



1. Products list for Expression lentiviral particles for **human** genes:

Cat#	GENE Symbol	Gene Name	Alternative Name	NCBI Accession
LVP106	AAK1	AP2 associated kinase 1	AP2 associated kinase 1	NM_014911
LVP285	ACTG1	actin, gamma 1	ACT; ACTG; DFNA20; DFNA26	NM_001614
LVP257	ACVR1	activin A receptor, type I	FOP; ALK2; SKR1; TSRI; ACTRI; ACVR1A; ACVRLK2; ACVR1	NM_001105
LVP118	ACVR1C	activin A receptor, type IC	ACVRLK7, ALK7	NM_145259
LVP116	ADCK1	aarF domain containing kinase 1	aarF domain containing kinase 1	NM_020421
LVP031	AK3	adenylate kinase 3-like 1	AK6; FIX; AK3L1; AKL3L; AKL3L1	NM_013410.2
LVP117	AKT1	v-akt murine thymoma viral oncogene homolog 1	AKT; PKB; RAC; PRKBA; MGC99656; PKB-ALPHA; RAC-ALPHA	NM_001014431
LVP421	ANPEP	alanyl (membrane) aminopeptidase	APN, CD13, GP150, LAP1, P150, PEPN	NM_001150.2
LVP405	Arf6	ADP-ribosylation factor 6	DKFZp564M0264	NM_001662
LVP332	ARID3B	AT rich interactive domain 3B (BRIGHT-like)	BDP, DRIL2	NM_006465.2
LVP121	ARRB2	arrestin, beta 2	ARB2, ARR2, BARR2, DKFZp686L0365	NM_004313
LVP122	ATF2	activating transcription factor 2	CRE-BP1, CREB2, HB16, MGC111558, TREB7	NM_001880
LVP250	AURKA	aurora kinase A	AIK, ARK1, AURA, AURORA2, BTAK, MGC34538, STK15, STK6, STK7	NM_003600
LVP123	AURKB	aurora kinase B	AIK2, AIM-1, AIM1, ARK2, AurB, IPL1, STK12, STK5, aurkb-sv1, aurkb-sv2	NM_004217
LVP124	AXL	AXL receptor tyrosine kinase	JTK11, UFO	NM_001699
LVP098	B3GALNT2	beta-1,3-N-acetylgalactosaminyl-transferase 2	B3GalNAc-T2, MGC39558	NM_152490.2
LVP389	BARD1	BRCA1 associated RING domain 1		NM_000465.2
LVP288	BAX	BCL2-associated X protein	BCL2L4	NM_138764.4



LVP126	BCKDK	branched chain ketoacid dehydrogenase kinase		NM_005881
LVP291	BDKRB1	bradykinin receptor B1	B1BKR; B1R; BKB1R; BKR1; BRADYB1	NM_000710
LVP036	BMX	BMX non-receptor tyrosine kinase	ETK, PSCTK2, PSCTK3	NM_001721
LVP390	BRAC1	breast cancer 1, early onset	BRCC1; BROVCA1; IRIS; PNCA4; PSCP	NM_007294.3
LVP078	BRD3	bromodomain containing 3	RP11-374P20.3, FLJ23227, FLJ41328, KIAA0043, ORFX, RING3L	NM_007371
LVP247	BRSK2	BR serine/threonine kinase 2	C11orf7, FLJ41362, PEN11B, SAD1, STK29	NM_003957
LVP127	BTK	Bruton agammaglobulinemia tyrosine kinase	RP1-164F3.2, AGMX1, AT, ATK, BPK, IMD1, MGC126261, MGC126262, PSCTK1, XLA	NM_000061
LVP043	BUB1	budding uninhibited by benzimidazoles 1 homolog (yeast)	BUB1A, BUB1L, hBUB1	NM_004336
LVP129	CAMK1	calcium/calmodulin-dependent protein kinase I	CAMKI	NM_003656
LVP130	CAMK1D	calcium/calmodulin-dependent protein kinase ID	RP11-462F15.1, CKLiK, CaM-K1, CaMKID	NM_153498
LVP049	CAMK2A	calcium/calmodulin-dependent protein kinase II alpha	CAMKA, KIAA0968	NM_171825
LVP133	CAMK4	calcium/calmodulin-dependent protein kinase IV	CaMK-GR, MGC36771	NM_001744
LVP203	CAMKV	CaM kinase-like vesicle-associated	1G5, MGC8407, VACAMKL	NM_024046
LVP261	CCND1	cyclin D1	BCL1, D11S287E, PRAD1, U21B31	NM_053056
LVP134	CCND3	cyclin D3	RP5-973N23.3	NM_001760
LVP135	CCNH	cyclin H	CAK, p34, p37	NM_001239
LVP136	CDC2L5	cell division cycle 2-like 5		XM_225404.5
LVP137	CDC42	cell division cycle 42 (GTP binding protein, 25kDa)	RP1-224A6.5, CDC42Hs, G25K	NM_001791.3
LVP119	CDK15	cyclin-dependent kinase 15	ALS2CR7, PFTK2	NM_139158



