

Supplemental Table S1. Mmu-miR-183-5p *in silico* predicted targets.

TARGET GENE	GENE DESCRIPTION	VALIDATION	DIANA	MIRANDA	MIRBRIDGE	PICTAR	PITA	RNA22	TARGETSCAN	TOTAL_HIT
AP3M1	adaptor-related protein complex 3, mu 1 subunit		V	V	V	V	V	V	V	7
BTG1	B-cell translocation gene 1, anti-proliferative		V	V	V	V	V	V	V	7
CLCN3	chloride channel, voltage-sensitive 3		V	V	V	V	V	V	V	7
CTDSPL	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase-like		V	V	V	V	V	V	V	7
DUSP10	dual specificity phosphatase 10		V	V	V	V	V	V	V	7
MAP3K4	mitogen-activated protein kinase kinase kinase 4		V	V	V	V	V	V	V	7
PDCD4	programmed cell death 4 (neoplastic transformation inhibitor)		V	V	V	V	V	V	V	7
PPP2R5C	protein phosphatase 2, regulatory subunit B', gamma		V	V	V	V	V	V	V	7
PTPN4	protein tyrosine phosphatase, non-receptor type 4 (megakaryocyte)		V	V	V	V	V	V	V	7
EZR	ezrin	V	V		V	V		V	V	6
FOXO1	forkhead box O1	V	V		V	V	V		V	6
ANKRD13C	ankyrin repeat domain 13C		V	V		V	V	V	V	6
ARHGAP6	Rho GTPase activating protein 6		V	V	V	V	V	V		6
BACH2	BTB and CNC homology 1, basic leucine zipper transcription factor 2		V	V		V	V	V	V	6
BNIP3L	BCL2/adenovirus E1B 19kDa interacting protein 3-like		V	V	V	V	V		V	6
BRMS1L	breast cancer metastasis-suppressor 1-like		V	V	V	V	V		V	6
CDK5R1	cyclin-dependent kinase 5, regulatory subunit 1 (p35)		V	V	V	V	V		V	6
CTDSP1	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase 1		V	V	V	V	V		V	6
DCX	doublecortin		V	V	V	V	V		V	6
ENAH	enabled homolog (Drosophila)		V	V	V	V	V		V	6
EPHA4	EPH receptor A4		V	V	V	V	V		V	6
FOXP1	forkhead box P1		V	V	V	V	V		V	6
IDH2	isocitrate dehydrogenase 2 (NADP+), mitochondrial		V	V	V	V	V		V	6
IRS1	insulin receptor substrate 1		V	V	V	V	V	V		6
KCNK10	potassium channel, subfamily K, member 10		V	V		V	V	V	V	6
LMO3	LIM domain only 3 (rhombotin-like 2)		V	V	V	V	V		V	6
LRP6	low density lipoprotein receptor-related protein 6		V	V		V	V	V	V	6
MEF2C	myocyte enhancer factor 2C		V	V	V	V	V		V	6
NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)		V	V	V	V	V		V	6
OSBPL8	oxysterol binding protein-like 8		V	V		V	V	V	V	6
PFN2	profilin 2		V	V	V	V	V		V	6
JAD2	Jade Family PHD Finger 2		V	V	V	V	V		V	6
PLAG1	pleiomorphic adenoma gene 1		V	V		V	V	V	V	6
PPP2CA	protein phosphatase 2, catalytic subunit, alpha isozyme		V	V	V	V	V		V	6
PPP2CB	protein phosphatase 2, catalytic subunit, beta isozyme		V	V	V	V	V		V	6
PRKCA	protein kinase C, alpha		V	V	V	V	V		V	6
SRSF2	Serine And Arginine Rich Splicing Factor 2		V	V	V	V	V		V	6
SLITRK3	SLIT and NTRK-like family, member 3		V	V		V	V	V	V	6

SNX1	sorting nexin 1	V	V	V	V	V		V	6
SOCS6	suppressor of cytokine signaling 6	V	V	V	V	V		V	6
STC1	stanniocalcin 1	V	V	V	V	V		V	6
TLE4	transducin-like enhancer of split 4 (E(sp1) homolog, Drosophila)	V	V	V	V	V	V		6
ERP44	Endoplasmic Reticulum Protein 44	V	V		V	V	V	V	6
UNC13B	unc-13 homolog B (C. elegans)	V	V	V	V	V		V	6
ZEB2	zinc finger E-box binding homeobox 2	V	V	V		V	V	V	6
ZMYM2	zinc finger, MYM-type 2	V	V	V	V	V		V	6
ABCA1	ATP-binding cassette, sub-family A (ABC1), member 1	V		V	V	V		V	5
ABI2	abl-interactor 2	V	V	V		V		V	5
ACVR2B	activin A receptor, type IIB	V	V	V		V		V	5
AMD1	adenosylmethionine decarboxylase 1	V	V	V	V	V			5
ARFGAP2	ADP-ribosylation factor GTPase activating protein 2	V	V		V	V	V		5
ATP2C1	ATPase, Ca++ transporting, type 2C, member 1	V	V			V	V	V	5
BZW1	basic leucine zipper and W2 domains 1	V	V	V		V		V	5
SMCO4	Single-Pass Membrane Protein With Coiled-Coil Domains 4	V	V		V	V		V	5
C16ORF72	chromosome 16 open reading frame 72	V	V		V	V		V	5
CACNA1E	calcium channel, voltage-dependent, R type, alpha 1E subunit	V	V	V	V			V	5
CPEB1	cytoplasmic polyadenylation element binding protein 1	V	V		V		V	V	5
CSNK1G3	casein kinase 1, gamma 3	V	V		V	V	V		5
CTNNA2	catenin (cadherin-associated protein), alpha 2	V	V	V	V	V			5
DAGLA	diacylglycerol lipase, alpha	V	V		V	V		V	5
DMXL1	Dmx-like 1	V	V			V	V	V	5
EGR1	early growth response 1	V	V		V	V	V		5
EI24	etoposide induced 2.4	V	V			V	V	V	5
AGO2	Argonate 2, RISC Catalytic Component	V	V		V	V		V	5
EML4	echinoderm microtubule associated protein like 4	V	V		V	V		V	5
KDM2B	Lysine Demethylase 2B	V	V	V		V		V	5
FOXN2	forkhead box N2	V	V		V	V		V	5
PIK4B	Phosphatidylinositol 4-Kinase Beta	V		V	V	V		V	5
FRMD6	FERM domain containing 6	V	V		V	V		V	5
GATAD2B	GATA zinc finger domain containing 2B	V	V		V	V		V	5
GMFB	glia maturation factor, beta	V	V	V		V		V	5
GNG5	guanine nucleotide binding protein (G protein), gamma 5	V		V	V	V		V	5
GREM2	gremlin 2, DAN family BMP antagonist	V	V	V		V		V	5
ICK	intestinal cell (MAK-like) kinase	V	V		V	V		V	5
KCNJ14	potassium inwardly-rectifying channel, subfamily J, member 14	V	V		V	V		V	5
KCNK2	potassium channel, subfamily K, member 2	V	V		V	V		V	5
GSE1	Gse1 Coiled-Coil Protein	V	V		V	V		V	5
KIAA0355	KIAA0355	V	V		V	V		V	5
KIAA0368	KIAA0368	V	V	V		V		V	5

LHFPL2	lipoma HMGIC fusion partner-like 2	V	V			V	V	V	5
MAL2	mal, T-cell differentiation protein 2 (gene/pseudogene)	V	V			V	V	V	5
MAPK8IP1	mitogen-activated protein kinase 8 interacting protein 1	V		V		V	V	V	5
MBNL1	muscleblind-like splicing regulator 1	V				V	V	V	5
MTA1	metastasis associated 1	V	V	V		V		V	5
MTMR6	myotubularin related protein 6	V		V		V		V	5
MXD4	MAX dimerization protein 4	V		V		V	V	V	5
NCK2	NCK adaptor protein 2	V	V	V		V		V	5
NR4A2	nuclear receptor subfamily 4, group A, member 2	V	V	V		V		V	5
NTRK2	neurotrophic tyrosine kinase, receptor, type 2	V	V	V			V	V	5
NUDT4	nudix (nucleoside diphosphate linked moiety X)-type motif 4	V	V			V	V	V	5
PDE4D	phosphodiesterase 4D, cAMP-specific	V	V			V	V	V	5
PEX19	peroxisomal biogenesis factor 19	V	V	V		V		V	5
PHF6	PHD finger protein 6	V	V			V	V	V	5
PKD2	polycystic kidney disease 2 (autosomal dominant)	V	V	V			V	V	5
PKP4	plakophilin 4	V	V			V	V	V	5
PRKCB	protein kinase C, beta	V	V	V		V	V		5
PSEN2	presenilin 2 (Alzheimer disease 4)	V		V		V	V	V	5
RAB8B	RAB8B, member RAS oncogene family	V		V		V	V	V	5
RALA	v-ral simian leukemia viral oncogene homolog A (ras related)	V	V			V	V	V	5
RHOBTB1	Rho-related BTB domain containing 1	V	V			V	V	V	5
RNF138	ring finger protein 138, E3 ubiquitin protein ligase	V	V			V	V	V	5
RNF2	ring finger protein 2	V	V	V		V		V	5
RPS6KA3	ribosomal protein S6 kinase, 90kDa, polypeptide 3	V	V	V		V		V	5
SACS	spastic ataxia of Charlevoix-Saguenay (sacsin)	V	V			V	V	V	5
SCARA3	scavenger receptor class A, member 3	V	V	V		V	V		5
SCYL3	SCY1-like 3 (S. cerevisiae)	V		V		V	V	V	5
SRSF11	Serine And Arginine Rich Splicing Factor 11	V	V			V	V	V	5
SIN3A	SIN3 transcription regulator family member A	V	V	V		V	V		5
SIRPA	signal-regulatory protein alpha	V	V				V	V	5
SLAIN1	SLAIN motif family, member 1	V	V			V	V	V	5
SLC35A1	solute carrier family 35 (CMP-sialic acid transporter), member A1	V	V			V	V	V	5
SLITRK1	SLIT and NTRK-like family, member 1	V	V			V	V	V	5
SMAD4	SMAD family member 4	V	V	V			V	V	5
SMPD3	sphingomyelin phosphodiesterase 3, neutral membrane (neutral sphingomyelinase II)	V	V			V	V	V	5
STK38L	serine/threonine kinase 38 like	V	V			V	V	V	5
TET1	tet methylcytosine dioxygenase 1	V	V			V	V	V	5
TIAM1	T-cell lymphoma invasion and metastasis 1	V	V	V			V	V	5
TMEM184C	transmembrane protein 184C	V	V				V	V	5
TMPO	thymopoietin	V	V	V			V	V	5
TMSB4Y	thymosin beta 4, Y-linked	V	V			V	V	V	5

TOMM70A	translocase of outer mitochondrial membrane 70 homolog A (<i>S. cerevisiae</i>)		V	V			V	V	V	5
TRAM1	translocation associated membrane protein 1		V	V	V	V	V			5
TRIM2	tripartite motif containing 2		V	V	V	V			V	5
YPEL5	yippee-like 5 (<i>Drosophila</i>)		V	V		V	V		V	5
ZDHHC6	zinc finger, DHHC-type containing 6		V	V		V	V		V	5
ZFPM2	zinc finger protein, FOG family member 2		V	V		V	V		V	5
ZFYVE26	zinc finger, FYVE domain containing 26		V	V		V	V		V	5
CELSR3	cadherin, EGF LAG seven-pass G-type receptor 3			V	V	V		V	V	5
CELF2	CUGBP Elav-Like Family Member 2			V	V	V	V		V	5
PPP2R2A	protein phosphatase 2, regulatory subunit B, alpha			V	V	V	V		V	5
RUNX1T1	runt-related transcription factor 1; translocated to, 1 (cyclin D-related)	V	V		V	V				4
ACVR2A	activin A receptor, type IIA		V	V	V		V			4
AGPAT5	1-acylglycerol-3-phosphate O-acyltransferase 5		V	V			V		V	4
AJAP1	adherens junctions associated protein 1		V			V	V		V	4
AKAP12	A kinase (PRKA) anchor protein 12		V				V	V	V	4
AP3M2	adaptor-related protein complex 3, mu 2 subunit		V	V	V			V		4
APPBP2	amyloid beta precursor protein (cytoplasmic tail) binding protein 2		V	V			V	V		4
ARHGAP18	Rho GTPase activating protein 18		V	V			V		V	4
ARHGEF18	Rho/Rac guanine nucleotide exchange factor (GEF) 18		V		V	V			V	4
ASTN1	astrotactin 1		V	V	V			V		4
ATRN	attractin		V	V				V	V	4
AUTS2	autism susceptibility candidate 2		V	V			V		V	4
B3GNT2	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 2		V	V	V	V				4
BNC2	basonuclin 2		V	V		V			V	4
CELF6	CUGBP Elav-Like Family Member 6		V			V	V		V	4
CNOT6L	CCR4-NOT transcription complex, subunit 6-like		V	V			V		V	4
COLEC12	collectin sub-family member 12		V	V	V		V			4
COMMD7	COMM domain containing 7		V	V				V	V	4
CPEB2	cytoplasmic polyadenylation element binding protein 2		V	V		V			V	4
CX3CL1	chemokine (C-X3-C motif) ligand 1		V	V			V		V	4
CYYR1	cysteine/tyrosine-rich 1		V	V			V		V	4
DGCR2	DiGeorge syndrome critical region gene 2		V		V	V			V	4
DPP8	dipeptidyl-peptidase 8		V	V			V		V	4
DTNA	dystrobrevin, alpha		V			V	V		V	4
EEF2	eukaryotic translation elongation factor 2		V	V			V		V	4
EPHA7	EPH receptor A7		V	V	V		V			4
ERBB2IP	erbb2 interacting protein		V	V			V		V	4
FAT1	FAT atypical cadherin 1		V	V	V		V			4
FCHO2	FCH domain only 2		V	V			V		V	4
FGF9	fibroblast growth factor 9		V		V	V			V	4
ARHGEF37	Rho guanine nucleotide exchange factor 37		V	V			V		V	4

FLRT3	fibronectin leucine rich transmembrane protein 3	V			V		V	V	4
FOXA1	forkhead box A1	V	V				V	V	4
GALNTL6	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 6	V	V				V		4
GNG12	guanine nucleotide binding protein (G protein), gamma 12	V	V	V				V	4
GPAM	glycerol-3-phosphate acyltransferase, mitochondrial	V	V				V	V	4
GTF2H1	general transcription factor IIH, polypeptide 1, 62kDa	V	V	V			V		4
HBEGF	heparin-binding EGF-like growth factor	V	V			V	V		4
HECTD2	HECT domain containing E3 ubiquitin protein ligase 2	V	V			V	V		4
HLF	hepatic leukemia factor	V	V				V	V	4
HSPA13	heat shock protein 70kDa family, member 13	V	V	V				V	4
ICA1	islet cell autoantigen 1, 69kDa	V	V				V	V	4
ING3	inhibitor of growth family, member 3	V	V			V	V		4
IPPK	inositol 1,3,4,5,6-pentakisphosphate 2-kinase	V	V				V	V	4
KIAA0101	KIAA0101	V	V				V	V	4
KIF2A	kinesin heavy chain member 2A	V	V				V	V	4
KLHL28	kelch-like family member 28	V	V				V	V	4
KLHL3	kelch-like family member 3	V	V				V	V	4
L3MBTL3	l(3)mbt-like 3 (Drosophila)	V	V				V	V	4
LAPTM4A	lysosomal protein transmembrane 4 alpha	V	V			V	V		4
LPHN1	latrophilin 1	V		V			V	V	4
LRRC1	leucine rich repeat containing 1	V	V				V	V	4
MACROD2	MACRO domain containing 2	V	V				V	V	4
TAB3	TGF-Beta Activated Kinase 1 And MAP3K7 Binding Protein 3	V	V				V	V	4
MAPK4	mitogen-activated protein kinase 4	V	V				V	V	4
MYO1B	myosin IB	V	V				V	V	4
NCAM1	neural cell adhesion molecule 1	V	V	V			V		4
NEFL	neurofilament, light polypeptide	V	V				V	V	4
NFAT5	nuclear factor of activated T-cells 5, tonicity-responsive	V	V	V			V		4
NFE2L1	nuclear factor, erythroid 2-like 1	V		V	V			V	4
NFYC	nuclear transcription factor Y, gamma	V		V	V			V	4
PAM	peptidylglycine alpha-amidating monooxygenase	V	V	V	V				4
PCGF5	polycomb group ring finger 5	V	V				V	V	4
PIM1	pim-1 oncogene	V	V			V	V		4
PLCXD3	phosphatidylinositol-specific phospholipase C, X domain containing 3	V				V		V	4
PLEKHA3	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 3	V	V	V			V		4
PLEKHA5	pleckstrin homology domain containing, family A member 5	V				V	V	V	4
PNOC	prepronociceptin	V		V	V			V	4
POLR2D	polymerase (RNA) II (DNA directed) polypeptide D	V	V	V			V		4
PPM1E	protein phosphatase, Mg2+/Mn2+ dependent, 1E	V	V			V	V		4
PRICKLE2	prickle homolog 2 (Drosophila)	V	V				V	V	4
PRKACB	protein kinase, cAMP-dependent, catalytic, beta	V	V	V			V		4

