_codon	UNKNOWN
5	176519456	G	A	E-H-108109-T1-1-D1-1	0.48	1254FGFR4	p.V288I	non_synonymous_codon	UNKNOWN
12	15677789	A	G	E-H-108109-T1-1-D1-1	0.49	635PTPRO	p.S645G	non_synonymous_codon	UNKNOWN
6	306711717	G	A	E-H-108109-T1-1-D1-1	0.48	977MDC1	p.P1748L	non_synonymous_codon	UNKNOWN
13	32893426	C	T	E-H-108109-T1-1-D1-1	0.48	679BRCA2	p.P94S	non_synonymous_codon	UNKNOWN
1	36933526	G	A	E-H-108109-T1-1-D1-1	0.47	744CSF3R	p.S139F	non_synonymous_codon	UNKNOWN
12	40671773	A	G	E-H-108109-T1-1-D1-1	0.5	704LRRK2	p.I675M	non_synonymous_codon	UNKNOWN
12	56495706	G	A	E-H-108109-T1-1-D1-1	0.49	469ERBB3	p.G1299E	non_synonymous_codon	UNKNOWN
7	151927070	C	T	E-H-108109-T1-1-D1-1	0.066	832KMT2C	p.G972R	non_synonymous_codon	UNKNOWN
1	155649287	C	A	E-H-108109-T1-1-D1-1	0.49	594YY1AP1	p.G151V	non_synonymous_codon	UNKNOWN
20	31023326	TC	T	E-H-108109-T1-1-D1-1	0.174	648ASXL1	p.P938fs*7	frameshift_variant	LIKELY
19	13054655	TGAG	T	E-H-108109-T1-1-D1-1	0.407	771CALR	p.E396delE	inframe_codon_loss	LIKELY
9	5073770	G	T	E-H-118542-T1-1-D1-1	0.089	303JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
11	77066767	C	T	E-H-118542-T1-1-D1-1	0.47	315PAK1	p.E240K	non_synonymous_codon	UNKNOWN
12	121890936	C	G	E-H-118542-T1-1-D1-1	0.086	640KDM2B	p.R649P	non_synonymous_codon	UNKNOWN
1	27688743	T	C	E-H-118542-T1-1-D1-1	0.44	206MAP3K6	p.?	splice_site_variant	UNKNOWN
18	60052119	G	A	E-H-118542-T1-1-D1-1	0.5	276TNFRSF11A	p.R568H	non_synonymous_codon	UNKNOWN
8	27645516	C	G	E-H-118542-T1-1-D1-1	0.45	488ESCO2	p.I376M	non_synonymous_codon	UNKNOWN
10	129901163	G	T	E-H-118542-T1-1-D1-1	0.47	541MKI67	p.V298I	non_synonymous_codon	UNKNOWN
10	129905605	G	T	E-H-118542-T1-1-D1-1	0.48	936MKI67	p.P1500Q	non_synonymous_codon	UNKNOWN
1	179076949	C	G	E-H-118542-T1-1-D1-1	0.53	192ABL2	p.Q1151H	non_synonymous_codon	UNKNOWN
7	151962296	T	T	E-H-118543-T1-1-D1-1	0.059	202KMT2C	p.?	splice_site_variant	UNKNOWN
20	31022592	C	T	E-H-118543-T1-1-D1-1	0.5	332ASXL1	p.R893*	stop_gained	ONCOGENIC
19	15355338	T	G	E-H-118543-T1-1-D1-1	0.076	317BRD4	p.Q762P	non_synonymous_codon	UNKNOWN
6	26124489	A	G	E-H-118543-T1-1-D1-1	0.49	737HIST1H2AC	p.K10R	non_synonymous_codon	UNKNOWN
3	41266238	G	A	E-H-118543-T1-1-D1-1	0.45	216CTNNB1	p.V79I	non_synonymous_codon	UNKNOWN
14	95590908	T	C	E-H-118543-T1-1-D1-1	0.056	430DICER1	p.K334R	non_synonymous_codon	UNKNOWN
19	41754430	G	A	E-H-118543-T1-1-D1-1	0.44	275AXL	p.G517S	non_synonymous_codon	UNKNOWN
17	7577538	C	T	E-H-118543-T1-1-D1-1	0.1	333TP53	p.R248Q	non_synonymous_codon	ONCOGENIC
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGACAAGAAACGCAAAAGAGGAGGAGGAG	A	E-H-118543-T1-1-D1-1	0.339	443CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
14	95562994	ATCC	T	E-H-118543-T1-1-D1-1	0.451	308DICER1	p.E1420delE	inframe_codon_loss	UNKNOWN
9	5073770	G	A	E-H-118544-T1-1-D1-1	0.06	232JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
11	77066767	C	T	E-H-118544-T1-1-D1-1	0.33	234PAK1	p.E240K	non_synonymous_codon	UNKNOWN
12	121890936	C	G	E-H-118544-T1-1-D1-1	0.075	319KDM2B	p.R649P	non_synonymous_codon	UNKNOWN
1	27688743	T	C	E-H-118544-T1-1-D1-1	0.29	133MAP3K6	p.?	splice_site_variant	UNKNOWN
18	60052119	G	A	E-H-118544-T1-1-D1-1	0.32	136TNFRSF11A	p.R568H	non_synonymous_codon	UNKNOWN
8	27645516	C	G	E-H-118544-T1-1-D1-1	0.3	274ESCO2	p.I376M	non_synonymous_codon	UNKNOWN
17	41246602	T	C	E-H-118544-T1-1-D1-1	0.21	258BRCA1	p.S316G	non_synonymous_codon	UNKNOWN
18	42531182	G	A	E-H-118544-T1-1-D1-1	0.12	211SETBP1	p.R626Q	non_synonymous_codon	UNKNOWN
10	129901163	C	T	E-H-118544-T1-1-D1-1	0.27	296MKI67	p.V298I	non_synonymous_codon	UNKNOWN
19	13054627	A	ATTGTC	E-H-118544-T1-1-D1-1	0.119	277CALR	p.K385fs*47	frameshift_variant	LIKELY
15	93540315	G	A	E-H-118545-T1-1-D1-1	0.078	411CHD2	p.E1242K	non_synonymous_codon	UNKNOWN
10	105193754	G	A	E-H-118545-T1-1-D1-1	0.47	745PDCD11	p.R1175Q	non_synonymous_codon	UNKNOWN
17	41246602	T	C	E-H-118545-T1-1-D1-1	0.47	515BRCA1	p.S316G	non_synonymous_codon	UNKNOWN
18	42531182	G	A	E-H-118545-T1-1-D1-1	0.49	394SETBP1	p.R626Q	non_synonymous_codon	UNKNOWN
19	13054627	A	ATTGTC	E-H-118545-T1-1-D1-1	0.37	586CALR	p.K385fs*47	frameshift_variant	LIKELY
9	5073770	G	T	E-H-118546-T1-1-D1-1	0.57	601JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
15	93540315	G	A	E-H-118546-T1-1-D1-1	0.073	688CHD2	p.E1242K	non_synonymous_codon	UNKNOWN
X	129147028	G	A	E-H-118546-T1-1-D1-1	0.48	533BCORL1	p.D94N	non_synonymous_codon	UNKNOWN
16	2983494	G	A	E-H-118546-T1-1-D1-1	0.52	1355FLYWCH1	p.R387Q	non_synonymous_codon	UNKNOWN
4	106155880	TC	T	E-H-118546-T1-1-D1-1	0.228	513TET2	p.C262fs*31	frameshift_variant	UNKNOWN
X	70361121	ACAGCAACAGCAGCAG	A	E-H-118546-T1-1-D1-1	0.328	1093MED12	p.Q2111_Q2115 delQQQQ	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-118547-T1-1-D1-1	0.082	463JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
6	117704600	C	G	E-H-118547-T1-1-D1-1	0.038	709ROS1	p.M792I	non_synonymous_codon	UNKNOWN
12	40716270	C	A	E-H-118547-T1-1-D1-1	0.057	440LRRK2	p.Q1823K	non_synonymous_codon	UNKNOWN
1	59248339	T	C	E-H-118547-T1-1-D1-1	0.38	142JUN	p.Q135R	non_synonymous_codon	UNKNOWN
6	26056440	C	T	E-H-118547-T1-1-D1-1	0.45	555HIST1H1C	p.V73M	non_synonymous_codon	UNKNOWN
1	36938239	G	A	E-H-118547-T1-1-D1-1	0.38	1406CSF3R	p.A241V	non_synonymous_codon	UNKNOWN
2	242046040	C	T	E-H-118547-T1-1-D1-1	0.45	343PASK	p.E1312K	non_synonymous_codon	UNKNOWN
8	37555584	T	TCGCACCTCGGCGGCTCAGCTGCTCCACCTGCAGCGCGCCGA	E-H-118547-T1-1-D1-1	0.136	1598ZNF703	p.A401_H402ins PTHLGGSSCST CSA	inframe_codon_gain	UNKNOWN
4	106155880	TC	T	E-H-118547-T1-1-D1-1	0.014	348TET2	p.C262fs*31	frameshift_variant	LIKELY
22	41574510	TCAG	T	E-H-118547-T1-1-D1-1	0.361	487EP300	p.Q2268delQ	inframe_codon_loss	UNKNOWN
9	5073770	G	T	E-H-118548-T1-1-D1-1	0.96	531JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
11	85989482	G	T	E-H-118548-T1-1-D1-1	0.48	819EED	p.R414L	non_synonymous_codon	UNKNOWN
6	117704600	G	G	E-H-118548-T1-1-D1-1	0.87	504ROS1	p.M792I	non_synonymous_codon	UNKNOWN
1	162740180	T	T	E-H-118548-T1-1-D1-1	0.45	1336DDR2	p.S461L	non_synonymous_codon	UNKNOWN
20	31383306	C	T	E-H-118548-T1-1-D1-1	0.47	664DNMT3B	p.T296M	non_synonymous_codon	UNKNOWN
12	40716270	C	A	E-H-118548-T1-1-D1-1	0.5	584LRRK2	p.Q1823K	non_synonymous_codon	UNKNOWN
2	242695307	G	A	E-H-118548-T1-1-D1-1	0.49	1473D2HGDH	p.R395Q	non_synonymous_codon	UNKNOWN
22	30054230	G	A	E-H-118548-T1-1-D1-1	0.45	1035NF2	p.G218S	non_synonymous_codon	UNKNOWN
19	35823714	A	C	E-H-118548-T1-1-D1-1	0.56	497CD22	p.K100T	non_synonymous_codon	UNKNOWN
20	54961561	C	T	E-H-118548-T1-1-D1-1	0.91	214AURKA	p.R24H	non_synonymous_codon	UNKNOWN
12	16762468	G	A	E-H-118548-T1-1-D1-1	0.47	735PIK3C2G	p.?	splice_site_variant	UNKNOWN