LVP232	CDK16	cyclin-dependent kinase 16	FLJ16665, PCTAIRE, PCTAIRE1, PCTGAIRE, PCTK1	NM_006201.4
LVP044	CDK18	cyclin-dependent kinase 18	PCTAIRE, PCTAIRE3, PCTK3	NM_002596
LVP263	CDK2	cyclin-dependent kinase 2	p33(CDK2)	NM_001798.3
LVP085	CDK3	cyclin-dependent kinase 3		NM_001258.2
LVP264	CDK4	cyclin-dependent kinase 4	CMM3, MGC14458, PSK-J3	NM_000075
LVP053	CDK5R1	cyclin-dependent kinase 5, regulatory subunit 1 (p35)	CDK5P35, CDK5R, MGC33831, NCK5A, p23, p25, p35, p35nck5a	NM_003885.2
LVP265	CDK7	cyclin-dependent kinase 7	CAK1, CDKN7, MO15, STK1, p39MO15	NM_001799.3
LVP139	CDK9	cyclin-dependent kinase 9	RP11-228B15.5, C-2k, CDC2L4, CTK1, PITALRE, TAK	NM_001261
LVP079	CDKL3	cyclin-dependent kinase-like 3	NKIAMRE	NM_016508
LVP082	CDKL5	cyclin-dependent kinase-like 5	RP1-245G19.3, ISSX, STK9	NM_003159
LVP140	CDKN1A	cyclin-dependent kinase inhibitor 1A (p21, Cip1)	CAP20, CDKN1, CIP1, MDA-6, P21, SDI1, WAF1, p21CIP1	NM_000389
LVP262	CDKN2B	cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)	CDK4I, INK4B, MTS2, P15, TP15, p15INK4b	NM_004936.3
LVP396	CEBPB	CCAAT/enhancer binding protein, beta	C/EBP-beta; CRP2; IL6DBP; LAP; MGC32080	NM_005194.2
LVP142	CHEK2	CHK2 checkpoint homolog (S. pombe)	RP11-436C9.1, CDS1, CHK2, HuCds1, LFS2, PP1425, RAD53	NM_007194.3
LVP113	CHUK	conserved helix-loop-helix ubiquitous kinase	IKBKA, IKK-alpha, IKK1, IKKA, NFKBIKA, TCF16	NM_001278.3
LVP035	CKB	creatine kinase, brain	B-CK, CKBB	NM_001823
LVP055	CKM	creatine kinase, muscle	CKMM, M-CK	NM_001824
LVP065	CLCN2	chloride channel 2	CIC-2, CLC2, ECA2, ECA3, EGI11, EGI3, EGMA, EJM6, EJM8	NM_004366
LVP143	CLK1	CDC-like kinase 1	CLK, CLK/STY, STY	NM_004071.3
LVP091	CLK3	CDC-like kinase 3	FLJ22858, PHCLK3, PHCLK3/152	NM_003992.4



LVP041	CMPK1	cytidine monophosphate (UMP-CMP) kinase 1, cytosolic	RP11-51112.1, CMK, CMPK, UMK, UMP-CMPK, UMPK	NM_016308
LVP144	COL4A3BP	collagen, type IV, alpha 3 (Goodpasture antigen) binding protein	CERT, CERTL, FLJ20597, GPBP, STARD11	NM_031361.2
LVP145	CREB1	cAMP responsive element binding protein 1	CREB, MGC9284	NM_004379
LVP420	CSF1	human colony stimulating factor 1 (macrophage), transcript variant 1	RP11-195M16.2, CSF-1, MCSF	NM_000757.3
LVP200	CSNK1A1L	casein kinase 1, alpha 1-like	CK1, MGC33182	NM_145203
LVP146	CSNK1D	casein kinase 1, delta	HCKID	NM_001893
LVP038	CSNK1G1	CSNK1G1 mRNA for casein kinase 1 gamma 1		AB042562
LVP148	CSNK2A1	casein kinase 2, alpha 1 polypeptide	CK2A1, CKII	NM_001895.3
LVP393	CTNNB1	catenin (cadherin-associated protein), beta 1	CTNNB	NM_001904.3
LVP282	CTSD	cathepsin D	CLN10; CPSD	NM_001909
LVP103	CXCR4	chemokine (C-X-C motif) receptor 4	CD184, D2S201E, FB22, HM89, HSY3RR, LAP3, LCR1, LESTR, NPY3R, NPYR, NPYRL, NPY3R, WHIM	NM_003467.2
LVP104	CXCR7	chemokine (C-X-C motif) receptor 7	CMKOR1, GPR159, RDC1	NM_020311
LVP352	CYC1	cytochrome c-1 (CYC1), nuclear gene encoding mitochondrial protein	UQCR4	NM_001916.3
LVP048	DAPK2	death-associated protein kinase 2	DRP-1, DRP1, MGC119312	NM_014326.3
LVP061	DCLK1	doublecortin-like kinase 1	CL1, CLICK1, DCAMKL1, DCDC3A, DCLK, KIAA0369	NM_004734.3
LVP149	DDIT3	DNA-damage-inducible transcript 3	CEBPZ, CHOP, CHOP-10, CHOP10, GADD153, MGC4154	NM_004083.4
LVP150	DDR1	discoidin domain receptor tyrosine kinase 1	DAAP-278B20.1, CAK, CD167, DDR, EDDR1, HGK2, MCK10, NEP, NTRK4, PTK3, PTK3A, RTK6, TRKE	NM_001954