PRKCI	protein kinase C, iota	V		V		V		V	4
PSD3	pleckstrin and Sec7 domain containing 3	V	V				V	V	4
PTDSS1	phosphatidylserine synthase 1	V	V			V		V	4
RAB11FIP4	RAB11 family interacting protein 4 (class II)	V				V	V	V	4
RCN2	reticulocalbin 2, EF-hand calcium binding domain	V	V			V	V		4
REPS2	RALBP1 associated Eps domain containing 2	V	V				V	V	4
REV1	REV1, polymerase (DNA directed)	V	V				V	V	4
RHOB	ras homolog family member B	V		V	V			V	4
ROBO2	roundabout, axon guidance receptor, homolog 2 (Drosophila)	V	V				V	V	4
RORC	RAR-related orphan receptor C	V		V			V	V	4
SEL1L	sel-1 suppressor of lin-12-like (C. elegans)	V	V				V	V	4
SEMA6D	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6D	V	V			V	V		4
SESN1	sestrin 1	V	V				V	V	4
SREK1IP1	SREK1 Interacting Protein 1	V	V				V	V	4
SLC1A2	solute carrier family 1 (glial high affinity glutamate transporter), member 2	V	V					V	4
SLC30A8	solute carrier family 30 (zinc transporter), member 8	V	V				V	V	4
SLC44A1	solute carrier family 44 (choline transporter), member 1	V	V			V	V		4
SLC6A6	solute carrier family 6 (neurotransmitter transporter), member 6	V				V	V	V	4
SNCB	synuclein, beta	V	V	V		V			4
SOX6	SRY (sex determining region Y)-box 6	V	V			V	V		4
SPATS2	spermatogenesis associated, serine-rich 2	V	V				V	V	4
SSRP1	structure specific recognition protein 1	V		V	V			V	4
TCF12	transcription factor 12	V				V	V	V	4
TCF7L2	transcription factor 7-like 2 (T-cell specific, HMG-box)	V	V	V			V		4
TPM1	tropomyosin 1 (alpha)	V	V	V			V		4
TTC7B	tetratricopeptide repeat domain 7B	V	V				V	V	4
USP47	ubiquitin specific peptidase 47	V	V			V		V	4
VAPB	VAMP (vesicle-associated membrane protein)-associated protein B and C	V		V	V			V	4
VPS37A	vacuolar protein sorting 37 homolog A (S. cerevisiae)	V	V			V	V		4
VSX2	visual system homeobox 2	V	V				V	V	4
XKR6	XK, Kell blood group complex subunit-related family, member 6	V	V			V	V		4
XPOT	exportin, tRNA	V	V				V	V	4
YAF2	YY1 associated factor 2	V	V				V	V	4
YES1	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1	V	V	V	V				4
ZNF592	zinc finger protein 592	V	V				V	V	4
ARHGAP21	Rho GTPase activating protein 21		V			V	V	V	4
CFL2	cofilin 2 (muscle)		V	V	V			V	4
CSMD1	CUB and Sushi multiple domains 1		V				V	V	4
ITGB1	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)		V	V	V	V			4
PLAGL2	pleiomorphic adenoma gene-like 2		V			V	V	V	4
PLCB4	phospholipase C, beta 4		V			V	V	V	4

TMSB4X	thymosin beta 4, X-linked			V		V	V		V	4
VDAC1	voltage-dependent anion channel 1			V		V	V			4
PDCD6	programmed cell death 6					V	V		V	4
ABAT	4-aminobutyrate aminotransferase	V	V					V		3
ABHD13	abhydrolase domain containing 13	V				V			V	3
ACVR1B	activin A receptor, type IB	V	V				V			3
AFF4	AF4/FMR2 family, member 4	V	V						V	3
ALAD	aminolevulinate dehydratase	V	V		V					3
ALOX15	arachidonate 15-lipoxygenase	V	V				V			3
AMMECR1L	AMMECR1-like	V	V				V			3
AMOT	angiomin	V	V		V					3
ANKRD50	ankyrin repeat domain 50	V					V		V	3
ARHGAP26	Rho GTPase activating protein 26	V	V						V	3
ARID4B	AT rich interactive domain 4B (RBP1-like)	V			V	V				3
ARL8B	ADP-ribosylation factor-like 8B	V	V				V			3
ATP10B	ATPase, class V, type 10B	V	V					V		3
BAGE3	B melanoma antigen family, member 3	V					V		V	3
BAZ1B	bromodomain adjacent to zinc finger domain, 1B	V	V						V	3
BCL11B	B-cell CLL/lymphoma 11B (zinc finger protein)	V				V			V	3
BCL2L11	BCL2-like 11 (apoptosis facilitator)	V			V	V				3
BCL6	B-cell CLL/lymphoma 6	V			V	V				3
BMI1	BMI1 polycomb ring finger oncogene	V				V			V	3
SUCO	SUN Domain Containing Ossification Factor	V	V				V			3
C5ORF24	chromosome 5 open reading frame 24	V	V				V			3
NADK2	NAD Kinase 2, Mitochondrial	V				V		V		3
SMIM8	Small Integral Membrane Protein 8	V	V						V	3
CACNB4	calcium channel, voltage-dependent, beta 4 subunit	V			V	V				3
CALCB	calcitonin-related polypeptide beta	V			V		V			3
CAMK2D	calcium/calmodulin-dependent protein kinase II delta	V	V						V	3
CCND2	cyclin D2	V			V	V				3
CD164	CD164 molecule, sialomucin	V	V				V			3
CD28	CD28 molecule	V	V					V		3
CDC42EP3	CDC42 effector protein (Rho GTPase binding) 3	V			V			V		3
CDH9	cadherin 9, type 2 (T1-cadherin)	V				V		V		3
CLEC3A	C-type lectin domain family 3, member A	V	V					V		3
CLEC7A	C-type lectin domain family 7, member A	V	V					V		3
CLIP1	CAP-GLY domain containing linker protein 1	V	V				V			3
CNOT6	CCR4-NOT transcription complex, subunit 6	V	V				V			3
CNTN5	contactin 5	V	V				V			3
CNTNAP2	contactin associated protein-like 2	V			V	V				3
COL12A1	collagen, type XII, alpha 1	V	V					V		3

CPM	carboxypeptidase M			V				V		3
CREM	cAMP responsive element modulator			V	V		V			3
CSNK1G1	casein kinase 1, gamma 1			V	V				V	3
CUX2	cut-like homeobox 2			V	V			V		3
CYB561D1	cytochrome b561 family, member D1			V	V			V		3
CYCS	cytochrome c, somatic			V		V		V		3
DAP	death-associated protein			V		V	V			3
DCHS1	dachsous cadherin-related 1			V	V			V		3
DDIT4	DNA-damage-inducible transcript 4			V	V				V	3
EIF4A2	eukaryotic translation initiation factor 4A2			V		V	V			3
ENY2	enhancer of yellow 2 homolog (Drosophila)			V		V	V			3
EVI5	ecotropic viral integration site 5			V	V				V	3
EXOC8	exocyst complex component 8			V	V				V	3
FAM175B	family with sequence similarity 175, member B			V	V		V			3
FAM91A1	family with sequence similarity 91, member A1			V	V			V		3
FBXO30	F-box protein 30			V			V	V		3
FCHSD2	FCH and double SH3 domains 2			V	V			V		3
FKBP1A	FK506 binding protein 1A, 12kDa			V		V	V			3
FNDC3B	fibronectin type III domain containing 3B			V			V		V	3
FRS2	fibroblast growth factor receptor substrate 2			V	V			V		3
FRYL	FRY-like			V	V			V		3
G6PC	glucose-6-phosphatase, catalytic subunit			V	V	V				3
GABRB2	gamma-aminobutyric acid (GABA) A receptor, beta 2			V	V			V		3
GARNL3	GTPase activating Rap/RanGAP domain-like 3			V	V			V		3
GCLM	glutamate-cysteine ligase, modifier subunit			V	V				V	3
GDA	guanine deaminase			V	V			V		3
GJA3	gap junction protein, alpha 3, 46kDa			V	V			V		3
GLDC	glycine dehydrogenase (decarboxylating)			V	V			V		3
GNAQ	guanine nucleotide binding protein (G protein), q polypeptide			V					V	3
GNB1	guanine nucleotide binding protein (G protein), beta polypeptide 1			V		V	V			3
GNG4	guanine nucleotide binding protein (G protein), gamma 4			V		V		V		3
GOLGA6B	golgin A6 family, member B			V	V			V		3
GOLGA7	golgin A7			V				V	V	3
GPR3	G protein-coupled receptor 3			V	V			V		3
GRIK2	glutamate receptor, ionotropic, kainate 2			V	V			V		3
GRM1	glutamate receptor, metabotropic 1			V	V			V		3
HCG_18385				V				V	V	3
HLA-DMB	major histocompatibility complex, class II, DM beta			V	V	V				3
HNRNPD	heterogeneous nuclear ribonucleoprotein D (AU-rich element RNA binding protein 1, 37kDa)			V	V				V	3
HOMER1	homer homolog 1 (Drosophila)			V	V			V		3
HS3ST1	heparan sulfate (glucosamine) 3-O-sulfotransferase 1			V			V		V	3

IDS	iduronate 2-sulfatase	V	V			V			3
IGF1	insulin-like growth factor 1 (somatomedin C)	V	V			V			3
IL12B	interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)	V	V	V					3
INADL	InaD-like (Drosophila)	V	V	V					3
INSIG1	insulin induced gene 1	V		V				V	3
ITGB8	integrin, beta 8	V	V					V	3
KCND2	potassium voltage-gated channel, Shal-related subfamily, member 2	V	V			V			3
KCNMB1	potassium large conductance calcium-activated channel, subfamily M, beta member 1	V		V			V		3
CEP170B	Centrosomal Protein 170B	V					V	V	3
KIAA1024	KIAA1024	V	V					V	3
KIAA1468	KIAA1468	V	V				V		3
KIAA2018	KIAA2018	V	V					V	3
KLHL24	kelch-like family member 24	V	V					V	3
KPNA4	karyopherin alpha 4 (importin alpha 3)	V			V		V		3
CERS6	Ceramide Synthase 6	V					V	V	3
LHX6	LIM homeobox 6	V	V				V		3
LPPR2	lipid phosphate phosphatase-related protein type 2	V	V					V	3
LRP1B	low density lipoprotein receptor-related protein 1B	V		V	V				3
MAL	mal, T-cell differentiation protein	V		V			V		3
MAN1A2	mannosidase, alpha, class 1A, member 2	V	V				V		3
MAP4K5	mitogen-activated protein kinase kinase kinase kinase 5	V	V			V			3
MAPKAPK2	mitogen-activated protein kinase-activated protein kinase 2	V	V				V		3
MECP2	methyl CpG binding protein 2 (Rett syndrome)	V	V					V	3
MED21	mediator complex subunit 21	V	V	V					3
MIB1	mindbomb E3 ubiquitin protein ligase 1	V	V			V			3
MIER1	mesoderm induction early response 1, transcriptional regulator	V	V			V			3
MKL2	MKL/myocardin-like 2	V			V			V	3
MORC3	MORC family CW-type zinc finger 3	V		V	V				3
MRC2	mannose receptor, C type 2	V	V			V			3
MUC1	mucin 1, cell surface associated	V	V				V		3
NCAN	neurocan	V	V				V		3
NCDN	neurochondrin	V	V			V			3
NCKAP1	NCK-associated protein 1	V		V	V				3
NELL1	NEL-like 1 (chicken)	V	V				V		3
NFKB1	nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	V	V	V					3
NOTCH1	notch 1	V	V				V		3
NRXN3	neurexin 3	V			V		V		3
NSL1	NSL1, MIS12 kinetochore complex component	V	V	V					3
NTN4	netrin 4	V	V			V			3
OPCML	opioid binding protein/cell adhesion molecule-like	V	V				V		3
ORC2	Origin Recognition Complex Subunit 2	V	V	V					3

OSBPL1A	oxysterol binding protein-like 1A	V	V				V		3
P4HA2	prolyl 4-hydroxylase, alpha polypeptide II	V	V				V		3
PALLD	palladin, cytoskeletal associated protein	V	V	V					3
PHF3	PHD finger protein 3	V				V		V	3
PHLDB2	pleckstrin homology-like domain, family B, member 2	V	V		V				3
PICALM	phosphatidylinositol binding clathrin assembly protein	V	V			V			3
PKNOX2	PBX/knotted 1 homeobox 2	V			V			V	3
PNPT1	polyribonucleotide nucleotidyltransferase 1	V	V					V	3
POLR2C	polymerase (RNA) II (DNA directed) polypeptide C, 33kDa	V		V			V		3
PPP1R14B	protein phosphatase 1, regulatory (inhibitor) subunit 14B	V	V			V			3
PPP1R3C	protein phosphatase 1, regulatory subunit 3C	V	V	V					3
PPP1R8	protein phosphatase 1, regulatory subunit 8	V	V	V					3
PRKCQ	protein kinase C, theta	V	V	V					3
PRKRA	protein kinase, interferon-inducible double stranded RNA dependent activator	V	V				V		3
PRKRIR	protein-kinase, interferon-inducible double stranded RNA dependent inhibitor, repressor of (P58 repressor)	V	V	V					3
PRUNE2	prune homolog 2 (Drosophila)	V	V					V	3
RAB35	RAB35, member RAS oncogene family	V	V			V			3
RAD50	RAD50 homolog (S. cerevisiae)	V		V				V	3
RBM8A	RNA binding motif protein 8A	V		V			V		3
RGS14	regulator of G-protein signaling 14	V	V			V			3
RIMBP2	RIMS binding protein 2	V				V		V	3
RPE	ribulose-5-phosphate-3-epimerase	V	V	V					3
RREB1	ras responsive element binding protein 1	V		V				V	3
RSBN1	round spermatid basic protein 1	V		V	V				3
RYBP	RING1 and YY1 binding protein	V	V			V			3
SAFB	scaffold attachment factor B	V			V			V	3
SENP1	SUMO1/sentrin specific peptidase 1	V	V				V		3
SEPT7	septin 7	V			V			V	3
SERP1	stress-associated endoplasmic reticulum protein 1	V	V	V					3
SETD7	SET domain containing (lysine methyltransferase) 7	V	V				V		3
SF1	splicing factor 1	V	V	V					3
SLC22A23	solute carrier family 22, member 23	V		V	V				3
SLC37A2	solute carrier family 37 (glucose-6-phosphate transporter), member 2	V	V				V		3
SLC4A4	solute carrier family 4 (sodium bicarbonate cotransporter), member 4	V	V				V		3
SLC4A7	solute carrier family 4, sodium bicarbonate cotransporter, member 7	V	V		V				3
SMC1A	structural maintenance of chromosomes 1A	V	V				V		3
SNHG11	small nucleolar RNA host gene 11 (non-protein coding)	V	V				V		3
SPRY3	sprouty homolog 3 (Drosophila)	V	V					V	3
ST6GALNAC3	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 3	V	V				V		3
STAG3L4	stromal antigen 3-like 4 (pseudogene)	V	V			V			3
STIM2	stromal interaction molecule 2	V		V	V				3

STXBP4	syntaxin binding protein 4	V	V					V	3
SYN2	synapsin II	V	V				V		3
TARDBP	TAR DNA binding protein	V				V		V	3
TBKBP1	TBK1 binding protein 1	V	V				V		3
THSD7B	thrombospondin, type I, domain containing 7B	V	V				V		3
TINF2	TERF1 (TRF1)-interacting nuclear factor 2	V	V	V					3
TMED7	transmembrane emp24 protein transport domain containing 7	V				V		V	3
TMEM86A	transmembrane protein 86A	V	V					V	3
TMSB4XP8	Thymosin Beta 4, X-Linked Pseudogene 8	V	V					V	3
TNRC6B	trinucleotide repeat containing 6B	V	V					V	3
TRHDE	thyrotropin-releasing hormone degrading enzyme	V	V					V	3
TRPS1	trichorhinophalangeal syndrome I	V	V					V	3
TSC1	tuberous sclerosis 1	V		V				V	3
TSPYL4	TSPY-like 4	V	V				V		3
TUB	tubby bipartite transcription factor	V				V		V	3
TUFT1	tuftelin 1	V	V					V	3
TXNDC5	thioredoxin domain containing 5 (endoplasmic reticulum)	V						V	3
UBA3	ubiquitin-like modifier activating enzyme 3	V	V				V		3
UBE2V2	ubiquitin-conjugating enzyme E2 variant 2	V	V				V		3
UCHL3	ubiquitin carboxyl-terminal esterase L3 (ubiquitin thiolesterase)	V		V		V			3
VAMP7	vesicle-associated membrane protein 7	V	V					V	3
WDFY1	WD repeat and FYVE domain containing 1	V	V					V	3
WDR26	WD repeat domain 26	V				V		V	3
YOD1	YOD1 deubiquitinase	V						V	3
ZDHHC17	zinc finger, DHHC-type containing 17	V	V				V		3
ZDHHC9	zinc finger, DHHC-type containing 9	V	V				V		3
LTN1	Listerin E3 Ubiquitin Protein Ligase 1	V				V		V	3
ZNF81	zinc finger protein 81	V	V			V			3
ARPP19	CAMP Regulated Phosphoprotein 19		V				V	V	3
SIK3	SIK Family Kinase 3		V				V	V	3
OAS3	2'-5'-oligoadenylate synthetase 3, 100kDa		V	V				V	3
PALM2	paralemmin 2		V				V	V	3
CLVS1	Clavesin 1		V				V	V	3
GPCPD1	Glycerophosphocholine Phosphodiesterase 1		V				V	V	3
SP1	Sp1 transcription factor		V			V		V	3
TMEM150A	Transmembrane Protein 150A		V				V	V	3
TPM3	tropomyosin 3		V			V	V		3
BTRC	beta-transducin repeat containing E3 ubiquitin protein ligase	V							1
KRTAP3-2	keratin associated protein 3-2	V							1

Supplemental Table S2. Mmu-miR-206-3p *in silico* predicted targets.

