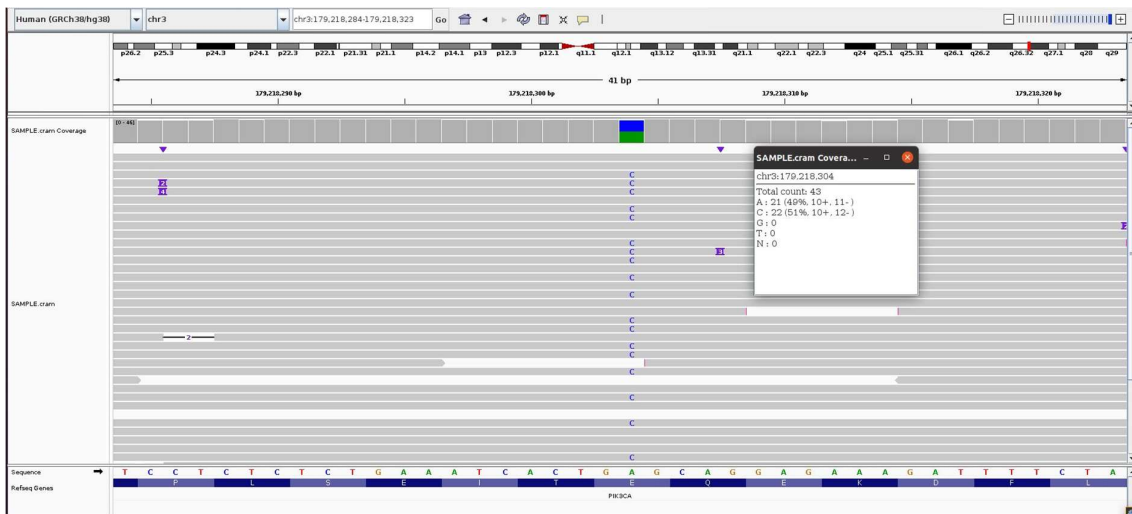




Supplementary Figure 1: Gene viewed in IGV Browser - representative of CNV gene loss, reads filled with white empty space means loss of reads that can properly aligned to reference genome, in this example HLA-A gene (Supplementary Fig. 1a); representative of no gene loss, reads filled with grey means properly aligned to reference genome with coloured bases mean single nucleotide variations, in this example TP53 gene (Supplementary Fig. 1b)



Supplementary Figure 2: The IGV browser view of the NM\_006218.4:c.1634A>C variant. Within the position of the variant, 22 reads were mapped as C, instead of A, confirming the presence of the variant.

Supplementary Table 1: List of genes with total loss at chromosome 6 from position 28,500,000 until 33,500,000. Shaded rows highlighted significant genes when altered may relate to cancer or render immune system defective.

Gene name	Chromosome	Gene Position		Gene type	Cancer / Immune Related Pathway	
		Start (bp)	End (bp)			
HLA-F	6	29722775	29738528	protein coding	Antigen processing and presentation (Immune system)	
HLA-G	6	29826967	29831125	protein coding	Antigen processing and presentation (Immune system)	
HLA-A	6	29941260	29949572	protein coding	Antigen processing and presentation (Immune system)	
HLA-E	6	30489509	30494194	protein coding	Antigen processing and presentation (Immune system)	
HLA-C	6	31268749	31272130	protein coding	Antigen processing and presentation (Immune system)	
HLA-B	6	31353872	31367067	protein coding	Antigen processing and presentation (Immune system)	
MICB	6	31494881	31511124	protein coding	Antigen processing and presentation (Immune system)	
HLA-DRA	6	32439878	32445046	protein coding	Antigen processing and presentation (Immune system)	
HLA-DRB5	6	32517353	32530287	protein coding	Antigen processing and presentation (Immune system)	
HLA-DRB1	6	32577902	32589848	protein coding	Antigen processing and presentation (Immune system)	
HLA-DQA1	6	32628179	32647062	protein coding	Antigen processing and presentation (Immune system)	
HLA-DQB1	6	32659467	32668383	protein coding	Antigen processing and presentation (Immune system)	
HLA-DOA2	6	32741391	32747198	protein coding	Antigen processing and presentation (Immune system)	
HLA-DOB	6	32812763	32820466	protein coding	Antigen processing and presentation (Immune system)	
TAP2	6	32821833	32838739	protein coding	Antigen processing and presentation (Immune system)	
TAP1	6	32845209	32853816	protein coding	Antigen processing and presentation (Immune system)	
HLA-DMB	6	32934629	32941028	protein coding	Antigen processing and presentation (Immune system)	
HLA-DMA	6	32948613	32969094	protein coding	Antigen processing and presentation (Immune system)	
HLA-DOA	6	33004182	33009591	protein coding	Antigen processing and presentation (Immune system)	
HLA-DPA1	6	33064569	33080775	protein coding	Antigen processing and presentation (Immune system)	
HLA-DPB1	6	33075990	33089696	protein coding	Antigen processing and presentation (Immune system)	
TAPBP	6	33299694	33314284	protein coding	Antigen processing and presentation (Immune system)	
TNF	6	31575565	31578336	protein coding	Apoptosis Signalling	Complement and coagulation cascades (Immune system)
C2	6	31897785	31945673	protein coding	Complement and coagulation cascades (Immune system)	
CFB	6	31945650	31952086	protein coding	Complement and coagulation cascades (Immune system)	

C4A	6	31982057	32002681	protein_coding	Complement and coagulation cascades (Immune system)	
C4B	6	32014795	32035418	protein_coding	Complement and coagulation cascades (Immune system)	
ATF6B	6	32115264	32128253	protein_coding	ERK Signalling	Chemokine signaling (Immune system)
TUBB	6	30717435	30725538	protein_coding	Fc gamma R-mediated phagocytosis (Immune system)	
GPSM3	6	32190766	32195523	protein_coding	NOD-like receptor (Immune system)	
NOTCH4	6	32194843	32224067	protein_coding	NOTCH Signalling	
GPX6	6	28503296	28528215	protein_coding		
GPX5	6	28525881	28534955	protein_coding		
SCAND3	6	28570535	28616212	protein_coding		
ZBED9-AS1	6	28587378	28591747	lncRNA		
	6	28633381	28633594	processed_pseudogene		
	6	28634861	28649538	lncRNA		
LINC00533	6	28648286	28649066	lncRNA		
RPSAP2	6	28732017	28732904	processed_pseudogene		
NOP56P1	6	28783633	28784004	processed_pseudogene		
	6	28837240	28839058	lncRNA		
LINC01623	6	28859625	28864630	lncRNA		
RPL13P	6	28861416	28862047	processed_pseudogene		
ZNF90P2	6	28888832	28889906	processed_pseudogene		
HCG14	6	28896530	28897322	lncRNA		
TRIM27	6	28903002	28923988	protein_coding		
RNU6-930P	6	28915645	28915744	snRNA		
LINC01556	6	28943877	28944537	lncRNA		
KRT18P1	6	28969130	28970460	processed_pseudogene		
RN7SL471P	6	28977475	28977773	misc_RNA		
HCG15	6	28986203	28987484	lncRNA		
	6	28986800	28988536	lncRNA		
ZNF311	6	28994785	29005316	protein_coding		
OR2AD1P	6	29026680	29027607	unprocessed_pseudogene		
OR2W1-AS1	6	29036021	29076524	lncRNA		