LVP026	DGKE	diacylglycerol kinase, epsilon 64kDa	DGK; DAGK5; DAGK6	NM_003647.2
LVP138	DNAJC28	DnaJ (Hsp40) homolog, subfamily C, member 28	C21orf55, C21orf78	NM_017833.3
LVP205	DUSP4	dual specificity phosphatase 4	HVH2, MKP-2, MKP2, TYP	NM_001394
LVP206	DUSP6	dual specificity phosphatase 6	MKP3, PYST1	NM_001946
LVP152	DYRK2	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 2	FLJ21217, FLJ21365	NM_003583
LVP392	EDNRB	endothelin receptor type B, transcript variant 1	ETB; ET-B; ETBR; ETRB; HSCR; WS4A; ABCDS; ET-BR; HSCR2	NM_000115.3
LVP153	EEF2K	eukaryotic elongation factor-2 kinase	HSU93850, MGC45041, eEF-2K	NM_013302
LVP071	ELAVL1	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 1 (Hu antigen R)	ELAV1, HUR, Hua, MeIG	NM_001419
LVP154	ELK1	ELK1, member of ETS oncogene family		NM_005229
LVP155	ELK4	ELK4, ETS-domain protein (SRF accessory protein 1)	SAP1	NM_021795.2
LVP156	EPHA2	EPH receptor A2	ARCC2, ECK	NM_004431
LVP083	EPHA4	EPH receptor A4	HEK8, SEK, TYRO1	NM_004438
LVP157	EPHB3	EPH receptor B3	ETK2, HEK2, TYRO6	NM_004443
LVP356	EPO	erythropoietin	EP, MVCD2	NM_000799.2
LVP158	ERBB3	v-erb-b2 erythroblastic leukemia viral oncogene homolog 3 (avian)	ErbB-3, HER3, LCCS2, MDA-BF-1, MGC88033, c-erbB-3, c-erbB3, erbB3-S, p180-ErbB3, p45-sErbB3, p85-sErbB3	NM_001005915
LVP159	ETS1	v-ets erythroblastosis virus E26 oncogene homolog 1 (avian)	ETS-1, EWSR2, FLJ10768	NM_005238
LVP160	ETS2	v-ets erythroblastosis virus E26 oncogene homolog 2 (avian)	ETS2IT1	NM_005239.4
LVP423	FASLG	human Fas ligand (TNF superfamily, member 6)	APT1LG1, CD178, CD95-L, CD95L, FASL, TNFSF6	NM_000639.1
LVP161	FASTK	Fas-activated serine/threonine kinase	FAST	NM_006712.3



LVP296	FGF18	fibroblast growth factor 18	FGF-18; ZFGF5	NM_003862.1
LVP066	FGFR1	fibroblast growth factor receptor 1	BFGFR, CD331, CEK, FGFR, FLG, FLJ99988, FLT2, HBGFR, KAL2, N-SAM, OGD	NM_015850.3
LVP162	FGFR2	fibroblast growth factor receptor 2	BEK, BFR-1, CD332, CEK3, CFD1, ECT1, FLJ98662, JWS, K-SAM, KGFR, TK14, TK25	NM_000141.4
LVP163	FGR	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog	FLJ43153, MGC75096, SRC2, c-fgr, c-src2, p55-Fgr, p55c-fgr, p58c-fgr	NM_005248.2
LVP416	FII(thrombin)	coagulation factor II (thrombin)	PT	NM_000506.3
LVP394	Flt3	fms-related tyrosine kinase 3	CD135; FLK2; STK1	NM_004119.2
LVP166	FOS	FBJ murine osteosarcoma viral oncogene homolog	AP-1, C-FOS	NM_005252.3
LVP258	Foxo3	forkhead box O3	AF6q21, DKFZp781A0677, FKHL1, FKHL1P2, FOXO2, FOXO3A, MGC12739, MGC31925	NM_201559.2
LVP077	FYN	FYN oncogene related to SRC, FGR, YES	RP1-66H14.1, MGC45350, SLK, SYN	NM_002037
LVP039	GAK	cyclin G associated kinase	FLJ16629, FLJ40395, MGC99654	NM_005255
LVP040	GALK2	galactokinase 2	GK2, MGC1745	NM_002044.2
LVP386	GATA4	GATA binding protein 4	MGC126629	NM_002052.3
LVP074	GBA	glucosidase, beta, acid	GBA1, GCB, GLUC	NM_000157.3
LVP045	GCK	glucokinase (hexokinase 4)	FGQTL3, GK, GLK, HGF3, HK4, HKIV, HXKP, LGLK, MODY2	NM_000162.3
LVP355	GDF9	growth differentiation factor 9	GDF-9; growth/differentiation factor 9	NM_005260.3
LVP273	GGA3	golgi associated, gamma adaptin ear containing, ARF binding protein 3	KIAA0154	NM_014001.2
LVP015	GLUL	glutamate-ammonia ligase (glutamine synthetase)	GS; GLNS; PIG43; PIG59	NM_002065.4



LVP076	GORASP2	golgi reassembly stacking protein 2, 55kDa	DKFZp434D156, FLJ13139, GOLPH6, GRASP55, GRS2, p59	NM_015530.3
LVP112	GPSM3	G-protein signaling modulator 3 (AGS3-like, C. elegans)	DAAP-218M18.6, AGS4, C6orf9, G18, G18.1a, G18.1b, G18.2, NG1	NM_022107.1
LVP330	GRK5	G protein-coupled receptor kinase 5	FLJ39780, GPRK5	NM_005308.2
LVP046	GRK6	G protein-coupled receptor kinase 6	FLJ32135, GPRK6	NM_002082
LVP167	GSK3B	glycogen synthase kinase 3 beta		NM_002093.3
LVP415	GYG1	Human glycogenin 1	GYG; GSD15	NM_004130.3
LVP303	HLA-G	major histocompatibility complex, class I, G	MHC-G; HLA-G	NM_002127.5
LVP302	IDO1	indoleamine 2,3-dioxygenase 1	IDO; INDO; IDO1	NM_002164.4
LVP277	IFNG	interferon, gamma	IFG, IFI	NM_000619.2
LVP169	IKBKB	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta	FLJ40509, IKK-beta, IKK2, IKKB, MGC131801, NFKB1KB	NM_001556
LVP170	IKBKG	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase gamma	AMCBX1, FIP-3, FIP3, Fip3p, IKK-gamma, IP, IP1, IP2, IPD2, NEMO	NM_003639.3
LVP073	IL17BR	interleukin 17 receptor B	CRL4, EVI27, IL17BR, IL17RH1, MGC5245	NM_018725
LVP293	IL2	interleukin 2	IL-2; lymphokine; TCGF	NM_000586.3
LVP295	IL20	interleukin 20	IL-20; IL10D; MGC96907; ZCYTO10	NM_018724.3
LVP292	IL3	interleukin 3 (colony-stimulating factor, multiple)	IL-3; MCGF; MGC79398; MGC79399; MULTI-CSF	NM_000588.3
LVP209	IRAK3	interleukin-1 receptor-associated kinase 3	ASRT5, FLJ13601, IRAKM	NM_007199
LVP172	JUN	jun oncogene	AP-1, AP1, c-Jun	NM_002228.3
LVP290	KCNJ5	potassium inwardly-rectifying channel, subfamily J, member 5	CIR; GIRK4; KATP1; KIR3.4	NM_000890
LVP418	KDM5A	human lysine (K)-specific demethylase 5A	JARID1A, RBBP-2, RBBP2, RBP2	NM_001042603.1
LVP419	KDM5B	lysine (K)-specific demethylase 5B	CT31, JARID1B, PLU-1, PLU1, PUT1, RBBP2H1A	NM_006618.3