1	155630397	T	C	E-H-118548-T1-1-D1-1	0.33	679YY1AP1	p.Q573R	non_synonymous_codon	UNKNOWN
6	161781201	G	A	E-H-118548-T1-1-D1-1	0.87	488PARK2	p.R402C	non_synonymous_codon	UNKNOWN
10	129901084	G	A	E-H-118548-T1-1-D1-1	0.51	638MKI67	p.T3007M	non_synonymous_codon	UNKNOWN
6	30671634	G	A	E-H-118548-T1-1-D1-1	0.49	633MDC1	p.P1778S	non_synonymous_codon	UNKNOWN
2	58388714	A	T	E-H-118548-T1-1-D1-1	0.44	612FANCL	p.D326E	non_synonymous_codon	UNKNOWN
6	89791118	C	T	E-H-118548-T1-1-D1-1	0.83	60PNRC1	p.P169S	non_synonymous_codon	UNKNOWN
11	92534968	G	A	E-H-118548-T1-1-D1-1	0.47	499FAT3	p.R2930Q	non_synonymous_codon	UNKNOWN
12	40702910	C	T	E-H-118548-T1-1-D1-1	0.56	579LRRK2	p.R1398C	non_synonymous_codon	UNKNOWN
10	129904901	C	T	E-H-118548-T1-1-D1-1	0.49	1429MKI67	p.V173S1	non_synonymous_codon	UNKNOWN
6	150004502	A	G	E-H-118548-T1-1-D1-1	0.83	572LATS1	p.S575P	non_synonymous_codon	UNKNOWN
9	5073770	G	T	E-H-118549-T1-1-D1-1	0.35	218JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
11	85989482	T	G	E-H-118549-T1-1-D1-1	0.046	303EED	p.R414L	non_synonymous_codon	UNKNOWN
1	162740180	C	T	E-H-118549-T1-1-D1-1	0.05	440DDR2	p.S481L	non_synonymous_codon	UNKNOWN
20	31383306	C	T	E-H-118549-T1-1-D1-1	0.082	146DNMT3B	p.T296M	non_synonymous_codon	UNKNOWN
2	242695307	G	A	E-H-118549-T1-1-D1-1	0.071	553D2HGDH	p.R395Q	non_synonymous_codon	UNKNOWN
22	30054230	G	A	E-H-118549-T1-1-D1-1	0.053	396NF2	p.G218S	non_synonymous_codon	UNKNOWN
19	35823714	A	C	E-H-118549-T1-1-D1-1	0.068	191CD22	p.K100T	non_synonymous_codon	UNKNOWN
20	54961561	C	T	E-H-118549-T1-1-D1-1	0.06	133AURKA	p.R24H	non_synonymous_codon	UNKNOWN
3	47165863	A	T	E-H-118549-T1-1-D1-1	0.45	332SETD2	p.F88Y	non_synonymous_codon	UNKNOWN
11	76257322	C	T	E-H-118549-T1-1-D1-1	0.48	124C11orf30	p.P1252L	non_synonymous_codon	UNKNOWN
11	69589767	G	A	E-H-118549-T1-1-D1-1	0.5	60FGF4	p.A29V	non_synonymous_codon	UNKNOWN
4	109010339	C	A	E-H-118549-T1-1-D1-1	0.42	292LEF1	p.E163D	non_synonymous_codon	UNKNOWN
11	92533558	G	A	E-H-118549-T1-1-D1-1	0.45	224FAT3	p.R2460Q	non_synonymous_codon	UNKNOWN
22	46725339	G	T	E-H-118549-T1-1-D1-1	0.45	335GTSE1	p.D671Y	non_synonymous_codon	UNKNOWN
13	110436780	C	T	E-H-118549-T1-1-D1-1	0.41	926IRS2	p.G541R	non_synonymous_codon	UNKNOWN
12	57858964	T	C	E-H-118550-T1-1-D1-1	0.45	320GLI1	p.C154R	non_synonymous_codon	UNKNOWN
11	61213503	A	C	E-H-118550-T1-1-D1-1	0.42	191SDHAF2	p.R154H	non_synonymous_codon	UNKNOWN
1	120483368	T	C	E-H-118550-T1-1-D1-1	0.42	125NOTCH2	p.N998S	non_synonymous_codon	UNKNOWN
19	13054567	AGAGGCTTAAGGAGGAGGAAGAACAAAGAAACGCAAAAGAGGAGGAG	A	E-H-118550-T1-1-D1-1	0.22	241CALR	p.L367fs*48	frameshift_variant	ONCOGENIC
9	5073770	G	T	E-H-118551-T1-1-D1-1	0.96	355JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
11	85989482	G	T	E-H-118551-T1-1-D1-1	0.49	557EED	p.R414L	non_synonymous_codon	UNKNOWN
6	117704600	C	G	E-H-118551-T1-1-D1-1	0.85	329ROS1	p.M792I	non_synonymous_codon	UNKNOWN
1	162740180	C	T	E-H-118551-T1-1-D1-1	0.46	728DDR2	p.S461L	non_synonymous_codon	UNKNOWN
20	31383306	C	T	E-H-118551-T1-1-D1-1	0.46	402DNMT3B	p.T296M	non_synonymous_codon	UNKNOWN
12	40716270	C	A	E-H-118551-T1-1-D1-1	0.49	455LRRK2	p.Q1823K	non_synonymous_codon	UNKNOWN
2	242695307	G	A	E-H-118551-T1-1-D1-1	0.49	821D2HGDH	p.R395Q	non_synonymous_codon	UNKNOWN
22	30054230	G	A	E-H-118551-T1-1-D1-1	0.5	615NF2	p.G218S	non_synonymous_codon	UNKNOWN
19	35823714	A	C	E-H-118551-T1-1-D1-1	0.48	357CD22	p.K100T	non_synonymous_codon	UNKNOWN
