

Supplementary Table S4 Predicted neoantigens in 80 HGSC patients

Patient ID	Neoantigen
Se001	ST3GAL3_V7L
Se001	KIF2C_V31I
Se001	COL11A1_E307D
Se001	GDAP2_I195M
Se001	DENND4B_H476N
Se001	SLAMF8_R46H
Se001	PCNXL2_K1776M
Se001	CEBPZ_G489S
Se001	P4HTM_D153H
Se001	ATP11B_F859L
Se001	EIF4G1_K447N
Se001	SH3TC1_K731N
Se001	ZMAT2_R116C
Se001	TMEM63B_L423R
Se001	TTI2_I33S
Se001	KCNB2_R496M
Se001	VAV2_S113P
Se001	SNAPC4_A1379P
Se001	FANCF_L192R
Se001	PLEKHB1_R21Q
Se001	GDPD5_D545E
Se001	CHD8_A2231T
Se001	PAK6_D88N
Se001	ZNF106_S26G
Se001	KIF7_I1203K
Se001	EPOR_S318I
Se001	ZNF100_K137T
Se001	PLAUR_V17L
Se001	FIZ1_K49N
Se001	SLC25A1_T266M
Se001	SUN2_Q505E
Se001	MECP2_P191A
Se001	APBA3_DHALHTISYTAASAACWC
Se001	DICER1_KEKPETNFPSPTFCAELFLWKEDTQQLS
Se001	PLXNB2_EALCNTTSECPSSPGSSLRAPWVGASASPSWGPIWASKQG
Se001	TSRGLWPAGTAPFSRNVTPCPPGSCV
Se001	SCAF11_ARERRQSQSRSTRESRRSELS
Se001	RALGAPA1_NGSYQGALHNATEQNIRAGTQA
Se004	ALPL_G349R
Se004	CC2D1B_A387D
Se004	HCN3_W294C
Se004	ARHGEF2_G890C
Se004	SEC16B_G382A
Se004	KIF14_S409C
Se004	ELK4_L392F
Se004	ATAD2B_R1108Q
Se004	CEP68_E755Q
Se004	STK39_T421P
Se004	EPHA4_I141F
Se004	NBEAL2_S999F
Se004	IFRD2_S53F

Se004	GRAMD1C_E274K
Se004	MFSD10_L209F
Se004	MAN2B2_R860H
Se004	WDFY3_G3428R
Se004	SCOC_R44W
Se004	DCLK2_P518R
Se004	MYO10_W1375L
Se004	CARD6_E201D
Se004	ERBB2IP_F212Y
Se004	RASA1_R674C
Se004	PIP5K2_T1175N
Se004	EGR1_S501T
Se004	ABHD16A_D360N
Se004	ABHD16A_G257A
Se004	MTCH1_R209H
Se004	UBR2_W1246R
Se004	PHF3_N1727I
Se004	ASCC3_N1368H
Se004	TUBE1_D22Y
Se004	MRPL32_S14F
Se004	COBL_Q1004R
Se004	TPST1_V265A
Se004	PEG10_R34T
Se004	MKLN1_R555K
Se004	XPO7_R717Q
Se004	LY6E_C71S
Se004	USP6NL_A556V
Se004	IFIT1_C163S
Se004	ZFYVE27_E71D
Se004	AFAP1L2_K256R
Se004	HNRNPUL2_R720Q
Se004	MACROD1_R10C
Se004	C11orf80_V70L
Se004	HSPA8_G190V
Se004	ITPR2_S7C
Se004	MMP19_F393L
Se004	SOCS4_G174C
Se004	CEMP1_I123V
Se004	CCDC64B_L241F
Se004	APIG1_T734M
Se004	TP53_G113D
Se004	ALKBH5_P322L
Se004	MED24_Q874H
Se004	STAT5B_S210F
Se004	AOC3_L516M
Se004	MXRA7_P145R
Se004	ARHGEF1_L602M
Se004	SLC1A5_V168M
Se004	HELZ2_D523E
Se004	CABIN1_Y1300H
Se004	EP300_S875T
Se004	PLXNB2_R241W
Se004	MBTPS2_Q210K
Se004	BCOR_R861H

Se004	KRBOX4_L32F
Se004	SUV39H1_I230M
Se004	GPC4_C189F
Se004	KIAA1551_SKTYNLRNVKKLVGSSLIKYGLRLN
Se004	MLK4_QFLAAKERTKSMCLHYWMLTWKVRAGTTLCHCAE
Se004	PTPRC_KIEFDNEVDKVNPLGAPEKLPE
Se004	DNMT3B_SGDGDSSEYQGWEGVWNRGPRVVGKDQGLLLVARHGGVL
Se004	EGHL
Se005	PLEKHG5_Y435C
Se005	TTC21B_A279V
Se005	ZNF445_A281V
Se005	CMSS1_N220K
Se005	SYNPO2_S1106F
Se005	MDN1_T2349I
Se005	GSDMD_L134F
Se005	SMARCA2_P127R
Se005	DFNB31_S407N
Se005	SPI1_Q93H
Se005	CD163_P1037T
Se005	RBM25_P750T
Se005	PTPN21_R59Q
Se005	SCAPER_G22C
Se005	MUC16_V9603I
Se005	GNAS_A46P
Se005	PANX2_T188M
Se005	SLC25A43_A89T
Se005	IDH3G_M70I
Se005	GLIS3_MNGRSCTGHREPHRGLGWSVVITFLPSEPTPGLLAPRPVAAHR
Se005	VPLWQALLTTSISRCPOEEGWLLRRTTWLRAASICLP
Se005	LURAP1_SFLDTVAPSELRDGLGKSYSWWREGOD
Se005	XPR1_MKFAEHITPEWRKQYIQ
Se006	DNAJC11_Y391F
Se006	ARHGEF10L_A97V
Se006	POMGNT1_A377S
Se006	ATXN7L2_R230W
Se006	CEP350_N2321S
Se006	LGR6_T296N
Se006	CR2_Y996H
Se006	GPD2_R91T
Se006	RBMS1_R181H
Se006	SETMAR_G62A
Se006	FGF12_V140D
Se006	USP38_I175L
Se006	CUL7_R503H
Se006	ADGRF5_D383E
Se006	SPIDR_I546K
Se006	VPS13B_K2922N
Se006	DENND3_P867S
Se006	PITRM1_G9V
Se006	PRKCQ_V152L
Se006	CYP2R1_K68M
Se006	CREB3L1_K289E
Se006	VPS51_R152H
Se006	ARHGEF12_F794L

Se006	ETS1_S193L
Se006	APOLD1_E147A
Se006	NUP58_G322V
Se006	AREL1_A586T
Se006	AKT1_P313L
Se006	ZFYVE19_A334P
Se006	COX11_M106R
Se006	SUPT5H_C634S
Se006	EPS8L1_A251V
Se006	MMP9_R61H
Se006	CD40_D183Y
Se006	CSTF1_D263Y
Se006	COL6A2_N968Y
Se006	INPP5J_K287N
Se008	RERE_R465H
Se008	TIMM17A_E7D
Se008	HERC5_R663S
Se008	SLC17A5_L159F
Se008	COMMD5_P150Q
Se008	RABGAP1_H721R
Se008	CPSF6_P276L
Se008	NLRC5_K996R
Se008	TSHZ1_C972W
Se008	LPIN3_N612S
Se008	HLCS_D171N
Se008	ANGEL1_KVARLSDGSHCHLVRGPKFCP
Se008	RPA1_TSGGTQSKVVPLPASLLTSPSGPFVLVLPTKVRVSPGATPEGKG
Se008	CCDC127_ISQGRKLVEEKLLEQERAQVMQ
Se011	PUS10_D437N
Se011	C3orf18_L78F
Se011	ACAP2_R16G
Se011	G3BP2_V352G
Se011	VCAN_P1018T
Se011	ZNF300_R253T
Se011	NOTCH4_H260Q
Se011	FNDC1_P1094R
Se011	PDK4_G297D
Se011	TGSI_R30M
Se011	KIAA0196_N517S
Se011	MTAP_T118P
Se011	LIMA1_L30Q
Se011	ITGA5_Q900E
Se011	CCDC64_D19Y
Se011	LONP2_R758W
Se011	POLR2A_N997S
Se011	TOP2A_N260K
Se011	GGA3_S309C
Se011	P2RY11_A87V
Se011	ILVBL_V402M
Se011	ARMC6_M437I
Se011	BCAS4_S120P
Se011	MYH9_A849V
Se011	MKNK1_AGHSRSRVFREGDAVSVSGKQEHFGAD
Se015	TMEM57_G160W