OR2W1	6	29044213	29045175	protein coding		
OR2P1P	6	29071824	29072599	unprocessed_pseudogene		
SAR1AP1	6	29076573	29077168	processed_pseudogene		
OR2B3	6	29086208	29087313	protein coding		
OR2J1	6	29099490	29102701	protein coding		
OR2J3	6	29108058	29114770	protein coding		
	6	29124210	29128908	lncRNA		
	6	29137410	29142934	lncRNA		
OR2N1P	6	29137880	29138816	transcribed_unprocessed_pseudogene		
	6	29162475	29166201	lncRNA		
OR2J2	6	29170907	29175811	protein coding		
OR2J4P	6	29181510	29182445	unprocessed_pseudogene		
	6	29212886	29216933	lncRNA		
OR2H4P	6	29215236	29216179	transcribed_unprocessed_pseudogene		
LINC03003	6	29223973	29292963	lncRNA		
OR2G1P	6	29229227	29230157	unprocessed_pseudogene		
OR2U1P	6	29262703	29264079	unprocessed_pseudogene		
OR2U2P	6	29268462	29269421	unprocessed_pseudogene		
LINC03003	6	29290711	29291653	transcribed_unprocessed_pseudogene		
OR14J1	6	29301701	29313017	protein coding		
DDX6P1	6	29329626	29331061	processed_pseudogene		
OR5V1	6	29353749	29431967	protein coding		
OR12D3	6	29373423	29375291	protein coding		
OR12D2	6	29395631	29398008	protein coding		
OR12D1	6	29414928	29418905	protein coding		
OR11A1	6	29425504	29457071	protein coding		
OR10C1	6	29439306	29440977	protein coding		
	6	29450210	29450558	processed_pseudogene		
OR2H1	6	29457155	29464328	protein coding		
UBDP1	6	29464596	29469806	unprocessed_pseudogene		

MAS1LP1	6	29475025	29476071	unprocessed_pseudogene		
	6	29485157	29494160	lncRNA		
MAS1L	6	29486697	29487956	protein_coding		
RPS17P1	6	29489271	29489676	processed_pseudogene		
LINC02829	6	29497475	29510558	lncRNA		
LINC01015	6	29528721	29533665	lncRNA		
GPR53P	6	29537704	29538787	unprocessed_pseudogene		
OR211P	6	29550407	29557773	protein_coding		
UBD	6	29555515	29559732	protein_coding		
GABBR1	6	29555629	29633976	protein_coding		
OR2H5P	6	29573909	29574836	unprocessed_pseudogene		
TMEM183AP1	6	29577459	29577748	processed_pseudogene		
SNORD32B	6	29582249	29582332	snoRNA		
RPL13AP	6	29582508	29583025	processed_pseudogene		
OR2H2	6	29585121	29590500	protein_coding		
SUMO2P1	6	29636060	29636343	processed_pseudogene		
MOG	6	29657002	29672372	protein_coding		
ZFP57	6	29672483	29681155	protein_coding		
ZDHHC20P1	6	29708125	29708547	processed_pseudogene		
	6	29722981	29723971	unprocessed_pseudogene		
HLA-F-AS1	6	29726601	29749049	lncRNA		
RPL23AP1	6	29726669	29727139	transcribed_processed_pseudogene		
MICE	6	29741731	29748969	transcribed_unprocessed_pseudogene		
HCG9P5	6	29748289	29748513	unprocessed_pseudogene		
Y_RNA	6	29750371	29750472	misc_RNA		
IFITM4P	6	29750729	29751148	processed_pseudogene		
	6	29751965	29752207	lncRNA		
	6	29752573	29763295	lncRNA		
	6	29763258	29763392	processed_pseudogene		
HLA-V	6	29790954	29797811	lncRNA		

HCG4	6	29791753	29792750	unprocessed_pseudogene		
HLA-V	6	29792234	29793136	transcribed_unprocessed_pseudogene		
HLA-P	6	29800415	29802425	unprocessed_pseudogene		
RPL7AP7	6	29803195	29803991	processed_pseudogene		
MICG	6	29812565	29812696	unprocessed_pseudogene		
HCG4P8	6	29827385	29828364	unprocessed_pseudogene		
	6	29849550	29885615	lncRNA		
	6	29852363	29852491	transcribed_unprocessed_pseudogene		
HCP5B	6	29871895	29873783	lncRNA		
	6	29887294	29888268	unprocessed_pseudogene		
HLA-H	6	29887752	29890482	unprocessed_pseudogene		
HLA-T	6	29896654	29897786	unprocessed_pseudogene		
DDX39BP1	6	29906543	29906909	unprocessed_pseudogene		
MCCD1P1	6	29907783	29908645	unprocessed_pseudogene		
HCG4B	6	29925983	29926973	unprocessed_pseudogene		
HLA-K	6	29926459	29929232	unprocessed_pseudogene		
HLA-U	6	29934101	29934286	unprocessed_pseudogene		
	6	29942075	29943067	unprocessed_pseudogene		
HLA-W	6	29956596	29958570	unprocessed_pseudogene		
MICD	6	29970801	29972464	unprocessed_pseudogene		
HCG9	6	29975112	29978410	lncRNA		
POLR1HASP	6	29976042	30061640	transcribed_unitary_pseudogene		
DDX39BP2	6	29993209	29993605	unprocessed_pseudogene		
MCCD1P2	6	29994437	29995314	unprocessed_pseudogene		
	6	30005971	30009956	lncRNA		
	6	30006121	30007116	unprocessed_pseudogene		
HLA-J	6	30006606	30009539	transcribed_unprocessed_pseudogene		
ETF1P1	6	30031713	30033003	processed_pseudogene		
	6	30035916	30035983	misc_RNA		
	6	30058115	30058190	misc_RNA		

POLR1H	6	30058899	30064909	protein_coding		
	6	30061080	30061183	misc_RNA		
PPP1R11	6	30066709	30070333	protein_coding		
RNF39	6	30070266	30075849	protein_coding		
TRIM31	6	30102897	30113090	protein_coding		
TRIM31-AS1	6	30105240	30114724	lncRNA		
	6	30132805	30132966	snoRNA		
TRIM40	6	30136124	30148735	protein_coding		
TRIM10	6	30151943	30161211	protein_coding		
TRIM15	6	30163206	30172693	protein_coding		
TRIM26	6	30184455	30213427	protein_coding		
PAIP1P1	6	30186798	30188614	processed_pseudogene		
HCG17	6	30234039	30326134	lncRNA		
TRIM26BP	6	30238301	30242279	unprocessed_pseudogene		
HLA-L	6	30259548	30293015	lncRNA		
HLA-L	6	30259625	30261703	transcribed_unprocessed_pseudogene		
	6	30282349	30286054	TEC		
HCG18	6	30286690	30327382	lncRNA		
TRIM39	6	30326479	30343729	protein_coding		
TRIM39-RPP21	6	30328907	30346854	protein_coding		
RPP21	6	30345131	30346884	protein_coding		
HLA-N	6	30351416	30351550	unprocessed_pseudogene		
	6	30359278	30359911	processed_pseudogene		
UBQLN1P1	6	30363112	30364280	processed_pseudogene		
MICC	6	30414715	30419319	unprocessed_pseudogene		
	6	30451139	30456212	lncRNA		
	6	30460825	30481634	lncRNA		
TMPOP1	6	30466452	30467994	processed_pseudogene		
SUCLA2P1	6	30468882	30470251	processed_pseudogene		
RANP1	6	30485940	30486590	processed_pseudogene		

