

Supplemental Table 1. A list of candidate genes required for EV-A71 infection in RD cell line generated from shRNA library knockdown screenings.

Entrez Gene ID for Human	Symbol	Synonym(s)	Entrez Gene Name	Location	Type(s)
79611	ACSS3	8430416H19Rik,acyl-CoA synthetase short-chain family member 3,Gm874,RGD1307051	acyl-CoA synthetase short-chain family member 3	Cytoplasm	enzyme
10863	ADAM28	a disintegrin and metallopeptidase domain 28,ADAM metallopeptidase domain 28,ADAM23,C130072N01RIK,D430033C21Rik,Dtgn1,eMDC II,MDC-L,MDC-Lm,MDC-Ls,TECADAM	ADAM metallopeptidase domain 28	Plasma Membrane	peptidase
230	ALDOC	AI847350,ALDC,ALDCAA,ALDO3,Aldolase 3,Aldolase C,aldolase C, fructose-bisphosphate,AU040929,F16dip7,Fructose bisphosphate aldolase c,RATALDCAA,SCRG2,Zebrin2	aldolase C, fructose-bisphosphate	Cytoplasm	enzyme
249	ALPL	AKP2,ALKALINE PHOSPHATASE BONE isoform,alkaline phosphatase, liver/bone/kidney,Alp,Alp2,AP-TNAP,BAP,Biliary ALP Isoenzyme (ALP1),HOPS,NAP,PHOA,Placental alkaline phosphatase,plap,RP23-277N22.4,TNAP,TNSALP	alkaline phosphatase, liver/bone/kidney	Plasma Membrane	phosphatase
	Andpro (includes others)	androgen regulated protein,Crp1,Crp2,cystatin related protein 2,P22k15,RATANDPRO,RGD1563136,RGD1564039,similar to Cystatin-related protein 2 precursor (Prostatic 22 kDa glycoprotein P22K15),similar to ventral prostate-specific protein	similar to Cystatin-related protein 2 precursor (Prostatic 22 kDa glycoprotein P22K15)	Other	other
80728	ARHGAP39	9530053N22,AI843066,CrGAP,D15Wsu169e,KIAA1688,PORF-2,Rho GTPase activating protein 39,Vilse	Rho GTPase activating protein 39	Nucleus	other
84159	ARID5B	4930580B11,5430435G07Rik,AI467247,AT rich interactive domain 5B (MRF1-like),DESRT,DKFZP586N012,MRF-2,Mrf1-like,RP11-341A19.1	AT rich interactive domain 5B (MRF1-like)	Nucleus	transcription regulator
414	ARSD	arylsulfatase D,ASD	arylsulfatase D	Cytoplasm	enzyme
4287	ATXN3	2210008M02Rik,AI463012,AI647473,AT3,ATAXIN	ataxin 3	Nucleus	peptidase

		3,ATX3,JOS,MJD,MJD1,RP11-529H20.5,Rsca3,SCA3			
23080	AVL9	5830411G16Rik,AVL9 homolog (S. cerevisiae),D730049P16Rik,KIAA0241,mKIAA0241,RGD1564615	AVL9 homolog (S. cerevisiae)	Other	other
783	CACNB2	AW060387,BC056183,CAB2,CACNLB2,Calcium channel beta 2 subunit,Calcium channel β 2 subunit,calcium channel, voltage-dependent, beta 2 subunit,calcium channel, voltage-dependent, β 2 subunit,CAVB2,Cavbeta2,Cchb2,Conotoxin Receptor beta2,DKFZp761J1323,L-type calcium channel beta 2a,L-type calcium channel β 2a,MYSB,RP11-383B4.2,RP23-56A7.2	calcium channel, voltage-dependent, beta 2 subunit	Plasma Membrane	ion channel
843	CASP10	ALPS2,caspase 10, apoptosis-related cysteine peptidase,FLICE2,MCH4	caspase 10, apoptosis-related cysteine peptidase	Cytoplasm	peptidase
885	CCK	CCK8,CHOLECYSTOKININ,Cholecystokinin 8	cholecystokinin	Extracellular Space	other
960	CD44	216062 AT,AL133330.1,AU023126,AW121933,AW146109,CD44 (containing exon 5),CD44 (soluble),CD44 Antigen,Cd44 molecule,CD44 molecule (Indian blood group),CD44 STANDARD FROM,CD44A,Cd44e,Cd44i,CDW44,CSPG8,ECMR-III,Epican,HCELL,HERMES,Hermes antigen,HUTCH-I,IN,LHR,Ly-24,MC56,MDU2,MDU3,METAA,MIC4,NKT.44,Pgp-1,RHAMM,RP23-203N8.3	CD44 molecule (Indian blood group)	Plasma Membrane	enzyme