Se015	PDZK1IP1_T13R
Se015	EFCAB7_L497M
Se015	HLX_H75Y
Se015	PAX8_P139R
Se015	GLI2_G109S
Se015	ITPR1_S159P
Se015	ABI3BP_S516P
Se015	ATR_N2342H
Se015	ZNF354B_G584V
Se015	STK3_D316N
Se015	PTPRD_R1378S
Se015	PTPRD_A1205E
Se015	AGTPBP1_V360I
Se015	ZNF503_S47W
Se015	ATL3_V434L
Se015	TRPT1_G54A
Se015	ADAMTS8_L239Q
Se015	GPATCH2L_S62I
Se015	SMG1_P2599R
Se015	KIAA0556_A1326G
Se015	PRSS53_C249Y
Se015	SHPK_N325I
Se015	KDM6B_S1192R
Se015	C1QL1_P60A
Se015	TPGS2_G33C
Se015	MALT1_G170R
Se015	MAST1_I324N
Se015	AKAP8L_A521V
Se015	CSEIL_D302A
Se015	STARD8_P227R
Se015	CENPI_V32L
Se015	BCORL1_A849V
Se015	ELF4_R270T
Se015	DPYD_GLPEVDPETMQLVKHGYLQVMSLVWLTQWNR
Se015	ETNK2_MAVPLRPLSRARPFT
Se015	MYPOP_GVIIAPRSEEGHPGPPQPRSLRTPPHTSGEKVSLHGKGAADG NLREIYYL
Se016	KDF1_T272N
Se016	CELSR2_A2769G
Se016	ZBTB18_L78Q
Se016	PXDN_R662P
Se016	IWS1_T651S
Se016	DNAH7_E85Q
Se016	ZNF197_A495T
Se016	ZNF197_P509H
Se016	DHX29_A869V
Se016	PPP2R2B_R251W
Se016	GABBR1_R51G
Se016	BTAF1_V827M
Se016	MORN4_L47P
Se016	MAP4K2_L504V
Se016	C11orf63_Q98H
Se016	CHPT1_R33C
Se016	HEATR5A_A1304P

Se016	ZIK1_K386T
Se016	SPATCIL_N140K
Se016	MTMR1_S270I
Se020	ZFYVE9_P802T
Se020	RSBN1_M49T
Se020	SV2A_R334K
Se020	YY1API_T421I
Se020	SLC30A1_I101S
Se020	MEIS1_V319L
Se020	DGUOK_R30T
Se020	BAZ2B_G85A
Se020	GPR155_Y803H
Se020	FRZB_G283S
Se020	COQ10B_K116R
Se020	KANSL1L_L705S
Se020	COL6A3_G1374C
Se020	DCPIA_L35Q
Se020	FLNB_E753Q
Se020	GTPBP8_Y95N
Se020	PPP2R3A_C67S
Se020	FOXL2_A216V
Se020	DCP2_D106V
Se020	SPARC_T27K
Se020	COL12A1_D652G
Se020	DLX5_S113R
Se020	TMEM130_S380P
Se020	ZNF862_P184T
Se020	VPS13B_L3454I
Se020	COL15A1_N807I
Se020	DOCK1_D1534N
Se020	UEVLD_H333R
Se020	MARGPRF_R75S
Se020	MCAM_K613N
Se020	ROBO3_V254E
Se020	ARHGAP9_W11C
Se020	SLC26A10_T246N
Se020	MON2_E984D
Se020	CHD8_D1952N
Se020	MGAT2_D199N
Se020	NDN_T271N
Se020	NUSAPI_Y340C
Se020	UBR1_D1142H
Se020	WDR59_D531E
Se020	CDH13_K137R
Se020	TP53_P146S
Se020	MYO18A_T436M
Se020	BPTF_D746H
Se020	GLTSCR2_A472V
Se020	NAT14_L64V
Se020	SOGA1_E455V
Se020	ZFP64_C335Y
Se020	TRPM2_K1107M
Se020	TOP3B_L5V
Se020	PGK1_G54R

Se020	G6PD_V382L
Se020	BCL2L11_NHGGEGDSCPHLPALALLLPDRFSSL
Se020	DYRK1A_GASAISSWLALKLLHRSLKLLILFKKQPFM
Se020	DYRK1A_VRQFPAPLGWH
Se020	WHSC1L1_ESCPASFHPECQKAAGIVMTVKLARNYITSRLFGSNWEITD GGQORSATPGLCH
Se020	ZNF274_KVQESSRDCALQGGVQEVQDTV
Se023	C1orf174_G109A
Se023	TRAF5_C81F
Se023	BIRC6_V3552A
Se023	ING5_E108V
Se023	TRAK1_R460C
Se023	RBM5_V145M
Se023	DZIP3_I336M
Se023	BRAT1_L659V
Se023	URGCP_G538V
Se023	SAMD9_C494F
Se023	ABCB8_G495V
Se023	ANGPT2_M87R
Se023	RAB11FIP1_V20M
Se023	PLEKHA2_Y229F
Se023	SEMA4D_E243V
Se023	FBXW5_V234M
Se023	PFKP_G118S
Se023	PAMR1_K148M
Se023	KMT2D_P3838L
Se023	FLT1_A935E
Se023	MTRF1_N107S
Se023	RNF219_I124V
Se023	PAPLN_D959E
Se023	STON2_H395Y
Se023	ADAL_N287D
Se023	MYO1E_V710M
Se023	THSD4_G323R
Se023	SLC7A6OS_N127S
Se023	ATP6V0A1_E166D
Se023	FASN_G1002S
Se023	RNMT_N320Y
Se023	MUC16_T3046A
Se023	COLGALT1_H256Y
Se023	LPAR2_R303C
Se023	RBM42_A177G
Se023	MYBPC2_G813V
Se023	SLC52A3_A158V
Se023	EBAG9_SGDQITLPTTVHQFLSRQMLKSGLPGMKMHPV
Se023	SLC16A2_GCSFAFQPSLVTTFNAAWVWPMVWCLLGVAFSPCPSRSS ECWGIRSSWPKPSRC
Se023	ZNF396_MNGSQSSTYRGPMNKMVGLKRDKETLLGKNRNVNMVAK SLVRAQPLFYIRESTVERNLMHVTSVQRHSAEAQF
Se023	PCDHA3_ADIGTNSLLTLQS
Se024	CPT2_R634Q
Se024	KDM5B_N460D
Se024	HPCAL1_E66K
Se024	GLI2_R1372Q

Se024	FAP_G443S
Se024	FN1_P1461S
Se024	HIST1H4E_D86H
Se024	TRRAP_R90W
Se024	ABCB9_R637W
Se024	ALOX5AP_A74E
Se024	MTHFS_I122F
Se024	CDH3_N706S
Se024	TP53_Y88D
Se024	EMILIN2_V906M
Se024	ZNF160_M54V
Se024	HS1BP3_TSRDSSVLDGTVRQGMMKRLSTFLRSKTKWQKRVPRSA
Se024	SEC24A_YSAGSVYYYPSSAQSPSTEITEGTTEIPYSEDWL
Se024	ARHGAP21_EERGLEYTGIYVPGNNAAISSM
Se025	MUTYH_R112W
Se025	PIP5K1A_D147N
Se025	CEP350_Q1451E
Se025	HS3ST1_R152H
Se025	GFPT2_V642L
Se025	TECPR1_T842M
Se025	TACC1_V196M
Se025	KNTC1_I1217V
Se025	SPAG9_E189K
Se025	DIP2A_A214T
Se025	ZBED4_T64M
Se026	ECE1_R171H
Se026	LRRN2_S45L
Se026	OR2W3_P182H
Se026	MTHFD2_V205I
Se026	DOCK10_S1776R
Se026	TRANK1_L436I
Se026	ARMC8_D26Y
Se026	ADAP1_P219L
Se026	TMEM184A_I226T
Se026	CHD7_A2127S
Se026	SGK3_L214F
Se026	NCOA2_L694F
Se026	VPS13B_I579T
Se026	ZNF462_T1204M
Se026	TRIM32_A513S
Se026	ITIH5_R399G
Se026	NCOA4_F246V
Se026	NR1H4_I478N
Se026	DACT1_N766S
Se026	CSPG4_H1548L
Se026	SETBP1_Q1000L
Se026	MYO5B_V1703A
Se026	ARID3A_C327Y
Se026	DLGAP4_P53S
Se026	OPHN1_H150N
Se026	PCGF3_YLIDATTVTECTPSAGAAW
Se029	VPS13D_Q502L
Se029	VWA5A_H190Y
Se032	KLHL21_S401Y

Se032	CAMTA1_A1381T
Se032	VGLL4_M199K
Se032	NOP16_L53V
Se032	RREB1_L9W
Se032	PLPP6_I183F
Se032	CLIC3_S222I
Se032	WAPL_T1125R
Se032	IFT46_D180N
Se032	ARID2_H48Q
Se032	NCOR2_G1872S
Se032	CSPG4_S1188Y
Se032	ABCC1_I741M
Se032	TP53_G134R
Se032	ST6GALNAC1_R391P
Se032	SERPINB5_F354S
Se032	JAM2_Y43F
Se034	CEP104_A895T
Se034	DDAH1_P96R
Se034	VTCN1_S44L
Se034	CAD_L1342V
Se034	POLR1A_Y792D
Se034	CXCR4_A251G
Se034	STK16_Q124E
Se034	PDE6D_V122I
Se034	MRPL1_Y148F
Se034	RAP1GDS1_L144M
Se034	CENPE_K827N
Se034	UBR2_H709N
Se034	TSPYL4_G52C
Se034	ERMARD_L117Q
Se034	VCPIP1_D974G
Se034	DAPK1_K175N
Se034	LRSAM1_E161V
Se034	AP3M1_R169W
Se034	ZNF143_T321S
Se034	AMPD3_N231Y
Se034	NUMA1_R958S
Se034	SYTL2_K557N
Se034	NCOR2_N429I
Se034	CDH24_Y349F
Se034	ZNF689_L449Q
Se034	TOMM34_S135L
Se034	MMP9_V348A
Se034	ZNFX1_L217F
Se034	GEMIN5_RKARSLPLSTQIQRGASSGLFGTSNCKALQRAE
Se034	HDAC4_KVMEIHSKYWRPQGVV
Se034	LRFN4_RPDDLETASPATSGQCPRASSPVSRPSLPATRSASGCWKASG PRCGAGPWVTPRLPCTGSVLTGWLATPPEPGLSPTGP
Se035	SYTL1_P278L
Se035	PLXNA2_V100A
Se035	OBSCN_R2628H
Se035	PNPT1_E355K
Se035	WDR19_D493G
Se035	RBM27_G953R