LINC02569	6	30516266	30519217	lncRNA		
GNL1	6	30541381	30556489	protein_coding		
PRR3	6	30557280	30563723	protein_coding		
	6	30570638	30571273	lncRNA		
ABCF1	6	30571393	30597179	protein_coding		
MIR877	6	30584332	30584417	miRNA		
PPP1R10	6	30600413	30618612	protein_coding		
MRPS18B	6	30617840	30626395	protein_coding		
ATAT1	6	30626842	30646823	protein_coding		
PTMAP1	6	30633632	30633956	processed_pseudogene		
C6orf136	6	30647039	30653210	protein_coding		
DHX16	6	30653119	30673006	protein_coding		
PPP1R18	6	30676389	30687895	protein_coding		
NRM	6	30688047	30691420	protein_coding		
RPL7P4	6	30696806	30697535	processed_pseudogene		
MDC1	6	30699807	30717447	protein_coding		
MDC1-AS1	6	30703067	30713184	lncRNA		
	6	30723105	30723877	lncRNA		
FLOT1	6	30727709	30742732	protein_coding		
Y_RNA	6	30736304	30736414	misc_RNA		
IER3-AS1	6	30742757	30743638	lncRNA		
IER3	6	30743199	30744548	protein_coding		
HCG20	6	30743790	30792250	lncRNA		
RN7SL353P	6	30751038	30751289	misc_RNA		
LINC00243	6	30798211	30830659	lncRNA		
LINC02570	6	30838324	30848204	lncRNA		
RN7SKP186	6	30864250	30864552	misc_RNA		
DDR1-DT	6	30866982	30875918	lncRNA		
DDR1	6	30876421	30900156	protein_coding		
MIR4640	6	30890883	30890972	miRNA		



GTF2H4	6	30908207	30914106	protein_coding		
	6	30908242	30926459	lncRNA		
VAR2	6	30914205	30926459	protein_coding		
SFTA2	6	30931353	30955636	protein_coding		
Y_RNA	6	30932618	30932709	misc_RNA		
MUCL3	6	30934523	30954221	protein_coding		
HCG21	6	30945979	30954862	lncRNA		
NAPGP2	6	30961403	30962396	processed_pseudogene		
MUC21	6	30983718	30989903	protein_coding		
MUC22	6	31010474	31035402	protein_coding		
HCG22	6	31053450	31059890	protein_coding		
RNU6-1133P	6	31083010	31083109	snRNA		
C6orf15	6	31111223	31112575	protein_coding		
PSORS1C1	6	31114750	31140092	protein_coding		
CDSN	6	31115087	31120446	protein_coding		
PSORS1C2	6	31137534	31139066	protein_coding		
POLR2LP1	6	31140727	31140913	processed_pseudogene		
CCHCR1	6	31142439	31158238	protein_coding		
TCF19	6	31158331	31167159	protein_coding		
POU5F1	6	31164337	31180731	protein_coding		
PSORS1C3	6	31173735	31177899	lncRNA		
	6	31195200	31198037	lncRNA		
HCG27	6	31197760	31203968	lncRNA		
	6	31200165	31201918	lncRNA		
	6	31222913	31223093	unprocessed_pseudogene		
	6	31224342	31225058	unprocessed_pseudogene		
	6	31272240	31272590	lncRNA		
USP8P1	6	31275572	31278754	processed_pseudogene		
RPL3P2	6	31280317	31281519	processed_pseudogene		
WASF5P	6	31287510	31288964	processed_pseudogene		

LINC02571	6	31293908	31301642	lncRNA		
	6	31307815	31308549	unprocessed_pseudogene		
MIR6891	6	31355224	31355316	miRNA		
	6	31356647	31357637	unprocessed_pseudogene		
DHFRP2	6	31360865	31367354	transcribed_processed_pseudogene		
	6	31367057	31376088	lncRNA		
RNU6-283P	6	31370134	31370240	snRNA		
FGFR3P1	6	31377419	31378019	processed_pseudogene		
ZDHHC20P2	6	31380411	31380839	processed_pseudogene		
HLA-S	6	31382074	31382288	unprocessed_pseudogene		
	6	31394289	31395495	lncRNA		
MICA	6	31399784	31415315	protein_coding		
	6	31400702	31463705	lncRNA		
Y RNA	6	31402152	31402250	misc_RNA		
LINC01149	6	31441667	31446973	lncRNA		
	6	31462728	31463336	unprocessed_pseudogene		
HCP5	6	31463170	31478936	lncRNA		
MICB-DT	6	31479973	31494935	lncRNA		
Y_RNA	6	31496689	31496790	misc_RNA		
	6	31515979	31516211	unprocessed_pseudogene		
PPIAP9	6	31519480	31520291	processed_pseudogene		
RPL15P4	6	31528114	31528693	processed_pseudogene		
MCCD1	6	31528962	31530232	protein_coding		
DDX39B	6	31530219	31542448	protein_coding		
ATP6V1G2- DDX39B	6	31530219	31546608	protein_coding		
SNORD117	6	31536374	31536449	snoRNA		
SNORD84	6	31541101	31541178	snoRNA		
DDX39B-AS1	6	31542304	31543138	lncRNA		
ATP6V1G2	6	31544444	31548427	protein_coding		
NFKBIL1	6	31546870	31558829	protein_coding		

	6	31560244	31572700	lncRNA		
LTA	6	31572054	31574324	protein_coding		
LTB	6	31580525	31582522	protein_coding		
LST1	6	31586124	31588909	protein_coding		
NCR3	6	31588895	31593006	protein_coding		
UQCRHP1	6	31611083	31611356	processed_pseudogene		
AIF1	6	31615217	31617021	protein_coding		
	6	31619847	31620406	lncRNA		
PRRC2A	6	31620715	31637771	protein_coding		
	6	31622774	31622860	protein_coding		
SNORA38	6	31623079	31623210	snoRNA		
	6	31623874	31625499	protein_coding		
MIR6832	6	31633787	31633858	miRNA		
BAG6	6	31639028	31652705	protein_coding		
APOM	6	31652416	31658210	protein_coding		
C6orf47	6	31658298	31660778	protein_coding		
C6orf47-AS1	6	31658329	31660721	lncRNA		
GPANK1	6	31661228	31666283	protein_coding		
Y_RNA	6	31663288	31663401	misc_RNA		
CSNK2B	6	31665227	31670343	protein_coding		
	6	31666102	31673546	protein_coding		
LY6G5B	6	31669976	31673776	protein_coding		
LY6G5C	6	31676684	31684040	protein_coding		
ABHD16A	6	31686955	31703356	protein_coding		
	6	31686962	31714072	lncRNA		
MIR4646	6	31701029	31701091	miRNA		
LY6G6F	6	31706866	31710679	protein_coding		
LY6G6F-LY6G6D	6	31706904	31717918	protein_coding		
LY6G6E	6	31711771	31714065	transcribed_unitary_pseudogene		
LY6G6D	6	31715348	31717919	protein_coding		