999	CDH1	AA960649,Arc-1,cadherin 1,cadherin 1, type 1, E-cadherin (epithelial),Cadherin E,CD324,CDHE,CSEIL,E-cadherin,ECAD,L-CAM,Um,UVO,uvomorulin	cadherin 1, type 1, E-cadherin (epithelial)	Plasma Membrane	other
25790	CFAP45	1700028D05Rik,CCDC19,cilia and flagella associated protein 45,coiled-coil domain containing 19,NESG1,RP11-190A12.6	cilia and flagella associated protein 45	Other	other
80205	CHD9	1810014J18RIK,9030205D12RIK,A330063D19Rik,AD-013,BC022889,chromodomain helicase DNA binding protein 9,CReMM,KISH2,LOC680231,mKIAA0308,PRIC320	chromodomain helicase DNA binding protein 9	Cytoplasm	other

51727	CMPK1	0610011D08Rik,CK,CMK,CMPK,cytidine monophosphate (UMP-CMP) kinase 1,cytidine monophosphate (UMP-CMP) kinase 1, cytosolic,RGD1310116,RP11-511I2.1,RP23-295C20.4,UMK,UMP-CMPK,UMPK	cytidine monophosphate (UMP-CMP) kinase 1, cytosolic	Nucleus	kinase
1270	CNTF	A1429687,CILIARY NEUROTROPHIC FACTOR,HCNTF	ciliary neurotrophic factor	Extracellular Space	cytokine
1277	COL1A1	alpha 1 (I) PROCOLLAGEN,alpha 1(I) COLLAGEN,Alpha1 type i collagen,Alpha1 Type I Procollagen,Alpha1-1 Collagen,COL I,COL1,Cola-1,COLIA1,COLLAGEN 1 alpha1,Collagen alpha 1(I) chain precursor,Collagen alpha1,COLLAGEN alpha1 (I),Collagen I,COLLAGEN I alpha1,Collagen i-alpha,Collagen i- α ,Collagen type I,COLLAGEN type I alpha 1,Collagen type I pro α 1,COLLAGEN type I α 1,Collagen Type1 Alpha1,Collagen α 1(I) chain precursor,collagen, type I, alpha 1,collagen, type I, α 1,Mov-13,OI4,PREPRO COLLAGEN alpha1(I),PROCOLLAGEN 1(I),PROCOLLAGEN 1alpha1,Procollagen alpha1 (1),Procollagen alpha1 type I,PROCOLLAGEN alpha1(I),Procollagen type 1,Procollagen α 1(i),PROCOLLAGEN-IALPHA1,RP23-112C19.9,Type I (alpha 1) procollagen,Type I (α 1) procollagen,type1 alpha 1 COLLAGEN,type1 alpha1 PROCOLLAGEN,type1 α 1 COLLAGEN, α 1 (I) PROCOLLAGEN, α 1(I) COLLAGEN	collagen, type I, alpha 1	Extracellular Space	other
1360	CPB1	0910001A18Rik,1810063F02Rik,2210008M23Rik,A1504870,carboxypeptidase B1 (tissue),CPB,PASP,PCPB	carboxypeptidase B1 (tissue)	Extracellular Space	peptidase
1437	CSF2	colony stimulating factor 2 (granulocyte-macrophage),Csfgm,GMCSF,MGI-IGM,NIF,RP23-309E16.1	colony stimulating factor 2 (granulocyte-macrophage)	Extracellular Space	cytokine
1460	CSNK2B	casein kinase 2, beta polypeptide,casein kinase 2, β polypeptide,Casein kinase ii β subunit,Ck II Beta Subunit,Ck II β Subunit,Ck2,ck2 Beta Subunit,Ck2 β ,ck2 β Subunit,CK2B,CK2N,CSK2B,DADB-127H9.2,G5A	casein kinase 2, beta polypeptide	Cytoplasm	kinase
1476	CSTB	AA960480,Cathepsin B,CST6,Cyb,CYSTATIN B,cystatin B (stefin B),Cystatin-beta,Cystatin- β ,EPM1,EPM1A,PME,stefin B,STFB,ULD	cystatin B (stefin B)	Cytoplasm	peptidase

2921	CXCL3	chemokine (C-X-C motif) ligand 2,chemokine (C-X-C motif) ligand 3,Cinc-2,CINC-2a,CINC-2b,Cinc3,Cxcl2,Dcip1,Gm1960,Gro beta,Gro β ,Gro γ ,Gro-alpha,Gro- α ,GRO1,Gro2,GRO3,GROA,GROb,GROg,Mgsa-b,MIP-2,MIP-2a,MIP-2b,Mip2 alpha,Mip2 α ,Scyb,Scyb2,SCYB3	chemokine (C-X-C motif) ligand 3	Extracellular Space	cytokine
1657	DMXL1	C630007L23RIK,D030030C22,Dmx-like 1	Dmx-like 1	Extracellular Space	other
23341	DNAJC16	2900037O03RIK,4732437J24Rik,D030060M24,DnaJ (Hsp40) homolog, subfamily C, member 16,mKIAA0962,RP23-395H4.2,RP4-680D5.1	DnaJ (Hsp40) homolog, subfamily C, member 16	Other	other