Se035	CD74_G267R
Se035	FAM193B_D461N
Se035	FILIP1_R125P
Se035	IMMP2L_R155H
Se035	DSCC1_H376Y
Se035	ANK3_D349G
Se035	GBF1_K1029R
Se035	FAM24B_A32P
Se035	KCTD12_R8S
Se035	CHTF18_R164C
Se035	ZNF319_C345F
Se035	TP53_R141H
Se035	METTL2A_C308R
Se035	L3MBTL4_R522M
Se035	MALT1_V156F
Se035	GSK3A_R113C
Se035	GNAS_A51T
Se035	HELZ2_E276G
Se035	MZF1_LRHLTHTEERRLWPGLRAPGRASESAHGRTAFPLR
Se035	EWSR1_QGSKLKVSLARNSMRGGLPPRE
Se037	ZMYM1_L881I
Se037	ASPM_S1110C
Se037	DISC1_A473V
Se037	RMDN2_F154Y
Se037	COQ10B_L10F
Se037	CCR1_I246V
Se037	ZGRF1_I1814T
Se037	PRKAA1_G203V
Se037	AP3B1_G832A
Se037	LARS_V750A
Se037	VARS2_W485S
Se037	COL12A1_A223T
Se037	MTPN_E49G
Se037	RGS22_G92V
Se037	FOCAD_D58E
Se037	ZEB1_R197S
Se037	C11orf80_C57F
Se037	CPT1A_L174P
Se037	ZW10_T93A
Se037	SNX19_V61M
Se037	NTM_E184K
Se037	CLEC2B_S88R
Se037	UBFD1_V163I
Se037	CAMKK1_L281V
Se037	DPY19L3_A696P
Se037	SYNE4_V202F
Se037	SIRPB1_P2S
Se037	DNTTIP1_S191C
Se037	PCDH19_S96I
Se037	ZNF821_SSHTEEDGGVEKELENTEQPV
Se037	DNASE1L1_SSPQLGRSTYMDFYRSHKTQVL
Se039	TCEB3_Q156L
Se039	FUCA1_T459S
Se039	FUCA1_Y335C

Se039	MSTO1_Y278C
Se039	UHMK1_E275G
Se039	DDX59_L210V
Se039	MEIS1_D200N
Se039	ZAK_E288Q
Se039	CHPF_R91G
Se039	ZMYND10_I103M
Se039	GRAMD1C_L446V
Se039	IGSF10_T1800M
Se039	SMC4_Q340H
Se039	SMC4_K963E
Se039	HNRNPDL_A39V
Se039	SCD5_Q203E
Se039	PPP3CA_K382N
Se039	LRBA_V2630L
Se039	DDX60L_M239I
Se039	TRIO_V1589I
Se039	LMBRD1_Y495C
Se039	PHIP_E356D
Se039	FAM71F2_V85M
Se039	FLNC_P1411S
Se039	ZNF862_V308A
Se039	VPS13B_Q3975R
Se039	RAD21_L14P
Se039	RPL8_T111S
Se039	NPR2_Y663C
Se039	FKBP15_V281G
Se039	DIP2C_G187E
Se039	KIAA1217_H126Y
Se039	AFAP1L2_I113M
Se039	CYP2E1_Q148K
Se039	NAALADL1_F431Y
Se039	RBM14_S612C
Se039	PITPNM1_T777M
Se039	TMEM126B_W140C
Se039	ZBTB44_E301K
Se039	ITGA5_G845S
Se039	GLS2_V8F
Se039	MICU2_G46V
Se039	RNF6_C635F
Se039	FAM63B_N181Y
Se039	POLG_G114R
Se039	MAN2A2_P139A
Se039	ATP6V0C_A27P
Se039	KIAA0100_R1075T
Se039	SEC14L1_G215V
Se039	MOCOS_R183L
Se039	ZNF407_D183H
Se039	ADNP2_A114P
Se039	THOP1_K286N
Se039	CLPP_C144Y
Se039	TRIP10_Q175E
Se039	JAK3_T21M
Se039	GPR4_L308M

Se039	C20orf196_G9V
Se039	UCKL1_I488N
Se039	CLIC6_L613V
Se039	PISD_F318L
Se039	APOL6_G246V
Se039	SH3BP1_R312L
Se039	ATRX_T13R
Se039	OCRL_H598N
Se039	TP53_PDDIEQWFTEDQVQMKLPECQRLLPWPLHQQLLHRRPLHQPP PGPCHLLSLPRKPTRAATVSVWASCILGQPSL
Se039	USP15_TASEDQIVSKATRDKTLVELAFFLLTEKLKVLQPLASH
Se039	CAND1_CECAEEGTRNVAECLGKLTLD
Se039	MCTP2_QLWNGIISITFVGREECLRRKHDRDVCVKTRSEV
Se043	PPARG_N24D
Se043	RHOBTB3_L274V
Se043	DDHD2_V515L
Se043	AGO2_S253F
Se043	CDH23_V1137E
Se043	CD19_E243K
Se043	TP53_K32E
Se043	EPB41L3_R129S
Se043	CEP192_L1428S
Se043	ICAM1_R225W
Se043	LIN37_P65L
Se044	BEST4_G19C
Se044	GMCL1_K482N
Se044	PIKFYVE_L1632I
Se044	UGDH_E150Q
Se044	ANKRD37_R144P
Se044	PDZD2_R565H
Se044	GIN1_G409W
Se044	GOLGA2_A154G
Se044	ATG2A_L288V
Se044	ARL2_S151I
Se044	TENM4_H2344Q
Se044	LRP1_A2366T
Se044	MYCBP2_T2374A
Se044	SYNE2_E694D
Se044	AMFR_D576N
Se044	TP53_G112D
Se044	FCGBP_C758G
Se044	AGRN_SNPCATKVFQGSWSWRASRASCSTRPRWLTPSQNCSEGRQPG ALRAPWTTSSGIQTSRRIFGVSACGTWGPANPSAPLWMCTLTPPQPSG HPTWPGPCSGRSRCPGAGPWG
Se044	RAI14_VSVLASKLKESEREREGPFRGCPD
Se044	SHROOM3_PGAAHVVGSTSIKSEAESTP
Se044	FBXO21_PISMSLLYLITVEPVNFPSHFL
Se044	MYCBP2_NDPAGYAMNRYVCYKCRKAYFG
Se047	WDTC1_T305N
Se047	POGZ_K719M
Se047	RASSF5_L191V
Se047	TTC7A_G106A
Se047	DCTN1_L67V
Se047	FN1_L1952F

Se047	BOC_S666Y
Se047	WDR19_D355Y
Se047	FAM24B_K34N
Se047	HELZ_S752C
Se047	LLGL2_G370D
Se047	ZBTB14_L231F
Se047	CAPS_G195A
Se047	SARS2_E301K
Se047	CBFA2T2_R329H
Se047	PABPC1L_V518F
Se047	TYMP_D209H
Se047	PHKA1_I562V
Se047	G6PD_K538M
Se048	LEPR_S791C
Se048	WDR54_L244I
Se048	GYPC_D27G
Se048	WDR1_Q14E
Se048	RAD23B_M267I
Se048	DCHS1_R2217H
Se048	DDX51_S561N
Se048	ZNF592_R608Q
Se048	LRRK1_T1196M
Se048	TP53_S82C
Se048	PHF20_P570L
Se048	DLGAP4_E210K
Se049	TAF1A_I163M
Se049	PYCR2_E36Q
Se049	C1orf131_L32V
Se049	MBD5_H218Y
Se049	C3orf18_T56M
Se049	PARP14_I921V
Se049	NDFIP1_R111M
Se049	SETX_V1974L
Se049	RNF31_R374C
Se049	EPG5_Q2519P
Se049	NACCI_R89Q
Se049	CLASRP_D274Y
Se049	ZNF264_V569L
Se049	TRMT6_L114F
Se050	PCNXL2_L609V
Se050	CCDC138_A225G
Se050	MOGAT1_V333L
Se050	SENP7_H512R
Se050	LGI2_A509S
Se050	CLCN3_L432V
Se050	PCDHGB4_R645C
Se050	MAP3K7_H244R
Se050	PTPRK_N986H
Se050	PLAGL1_F232L
Se050	SLC12A9_T190I
Se050	YAP1_R124G
Se050	TP53_R116W
Se050	NLK_V61L
Se050	DLGAP1_H119P