MPIG6B	6	31718594	31726714	protein_coding		
LY6G6C	6	31718648	31721746	protein_coding		
DDAH2	6	31727038	31730617	protein_coding		
CLIC1	6	31730581	31739763	protein_coding		
MSH5	6	31739677	31762676	protein_coding		
MSH5-SAPCD1	6	31740020	31764851	protein_coding		
RNU6-850P	6	31756951	31757053	snRNA		
SAPCD1	6	31762656	31764850	protein_coding		
SAPCD1-AS1	6	31764310	31765588	lncRNA		
VWA7	6	31765590	31777328	protein_coding		
VAR51	6	31777518	31795752	protein_coding		
Y_RNA	6	31778817	31778905	misc_RNA		
LSM2	6	31797396	31806966	protein_coding		
HSPA1L	6	31809619	31815283	protein_coding		
HSPA1A	6	31815543	31817946	protein_coding		
	6	31821149	31821964	lncRNA		
	6	31826841	31827443	lncRNA		
HSPA1B	6	31827738	31830254	protein_coding		
	6	31828834	31839719	lncRNA		
SNHG32	6	31834608	31839766	lncRNA		
SNORD48	6	31835263	31835326	snoRNA		
SNORD52	6	31837076	31837142	snoRNA		
NEU1	6	31857659	31862905	protein_coding		
SLC44A4	6	31863192	31879046	protein_coding		
EHMT2-AS1	6	31877808	31884204	lncRNA		
EHMT2	6	31879759	31897698	protein_coding		
ZBTB12	6	31899613	31902086	protein_coding		
	6	31927698	31952048	protein_coding		
C2-AS1	6	31934474	31941724	lncRNA		
NELFE	6	31952087	31959038	protein_coding		

MIR1236	6	31956839	31956940	miRNA		
SKIC2	6	31959116	31969818	protein_coding		
DXO	6	31969810	31972290	protein_coding		
STK19	6	31971091	31982821	protein_coding		
C4A-AS1	6	31999976	32003521	lncRNA		
	6	32005636	32008451	lncRNA		
CYP21A1P	6	32005689	32008399	transcribed_unprocessed_pseudogene		
TNXA	6	32008614	32012472	unprocessed_pseudogene		
STK19B	6	32013270	32013787	unprocessed_pseudogene		
C4B-AS1	6	32032713	32036258	lncRNA		
CYP21A2	6	32038327	32041644	protein_coding		
TNXB	6	32041153	32115334	protein_coding		
RNA5SP206	6	32078508	32078628	rRNA_pseudogene		
	6	32098176	32117610	lncRNA		
	6	32108406	32112849	lncRNA		
FKBPL	6	32128707	32130288	protein_coding		
PRRT1	6	32148359	32153083	protein_coding		
	6	32150495	32154373	protein_coding		
	6	32152802	32154365	lncRNA		
PPT2	6	32153441	32163678	protein_coding		
PPT2-EGFL8	6	32153845	32171978	protein_coding		
EGFL8	6	32164595	32168281	protein_coding		
AGPAT1	6	32168212	32178096	protein_coding		
MIR6721	6	32170030	32170116	miRNA		
RNF5	6	32178405	32180793	protein_coding		
MIR6833	6	32179816	32179876	miRNA		
AGER	6	32180968	32184322	protein_coding		
	6	32184733	32185882	lncRNA		
PBX2	6	32184733	32190202	protein_coding		
TSBP1-AS1	6	32254640	32407763	lncRNA		

TSBP1	6	32288526	32371907	protein coding		
HNRNPA1P2	6	32325219	32326178	processed_pseudogene		
RNU6-603P	6	32352877	32352983	snRNA		
BTNL2	6	32393339	32407181	protein coding		
HLA-DRB9	6	32459821	32473500	unprocessed_pseudogene		
RNU1-61P	6	32549940	32550090	snRNA		
HLA-DRB6	6	32552713	32560022	lncRNA		
HLA-DRB6	6	32553046	32558186	transcribed_unprocessed_pseudogene		
HLA-DQB1-AS1	6	32659880	32660729	lncRNA		
MTCO3P1	6	32706124	32706955	unprocessed_pseudogene		
	6	32718005	32719170	lncRNA		
HLA-DQB3	6	32730758	32731695	unprocessed_pseudogene		
MIR3135B	6	32749912	32749979	miRNA		
HLA-DQB2	6	32756098	32763532	protein coding		
	6	32813767	32838822	protein coding		
PSMB8	6	32840717	32844679	protein coding		
PSMB8-AS1	6	32844078	32846500	lncRNA		
PSMB9	6	32844136	32859851	protein coding		
PPP1R2P1	6	32879171	32879848	transcribed_processed_pseudogene		
	6	32893197	32894665	lncRNA		
	6	32894299	32903758	lncRNA		
HLA-Z	6	32896416	32896490	unprocessed_pseudogene		
	6	32937364	32953122	protein coding		
BRD2	6	32968594	32981505	protein coding		
	6	32970232	32970886	lncRNA		
	6	32972065	32972853	lncRNA		
RPL32P1	6	33079451	33079860	processed_pseudogene		
HLA-DPA2	6	33091753	33097295	unprocessed_pseudogene		
COL11A2P1	6	33103794	33107330	unprocessed_pseudogene		
	6	33112440	33119163	lncRNA		

HLA-DPB2	6	33112516	33129084	transcribed_unprocessed_pseudogene		
HLA-DPA3	6	33131216	33143325	unprocessed_pseudogene		
HCG24	6	33144783	33147767	lncRNA		
COL11A2	6	33162681	33192499	protein_coding		
RXRB	6	33193588	33200665	protein_coding		
RNY4P10	6	33199601	33199696	misc_RNA		
SLC39A7	6	33200305	33204439	protein_coding		
HSD17B8	6	33204655	33206831	protein_coding		
	6	33207081	33208473	lncRNA		
MIR219A1	6	33207835	33207944	miRNA		
RING1	6	33208500	33212722	protein_coding		
ZNF70P1	6	33215705	33216328	processed_pseudogene		
HTATSF1P1	6	33237799	33239690	processed_pseudogene		
	6	33246075	33246856	lncRNA		
	6	33247976	33249215	lncRNA		
HCG25	6	33249534	33255167	lncRNA		
VPS52	6	33250272	33272047	protein_coding		
RPS18	6	33272075	33276511	protein_coding		
B3GALT4	6	33277123	33284832	protein_coding		
WDR46	6	33279108	33289247	protein_coding		
MIR6873	6	33287227	33287289	miRNA		
PFDN6	6	33289302	33298401	protein_coding		
MIR6834	6	33290245	33290325	miRNA		
RGL2	6	33291654	33298942	protein_coding		
	6	33299479	33301090	lncRNA		
ZBTB22	6	33314406	33317942	protein_coding		
DAXX	6	33318558	33323016	protein_coding		
	6	33321386	33329286	protein_coding		
SMIM40	6	33323628	33329279	protein_coding		
MYL12BP3	6	33338978	33339495	processed_pseudogene		

LYPLA2P1	6	33365548	33366243	processed_pseudogene		
RPL35AP4	6	33389374	33389475	processed_pseudogene		
KIFC1	6	33391823	33409896	protein_coding		
RPL12P1	6	33400059	33400556	processed_pseudogene		
PHF1	6	33410399	33416453	protein_coding		
CUTA	6	33416442	33418317	protein_coding		
SYNGAP1	6	33419661	33453689	protein_coding		
SYNGAP1-AS1	6	33437363	33454453	lncRNA		
MIR5004	6	33438331	33438437	miRNA		
ZBTB9	6	33453970	33457544	protein_coding		



Supplementary Table 2: List of genes with total loss at chromosome X from position 1 until 2,000,000. Shaded rows highlighted significant genes when altered may relate to cancer or render immune system defective.