20	54961561	C	T	E-H-118551-T1-1-D1-1	0.96	165AURKA	p.R24H	non_synonymous_codon	UNKNOWN
5	67576437	C	T	E-H-118551-T1-1-D1-1	0.46	400PIK3R1	p.T239M	non_synonymous_codon	UNKNOWN
12	18762468	G	A	E-H-118551-T1-1-D1-1	0.43	508PIK3C2G	p.?	splice_site_variant	UNKNOWN
1	155630397	T	C	E-H-118551-T1-1-D1-1	0.41	526YY1AP1	p.Q573R	non_synonymous_codon	UNKNOWN
10	129901084	G	A	E-H-118551-T1-1-D1-1	0.47	504MKI67	p.T3007M	non_synonymous_codon	UNKNOWN
6	30671634	G	A	E-H-118551-T1-1-D1-1	0.5	543MDC1	p.P1778S	non_synonymous_codon	UNKNOWN
2	58388714	A	T	E-H-118551-T1-1-D1-1	0.45	370FANCL	p.D326E	non_synonymous_codon	UNKNOWN
6	89791118	C	T	E-H-118551-T1-1-D1-1	0.76	17PNRC1	p.P169S	non_synonymous_codon	UNKNOWN
11	92534968	G	A	E-H-118551-T1-1-D1-1	0.46	376FAT3	p.R2930Q	non_synonymous_codon	UNKNOWN
12	40702910	C	T	E-H-118551-T1-1-D1-1	0.57	383LRRK2	p.R1398C	non_synonymous_codon	LIKELY
6	150004502	A	G	E-H-118551-T1-1-D1-1	0.84	423LATS1	p.S575P	non_synonymous_codon	UNKNOWN
9	5073770	G	T	E-H-118552-T1-1-D1-1	0.87	335JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
10	104590739	C	T	E-H-118552-T1-1-D1-1	0.43	410CYP17A1	p.R416H	non_synonymous_codon	UNKNOWN
2	58459232	G	A	E-H-118552-T1-1-D1-1	0.47	476FANCL	p.L38F	non_synonymous_codon	UNKNOWN
11	94192594	C	T	E-H-118552-T1-1-D1-1	0.44	432MRE11A	p.E494K	non_synonymous_codon	UNKNOWN
2	212537896	T	C	E-H-118552-T1-1-D1-1	0.57	283ERBB4	p.H570R	non_synonymous_codon	UNKNOWN
21	44514777	T	G	E-H-118553-T1-1-D1-1	0.29	289U2AF1	p.Q157P	non_synonymous_codon	ONCOGENIC
15	90631838	C	T	E-H-118553-T1-1-D1-1	0.078	476IDH2	p.R172K	non_synonymous_codon	ONCOGENIC
3	37092019	G	A	E-H-118553-T1-1-D1-1	0.48	202MLH1	p.V716M	non_synonymous_codon	UNKNOWN
19	42384959	T	C	E-H-118553-T1-1-D1-1	0.44	362CD79A	p.M198T	non_synonymous_codon	UNKNOWN
10	105162917	G	T	E-H-118553-T1-1-D1-1	0.41	297PDCD11	p.V93L	non_synonymous_codon	UNKNOWN
2	191923449	C	T	E-H-118553-T1-1-D1-1	0.46	374STAT4	p.A361T	non_synonymous_codon	UNKNOWN
3	30664714	G	A	I-H-106443-T2-1-D1-1	0.5	395TGFBR2	p.D40N	non_synonymous_codon	UNKNOWN
12	31944715	C	T	I-H-106443-T2-1-D1-1	0.49	496H3F3C	p.R129Q	non_synonymous_codon	UNKNOWN
15	88689553	C	G	I-H-106443-T2-1-D1-1	0.49	562NTRK3	p.L449V	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGAACAAAGAAACGCAAAAGAGGAGGAGGAG	A	I-H-106443-T2-1-D1-1	0.259	363CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
9	5073770	G	T	I-H-108077-T1-1-D1-1	0.4	545JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
7	151945349	T	A	I-H-108077-T1-1-D1-1	0.045	715KMT2C	p.K724*	stop_gained	UNKNOWN
11	92534043	G	T	I-H-108077-T1-1-D1-1	0.52	698FAT3	p.V2622F	non_synonymous_codon	UNKNOWN
12	133253180	A	T	I-H-108077-T1-1-D1-1	0.51	603POLE	p.D287E	non_synonymous_codon	UNKNOWN
8	37693192	C	T	I-H-108077-T1-1-D1-1	0.51	1759GPR124	p.R852C	non_synonymous_codon	UNKNOWN
1	46597543	A	G	I-H-108077-T1-1-D1-1	0.48	433PIK3R3	p.F28L	non_synonymous_codon	UNKNOWN
17	63532592	A	C	I-H-108077-T1-1-D1-1	0.48	854AXIN2	p.W663G	non_synonymous_codon	UNKNOWN
X	1553938	GCGACA	G	I-H-108077-T1-1-D1-1	0.245	755ASMTL	p.V125fs*114	frameshift_variant	UNKNOWN
21	36164859	ACCCGCGGGAACCTG	A	I-H-108077-T1-1-D1-1	0.216	1960RUNX1	p.Q335fs*255	frameshift_variant	UNKNOWN
2	99172077	TGCTCGAGAGGAGCGC	T	I-H-108077-T1-1-D1-1	0.283	999INPP4A	p.Q550_L554del QKERL	inframe_codon_loss	UNKNOWN
6	139202191	TGA	T	I-H-108077-T1-1-D1-1	0.423	608ECT2L	p.D590fs*28	frameshift_variant	UNKNOWN