LVP353	Kiss1	KiSS-1 metastasis-suppressor	PP5098, KiSS-1, METASTIN, MGC39258	NM_002256.3
LVP294	KITLG	KIT ligand	FPH2; Kitl; KL-1; MGF; SCF; SF; SHEP7	NM_000899.3
LVP101	LBR	lamin B receptor	DHCR14B, FLJ43126, LMN2R, MGC9041, PHA	NM_002296.2
LVP384	LDHA	lactate dehydrogenase A	LDH1; LDHM; GSD11; PIG19	NM_005566.3
LVP033	LIMK2	LIM domain kinase 2	LIMK-2	NM_005569
LVP174	LMNA	lamin A/C	RP11-54H19.1, CDCD1, CDDC, CMD1A, CMT2B1, EMD2, FPL, FPLD, HGPS, IDC, LDP1, LFP, LGMD1B, LMN1, LMNC, LMNL1, PRO1	NM_005572.3
LVP422	LOXL2	human lysyl oxidase-like 2	LOR2, WS9-14	NM_002318.2
LVP092	MAK	male germ cell-associated kinase	RP3-417M14.2, dJ417M14.2	NM_005906
LVP349	MAP1LC3B	microtubule-associated protein 1 light chain 3 beta	LC3 B; ATG8F; MAP1A/1BLC3; MAP1LC3B	NM_022818.4
LVP176	MAP2K2	mitogen-activated protein kinase kinase 2	FLJ26075, MAPKK2, MEK2, MKK2, PRKMK2	NM_030662.3
LVP177	MAP2K3	mitogen-activated protein kinase kinase 3	MAPKK3, MEK3, MKK3, PRKMK3	NM_145109.2
LVP178	MAP2K4	mitogen-activated protein kinase kinase 4	JNKK, JNKK1, MAPKK4, MEK4, MKK4, PRKMK4, SEK1, SERK1	NM_003010
LVP228	MAP2K5	mitogen-activated protein kinase kinase 5	HsT17454, MAPKK5, MEK5, PRKMK5	NM_145160.1
LVP180	MAP3K12	mitogen-activated protein kinase kinase kinase 12	DLK, MEKK12, MUK, ZPK, ZPKP1	NM_006301.2
LVP181	MAP3K14	mitogen-activated protein kinase kinase kinase 14	FTDCR1B, HS, HSNIK, NIK	NM_003954
LVP182	MAP3K5	mitogen-activated protein kinase kinase kinase 5	RP3-325F22.4, ASK1, MAPKKK5, MEKK5	NM_005923
LVP183	MAP3K7	mitogen-activated protein kinase kinase kinase 7	MEKK7, TAK1, TGF1a	NM_003188
LVP184	MAP3K8	mitogen-activated protein kinase kinase kinase 8	RP11-449I17.8, COT, EST, ESTF, FLJ10486, MEKK8, TPL2, Tpl-2, c-COT	NM_005204.2
LVP185	MAPK1	mitogen-activated protein kinase 1	ERK, ERK2, ERT1, MAPK2, P42MAPK, PRKM1, PRKM2, p38, p40, p41, p41mapk	NM_002745



LVP186	MAPK12	mitogen-activated protein kinase 12	ERK3, ERK6, P38GAMMA, PRKM12, SAPK-3, SAPK3	NM_002969
LVP187	MAPK13	mitogen-activated protein kinase 13	PRKM13, SAPK4, p38delta	NM_002754.3
LVP188	MAPK3	mitogen-activated protein kinase 3	ERK1, HS44KDAP, HUMKER1A, MGC20180, P44ERK1, P44MAPK, PRKM3	NM_002746
LVP189	MAPK6	mitogen-activated protein kinase 6	DKFZp686F03189, ERK3, HsT17250, PRKM6, p97MAPK	NM_002748
LVP190	MAPK7	mitogen-activated protein kinase 7	BMK1, ERK4, ERK5, PRKM7	NM_002749
LVP191	MAPK8	mitogen-activated protein kinase 8	JNK, JNK1, JNK1A2, JNK21B1/2, PRKM8, SAPK1	NM_002750
LVP192	MAPK9	mitogen-activated protein kinase 9	JNK-55, JNK2, JNK2A, JNK2ALPHA, JNK2B, JNK2BETA, PRKM9, SAPK, p54a, p54aSAPK	NM_002752
LVP075	MAPKAPK3	mitogen-activated protein kinase-activated protein kinase 3	3PK, MAPKAP3	NM_004635
LVP195	MAPKAPK5	mitogen-activated protein kinase-activated protein kinase 5	PRAK	NM_003668.2
LVP032	MARK2	MAP/microtubule affinity-regulating kinase 2	EMK-1, EMK1, MGC99619, PAR-1, Par1b	NM_004954
LVP029	MARK3	MAP/microtubule affinity-regulating kinase 3	KP78; CTAK1; PAR1A	NM_002376
LVP196	MAST2	microtubule associated serine/threonine kinase 2	FLJ39200, KIAA0807, MAST205, MTSSK, RP4-533D7.1	NM_015112
LVP030	MATK	megakaryocyte-associated tyrosine kinase	CHK; CTK; HYL; Lsk; HYLTK; HHYLTK; MGC1708; MGC2101; DKFZp434N1212	NM_002378
LVP197	MAX	MYC associated factor X	bHLHd4, bHLHd5, bHLHd6, bHLHd7, bHLHd8	NM_002382
LVP198	MEF2B	myocyte enhancer factor 2B	hCG_38559, FLJ32648, RSRFR2	NM_001145785.1
LVP199	MEF2C	myocyte enhancer factor 2C		NM_002397.3