Se050	DSG2_A8S
Se050	SHKBP1_W225L
Se050	PPP1R37_S291P
Se050	PPP1R37_S291L
Se050	BCL2L12_Y162C
Se050	UQCC1_V18I
Se050	CBY1_R79M
Se050	ARHGEF6_C139R
Se050	ARHGEF7_SFSKGDVIHVTVGHTQRPDRLVPPQLRARGQGQREACV SQIRNTEEPSQRI
Se050	CA11_LSELRLFGARSRLGTSDQPPGLLC
Se050	IQGAP1_QQYQRRLAAVASRRVLLRRLFVN
Se050	IRS1_VKDFKQCPQECSLPHPHPLINPWA AVRAAPPAAQVRI
Se050	ROBO4_LKHRMDHSDSQGPEQQQPQSSAGGGCPGPTLSSLLALLG LPKPRRAPASRHQHFLWLPHR
Se050	ZBTB44_FQCPTCGVRFTVFRT
Se050	TNS1_PGAFIIRDHSMKVSSPPPTIM
Se051	CELSR2_A106T
Se051	ATP1A1_D202Y
Se051	RCSD1_P122L
Se051	ASPM_K1802E
Se051	HLX_G29V
Se051	NTPCR_T132M
Se051	KCNK1_K176N
Se051	CDCA7_S34F
Se051	PODXL2_P304L
Se051	ATP13A3_Y618C
Se051	ICE1_N1870Y
Se051	PCDH12_Q964R
Se051	SAP30L_N79S
Se051	TP53I11_A137V
Se051	WNK1_K940N
Se051	NR4A1_A504S
Se051	CCDC92_S8N
Se051	EP400_L2658V
Se051	TFDP1_Q222E
Se051	TP53_R116Q
Se051	COASY_L312M
Se051	EPS15L1_T536M
Se051	SIGLEC10_I476V
Se051	KIF3B_V314A
Se051	PREX1_R198M
Se051	SYNJ1_R638T
Se051	MYH9_L1449P
Se051	PLS3_H210D
Se051	DKC1_R298W
Se051	BRCA1_HPEKYQGSSVSTCMWSHVAQILMPAHYSMRTAVVYSLKTE
Se051	KIAA1161_FVREPTGRLPASARC
Se051	POLR3C_YAEVSNTFVRLPFGTYH
Se051	PSMB1_TILYSRRFFPYLMKKERGLYTALIQ
Se054	STIL_Q638K
Se054	TXNIP_V123L
Se054	PREPL_G298A
Se054	ITGB6_G80R

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Se054	CUL9_V1877L
Se054	DNAH11_R852S
Se054	LRWD1_T286I
Se054	FZD3_Q471E
Se054	CDK5RAP2_D881N
Se054	VWF_E581D
Se054	SPINT1_V256L
Se054	ADAMTSL3_H424Y
Se054	CSNK2A2_N119S
Se054	KDM6B_L173R
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Se054	LAMA3_S1494C
Se054	DSG2_S351R
Se054	CPAMD8_P217H
Se054	BMP7_S13T
Se054	TNRC6B_R1319W
Se054	PLEKHG5_YLNEFHSAVGALCRGWVDTIYN
Se059	COL9A2_Q489H
Se059	HMCN1_S3553C
Se059	KIF21B_R832W
Se059	LYPD6B_N133Y
Se059	DHX30_K846Q
Se059	CLDN16_L90F
Se059	ARSI_S290R
Se059	CASP8AP2_L1497V
Se059	TSC22D4_L246F
Se059	ING3_F22L
Se059	ERMP1_L817F
Se059	BNC2_C446Y
Se059	ARHGAP21_K229Q
Se059	ACBD5_L85V
Se059	TCF7L2_A148V
Se059	CHST11_V107L
Se059	ARHGEF7_R651W
Se059	ADCY4_A676P
Se059	TRIP11_E67D
Se059	CIITA_L861M
Se059	MNT_G534S
Se059	TP53_M114V
Se059	SLC26A11_I271V
Se059	KIAA1468_R867G
Se059	CDKN2D_A37T
Se059	CILP2_R112H
Se059	SLC1A5_A172G
Se059	SLC2A11_R2T
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Se059	PER2_FDYSPIRFRARTESTSRWTPAGPASSTHGAGKSPSSLGGTKSGW
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Se060	YIPF4_L178V
Se060	BIRC6_E2160K
Se060	CCDC88A_R882H

Se060	DYSF_R1572L
Se060	ATG7_K350N
Se060	GOLGB1_A1991T
Se060	SH3RF1_G393R
Se060	CFTR_R1066C
Se060	MAF1_R120Q
Se060	JAK2_Y934H
Se060	TMEM216_L65R
Se060	MYRF_D427N
Se060	ARHGEF17_P1035L
Se060	RALGAPA1_G934A
Se060	SEMA6D_V21F
Se060	FAM195A_N138Y
Se060	AMDHD2_G9R
Se060	ITGAX_S357R
Se060	DNMT1_P7T
Se060	LYL1_G221V
Se060	DTD1_D138Y
Se060	SIK1_D506E
Se067	CLDN19_V167L
Se067	CYP4B1_L8V
Se067	CMTM6_G114E
Se067	SCN5A_F1604L
Se067	ITPR3_V1058M
Se067	AIG1_P139T
Se067	CCZ1B_C184Y
Se067	KMT2E_P1832A
Se067	ADAMTSL2_V478M
Se067	PPP3CB_L386V
Se067	SIDT2_T311S
Se067	BHLHE41_K76E
Se067	OPRL1_N21T
Se067	RRPIB_D115N
Se067	KMT2D_NHVAAGSGQERVLVIPPSLVPTRPILLRE
Se067	TRAF6_LVRCEVSTRFLTWVAFGGRVFSHEVLMQGYSLPSLAQKQLP GENS
Se068	CGN_R845S
Se068	PKP4_G446D
Se068	TKT_I274M
Se068	CPE_S424L
Se068	C2_G169C
Se068	AIMP2_D74H
Se068	CYC1_K315N
Se068	SEC24C_P621A
Se068	DLG4_R148Q
Se068	NLE1_R119H
Se068	ZNF763_Y158C
Se068	SPINT2_D29H
Se068	ZNF182_P4H
Se068	CUX1_YKRLIDVPDPVGQQLQKLVQRL
Se068	ZRSR2_NPNNEFWANRTGSSFGKNSER
Se071	SPEG_R1350C
Se071	TNIK_R1262T
Se071	PIK3CA_H1047R

Se071	KCNK5_S295Y
Se071	BTRC_T391I
Se071	SYT13_R303C
Se071	GPRC5B_C267S
Se071	PPP2R1A_P179R
Se071	SLC4A11_G766R
Se071	GAL3ST1_D128N
Se071	PHKA2_T842R
Se071	TDRD7_IAHVYLFTPKNDPHRSINRQIT
Se101	MRPL37_Y31C
Se101	PHLDB2_S196L
Se101	SLC22A5_I146V
Se101	UBE2J1_S9T
Se101	THAP1_T138A
Se101	TTF1_G121R
Se101	BAD_A78V
Se101	RBM23_L380V
Se101	FANCM_P936T
Se101	NDC80_K271T
Se101	GDF15_D136A
Se101	ZNF431_G16V
Se101	RBL1_S1013N
Se101	RBPJL_L250H
Se102	MMEL1_L287F
Se102	OMA1_V299M
Se102	PDE4B_D225E
Se102	STRN_W490G
Se102	CNNM4_C151R
Se102	WDR33_M423I
Se102	FN1_P1111T
Se102	TRNT1_S269L
Se102	FLNB_V1220L
Se102	PCCB_R410W
Se102	IL1RAP_S575T
Se102	LAP3_L511F
Se102	PCDHGB1_D662E
Se102	GCNT2_Q193K
Se102	MRPS10_S90T
Se102	ELFN1_Y379N
Se102	FOXK1_A317V
Se102	TMEM130_S52R
Se102	CDK5_L235R
Se102	SCRIB_A1325V
Se102	CENPP_E63Q
Se102	STXBP1_L582V
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Se102	ADAMTSL2_R221L
Se102	LCOR_L354R
Se102	NSMCE4A_R83P
Se102	LRRC32_I230N
Se102	FLII_L64M
Se102	GHDC_Q376H
Se102	ZNF652_L538V
Se102	APPBP2_L26V

Se102	APPBP2_V25G
Se102	HELZ_K500N
Se102	TMC6_R231P
Se102	BRD4_E345Q
Se102	RASAL3_R992L
Se102	CHERP_R559Q
Se102	CENPB_Q313H
Se102	LMTK2_FLHSDLALRNCESGRLRNRIQQVQGGLY
Se102	SMO_EGCGIQCQNPLSTRCTATSRPSGSPRASARSSPWPWSWLTGGT RIATLLFSSTSMRASLWAALAGWPSSWMVPAERSSAVQMAP
Se103	OBSCN_E4387K
Se103	HIBCH_V158M
Se103	DOCK1_D344N
Se103	PPFIA1_V178M
Se103	ZNF200_I334M
Se103	TP53_V41L
Se103	SIRT2_G104V
Se104	CPA1_A336T
Se104	LZTS2_G27R
Se104	KIAA0556_R1029H
Se104	CLDN7_A94T
Se104	RRP1B_R476W
Se104	ARMC7_AITLMLHLSPPDRHARGAVHASLLPLGQRQAPEPGTDLPGGL LLPPPGRGPGPAGALCPGYPTAERGPTAALIHGDCETVAPLLETT VLMWTQGTGSTYCPIGAFSAI
Se104	BRD7_GEDGQCWQERGLWRCRSTRLOESQQRK
Se105	SLAMF7_P93S
Se105	RBM34_V194F
Se105	PTCD1_E36D
Se105	TSSK6_G121S
Se105	SUPT5H_D310N
Se105	CAPN6_V134L
Se105	DERL1_RYWFAATVAVPWSANSASSARPTSSSGPKPSFIAFRFGGQSLP PFISLWVQELDFFIWSIYISYISILRDLKQELLMGGQOTIYSCSSLTGFA ZBTB7B_PCVIAACMEISAGOWARSSOPGRG
Se108	ALG14_E85Q
Se108	POLR3C_S538C
Se108	MNDA_F223L
Se108	EXO1_T396S
Se108	WDR35_G151V
Se108	POLR1A_G130A
Se108	CD8B_P108L
Se108	PTPN23_Q762H
Se108	BCHE_E559G
Se108	FYTTD1_S84R
Se108	C5orf34_F362S
Se108	DDX56_R379W
Se108	LAMB1_L421V
Se108	DLC1_I141T
Se108	GOLGA2_S131P
Se108	NUP214_V990I
Se108	SEC61A2_G122V
Se108	C10orf12_G594W
Se108	ABLIM1_G43E