9	5073770	G	T	IH-108078-T1-1-D1-1	0.8	299JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
X	110435818	A	G	IH-108078-T1-1-D1-1	0.41	488PAK3	p.N358D	non_synonymous_codon	UNKNOWN
15	91347483	T	A	IH-108078-T1-1-D1-1	0.46	407BLM	p.S1209T	non_synonymous_codon	UNKNOWN
X	39933332	AGCTGCCA	ACG	IH-108078-T1-1-D1-1	0.088	736BCOR	p.G421fs*17	frameshift_variant	UNKNOWN
X	39933325	GGAGGT	G	IH-108078-T1-1-D1-1	0.285	787BCOR	p.P424fs*14	frameshift_variant	UNKNOWN
9	5073770	G	T	IH-108079-T1-1-D1-1	0.59	409JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
17	74732959	G	T	IH-108079-T1-1-D1-1	0.36	645SRSF2	p.P95H	non_synonymous_codon	ONCOGENIC
1	43818306	T	A	IH-108079-T1-1-D1-1	0.4	909MPL	p.Y591N	non_synonymous_codon	LIKELY
12	46205257	T	C	IH-108079-T1-1-D1-1	0.38	690ARID2	p.P114L	non_synonymous_codon	UNKNOWN
13	48921960	G	A	IH-108079-T1-1-D1-1	0.37	627RB1	p.?	splice_site_variant	UNKNOWN
13	48955426	C	G	IH-108079-T1-1-D1-1	0.48	664RB1	p.F514L	non_synonymous_codon	UNKNOWN
11	3727756	C	G	IH-108079-T1-1-D1-1	0.51	422NUP98	p.E948D	non_synonymous_codon	UNKNOWN
19	7142981	C	G	IH-108079-T1-1-D1-1	0.47	991INSR	p.R796S	non_synonymous_codon	UNKNOWN
8	37699097	C	A	IH-108079-T1-1-D1-1	0.51	1128GPR124	p.R1081S	non_synonymous_codon	UNKNOWN
X	66766350	GGGTGGTGGCGGGCGGGCGGGCGGGCGGGCGGGC	G	IH-108079-T1-1-D1-1	0.055	451AR	p.G461_G473del GGGGGGGGG	inframe_codon_loss	UNKNOWN
4	106156282	CT	C	IH-108079-T1-1-D1-1	0.828	705TET2	p.K389fs*38	frameshift_variant	UNKNOWN
2	27465608	G	C	IH-108080-T1-1-D1-1	0.48	657CAD	p.V2115L	non_synonymous_codon	UNKNOWN
1	120458270	G	C	IH-108080-T1-1-D1-1	0.53	492NOTCH2	p.P2359A	non_synonymous_codon	UNKNOWN
X	76939515	T	G	IH-108080-T1-1-D1-1	0.13	869ATRX	p.E411D	non_synonymous_codon	UNKNOWN
2	225379411	G	A	IH-108080-T1-1-D1-1	0.49	519CUL3	p.R153C	non_synonymous_codon	UNKNOWN
10	105205260	A	G	IH-108080-T1-1-D1-1	0.47	324POCD11	p.K1857R	non_synonymous_codon	UNKNOWN
5	176722219	T	C	IH-108080-T1-1-D1-1	0.45	550NSD1	p.L2617S	non_synonymous_codon	UNKNOWN
6	32189085	G	A	IH-108080-T1-1-D1-1	0.49	333NOTCH4	p.R157W	non_synonymous_codon	UNKNOWN
9	21971040	C	T	IH-108080-T1-1-D1-1	0.48	726CDKN2A	p.A121T	non_synonymous_codon	UNKNOWN
2	25965376	A	G	IH-108080-T1-1-D1-1	0.47	692ASXL2	p.V1277A	non_synonymous_codon	UNKNOWN
12	121947390	C	T	IH-108080-T1-1-D1-1	0.44	537KDM2B	p.A543T	non_synonymous_codon	UNKNOWN
19	13054574	TAAGGAGGAGGAAGACAAAGAAACGCAAGAGG	T	IH-108080-T1-1-D1-1	0.317	410CALR	p.K368fs*51	frameshift_variant	LIKELY
9	5073770	G	T	IH-108081-T1-1-D1-1	0.36	320JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
17	74732959	G	A	IH-108081-T1-1-D1-1	0.4	459SRSF2	p.P95L	non_synonymous_codon	ONCOGENIC
8	128750527	T	C	IH-108081-T1-1-D1-1	0.47	1411MYC	p.F22L	non_synonymous_codon	LIKELY
20	57484421	A	G	IH-108081-T1-1-D1-1	0.4	904GNAS	p.R202H	non_synonymous_codon	ONCOGENIC
11	64128610	G	C	IH-108081-T1-1-D1-1	0.43	328RPS6KA4	p.G156A	non_synonymous_codon	UNKNOWN
5	131893069	A	C	IH-108081-T1-1-D1-1	0.39	438RAD50	p.E18A	non_synonymous_codon	UNKNOWN
14	38064109	C	G	IH-108081-T1-1-D1-1	0.5	371FOXA1	p.Q23H	non_synonymous_codon	UNKNOWN
13	41134463	C	T	IH-108081-T1-1-D1-1	0.5	994FOXO1	p.V389I	non_synonymous_codon	UNKNOWN
2	141660547	C	G	IH-108081-T1-1-D1-1	0.43	352LRP1B	p.K1236N	non_synonymous_codon	UNKNOWN
9	5073770	G	T	IH-108082-T1-1-D1-1	0.077	517JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