Gene name	Chromosome	Gene Position		Gene type	Cancer / Immune Related Pathway	
		Start (bp)	End (bp)			
PPP2R3B	X	333933	386955	protein_coding	B cell receptor (Immune system)	T cell receptor (Immune system)
SLC25A6	X	1386152	1392113	protein_coding	B cell receptor (Immune system)	
IL3RA	X	1336616	1382689	protein_coding	JAK-STAT Signalling	
	X	253743	255091	unprocessed_pseudogene		
PLCXD1	X	276322	303356	protein_coding		
GTPBP6	X	304529	318796	protein_coding		
LINC00685	X	320990	321851	lncRNA		
	X	386980	405579	lncRNA		
Metazoa_SRP	X	388100	388389	misc_RNA		
	X	419157	421980	lncRNA		
FABP5P13	X	523775	524102	processed_pseudogene		
KRT18P53	X	545236	545352	processed_pseudogene		
SHOX	X	624344	659411	protein_coding		
	X	990221	994365	lncRNA		
RPL14P5	X	1008503	1010101	processed_pseudogene		
CRLF2	X	1190490	1212723	protein_coding		
CRLF2	X	1190490	1212723	protein_coding		
CSF2RA	X	1268800	1310381	protein_coding		
MIR3690	X	1293918	1293992	miRNA		
MIR3690	X	1293918	1293992	miRNA		
RNA5SP498	X	1300256	1300375	rRNA_pseudogene		
LINC00106	X	1396427	1399402	lncRNA		
ASMTL-AS1	X	1401769	1414028	lncRNA		
ASMTL	X	1403139	1453762	protein_coding		
P2RY8	X	1462581	1537185	protein_coding		
AKAP17A	X	1591604	1602520	protein_coding		
ASMT	X	1615059	1643081	protein_coding		
	X	1661795	1662306	lncRNA		
LINC02968	X	1732584	1763212	lncRNA		
	X	1767347	1768776	lncRNA		

Supplementary Table 3: List of genes with single copy loss at chromosome 11 from position 1 until 3,500,000. Shaded rows highlighted significant genes when altered may relate to cancer or render immune system defective.

Gene name	Chromosome	Gene Position		Gene type	Cancer / Immune Related Pathway						
		Start (bp)	End (bp)								
CD81	11	2376177	2397802	protein_coding	T cell receptor (Immune system)	B cell receptor (Immune system)					
IFITM1	11	310041	315272	protein_coding	T cell receptor (Immune system)	B cell receptor (Immune system)					
HRAS	11	532242	537321	protein_coding	B cell receptor (Immune system)	Chemokine signalling (Immune system)	ERK Signalling	PI3K Signalling	Other RAS Signalling	T cell receptor (Immune system)	
IRF7	11	612553	615983	protein_coding	Complement and coagulation cascades (Immune system)	RIG-I-like receptor (Immune system)					
CTSD	11	1752752	1764573	protein_coding	NETWORK VARIATION - NUCLEAR RECEPTOR Signalling						
INS	11	2159779	2161221	protein_coding	T cell receptor (Immune system)	B cell receptor (Immune system)					
IGF2	11	2129112	2158391	protein_coding	T cell receptor (Immune system)	B cell receptor (Immune system)	ERK Signalling	PI3K Signalling			
WBP1LP10	11	75780	76143	unprocessed_pseudogene							
OR4F2P	11	86649	87586	unprocessed_pseudogene							
	11	112967	125927	lncRNA							
CICP23	11	123312	126123	processed_pseudogene							
LINC01001	11	127204	139612	lncRNA							
	11	129279	186136	lncRNA							
RNU6-447P	11	152999	153102	snRNA							
BET1L	11	167784	207399	protein_coding							
SCGB1C1	11	193078	194575	protein_coding							
ODF3	11	196761	200261	protein_coding							
	11	203623	205470	lncRNA							
RIC8A	11	207708	215113	protein_coding							
MIR6743	11	209336	209406	miRNA							
SIRT3	11	215030	236931	protein_coding							
PSMD13	11	236966	252984	protein_coding							
	11	243099	243483	processed_pseudogene							

COX8BP	11	253416	269461	transcribed_unitary_pseudogene					
NLRP6	11	278407	285388	protein_coding					
	11	287305	288987	lncRNA					
PGGHG	11	289126	296107	protein_coding					
IFITM5	11	298200	299526	protein_coding					
IFITM2	11	303655	309397	protein_coding					
	11	303856	304144	processed_pseudogene					
	11	308408	315272	protein_coding					
	11	310139	311141	lncRNA					
	11	318640	325631	lncRNA					
IFITM3	11	319676	329475	protein_coding					
	11	321991	322426	lncRNA					
	11	327171	330190	lncRNA					
	11	333192	333688	lncRNA					
B4GALNT4	11	369499	382117	protein_coding					
PKP3	11	392614	404908	protein_coding					
SIGIRR	11	405716	417455	protein_coding					
ANO9	11	417933	442011	protein_coding					
RN7SL838P	11	440399	440693	misc_RNA					
PTDSS2	11	448268	491399	protein_coding					
	11	462930	463899	lncRNA					
RNH1	11	494512	507300	protein_coding					
	11	512513	518134	lncRNA					
	11	518991	532262	lncRNA					
	11	528907	529659	lncRNA					
LRRC56	11	537527	554912	protein_coding					
LMNTD2	11	554850	560738	protein_coding					
LMNTD2-AS1	11	557595	560107	lncRNA					
RASSF7	11	560404	564025	protein_coding					
MIR210HG	11	565657	568457	lncRNA					

MIR210	11	568089	568198	miRNA					
PHRF1	11	576470	612222	protein_coding					
CDHR5	11	616577	626078	protein_coding					
SCT	11	626309	627181	protein_coding					
DRD4	11	637269	640706	protein_coding					
DEAF1	11	644233	707118	protein_coding					
	11	665910	678391	lncRNA					
EPS8L2	11	694438	727727	protein_coding					
TMEM80	11	695591	705028	protein_coding					
	11	708564	727047	lncRNA					
TALDO1	11	747415	765012	protein_coding					
GATD1	11	767220	777488	protein_coding					
GATD1-DT	11	777574	785231	lncRNA					
	11	779617	780755	TEC					
	11	781645	782105	lncRNA					
CEND1	11	787115	790113	protein_coding					
SLC25A22	11	790475	798281	protein_coding					
PANO1	11	797511	799190	protein_coding					
PIDD1	11	799179	809753	protein_coding					
RPLP2	11	809965	812880	protein_coding					
SNORA52	11	811681	811814	snoRNA					
PNPLA2	11	818914	825573	protein_coding					
	11	823634	832883	lncRNA					
CRACR2B	11	826144	831991	protein_coding					
CD151	11	832887	839831	protein_coding					
POLR2L	11	837356	842529	protein_coding					
TSPAN4	11	842812	867116	protein_coding					
	11	856880	859795	lncRNA					
CHID1	11	867859	915058	protein_coding					
AP2A2	11	924881	1012245	protein_coding					

RNU6-1025P	11	948421	948524	snRNA					
MUC6	11	1012823	1036718	protein_coding					
LINC02688	11	1049880	1055749	lncRNA					
MUC2	11	1074875	1110511	protein_coding					
MUC5AC	11	1157953	1201138	protein_coding					
	11	1218530	1220242	lncRNA					
MUC5B	11	1223066	1262172	protein_coding					
MUC5B-AS1	11	1242261	1249676	lncRNA					
MIR6744	11	1256605	1256670	miRNA					
TOLLIP	11	1274371	1309654	protein_coding					
TOLLIP-DT	11	1309769	1310707	lncRNA					
	11	1333250	1337068	lncRNA					
LINC02689	11	1350359	1364286	lncRNA					
BRSK2	11	1389899	1462689	protein_coding					
	11	1464582	1467632	lncRNA					
MOB2	11	1469457	1501247	protein_coding					
DUSP8	11	1554051	1572271	protein_coding					
KRTAP5-AS1	11	1571353	1599184	lncRNA					
KRTAP5-1	11	1584342	1585283	protein_coding					
KRTAP5-2	11	1597177	1598294	protein_coding					
KRTAP5-3	11	1607565	1608463	protein_coding					
KRTAP5-4	11	1620958	1622138	protein_coding					
KRTAP5-5	11	1629775	1630930	protein_coding					
	11	1662584	1663343	lncRNA					
FAM99A	11	1665597	1667856	lncRNA					
FAM99B	11	1683269	1685629	lncRNA					
LINC02708	11	1688297	1689056	lncRNA					
KRTAP5-6	11	1697195	1697755	protein_coding					
IFITM10	11	1732406	1750595	protein_coding					
	11	1734821	1763954	protein_coding					