23033	DOPEY1	B130005I07RIK,BC035275,C130028L17,D9ErtD809e,dJ202D23.2,dopey family member 1,KIAA1117,RGD1305534,RP1-202D23.2	dopey family member 1	Cytoplasm	other
80824	DUSP16	3830417M17Rik,AW558566,D6ErtD213e,dual specificity phosphatase 16,MKP-7,Mkpm	dual specificity phosphatase 16	Nucleus	phosphatase
80258	EFHC2	4933407D04Rik,dJ1158H2.1,EF-hand domain (C-terminal) containing 2,mRib72-2,MRX74,RGD1563388,RP11-334D18.1,RP23-303N21.1	EF-hand domain (C-terminal) containing 2	Other	other
1956	EGFR	9030024J15RIK,AI552599,C-ERBB,EGF receptor,EGF-TK,EGFR VIII,EGFR1,epidermal growth factor receptor,ERBB,ERBB1,Errb1,Errp,HER-1 (EGFR),HER1,MENA,PIG61,RP23-295E4.1,wa-2,Wa5	epidermal growth factor receptor	Plasma Membrane	kinase
11170	FAM107A	DRR1,family with sequence similarity 107, member A,LOC100364831,RGD1306327,RP24-111B7.1,TU3A	family with sequence similarity 107, member A	Nucleus	other
26190	FBXW2	2700071L08RIK,F-box and WD repeat domain containing 2,F-box and WD-40 domain protein 2,FBW2,Fwd2,MD6,RP11-88M19.2,RP23-446N16.3	F-box and WD repeat domain containing 2	Cytoplasm	enzyme
2521	FUS	ALS6,D430004D17Rik,D930039C12Rik,ETM4,FUS RNA binding protein,FUS1,HNRNPP2,POMP75,TLS	FUS RNA binding protein	Nucleus	transcription regulator
2561	GABRB2	A1834970,C030002O17RIK,C030021G16Rik,GABA A receptor B2,GABA A receptor subunit beta2,Gaba A receptor β -2,GABA-A,Gabrab2,gamma-aminobutyric acid (GABA) A receptor, beta 2,gamma-aminobutyric acid (GABA) A receptor, subunit beta 2,GARB2,RP23-335G10.1, γ -	gamma-aminobutyric acid (GABA) A receptor, beta 2	Plasma Membrane	ion channel

		aminobutyric acid (GABA) A receptor, subunit β 2, γ -aminobutyric acid (GABA) A receptor, β 2			
2778	GNAS	5530400H20RIK,A930027G11RIK,AHO,AHO2,C130027O20Rik,C20orf45,G alpha S,G protein α s,G α S,GANGLIOSIDE EXPRESSION FACTOR 2,GNAS (guanine nucleotide binding protein, alpha stimulating) complex locus,GNAS (guanine nucleotide binding protein, α stimulating) complex locus,GNAS complex locus,GNAS1,Gnasxl,Gnpas,GPSA,Gs alpha,Gs alpha subunit,Gs GTP-Binding,GS α ,Gs α subunit,GSA,GSP,LOC100361691,LOC690994,NESP,Nesp5 5,NESPL,OEDSML,P1,P2,P3,PHP1A,PHP1B,PHP1C,POH,R GD:621483,RP23-439H2.1,RP4-543J19.4,XLalphas	GNAS complex locus	Plasma Membrane	enzyme
55105	GPATCH 2	5830433G22RIK,5830436K05RIK,AI427714,AI430061,AI447508,AW107440,AW491060,CT110,G patch domain containing 2,GPATC2,LOC100504534,PPP1R30,RP11-361K17.1	G patch domain containing 2	Other	other
9289	GPR56	BFPP,BPPR,Cyt28,G protein-coupled receptor 56,LOC682401,TM7LN4,TM7XN1,UNQ540/PRO1083	G protein-coupled receptor 56	Plasma Membrane	G-protein coupled receptor
2885	GRB2	AA408164,ASH,BOS 19430,EGFRBP-GRB2,GRAB2,growth factor receptor-bound protein 2,MST084,MSTP084,NCKAP2,RP23-28I4.1	growth factor receptor-bound protein 2	Cytoplasm	other
3005	H1F0	D130017D06Rik,H1 histone family, member 0,H1(0),H10,H1FV,Histone h1	H1 histone family, member 0	Nucleus	other