LVP204	MKNK1	MAP kinase interacting serine/threonine kinase 1	RP11-49P4.3, MNK1	NM_003684
LVP395	MMP9	matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase)	CLG4B; GELB; MANDP2; MMP-9	NM_004994.2
LVP229	MRE11A	MRE11 meiotic recombination 11 homolog A (<i>S. cerevisiae</i>)	ATLD, HNGS1, MRE11, MRE11B	NM_005590
LVP400	MSH3	MSH3 mutS homolog 3	DUP; MRP1	NM_002439.3
LVP417	MSH3	human mutS homolog 3 (<i>E. coli</i>)	DUP, MRP1	NM_002439
LVP207	MYD88	myeloid differentiation primary response gene (88)	MYD88D	NM_002468
LVP111	NBN	nibrin	AT-V1, AT-V2, ATV, FLJ10155, MGC87362, NBS, NBS1, P95	NM_002485.4
LVP286	NCOA4	nuclear receptor coactivator 4	ARA70; DKFZp762E1112; ELE1; PTC3; RFG	NM_001145263.1
LVP165	NEK10	NIMA (never in mitosis gene a)- related kinase 10	FLJ32685	NM_152534.3
LVP089	NEK11	NIMA (never in mitosis gene a)- related kinase 11	FLJ23495	NM_024800
LVP230	NEK6	NIMA (never in mitosis gene a)-related kinase 6	RP11-101K10.6, SID6-1512	NM_014397.4
LVP208	NFATC3	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 3	NFAT4, NFATX	NM_004555.2
LVP100	NFIC	nuclear factor I/C (CCAAT-binding transcription factor)	CTF, CTF5, MGC20153, NF-I, NFI	NM_005597.2
LVP210	NFkB1	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	DKFZp686C01211, EBP-1, KBF1, MGC54151, NF-kappa-B, NF-kappaB, NFkB-p105, NFkB-p50, p105, p50	NM_003998.3
LVP168	NFKBIA	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	IKBA, MAD-3, NFKBI	NM_020529.2
LVP201	NIM1	serine/threonine-protein kinase	MGC42105	NM_153361
LVP050	NME1	non-metastatic cells 1, protein	AWD, GAAD, NB, NBS, NDPK-A, NDPKA, NM23, NM23-H1	NM_000269.2



LVP028	NME5	non-metastatic cells 5, protein expressed in (nucleoside-diphosphate kinase)	NM23H5; RSPH23; NM23-H5	NM_003551
LVP110	NPM1	nucleophosmin (nucleolar phosphoprotein B23, numatrin)	B23, MGC104254, NPM	NM_002520.5
LVP406	NPTN	neuroplastin	GP55; GP65; SDR1; np55; np65; SDFR1	NM_017455
LVP108	NR3C1 variant 1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	GCCR, GCR, GR, GRL	NM_001018077
LVP109	NR3C1 variant 6	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	GCCR, GCR, GR, GRL	NM_001020825.1
LVP272	NRAS	neuroblastoma RAS viral (v-ras) oncogene homolog	N-ras, RP5-1000E10.2, ALPS4, NRAS1, NS6	NM_002524.3
LVP047	NUAK2	NUAK family, SNF1-like kinase, 2	DKFZp434J037, DKFZp686F01113, FLJ90349, SNARK	NM_030952.1
LVP329	OMD	osteomodulin	UNQ190/PRO216, OSAD, SLRR2C	NM_005014.2
LVP259	OXR1	oxidative-stress responsive 1	KIAA1101, OSR1	NM_005109.2
LVP211	PAK2	p21 protein (Cdc42/Rac)-activated kinase 2	PAK65, PAKgamma	NM_002577.4
LVP231	PAK4	p21 protein (Cdc42/Rac)-activated kinase 4		NM_001014831
LVP037	PAK6	p21 protein (Cdc42/Rac)-activated kinase 6	PAK5	NM_020168
LVP125	PARS2	prolyl-tRNA synthetase 2, mitochondrial (putative)	DKFZp727A071, MGC14416, MGC19467, MT-PRORS	NM_152268
LVP095	PBK	PDZ binding kinase	CT84, FLJ14385, Nori-3, SPK, TOPK	NM_018492.2
LVP278	PCBP2	poly(rC) binding protein 2	HNRPE2, hnRNP-E2	NM_031989.4
LVP102	PDHA1	pyruvate dehydrogenase (lipoamide) alpha 1	RP11-723P2.1, PDHA, PDHCE1A, PHE1A	NM_000284.2
LVP052	PDIK1L	PDLIM1 interacting kinase 1 like	CLIK1L, RP11-96L14.4, STK35L2	NM_152835.3
LVP060	PDK3	pyruvate dehydrogenase kinase, isozyme 3		NM_005391.4