PRADX	11	1760348	1762486	lncRNA						
	11	1763009	1763749	lncRNA						
	11	1773745	1774903	lncRNA						
	11	1776930	1778388	lncRNA						
RPL36AP39	11	1792553	1792870	processed_pseudogene						
	11	1802889	1804095	processed_pseudogene						
SYT8	11	1828307	1837521	protein_coding						
TNNI2	11	1838981	1841680	protein_coding						
LSP1	11	1850904	1892267	protein_coding						
MIR4298	11	1859464	1859536	miRNA						
	11	1864177	1866667	lncRNA						
MIR7847	11	1880045	1880147	miRNA						
PRR33	11	1888078	1891895	protein_coding						
LINC01150	11	1897015	1908656	lncRNA						
TNNT3	11	1919703	1938706	protein_coding						
MRPL23	11	1947278	1984522	protein_coding						
MRPL23-AS1	11	1983237	1989993	lncRNA						
LINC01219	11	1991096	1993670	lncRNA						
H19	11	1995166	2004552	lncRNA						
	11	1996540	1996610	misc_RNA						
MIR675	11	1996759	1996831	miRNA						
	11	1997484	1997552	misc_RNA						
	11	2129121	2129964	lncRNA						
	11	2131395	2149603	protein_coding						
INS-IGF2	11	2132538	2161209	protein_coding						
MIR483	11	2134134	2134209	miRNA						
IGF2-AS	11	2140501	2148666	lncRNA						
TH	11	2163929	2171815	protein_coding						
MIR4686	11	2173063	2173138	miRNA						
ASCL2	11	2268498	2270588	protein_coding						

C11orf21	11	2295628	2303049	protein coding					
TSPAN32	11	2301997	2318204	protein coding					
RNU6-878P	11	2321718	2321827	snRNA					
CD81-AS1	11	2328749	2377992	lncRNA					
RPL26P30	11	2335135	2347685	transcribed_processed_pseudogene					
	11	2336133	2342114	lncRNA					
	11	2371538	2375401	lncRNA					
Y_RNA	11	2372638	2372750	misc RNA					
TSSC4	11	2400488	2403878	protein coding					
	11	2404515	2407908	lncRNA					
TRPM5	11	2404515	2444514	protein coding					
KCNQ1	11	2444654	2849105	protein coding					
KCNQ1OT1	11	2597308	2700003	lncRNA					
	11	2652099	2652562	misc RNA					
	11	2674097	2674292	misc RNA					
	11	2674625	2674740	misc RNA					
	11	2697851	2698076	misc RNA					
COX6CP18	11	2771356	2771577	processed_pseudogene					
KCNQ1-AS1	11	2840135	2861568	lncRNA					
KCNQ1DN	11	2870033	2872105	lncRNA					
	11	2871437	2871498	misc RNA					
CDKN1C	11	2883213	2885775	protein coding					
SLC22A18A S	11	2887344	2903813	lncRNA					
SLC22A18	11	2899721	2925246	protein coding					
PHLDA2	11	2928273	2929420	protein coding					
NAP1L4	11	2944431	2992377	protein coding					
SNORA54	11	2963771	2963893	snoRNA					
	11	2989863	2991344	lncRNA					
CARS1	11	3000922	3057613	protein coding					
CARS1-AS1	11	3029009	3041260	lncRNA					

RNU1-91P	11	3048359	3048521	snRNA					
	11	3057538	3064707	lncRNA					
	11	3084393	3085443	processed_pseudogene					
OSBPL5	11	3087107	3166739	protein_coding					
	11	3189546	3189929	lncRNA					
MRGPRG	11	3217944	3218813	protein_coding					
MRGPRG-AS1	11	3218332	3223131	lncRNA					
MRGPRE	11	3225030	3232417	protein_coding					
	11	3226061	3232838	lncRNA					
NDUFA5P8	11	3276045	3276390	processed_pseudogene					
	11	3289311	3289642	processed_pseudogene					
NDUFA5P1	11	3321862	3322202	processed_pseudogene					
	11	3335125	3335407	processed_pseudogene					
	11	3336721	3340630	lncRNA					
ZNF195	11	3339261	3379222	protein_coding					
	11	3380918	3408981	lncRNA					
OR7E12P	11	3390780	3391752	unprocessed_pseudogene					
TSSC2	11	3401759	3408810	transcribed_unprocessed_pseudogene					
FAM86GP	11	3410352	3422496	unprocessed_pseudogene					
ENPP7P15	11	3429758	3500621	transcribed_unprocessed_pseudogene					
	11	3469319	3531328	lncRNA					
	11	3475280	3477065	lncRNA					
	11	3475778	3581211	lncRNA					



Supplementary Table 4: List of genes with single copy loss at chromosome 15 from position 23,500,000 until 31,500,000. Shaded rows highlighted significant genes when altered may relate to cancer or render immune system defective.

Gene name	Chromosome	Gene Position		Gene type	Cancer / Immune Related Pathway
		Start (bp)	End (bp)		
TJP1	15	29699367	29968915	protein_coding	Fc gamma R-mediated phagocytosis (Immune system)
UBE3A	15	25333728	25439051	protein_coding	Fc gamma R-mediated phagocytosis (Immune system)
MIR4508	15	23562062	23562131	miRNA	
	15	23565265	23569657	lncRNA	
MKRN3	15	23565674	23630075	protein_coding	
MAGEL2	15	23643549	23647867	protein_coding	
NDN	15	23685400	23687305	protein_coding	
	15	23757115	23856375	lncRNA	
RNU6-741P	15	23777437	23777543	snRNA	
PWRN4	15	23912411	24090821	lncRNA	
PWRN1	15	24101827	24823365	lncRNA	
PWRN2	15	24162754	24169948	lncRNA	
	15	24206784	24225854	lncRNA	
	15	24238145	24240192	lncRNA	
	15	24341729	24343464	lncRNA	
	15	24558060	24912924	lncRNA	
NPAP1	15	24675775	24683393	protein_coding	
SNRPN	15	24823637	24978723	protein_coding	
	15	24848355	24852253	lncRNA	
RPL5P1	15	24908932	24909825	processed_pseudogene	
RPS27P2	15	24910874	24911125	processed_pseudogene	
SNURF	15	24954987	24977850	protein_coding	
	15	24955034	25000276	protein_coding	
SNHG14	15	24978583	25420336	lncRNA	
SNORD107	15	24981994	24982068	snoRNA	
PWAR5	15	24985053	24988232	TEC	
SNORD64	15	24985100	24985166	snoRNA	
SNORD108	15	24986925	24986995	snoRNA	
	15	25027736	25032047	lncRNA	
SNORD109A	15	25041974	25042040	snoRNA	
SNORD116-1	15	25051477	25051571	snoRNA	
SNORD116-2	15	25054210	25054304	snoRNA	
SNORD116-3	15	25056860	25056954	snoRNA	
SNORD116-4	15	25059538	25059633	snoRNA	
SNORD116-5	15	25062333	25062427	snoRNA	
SNORD116-6	15	25065026	25065121	snoRNA	
SNORD116-7	15	25067788	25067882	snoRNA	
SNORD116-8	15	25070432	25070526	snoRNA	
SNORD116-9	15	25073107	25073201	snoRNA	
SNORD116-10	15	25074114	25074215	snoRNA	
SNORD116-11	15	25075929	25076020	snoRNA	
SNORD116-12	15	25077051	25077142	snoRNA	