3043	HBB	beta -THALASSaemia,beta -THALASSEMIa,beta globin minor gene,Beta-globin,Beta-haemoglobin,Beta-Hemoglobin,Beta-s,Beta-t,BOS 14803,CD113t-C,haemoglobin,haemoglobin, beta,haemoglobin, beta adult major chain,haemoglobin, beta adult s chain,haemoglobin, beta adult t chain,haemoglobin, β ,haemoglobin, β adult major chain,haemoglobin, β adult s chain,haemoglobin, β adult t chain,Hb β ,Hbb-b1,Hbb-bs,Hbb-bt,Hbbt1,Hbbt2,hemoglobin,hemoglobin, beta,hemoglobin, beta adult major chain,hemoglobin, beta adult s chain,hemoglobin, beta adult t chain,hemoglobin, β ,hemoglobin, β adult major chain,hemoglobin, β adult s chain,hemoglobin, β adult t chain,LOC100134871,LOC100503164,LOC293265,LOC6890	hemoglobin, beta	Cytoplasm	transporter

		64,rCG 39884,Zero beta-globin,Zero β -globin, β - THALASSaemia, β -THALASSEMIA, β globin minor gene, β -globin, β -haemoglobin, β -Hemoglobin, β -s, β -t			
333932	HIST2H3A	H3.2-221,H3/n,H3/o,Hist1,Hist1h3f,histone cluster 1, H3f,histone cluster 2, H3a,histone H3.3B-like,LOC100359421	histone cluster 2, H3a	Nucleus	other
220988	HNRNPA3	2410013L13Rik,2610209F03Rik,2610510D13RIK,D10S102,FBRNP,heterogeneous nuclear ribonucleoprotein A3,HNRPA3,RP23-374O4.1	heterogeneous nuclear ribonucleoprotein A3	Nucleus	other
3239	HOXD13	BDE,BDSD,homeo box D13,Hox-4.8,HOX4I,RP23-313J15.6,SPD,spdh	homeobox D13	Nucleus	transcription regulator
3263	HPX	haemopexin,hemopexin,HPXN,HX	hemopexin	Extracellular Space	transporter
3298	HSF2	AI661205,heat shock factor 2,heat shock transcription factor 2,Hsf2 α ,Hsf2 β ,HSTF 2	heat shock transcription factor 2	Nucleus	transcription regulator
	Ighd	IgD,Igh-5,immunoglobulin heavy constant delta	immunoglobulin heavy constant delta	Extracellular Space	other
3507	IGHM	AGM1,AI326478,Ak007163,FLJ00385,IG gamma-1 chain c region,IG HEAVY CONSTANT MU,Ig mu,Ig mu chain c region,IG γ -1 chain c region,IGH-6,Igm,IgM mu,Immunoglobulin heavy chain 6,immunoglobulin heavy constant mu,IPI00022910,MU,Mu heavy chain,Mu MT,Mu S,muH,muHC,VH,VH186.2	immunoglobulin heavy constant mu	Plasma Membrane	transmembrane receptor
8518	IKBKAP	3110040G09Rik,6030413P05,C78473,DYS,ELP1,FD,IKAP,IKI3,Ikkap1,inhibitor of kappa light polypeptide enhancer in B cells, kinase complex-associated protein,inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein,inhibitor of κ light polypeptide enhancer in B cells, kinase complex-associated protein,inhibitor of κ light polypeptide gene enhancer in B-cells, kinase complex-associated protein,RP11-3J11.4,RP23-48F4.3,TOT1	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein	Cytoplasm	other
3633	INPP5B	5PTase,AW260155,inositol polyphosphate-5-phosphatase B,inositol polyphosphate-5-phosphatase, 75kDa,INPP5P,LOC100909888,PHOSPHOINOSITIDE 5-PHOSPHATASE type II,RP11-109P14.7,RP23-168M5.1	inositol polyphosphate-5-phosphatase, 75kDa	Plasma Membrane	phosphatase
353219	KAAG1	kidney associated antigen 1,RU2,RU2AS	kidney	Extracellular	other

			associated antigen 1	Space	
284058	KANSL1	1700081L11Rik,9430041J06Rik,CENP-36,DKFZP727C091,hMSL1v1,KAT8 regulatory NSL complex subunit 1,KDVS,KIAA1267,LOC284058,mKIAA1267,MSL1v1,NSL1,RGD1311429,RP23-136D4.2	KAT8 regulatory NSL complex subunit 1	Nucleus	other
55818	KDM3A	1700105C21Rik,C230043E16Rik,JHDM2A,JHMD2A,JMJD1,JMJD1A,KDM2A,lysine (K)-specific demethylase 3A,TGSA,TSGA,Zinc finger protein-putative	lysine (K)-specific demethylase 3A	Nucleus	transcription regulator
23030	KDM4B	4732474L06RIK,AC073761.3,JMJD2B,lysine (K)-specific demethylase 4B,mKIAA0876,TDRD14B	lysine (K)-specific demethylase 4B	Nucleus	other