LVP212	PDK4	pyruvate dehydrogenase kinase, isozyme 4		NM_002612
LVP025	PFKM	phosphofructokinase, muscle	GSD7; PFK1; PFKA; PFKX; PFK-1; MGC8699	NM_000289
LVP327	PGR	progesterone receptor	NR3C3, PR	NM_000926.4
LVP213	PHKG2	phosphorylase kinase, gamma 2 (testis)	GSD9C	NM_000294
LVP214	PIK3CB	phosphoinositide-3-kinase, catalytic, beta polypeptide	DKFZp779K1237, MGC133043, P110BETA, PI3K, PI3KBETA, PIK3C1	NM_006219
LVP215	PIK3R3	phosphoinositide-3-kinase, regulatory subunit 3 (gamma)	DKFZp686P05226, FLJ41892, p55, p55-GAMMA	NM_003629
LVP062	PIM1	pim-1 oncogene	PIM	NM_002648.3
LVP034	PIM2	pim-2 oncogene		NM_006875
LVP058	PIP5K1A	phosphatidylinositol-4-phosphate 5-kinase, type I, alpha	RP11-68I18.9	NM_001135637
LVP233	PKMYT1	protein kinase, membrane associated tyrosine/threonine 1	DKFZp547K1610, FLJ20093, MYT1	NM_004203
LVP234	PLK1	polo-like kinase 1 (Drosophila)	PLK, STPK13	NM_005030
LVP226	PLK4	polo-like kinase 4	SAK, STK18	NM_014264.3
LVP068	POMP	proteasome maturation protein	C13orf12, HSPC014, PNAS-110, UMP1	NM_015932.4
LVP216	PPARg	peroxisome proliferator-activated receptor gamma	CIMT1, GLM1, NR1C3, PPARG1, PPARG2, PPARGgamma	NM_005037
LVP072	PPP1R7	protein phosphatase 1, regulatory (inhibitor) subunit 7	SDS22	NM_002712
LVP328	PRELP	proline/arginine-rich end leucine-rich repeat protein	RP11-91B9.1, MGC45323, MST161, MSTP161, SLRR2A	NM_201348.1
LVP217	PRKAA1	protein kinase, AMP-activated, alpha 1 catalytic subunit	AMPK; AMPKa1; MGC33776; MGC57364; PRKAA1	NM_206907.3
LVP094	PRKAA2	protein kinase, AMP-activated, alpha 2 catalytic subunit	AMPK, AMPK2, PRKAA	NM_006252.3
LVP218	PRKACA	protein kinase, cAMP-dependent, catalytic, alpha	MGC102831, MGC48865, PKACA	NM_002730



LVP235	PRKACB	protein kinase, cAMP-dependent, catalytic, beta	RP11-82H13.1, DKFZp781I2452, MGC41879, MGC9320, PKACB	NM_002731
LVP219	PRKCA	protein kinase C, alpha	AAG6, MGC129900, MGC129901, PKC-alpha, PKCA, PRKACA	NM_002737
LVP236	PRKCG	protein kinase C, gamma	MGC57564, PKC-gamma, PKCC, PKCG, SCA14	NM_002739.3
LVP099	PROM1	prominin 1	AC133, CD133, CORD12, MCDR2, MSTP061, PROML1, RP41, STGD4	NM_001145847.1
LVP220	PTK2B	PTK2B protein tyrosine kinase 2 beta	CADTK, CAKB, FADK2, FAK2, PKB, PTK, PYK2, RAFTK	NM_173174.1
LVP266	Rac1	ras-related C3 botulinum toxin substrate 1	MIG5, MGC111543, TC-25, p21-Rac1	NM_006908.4
LVP267	Rac2	ras-related C3 botulinum toxin substrate 2	EN-7, Gx, HSPC022	NM_002872.3
LVP088	RAGE	renal tumor antigen	MOK, RAGE1	NM_014226
LVP274	RalBP1	ralA binding protein 1	RIP1, RLIP1, RLIP76	NM_006788.3
LVP275	RanBP1	RAN binding protein 1	HTF9A	NM_002882.2
LVP354	RASA3	RAS p21 protein activator 3	RP11-245B11.3, GAP1P4BP, GAPIII	NM_007368.2
LVP284	RASSF5	Ras association (RalGDS/AF-6) domain family member 5	Maxp1; MGC10823; MGC17344; NORE1; NORE1A; NORE1B; RAPL; RASSF3	NM_182665
LVP237	RELA	v-rel reticuloendotheliosis viral oncogene homolog A (avian)	MGC131774, NFKB3, p65	NM_021975
LVP221	RET	ret proto-oncogene	Dmel_CG14396, CG1061, CG14396, D-ret, DRET, DmHD-59, Dmel\CG14396, Dret, HD-59, MEN2, RET, Reto, dRET, dRet, ret	NM_020630
LVP280	RGS16	regulator of G-protein signaling 16	A28-RGS14; A28-RGS14P; RGS-R	NM_002928.3
LVP260	RhoA	ras homolog gene family, member A	ARH12, ARHA, RHO12, RHOH12	NM_001664.2
LVP251	RIOK3	RIO kinase 3 (yeast)	DKFZp779L1370, SUDD	NM_003831
LVP222	RIPK2	receptor-interacting serine-threonine kinase 2	WUGSC:H_RG437L15.1, CARD3, CARDIAK, CCK, GIG30, RICK, RIP2	NM_003821