Se108	RGS10_S31T
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Se108	DGKZ_R38W
Se108	C2CD3_A1021G
Se108	PLXNC1_A133P
Se108	BRI3BP_A74S
Se108	TRPM7_G317A
Se108	SCAPER_V317I
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Se108	WDR81_K495E
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Se108	HOOK3_NEALSAKEEIAHELDMQVAALQ
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Se109	COL6A6_L174M
Se109	TNIP1_P522R
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Se109	GDI1_G220V
Se110	KCNAB2_M106I
Se110	ZP3_P22H
Se110	ANK3_G167A
Se110	ZBTB39_V87D
Se110	PAK4_R203P
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Se111	BOLA1_E41K
Se111	POLE4_F74I
Se111	PVRL3_M213V
Se111	TNS3_G785V
Se111	DNAJB5_F174S
Se111	GBA2_L526V
Se111	DIP2C_G1027V
Se111	EPS8_S481N
Se111	NOVA1_V197I
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Se112	SCNN1D_S332T
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Se112	SV2A_Q286H
Se112	PRRX1_N219K
Se112	ELK4_P409T
Se112	MAPKAPK2_M314T
Se112	RTKN_M131I
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Se112	ZNF354B_C466F
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Se112	SEC61A2_E210K
Se112	ARL5B_V42L
Se112	PLCE1_G1960R
Se112	RCN1_H202R
Se112	TMEM126B_L84F
Se112	MAML2_Q672E
Se112	MANSC1_C100S
Se112	SPATS2_A275S
Se112	SLC16A7_F346Y
Se112	ANKRD13A_V34M
Se112	ARID4A_N358T
Se112	ZWILCH_L148F
Se112	ZC3H18_R406W
Se112	KDM6B_P528R
Se112	FLCN_P404R
Se112	TNFAIP1_F80V
Se112	MYOM1_T395A
Se112	UBA52_I61M
Se112	PRR12_T1192M
Se112	RANGAP1_L23R
Se112	DDX3X_R183C
Se112	RRAGB_N92K
Se112	PNCK_H392D
Se112	EPHA1_ARAKEVTLMDTRRAGLAAGSPKRWVE
Se112	GALT_WHGAPTGSEAGTIGSCTLITTLRSCALPLSGNSWLATKCLLRL RGTSPLSRLQRD
Se112	IGF2R_QLNYRGGTPYNTHRELRSPPFSVIETREWASLNIRKRITPPTTS GGTPAMPARRSPWNA
Se112	TP53_CSDSDGLAPPQLSEWKEICVWSIWMETLFDIVWWCPMSRLRL ALTVPPSTTTTTCVTVPAWAA
Se112	ZCWPW1_KSYSLLPCSPNPLRRRPRGSPVQRQRP
Se112	SRA1_MTRCQAEVEMAELYV
Se112	TBC1D32_RTTVLRLLLETKSLVTTAIQQCV
Se112	RARG_PSQPYMFPRMLITDLRGISTKG
Se113	FMO4_G162R
Se113	MBNL1_T6I
Se113	PCDHGB6_R627C
Se113	TRRAP_E660D
Se113	NSMCE2_F17L
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Se114	NLRP3_S597N
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Se114	SSFA2_H740R
Se114	WDR5B_T297A
Se114	DIRC2_L382W
Se114	NSD1_W421C
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Se114	BIRC3_G472A
Se114	ALOX5AP_S108R
Se114	TJP1_S404C
Se114	DECR2_D12Y
Se114	USP7_D428Y
Se114	DYRK1B_A417T
Se114	IRAK1_D52H
Se114	APOBR_QTGSVAAGIMGVMWSHTSALLALVKLWKGCLGKAGTRKK RKRQQQESMQVGKNLWVRAQQRKR
Se114	CCDC88B_WRVWNLNHLWGD
Se114	EXD3_SQPPTGGAQASRTPLSPSWATGWWGTCKNWARPAPPWPM WRSRFWAAWTCCWCTDRCGWRACQPQPWTGPGS
Se114	EXD3_GAQAFSRLVAQPSRTPLSPSWATGWWGTCKNWARPAPPWPM WRSRFWAAWTCCWCTDRCGWRACQPQPWTGPGS
Se114	PPA2_NAKMEIATKEPICKGWKATLCGEYLPLQLYMELWYPPSDSFL WRSYSCEDPWNGFSY
Se114	PHF3_RFTPVTEEDQIYTLFFAYFSSR
Se115	RAPH1_S913A
Se115	ZNF142_L943S
Se115	SEC62_F234V
Se115	METTTL14_A62V
Se115	CDCA2_K634R
Se115	ADAMTSL2_P333T
Se115	ADAMTSL4_K825N
Se115	ADAMTSL4_Y826N
Se115	ATP11A_A915V
Se115	FASN_R1349W
Se115	B3GNT3_H91Y
Se115	KMT2B_S941C
Se115	EML2_S185L
Se115	SLC52A3_F129S
Se115	ABHD8_SSASSDAAQGDPAAMGGCWWKTWAEPLPTSYPGRMALGSR RPPWRWSWQIRRAAMAAWPPAAQAAAAAVAVVGGGGEGPAPRGPS ILTVRASLAAPRPTWCSFSSMVSAPWPSGRSSWTSLCA
Se115	AHNAK2_EKRLKKEQILTKGSGHQVQNAQVQDAIVRGVSPRQV HGGLGGCVCAEGGRREPPLHAGGPQDH
Se115	C1orf186_AVKEMKETQTETSQCLIPFTGMTATHPQIAWIAPAVRLLPA RPQRMWITHKSSFLTEN
Se115	CCDC85C_DKLLAQAGSGVPHAAERLLALPLGVPACVPAALLPGLPA ERPGLPRT
Se115	CRNKL1_LVLAWSSQFRRRPGRPAPQSLRRC
Se115	L3MBTL2_GYLMICVDGGPPQMAWTGSATMPLPTPSSRPPSVRRMTLS SHRQKVMRHLSTGRTTWRPSPKPLHRDSLWIAQTMASRWA

Se115	SEMA3B_ENPDDDKIYFFRETAVEAAPAL
Se115	DOCK4_RHCSTKEKGEKLFGFSFVPLMQ
Se115	FBXO32_ILSDKGOLDWKMYFKLVRCYPR
Se115	ZC3H12C_QYPSMMMATKNGTPMPYEQYPK
Se115	MMP14_LFWMPNGKTYFRGNKYRFNEE
Se116	MXRA8_P160L
Se116	ZNF638_K1431N
Se116	RBSN_L559V
Se116	EXOSC7_M239I
Se116	CACNA1D_L80V
Se116	ABI3BP_E427Q
Se116	GEMIN5_R718Q
Se116	DOCK2_M1388R
Se116	MDC1_M1316I
Se116	BAG6_Q289E
Se116	FGD2_R322C
Se116	RBAK_C266S
Se116	FBXL18_R501H
Se116	TRIM4_R170L
Se116	TRIB1_L42I
Se116	ZNF239_R44K
Se116	IGHMBP2_D754Y
Se116	TAPBPL_R442H
Se116	SPRY2_R292H
Se116	NOP9_R290C
Se116	SYNE2_M5466I
Se116	ITGAE_I909T
Se116	TP53_R116W
Se116	MAPK7_P323S
Se116	KCNJ2_I269V
Se116	GDF15_R57Q
Se116	MOCS3_V189F
Se116	EGFR_SLNITSLGLRSSRR
Se116	ITGA1_MSLEPIKOTCCYLGSTIHAQOKTKMSHAGLVLELQLLL
Se116	ZNF679_LTFRDVVIEFSAEFI
Se116	TJP2_KLFDQANKLKKNVCTPFYSYNQPKFSQ
Se117	PMF1_E198K
Se117	ATP2B2_P859T
Se117	CUL7_R1062Q
Se117	SLC17A5_F48L
Se117	UTRN_D1037V
Se117	TMEM140_A153V
Se117	CLEC5A_E113V
Se117	TRPS1_S882F
Se117	PLEC_I3605L
Se117	GBA2_L550F
Se117	DHCR7_Q144E
Se117	TMPRSS13_L308Q
Se117	EFTUD1_V487L
Se117	TP53_C9Y
Se117	FARSA_P347L
Se117	DYRK1A_A26G
Se117	PIM3_T86A
Se117	PDK3_R162H