SNORD116-13	15	25079058	25079149	snoRNA	
SNORD116-14	15	25080142	25080233	snoRNA	
SNORD116-15	15	25081287	25081378	snoRNA	
SNORD116-16	15	25082768	25082859	snoRNA	
SNORD116-17	15	25083588	25083679	snoRNA	
SNORD116-18	15	25085385	25085476	snoRNA	
SNORD116-19	15	25086527	25086618	snoRNA	
	15	25087661	25088896	lncRNA	
SNORD116-20	15	25087662	25087753	snoRNA	
SNORD116-21	15	25088804	25088895	snoRNA	
SNORD116-22	15	25089923	25090014	snoRNA	
SNORD116-23	15	25091786	25091877	snoRNA	
	15	25091786	25107469	lncRNA	
	15	25091960	25092377	TEC	
SNORD116-24	15	25094037	25094128	snoRNA	
SNORD116-25	15	25097663	25097754	snoRNA	
SNORD116-26	15	25099499	25099594	snoRNA	
SNORD116-27	15	25101575	25101666	snoRNA	
SNORD116-28	15	25104642	25104732	snoRNA	
SNORD116-29	15	25106521	25106603	snoRNA	
SNORD116-30	15	25108268	25108352	snoRNA	
PWAR1	15	25135642	25138055	TEC	
SNORD115	15	25159221	25159279	snoRNA	
DMAC1P1	15	25169337	25169676	processed_pseudogene	
SNORD115-1	15	25170723	25170804	snoRNA	
SNORD115-2	15	25172635	25172716	snoRNA	
SNORD115-3	15	25174927	25175008	snoRNA	
SNORD115-4	15	25176832	25176913	snoRNA	
SNORD115-5	15	25178738	25178819	snoRNA	
SNORD115-6	15	25180497	25180578	snoRNA	
SNORD115-7	15	25182385	25182466	snoRNA	
SNORD115-8	15	25184306	25184387	snoRNA	
SNORD115-9	15	25185631	25185712	snoRNA	
SNORD115-10	15	25187536	25187616	snoRNA	
SNORD115-11	15	25189414	25189495	snoRNA	
SNORD115-12	15	25191416	25191497	snoRNA	
SNORD115-13	15	25193321	25193402	snoRNA	
SNORD115-14	15	25194921	25195001	snoRNA	
SNORD115-15	15	25197576	25197656	snoRNA	
SNORD115-16	15	25199448	25199529	snoRNA	
SNORD115-17	15	25201323	25201404	snoRNA	
SNORD115-18	15	25203227	25203308	snoRNA	
SNORD115-19	15	25204357	25204438	snoRNA	
SNORD115-20	15	25206262	25206343	snoRNA	
SNORD115-21	15	25208083	25208163	snoRNA	
SNORD115-22	15	25209918	25209999	snoRNA	

SNORD115-23	15	25211796	25211877	snoRNA	
SNORD115-24	15	25213648	25213729	snoRNA	
SNORD115-25	15	25215541	25215622	snoRNA	
SNORD115-26	15	25218617	25218698	snoRNA	
SNORD115-27	15	25220497	25220578	snoRNA	
SNORD115-28	15	25222348	25222428	snoRNA	
SNORD115-29	15	25223246	25223327	snoRNA	
SNORD115-30	15	25225203	25225284	snoRNA	
SNORD115-31	15	25227109	25227190	snoRNA	
SNORD115-32	15	25228967	25229048	snoRNA	
SNORD115-33	15	25230838	25230919	snoRNA	
SNORD115-34	15	25232387	25232468	snoRNA	
SNORD115-35	15	25234247	25234328	snoRNA	
SNORD115-36	15	25236085	25236166	snoRNA	
SNORD115-37	15	25237986	25238067	snoRNA	
SNORD115-38	15	25239838	25239919	snoRNA	
SNORD115-39	15	25241746	25241827	snoRNA	
SNORD115-40	15	25243614	25243695	snoRNA	
SNORD115-41	15	25245478	25245559	snoRNA	
SNORD115-42	15	25247345	25247426	snoRNA	
SNORD115-43	15	25249198	25249279	snoRNA	
SNORD115-44	15	25250859	25250940	snoRNA	
	15	25255579	25257027	TEC	
SNORD115-45	15	25264510	25264590	snoRNA	
SNORD115-46	15	25266591	25266661	snoRNA	
SNORD115-47	15	25268466	25268551	snoRNA	
SNORD115-48	15	25269783	25269858	snoRNA	
SNORD109B	15	25278343	25278409	snoRNA	
	15	25345633	25347235	lncRNA	
LINC02250	15	25456271	25578813	lncRNA	
	15	25580969	25581122	processed_pseudogene	
	15	25636451	25641767	lncRNA	
ATP10A	15	25677273	25865184	protein_coding	
RNA5SP390	15	25738508	25738620	rRNA_pseudogene	
MIR4715	15	25848747	25848825	miRNA	
ATP10A-DT	15	25865295	25877211	lncRNA	
LINC02346	15	25902119	26053123	lncRNA	
	15	25928146	25928575	processed_pseudogene	
	15	26008940	26009074	snoRNA	
	15	26050538	26052276	lncRNA	
LINC00929	15	26115726	26134001	lncRNA	
	15	26261669	26265918	lncRNA	
LINC02248	15	26395037	26455219	lncRNA	
	15	26403480	26477840	lncRNA	
GABRB3	15	26543552	26939539	protein_coding	
	15	26557598	26557937	lncRNA	