LVP114	RNASEH2A	ribonuclease H2, subunit A	AGS4, JUNB, RNASEHI, RNHIA, RNHL	NM_006397.2
LVP401	ROR2	receptor tyrosine kinase-like orphan receptor 2	BDB; BDB1; NTRKR2	NM_004560.3
LVP064	RP2	retinitis pigmentosa 2 (X-linked recessive)	DELXp11.3, KIAA0215, NME10, TBCCD2, XRP2	NM_006915.2
LVP193	RPS6KA1	ribosomal protein S6 kinase, 90kDa, polypeptide 1	RP11-492M19.2, HU-1, MAPKAPK1A, RSK, RSK1	NM_002953.3
LVP238	RPS6KA2	ribosomal protein S6 kinase, 90kDa, polypeptide 2	RP1-168L15.2, HU-2, MAPKAPK1C, RSK, RSK3, S6K-alpha, S6K-alpha2, p90-RSK3, pp90RSK3	NM_021135.4
LVP194	RPS6KA3	ribosomal protein S6 kinase, 90kDa, polypeptide 3	RP11-393H10.3, CLS, HU-3, ISPK-1, MAPKAPK1B, MRX19, RSK, RSK2, S6K-alpha3, p90-RSK2, pp90RSK2	NM_004586.2
LVP239	RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1	PS6K, S6K, S6K1, STK14A, p70(S6K)-alpha, p70-S6K, p70-alpha	NM_003161
LVP086	RPS6KL1	ribosomal protein S6 kinase-like 1	FLJ35734, MGC11287	NM_031464.3
LVP281	RUVBL2	RuvB-like 2	CGI-46; ECP51; INO80J; REPTIN; RVB2; TIH2; TIP48; TIP49B	NM_006666.1
LVP385	RXRA	retinoid X receptor, alpha	NR2B1	NM_002957.4
LVP223	SGK2	serum/glucocorticoid regulated kinase 2	RP1-138B7.2, H-SGK2, dJ138B7.2	NM_016276
LVP240	SGK3	serum/glucocorticoid regulated kinase family, member 3	CISK, DKFZp781N0293, SGK2, SGKL	NM_013257
LVP175	SMAD2	SMAD family member 2	JV18, JV18-1, MADH2, MADR2, MGC22139, MGC34440, hMAD-2, hSMAD2	NM_005901.4
LVP404	SOD2	superoxide dismutase 2, mitochondrial	RP1-56L9.2, IPOB, MNSOD, MVCD6	NM_000636
LVP241	SP1	Sp1 transcription factor		NM_003109.1



LVP242	SPAG9	sperm associated antigen 9	CT89, FLJ13450, FLJ14006, FLJ26141, FLJ34602, HLC-6, HLC4, HLC6, JIP-4, JIP4, JLP, KIAA0516, MGC117291, MGC14967, MGC74461, PHET, PIG6	NM_003971
LVP120	SPEG	SPEG complex locus	APEG1, BPEG, KIAA1297, MGC12676, SPEGalpha, SPEGbeta	NM_005876
LVP132	SPZ1	spermatogenic leucine zipper 1	FLJ25709, NYD-TSP1	NM_032567.2
LVP243	SRPK1	SFRS protein kinase 1	SFRSK1	NM_003137
LVP224	STAT3	signal transducer and activator of transcription 3 (acute-phase response factor)	APRF, FLJ20882, HIES, MGC16063	NM_003150
LVP383	Stat3	STAT3 signal transducer and activator of transcription 3	APRF; HIES	NM_139276.2
LVP081	STK10	serine/threonine kinase 10	LOK, PRO2729	NM_005990
LVP090	STK11	serine/threonine kinase 11	LKB1, PJS	NM_000455.4
LVP225	STK16	serine/threonine kinase 16	FLJ39635, KRCT, MGC16211, MPSK, PKL12, TSF1	NM_001008910.2
LVP056	STK17B	serine/threonine kinase 17b	DRAK2	NM_004226.3
LVP246	STK25	serine/threonine kinase 25 (STE20 homolog, yeast)	DKFZp686J1430, SOK1, YSK1	NM_006374
LVP248	STK3	serine/threonine kinase 3 (STE20 homolog, yeast)	FLJ90748, KRS1, MST2	NM_006281
LVP063	STK32C	serine/threonine kinase 32C	MGC23665, PKE, RP11-140A10.1, YANK3	NM_173575
LVP249	STK38	serine/threonine kinase 38	NDR, NDR1	NM_007271
LVP080	STK4	serine/threonine kinase 4	DKFZp686A2068, KRS2, MST1, YSK3	NM_006282
LVP202	STK40	serine/threonine kinase 40	MGC4796, RP11-268J15.4, SHIK, SgK495	NM_032017
LVP107	STRADB	STE20-related kinase adaptor beta	ALS2CR2, CALS-21, ILPIP, ILPIPA, MGC102916, PAPK, PRO1038	NM_018571



LVP151	STYK1	serine/threonine/tyrosine kinase 1	DKFZp761P1010, NOK, SuRTK106	NM_018423.2
LVP171	TAOK3	TAO kinase 3	DKFZp666H245, DPK, FLJ31808, JIK, MAP3K18	NM_016281.2
LVP276	TAPBP	TAP binding protein (tapasin)	TPN; TAPA; TPSN; NGS17; TAPBP	NM_003190.3
LVP387	TBX5	T-box 5	HOS	NM_000192.3
LVP105	TERT	telomerase reverse transcriptase	EST2, TCS1, TP2, TRT, hEST2	NM_198253.2
LVP289	TGFB1	transforming growth factor, beta 1	CED, DPD1, LAP, TGFB, TGFbeta	NM_000660.4
LVP054	TGFBR2	transforming growth factor, beta receptor II (70/80kDa)	AAT3, FAA3, LDS1B, LDS2B, MFS2, RIIC, TAAD2, TGFR-2, TGFbeta-RII	NM_001024847.2
LVP097	TMEM50B	transmembrane protein 50B	C21orf4, DKFZp686C2482, FLJ26146, HCVPTP3	NM_006134.5
LVP287	TNF	tumor necrosis factor	DIF; TNFA; TNFSF2; TNF-alpha	NM_000594.2
LVP331	TNFAIP6	tumor necrosis factor, alpha-induced protein 6	TSG-6, TSG6	NM_007115.2
LVP173	TNIK	TRAF2 and NCK interacting kinase		NM_015028
LVP115	TNK2	tyrosine kinase, non-receptor, 2	ACK; ACK1; FLJ44758; FLJ45547; p21cdc42Hs	NM_005781
LVP253	TP53	tumor protein p53	FLJ92943, LFS1, TRP53, p53	NM_000546
LVP397	TP63	tumor protein p63 (TP63), transcript variant 4	AIS; B(p51A); B(p51B); EEC3; KET; LMS; NBP	NM_001114980.1
LVP069	TPT1	tumor protein, translationally-controlled 1	FLJ27337, HRF, TCTP, p02	NM_003295
LVP244	TPTE	transmembrane phosphatase with tensin homology	CT44, PTEN2	NM_199259.2
LVP042	TRIB2	tribbles homolog 2 (Drosophila)	C5FW, FLJ57420, GS3955, TRB2	NM_021643
LVP128	TRIB3	tribbles homolog 3 (Drosophila)	RP5-1103G7.7, C20orf97, NIPK, SINK, SKIP3, TRB3	NM_021158
LVP084	TSSK1B	testis-specific serine kinase 1B	FKSG81, SPOGA4, STK22D, TSSK1	NM_032028
LVP227	TSSK2	testis-specific serine kinase 2	DGS-G, FLJ38613, SPOGA2, STK22B	NM_053006
LVP245	TSSK3	testis-specific serine kinase 3	SPOGA3, STK22C, STK22D, TSK3	NM_052841