Se117	EXOC8_TEQKSSLESIPPPPLEGRRESVGRGAETTSEARPAFSPPPGVPP ATAPVQARKESSALSPCLRRWKAAGICWRRRDSTWCTMGT
Se117	LMF2_FRRMTGLGGRPGGAGGQLRRPPLDGDRVHVQAWPEPEAAPG CGAPPATPGLADVVCSPGPTHAPVVKPGLAPAAGQGASDPPCPEP SGQVSLPQAAAHLRSPALQVLVLPWAGAGPVVAAPVGGGVLPPIRVP GGPHAGDAAQAVWTTGEKPTSHPPQRQHPGPGPPLDSLAVSPGGPR PALGAPHGRGGCOICASPASTLFSPLVLPAGTSQRGEAQASLPERLRSL
Se117	RBM15_MRTAGREAACGSAV
Se118	PRKCZ_R73G
Se118	USP24_S2135T
Se118	ATP8B2_D1022N
Se118	ELK4_M405L
Se118	BIRC6_D1967H
Se118	GULP1_D103H
Se118	MYEOV2_K192Q
Se118	FBLN2_G707S
Se118	FRYL_S2582F
Se118	FRAS1_L1138F
Se118	FAT2_T843A
Se118	CD83_S48F
Se118	BAK1_G4W
Se118	FAM83B_E575G
Se118	TULP4_Y464F
Se118	C7orf60_D349A
Se118	SNTB1_H382N
Se118	SPTAN1_Q2124R
Se118	ABCA2_H1295L
Se118	CDHR1_K578M
Se118	MRPL43_R68C
Se118	SLC43A1_P183T
Se118	LGALS12_D11H
Se118	CYFIP1_Q378H
Se118	STRA6_A400S
Se118	ALDH1A3_V170M
Se118	GLYR1_R7W
Se118	FBXL19_L74V
Se118	RILP_Q250H
Se118	PHF12_G938R
Se118	STARD3_W386C
Se118	CHERP_K879N
Se118	ATRN_H808R
Se118	PDGFC_FCIHYNIVMPQ
Se118	WNT7A_TFLKIKKPLSYGPGVHREVAQLLRGGPGDRQCCHPGPRLQQ DGSPGQRL
Se118	PLEKHG4_RDTFVLQASSLWRQAVHNKEVR
Se119	ESPN_D689N
Se119	ZMYND10_N301H
Se119	UGT2B7_T503S
Se119	PCDHGC4_V368A
Se119	LRRC16A_G171V
Se119	GLTSCR1L_I166L
Se119	ZNF775_P275L
Se119	SEC31B_G122V
Se119	FRMD8_R152L

Se119	R3HDM2_M724I
Se119	TBC1D15_M145I
Se119	SEL1L_L9V
Se119	CACNA1H_G712C
Se119	ZNF574_K506E
Se119	C20orf27_G178A
Se119	KCNG1_A441V
Se119	KCNG1_A441S
Se119	PRDM15_S267I
Se119	MAMSTR_TKSMLLERMARGASGRSRGARTVPRVLPGRASSPRWQPPG VRARSSPAQHLTGHLFHVPRIPRGRRLRLQLPLRLLLQLQP
Se120	ALDH4A1_R10G
Se120	ZZZ3_S367Y
Se120	TANC1_A1036V
Se120	ATG4B_R90P
Se120	TTC33_R46H
Se120	SKIV2L2_H810Y
Se120	SLC35B2_F73L
Se120	NOM1_C697Y
Se120	KAT6A_V1188I
Se120	SULF1_H182Y
Se120	FAM175B_R282Q
Se120	PIK3C2A_V528M
Se120	NCAPD3_D1135G
Se120	TIMELESS_R515Q
Se120	FZD10_R443H
Se120	NFATC4_P127L
Se120	SPTB_P1197Q
Se120	SHCBP1_S337C
Se120	GPS2_D107H
Se120	NF1_T1951S
Se120	PCTP_F104L
Se120	RGS9_S554N
Se120	SIGLEC15_S178I
Se120	ZNF837_E461V
Se120	MYH7B_Y175N
Se120	RPN2_G57V
Se120	INPP5A_ESTPMLEKEKFRRTTSPSANGQEKASSGRGGALQTVPLTW LPIN1_LKRSHTSDFPVRIPSVTSPFGESHCHLLKTRTFILPQRKMSQA ASCQQCRAWLSPIKG
Se120	ZNF574_PALQQEVQASSLQRCLCLSLTPCQLLTTVTSCAMVKPLGGIA GGAGPGGTTVEKQAGQPHRSSSAQPVTSSFSHPTSYSSTCGVTGRASL SAPCAVVSSLALPVWTSTLETIAASHTSCV
Se121	GNL2_R355P
Se121	SLC44A5_R351Q
Se121	ITSN2_D614H
Se121	HARS_N120T
Se121	PCDHGA6_D426H
Se121	ZSCAN16_K318I
Se121	ATF6B_L119H
Se121	KMT2C_A1590T
Se121	HAUS6_S484T
Se121	CELF2_G40R
Se121	PARBPBP_L393F

Se121	PLCB2_R762H
Se121	ANKFY1_D284H
Se121	TP53_H61R
Se121	CYP1B1_NVPATITDIFRAPARTPCPPRCSGCSSSSPGILMCRLECRQNW
Se121	IRS
Se121	WGGTVCLVWVTSPTCPMSWPSFMKPCASPALCLSLFLMPPLPTPLSW
Se121	ZFYVE19_RGGTVPVGVWGRAGQGREGKGGAGVRVQGAQDLAGVIS
Se121	ALQ
Se122	ACSL1_M291V
Se122	SLC35A4_G72A
Se122	CDK14_D226G
Se122	AQP3_A44V
Se122	VAV2_P617L
Se122	PIK3C2A_L435I
Se122	ZNF646_Q349H
Se122	PPP4R1_S648T
Se122	KLK8_R106H
Se122	ATM_SLLLKDIKSGLVLRDVIYTLIH
Se123	GPR153_H129Q
Se123	EIF3I_K17M
Se123	DHCR24_M476R
Se123	GBP4_D347E
Se123	TGFBR3_E442D
Se123	OTUD7B_F359Y
Se123	ARNT_P286L
Se123	TMEM63A_F210V
Se123	RAB10_Q68E
Se123	DNAJC10_V532L
Se123	NEMP2_N90T
Se123	BARD1_Q430E
Se123	ROBO2_L50M
Se123	NSUN7_C476F
Se123	SLC10A7_P27T
Se123	ELL2_MIL
Se123	MCC_I388M
Se123	MLLT4_Q806H
Se123	C7orf26_L21W
Se123	AGR3_P124R
Se123	VPS13B_K867I
Se123	PLEC_Q1420H
Se123	C10orf128_V109L
Se123	LZTS2_R479W
Se123	B4GALNT4_P714A
Se123	EEF1G_D393H
Se123	B4GAT1_I197S
Se123	NUMA1_A1289G
Se123	PEX5_R105T
Se123	CDKN1B_V36L
Se123	ATF7IP_R1041C
Se123	NUP107_H545Y
Se123	KIAA1033_T572A
Se123	TRPV4_Q683P
Se123	PYGL_S775L
Se123	DACT1_M245L

Se123	CCDC88C_N48K
Se123	TMEM121_P218T
Se123	ATMIN_K153N
Se123	DPEP1_E327Q
Se123	AOC3_I363M
Se123	GPATCH8_E312Q
Se123	LRFN3_G125V
Se123	GSS_R132C
Se123	PIGT_L269V
Se123	DOPEY2_A1412T
Se123	PACSIN2_V9L
Se123	ADAMTSL4_GSQRCELNCRPLASASMSVTLKRSRMGPCVSLEPLTSV WLDVAV
Se123	SYK_SRIKSYFPPKATESPPLPKGTGKRVLCHSIRMSQNLHPGLQTKA PREKPYPTQRCTRAPTRTPRRSGPRRFTWTESC
Se123	COL6A6_EQYVSKLKTFAAHNQTFLLKLR
Se124	TP73_H17Q
Se124	FAM69A_V45A
Se124	PRCC_F388Y
Se124	KIF14_I609V
Se124	WDR26_P589T
Se124	HEATR1_E741Q
Se124	CAP2_M405I
Se124	TIAM2_S604R
Se124	RSBN1L_S21L
Se124	PREX2_D1142E
Se124	VSTM4_S143Y
Se124	MGEA5_S19Y
Se124	UROS_A191T
Se124	ANKRD52_D869H
Se124	TP53_C145F
Se124	SMCR8_A237V
Se124	ITGB4_G1383D
Se124	GAREM1_R376G
Se124	TPGS1_V122M
Se124	NLRP7_KPVPVLLGSLLNAAQGTGPPAPGAAADLRKGGGLPGGGQE GLFPETLWRRGPHACL
Se125	ASAP3_A668S
Se125	BCAS2_R72T
Se125	CRIM1_C284Y
Se125	STEAP3_R126H
Se125	GOLGA4_E1853Q
Se125	XYLB_G235S
Se125	FLNB_A1218S
Se125	XRN1_L662M
Se125	RAP1GDS1_E269Q
Se125	DCDC2_R7M
Se125	FZD3_D640G
Se125	GRHL2_K118N
Se125	CNTLN_K1289R
Se125	RABL6_P170A
Se125	DEAF1_L129M
Se125	OTUB1_E5V
Se125	CLEC7A_Q152K