TARGET GENE	GENE DESCRIPTION	VALIDATION	DIANA	MIRANDA	MIRBRIDGE	PICTAR	PITA	RNA22	TARGETSCAN	TOTAL_HIT
MET	met proto-oncogene	V	V	V	V	V	V	V	V	8
GJA1	gap junction protein, alpha 1, 43kDa	V	V	V	V	V	V		V	7
TRIM2	tripartite motif containing 2		V	V	V	V	V	V	V	7
UBN1	ubiquitin 1		V	V	V	V	V	V	V	7
BCL11A	B-cell CLL/lymphoma 11A (zinc finger protein)		V	V	V	V	V	V	V	7
ETS1	v-ets avian erythroblastosis virus E26 oncogene homolog 1		V	V	V	V	V	V	V	7
RASA1	RAS p21 protein activator (GTPase activating protein) 1		V	V	V	V	V	V	V	7
PTPLAD1	protein tyrosine phosphatase-like A domain containing 1		V	V	V	V	V	V	V	7
NRP1	neuropilin 1		V	V	V	V	V	V	V	7
ANXA4	annexin A4		V	V	V	V	V	V	V	7
KLF13	Kruppel-like factor 13		V	V	V	V	V	V	V	7
THBS1	thrombospondin 1		V	V	V	V	V	V	V	7
HNRNPU	heterogeneous nuclear ribonucleoprotein U (scaffold attachment factor A)		V	V	V	V	V	V	V	7
JARID2	jumonji, AT rich interactive domain 2		V	V	V	V	V	V	V	7
MMD	monocyte to macrophage differentiation-associated		V	V	V	V	V	V	V	7
ADAR	adenosine deaminase, RNA-specific		V	V	V	V	V		V	6
HSP90B1	heat shock protein 90kDa beta (Grp94), member 1		V	V	V	V	V		V	6
FZD7	frizzled family receptor 7		V	V	V	V	V		V	6
TBP	TATA box binding protein		V	V	V	V	V		V	6
PAX3	paired box 3		V	V	V	V	V		V	6
PAFAH1B1	platelet-activating factor acetylhydrolase 1b, regulatory subunit 1 (45kDa)		V	V		V	V	V	V	6
FUBP1	far upstream element (FUSE) binding protein 1		V	V	V	V	V		V	6
IGF1	insulin-like growth factor 1 (somatomedin C)		V	V	V		V	V	V	6
FRAS1	Fraser syndrome 1		V	V		V	V	V	V	6
FOSB	FBJ murine osteosarcoma viral oncogene homolog B		V	V	V	V	V		V	6
HOXB4	homeobox B4		V	V		V	V	V	V	6
KCNIP3	Kv channel interacting protein 3, calsenuin		V	V	V	V		V	V	6
FBXO33	F-box protein 33		V	V		V	V	V	V	6
KCTD13	potassium channel tetramerization domain containing 13		V	V		V	V	V	V	6
KIF2A	kinesin heavy chain member 2A		V	V		V	V	V	V	6
GCLC	glutamate-cysteine ligase, catalytic subunit		V	V	V	V		V	V	6
SPRED1	sprouty-related, EVH1 domain containing 1		V	V		V	V	V	V	6
SP2	Sp2 transcription factor		V	V	V	V	V		V	6
TIMP3	TIMP metalloproteinase inhibitor 3		V		V	V	V	V	V	6
PFN2	profilin 2		V	V	V		V	V	V	6
AP3D1	adaptor-related protein complex 3, delta 1 subunit		V	V	V	V	V		V	6
ZNF236	zinc finger protein 236		V	V		V	V	V	V	6

ARCN1	archain 1		V	V	V	V	V		V	6
RARB	retinoic acid receptor, beta		V	V		V	V	V	V	6
NR4A2	nuclear receptor subfamily 4, group A, member 2		V	V	V	V	V		V	6
SOX9	SRY (sex determining region Y)-box 9		V	V	V		V	V	V	6
UTRN	utrophin	V	V	V	V		V		V	6
LIN7C	lin-7 homolog C (C. elegans)		V	V		V	V	V	V	6
NOTCH3	notch 3		V	V	V	V		V	V	6
SRSF9	Serine And Arginine Rich Splicing Factor 9		V	V	V	V	V		V	6
SRSF3	Serine And Arginine Rich Splicing Factor 3		V	V	V	V	V		V	6
TRA2B	Transformer 2 Beta Homolog		V	V	V	V	V		V	6
PSIP1	PC4 And SFRS1 Interacting Protein 1		V	V	V	V	V		V	6
EIF4E	eukaryotic translation initiation factor 4E		V	V	V	V	V		V	6
SFRP1	secreted frizzled-related protein 1		V	V	V	V	V		V	6
YWHAZ	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide		V	V	V	V	V		V	6
EFNB2	ephrin-B2		V	V	V	V	V		V	6
EDN1	endothelin 1		V	V	V	V	V		V	6
BACH2	BTB and CNC homology 1, basic leucine zipper transcription factor 2		V	V		V	V	V	V	6
BAG4	BCL2-associated athanogene 4		V	V	V	V	V	V		6
HDAC4	histone deacetylase 4		V	V	V	V	V		V	6
NFAT5	nuclear factor of activated T-cells 5, tonicity-responsive		V	V	V	V		V	V	6
MAP1A	microtubule-associated protein 1A		V	V	V	V	V		V	6
DMPK	dystrophia myotonica-protein kinase		V	V	V	V	V		V	6
MAP4K3	mitogen-activated protein kinase kinase kinase kinase 3		V	V	V	V	V		V	6
BDNF	brain-derived neurotrophic factor		V	V	V	V	V		V	6
NDRG3	NDRG family member 3		V	V		V	V	V	V	6
DHX15	DEAH (Asp-Glu-Ala-His) box helicase 15		V	V	V	V	V		V	6
MATR3	matrin 3		V	V	V	V	V		V	6
TNKS2	tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2		V	V	V	V	V		V	6
RIT2	Ras-like without CAAX 2		V	V	V	V	V		V	6
DDX5	DEAD (Asp-Glu-Ala-Asp) box helicase 5		V	V	V	V	V		V	6
MED1	mediator complex subunit 1		V	V	V	V	V		V	6
BSN	bassoon presynaptic cytomatrix protein		V		V	V	V	V	V	6
NCL	nucleolin		V	V	V		V	V	V	6
WDR1	WD repeat domain 1		V	V	V	V	V		V	6
CTTNBP2NL	CTTNBP2 N-terminal like		V		V	V	V	V	V	6
SNX2	sorting nexin 2		V	V	V	V	V		V	6
RYBP	RING1 and YY1 binding protein		V	V	V		V	V	V	6
TSPYL4	TSPY-like 4		V	V	V	V	V		V	6
MSANTD2	Myb/SANT DNA Binding Domain Containing 2		V	V		V	V	V	V	6
VGLL4	vestigial like 4 (Drosophila)		V	V	V	V	V		V	6

RNF138	ring finger protein 138, E3 ubiquitin protein ligase	V	V		V	V	V	V	6
MYLK	myosin light chain kinase	V	V	V	V	V		V	6
HS3ST3B1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3B1	V	V		V	V	V	V	6
VEGFA	vascular endothelial growth factor A	V	V	V		V	V	V	6
MNT	MNT, MAX dimerization protein	V	V	V	V	V		V	6
RNF38	ring finger protein 38	V	V		V	V	V	V	6
CREM	cAMP responsive element modulator	V	V	V	V	V		V	6
TMEM243	Transmembrane Protein 243	V	V		V	V	V	V	6
MPP5	membrane protein, palmitoylated 5 (MAGUK p55 subfamily member 5)	V		V	V	V	V	V	6
VAMP4	vesicle-associated membrane protein 4	V	V	V	V	V		V	6
CORO1C	coronin, actin binding protein, 1C	V		V	V	V	V	V	6
VAMP2	vesicle-associated membrane protein 2 (synaptobrevin 2)	V	V	V	V	V		V	6
UST	uronyl-2-sulfotransferase	V	V	V	V	V		V	6
RRBP1	ribosome binding protein 1	V	V	V	V	V		V	6
SNAP25	synaptosomal-associated protein, 25kDa	V	V	V	V	V		V	6
CNN3	calponin 3, acidic	V	V	V	V	V		V	6
CLTC	clathrin, heavy chain (Hc)	V	V	V	V	V		V	6
CLCN3	chloride channel, voltage-sensitive 3	V	V		V	V	V	V	6
RSBN1	round spermatid basic protein 1	V	V	V	V	V		V	6
UBE4A	ubiquitination factor E4A	V	V	V	V	V		V	6
SULF1	sulfatase 1	V	V	V		V	V	V	6
CCND2	cyclin D2	V	V	V	V	V		V	6
CD164	CD164 molecule, sialomucin	V	V	V		V	V	V	6
CDK6	cyclin-dependent kinase 6	V	V		V	V	V	V	6
CD2AP	CD2-associated protein	V	V	V		V		V	5
CDC42	cell division cycle 42	V	V	V	V			V	5
MPZ	myelin protein zero	V	V	V	V			V	5
CDK9	cyclin-dependent kinase 9	V	V	V	V			V	5
CCND1	cyclin D1	V		V	V		V	V	5
CEBPZ	CCAAT/enhancer binding protein (C/EBP), zeta	V	V	V		V	V		5
RSBN1L	round spermatid basic protein 1-like	V	V		V	V		V	5
CHSY1	chondroitin sulfate synthase 1	V	V	V		V	V		5
CITED2	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2	V	V	V		V		V	5
CBL	Cbl proto-oncogene, E3 ubiquitin protein ligase	V	V	V		V		V	5
UBE2H	ubiquitin-conjugating enzyme E2H	V	V		V	V		V	5
UBR5	ubiquitin protein ligase E3 component n-recognin 5	V	V		V	V		V	5
USP33	ubiquitin specific peptidase 33	V		V	V	V		V	5
COL4A3	collagen, type IV, alpha 3 (Goodpasture antigen)	V	V	V	V			V	5
CAPRIN1	cell cycle associated protein 1	V	V	V		V		V	5
CAAP1	Caspase Activity And Apoptosis Inhibitor 1	V	V		V	V		V	5

RNGTT	RNA guanylyltransferase and 5'-phosphatase	V	V		V	V		V	5
CPEB1	cytoplasmic polyadenylation element binding protein 1	V	V		V	V		V	5
RSPO3	R-spondin 3	V	V		V	V		V	5
TWF1	twinfilin actin-binding protein 1	V	V	V		V		V	5
CREB5	cAMP responsive element binding protein 5	V	V	V		V		V	5
CREBL2	cAMP responsive element binding protein-like 2	V	V		V	V		V	5
VASP	vasodilator-stimulated phosphoprotein	V	V	V		V		V	5
MXD1	MAX dimerization protein 1	V	V	V		V		V	5
MXD4	MAX dimerization protein 4	V		V	V		V	V	5
KMT2E	Lysine Methyltransferase 2E	V	V		V	V		V	5
NAB1	NGFI-A binding protein 1 (EGR1 binding protein 1)	V	V	V		V		V	5
NAMPT	nicotinamide phosphoribosyltransferase	V	V	V		V		V	5
NBEA	neurobeachin	V	V			V	V	V	5
MIPOL1	mirror-image polydactyly 1	V	V		V	V		V	5
NCK2	NCK adaptor protein 2	V	V	V		V		V	5
SEC62	SEC62 homolog (S. cerevisiae)	V	V		V	V		V	5
CYB5B	cytochrome b5 type B (outer mitochondrial membrane)	V	V	V		V		V	5
TRAPPC3	trafficking protein particle complex 3	V	V		V	V		V	5
SEC63	SEC63 homolog (S. cerevisiae)	V	V		V	V		V	5
DAAM1	dishevelled associated activator of morphogenesis 1	V	V		V	V		V	5
TNPO2	transportin 2	V		V	V	V		V	5
MEX3C	mex-3 RNA binding family member C	V	V		V	V		V	5
DDX17	DEAD (Asp-Glu-Ala-Asp) box helicase 17	V	V	V		V		V	5
MEIS1	Meis homeobox 1	V	V		V	V		V	5
BSC12	Berardinelli-Seip congenital lipodystrophy 2 (seipin)	V	V		V		V	V	5
WDR48	WD repeat domain 48	V	V		V	V		V	5
SEMA6D	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6D	V		V	V	V		V	5
NCOA3	nuclear receptor coactivator 3	V	V	V	V	V			5
BLCAP	bladder cancer associated protein	V	V		V	V		V	5
WNK3	WNK lysine deficient protein kinase 3	V	V		V	V		V	5
MAPKBP1	mitogen-activated protein kinase binding protein 1	V	V			V	V	V	5
TMEM55B	transmembrane protein 55B	V	V		V	V		V	5
RGS7	regulator of G-protein signaling 7	V	V	V		V	V	V	5
DLG4	discs, large homolog 4 (Drosophila)	V	V		V	V		V	5
BCL7A	B-cell CLL/lymphoma 7A	V	V		V	V		V	5
SETBP1	SET binding protein 1	V		V	V	V		V	5
NEUROD1	neuronal differentiation 1	V	V	V		V	V	V	5
MAL2	mal, T-cell differentiation protein 2 (gene/pseudogene)	V	V		V		V	V	5
MAGI2	membrane associated guanylate kinase, WW and PDZ domain containing 2	V	V	V	V			V	5
TMCC1	transmembrane and coiled-coil domain family 1	V	V		V	V		V	5

E2F5	E2F transcription factor 5, p130-binding	V	V		V	V		V	5
MAB21L1	mab-21-like 1 (C. elegans)	V	V		V	V		V	5
YWHAQ	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide	V	V	V	V	V			5
AZIN1	antizyme inhibitor 1	V	V		V	V		V	5
NGFR	nerve growth factor receptor	V	V	V	V			V	5
AGO1	Argonaute 1, RISC Catalytic Component	V	V		V	V		V	5
ZBTB4	zinc finger and BTB domain containing 4	V	V		V	V		V	5
ZIC4	Zic family member 4	V	V		V	V		V	5
ASH2L	ash2 (absent, small, or homeotic)-like (Drosophila)	V	V	V	V			V	5
ZMAT3	zinc finger, matrin-type 3	V	V		V	V		V	5
ARRDC3	arrestin domain containing 3	V	V		V	V	V		5
ARID2	AT rich interactive domain 2 (ARID, RFX-like)	V	V	V		V		V	5
EPB41L1	erythrocyte membrane protein band 4.1-like 1	V	V			V	V	V	5
KTN1	kinectin 1 (kinesin receptor)	V	V		V	V		V	5
RCAN2	regulator of calcineurin 2	V	V		V	V		V	5
EYA4	eyes absent homolog 4 (Drosophila)	V	V		V	V		V	5
AP1G1	adaptor-related protein complex 1, gamma 1 subunit	V	V	V	V	V			5
RAB5A	RAB5A, member RAS oncogene family	V	V	V		V		V	5
THRB	thyroid hormone receptor, beta	V		V	V		V	V	5
ANP32B	acidic (leucine-rich) nuclear phosphoprotein 32 family, member B	V	V		V	V		V	5
QKI	QKI, KH domain containing, RNA binding	V	V		V	V		V	5
CEP44	Centrosomal Protein 44	V	V			V	V	V	5
SLC25A25	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 25	V	V		V	V		V	5
KHSRP	KH-type splicing regulatory protein	V	V		V	V		V	5
ANXA2	annexin A2		V	V	V	V		V	5
SLC35F1	solute carrier family 35, member F1	V	V			V	V	V	5
API5	apoptosis inhibitor 5		V	V	V	V		V	5
FBXW7	F-box and WD repeat domain containing 7, E3 ubiquitin protein ligase	V	V	V		V		V	5
TGFBR3	transforming growth factor, beta receptor III	V		V	V	V		V	5
FGF14	fibroblast growth factor 14	V	V	V	V	V			5
OTUB2	OTU domain, ubiquitin aldehyde binding 2	V	V	V		V	V		5
SLC39A10	solute carrier family 39 (zinc transporter), member 10	V	V			V	V	V	5
JOSD1	Josephin domain containing 1	V	V		V	V		V	5
FN1	fibronectin 1	V	V	V	V	V			5
AMOT	angiominin	V	V	V		V		V	5
FNDC3A	fibronectin type III domain containing 3A	V	V		V	V		V	5
FNDC3B	fibronectin type III domain containing 3B	V	V		V	V		V	5
OTUD5	OTU domain containing 5	V	V		V		V	V	5
FOXP1	forkhead box P1	V	V		V	V		V	5
AKAP11	A kinase (PRKA) anchor protein 11	V	V		V	V		V	5

SLC44A1	solute carrier family 44 (choline transporter), member 1	V	V		V	V		V	5
AIF1L	allograft inflammatory factor 1-like	V	V			V	V	V	5
OTX2	orthodenticle homeobox 2	V	V		V	V		V	5
SMARCC1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1	V	V	V		V		V	5
HNRNPK	heterogeneous nuclear ribonucleoprotein K		V	V	V	V		V	5
TBC1D15	TBC1 domain family, member 15	V	V		V	V		V	5
ADPGK	ADP-dependent glucokinase	V	V		V	V		V	5
HSPE1	heat shock 10kDa protein 1	V		V	V		V	V	5
HSPD1	heat shock 60kDa protein 1 (chaperonin)		V	V	V	V		V	5
JUND	jun D proto-oncogene		V	V	V	V		V	5
SYT1	synaptotagmin I	V	V	V	V			V	5
KCNA5	potassium voltage-gated channel, shaker-related subfamily, member 5		V	V	V	V		V	5
ZFP36L1	ZFP36 ring finger protein-like 1		V	V	V	V		V	5
PDCD10	programmed cell death 10	V	V		V	V		V	5
PDGFA	platelet-derived growth factor alpha polypeptide	V	V	V		V		V	5
GDAP1L1	ganglioside induced differentiation associated protein 1-like 1	V	V		V	V		V	5
GDF6	growth differentiation factor 6	V	V		V	V		V	5
STC2	stanniocalcin 2	V	V	V		V		V	5
HMGN1	high mobility group nucleosome binding domain 1	V		V	V	V		V	5
GIT1	G protein-coupled receptor kinase interacting ArfGAP 1	V	V		V	V		V	5
HIVEP2	human immunodeficiency virus type I enhancer binding protein 2	V	V		V	V		V	5
GLCCI1	glucocorticoid induced transcript 1	V	V			V	V	V	5
SMG7	SMG7 nonsense mediated mRNA decay factor	V	V			V	V	V	5
PDIK1L	PDLIM1 interacting kinase 1 like	V	V		V	V		V	5
GMFB	glia maturation factor, beta	V	V	V			V	V	5
PTPRG	protein tyrosine phosphatase, receptor type, G	V	V		V	V		V	5
HIC2	hypermethylated in cancer 2	V	V		V	V		V	5
HIAT1	hippocampus abundant transcript 1	V	V		V	V		V	5
PHAX	phosphorylated adaptor for RNA export	V		V	V	V		V	5
PTBP1	polypyrimidine tract binding protein 1	V		V	V		V	V	5
HACE1	HECT domain and ankyrin repeat containing E3 ubiquitin protein ligase 1	V	V		V	V		V	5
SNAI2	snail family zinc finger 2	V	V		V	V		V	5
PRKRIR	protein-kinase, interferon-inducible double stranded RNA dependent inhibitor, repressor of (P58 repressor)	V	V	V		V		V	5
MPP7	membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7)	V	V	V		V		V	5
PICALM	phosphatidylinositol binding clathrin assembly protein	V	V	V		V		V	5
GPR85	G protein-coupled receptor 85	V	V		V			V	4
GRK6	G protein-coupled receptor kinase 6	V		V	V			V	4
GPR137C	G protein-coupled receptor 137C	V	V			V		V	4
GTF2B	general transcription factor IIB	V		V	V			V	4
GPD2	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)	V			V	V		V	4