90011	KIR3DX1	FLJ00060,killer cell immunoglobulin-like receptor, three domains, X1,KIR3DL0,LENG12,XXbac-BCX85G21.1	killer cell immunoglobulin-like receptor, three domains, X1	Other	other
4297	KMT2A	6430520K01,ALL-1,CXXC7,FLJ11783,hCG1732268,HRX,HTRX,HTRX1,lysine (K)-specific methyltransferase 2A,mKIAA4050,MLL,MLL/GAS7,MLL1,MLL1A,TET1-MLL,TRX1,WDSTS	lysine (K)-specific methyltransferase 2A	Nucleus	transcription regulator
54596	L1TD1	ECAT11,FLJ10884,LINE-1 type transposase domain containing 1,RP5-1155K23.3	LINE-1 type transposase domain containing 1	Other	other
283025	LINC01553	C10orf40,long intergenic non-protein coding RNA 1553	long intergenic non-protein coding RNA 1553	Other	other
101927059	LOC101927059	uncharacterized LOC101927059	uncharacterized LOC101927059	Other	other
	LOC102639117	Prostatein peptide C3(1),Psbp1,Scgb2a1,Scgb2a2,secretoglobin family 2A member 2-like,secretoglobin, family 2A, member	secretoglobin family 2A member 2-like	Extracellular Space	other

		1,secretoglobin, family 2A, member 2			
9926	LPGAT1	AI649174,AW112037,BC013667,FAM34A,FAM34A1,KIAA0205,LOC683760,lysophosphatidylglycerol acyltransferase 1,NET8	lysophosphatidylglycerol acyltransferase 1	Cytoplasm	other
9448	MAP4K4	9430080K19RIK,AU043147,AU045934,AW046177,FLH21957,FLJ20373,haemoPOIETIC PROGENITOR KINASE,HEL-S-31,HEMOPOIETIC PROGENITOR KINASE,HGK,MEKKK4,mitogen-activated protein kinase kinase kinase 4,NIK	mitogen-activated protein kinase kinase kinase 4	Cytoplasm	kinase
7867	MAPKAPK3	3PK,AI874665,Mapkap kinase 3,MAPKAP3,MapkKapk3,mitogen-activated protein kinase-activated protein kinase 3,MK-3,RP23-115A1.1	mitogen-activated protein kinase-activated protein kinase 3	Nucleus	kinase
23139	MAST2	Mast2 predicted,MAST205,microtubule associated serine/threonine kinase 2,MTSSK,RP23-276M23.5,RP4-533D7.1	microtubule associated serine/threonine kinase 2	Cytoplasm	kinase
130752	MDH1B	1700124B08RIK,AV255588,LOC130752,malate dehydrogenase 1B, NAD (soluble),RP11-95H11,RP23-341P11.6	malate dehydrogenase 1B, NAD (soluble)	Other	enzyme
4200	ME2	AW120568,D030040L20Rik,LOC100505264,malic enzyme 2, NAD(+)-dependent, mitochondrial,NAD-ME,ODS1	malic enzyme 2, NAD(+)-dependent, mitochondrial	Cytoplasm	enzyme
51072	MEMO1	0610016J10Rik,C2orf4,CGI-27,D930048L02Rik,mediator of cell motility 1,MEMO,NS5ATP7,RGD1309929	mediator of cell motility 1	Cytoplasm	other
79906	MORN1	2900057D20Rik,4930417P05Rik,AU042805,LOC100129110,MORN repeat containing 1,RP23-298E4.3,RP4-740C4.1	MORN repeat containing 1	Other	other
54737	MPHOSPH8	1500035L22Rik,4930548G07Rik,Ab2-008,AU040635,HSMPP8,M-phase phosphoprotein 8,mpp8,RGD1305133,RP11-523H24.1,TWA3	M-phase phosphoprotein 8	Nucleus	transcription regulator
51126	NAA20	1500004D14RIK,2900026I01Rik,ARD1,AU041458,D2Ertd186e,dJ1002M8.1,N(alpha)-acetyltransferase 20, NatB catalytic subunit,N(alpha)-acetyltransferase 20, NatB catalytic subunit,NAT3,NAT3P,NAT5,NAT5P,RP23-125A1.5,RP5-1002M8.3	N(alpha)-acetyltransferase 20, NatB catalytic subunit	Cytoplasm	enzyme

10135	NAMPT	1110035O14Rik,AI314458,AI480535,NAMPTase,nicotinamide phosphoribosyltransferase,PBEF,PBEF1,Pre-B-Cell Colony Enhancing Eactor,PRE-B-CELL COLONY-ENHANCING FACTOR,PRE-B-CELL COLONY-ENHANCING FACTOR 1,VF,VISFATIN	nicotinamide phosphoribosyltransferase	Extracellular Space	cytokine