Se125	GALC_G355V
Se125	HERC1_A4494V
Se125	CHTF18_V577M
Se125	MTSS1L_R84C
Se125	MYH10_S1922T
Se125	MED25_G298W
Se125	ZFP64_F317L
Se125	SGSM3_L254V
Se125	DOCK11_H1078Q
Se125	CTSA_PLFLLLLLLLLVSWASRGEAAP
Se126	EHBPI_N218K
Se126	ERBB4_C520W
Se126	FAM149A_K201E
Se126	SCRIB_G1424R
Se126	MAP1LC3B2_E14V
Se126	ZC3H14_A384T
Se126	RPAP1_R1289W
Se126	ITGB4_E853D
Se126	SPEF1_G123S
Se126	BORA_GKFRWSIDQLAE
Se126	SYNGAP1_SNLDTLTNSSLGRELSTLHAL
Se127	LEPR_D475A
Se127	LEPR_N1126Y
Se127	PIK3C2B_V923I
Se127	SEC61A1_I129V
Se127	UHRF1BP1_D474Y
Se127	FBXO10_V29L
Se127	SYT7_N135Y
Se127	USP5_S39C
Se127	ZFYVE26_D1470N
Se127	CTCF_L398T
Se127	ATP13A2_TGVQLGGYFLTPTWVPLNRTV
Se128	AGRN_G741E
Se128	ZBTB40_V972M
Se128	PDE4B_E263K
Se128	POLQ_D549N
Se128	AHR_Y468C
Se128	TRRAP_W3205S
Se128	KIAA1549_Q1487H
Se128	KRAS_G12R
Se128	BRI3BP_H151Y
Se128	PIK3R5_D76N
Se128	RIPK4_G615V
Se128	NHSL2_A523T
Se128	LAGE3_R143H
Se128	SIPA1_SEDKGNPAPELSLCGTPSAGSCRRRAVGPWRTSGRPSRRLPLL ATPFWSRCPERDSPSQRVETLRELQNLMLSQSLGTSQRRSLTWSPCSG SCRRTCRRRRRTGRPWRRCGA
Se129	SPEN_S1424N
Se129	PQLC2_S126P
Se129	MEF2D_R15Q
Se129	NID1_P557S
Se129	BIRC6_V3258G
Se129	UBXN4_A99S

Se129	TAMM41_T162I
Se129	RAD54L2_S385Y
Se129	FAM208A_T1150A
Se129	PBX3_R304H
Se129	ARHGAP21_T1114I
Se129	TOLLIP_P220L
Se129	ITPR2_R1547H
Se129	DIAPH3_P16H
Se129	EIF2AK4_M149V
Se129	ZNF521_V354I
Se129	THOP1_H391Y
Se129	ATP13A1_D541Y
Se129	FOXA3_R160H
Se129	ZMYND8_T230M
Se129	CLCN5_R563C
Se129	AFDN_PDHIPKTKKHWKARHPRERRELTGLAMAPPFLRRSCPI
Se129	ZNF585B_DFSREEWRHLDLRETCTGM
Se130	GPR161_A141T
Se130	EPCAM_V6I
Se130	FLNB_G972V
Se130	SORCS2_T893K
Se130	TBC1D1_K787M
Se130	KIAA0922_G973V
Se130	ZNF391_K200I
Se130	C2_L126P
Se130	IGF2R_T1015S
Se130	ORC5_L351P
Se130	PUF60_V333I
Se130	AQP3_Y104C
Se130	RASSF4_L28V
Se130	SBF2_I1318V
Se130	APLP2_E49V
Se130	PLEKHG6_E244Q
Se130	ORMDL2_A121S
Se130	ZDHC17_Y223S
Se130	RNF213_S4922R
Se130	NPLOC4_D111H
Se130	ANKRD27_H754R
Se130	ZNF671_R408W
Se130	PABPCIL_P457T
Se130	LAMA5_E2916D
Se130	IL17RA_D538A
Se130	SNAP29_L31F
Se130	TMLHE_S88F
Se130	DTX3L_VHFVNLQESMTDWFAPKSPCKGEAVCSKRRRNVFIGWKEIER
Se130	TRERF1_IFVQKMVKSKTWLSAWSTTTTRGKRSCGWGGNTGHAHQKS
Se130	KIRREL_PPGPAAPAGTDENYEKFNHPF
Se130	YIPF5_PYTGQIQPTQPFYGNFDEP
Se131	CACHD1_R150Q
Se131	C1D_T73S
Se131	PDE1A_V219F
Se131	ENTPD4_A160S
Se131	DEAF1_P204L
Se131	QSER1_T1248I

Se131	UTP20_R1043W
Se131	UBAC2_R90K
Se131	TM9SF1_G453V
Se131	AP4E1_D965N
Se131	VPS13C_E2692A
Se131	IGDCC4_N1145K
Se131	TMEM208_F118L
Se131	SCRN2_S288R
Se131	CACNG4_V303M
Se131	NFATC1_R108S
Se131	TEF_K177M
Se131	MDN1_ITMEIVNKLEAATQQ
Se131	ZNF467_ALGATVDAPAAAAQDPIPWCPSAPPRASGPSSARTAGAASP
Se131	MGSTWRGTRACTRANGPSPARSVTAASARGLIWSPTPGPTAAPGLSP
Se131	ALSAAAASAASRTWAATTRRCTLAAAPTAPAPSAPAASAPKPT
Se132	UBR4_R2974H
Se132	DNTTIP2_L252I
Se132	TOMM40L_L73F
Se132	RGS16_D153H
Se132	C1orf106_G299S
Se132	ATP2B4_L1002V
Se132	PLXNA2_V1183G
Se132	ROCK2_C1257F
Se132	BIRC6_I2111M
Se132	TMEM131_F632L
Se132	REV1_G58A
Se132	SH3RF3_R535L
Se132	SLC6A6_C112W
Se132	MITF_A57T
Se132	ABTB1_I38F
Se132	HPS3_D135H
Se132	WWTR1_S5P
Se132	CHRD_D67N
Se132	CENPC_M647I
Se132	TMEM192_L178V
Se132	IL6ST_M804I
Se132	GRAMD3_M238T
Se132	GRPEL2_R208H
Se132	NEDD9_G116V
Se132	ITPR3_F994L
Se132	DST_V3858F
Se132	LACE1_F188L
Se132	MDH2_A202G
Se132	ARPC1B_D130H
Se132	KMT2E_G1134R
Se132	MAK16_L91M
Se132	CHD7_M7I
Se132	VPS13B_A3424S
Se132	GRHL2_F23L
Se132	ENPP2_R203W
Se132	TRIM14_V326F
Se132	ZFAND4_G621R
Se132	PITPNM1_S318L
Se132	NUDT4_C96F

Se132	GNPTAB_I354N
Se132	CENPJ_A1183T
Se132	HSPH1_G266A
Se132	PCDH17_W12R
Se132	TBC1D4_M992I
Se132	ABCC4_I311M
Se132	LAMP1_L240V
Se132	AKAP6_V1408L
Se132	ATG2B_T1944R
Se132	PLA2G4F_H246N
Se132	HAUS2_S194C
Se132	LCMT2_L279V
Se132	TMEM8A_V123I
Se132	COG7_R470K
Se132	CMTR2_L708F
Se132	TP53_C3W
Se132	FAM83G_G665V
Se132	PIGW_E21K
Se132	MIF4GD_P128L
Se132	LDLR_A603T
Se132	NCCRP1_G238R
Se132	C20orf194_V215I
Se132	C20orf24_D37H
Se132	NDRG3_L272F
Se132	USP16_P586A
Se132	DOPEY2_E1559Q
Se132	HLCS_I648V
Se132	NUP62CL_T24M
Se132	CXorf40B_YAGFVLNGIKTGDALASSAEQPAELYHRRPHCSQGLGRRCLSGAAGGETRDDSCSDSGLAQERGKVWSRSDSGTR
Se132	TDRD5_TKDGLSPOELEEYLLMVGNHLP
Se132	DCLK2_LKQISAHGRSSNVNGGPELDRC
Se132	LMBR1_NLYPAVMVLLIETSISVLLVA
Se132	B3GAT3_LAYFLVSIAGLYALVOLGQPCD
Se132	ZFPM1_CEITFSNVNNYVHKRLYCSGRR
Se132	TK1_QILOQSPANS GTCEGRPLPSCHCRL LDAALHAAQPLQEEVGRRG
Se133	NAV1_R284W
Se133	TRAPPC12_G342S
Se133	SMC6_S1068F
Se133	CRIM1_D158H
Se133	DNAH1_R4096H
Se133	SIPA1_R1007Q
Se133	CTAGE5_K236M
Se133	EMC8_E97K
Se133	TP53_R141C
Se133	MAN2B1_R190H
Se133	COLGALT1_R453W
Se133	RALGAPA2_V691M
Se133	GRHL2_KNRDEQLKYWKSGTLGSIRRSRGLTLPITRRALIRLET LKRLHIMLFPLPGT
Se133	PLAT_HPWQAAIFAKHGSCAGAYSSAPAGFSLPPTASRRGFRPTT
Se133	WSB1_DGALLATASYDIEYISGIHIMETF
Se134	ATPIA2_Q703H
Se134	ATPIA2_V924M