SOX6	SRY (sex determining region Y)-box 6	V	V		V		V	4
HAND2	heart and neural crest derivatives expressed 2	V		V	V		V	4
HCN1	hyperpolarization activated cyclic nucleotide-gated potassium channel 1	V	V			V	V	4
GNPTAB	N-acetylglucosamine-1-phosphate transferase, alpha and beta subunits	V			V		V	4
SMYD4	SET and MYND domain containing 4	V	V		V		V	4
GNPDA2	glucosamine-6-phosphate deaminase 2	V			V	V	V	4
SP1	Sp1 transcription factor	V	V				V	4
SPTLC3	serine palmitoyltransferase, long chain base subunit 3	V	V			V	V	4
SRI	sorcin	V	V	V			V	4
SMEK2	SMEK homolog 2, suppressor of mek1 (Dictyostelium)	V	V			V	V	4
HMGCR	3-hydroxy-3-methylglutaryl-CoA reductase	V	V		V		V	4
SS18	synovial sarcoma translocation, chromosome 18	V	V		V		V	4
HNRNPA3	heterogeneous nuclear ribonucleoprotein A3	V	V			V	V	4
STK39	serine threonine kinase 39	V		V	V		V	4
GAN	gigaxonin	V	V			V	V	4
TAGLN2	transgelin 2	V	V			V	V	4
TAL1	T-cell acute lymphocytic leukemia 1	V		V		V	V	4
TAOK3	TAO kinase 3	V	V			V	V	4
FUBP3	far upstream element (FUSE) binding protein 3	V	V			V	V	4
FRS2	fibroblast growth factor receptor substrate 2	V	V			V	V	4
IGFBP5	insulin-like growth factor binding protein 5	V	V		V		V	4
SMARCB1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1	V		V	V		V	4
SMAP1	small ArfGAP 1	V			V	V	V	4
INSM1	insulinoma-associated 1	V	V	V		V		4
SLC8A1	solute carrier family 8 (sodium/calcium exchanger), member 1	V	V	V			V	4
INTS6	integrator complex subunit 6	V	V	V			V	4
SLC7A6	solute carrier family 7 (amino acid transporter light chain, y+L system), member 6	V	V	V			V	4
SLC5A3	solute carrier family 5 (sodium/myo-inositol cotransporter), member 3	V	V			V	V	4
TBX3	T-box 3	V		V	V		V	4
FNBP1L	formin binding protein 1-like	V	V			V	V	4
TEF	thyrotrophic embryonic factor	V		V	V		V	4
KANK4	KN motif and ankyrin repeat domains 4	V	V			V	V	4
TFE3	transcription factor binding to IGHM enhancer 3	V			V		V	4
TFEC	transcription factor EC	V	V	V		V		4
SLC38A3	solute carrier family 38, member 3	V		V	V		V	4
KDM2B	Lysine Demethylase 2B	V	V	V	V			4
SLC31A1	solute carrier family 31 (copper transporter), member 1	V	V		V		V	4
FAM91A1	family with sequence similarity 91, member A1	V	V			V	V	4
KDEL2	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2	V	V	V			V	4
FAM63B	family with sequence similarity 63, member B	V	V			V	V	4

C2CD5	C2 Calcium Dependent Domain Containing 5	V	V			V		V	4
ULK2	Unc-51 Like Autophagy Activating Kinase 2	V	V				V	V	4
SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13	V	V					V	4
FAM46C	family with sequence similarity 46, member C	V	V					V	4
ZC2HC1C	Zinc Finger C2HC-Type Containing 1C	V	V					V	4
NEXMIF	Neurite Extension And Migration Factor	V	V					V	4
TGIF2	TGFB-induced factor homeobox 2	V	V			V		V	4
SLC25A22	solute carrier family 25 (mitochondrial carrier: glutamate), member 22	V				V		V	4
TIGD6	tigger transposable element derived 6	V	V				V	V	4
KLF4	Kruppel-like factor 4 (gut)	V			V	V		V	4
SLC23A2	solute carrier family 23 (ascorbic acid transporter), member 2	V	V					V	4
EPHB1	EPH receptor B1	V	V		V		V		4
SLC16A3	solute carrier family 16 (monocarboxylate transporter), member 3	V			V	V		V	4
LARP4	La ribonucleoprotein domain family, member 4	V	V				V	V	4
LASP1	LIM and SH3 protein 1	V				V		V	4
CERS2	Ceramide Synthase 2	V	V				V	V	4
SLC16A2	solute carrier family 16, member 2 (thyroid hormone transporter)	V	V				V	V	4
SH3TC2	SH3 domain and tetratricopeptide repeats 2	V	V					V	4
EMP1	epithelial membrane protein 1	V	V		V			V	4
SH3PXD2B	SH3 and PX domains 2B	V	V					V	4
SH3BGL3	SH3 domain binding glutamic acid-rich protein like 3	V				V	V	V	4
EML4	echinoderm microtubule associated protein like 4	V	V			V		V	4
ELOF1	elongation factor 1 homolog (S. cerevisiae)	V				V	V	V	4
LPPR4	lipid phosphate phosphatase-related protein type 4	V	V				V	V	4
LRAT	lecithin retinol acyltransferase (phosphatidylcholine--retinol O-acyltransferase)	V	V					V	4
ELMO1	engulfment and cell motility 1	V	V		V		V		4
EIF4E3	eukaryotic translation initiation factor 4E family member 3	V	V				V	V	4
LRRC8A	leucine rich repeat containing 8 family, member A	V				V	V	V	4
EIF1AD	eukaryotic translation initiation factor 1A domain containing	V	V				V	V	4
TM4SF1	transmembrane 4 L six family member 1	V	V		V			V	4
TMEM135	transmembrane protein 135	V	V			V		V	4
DNAJC5	Dnaj (Hsp40) homolog, subfamily C, member 5	V	V			V		V	4
MAN1C1	mannosidase, alpha, class 1C, member 1	V	V				V	V	4
DNAJC13	Dnaj (Hsp40) homolog, subfamily C, member 13	V	V			V	V		4
TMEM178A	Transmembrane Protein 178A	V	V				V	V	4
MAP3K1	mitogen-activated protein kinase kinase kinase 1, E3 ubiquitin protein ligase	V	V				V	V	4
MAP4K2	mitogen-activated protein kinase kinase kinase 2	V			V	V		V	4
TMEM47	transmembrane protein 47	V	V		V			V	4
MAPK1	mitogen-activated protein kinase 1	V			V		V	V	4
DICER1	dicer 1, ribonuclease type III	V					V	V	4

TMOD2	tropomodulin 2 (neuronal)	V	V		V	V			4
MBTD1	mbt domain containing 1	V	V			V	V		4
SERP1	stress-associated endoplasmic reticulum protein 1	V		V			V	V	4
DGKG	diacylglycerol kinase, gamma 90kDa	V	V		V			V	4
TNPO1	transportin 1	V		V		V		V	4
MED14	mediator complex subunit 14	V	V	V			V		4
DDX3X	DEAD (Asp-Glu-Ala-Asp) box helicase 3, X-linked	V	V	V				V	4
MEOX2	mesenchyme homeobox 2	V	V		V			V	4
DCP2	decapping mRNA 2	V		V	V			V	4
TPM3	tropomyosin 3	V	V		V	V			4
MIER1	mesoderm induction early response 1, transcriptional regulator	V	V			V		V	4
CXORF23	chromosome X open reading frame 23	V	V		V		V		4
TRHDE	thyrotropin-releasing hormone degrading enzyme	V	V	V		V			4
TRPS1	trichorhinophalangeal syndrome I	V		V	V			V	4
RUNX1	runt-related transcription factor 1	V	V			V	V		4
TTC7B	tetratricopeptide repeat domain 7B	V	V			V		V	4
CRK	v-crk avian sarcoma virus CT10 oncogene homolog	V	V	V	V				4
MMD2	monocyte to macrophage differentiation-associated 2	V	V				V	V	4
CRIM1	cysteine rich transmembrane BMP regulator 1 (chordin-like)	V		V	V			V	4
CPLX2	complexin 2	V	V			V		V	4
MON2	MON2 homolog (S. cerevisiae)	V	V			V		V	4
UBE2D2	ubiquitin-conjugating enzyme E2D 2	V	V			V	V		4
COL6A3	collagen, type VI, alpha 3	V	V	V			V		4
UBQLN1	ubiquilin 1	V	V		V	V			4
CCDC141	coiled-coil domain containing 141	V				V	V	V	4
CCBL2	cysteine conjugate-beta lyase 2	V	V		V		V		4
CAP1	CAP, adenylate cyclase-associated protein 1 (yeast)	V		V	V			V	4
CPED1	Cadherin Like And PC-Esterase Domain Containing 1	V	V			V		V	4
TMSB4X	thymosin beta 4, X-linked		V		V	V		V	4
RNF40	ring finger protein 40, E3 ubiquitin protein ligase	V			V		V	V	4
MT1H	metallothionein 1H	V	V	V			V		4
SMIM14	Small Integral Membrane Protein 14	V	V		V			V	4
RNF19A	ring finger protein 19A, RBR E3 ubiquitin protein ligase	V	V	V	V				4
MTSS1	metastasis suppressor 1	V		V	V			V	4
MTX1	metaxin 1	V	V		V			V	4
MUM1L1	melanoma associated antigen (mutated) 1-like 1	V	V		V			V	4
C2ORF69	chromosome 2 open reading frame 69	V	V			V		V	4
C20ORF112	chromosome 20 open reading frame 112	V			V	V		V	4
VEZF1	vascular endothelial zinc finger 1	V	V			V		V	4
RNF165	ring finger protein 165	V	V			V		V	4

KAT6A	Lysine Acetyltransferase 6A	V		V	V		V		4
C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1	V	V			V	V		4
C11ORF57	chromosome 11 open reading frame 57	V	V				V	V	4
NADK	NAD kinase	V			V	V		V	4
VTI1A	vesicle transport through interaction with t-SNAREs 1A	V	V	V		V			4
NAP1L5	nucleosome assembly protein 1-like 5	V	V		V			V	4
SKIDA1	SKI/DACH Domain Containing 1	V	V			V		V	4
RNF111	ring finger protein 111	V	V			V		V	4
BZRAP1	benzodiazapine receptor (peripheral) associated protein 1	V	V	V		V			4
BTAF1	BTAF1 RNA polymerase II, B-TFIID transcription factor-associated, 170kDa	V	V			V		V	4
WIPF2	WAS/WASL interacting protein family, member 2	V	V			V		V	4
BOLL	boule-like RNA-binding protein	V			V		V	V	4
BHLHE22	Basic Helix-Loop-Helix Family Member E22	V	V			V	V		4
RICTOR	RPTOR independent companion of MTOR, complex 2	V	V			V		V	4
XPNPEP3	X-prolyl aminopeptidase (aminopeptidase P) 3, putative	V	V				V	V	4
YES1	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1	V			V		V	V	4
BCL11B	B-cell CLL/lymphoma 11B (zinc finger protein)	V				V	V	V	4
ATP6V1A	ATPase, H+ transporting, lysosomal 70kDa, V1 subunit A	V	V			V		V	4
RGAG1	retrotransposon gag domain containing 1	V	V			V		V	4
NOTCH2	notch 2	V	V	V			V		4
ZNF146	zinc finger protein 146	V	V	V	V				4
NPTX1	neuronal pentraxin I	V		V	V		V		4
ARHGEF3	Rho guanine nucleotide exchange factor (GEF) 3	V	V				V	V	4
ARHGEF18	Rho/Rac guanine nucleotide exchange factor (GEF) 18	V		V	V		V		4
ZNF217	zinc finger protein 217	V		V	V			V	4
NR4A3	nuclear receptor subfamily 4, group A, member 3	V	V			V		V	4
ARF3	ADP-ribosylation factor 3	V	V			V		V	4
ZNF280D	zinc finger protein 280D	V	V			V	V		4
ZNF580	zinc finger protein 580	V	V			V		V	4
ZZZ3	zinc finger, ZZ-type containing 3	V	V			V		V	4
NXT2	nuclear transport factor 2-like export factor 2	V	V				V	V	4
PUM2	pumilio RNA-binding family member 2	V	V			V	V		4
ORC6	Origin Recognition Complex Subunit 6	V	V	V			V		4
PTPRT	protein tyrosine phosphatase, receptor type, T	V	V			V	V		4
OSBPL7	oxysterol binding protein-like 7	V			V	V		V	4
BET1	Bet1 golgi vesicular membrane trafficking protein		V	V	V			V	4
CALM1	calmodulin 1 (phosphorylase kinase, delta)		V	V			V	V	4
CELSR3	cadherin, EGF LAG seven-pass G-type receptor 3		V	V	V	V			4
EIF1AX	eukaryotic translation initiation factor 1A, X-linked		V		V	V		V	4
PALLD	palladin, cytoskeletal associated protein	V		V	V		V		4

HMGXB4	HMG-Box Containing 4			V	V	V	V	V		4
PCDH17	protocadherin 17		V	V			V		V	4
ACVR2B	activin A receptor, type IIB		V	V			V		V	4
PDCD4	programmed cell death 4 (neoplastic transformation inhibitor)		V			V		V	V	4
PTPRK	protein tyrosine phosphatase, receptor type, K		V	V	V		V			4
ACAP2	ArfGAP with coiled-coil, ankyrin repeat and PH domains 2		V	V		V			V	4
MYEF2	myelin expression factor 2			V			V	V	V	4
PEA15	phosphoprotein enriched in astrocytes 15		V	V			V		V	4
NDFIP2	Nedd4 family interacting protein 2			V			V	V	V	4
ABHD2	abhydrolase domain containing 2		V		V		V		V	4
PGAM1	phosphoglycerate mutase 1 (brain)		V		V	V			V	4
PTPN1	protein tyrosine phosphatase, non-receptor type 1		V		V		V		V	4
CDK14	Cyclin Dependent Kinase 14			V		V		V	V	4
SEC22B	SEC22 vesicle trafficking protein homolog B (<i>S. cerevisiae</i>) (gene/pseudogene)			V	V		V		V	4
PHC2	polyhomeotic homolog 2 (<i>Drosophila</i>)		V		V	V		V		4
SMARCA4	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4			V	V	V			V	4
PHF6	PHD finger protein 6		V	V		V	V			4
FSTL1	follistatin-like 1	V	V	V				V		4
PHLPP2	PH Domain And Leucine Rich Repeat Protein Phosphatase 2		V				V	V	V	4
PIAS3	protein inhibitor of activated STAT, 3		V	V		V			V	4
GPR6	G protein-coupled receptor 6		V	V			V		V	4
PREX1	phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1		V	V	V				V	4
PPIB	peptidylprolyl isomerase B (cyclophilin B)		V			V	V		V	4
POLDIP3	polymerase (DNA-directed), delta interacting protein 3		V			V	V		V	4
POLA1	polymerase (DNA directed), alpha 1, catalytic subunit		V		V	V			V	4
POGK	pogo transposable element with KRAB domain		V	V		V			V	4
PLEKHO2	pleckstrin homology domain containing, family O member 2		V	V			V		V	4
PLEKHA7	pleckstrin homology domain containing, family A member 7		V	V					V	3
PLEK	pleckstrin		V	V				V		3
PLAG1	pleiomorphic adenoma gene 1		V			V			V	3
PIKFYVE	Phosphoinositide Kinase, FYVE-Type Zinc Finger Containing		V	V				V		3
PPP1R9A	protein phosphatase 1, regulatory subunit 9A		V	V			V			3
PPP2R5C	protein phosphatase 2, regulatory subunit B', gamma		V	V				V		3
PRDM16	PR domain containing 16		V			V		V		3
PIM1	pim-1 oncogene		V		V	V				3
PRKACB	protein kinase, cAMP-dependent, catalytic, beta		V		V	V				3
PRKCE	protein kinase C, epsilon		V		V				V	3
PHKG2	phosphorylase kinase, gamma 2 (testis)		V		V	V				3
PRLR	prolactin receptor		V		V	V				3
PHC3	polyhomeotic homolog 3 (<i>Drosophila</i>)		V	V			V			3

PTGIR	prostaglandin I2 (prostacyclin) receptor (IP)	V	V	V						3
PTGS1	prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)	V	V					V		3
PGM5	phosphoglucomutase 5	V	V	V						3
PGD	phosphogluconate dehydrogenase	V		V					V	3
PTPRF	protein tyrosine phosphatase, receptor type, F	V	V					V		3
PECAM1	platelet/endothelial cell adhesion molecule 1	V	V	V						3
PDE5A	phosphodiesterase 5A, cGMP-specific	V	V	V						3
PTPRS	protein tyrosine phosphatase, receptor type, S	V						V	V	3
OSBP	oxysterol binding protein	V					V		V	3
OLFML2A	olfactomedin-like 2A	V					V		V	3
NUP50	nucleoporin 50kDa	V						V	V	3
QSER1	glutamine and serine rich 1	V	V					V		3
RAB11FIP4	RAB11 family interacting protein 4 (class II)	V	V					V		3
RAB3IP	RAB3A interacting protein	V	V					V		3
NSF	N-ethylmaleimide-sensitive factor	V			V	V				3
RALA	v-ral simian leukemia viral oncogene homolog A (ras related)	V			V	V				3
RAP1A	RAP1A, member of RAS oncogene family	V				V			V	3
RAPGEF2	Rap guanine nucleotide exchange factor (GEF) 2	V						V	V	3
RAPH1	Ras association (RalGDS/AF-6) and pleckstrin homology domains 1	V	V					V		3
NRCAM	neuronal cell adhesion molecule	V				V		V		3
NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	V	V					V		3
RBM33	RNA binding motif protein 33	V	V					V		3
NR1H3	nuclear receptor subfamily 1, group H, member 3	V				V			V	3
RERE	arginine-glutamic acid dipeptide (RE) repeats	V						V	V	3
NMT2	N-myristoyltransferase 2	V				V			V	3
NET1	neuroepithelial cell transforming 1	V	V						V	3
NECAB1	N-terminal EF-hand calcium binding protein 1	V				V			V	3
RIMS4	regulating synaptic membrane exocytosis 4	V				V			V	3
NCOA1	nuclear receptor coactivator 1	V	V						V	3
NCBP1	nuclear cap binding protein subunit 1, 80kDa	V			V				V	3
NAALADL2	N-acetylated alpha-linked acidic dipeptidase-like 2	V				V			V	3
RNF141	ring finger protein 141	V	V						V	3
RNF145	ring finger protein 145	V	V					V		3
MYO15A	myosin XVA	V			V				V	3
PPP1R3B	protein phosphatase 1, regulatory subunit 3B							V	V	3
MTMR12	myotubularin related protein 12	V	V						V	3
MT1G	metallothionein 1G	V	V	V						3
MSRB3	methionine sulfoxide reductase B3	V	V	V						3
RP2	retinitis pigmentosa 2 (X-linked recessive)	V	V						V	3
RPA1	replication protein A1, 70kDa	V			V			V		3