10825	NEU3	Membrane sialidase,neuraminidase 3,Pmgs,SIAL3,sialidase 3 (membrane sialidase)	sialidase 3 (membrane sialidase)	Plasma Membrane	enzyme
10392	NOD1	C230079P11,CARD4,CASPASE RECRUITMENT domain family 4,CLR7.1,F830007N14Rik,NLRC1,nucleotide-binding oligomerization domain containing 1,RGD1562269	nucleotide-binding oligomerization domain containing 1	Cytoplasm	other
4878	NPPA	ANF,ANP,ATFB6,Atrial natriuretic factor,Atrial Natriuretic Peptide Prohormone,ATRST2,CDD-ANF,natriuretic peptide A,natriuretic peptide type A,PND,Prepronatriodilatin,RATANF,RP23-128E8.2	natriuretic peptide A	Extracellular Space	other
23225	NUP210	9830001L10,AI836801,Gp120,gp190,GP210,nucleoporin 210,nucleoporin 210kDa,POM210,PSEC0245	nucleoporin 210kDa	Nucleus	transporter
5062	PAK2	5330420P17RIK,A130002K10Rik,AI836325,D16Ertd269e,gamma-PAK,LOC100910732,mKIAA4182,p21 activated protein kinase gamma,p21 protein (Cdc42/Rac)-activated kinase 2,PAK gamma,PAK65,PAKgamma,serine/threonine-protein kinase PAK 2-like,gamma-PAK	p21 protein (Cdc42/Rac)-activated kinase 2	Cytoplasm	kinase
60676	PAPPA2	LOC680415,PAPP-E,pappalysin 2,PLAC3,RP4-774I24.1,similar to pappalysin 2 isoform 1	pappalysin 2	Extracellular Space	peptidase
5098	PCDHGC3	PC2,PC43,PCDH-GAMMA-C3,PCDH-gamma-C3,PCDH2,protocadherin gamma subfamily C,3,protocadherin gamma subfamily C,3	protocadherin gamma subfamily C,3	Plasma Membrane	other
23133	PHF8	9830141C09Rik,JHDM1F,mKIAA1111,MRXSSD,PHD finger protein 8,RGD1561065,RP13-444K19.2,RP23-14P24.1,ZNF422	PHD finger protein 8	Nucleus	enzyme
8301	PICALM	AP180,CALM,clathrin assembly lymphoid myeloid leukaemia,CLTH,fit-1,LAP,mKIAA4114,PAP180,PCALM,phosphatidylinositol binding clathrin assembly protein,SEP6	phosphatidylinositol binding clathrin assembly protein	Cytoplasm	other
5371	PML	1200009E24Rik,AI661194,PP8675,promyelocytic leukaemia,promyelocytic leukemia,RGD1562602,RNF71,TRIM19	promyelocytic leukemia	Nucleus	transcription regulator

5437	POLR2H	DNA-directed RNA polymerases I, II, and III subunit RPABC3-like,LOC100912534,polymerase (RNA) II (DNA directed) polypeptide H,rCG 36803,RGD1561203,RPABC3,RPB17,RPB8	polymerase (RNA) II (DNA directed) polypeptide H	Nucleus	enzyme
5592	PRKG1	AAT8,AW125416,BOS 23279,cGK,cGK 1,CGKI,CGKI β ,Cgmp-dependent protein kinase, alpha,Cgmp-dependent protein kinase, α ,CYCLIC GMP-DEPENDENT protein KINASE,Gm19690,LOC100503436,PKG,PKG1,PKG1,PKG1- α ,PKG1- α ,Prkg1 mapped,PRKG1B,PRKGR1B,protein kinase, cGMP-dependent, type 1,protein kinase, cGMP-dependent, type I,RP11-346D6.1	protein kinase, cGMP-dependent, type I	Cytoplasm	kinase
54458	PRR13	1110020C13RIK,2010324E22Rik,BM-041,DKFZP564J157,proline rich 13,RGD1307129,taxane-resistance,TXR1	proline rich 13	Nucleus	other
5710	PSMD4	AF,AF-1,angiocidin,ASF,MCB1,proteasome (prosome, macropain) 26S subunit, non-ATPase, 4,Proteasome 26s subunit non-atpase 4,pUB-R5,RP11-126K1.1,Rpn10,S5A	proteasome (prosome, macropain) 26S subunit, non-ATPase, 4	Cytoplasm	other
65263	PYCLR	1110058B13RIK,2700073G24Rik,pyrroline-5-carboxylate reductase-like	pyrroline-5-carboxylate reductase-like	Other	enzyme