9	93606193	G	A	IH-108082-T1-1-D1-1	0.49	499SYK	p.G5S	non_synonymous_codon	UNKNOWN
2	198266714	C	T	IH-108082-T1-1-D1-1	0.19	461SF3B1	p.G740R	non_synonymous_codon	LIKELY
19	6534760	C	T	IH-108082-T1-1-D1-1	0.47	1178TNFSF9	p.R150W	non_synonymous_codon	UNKNOWN
19	52693424	T	G	IH-108082-T1-1-D1-1	0.48	915PPP2R1A	p.F4C	non_synonymous_codon	UNKNOWN
14	38061183	T	A	IH-108082-T1-1-D1-1	0.51	592FOXA1	p.E269V	non_synonymous_codon	UNKNOWN
6	26234606	C	T	IH-108082-T1-1-D1-1	0.055	724HIST1H1D	p.A186T	non_synonymous_codon	UNKNOWN
13	110436933	C	T	IH-108082-T1-1-D1-1	0.49	693IRS2	p.G490S	non_synonymous_codon	UNKNOWN
7	151879489	A	G	IH-108082-T1-1-D1-1	0.71	807KMT2C	p.M1819T	non_synonymous_codon	UNKNOWN
7	148512023	CA	C	IH-108082-T1-1-D1-1	0.299	211EZH2	p.C552fs*123	frameshift_variant	UNKNOWN
1	27683225	GCCT	G	IH-108082-T1-1-D1-1	0.4	1213MAP3K6	p.E1126delE	inframe_codon_loss	UNKNOWN
6	26234605	GCCT	G	IH-108082-T1-1-D1-1	0.44	1326HIST1H1D	p.K185_A186del nsT	inframe_variant	UNKNOWN
9	5073770	G	T	IH-108083-T1-1-D1-1	0.34	418JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
7	151945330	G	T	IH-108083-T1-1-D1-1	0.084	689KMT2C	p.S730Y	non_synonymous_codon	LIKELY
8	15480643	A	G	IH-108083-T1-1-D1-1	0.43	358TUSC3	p.I65V	non_synonymous_codon	UNKNOWN
6	26156758	C	T	IH-108083-T1-1-D1-1	0.47	466HIST1H1E	p.A47V	non_synonymous_codon	UNKNOWN
6	108985226	C	G	IH-108083-T1-1-D1-1	0.11	1161FOXO3	p.P397R	non_synonymous_codon	UNKNOWN
12	122018761	T	C	IH-108083-T1-1-D1-1	0.46	854KDM2B	p.H19R	non_synonymous_codon	UNKNOWN
19	45860626	G	C	IH-108083-T1-1-D1-1	0.49	561ERCC2	p.L461V	non_synonymous_codon	UNKNOWN
19	18272777	A	T	IH-108083-T1-1-D1-1	0.47	479PIK3R2	p.S273C	non_synonymous_codon	UNKNOWN
20	30822339	G	A	IH-108083-T1-1-D1-1	0.48	840POFUT1	p.D348N	non_synonymous_codon	UNKNOWN
19	45855507	G	C	IH-108083-T1-1-D1-1	0.45	748ERCC2	p.A717G	non_synonymous_codon	UNKNOWN
4	187510258	C	T	IH-108083-T1-1-D1-1	0.47	875FAT1	p.A4419T	non_synonymous_codon	UNKNOWN
9	135772998	CTG	C	IH-108083-T1-1-D1-1	0.08	327TSC1	p.?	splice_site_variant	UNKNOWN
1	160323977	A	G	IH-108084-T1-1-D1-1	0.46	467NCSTN	p.N417Y	non_synonymous_codon	UNKNOWN
18	33754519	C	T	IH-108084-T1-1-D1-1	0.45	230ELP2	p.A799V	non_synonymous_codon	UNKNOWN
5	149495360	G	A	IH-108084-T1-1-D1-1	0.46	324PDGFRB	p.A1096V	non_synonymous_codon	UNKNOWN
4	55964925	G	A	IH-108084-T1-1-D1-1	0.44	404KOR	p.T771M	non_synonymous_codon	UNKNOWN
X	129139262	C	T	IH-108084-T1-1-D1-1	1	107BCORL1	p.R19W	non_synonymous_codon	UNKNOWN
3	37092047	G	A	IH-108084-T1-1-D1-1	0.47	366MLH1	p.R725H	non_synonymous_codon	UNKNOWN
8	41834732	C	T	IH-108084-T1-1-D1-1	0.53	567KAT6A	p.R386Q	non_synonymous_codon	UNKNOWN
13	48934173	G	T	IH-108084-T1-1-D1-1	0.44	861RB1	p.D210Y	non_synonymous_codon	UNKNOWN
14	95557551	T	C	IH-108084-T1-1-D1-1	0.5	605DICER1	p.R1839Q	non_synonymous_codon	UNKNOWN
19	13054564	AGCAGAGGCTTAAGGAGGAGGAAGAAACAAGAAACGCAAGAGGAGGAGGAG	A	IH-108084-T1-1-D1-1	0.102	410CALR	p.L367fs*46	frameshift_variant	ONCOGENIC
9	5073770	G	T	IH-108085-T1-1-D1-1	0.35	231JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
7	151945330	G	T	IH-108085-T1-1-D1-1	0.058	521KMT2C	p.S730Y	non_synonymous_codon	LIKELY
8	128750527	T	C	IH-108085-T1-1-D1-1	0.51	821MYC	p.F22L	non_synonymous_codon	LIKELY
1	160323977	A	T	IH-108085-T1-1-D1-1	0.41	472NCSTN	p.N417Y	non_synonymous_codon	UNKNOWN
20	31022592	C	T	IH-108085-T1-1-D1-1	0.076	277ASXL1	p.R693*	stop_gained	ONCOGENIC