RPE	ribulose-5-phosphate-3-epimerase	V		V	V				3
RPRD1A	regulation of nuclear pre-mRNA domain containing 1A	V	V				V		3
RPS6KA5	ribosomal protein S6 kinase, 90kDa, polypeptide 5	V	V	V					3
MS4A1	membrane-spanning 4-domains, subfamily A, member 1	V	V				V		3
MRAS	muscle RAS oncogene homolog	V					V	V	3
MPZL1	myelin protein zero-like 1	V	V	V					3
RSPO1	R-spondin 1	V	V				V		3
MOB3B	MOB Kinase Activator 3B	V	V				V		3
RTKN2	rhotekin 2	V	V				V		3
RTN3	reticulon 3	V					V	V	3
MKL2	MKL/myocardin-like 2	V	V					V	3
MKL1	megakaryoblastic leukemia (translocation) 1	V				V		V	3
SAMSN1	SAM domain, SH3 domain and nuclear localization signals 1	V	V				V		3
SATB2	SATB homeobox 2	V	V				V		3
SEC61A1	Sec61 alpha 1 subunit (<i>S. cerevisiae</i>)	V				V		V	3
MINK1	misshapen-like kinase 1	V	V				V		3
MGAT4A	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme A	V	V					V	3
MEA1	male-enhanced antigen 1	V	V			V			3
SEPT2	septin 2	V		V				V	3
MCHR1	melanin-concentrating hormone receptor 1	V		V				V	3
SERPINB8	serpin peptidase inhibitor, clade B (ovalbumin), member 8	V	V	V					3
MAP2	microtubule-associated protein 2	V	V	V					3
LRRK1	leucine-rich repeat kinase 1	V	V				V		3
SFRP2	secreted frizzled-related protein 2	V	V				V		3
LRRC16A	leucine rich repeat containing 16A	V	V				V		3
LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor	V	V	V					3
SCAF11	SR-Related CTD Associated Factor 11	V	V					V	3
LPP	LIM domain containing preferred translocation partner in lipoma	V	V			V			3
LMBR1	limb development membrane protein 1	V					V	V	3
LITAF	lipopolysaccharide-induced TNF factor	V	V	V					3
LIPI	lipase, member I	V	V				V		3
LHX9	LIM homeobox 9	V					V	V	3
SLC10A7	solute carrier family 10, member 7	V					V	V	3
LETM1	leucine zipper-EF-hand containing transmembrane protein 1	V				V		V	3
LAMC2	laminin, gamma 2	V	V				V		3
SLC1A2	solute carrier family 1 (glial high affinity glutamate transporter), member 2	V	V				V		3
KRAS	Kirsten rat sarcoma viral oncogene homolog	V		V				V	3
SLC25A1	solute carrier family 25 (mitochondrial carrier; citrate transporter), member 1	V		V	V				3
KIF3C	kinesin family member 3C	V	V				V		3
G2E3	G2/M-Phase Specific E3 Ubiquitin Protein Ligase	V					V	V	3

PHF24	PHD Finger Protein 24	V	V				V	3
KCTD10	potassium channel tetramerization domain containing 10	V			V		V	3
KCNJ2	potassium inwardly-rectifying channel, subfamily J, member 2	V	V				V	3
SLC37A3	solute carrier family 37, member 3	V			V		V	3
SLC38A2	solute carrier family 38, member 2	V		V	V			3
KCNJ15	potassium inwardly-rectifying channel, subfamily J, member 15	V	V				V	3
KCNE1	potassium voltage-gated channel, Isk-related family, member 1	V	V	V				3
KDM5C	Lysine Demethylase 5C	V		V			V	3
ITGB3	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)	V		V	V			3
SLC6A20	solute carrier family 6 (proline IMINO transporter), member 20	V		V			V	3
SLC7A2	solute carrier family 7 (cationic amino acid transporter, y+ system), member 2	V		V			V	3
ISL2	ISL LIM homeobox 2	V					V	3
INTS2	integrator complex subunit 2	V	V			V		3
SLC8A2	solute carrier family 8 (sodium/calcium exchanger), member 2	V				V	V	3
ILDR1	immunoglobulin-like domain containing receptor 1	V	V				V	3
SMARCAD1	SWI/SNF-related, matrix-associated actin-dependent regulator of chromatin, subfamily a, containing DEAD/H box 1	V	V		V			3
IKBKB	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta	V		V			V	3
ID4	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein	V		V	V			3
HLTF	helicase-like transcription factor	V	V				V	3
HIPK1	homeodomain interacting protein kinase 1	V	V			V		3
HECW2	HECT, C2 and WW domain containing E3 ubiquitin protein ligase 2	V	V				V	3
GYPA	glycophorin A (MNS blood group)	V	V				V	3
GRPEL2	GrpE-like 2, mitochondrial (E. coli)	V	V				V	3
SNED1	sushi, nidogen and EGF-like domains 1	V					V	3
GPR125	G protein-coupled receptor 125	V				V	V	3
SOX5	SRY (sex determining region Y)-box 5	V	V			V		3
GOLPH3	golgi phosphoprotein 3 (coat-protein)	V			V		V	3
GNPNAT1	glucosamine-phosphate N-acetyltransferase 1	V			V		V	3
GNE	glucosamine (UDP-N-acetyl)-2-epimerase/N-acetylmannosamine kinase	V		V			V	3
GNB1	guanine nucleotide binding protein (G protein), beta polypeptide 1	V		V	V			3
SPEG	SPEG complex locus	V				V	V	3
SPHK2	sphingosine kinase 2	V		V			V	3
GLS	glutaminase	V	V				V	3
SPRY3	sprouty homolog 3 (Drosophila)	V	V				V	3
GLIS2	GLIS family zinc finger 2	V				V	V	3
SRC	v-src avian sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog	V	V				V	3
SRGAP3	SLIT-ROBO Rho GTPase activating protein 3	V	V	V				3
GK5	glycerol kinase 5 (putative)	V	V				V	3
GIMAP6	GTPase, IMAP family member 6	V	V				V	3
SSR1	signal sequence receptor, alpha	V	V	V				3

STAG2	stromal antigen 2	V	V		V					3
STARD7	StAR-related lipid transfer (START) domain containing 7	V	V						V	3
GH2	growth hormone 2	V	V					V		3
STK3	serine/threonine kinase 3	V	V	V						3
GCH1	GTP cyclohydrolase 1	V	V			V				3
STX12	syntaxin 12	V	V					V		3
STX6	syntaxin 6	V			V				V	3
GAS2L1	growth arrest-specific 2 like 1	V				V			V	3
SYNJ2	synaptojanin 2	V			V	V				3
GALNT15	Polypeptide N-Acetylgalactosaminyltransferase 15	V	V					V		3
GAD2	glutamate decarboxylase 2 (pancreatic islets and brain, 65kDa)	V	V	V						3
GABBR2	gamma-aminobutyric acid (GABA) B receptor, 2	V	V						V	3
G6PD	glucose-6-phosphate dehydrogenase	V			V				V	3
FYB	FYN binding protein	V			V				V	3
FUT9	fucosyltransferase 9 (alpha (1,3) fucosyltransferase)	V	V	V						3
FRK	fyn-related kinase	V	V	V						3
FMNL2	formin-like 2	V	V					V		3
TERF2	telomeric repeat binding factor 2	V	V	V						3
FLI1	Fli-1 proto-oncogene, ETS transcription factor	V	V					V		3
FKTN	fukutin	V	V						V	3
FCHSD2	FCH and double SH3 domains 2	V	V						V	3
TGIF1	TGFB-induced factor homeobox 1	V			V	V				3
FAM155B	family with sequence similarity 155, member B	V	V					V		3
FAM131B	family with sequence similarity 131, member B	V	V						V	3
FAM107B	family with sequence similarity 107, member B	V							V	3
FAM102A	family with sequence similarity 102, member A	V							V	3
FAF2	Fas associated factor family member 2	V	V						V	3
TKT	transketolase	V			V	V				3
EDA	ectodysplasin A	V	V	V						3
DPY19L4	dpy-19-like 4 (C. elegans)	V	V						V	3
DNM3	dynamin 3	V	V						V	3
DMRT2	doublesex and mab-3 related transcription factor 2	V					V		V	3
TMEM39A	transmembrane protein 39A	V	V						V	3
DLD	dihydrolipoamide dehydrogenase	V	V		V					3
DLC1	deleted in liver cancer 1	V			V	V				3
DGKZ	diacylglycerol kinase, zeta	V			V	V				3
TMSB4XP8	Thymosin Beta 4, X-Linked Pseudogene 8	V	V							3
DGKH	diacylglycerol kinase, eta	V	V					V		3
DDX3Y	DEAD (Asp-Glu-Ala-Asp) box helicase 3, Y-linked	V	V						V	3
DAP	death-associated protein	V	V						V	3

CYP4B1	cytochrome P450, family 4, subfamily B, polypeptide 1	V	V	V						3
TPPP	tubulin polymerization promoting protein	V		V					V	3
CYP11B1	cytochrome P450, family 11, subfamily B, polypeptide 1	V	V	V						3
CTNNA2	catenin (cadherin-associated protein), alpha 2	V	V					V		3
CTCF	CCCTC-binding factor (zinc finger protein)-like	V	V					V		3
CTBP2	C-terminal binding protein 2	V					V		V	3
TSPAN4	tetraspanin 4	V				V			V	3
TSPAN9	tetraspanin 9	V					V		V	3
CSTA	cystatin A (stefin A)	V	V	V						3
CSNK1G1	casein kinase 1, gamma 1	V	V				V			3
CPM	carboxypeptidase M	V		V				V		3
CPA4	carboxypeptidase A4	V	V						V	3
CLOCK	clock circadian regulator	V	V			V				3
CHL1	cell adhesion molecule L1-like	V	V					V		3
CDON	cell adhesion associated, oncogene regulated	V	V						V	3
CD28	CD28 molecule	V	V	V						3
CAV2	caveolin 2	V	V	V						3
UNC50	unc-50 homolog (C. elegans)	V					V		V	3
CAPZA1	capping protein (actin filament) muscle Z-line, alpha 1	V	V				V			3
CAND1	cullin-associated and neddylation-dissociated 1	V	V					V		3
CAMK2G	calcium/calmodulin-dependent protein kinase II gamma	V	V			V				3
C7ORF60	chromosome 7 open reading frame 60	V	V				V			3
VAPA	VAMP (vesicle-associated membrane protein)-associated protein A, 33kDa	V						V	V	3
C6ORF120	chromosome 6 open reading frame 120	V	V				V			3
VAT1	vesicle amine transport 1	V	V						V	3
EVA1C	Eva-1 Homolog C	V	V					V		3
CCSAP	Centriole, Cilia And Spindle Associated Protein	V				V			V	3
TICRR	TOPBP1 Interacting Checkpoint And Replication Regulator	V				V		V		3
VPS45	vacuolar protein sorting 45 homolog (S. cerevisiae)	V					V		V	3
VSIG1	V-set and immunoglobulin domain containing 1	V	V					V		3
WBP1L	WW Domain Binding Protein 1 Like	V					V		V	3
WDFY1	WD repeat and FYVE domain containing 1	V	V	V						3
BTRC	beta-transducin repeat containing E3 ubiquitin protein ligase	V	V					V		3
BRWD1	bromodomain and WD repeat domain containing 1	V	V					V		3
WDR6	WD repeat domain 6	V				V			V	3
WDR61	WD repeat domain 61	V		V		V				3
WEE1	WEE1 G2 checkpoint kinase	V	V				V			3
BPNT1	3'(2'), 5'-bisphosphate nucleotidase 1	V				V			V	3
BICD1	bicaudal D homolog 1 (Drosophila)	V	V				V			3
WSCD2	WSC domain containing 2	V	V						V	3

BCMO1	beta-carotene 15,15'-monooxygenase 1	V		V	V				3
XPO6	exportin 6	V			V			V	3
BCL2L2	BCL2-like 2	V	V					V	3
YPEL2	yippee-like 2 (Drosophila)	V					V	V	3
BAAT	bile acid CoA: amino acid N-acyltransferase (glycine N-choloyltransferase)	V	V				V		3
ATP6V1B2	ATPase, H+ transporting, lysosomal 56/58kDa, V1 subunit B2	V			V			V	3
ZBTB26	zinc finger and BTB domain containing 26	V	V				V		3
ASRGL1	asparaginase like 1	V	V				V		3
ZBTB6	zinc finger and BTB domain containing 6	V	V					V	3
ZC3H14	zinc finger CCCH-type containing 14	V	V					V	3
ZC3H7B	zinc finger CCCH-type containing 7B	V					V	V	3
ZC3HAV1	zinc finger CCCH-type, antiviral 1	V	V					V	3
ZFP91	ZFP91 zinc finger protein	V				V		V	3
ASPH	aspartate beta-hydroxylase	V	V					V	3
ASH1L	ash1 (absent, small, or homeotic)-like (Drosophila)	V			V			V	3
ZMYND11	zinc finger, MYND-type containing 11	V	V					V	3
ARPC1A	actin related protein 2/3 complex, subunit 1A, 41kDa	V			V	V			3
ZNF215	zinc finger protein 215	V	V		V				3
ARFIP1	ADP-ribosylation factor interacting protein 1	V	V				V		3
APPBP2	amyloid beta precursor protein (cytoplasmic tail) binding protein 2	V	V					V	3
ZNF24	zinc finger protein 24	V			V			V	3
ZNF280C	zinc finger protein 280C	V	V					V	3
AP1S3	adaptor-related protein complex 1, sigma 3 subunit	V	V		V				3
ZNF281	zinc finger protein 281	V			V	V			3
ZNF365	zinc finger protein 365	V	V					V	3
ZNF398	zinc finger protein 398	V	V				V		3
ANXA13	annexin A13	V	V		V				3
ZNF652	zinc finger protein 652	V						V	3
ZNF800	zinc finger protein 800	V	V			V		V	3
ANO1	anoctamin 1, calcium activated chloride channel	V						V	3
ANKRD29	ankyrin repeat domain 29	V	V			V			3
ANKRD23	ankyrin repeat domain 23	V				V		V	3
AMPH	amphiphysin	V			V	V			3
AKAP12	A kinase (PRKA) anchor protein 12	V			V	V			3
AGPAT1	1-acylglycerol-3-phosphate O-acyltransferase 1	V	V					V	3
AFF4	AF4/FMR2 family, member 4	V	V		V				3
FGD4	FYVE, RhoGEF and PH domain containing 4							V	3
RALGAPA1	Ral GTPase Activating Protein Catalytic Alpha Subunit 1							V	3
GXYLT1	Glucoside Xylosyltransferase 1							V	3
AFF2	AF4/FMR2 family, member 2	V	V					V	3

Supplemental Table S3. Mmu-miR-381-3p *in silico* predicted targets.

TARGET GENE	GENE DESCRIPTION	VALIDATION	DIANA	MIRANDA	MIRBRIDGE	PICTAR	PITA	RNA22	TARGETSCAN	TOTAL_HIT
KLF12	Kruppel-like factor 12		V	V			V	V	V	5
LRRC4	leucine rich repeat containing 4		V	V			V	V	V	5
MBNL1	muscleblind-like splicing regulator 1		V	V		V	V		V	5
HIVEP2	human immunodeficiency virus type I enhancer binding protein 2		V	V			V	V	V	5
HIPK1	homeodomain interacting protein kinase 1		V	V			V	V	V	5
NR5A2	nuclear receptor subfamily 5, group A, member 2		V	V			V	V	V	5
NRP2	neuropilin 2		V	V			V	V	V	5
PCGF3	polycomb group ring finger 3		V	V			V	V	V	5
EPS8	epidermal growth factor receptor pathway substrate 8		V	V			V	V	V	5
EPB41L1	erythrocyte membrane protein band 4.1-like 1		V	V			V	V	V	5
EML1	echinoderm microtubule associated protein like 1		V	V			V	V	V	5
EIF2B5	eukaryotic translation initiation factor 2B, subunit 5 epsilon, 82kDa		V	V			V	V	V	5
RAC1	ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)		V	V			V	V	V	5
KIF1B	kinesin family member 1B		V	V			V	V	V	5
YES1	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1		V	V			V	V	V	5
SEMA6D	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6D		V	V		V	V		V	5
SLC1A2	solute carrier family 1 (glial high affinity glutamate transporter), member 2		V	V			V	V	V	5
SLC6A8	solute carrier family 6 (neurotransmitter transporter), member 8		V	V			V	V	V	5
SRGAP2	SLIT-ROBO Rho GTPase activating protein 2		V	V			V	V	V	5
TEAD1	TEA domain family member 1 (SV40 transcriptional enhancer factor)		V	V			V	V	V	5
TMEM168	transmembrane protein 168		V	V			V	V	V	5
UBN1	ubiquitin 1		V	V			V	V	V	5
VCPIP1	valosin containing protein (p97)/p47 complex interacting protein 1		V	V			V	V	V	5
VAPA	VAMP (vesicle-associated membrane protein)-associated protein A, 33kDa		V	V			V	V	V	5
USP34	ubiquitin specific peptidase 34		V	V			V		V	4
ANO4	anoctamin 4		V	V			V		V	4
USP15	ubiquitin specific peptidase 15		V	V			V		V	4
SPPL3	Signal Peptide Peptidase Like 3		V	V			V		V	4
ARHGAP24	Rho GTPase activating protein 24		V	V			V		V	4
UBR5	ubiquitin protein ligase E3 component n-recognin 5		V	V			V		V	4
UBR1	ubiquitin protein ligase E3 component n-recognin 1		V	V			V		V	4
ANKRD12	ankyrin repeat domain 12		V	V			V		V	4
UBE4A	ubiquitination factor E4A		V	V			V		V	4
UBE3A	ubiquitin protein ligase E3A		V	V			V		V	4
ASXL2	additional sex combs like 2 (Drosophila)		V	V			V		V	4
ATP1B1	ATPase, Na ⁺ /K ⁺ transporting, beta 1 polypeptide		V	V			V		V	4