23433	RHOQ	ARHQ,HEL-S-42,ras homolog family member Q,ras homolog gene family, member Q,RASL7A,Rhot,TC10,TC10 β ,TC10A,Tc10 α	ras homolog family member Q	Plasma Membrane	enzyme
10921	RNPS1	E5.1,Ribonucleic acid binding protein S1,RNA binding protein S1, serine-rich domain	RNA binding protein S1, serine-rich domain	Nucleus	other
6194	RPS6	40S ribosomal protein S6-like,LOC100911372,pp33,RIBOSOMAL protein S6,RP11-513M16.6,S6,S6R,S6RP	ribosomal protein S6	Cytoplasm	other
6201	RPS7	DBA8,LOC100362830,LOC497813,Mtu,ribosomal protein S7,ribosomal protein S7-like,Rps7A,S7	ribosomal protein S7	Cytoplasm	other
6203	RPS9	3010033P07RIK,AL022771,AL022885,Ribo s9,ribosomal protein S9,S9,XXbac-BCX105G6.6	ribosomal protein S9	Cytoplasm	translation regulator
6208	RPS14	2600014J02Rik,AL023078,EMTB,PRO2640,ribosomal protein S14,S14	ribosomal protein S14	Cytoplasm	translation regulator
6227	RPS21	1810049N11Rik,2410030A14RIK,HLDF,LOC100291837,ribos	ribosomal	Cytoplasm	other

		omal protein S21,RP23-16P3.4,RP5-908M14.8,S21	protein S21		
5265	SERPINA1	A1-PI,A1A,A1AT,AAT,AAT2,AI118301,alpha 1 antiprotease,Alpha 1 Protease Inhibitor,alpha 1 PROTEINASE INHIBITOR,Alpha at1,Alpha-1-antiproteinase,alpha-1-antitrypsin isomer 1,alpha-1-antitrypsin isomer 2,Alpha1 Antitrypsin,alpha1 AT,alpha1-PI,antitrypsin,D12Ucla2,Dom1,Dom2,Dom4,Dom5,Elafin,PI,PI1,PI2,PI3,PI4,PI5,PI6,PRO0684,PRO2275,serine (or cysteine) peptidase inhibitor, clade A, member 1A,serine (or cysteine) peptidase inhibitor, clade A, member 1C,serine (or cysteine) peptidase inhibitor, clade A, member 1D,serine (or cysteine) peptidase inhibitor, clade A, member 1E,serine (or cysteine) preptidase inhibitor, clade A, member 1B,Serine protease inhibitor 1-2,serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1,serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1,Serpina1a,Serpina1b,Serpina1c,Serpina1d,Serpina1e,Skalp ,Spi1,Spi1-1,Spi1-2,Spi1-3,Spi1-4,Spi1-5,Spi1-6,trypsin inhibitor, alpha 1-antitrypsin,trypsin inhibitor, alpha 1-antitrypsin,Wap3,[A]1-PI,alpha 1 antiprotease,alpha 1 Protease Inhibitor,alpha 1 PROTEINASE INHIBITOR,alpha at1,alpha-1-antiproteinase,alpha-1-antitrypsin,alpha-1-antitrypsin isomer 1,alpha-1-antitrypsin isomer 2	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 1	Extracellular Space	other
9905	SGSM2	D630003G22Rik,mKIAA0397,R74628,RP23-174M12.3,RUTBC1,small G protein signaling modulator 2	small G protein signaling modulator 2	Other	other
6535	SLC6A8	AA589632,CCDS1,CHOT1,CHT1,CREAT,Creatine Transporter,CRT,CRTR,CT1,CTR5,RP23-329M9.4,solute carrier family 6 (neurotransmitter transporter), member 8,solute carrier family 6 (neurotransmitter transporter, creatine), member 8	solute carrier family 6 (neurotransmitter transporter), member 8	Cytoplasm	transporter
8243	SMC1A	5830426I24Rik,CDLS2,DXS423E,mKIAA0178,RP23-419G22.4,RP6-29D12.1,SB1.8,SMC1,SMC1 beta,Smc1 alpha,SMC1 beta,SMC1alpha,SMC1L1,SMCB,STRUCTURAL MAINTENANCE of CHROMOSOMES 1,structural maintenance of chromosomes 1A	structural maintenance of chromosomes 1A	Nucleus	transporter
6651	SON	2900011L12Rik,AA409051,AU067731,BASS1,C21orf50,C81487,DBP-5,DNA-5B,HSPC310,mKIAA1019,NREBP,SON DNA	SON DNA binding protein	Nucleus	other

		binding protein,SON3			