LVP254	TTBK2	tau tubulin kinase 2	KIAA0847, SCA11, TTBK	NM_173500
LVP096	TUBA1B	tubulin, alpha 1b	K-ALPHA-1	NM_006082
LVP087	TWF1	twinfilin, actin-binding protein, homolog 1 (Drosophila)	A6, MGC23788, MGC41876, PTK9	NM_002822
LVP093	TWF2	twinfilin, actin-binding protein, homolog 2 (Drosophila)	A6RP, A6r, MSTP011, PTK9L	NM_007284.3
LVP067	TXN	thioredoxin	RP11-427L11.1, DKFZp686B1993, MGC61975, TRX, TRX1	NM_003329.2
LVP051	TYK2	tyrosine kinase 2	JTK1	NM_003331
LVP022	UBD	ubiquitin D	FAT10; UBD-3; GABBR1	NM_006398.3
LVP164	ULK4	unc-51-like kinase 4 (C. elegans)	hCG_1996673, DKFZp434E1822, FAM7C1, FLJ20574, REC01035	NM_017886.2
LVP388	VEGFA	vascular endothelial growth factor A	VPF; VEGF; MVCD1; MGC70609	NM_001171626.1
LVP255	VRK3	vaccinia related kinase 3		NM_016440
LVP252	WEE1	WEE1 homolog (S. pombe)	DKFZp686I18166, FLJ16446, WEE1A, WEE1hu	NM_003390.3
LVP057	WIF1	WNT inhibitory factor 1	WIF-1	NM_007191
LVP070	XPO5	exportin 5	RP3-337H4.5, FLJ14239, FLJ32057, FLJ45606, KIAA1291	NM_020750.2
LVP059	YES1	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1	HsT441, P61-YES, Yes, c-yes	NM_005433.3
LVP256	ZAP70	zeta-chain (TCR) associated protein kinase 70kDa	FLJ17670, FLJ17679, SRK, STD, TZK, ZAP-70	NM_001079
LVP279	ZFP36	zinc finger protein 36, C3H type	G0S24, GOS24, NUP475, RNF162A, TIS11, TTP	NM_003407

2. Products list for Expression lentiviral particles for **mouse** genes:

Cat#	Gene symbol	Gene name	alternative name	NCBI ID
LVP131	m Acp2	acid phosphatase 2, lysosomal	LAP; Acp-2	NM_007387.2



LVP424	m CSF2	mouse colony stimulating factor 2 (granulocyte-macrophage)	RP23-309E16.1, Csfgm, Gm-CSf, MGI-IGM	NM_009969.4
LVP179	m CSN3	casein kappa	Csnk; CSN10; AW208918; Csn3	NM_007786.4
LVP141	m Gadd45a	growth arrest and DNA-damage-inducible 45 alpha	AA545191, Ddit1, GADD45	NM_007836.1
LVP398	m Git2	G protein-coupled receptor kinase-interactor 2	CAT2; KIAA0148	NM_019834.3
LVP391	m IL10	interleukin 10	CSIF; IL-10	NM_010548.2
LVP008m	m Klf4	Kruppel-like factor 4 (gut)	EZF; Zie; Gklf	NM_010637.3
LVP006m	m LIN28	lin-28 homolog A	Lin-28, Lin28a, Tex17	NM_145833.1
LVP270	m MEF2C	myocyte enhancer factor 2C	Mef2	NM_025282.3
LVP271	m Mesp1	mesoderm posterior 1	bHLHc5; MGC159208; MGC159210	NM_008588.2
LVP268	m Mitf	microphthalmia-associated transcription factor	Wh; bw; mi; vit; Bhlhe32; Vitiligo; MGC124309; MGC124310	NM_008601.3
LVP007m	m Myc	myelocytomatosis oncogene	Myc2; Nird; Niard; bHLHe39; AU016757; Myc	NM_010849.4
LVP147	m Myd88	myeloid differentiation primary response gene 88		NM_010851.2
LVP005m	m NANOG	Nanog homeobox	ENK, ecat4	NM_028016.2
LVP003m	m OCT4	POU domain, class 5, transcription factor 1	Pou5f1, Oct3; Oct4; Otf3; Otf4; Oct-3; Oct-4; Otf-3; Otf-4; Otf3g; Oct3/4; Oct-3/4; Otf3-rs7	NM_013633.2
LVP269	m PAX6	paired box gene 6	Dey; Sey; AEY11; Pax-6; Gsfaey11; 1500038E17Rik	NM_013627.4
LVP351	m shank3	SH3/ankyrin domain gene 3	AI841104, Shank3b	NM_021423
LVP004m	m Sox2	SRY-box containing gene 2	lcc; ysb; Sox-2	NM_011443.3
LVP350	m SRC	Rous sarcoma oncogene (src), transcript variant 2	RP23-169M4.1, AW259666, pp60c-src	NM_001025395.2