17	30323836	A	G	I-H-108085-T1-1-D1-1	0.06	184SUZ12	p.D805G	non_synonymous_codon	UNKNOWN
7	41729843	C	T	I-H-108085-T1-1-D1-1	0.49	528INHBA	p.R229Q	non_synonymous_codon	UNKNOWN
10	98182398	T	A	I-H-108085-T1-1-D1-1	0.43	532TLL2	p.H242L	non_synonymous_codon	UNKNOWN
14	38061077	G	T	I-H-108085-T1-1-D1-1	0.67	186FOXA1	p.S304R	non_synonymous_codon	UNKNOWN
17	38499083	C	T	I-H-108085-T1-1-D1-1	0.49	520RARA	p.P43S	non_synonymous_codon	UNKNOWN
12	121880447	CCTT	C	I-H-108085-T1-1-D1-1	0.36	962KDM2B	p.K932delK	inframe_codon_loss	UNKNOWN
19	15350575	TCTC	C	I-H-108085-T1-1-D1-1	0.367	537BRD4	p.E113delE	inframe_codon_loss	UNKNOWN
9	5073770	G	T	I-H-108086-T1-1-D1-1	0.34	425JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
1	120478125	A	C	I-H-108086-T1-1-D1-1	0.49	504NOTCH2	p.F1209V	non_synonymous_codon	UNKNOWN
12	4488595	G	T	I-H-108086-T1-1-D1-1	0.52	828FGF23	p.H52N	non_synonymous_codon	UNKNOWN
6	15513567	G	A	I-H-108086-T1-1-D1-1	0.5	692JARID2	p.G1122R	non_synonymous_codon	UNKNOWN
20	36026209	C	T	I-H-108086-T1-1-D1-1	0.49	1745SRC	p.R271W	non_synonymous_codon	UNKNOWN
8	37555584	T	TCGCACCTCGGC GGCTCCAGCTGCCACCTGCAGCGCGCCGA	I-H-108086-T1-1-D1-1	0.113	2228ZNF703	p.A401_H402ins PTHLGGSSCST CSA	inframe_codon_gain	UNKNOWN
9	5073770	G	T	I-H-108087-T1-1-D1-1	0.38	351JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
5	35876182	A	G	I-H-108087-T1-1-D1-1	0.48	441IL7R	p.Q325R	non_synonymous_codon	UNKNOWN
6	26056310	G	C	I-H-108087-T1-1-D1-1	0.46	1301HIST1H1C	p.A116G	non_synonymous_codon	UNKNOWN
7	82595427	T	C	I-H-108087-T1-1-D1-1	0.46	1402PCLO	p.K1228R	non_synonymous_codon	UNKNOWN
19	19256794	G	T	I-H-108087-T1-1-D1-1	0.48	319MEF2B	p.R307S	non_synonymous_codon	UNKNOWN
X	53432009	G	A	I-H-108087-T1-1-D1-1	0.54	199SMC1A	p.R711W	non_synonymous_codon	LIKELY
7	151945217	ACT	A	I-H-108087-T1-1-D1-1	0.038	1007KMT2C	p.E767fs*28	frameshift_variant	UNKNOWN
7	151962167	AC	A	I-H-108087-T1-1-D1-1	0.056	753KMT2C	p.R380fs*25	frameshift_variant	UNKNOWN
7	151945330	G	T	I-H-108088-T1-1-D1-1	0.051	779KMT2C	p.S730Y	non_synonymous_codon	LIKELY
6	108985226	C	G	I-H-108088-T1-1-D1-1	0.089	1123FOXO3	p.P397R	non_synonymous_codon	UNKNOWN
7	148512132	C	G	I-H-108088-T1-1-D1-1	0.1	147EZH2	p.?	splice_site_variant	LIKELY
6	117631301	C	T	I-H-108088-T1-1-D1-1	0.48	472ROS1	p.R2126Q	non_synonymous_codon	UNKNOWN
6	26234797	T	C	I-H-108088-T1-1-D1-1	0.47	830HIST1H1D	p.K122R	non_synonymous_codon	UNKNOWN
5	131945093	G	A	I-H-108088-T1-1-D1-1	0.51	294RAD50	p.?	splice_site_variant	UNKNOWN
16	2983334	G	A	I-H-108088-T1-1-D1-1	0.53	810FLYWCH1	p.D333N	non_synonymous_codon	UNKNOWN
11	76253389	C	G	I-H-108088-T1-1-D1-1	0.43	476C11orf30	p.A896G	non_synonymous_codon	UNKNOWN
17	78935270	G	A	I-H-108088-T1-1-D1-1	0.5	640RPTOR	p.V1228M	non_synonymous_codon	UNKNOWN
1	160325722	G	A	I-H-108088-T1-1-D1-1	0.44	391NCSTN	p.D509N	non_synonymous_codon	UNKNOWN
2	242681923	G	A	I-H-108088-T1-1-D1-1	0.48	692D2HGDH	p.V142I	non_synonymous_codon	UNKNOWN
19	13054627	A	ATTGTC	I-H-108088-T1-1-D1-1	0.144	445CALR	p.K385fs*47	frameshift_variant	LIKELY
19	33792731	G	GGCGGGT	I-H-108088-T1-1-D1-1	0.227	22CEBPA	p.P196_P197ins HP	inframe_codon_gain	UNKNOWN
16	2134981	CCTT	C	I-H-108088-T1-1-D1-1	0.443	751TSC2	p.F1510delF	inframe_codon_loss	UNKNOWN
20	31022683	TAGGAGAG	T	I-H-108088-T1-1-D1-1	0.071	407ASXL1	p.R718fs*5	frameshift_variant	LIKELY
21	36259322	G	GC	I-H-108088-T1-1-D1-1	0.082	960RUNX1	p.P57fs*81	frameshift_variant	LIKELY
17	70120019	G	GCGC	I-H-108088-T1-1-D1-1	0.279	172SOX9	p.P346_Q347ins P	inframe_codon_gain	UNKNOWN
7	151882672	C	A	I-H-108089-T1-1-D1-1	0.13	563KMT2C	p.A1685S	non_synonymous_codon	LIKELY
19	10472202	C	G	I-H-108089-T1-1-D1-1	0.24	1522TYK2	p.V678L	non_synonymous_codon	UNKNOWN
20	31017239	G	A	I-H-108089-T1-1-D1-1	0.39	328ASXL1	p.?	splice_site_variant	LIKELY
13	41240039	C	G	I-H-108089-T1-1-D1-1	0.32	25FOXO1	p.G104A	non_synonymous_codon	UNKNOWN
2	25990569	C	T	I-H-108089-T1-1-D1-1	0.5	877ASXL2	p.G220R	non_synonymous_codon	UNKNOWN
4	106197317	A	G	I-H-108089-T1-1-D1-1	0.41	380TET2	p.T1884A	non_synonymous_codon	ONCOGENIC
17	74732935	CGGCGGCTGTGGTGTGAGTCCGGGG	C	I-H-108089-T1-1-D1-1	0.286	367SRSF2	p.P95_R102delP PDSHHSR	inframe_codon_loss	ONCOGENIC
9	5073770	G	T	I-H-108090-T1-1-D1-1	0.57	421JAK2	p.V617F	non_synonymous_codon	ONCOGENIC
20	57484421	G	A	I-H-108090-T1-1-D1-1	0.42	782GNAS	p.R202H	non_synonymous_codon	ONCOGENIC
17	17118598	C	T	I-H-108090-T1-1-D1-1	0.51	340FLCN	p.A445T	non_synonymous_codon	UNKNOWN
2	209113112	C	T	I-H-108090-T1-1-D1-1	0.42	240DH1	p.R132H	non_synonymous_codon	ONCOGENIC
8	27645464	A	C	I-H-108090-T1-1-D1-1	0.51	383ESCO2	p.Q359P	non_synonymous_codon	UNKNOWN
19	18278023	C	T	I-H-108090-T1-1-D1-1	0.41	417PIK3R2	p.A548V	non_synonymous_codon	UNKNOWN
2	96810790	C	A	I-H-108090-T1-1-D1-1	0.55	198DUSP2	p.R102W	non_synonymous_codon	UNKNOWN
7	80290500	T	C	I-H-108090-T1-1-D1-1	0.53	306CD36	p.F135L	non_synonymous_codon	UNKNOWN
17	74732935	CGGCGGCTGTGGTGTGAGTCCGGGG	C	I-H-108090-T1-1-D1-1	0.339	425SRSF2	p.P95_R102delP PDSHHSR	inframe_codon_loss	ONCOGENIC
22	29091856	AG	A	I-H-108090-T1-1-D1-1	0.404	218CHEK2	p.T410fs*15	frameshift_variant	UNKNOWN