10418	SPON1	AI666765,AW455831,BC020531,D330035F22RIK,f-spondin,FSP,MGC10724,SPONDIN 1,spondin 1, (f-spondin) extracellular matrix protein,spondin 1, extracellular matrix protein,Sponf,VSGP/F-spondin	spondin 1, extracellular matrix protein	Extracellular Space	other
55240	STEAP3	1010001D01Rik,AHMIO2,dudlin-2,FLJ10829,pHyde,STEAP family member 3,STEAP family member 3, metalloreductase,STMP3,TSAP6	STEAP family member 3, metalloreductase	Cytoplasm	transporter
6847	SYCP1	CT8,HOM-TES-14,RP11-109G4.1,SCP-1,synaptonemal complex protein 1	synaptonemal complex protein 1	Nucleus	other
8189	SYMPK	1500016F02RIK,4632415H16RIK,AA125406,AI449890,hCG 20812,Hfn3g,SPK,SYM,Symplekin	symplekin	Cytoplasm	other
23224	SYNE2	6820443O06RIK,AW546258,D12Ert777e,EDMD5,LOC625703,mKIAA1011,Nesp2,NESP2G,Nesprin-2,NUA,NUANCE,RGD1305248,spectrin repeat containing, nuclear envelope 2,TROPH	spectrin repeat containing, nuclear envelope 2	Nucleus	other
	Tcrb-J	5830405F06Rik,T cell receptor beta, joining region,T cell receptor β , joining region	T cell receptor beta, joining region	Other	other
79064	TMEM23	0610006I08Rik,LOC100911695,transmembrane protein 223,transmembrane protein 223-like	transmembrane protein 223	Other	other
729515	TMEM242	1110008A10Rik,2310046K16Rik,5730437N04Rik,BM033,C1H6orf35,C6orf35,rCG 40784,RGD1307262,RP11-96F3.3,transmembrane protein 242	transmembrane protein 242	Other	other
6955	TRA	IMD7,PT alpha,PT α ,T cell receptor alpha chain,T cell receptor alpha locus,T cell receptor α chain,T cell receptor α locus,TCR α ,TCRA,Tcralpha,TCRD,TRA@,TRAC	T cell receptor alpha locus	Plasma Membrane	transmembrane receptor
23321	TRIM2	CMT2R,mKIAA0517,narf,RNF86,tripartite motif-containing 2	tripartite motif containing 2	Cytoplasm	enzyme
10612	TRIM3	BERP,BERP1,HAC1,RNF22,RNF97,tripartite motif-containing 3	tripartite motif containing 3	Cytoplasm	enzyme
140803	TRPM6	CHAK2,HMGX,HOMG,HOMG1,HSH,RP11-174B4.1,transient receptor potential cation channel, subfamily M, member 6,TRPM6/CHAK2	transient receptor potential cation channel,	Plasma Membrane	kinase

			subfamily M, member 6		
79573	TTC13	BC017545,PSEC0076,tetratricopeptide repeat domain 13	tetratricopeptide repeat domain 13	Other	other
10376	TUBA1B	K alpha 1-TUBULIN,K α 1-TUBULIN,K-alpha-1,K-α-1,Tuba2,tubulin, alpha 1B,tubulin, α 1B	tubulin, alpha 1b	Cytoplasm	other
29979	UBQLN1	1110046H03Rik,1810030E05Rik,AU019746,C77538,D13ErtD372e,DA41,DSK2,PLIC-1,ubiquilin 1,UBQN,XDRP1	ubiquilin 1	Cytoplasm	other
7350	UCP1	A1385626,SLC25A7,Thermogenin,UCP,Ucpa,Uncoupling protein 1,uncoupling protein 1 (mitochondrial, proton carrier),Uncp	uncoupling protein 1 (mitochondrial, proton carrier)	Cytoplasm	transporter
9686	VGLL4	BC048841,KIAA0121,vestigial like 4 (Drosophila),vestigial-like family member 4,VGL-4	vestigial-like family member 4	Nucleus	other
55187	VPS13D	BC037490,RP23-133N19.2,vacuolar protein sorting 13 D (yeast),vacuolar protein sorting 13 homolog D (S. cerevisiae)	vacuolar protein sorting 13 homolog D (S. cerevisiae)	Cytoplasm	other
7453	WARS	GAMMA-2,IFI53,IFP53,LOC640248,TrpRS,tryptophanyl-tRNA synthetase,WRS,γ-2	tryptophanyl-tRNA synthetase	Cytoplasm	enzyme
7549	ZNF2	2810405K07Rik,A1-5,LOC100909998,RP23-105O13.6,Zfp661,zinc finger protein 2,zinc finger protein 2-like,zinc finger protein 661,ZNF661	zinc finger protein 2	Other	other