Se134	CDC73_G22A
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Se134	SNRNP200_Q1568P
Se134	PMS1_L561P
Se134	VGLL3_K44M
Se134	EPHB3_P400R
Se134	TBC1D19_D77N
Se134	PCDHGB6_S475R
Se134	FAT2_Q1520R
Se134	RREB1_V1284L
Se134	FAM160B2_G439R
Se134	HNRNPK_G248V
Se134	ENG_F290L
Se134	FAM208B_R2080T
Se134	ITGA8_V718M
Se134	LRRC20_F59V
Se134	HARBI1_P194L
Se134	EHBP1L1_I62N
Se134	SPTBN2_F1913L
Se134	SLC38A2_Q36L
Se134	DDX23_E334Q
Se134	TMEM263_G92R
Se134	RALGAP1_G1583R
Se134	DDHD1_P663A
Se134	RTN1_R513W
Se134	BRF1_E131Q
Se134	TBC1D24_L325V
Se134	IGSF6_A121V
Se134	TP53_R148S
Se134	MAP2K7_V180M
Se134	MICAL3_W1001L
Se134	TMX2_IVMMKNRRSITGATYRQHFHV
Se134	TPRN_KLPYLPHPARPGVAELQPRGS
Se135	VPS13D_T1011S
Se135	B4GALT3_A133T
Se135	NBAS_S1994F
Se135	NAGK_G38R
Se135	SCRN3_N410K
Se135	DZIP3_R1000G
Se135	FGFR3_N191I
Se135	ALDH7A1_L26R
Se135	TMEM170B_K2M
Se135	PUS7_M403I
Se135	FAM171A1_A370V
Se135	LATS2_C400Y
Se135	RHBDF2_L721V
Se135	CILP2_V513L
Se135	RYR1_K965N
Se135	FKRP_R154H
Se135	IFNAR1_A406P
Se135	TIMM8A_A9V
Se135	IL13RA2_G47D
Se135	DNASE1L1_P67A

Se135	CRISPLD1_PVDKRRKTYIASQKVYRILQEERHSECLLLCETEYLEEDHK DYSKCNISEFCIKL
Se135	ZNF232_HRRIHSGEKPFGLMDGAQSSLDIGEFMPEKSLPIELKGRTP DRILHRSNLL
Se136	STAT1_E500K
Se136	LARS2_W455C
Se136	CACNA1D_R631K
Se136	ABCC10_T651I
Se136	ESR1_L536P
Se136	CREB3L2_T506K
Se136	OSBPL5_T465A
Se136	ZDHC13_V390D
Se136	ACOT1_T202M
Se136	MAP2K3_T10I
Se136	ELF4_V247A
Se136	AFDN_KGAKEIILDDDDVLYKSSGNGQVTKGF
Se137	IPO13_V774F
Se137	AGL_R404T
Se137	OTUD7B_P78T
Se137	CD84_N36T
Se137	OBSCN_T4372I
Se137	PQLC3_V90L
Se137	LRP2_S608G
Se137	HOXD8_K14N
Se137	SLC25A38_Q236E
Se137	PRICKLE2_M236I
Se137	TXK_T196R
Se137	PCDHA4_A731T
Se137	RGL2_D361N
Se137	WDR60_S758L
Se137	SNAI2_S30Y
Se137	TMEM67_V701A
Se137	KCNQ3_E5G
Se137	WISP1_P163L
Se137	ENG_Y612S
Se137	NAIF1_A42T
Se137	SETX_R2340Q
Se137	RALGDS_Y813C
Se137	PDZD8_R936M
Se137	CNIH1_I29V
Se137	LOC81691_E560A
Se137	IRX5_A279S
Se137	NLRP1_A126V
Se137	COLEC12_T230K
Se137	IER2_N173K
Se137	PEPD_S160N
Se137	ANGPT4_K102N
Se137	TNRC6B_E637G
Se137	BRWD3_W297R
Se137	USP13_NSKIFLDLDTDYEYEDEAKLVI
Se138	UBE4B_A234T
Se138	AGL_K969I
Se138	ILDR2_C231Y
Se138	ASPM_H262L

Se138	AKT3_G231C
Se138	SLC1A4_G59A
Se138	NRP2_R428W
Se138	PASK_C925Y
Se138	DBR1_S466C
Se138	CEP70_D396E
Se138	TNIK_L915R
Se138	EVC2_T1036S
Se138	MAN2B2_G345R
Se138	CPEB2_G786C
Se138	N4BP2_A1640S
Se138	C7_G821S
Se138	CCDC125_S103L
Se138	CAP2_F130I
Se138	BRD2_D511V
Se138	SYNGAP1_A351D
Se138	KCNQ5_W180L
Se138	ADAP1_R131Q
Se138	HIP1_S582T
Se138	FBXL13_Q609H
Se138	ZYX_V484A
Se138	ADAM9_W724C
Se138	CUBN_G1739A
Se138	MMRN2_V239G
Se138	DYRK4_F175I
Se138	RAB3IP_T128I
Se138	ATP8A2_S595P
Se138	KCNRG_V112I
Se138	SUPT16H_F687I
Se138	ARRDC4_L397V
Se138	MVP_D355E
Se138	TLDC1_A334S
Se138	LIG1_A724D
Se138	C20orf194_G1133S
Se138	EPPK1_IKVAAIRGEVTCSTPGSSIRRPCTHFVWGGLGDRHSARWSV
Se138	GALNT11_AYSSSPVVRGGSTGDCTSNGILSPFLS
Se138	PANK1_GDQ GKAGGGSPAGGARGSPIPRPGLACSRPAPWGRRAGGRA
Se138	QRRWGSRQEEGRSAGFAIPRRRLCGC
Se138	TGFBRAP1_ENPVSGDPFCVKRRTIQMFLVY
Se138	REST_PVQVEPPPPMEIRPAPDEPVQM
Se138	RAB11FIP1_TQSSSEPSVFSLSPIAAPIST
Se138	FAM155B_AAAL TICCCCCWAPRPSDKPCA
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Se139	MLPH_S444C
Se139	TACC3_P353R
Se139	RBM47_S6Y
Se139	SLC4A4_L625W
Se139	ZNF827_V920M
Se139	SPRY4_V129L
Se139	FAM65B_P4A
Se139	ARID1B_A1870P
Se139	SDK1_D1174V

Se139	CDK13_R860G
Se139	CACNA2D1_N154D
Se139	TMEM67_P7L
Se139	RECQL4_R766G
Se139	EIF3A_F184S
Se139	TECPR2_E356A
Se139	MLST8_W274R
Se139	PKMYT1_L277M
Se139	RANBP10_D492N
Se139	TP53_Y87H
Se139	DSC2_P139L
Se139	PARD6G_P249R
Se139	AP3D1_D146G
Se139	JSRP1_L143P
Se139	FZR1_Q218H
Se139	CACTIN_S67T
Se139	PTPRS_M16I
Se139	DNM2_E588D
Se139	TMED1_Y47H
Se139	SIX5_A117V
Se139	AP2A1_G202S
Se139	ATF5_R280L
Se139	SIGLEC1_R376W
Se139	CTNNB1_G523V
Se139	HMGB3_S42F
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Se139	SKIV2L2_DDRGIVILMVDGKQLLKGSADP
Se139	ZNF311_ALCRHKKTHSGAFKTRNRLCMH
Se139	RNF26_CLCQACTEILMRHPVYHRNCP LCRRGILQTLNVYLLSLLPCLP
Se139	TPPCSTOALTGQH
Se140	KCNK2_I99R
Se140	UBR3_M405V
Se140	DIS3L2_H81R
Se140	CRBN_Q172K
Se140	KMT2E_S780N
Se140	TNPO3_V473I
Se140	SLC25A29_E116K
Se140	SMG1_C2738R
Se140	CNOT1_R1678C
Se140	TP53_P19S
Se140	CASKIN2_P980L
Se140	ELL_N530S
Se140	LARP1_YEIDDRDVNKISLSPRHHITCAGTQGGTAQATTPRVPR
Se140	NF1_CISGFSKSSIEPLFGIHDSMAVKSSSFLQA
Se140	USP19_VNLGNTCFMNSHSVSVQHSCTPGLLP
Se141	INADL_T545N
Se141	LRRRC8C_Y126F
Se141	TROVE2_A494S
Se141	HEATR1_Q247E
Se141	TGFBRAP1_E108D
Se141	CNTN3_D561G
Se141	DNAJC13_K1359R
Se141	GRSF1_C11W
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Se141	RRNAD1_SEFLENPSQSSIPETCQAQEAA
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Se142	RALGPS2_H482Y
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Se142	GNAQ_T96S
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Se142	SPATA13_E174K
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Se142	APIG1_R35Q
Se142	TP53_R141C
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Se143	ELMOD3_H110P
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Se143	PSD4_G421R
Se143	PLEKHM3_E634D
Se143	PTH2R_A49D
Se143	SST_A11G
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Se143	TENM3_N1582I
Se143	SRFBP1_A197S
Se143	PCDHGB4_E359D
Se143	HECW1_T717M

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Se143	MON2_P453R
Se143	SBNO1_P220A
Se143	AJUBA_D27E
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Se143	TP53_M105I
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Se143	ITCH_P456A
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Se143	MED12_A1137V
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Se143	GPPALPTGAHTTAGRRWGRLAHPGASMT
Se143	SLC6A6_REPNRWAVEREEPHLTTLAPS
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Se145	TP53_C9Y
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Se145	MISP_A617T
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Se146	TP53_R43H
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Se146	DIP2A_I968V
Se147	AP4B1_C214S
Se147	COPA_D998Y
Se147	SWT1_S366T
Se147	HMCN1_S5611Y
Se147	TLR5_G10A
Se147	AHCTF1_P1672T
Se147	NCKAP1_I720V
Se147	DHTKD1_G104R
Se147	EXT2_P558L
Se147	MAP3K11_C686Y
Se147	MCF2L_L730P
Se147	INO80E_E152K
Se147	TP53_L125Q
Se147	IRGQ_R483K
Se147	SIGLEC7_R253T

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Se147	EPC2_CKTKHPHLSLMWFVKRRSTQRSKQRL
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Se150	EPHA3_E872Q
Se150	MATR3_L28F
Se150	NDST1_P221S
Se150	SIMC1_P159H
Se150	HERPUD2_H200Q
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Se152	DGKZ_R44C

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