	15	26657030	26658763	lncRNA	
	15	26851132	26851610	processed_pseudogene	
GABRA5	15	26866911	26949208	protein_coding	
TVP23BP1	15	26964917	26970385	unprocessed_pseudogene	
GABRG3	15	26971181	27541984	protein_coding	
GABRG3-AS1	15	27038978	27161319	lncRNA	
	15	27208089	27208635	processed_pseudogene	
RNA5SP391	15	27280318	27280436	rRNA_pseudogene	
SERPINE4P	15	27340524	27340804	processed_pseudogene	
	15	27362310	27366398	lncRNA	
	15	27418796	27420735	lncRNA	
	15	27422381	27428338	lncRNA	
	15	27483035	27541991	lncRNA	
	15	27621534	27629289	lncRNA	
	15	27662715	27667273	lncRNA	
	15	27684498	27685768	lncRNA	
OCA2	15	27754875	28099315	protein_coding	
	15	27775621	27776798	lncRNA	
RPL5P32	15	27895704	27896582	processed_pseudogene	
HERC2	15	28111040	28322179	protein_coding	
RPL41P2	15	28315651	28316059	processed_pseudogene	
HERC2P1	15	28332237	28336609	unprocessed_pseudogene	
	15	28346490	28346647	unprocessed_pseudogene	
GOLGA6L24	15	28347851	28358084	protein_coding	
MPHOSPH10P7	15	28362796	28365731	unprocessed_pseudogene	
GOLGA8F	15	28378621	28392021	protein_coding	
RN7SL238P	15	28387196	28387485	misc_RNA	
ABCB10P3	15	28402868	28405033	processed_pseudogene	
	15	28416449	28416674	unprocessed_pseudogene	
	15	28422172	28422373	unprocessed_pseudogene	
MIR4509-2	15	28426491	28426584	miRNA	
	15	28444144	28444264	unprocessed_pseudogene	
	15	28454660	28457783	unprocessed_pseudogene	
	15	28473322	28473448	unprocessed_pseudogene	
MIR4509-3	15	28490752	28490845	miRNA	
	15	28494975	28495182	unprocessed_pseudogene	
ABCB10P4	15	28506625	28508808	processed_pseudogene	
GOLGA8G	15	28519611	28533014	protein_coding	
Metazoa_SRP	15	28524151	28524440	misc_RNA	
	15	28545912	28549777	unprocessed_pseudogene	
GOLGA6L25	15	28553568	28563779	protein_coding	
	15	28564986	28565152	unprocessed_pseudogene	
HERC2P11	15	28575019	28579400	unprocessed_pseudogene	
	15	28589469	28642421	lncRNA	
HERC2P9	15	28590189	28674027	transcribed_unprocessed_pseudogene	
HERC2P9	15	28651421	28685264	lncRNA	

	15	28679405	28682252	unprocessed_pseudogene	
GOLGA8M	15	28698583	28738384	protein_coding	
RN7SL719P	15	28703554	28703790	misc_RNA	
GOLGA8M	15	28719377	28738431	lncRNA	
WHAMMP2	15	28737583	28754869	transcribed_unprocessed_pseudogene	
	15	28738022	28759204	lncRNA	
	15	28763440	28764151	processed_pseudogene	
	15	28788243	28789392	lncRNA	
	15	28788602	28792002	transcribed_unprocessed_pseudogene	
	15	28789199	28789486	transcribed_processed_pseudogene	
	15	28789664	28808298	lncRNA	
PDCD6IPP2	15	28801366	28818999	transcribed_unprocessed_pseudogene	
	15	28815346	28859007	lncRNA	
	15	28830619	28831182	processed_pseudogene	
GOLGA6L7	15	28841832	28848675	protein_coding	
	15	28852110	28852902	lncRNA	
	15	28857882	28858398	processed_pseudogene	
	15	28881667	28884655	lncRNA	
APBA2	15	28884483	29118315	protein_coding	
	15	28970196	28977464	lncRNA	
ENTREP2	15	29120252	29570979	protein_coding	
	15	29233673	29235137	processed_pseudogene	
	15	29233868	29233979	snoRNA	
NSMCE3	15	29264989	29269822	protein_coding	
	15	29373602	29376956	lncRNA	
	15	29609676	29611212	lncRNA	
TUBBP8	15	29612570	29614274	processed_pseudogene	
	15	29664477	29669482	lncRNA	
LCIAR	15	29674932	29680957	lncRNA	
	15	29728186	29729531	lncRNA	
HMG2P5	15	29730713	29730985	processed_pseudogene	
	15	29822631	29824081	lncRNA	
NCAPGP2	15	30005205	30006430	unprocessed_pseudogene	
	15	30005443	30045848	lncRNA	
SYNGR2P1	15	30044455	30045296	processed_pseudogene	
	15	30052942	30073064	lncRNA	
	15	30072620	30072958	transcribed_unprocessed_pseudogene	
GOLGA8J	15	30082955	30096690	protein_coding	
RN7SL673P	15	30091662	30091898	misc_RNA	
DNM1P28	15	30098826	30102093	unprocessed_pseudogene	
ULK4P3	15	30103720	30131757	lncRNA	
ULK4P3	15	30110302	30127785	transcribed_unprocessed_pseudogene	
U8	15	30112198	30112330	snoRNA	
GOLGA8T	15	30135051	30148748	protein_coding	
RN7SL469P	15	30143733	30143969	misc_RNA	
DNM1P30	15	30150872	30153409	unprocessed_pseudogene	

	15	30153933	30154110	unprocessed_pseudogene
	15	30170563	30179943	lncRNA
LINC02249	15	30195809	30217552	lncRNA
	15	30223017	30225564	processed_pseudogene
RNU6-17P	15	30254402	30254508	snRNA
	15	30282533	30288389	processed_pseudogene
	15	30344307	30348236	TEC
Y_RNA	15	30355436	30355540	misc_RNA
CHRFAM7A	15	30360566	30393849	protein_coding
	15	30361751	30366788	lncRNA
	15	30380353	30386987	transcribed_unprocessed_pseudogene
U8	15	30384959	30385091	snoRNA
	15	30395146	30396368	unprocessed_pseudogene
GOLGA8R	15	30400562	30414260	protein_coding
RN7SL196P	15	30405307	30405597	misc_RNA
	15	30417251	30471673	lncRNA
	15	30420283	30420429	unprocessed_pseudogene
LINC02256	15	30427080	30470946	lncRNA
WHAMMP4	15	30470779	30484689	transcribed_unprocessed_pseudogene
	15	30477821	30507623	lncRNA
	15	30487963	30490313	lncRNA
MPHOSPH10P3	15	30507377	30513698	unprocessed_pseudogene
	15	30516079	30517867	unprocessed_pseudogene
	15	30540093	30545969	lncRNA
GOLGA8Q	15	30552050	30565684	protein_coding
RN7SL796P	15	30560644	30560934	misc_RNA
DNM1P50	15	30567822	30571089	unprocessed_pseudogene
ULK4P2	15	30572738	30600647	lncRNA
ULK4P2	15	30579285	30596738	transcribed_unprocessed_pseudogene
U8	15	30581184	30581316	snoRNA
GOLGA8H	15	30604028	30617752	protein_coding
	15	30607695	30608193	lncRNA
RN7SL628P	15	30612724	30612960	misc_RNA
	15	30616958	30617749	lncRNA
ARHGAP11B-DT	15	30616998	30625773	lncRNA
ARHGAP11B	15	30624494	30649529	protein_coding
	15	30624548	30773002	protein_coding
	15	30644639	30658868	transcribed_unprocessed_pseudogene
	15	30646132	30723495	lncRNA
	15	30658717	30772993	lncRNA
Y_RNA	15	30673750	30673843	misc_RNA
	15	30750406	30759859	transcribed_unprocessed_pseudogene
GOLGA8UP	15	30791573	30801859	unprocessed_pseudogene
RN7SL82P	15	30800160	30800396	misc_RNA
HERC2P10	15	30815271	30844153	unprocessed_pseudogene
TMEM183AP3	15	30882267	30883231	processed_pseudogene

FAN1	15	30890559	30943108	protein_coding	
	15	30899480	30900327	unprocessed_pseudogene	
MTMR10	15	30938941	30991628	protein_coding	
RNU6-466P	15	30956248	30956350	snRNA	
	15	30992171	31042302	lncRNA	
TRPM1	15	31001065	31161160	protein_coding	
MIR211	15	31065032	31065141	miRNA	
LINC03034	15	31202934	31230886	lncRNA	
LINC02352	15	31215622	31224445	lncRNA	
KLF13	15	31326835	31435665	protein_coding	
UBE2CP4	15	31420128	31420662	processed_pseudogene	
	15	31453201	31454139	processed_pseudogene	
OTUD7A	15	31475398	31870789	protein_coding	