UBE2E2	ubiquitin-conjugating enzyme E2E 2	V	V	V	V	4
UBAP2L	ubiquitin associated protein 2-like	V	V	V	V	4
ATRN	attractin	V	V	V	V	4
TRIM63	tripartite motif containing 63, E3 ubiquitin protein ligase	V	V	V	V	4
AZIN1	antizyme inhibitor 1	V	V	V	V	4
TP53BP1	tumor protein p53 binding protein 1	V	V	V	V	4
VPS13B	vacuolar protein sorting 13 homolog B (yeast)	V	V	V	V	4
TET3	tet methylcytosine dioxygenase 3	V	V	V	V	4
WAPAL	wings apart-like homolog (Drosophila)	V	V	V	V	4
BCL11A	B-cell CLL/lymphoma 11A (zinc finger protein)	V	V	V	V	4
BCL11B	B-cell CLL/lymphoma 11B (zinc finger protein)	V	V	V	V	4
TANC2	tetratricopeptide repeat, ankyrin repeat and coiled-coil containing 2	V	V	V	V	4
SYNCRIP	synaptotagmin binding, cytoplasmic RNA interacting protein	V	V	V	V	4
BIRC6	baculoviral IAP repeat containing 6	V	V	V	V	4
BIVM	basic, immunoglobulin-like variable motif containing	V	V	V	V	4
SUV420H1	suppressor of variegation 4-20 homolog 1 (Drosophila)	V	V	V	V	4
BNC2	basonuclin 2	V	V	V	V	4
STX12	syntaxin 12	V	V	V	V	4
STK38L	serine/threonine kinase 38 like	V	V	V	V	4
ST8SIA2	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 2	V	V	V	V	4
BTBD7	BTB (POZ) domain containing 7	V	V	V	V	4
SSH2	slingshot protein phosphatase 2	V	V	V	V	4
WDR37	WD repeat domain 37	V	V	V	V	4
EMSY	EMSY, BRCA2 Interacting Transcriptional Repressor	V	V	V	V	4
SPTSSA	Serine Palmitoyltransferase Small Subunit A	V	V	V	V	4
KATNBL1	Katanin Regulatory Subunit B1 Like 1	V	V	V	V	4
SPRY4	sprouty homolog 4 (Drosophila)	V	V	V	V	4
C18ORF25	chromosome 18 open reading frame 25	V	V	V	V	4
SP1	Sp1 transcription factor	V	V	V	V	4
SOX4	SRY (sex determining region Y)-box 4	V	V	V	V	4
LURAP1L	Leucine Rich Adaptor Protein 1 Like	V	V	V	V	4
SOX2	SRY (sex determining region Y)-box 2	V	V	V	V	4
SORBS1	sorbin and SH3 domain containing 1	V	V	V	V	4
SOCS5	suppressor of cytokine signaling 5	V	V	V	V	4
SNX27	sorting nexin family member 27	V	V	V	V	4
SNRNP40	small nuclear ribonucleoprotein 40kDa (U5)	V	V	V	V	4
SNRK	SNF related kinase	V	V	V	V	4
SMEK2	SMEK homolog 2, suppressor of mek1 (Dictyostelium)	V	V	V	V	4
SLMAP	sarcolemma associated protein	V	V	V	V	4

WEE1	WEE1 G2 checkpoint kinase	V	V	V	V	4
CDC42BPA	CDC42 binding protein kinase alpha (DMPK-like)	V	V	V	V	4
CDC73	cell division cycle 73	V	V	V	V	4
SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3	V	V	V	V	4
WNT5A	wingless-type MMTV integration site family, member 5A	V	V	V	V	4
CHD2	chromodomain helicase DNA binding protein 2	V	V	V	V	4
CHD4	chromodomain helicase DNA binding protein 4	V	V	V	V	4
CHD9	chromodomain helicase DNA binding protein 9	V	V	V	V	4
SLC16A14	solute carrier family 16, member 14	V	V	V	V	4
SIPA1L2	signal-induced proliferation-associated 1 like 2	V	V	V	V	4
CLCF1	cardiotrophin-like cytokine factor 1	V	V	V	V	4
SIAH1	siah E3 ubiquitin protein ligase 1	V	V	V	V	4
SHOX2	short stature homeobox 2	V	V	V	V	4
SHANK2	SH3 and multiple ankyrin repeat domains 2	V	V	V	V	4
SH2B3	SH2B adaptor protein 3	V	V	V	V	4
SFRP2	secreted frizzled-related protein 2	V	V	V	V	4
CNOT2	CCR4-NOT transcription complex, subunit 2	V	V	V	V	4
CNOT7	CCR4-NOT transcription complex, subunit 7	V	V	V	V	4
SEPT11	septin 11	V	V	V	V	4
SEN6	SUMO1/sentrin specific peptidase 6	V	V	V	V	4
COL11A1	collagen, type XI, alpha 1	V	V	V	V	4
XPO7	exportin 7	V	V	V	V	4
SEMA3C	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C	V	V	V	V	4
SEC24A	SEC24 family member A	V	V	V	V	4
SATB1	SATB homeobox 1	V	V	V	V	4
CPNE4	copine IV	V	V	V	V	4
RYBP	RING1 and YY1 binding protein	V	V	V	V	4
CRISPLD1	cysteine-rich secretory protein LCCL domain containing 1	V	V	V	V	4
CRK	v-crk avian sarcoma virus CT10 oncogene homolog	V	V	V	V	4
RPS6KA3	ribosomal protein S6 kinase, 90kDa, polypeptide 3	V	V	V	V	4
RPRD1A	regulation of nuclear pre-mRNA domain containing 1A	V	V	V	V	4
CTNNA2	catenin (cadherin-associated protein), alpha 2	V	V	V	V	4
RPL22	ribosomal protein L22	V	V	V	V	4
PTBD3	Polypyrimidine Tract Binding Protein 3	V	V	V	V	4
ROCK2	Rho-associated, coiled-coil containing protein kinase 2	V	V	V	V	4
RNF2	ring finger protein 2	V	V	V	V	4
RNF144A	ring finger protein 144A	V	V	V	V	4
DCUN1D3	DCN1, defective in cullin neddylation 1, domain containing 3	V	V	V	V	4
RNF114	ring finger protein 114	V	V	V	V	4

RNF111	ring finger protein 111	V	V	V	V	4
RC3H1	ring finger and CCCH-type domains 1	V	V	V	V	4
RBPJ	recombination signal binding protein for immunoglobulin kappa J region	V	V	V	V	4
DDX6	DEAD (Asp-Glu-Ala-Asp) box helicase 6	V		V	V	4
SCAF8	SR-Related CTD Associated Factor 8	V	V	V	V	4
DENND4C	DENN/MADD domain containing 4C	V	V	V	V	4
RAPGEFL1	Rap guanine nucleotide exchange factor (GEF)-like 1	V	V	V	V	4
DLC1	deleted in liver cancer 1	V	V	V	V	4
DLGAP2	discs, large (Drosophila) homolog-associated protein 2	V	V		V	4
DMTF1	cyclin D binding myb-like transcription factor 1	V	V	V	V	4
RAPGEF6	Rap guanine nucleotide exchange factor (GEF) 6	V	V	V	V	4
YTHDC1	YTH domain containing 1	V	V	V	V	4
RAP1GDS1	RAP1, GTP-GDP dissociation stimulator 1	V	V	V	V	4
DPP6	dipeptidyl-peptidase 6	V	V	V	V	4
RALGPS1	Ral GEF with PH domain and SH3 binding motif 1	V	V	V	V	4
DVL2	dishevelled segment polarity protein 2	V	V	V	V	4
AFF1	AF4/FMR2 family, member 1	V	V	V	V	4
RAB6B	RAB6B, member RAS oncogene family	V	V		V	4
RAB39B	RAB39B, member RAS oncogene family	V	V	V	V	4
EFNB2	ephrin-B2	V	V	V	V	4
EIF1AX	eukaryotic translation initiation factor 1A, X-linked	V	V	V	V	4
YTHDF1	YTH domain family, member 1	V	V	V	V	4
RAB2A	RAB2A, member RAS oncogene family	V	V	V	V	4
EIF4G2	eukaryotic translation initiation factor 4 gamma, 2	V	V	V	V	4
R3HDM2	R3H domain containing 2	V	V	V	V	4
ELOVL7	ELOVL fatty acid elongase 7	V	V	V	V	4
ZBTB5	zinc finger and BTB domain containing 5	V	V	V	V	4
EN1	engrailed homeobox 1	V	V	V	V	4
R3HDM1	R3H domain containing 1	V	V	V	V	4
ZFAND3	zinc finger, AN1-type domain 3	V	V	V	V	4
PVRL1	poliovirus receptor-related 1 (herpesvirus entry mediator C)	V	V	V	V	4
ACVR2B	activin A receptor, type IIB	V	V	V	V	4
PTP4A1	protein tyrosine phosphatase type IVA, member 1	V	V	V	V	4
PSIP1	PC4 and SFRS1 interacting protein 1	V	V	V	V	4
PRDM12	PR domain containing 12	V	V	V	V	4
ETF1	eukaryotic translation termination factor 1	V	V	V	V	4
PPP1R14C	protein phosphatase 1, regulatory (inhibitor) subunit 14C	V	V	V	V	4
ETS1	v-ets avian erythroblastosis virus E26 oncogene homolog 1	V	V	V	V	4
POU4F1	POU class 4 homeobox 1	V	V	V	V	4

PNRC1	proline-rich nuclear receptor coactivator 1	V	V	V	V	4
FAM107B	family with sequence similarity 107, member B	V	V	V	V	4
PHF2	PHD finger protein 2	V	V	V	V	4
JADE2	Jade Family PHD Finger 2	V	V	V	V	4
PHACTR2	phosphatase and actin regulator 2	V	V	V	V	4
PDS5B	PDS5, regulator of cohesion maintenance, homolog B (<i>S. cerevisiae</i>)	V	V	V	V	4
PCSK2	proprotein convertase subtilisin/kexin type 2	V	V	V	V	4
FAM46A	family with sequence similarity 46, member A	V	V	V	V	4
FBXL19	F-box and leucine-rich repeat protein 19	V	V	V	V	4
FBXL3	F-box and leucine-rich repeat protein 3	V	V	V	V	4
ZFH3	zinc finger homeobox 3	V	V	V	V	4
PARD6B	par-6 family cell polarity regulator beta	V	V	V	V	4
PAPOLA	poly(A) polymerase alpha	V	V	V	V	4
PAN3	PAN3 poly(A) specific ribonuclease subunit homolog (<i>S. cerevisiae</i>)	V	V	V	V	4
PAFAH1B1	platelet-activating factor acetylhydrolase 1b, regulatory subunit 1 (45kDa)	V	V	V	V	4
FGF7	fibroblast growth factor 7	V	V	V	V	4
FGFR2	fibroblast growth factor receptor 2	V	V	V	V	4
FILIP1L	filamin A interacting protein 1-like	V	V	V	V	4
FLRT3	fibronectin leucine rich transmembrane protein 3	V	V	V	V	4
OSBPL3	oxysterol binding protein-like 3	V	V	V	V	4
OSBP	oxysterol binding protein	V	V	V	V	4
NRXN1	neurexin 1	V	V	V	V	4
ZFPM2	zinc finger protein, FOG family member 2	V	V	V	V	4
NRF1	nuclear respiratory factor 1	V	V	V	V	4
GABRB3	gamma-aminobutyric acid (GABA) A receptor, beta 3	V	V	V	V	4
GAD1	glutamate decarboxylase 1 (brain, 67kDa)	V	V	V	V	4
ACTG1	actin, gamma 1	V	V	V	V	4
NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	V	V	V	V	4
NLK	nemo-like kinase	V	V	V	V	4
GAS2	growth arrest-specific 2	V	V	V	V	4
GBAS	glioblastoma amplified sequence	V	V	V	V	4
NHS	Nance-Horan syndrome (congenital cataracts and dental anomalies)	V	V	V	V	4
GFRA1	GDNF family receptor alpha 1	V	V	V	V	4
NFKBIA	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	V	V	V	V	4
GNB4	guanine nucleotide binding protein (G protein), beta polypeptide 4	V	V	V	V	4
GOLGA1	golgin A1	V	V	V	V	4
NFIA	nuclear factor I/A	V	V	V	V	4
NFAT5	nuclear factor of activated T-cells 5, tonicity-responsive	V	V	V	V	4
NEUROD1	neuronal differentiation 1	V	V	V	V	4

GPR158	G protein-coupled receptor 158	V	V	V	V	4
NBEA	neurobeachin	V	V	V	V	4
NAP1L5	nucleosome assembly protein 1-like 5	V	V	V	V	4
GRM1	glutamate receptor, metabotropic 1	V	V		V	4
GRM8	glutamate receptor, metabotropic 8	V	V	V	V	4
GTF2E1	general transcription factor IIE, polypeptide 1, alpha 56kDa	V	V		V	4
NAMPT	nicotinamide phosphoribosyltransferase	V	V	V	V	4
NACC2	NACC family member 2, BEN and BTB (POZ) domain containing	V	V	V	V	4
HBP1	HMG-box transcription factor 1	V	V	V	V	4
KAT6B	Lysine Acetyltransferase 6B	V	V	V	V	4
MYH10	myosin, heavy chain 10, non-muscle	V	V	V	V	4
MYCN	v-myc avian myelocytomatosis viral oncogene neuroblastoma derived homolog	V	V		V	4
HIATL1	hippocampus abundant transcript-like 1	V	V	V	V	4
ACSL3	acyl-CoA synthetase long-chain family member 3	V	V	V	V	4
ZMYND11	zinc finger, MYND-type containing 11	V	V	V	V	4
MTMR12	myotubularin related protein 12	V	V	V	V	4
MSL2	male-specific lethal 2 homolog (Drosophila)	V	V	V	V	4
ZNF592	zinc finger protein 592	V	V	V	V	4
HNRNPR	heterogeneous nuclear ribonucleoprotein R	V	V	V	V	4
MMGT1	membrane magnesium transporter 1	V	V	V	V	4
KMT2C	Lysine Methyltransferase 2C	V	V	V	V	4
KMT2A	Lysine Methyltransferase 2A	V	V	V	V	4
MITF	microphthalmia-associated transcription factor	V	V	V	V	4
MEIS2	Meis homeobox 2	V	V	V	V	4
MEGF10	multiple EGF-like-domains 10	V	V	V	V	4
ID2	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein	V	V	V	V	4
MED14	mediator complex subunit 14	V	V	V	V	4
MED13L	mediator complex subunit 13-like	V	V	V	V	4
MED13	mediator complex subunit 13	V	V	V	V	4
IL15RA	interleukin 15 receptor, alpha	V	V		V	4
ACBD5	acyl-CoA binding domain containing 5	V	V	V	V	4
INSIG2	insulin induced gene 2	V	V	V	V	4
MARK1	MAP/microtubule affinity-regulating kinase 1	V	V	V	V	4
IQSEC2	IQ motif and Sec7 domain 2	V	V	V	V	4
ITCH	itchy E3 ubiquitin protein ligase	V	V	V	V	4
MAG11	membrane associated guanylate kinase, WW and PDZ domain containing 1	V	V	V	V	4
LZTS2	leucine zipper, putative tumor suppressor 2	V	V	V	V	4
ZNF521	zinc finger protein 521	V	V	V	V	4
JAG2	jagged 2	V	V	V	V	4

LRRC16B	leucine rich repeat containing 16B	V	V		V	V	4
LRFN1	leucine rich repeat and fibronectin type III domain containing 1	V	V		V	V	4
JPH1	junctophilin 1	V	V		V	V	4
JPH3	junctophilin 3	V	V		V	V	4
KALRN	kalirin, RhoGEF kinase	V	V		V	V	4
LPHN1	latrophilin 1	V	V		V	V	4
LIN7C	lin-7 homolog C (C. elegans)	V	V		V	V	4
LDB2	LIM domain binding 2	V	V		V	V	4
LARP4	La ribonucleoprotein domain family, member 4	V	V		V	V	4
LARP1	La ribonucleoprotein domain family, member 1	V	V		V	V	4
KPNA6	karyopherin alpha 6 (importin alpha 7)	V	V		V	V	4
KCTD15	potassium channel tetramerization domain containing 15	V	V		V	V	4
KHDRBS1	KH domain containing, RNA binding, signal transduction associated 1	V	V		V	V	4
KPNA3	karyopherin alpha 3 (importin alpha 4)	V	V		V	V	4
ICE1	Interactor Of Little Elongation Complex ELL Subunit 1	V	V		V	V	4
KANSL1	KAT8 Regulatory NSL Complex Subunit 1	V	V		V	V	4
USF3	Upstream Transcription Factor Family Member 3	V	V		V	V	4
NEXMIF	Neurite Extension And Migration Factor	V	V		V	V	4
KIF11	kinesin family member 11	V			V	V	4
RAPGEF5	Rap guanine nucleotide exchange factor (GEF) 5	V	V		V	V	4
KLF4	Kruppel-like factor 4 (gut)	V	V		V	V	4
ZNF706	zinc finger protein 706	V	V		V	V	4
KIN	KIN, antigenic determinant of recA protein homolog (mouse)	V	V			V	3
KLF3	Kruppel-like factor 3 (basic)	V			V	V	3
KIF3B	kinesin family member 3B	V	V		V		3
ATG14	Autophagy Related 14	V	V		V		3
KCTD12	potassium channel tetramerization domain containing 12	V	V			V	3
KPNB1	karyopherin (importin) beta 1	V	V		V		3
LANCL3	LanC lantibiotic synthetase component C-like 3 (bacterial)	V			V	V	3
KCNMB2	potassium large conductance calcium-activated channel, subfamily M, beta member 2	V	V		V		3
KCNH5	potassium voltage-gated channel, subfamily H (eag-related), member 5	V	V		V		3
LCOR	ligand dependent nuclear receptor corepressor	V	V		V		3
KCNE3	potassium voltage-gated channel, Isk-related family, member 3	V	V			V	3
LEAP2	liver expressed antimicrobial peptide 2	V	V		V		3
LEF1	lymphoid enhancer-binding factor 1	V	V		V		3
LHX8	LIM homeobox 8	V	V		V		3
LIN28A	Lin-28 Homolog A	V	V			V	3
KCND2	potassium voltage-gated channel, Shal-related subfamily, member 2	V	V		V		3
LMO3	LIM domain only 3 (rhombotin-like 2)	V	V			V	3

LMO4	LIM domain only 4	V	V			V	3
KCNA4	potassium voltage-gated channel, shaker-related subfamily, member 4	V	V			V	3
LRCH1	leucine-rich repeats and calponin homology (CH) domain containing 1	V	V			V	3
JHDM1D	jumonji C domain containing histone demethylase 1 homolog D (<i>S. cerevisiae</i>)	V	V			V	3
LRP6	low density lipoprotein receptor-related protein 6	V				V	3
JAK2	Janus kinase 2	V	V			V	3
LRRC17	leucine rich repeat containing 17	V	V			V	3
JAG1	jagged 1	V	V			V	3
ITGB8	integrin, beta 8	V	V			V	3
ITGAV	integrin, alpha V	V	V			V	3
MAP3K7	Mitogen-Activated Protein Kinase Kinase Kinase 7	V	V			V	3
MAP4	microtubule-associated protein 4	V	V			V	3
INTS6	integrator complex subunit 6	V	V			V	3
INSIG1	insulin induced gene 1	V	V			V	3
MBNL2	muscleblind-like splicing regulator 2	V	V			V	3
IL13	interleukin 13	V	V			V	3
IKZF2	IKAROS family zinc finger 2 (Helios)	V	V			V	3
IGF1R	insulin-like growth factor 1 receptor	V	V			V	3
ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein	V	V			V	3
MEGF9	multiple EGF-like-domains 9	V	V			V	3
HSPA13	heat shock protein 70kDa family, member 13	V	V			V	3
MET	met proto-oncogene	V	V			V	3
MID1	midline 1 (Opitz/BBB syndrome)	V	V			V	3
MIER3	mesoderm induction early response 1, family member 3	V	V			V	3
HS6ST2	heparan sulfate 6-O-sulfotransferase 2	V	V			V	3
HS2ST1	heparan sulfate 2-O-sulfotransferase 1	V	V			V	3
HOXA9	homeobox A9	V				V	3
MLLT3	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, <i>Drosophila</i>); translocated to, 3	V	V			V	3
HOOK3	hook microtubule-tethering protein 3	V	V			V	3
MNT	MNT, MAX dimerization protein	V	V			V	3
MOB1B	MOB Kinase Activator 1B	V	V			V	3
HNRNPD	heterogeneous nuclear ribonucleoprotein D (AU-rich element RNA binding protein 1, 37kDa)	V	V			V	3
MSL1	male-specific lethal 1 homolog (<i>Drosophila</i>)	V	V			V	3
HMGB1	high mobility group box 1	V	V			V	3
MTF1	metal-regulatory transcription factor 1	V	V			V	3
MTFMT	mitochondrial methionyl-tRNA formyltransferase	V	V			V	3
HMBOX1	homeobox containing 1	V	V			V	3
MTSS1	metastasis suppressor 1	V	V			V	3
MXD1	MAX dimerization protein 1	V	V			V	3