Table S2

	MAC (N=18)	RIC (N=83)	p value*
Age at transplant			0.8639
N	18	83	
Mean (SD)	58.0 (7.7)	57.7 (7.8)	
Median	59.3	59	
Range	(38.3-65.5)	(30.0-73.4)	
gender			0.2931
Male	13 (72.2%)	47 (56.6%)	
cytogenetic risk			0.2124
Missing	3	12	
favorable	13 (86.7%)	48 (67.6%)	
unfavorable	2 (13.3%)	23 (32.4%)	
Diagnosis Group			0.8019
PMF	10 (55.6%)	52 (62.7%)	
Post ET MF	4 (22.2%)	16 (19.3%)	
Post PV MF	4 (22.2%)	14 (16.9%)	
MPN-U	0 (0.0%)	1 (1.2%)	
DIPSS			0.4697
Low Risk	1 (5.6%)	8 (9.6%)	
Int-1	4 (22.2%)	32 (38.6%)	
Int-2	10 (55.6%)	31 (37.3%)	
High Risk	3 (16.7%)	12 (14.5%)	
Donor Type			0.0084
MRD	7 (38.9%)	39 (47.0%)	
MUD	8 (44.4%)	44 (53.0%)	
Mismatch	3 (16.7%)	0 (0.0%)	
Time from Diagnosis to Transplant (years)			0.895
Mean (SD)	3.5 (5.0)	3.4 (4.3)	
Median	1.4	2.1	
Range	(0.2-18.0)	(0.1-28.4)	
3 or more somatic mutations			0.3976
Yes	7 (38.9%)	23 (27.7%)	
HMR			0.7948
Yes	6 (33.3%)	31 (37.3%)	
MPN Triple Negative (no for JAK2, MPL and CALR)			0.5336
Yes	5 (27.8%)	17 (20.5%)	
MPN drive mutation			0.9032
Had two mutations (JAK2&CALR or JAK2&MPL)	1 (5.6%)	4 (4.8%)	
Only had JAK2	9 (50.0%)	43 (51.8%)	
Only had CALR	3 (16.7%)	19 (22.9%)	
Triple negative	5 (27.8%)	17 (20.5%)	
*: Two sample t-test or Fisher's exact test was used when applicable			

Table S3

Effect	Level	NRM N/Total N	HR (95% CI)	P value
Conditioning Regimen	MAC	1/18	Reference	0.0024
	RIC	36/83	10.59 (1.49-75.46)	
U2AF1_cat	No	29/91	Reference	0.0036
	Yes	8/10	3.25 (1.60-6.60)	
IDH2_cat	No	31/93	Reference	0.0277
	Yes	6/8	2.72 (1.24-5.98)	
DNMT3A_cat	No	33/96	Reference	0.0311
	Yes	4/5	3.16 (1.27-7.84)	

Table S4

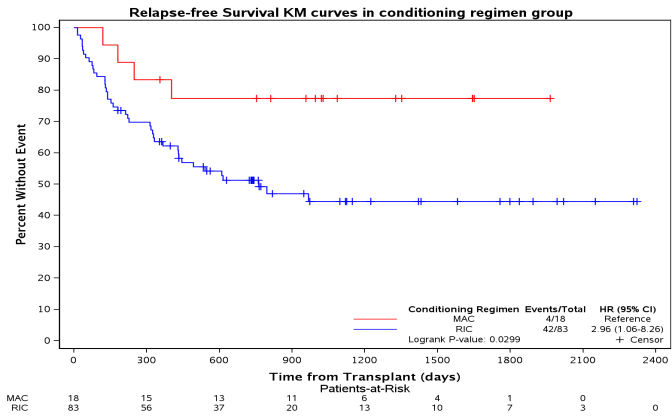
Effect	Level	HR (95% CI)	P value
Age at transplant	50 - 65 vs. < 50	1.27 (0.50,3.25)	0.8763
	> 65 vs. < 50	1.29 (0.41,4.05)	
gender	F vs. M	1.10 (0.61,1.98)	0.7434
Cytogenetic risk	unfavorable vs. favorable	1.88 (0.98,3.61)	0.1007
	NA vs. favorable	1.85 (0.83,4.15)	
DIPSS	High Risk vs. Low Risk	1.34 (0.40,4.46)	0.7146
	Int-1 vs. Low Risk	1.34 (0.45,3.97)	
	Int-2 vs. Low Risk	0.94 (0.31,2.81)	
Spleen status	Splenectomy vs. No splenomegaly	1.61 (0.57,4.53)	0.5971
	Splenomegaly vs. No splenomegaly	1.39 (0.66,2.93)	
Conditioning intensity	RIC vs. MAC	2.96 (1.06,8.26)	0.03
Time from diagnosis to transplant	>2 years vs. <= 2 years	0.95 (0.53,1.69)	0.8486
Primary vs secondary MF	Other dx vs. PMF	0.89 (0.49,1.63)	0.7109
Donor	Unrelated vs. Related	1.72 (0.95,3.14)	0.072
Donor age	>=50 vs. <50	0.88 (0.46,1.68)	0.6896
Mutations	At least one positive vs. triple negative	1.33 (0.62,2.85)	0.4626
HMR presence	Yes vs. No	1.47 (0.81,2.68)	0.2022
3 or more somatic mutations	Yes vs. No	1.53 (0.84,2.79)	0.1609
JAK2	Yes vs. No	1.59 (0.86,2.95)	0.1368
CALR	Yes vs. No	0.61 (0.27,1.35)	0.2169
ASXL1	Yes vs. No	1.67 (0.85,3.30)	0.1332
SRSF2	Yes vs. No	0.85 (0.34,2.16)	0.7402
KMT2C	Yes vs. No	1.23 (0.52,2.91)	0.6313
U2AF1	Yes vs. No	2.37 (1.10,5.08)	0.0226
TET2	Yes vs. No	1.49 (0.59,3.77)	0.3991
IDH2	Yes vs. No	1.99 (0.84,4.70)	0.1088
DNMT3A	Yes vs. No	4.02 (1.56,10.35)	0.0018
MIPSS-70	High Risk vs. Intermediate/low risk	1.30 (0.66,2.55)	0.4496