HECTD2	HECT domain containing E3 ubiquitin protein ligase 2	V	V	V		3
HCN1	hyperpolarization activated cyclic nucleotide-gated potassium channel 1	V	V	V		3
MYH9	myosin, heavy chain 9, non-muscle	V	V		V	3
HCCS	holocytochrome c synthase	V	V	V		3
HBEGF	heparin-binding EGF-like growth factor	V	V	V		3
GTF2H1	general transcription factor IIH, polypeptide 1, 62kDa	V	V	V		3
NAP1L2	nucleosome assembly protein 1-like 2	V	V	V		3
GRHL1	grainyhead-like 1 (Drosophila)	V	V		V	3
NASP	nuclear autoantigenic sperm protein (histone-binding)	V	V		V	3
GPR64	G protein-coupled receptor 64	V	V	V		3
NCAM1	neural cell adhesion molecule 1	V	V		V	3
NCKAP1	NCK-associated protein 1	V	V	V		3
NCOA6	nuclear receptor coactivator 6	V	V	V		3
NDUFAB1	NADH dehydrogenase (ubiquinone) 1, alpha/beta subcomplex, 1, 8kDa	V	V	V	V	3
GPR125	G protein-coupled receptor 125	V	V	V		3
NEUROG2	neurogenin 2	V	V		V	3
NFASC	neurofascin	V	V		V	3
GPC1	glypican 1	V		V	V	3
GORASP2	golgi reassembly stacking protein 2, 55kDa	V	V	V		3
NFIB	nuclear factor I/B	V	V	V		3
GNAI1	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 1	V	V	V		3
NHLH2	nescient helix loop helix 2	V	V	V		3
GEM	GTP binding protein overexpressed in skeletal muscle	V	V		V	3
NIPBL	Nipped-B homolog (Drosophila)	V	V		V	3
NKRF	NFKB repressing factor	V	V	V		3
GAPVD1	GTPase activating protein and VPS9 domains 1	V	V		V	3
NLN	neurolysin (metallopeptidase M3 family)	V	V	V		3
NOC3L	nucleolar complex associated 3 homolog (S. cerevisiae)	V	V		V	3
GALNT7	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 7 (GalNAc-T7)	V	V		V	3
GALC	galactosylceramidase	V	V		V	3
FUBP3	far upstream element (FUSE) binding protein 3	V	V	V		3
FRYL	FRY-like	V	V	V		3
FRS2	fibroblast growth factor receptor substrate 2	V	V		V	3
NTN4	netrin 4	V	V	V		3
NUP153	nucleoporin 153kDa	V	V		V	3
ONECUT2	one cut homeobox 2	V	V	V		3
ORC2	Origin Recognition Complex Subunit 2	V	V		V	3
FOXP2	forkhead box P2	V		V	V	3
FOXF2	forkhead box F2	V	V	V		3

OTUD4	OTU domain containing 4	V	V			V	3
OTUD6B	OTU domain containing 6B	V	V		V		3
OTUD7B	OTU domain containing 7B	V	V		V		3
FGF1	fibroblast growth factor 1 (acidic)	V	V			V	3
FCHO2	FCH domain only 2	V	V		V		3
FBXO45	F-box protein 45	V			V	V	3
PAPOLG	poly(A) polymerase gamma	V	V		V		3
FBXO34	F-box protein 34	V	V		V		3
PARVA	parvin, alpha	V	V			V	3
PCDH11X	protocadherin 11 X-linked	V	V		V		3
PCDH11Y	protocadherin 11 Y-linked	V	V		V		3
PCDH17	protocadherin 17	V	V		V		3
PCDH8	protocadherin 8	V	V		V		3
FBXO21	F-box protein 21	V	V		V		3
PCLO	piccolo presynaptic cytomatrix protein	V	V			V	3
FAM178A	family with sequence similarity 178, member A	V	V			V	3
PDE7B	phosphodiesterase 7B	V	V		V		3
PDGFC	platelet derived growth factor C	V	V		V		3
PDIK1L	PDLIM1 interacting kinase 1 like	V	V		V		3
PDS5A	PDS5, regulator of cohesion maintenance, homolog A (<i>S. cerevisiae</i>)	V	V		V		3
FAM175A	family with sequence similarity 175, member A	V	V		V		3
PELI1	pellino E3 ubiquitin protein ligase 1	V	V		V		3
PGAP1	post-GPI attachment to proteins 1	V	V			V	3
FAM160B1	family with sequence similarity 160, member B1	V	V		V		3
FAM135B	family with sequence similarity 135, member B	V	V		V		3
FAM117A	family with sequence similarity 117, member A	V	V			V	3
PHTF2	putative homeodomain transcription factor 2	V	V		V		3
PI15	peptidase inhibitor 15	V	V			V	3
PLAG1	pleiomorphic adenoma gene 1	V	V			V	3
PLCXD3	phosphatidylinositol-specific phospholipase C, X domain containing 3	V	V		V		3
PMP22	peripheral myelin protein 22	V	V		V		3
PMPCB	peptidase (mitochondrial processing) beta	V	V		V		3
EXO1	exonuclease 1	V	V			V	3
POPDC3	popeye domain containing 3	V	V		V		3
ETS2	v-ets avian erythroblastosis virus E26 oncogene homolog 2	V				V	3
PPAP2B	phosphatidic acid phosphatase type 2B	V	V		V		3
PPFIA1	protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 1	V			V	V	3
PPM1D	protein phosphatase, Mg2+/Mn2+ dependent, 1D	V	V		V		3
PPM1E	protein phosphatase, Mg2+/Mn2+ dependent, 1E	V	V		V		3

ETNK1	ethanolamine kinase 1	V	V	V				3
PPP2R2C	protein phosphatase 2, regulatory subunit B, gamma	V	V				V	3
PPP6C	protein phosphatase 6, catalytic subunit	V	V	V				3
ESR1	estrogen receptor 1	V		V			V	3
PRDM16	PR domain containing 16	V	V	V				3
PRKACB	protein kinase, cAMP-dependent, catalytic, beta	V	V	V				3
PRKCE	protein kinase C, epsilon	V				V	V	3
PRPF38B	pre-mRNA processing factor 38B	V	V	V				3
PRPF8	pre-mRNA processing factor 8	V				V	V	3
PRPS2	phosphoribosyl pyrophosphate synthetase 2	V	V	V				3
PRRX1	paired related homeobox 1	V	V	V				3
ESM1	endothelial cell-specific molecule 1	V	V	V				3
PSMD3	proteasome (prosome, macropain) 26S subunit, non-ATPase, 3	V	V	V				3
PTBP1	polypyrimidine tract binding protein 1	V	V	V				3
PTCH1	patched 1	V		V			V	3
PTGFR	prostaglandin F receptor (FP)	V	V				V	3
PTK2	protein tyrosine kinase 2	V	V	V				3
ERO1L	ERO1-like (S. cerevisiae)	V	V	V				3
PURA	purine-rich element binding protein A	V	V	V				3
PURG	purine-rich element binding protein G	V	V	V				3
EPB41L5	erythrocyte membrane protein band 4.1 like 5	V	V	V				3
QKI	QKI, KH domain containing, RNA binding	V	V	V				3
EPB41	erythrocyte membrane protein band 4.1 (elliptocytosis 1, RH-linked)	V		V			V	3
EIF4G3	eukaryotic translation initiation factor 4 gamma, 3	V	V	V				3
RAB11FIP2	RAB11 family interacting protein 2 (class I)	V	V	V				3
RAB1B	RAB1B, member RAS oncogene family	V	V	V				3
RAB27A	RAB27A, member RAS oncogene family	V	V	V				3
EIF3A	eukaryotic translation initiation factor 3, subunit A	V	V	V				3
EBF3	early B-cell factor 3	V				V	V	3
DYRK1A	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 1A	V	V	V				3
DYNC1LI2	dynein, cytoplasmic 1, light intermediate chain 2	V	V	V				3
DUSP3	dual specificity phosphatase 3	V	V			V		3
DOCK4	dedicator of cytokinesis 4	V	V	V				3
RAP2C	RAP2C, member of RAS oncogene family	V		V			V	3
DNM3	dynamamin 3	V	V			V		3
DNAJB2	DnaJ (Hsp40) homolog, subfamily B, member 2	V	V	V				3
DGKD	diacylglycerol kinase, delta 130kDa	V	V	V				3
DEK	DEK oncogene	V	V				V	3
RBM24	RNA binding motif protein 24	V	V	V				3

RBM26	RNA binding motif protein 26	V	V		V				3
RBM7	RNA binding motif protein 7	V	V				V		3
DDX52	DEAD (Asp-Glu-Ala-Asp) box polypeptide 52	V	V				V		3
RBPMS2	RNA binding protein with multiple splicing 2	V			V		V		3
DDX4	DEAD (Asp-Glu-Ala-Asp) box polypeptide 4	V	V				V		3
RCAN2	regulator of calcineurin 2	V	V					V	3
REV3L	REV3-like, polymerase (DNA directed), zeta, catalytic subunit	V	V					V	3
RICTOR	RPTOR independent companion of MTOR, complex 2	V	V					V	3
RIT1	Ras-like without CAAX 1	V	V				V		3
DDIT3	DNA-damage-inducible transcript 3	V	V				V		3
DCX	doublecortin	V	V				V		3
RNF13	ring finger protein 13	V	V				V		3
DCBLD2	discoidin, CUB and LCCL domain containing 2	V	V					V	3
RNF19A	ring finger protein 19A, RBR E3 ubiquitin protein ligase	V					V	V	3
DAG1	dystroglycan 1 (dystrophin-associated glycoprotein 1)	V	V				V		3
RNF38	ring finger protein 38	V	V		V				3
CYB5B	cytochrome b5 type B (outer mitochondrial membrane)	V	V				V		3
CWC22	CWC22 spliceosome-associated protein homolog (<i>S. cerevisiae</i>)	V	V				V		3
CUL3	cullin 3	V					V	V	3
CTCF	CCCTC-binding factor (zinc finger protein)	V	V				V		3
RPRD1B	regulation of nuclear pre-mRNA domain containing 1B	V	V					V	3
CSNK1G3	casein kinase 1, gamma 3	V	V				V		3
RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1	V	V				V		3
RRN3	RRN3 RNA polymerase I transcription factor homolog (<i>S. cerevisiae</i>)	V	V					V	3
CREB5	cAMP responsive element binding protein 5	V	V				V		3
SALL1	spalt-like transcription factor 1	V	V				V		3
CPEB4	cytoplasmic polyadenylation element binding protein 4	V	V					V	3
SBF2	SET binding factor 2	V	V					V	3
CPEB3	cytoplasmic polyadenylation element binding protein 3	V	V					V	3
COL3A1	collagen, type III, alpha 1	V	V				V		3
COL19A1	collagen, type XIX, alpha 1	V	V					V	3
COBLL1	cordons-bleu WH2 repeat protein-like 1	V	V					V	3
CNR1	cannabinoid receptor 1 (brain)	V	V				V		3
SEPT9	septin 9	V	V					V	3
SFPQ	splicing factor proline/glutamine-rich	V	V				V		3
CNOT1	CCR4-NOT transcription complex, subunit 1	V					V	V	3
SGK3	serum/glucocorticoid regulated kinase family, member 3	V	V					V	3
CLIP3	CAP-GLY domain containing linker protein 3	V	V				V		3
CLIP1	CAP-GLY domain containing linker protein 1	V	V					V	3

CLDN1	claudin 1	V	V			V	3	
CLCN5	chloride channel, voltage-sensitive 5	V	V		V		3	
CIRBP	cold inducible RNA binding protein	V	V		V		3	
SIX4	SIX homeobox 4	V	V		V		3	
SLC12A6	solute carrier family 12 (potassium/chloride transporter), member 6	V	V		V		3	
CHL1	cell adhesion molecule L1-like	V	V		V		3	
SLC16A9	solute carrier family 16, member 9	V	V		V		3	
CGGBP1	CGG triplet repeat binding protein 1	V	V		V		3	
CEP76	centrosomal protein 76kDa	V			V	V	3	
SLC25A24	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 24	V	V		V		3	
SLC38A2	solute carrier family 38, member 2	V			V	V	3	
CDC37L1	cell division cycle 37-like 1	V	V		V		3	
CD2AP	CD2-associated protein	V	V		V		3	
SLTM	SAFB-like, transcription modulator	V	V		V		3	
CCNT2	cyclin T2	V	V		V		3	
SNCA	synuclein, alpha (non A4 component of amyloid precursor)	V	V			V	3	
CCDC85A	coiled-coil domain containing 85A	V	V		V		3	
CCDC47	coiled-coil domain containing 47	V	V		V		3	
CAND1	cullin-associated and neddylation-dissociated 1	V	V		V		3	
CAMLG	calcium modulating ligand	V	V			V	3	
CADPS2	Ca ⁺⁺ -dependent secretion activator 2	V				V	V	3
SOX11	SRY (sex determining region Y)-box 11	V				V	V	3
CAAP1	Caspase Activity And Apoptosis Inhibitor 1	V	V		V		3	
KIAA1456	KIAA1456	V	V		V		3	
SOX9	SRY (sex determining region Y)-box 9	V	V				V	3
CREBRF	CREB3 Regulatory Factor	V				V	V	3
SP4	Sp4 transcription factor	V	V		V		3	
SPOCK1	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican) 1	V	V			V	3	
SPRY1	sprouty homolog 1, antagonist of FGF signaling (Drosophila)	V				V	V	3
SPRY3	sprouty homolog 3 (Drosophila)	V	V				V	3
C15ORF41	chromosome 15 open reading frame 41	V	V		V		3	
C10ORF12	chromosome 10 open reading frame 12	V	V		V		3	
SRRM1	serine/arginine repetitive matrix 1	V	V		V		3	
SS18	synovial sarcoma translocation, chromosome 18	V				V	V	3
BTG1	B-cell translocation gene 1, anti-proliferative	V	V		V		3	
ST18	suppression of tumorigenicity 18 (breast carcinoma) (zinc finger protein)	V	V				V	3
BST1	bone marrow stromal cell antigen 1	V	V			V	3	
ST8SIA3	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 3	V	V		V		3	
STAG1	stromal antigen 1	V	V		V		3	

STK24	serine/threonine kinase 24	V	V				V	3
BRWD1	bromodomain and WD repeat domain containing 1	V	V			V		3
BRD7	bromodomain containing 7	V	V			V		3
STX16	syntaxin 16	V	V			V		3
STXBPS	syntaxin binding protein 5 (tomosyn)	V	V			V		3
BMPR2	bone morphogenetic protein receptor, type II (serine/threonine kinase)	V	V				V	3
BHLHE22	Basic Helix-Loop-Helix Family Member E22	V	V			V		3
SYT14	synaptotagmin XIV	V	V			V		3
SYT14L	synaptotagmin XIV-like	V	V			V		3
SYVN1	synovial apoptosis inhibitor 1, synoviolin	V	V				V	3
TAF4B	TAF4b RNA polymerase II, TATA box binding protein (TBP)-associated factor, 105kDa	V	V				V	3
BDNF	brain-derived neurotrophic factor	V			V		V	3
TBC1D15	TBC1 domain family, member 15	V	V			V		3
TBC1D4	TBC1 domain family, member 4	V	V			V		3
PRRC2A	Proline Rich Coiled-Coil 2A	V	V				V	3
TEK	TEK tyrosine kinase, endothelial	V	V				V	3
TET2	tet methylcytosine dioxygenase 2	V					V	3
BAIAP2	BAI1-associated protein 2	V	V			V		3
THSD7B	thrombospondin, type I, domain containing 7B	V	V			V		3
THUMPD1	THUMP domain containing 1	V	V			V		3
TIMM8A	translocase of inner mitochondrial membrane 8 homolog A (yeast)	V	V			V		3
TLN2	talin 2	V	V				V	3
TM4SF1	transmembrane 4 L six family member 1	V	V			V		3
TMED7	transmembrane emp24 protein transport domain containing 7	V	V				V	3
TMEM14C	transmembrane protein 14C	V	V				V	3
TMEM161B	transmembrane protein 161B	V	V			V		3
B4GALT6	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 6	V	V				V	3
TMEM185A	transmembrane protein 185A	V	V			V		3
TNFRSF21	tumor necrosis factor receptor superfamily, member 21	V	V			V		3
TNFSF4	tumor necrosis factor (ligand) superfamily, member 4	V	V				V	3
B3GNT5	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 5	V	V			V		3
ATXN7L1	ataxin 7-like 1	V	V				V	3
TRIO	trio Rho guanine nucleotide exchange factor	V	V			V		3
CEP41	Centrosomal Protein 41	V	V			V		3
TSPAN2	tetraspanin 2	V	V			V		3
TXNDC5	thioredoxin domain containing 5 (endoplasmic reticulum)	V				V	V	3
ATP2B4	ATPase, Ca++ transporting, plasma membrane 4	V	V			V		3
ATP2A2	ATPase, Ca++ transporting, cardiac muscle, slow twitch 2	V	V			V		3
UBE2W	ubiquitin-conjugating enzyme E2W (putative)	V	V				V	3