Table S5

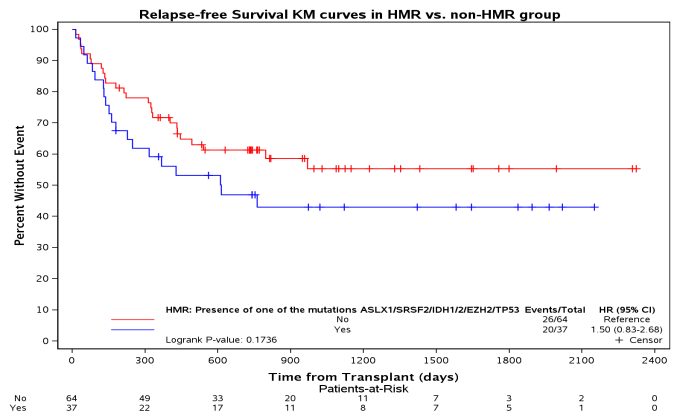
Case	Months Post-Transplant	%Donor	%Host	Detection of JAK2V617F mutation
PT1	1	84	16	-
	3	83	17	-
	5	85	15	-
	8	60	40	+
PT2	2	100	0	-
	3	100	0	-
	4	100	0	-
	5	80	20	+
PT3	1	100	0	-
	3	100	0	-
	4	91	9	+
PT4	1	100	0	-
	3	77	23	-
	4	75	25	N/A
	6	52	48	+
	12	14	86	+

Supplemental Figure 1

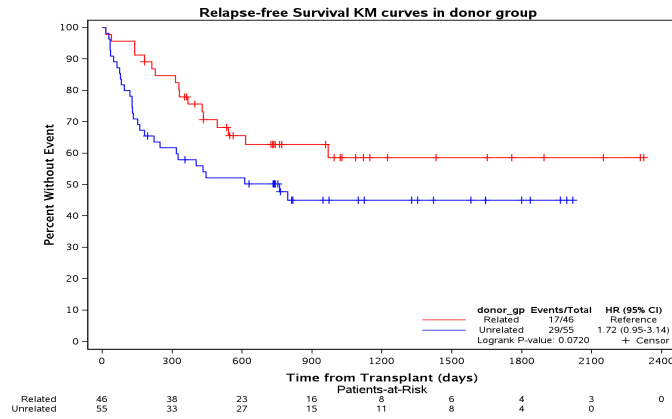
A



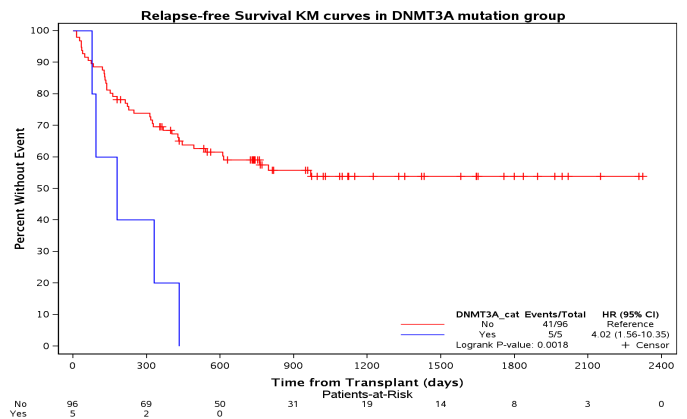
B



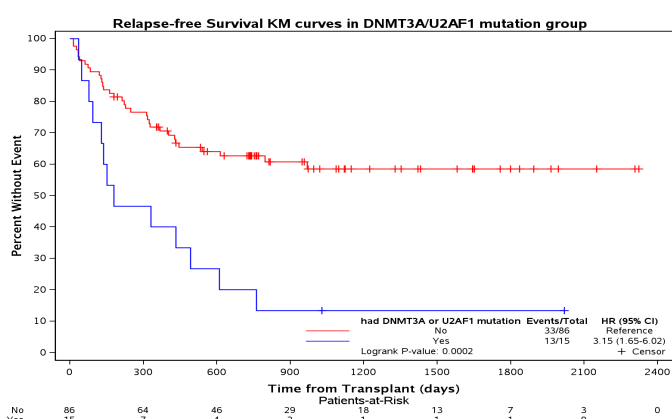
C



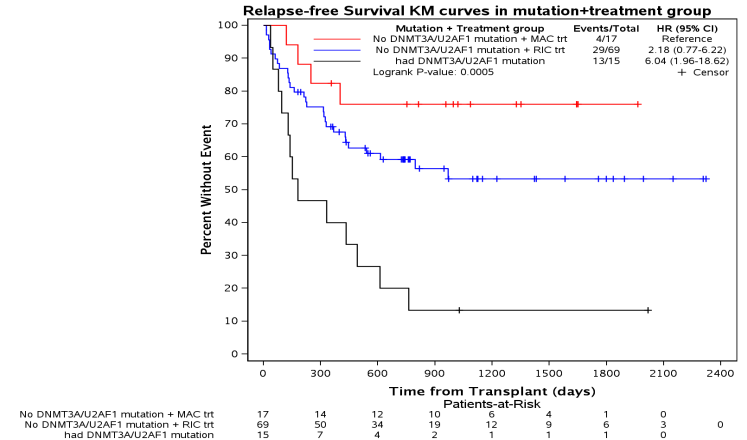
D



E



F



Supplemental Figure 2