ASPHD2	aspartate beta-hydroxylase domain containing 2	V		V	V	3
ART3	ADP-ribosyltransferase 3	V	V	V		3
UBL3	ubiquitin-like 3	V	V		V	3
UBLCP1	ubiquitin-like domain containing CTD phosphatase 1	V	V	V		3
ARRDC3	arrestin domain containing 3	V	V		V	3
ARMC8	armadillo repeat containing 8	V	V	V		3
UBR3	ubiquitin protein ligase E3 component n-recognin 3 (putative)	V	V	V		3
ARID4B	AT rich interactive domain 4B (RBP1-like)	V	V	V		3
UBXN7	UBX domain protein 7	V	V		V	3
ARAP2	ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 2	V	V		V	3
USP1	ubiquitin specific peptidase 1	V	V	V		3
APPBP2	amyloid beta precursor protein (cytoplasmic tail) binding protein 2	V	V	V		3
ANKS1B	ankyrin repeat and sterile alpha motif domain containing 1B	V	V	V		3
USP6	ubiquitin specific peptidase 6 (Tre-2 oncogene)	V	V		V	3
UVRAG	UV radiation resistance associated	V	V	V		3
VAMP1	vesicle-associated membrane protein 1 (synaptobrevin 1)	V	V	V		3
ANKRD50	ankyrin repeat domain 50	V		V	V	3
VBP1	von Hippel-Lindau binding protein 1	V	V	V		3
ANKRD13A	ankyrin repeat domain 13A	V	V	V		3
VEGFA	vascular endothelial growth factor A	V	V	V		3
VEZF1	vascular endothelial zinc finger 1	V	V	V		3
VNN2	vanin 2	V	V		V	3
ANKHD1	ankyrin repeat and KH domain containing 1	V	V	V		3
VSNL1	visinin-like 1	V	V	V		3
ANK3	ankyrin 3, node of Ranvier (ankyrin G)	V		V	V	3
WDR26	WD repeat domain 26	V	V		V	3
AMOT	angiominin	V	V		V	3
WDR7	WD repeat domain 7	V	V	V		3
AKAP6	A kinase (PRKA) anchor protein 6	V	V		V	3
WIPI1	WD repeat domain, phosphoinositide interacting 1	V	V	V		3
AGPAT3	1-acylglycerol-3-phosphate O-acyltransferase 3	V	V		V	3
XIAP	X-linked inhibitor of apoptosis	V	V	V		3
AFF4	AF4/FMR2 family, member 4	V	V		V	3
AFF3	AF4/FMR2 family, member 3	V	V		V	3
AFF2	AF4/FMR2 family, member 2	V	V		V	3
ADNP	activity-dependent neuroprotector homeobox	V	V	V		3
YY1	YY1 transcription factor	V	V		V	3
ZAK	sterile alpha motif and leucine zipper containing kinase AZK	V	V	V		3
ZBTB22	zinc finger and BTB domain containing 22	V	V		V	3

ZBTB34	zinc finger and BTB domain containing 34	V	V	V			3
ZBTB39	zinc finger and BTB domain containing 39	V	V			V	3
ADAMTSL3	ADAMTS-like 3	V	V			V	3
ZC3H11A	zinc finger CCCH-type containing 11A	V	V	V			3
ZC3H12B	zinc finger CCCH-type containing 12B	V		V		V	3
ZC3H6	zinc finger CCCH-type containing 6	V	V	V			3
ZC3H7A	zinc finger CCCH-type containing 7A	V	V	V			3
ZCCHC11	zinc finger, CCHC domain containing 11	V	V	V			3
ZDHHC2	zinc finger, DHHC-type containing 2	V		V		V	3
ADAMTS3	ADAM metalloproteinase with thrombospondin type 1 motif, 3	V	V	V			3
ACVR2A	activin A receptor, type IIA	V	V	V			3
ZFP36	ZFP36 ring finger protein	V	V	V			3
ACVR1	activin A receptor, type I	V	V			V	3
ZFY	zinc finger protein, Y-linked	V	V	V			3
ZFYVE20	zinc finger, FYVE domain containing 20	V		V		V	3
ZIC5	Zic family member 5	V	V	V			3
ACE2	angiotensin I converting enzyme 2	V	V			V	3
ZNF292	zinc finger protein 292	V	V			V	3
ZBTB21	Zinc Finger And BTB Domain Containing 21	V	V	V			3
ABCD3	ATP-binding cassette, sub-family D (ALD), member 3	V	V	V			3
MPHOSPH9	M-phase phosphoprotein 9	V	V	V			3
ABCA1	ATP-binding cassette, sub-family A (ABC1), member 1	V	V	V			3
CACNA1C	calcium channel, voltage-dependent, L type, alpha 1C subunit		V	V		V	3
CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha		V	V		V	3
DHX40	DEAH (Asp-Glu-Ala-His) box polypeptide 40		V	V		V	3
DIO2	deiodinase, iodothyronine, type II		V	V		V	3
EIF1	eukaryotic translation initiation factor 1		V	V		V	3
FNIP1	folliculin interacting protein 1		V	V		V	3
GABARAPL1	GABA(A) receptor-associated protein like 1		V	V		V	3
ARHGAP35	Rho GTPase Activating Protein 35		V	V		V	3
GTF2I	general transcription factor Iii		V	V		V	3
KDM5B	Lysine Demethylase 5B		V	V		V	3
PDAP1	PDGFA associated protein 1		V	V		V	3
PHF21A	PHD finger protein 21A		V	V		V	3
PURB	purine-rich element binding protein B		V	V		V	3
DCAF10	DDB1 And CUL4 Associated Factor 10		V	V		V	3
DCAF12	DDB1 And CUL4 Associated Factor 12		V	V		V	3
ZBTB38	zinc finger and BTB domain containing 38		V	V		V	3
ZNF532	zinc finger protein 532		V	V		V	3

PCDH7

protocadherin 7

V

V

V

3

Supplemental Table S4. *In silico* predicted cotargets by both mmu-miRs-206-3p and -381-3p.

TARGET GENE	GENE DESCRIPTION
GPR125	G protein-coupled receptor 125
CTNNA2	catenin (cadherin-associated protein), alpha 2
SFRP2	secreted frizzled-related protein 2
TM4SF1	transmembrane 4 L six family member 1
KLF4	Kruppel-like factor 4 (gut)
CAAP1	Caspase Activity And Apoptosis Inhibitor 1
EIF1AX	eukaryotic translation initiation factor 1A, X-linked
TBC1D15	TBC1 domain family, member 15
UBR5	ubiquitin protein ligase E3 component n-recognin 5
NAP1L5	nucleosome assembly protein 1-like 5
PTBP1	polypyrimidine tract binding protein 1
WEE1	WEE1 G2 checkpoint kinase
BHLHE22	Basic Helix-Loop-Helix Family Member E22
SMEK2	SMEK homolog 2, suppressor of mek1 (Dictyostelium)
RNF19A	ring finger protein 19A, RBR E3 ubiquitin protein ligase
NEUROD1	neuronal differentiation 1
FAM107B	family with sequence similarity 107, member B
NBEA	neurobeachin
RCAN2	regulator of calcineurin 2
CRK	v-crk avian sarcoma virus CT10 oncogene homolog
SOX9	SRY (sex determining region Y)-box 9
MET	met proto-oncogene
MTSS1	metastasis suppressor 1
SS18	synovial sarcoma translocation, chromosome 18
HIVEP2	human immunodeficiency virus type I enhancer binding protein 2
OSBP	oxysterol binding protein
UBE4A	ubiquitination factor E4A
RNF111	ring finger protein 111
CAND1	cullin-associated and neddylation-dissociated 1
AZIN1	antizyme inhibitor 1
HCN1	hyperpolarization activated cyclic nucleotide-gated potassium channel 1
MNT	MNT, MAX dimerization protein
CD2AP	CD2-associated protein
STX12	syntaxin 12
VEGFA	vascular endothelial growth factor A
ZMYND11	zinc finger, MYND-type containing 11
UBN1	ubiquitin 1
FUBP3	far upstream element (FUSE) binding protein 3
INTS6	integrator complex subunit 6
DLC1	deleted in liver cancer 1
NAMPT	nicotinamide phosphoribosyltransferase
SLC38A2	solute carrier family 38, member 2
YES1	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1
ARRDC3	arrestin domain containing 3

BDNF	brain-derived neurotrophic factor
PRKACB	protein kinase, cAMP-dependent, catalytic, beta
VEZF1	vascular endothelial zinc finger 1
CHL1	cell adhesion molecule L1-like
MTMR12	myotubularin related protein 12
PCDH17	protocadherin 17
PRKCE	protein kinase C, epsilon
PDIK1L	PDLIM1 interacting kinase 1 like
NR3C1	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)
RPRD1A	regulation of nuclear pre-mRNA domain containing 1A
MED14	mediator complex subunit 14
PRDM16	PR domain containing 16
LIN7C	lin-7 homolog C (C. elegans)
EPB41L1	erythrocyte membrane protein band 4.1-like 1
RYBP	RING1 and YY1 binding protein
LARP4	La ribonucleoprotein domain family, member 4
EFNB2	ephrin-B2
MXD1	MAX dimerization protein 1
DNM3	dynamamin 3
RICTOR	RPTOR independent companion of MTOR, complex 2
BCL11A	B-cell CLL/lymphoma 11A (zinc finger protein)
ESR1	estrogen receptor 1
RNF38	ring finger protein 38
VAPA	VAMP (vesicle-associated membrane protein)-associated protein A, 33kDa
ETS1	v-ets avian erythroblastosis virus E26 oncogene homolog 1
AMOT	angiomin
PAFAH1B1	platelet-activating factor acetylhydrolase 1b, regulatory subunit 1 (45kDa)
CYB5B	cytochrome b5 type B (outer mitochondrial membrane)
APPBP2	amyloid beta precursor protein (cytoplasmic tail) binding protein 2
SEMA6D	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6D
BCL11B	B-cell CLL/lymphoma 11B (zinc finger protein)
FRS2	fibroblast growth factor receptor substrate 2
PLAG1	pleiomorphic adenoma gene 1
HIPK1	homeodomain interacting protein kinase 1
AFF4	AF4/FMR2 family, member 4
CREB5	cAMP responsive element binding protein 5
SP1	Sp1 transcription factor
BRWD1	bromodomain and WD repeat domain containing 1
KIAA2022	KIAA2022
ACVR2B	activin A receptor, type IIB
SPRY3	sprouty homolog 3 (Drosophila)
QKI	QKI, KH domain containing, RNA binding
AFF2	AF4/FMR2 family, member 2
NFAT5	nuclear factor of activated T-cells 5, tonicity-responsive
SLC1A2	solute carrier family 1 (glial high affinity glutamate transporter), member 2

Supplemental Table S5. In silico predicted targets either by mmu-miR-206-3p or -381-3p.

TARGET_GENE	GENE_DESCRIPTION
TP53BP1	tumor protein p53 binding protein 1
WDR61	WD repeat domain 61
HSPE1	heat shock 10kDa protein 1
CEBPZ	CCAAT/enhancer binding protein (C/EBP), zeta
NR1H3	nuclear receptor subfamily 1, group H, member 3
NDUFAB1	NADH dehydrogenase (ubiquinone) 1, alpha/beta subcomplex, 1, 8kDa
MTX1	metaxin 1
MT1H	metallothionein 1H
FGF14	fibroblast growth factor 14
MT1F	metallothionein 1F
DDIT3	DNA-damage-inducible transcript 3
MT1G	metallothionein 1G
UNC50	unc-50 homolog (C. elegans)
PPIB	peptidylprolyl isomerase B (cyclophilin B)
SMARCB1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1
PRRC2A	Proline Rich Coiled-Coil 2A
BRD7	bromodomain containing 7
LEAP2	liver expressed antimicrobial peptide 2
PGD	phosphogluconate dehydrogenase
MEA1	male-enhanced antigen 1
ASPHD2	aspartate beta-hydroxylase domain containing 2
ARPC1A	actin related protein 2/3 complex, subunit 1A, 41kDa
GH2	growth hormone 2
GTF2B	general transcription factor IIB
DDX4	DEAD (Asp-Glu-Ala-Asp) box polypeptide 4
MAPK3	mitogen-activated protein kinase 3
RAB2A	RAB2A, member RAS oncogene family
HSP90B1	heat shock protein 90kDa beta (Grp94), member 1
RIT2	Ras-like without CAAX 2
JUND	jun D proto-oncogene
ID1	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
ISL2	ISL LIM homeobox 2
TKT	transketolase
MAP4K2	mitogen-activated protein kinase kinase kinase kinase 2
ART3	ADP-ribosyltransferase 3
SNRNP40	small nuclear ribonucleoprotein 40kDa (U5)
ANXA2	annexin A2
CWC22	CWC22 spliceosome-associated protein homolog (S. cerevisiae)
SFRS9	Serine And Arginine Rich Splicing Factor 9
MTFMT	mitochondrial methionyl-tRNA formyltransferase
ZNF580	zinc finger protein 580
SMARCA4	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4
TMEM14C	transmembrane protein 14C
BCMO1	beta-carotene 15,15'-monooxygenase 1
ANKHD1	ankyrin repeat and KH domain containing 1
WIP1	WD repeat domain, phosphoinositide interacting 1
CDK9	cyclin-dependent kinase 9
G6PD	glucose-6-phosphate dehydrogenase
NCL	nucleolin
CSTA	cystatin A (stefin A)

SH3BGRL3	SH3 domain binding glutamic acid-rich protein like 3
NFKBIA	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha
BSCL2	Berardinelli-Seip congenital lipodystrophy 2 (seipin)
KDM5B	Lysine Demethylase 5B
CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha
SPHK2	sphingosine kinase 2
TMEM243	Transmembrane Protein 243
FILIP1L	filamin A interacting protein 1-like
KIN	KIN, antigenic determinant of recA protein homolog (mouse)
TMSB4X	thymosin beta 4, X-linked
DMPK	dystrophia myotonica-protein kinase
SAMSN1	SAM domain, SH3 domain and nuclear localization signals 1
PHKG2	phosphorylase kinase, gamma 2 (testis)
SLC16A3	solute carrier family 16 (monocarboxylate transporter), member 3
GRM8	glutamate receptor, metabotropic 8
XPO6	exportin 6
DHX15	DEAH (Asp-Glu-Ala-His) box helicase 15
MPHOSPH9	M-phase phosphoprotein 9
PSMD3	proteasome (prosome, macropain) 26S subunit, non-ATPase, 3
ELOF1	elongation factor 1 homolog (<i>S. cerevisiae</i>)
NASP	nuclear autoantigenic sperm protein (histone-binding)
ASH2L	ash2 (absent, small, or homeotic)-like (<i>Drosophila</i>)
SLC25A1	solute carrier family 25 (mitochondrial carrier; citrate transporter), member 1
TAC1	tachykinin, precursor 1
KCNA4	potassium voltage-gated channel, shaker-related subfamily, member 4
POPDC3	popeye domain containing 3
DDX5	DEAD (Asp-Glu-Ala-Asp) box helicase 5
NOC3L	nucleolar complex associated 3 homolog (<i>S. cerevisiae</i>)
SCAF8	SR-Related CTD Associated Factor 8
ANXA13	annexin A13
TMSB4XP8	Thymosin Beta 4, X-Linked Pseudogene 8
ANP32B	acidic (leucine-rich) nuclear phosphoprotein 32 family, member B
CPNE4	copine IV
VNN2	vanin 2
HMGN1	high mobility group nucleosome binding domain 1
ZBTB22	zinc finger and BTB domain containing 22
KTN1	kinectin 1 (kinesin receptor)
TSPAN4	tetraspanin 4
TRIM63	tripartite motif containing 63, E3 ubiquitin protein ligase
EIF2B5	eukaryotic translation initiation factor 2B, subunit 5 epsilon, 82kDa
GFRA1	GDNF family receptor alpha 1
PDCD10	programmed cell death 10
ARHGAP35	Rho GTPase Activating Protein 35
TRAPPC3	trafficking protein particle complex 3
LRRC16B	leucine rich repeat containing 16B
WDR6	WD repeat domain 6
MKL1	megakaryoblastic leukemia (translocation) 1
EN1	engrailed homeobox 1
KCNA5	potassium voltage-gated channel, shaker-related subfamily, member 5
CEP76	centrosomal protein 76kDa
SNX2	sorting nexin 2
PCDH8	protocadherin 8
CYP4B1	cytochrome P450, family 4, subfamily B, polypeptide 1

SETBP1	SET binding protein 1
KCTD13	potassium channel tetramerization domain containing 13
LIP1	lipase, member 1
DVL2	dishevelled segment polarity protein 2
NAP1L2	nucleosome assembly protein 1-like 2
BST1	bone marrow stromal cell antigen 1
CALM2	calmodulin 2 (phosphorylase kinase, delta)
ZC2HC1C	Zinc Finger C2HC-Type Containing 1C
TTC7B	tetratricopeptide repeat domain 7B
KHSRP	KH-type splicing regulatory protein
ZFP36	ZFP36 ring finger protein
RPA1	replication protein A1, 70kDa
RSBN1L	round spermatid basic protein 1-like
MSANTD2	Myb/SANT DNA Binding Domain Containing 2
SLC38A3	solute carrier family 38, member 3
RRBP1	ribosome binding protein 1
CADPS2	Ca ⁺⁺ -dependent secretion activator 2
CIRBP	cold inducible RNA binding protein
PHAX	phosphorylated adaptor for RNA export
VBP1	von Hippel-Lindau binding protein 1
ZC3H7A	zinc finger CCCH-type containing 7A
AKAP12	A kinase (PRKA) anchor protein 12
ACE2	angiotensin I converting enzyme 2
CITED2	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2
USP1	ubiquitin specific peptidase 1
POLA1	polymerase (DNA directed), alpha 1, catalytic subunit
SEC22B	SEC22 vesicle trafficking protein homolog B (<i>S. cerevisiae</i>) (gene/pseudogene)
EVA1C	Eva-1 Homolog C
ORC6	Origin Recognition Complex Subunit 6
LMO4	LIM domain only 4
KCNJ15	potassium inwardly-rectifying channel, subfamily J, member 15
OSBPL7	oxysterol binding protein-like 7
IL15RA	interleukin 15 receptor, alpha
RAP1GDS1	RAP1, GTP-GDP dissociation stimulator 1
CHD4	chromodomain helicase DNA binding protein 4
TBP	TATA box binding protein
HNRNPD	heterogeneous nuclear ribonucleoprotein D (AU-rich element RNA binding protein 1, 37kDa)
HNRNPR	heterogeneous nuclear ribonucleoprotein R
RNF13	ring finger protein 13
BICD1	bicaudal D homolog 1 (<i>Drosophila</i>)
ANO4	anoctamin 4
FGD4	FYVE, RhoGEF and PH domain containing 4
ID2	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein
TIMM8A	translocase of inner mitochondrial membrane 8 homolog A (yeast)
LRFN1	leucine rich repeat and fibronectin type III domain containing 1
GPR6	G protein-coupled receptor 6
R3HDM2	R3H domain containing 2
RBM26	RNA binding motif protein 26
DGKZ	diacylglycerol kinase, zeta
LRR17	leucine rich repeat containing 17
C20ORF112	chromosome 20 open reading frame 112
RAB43	RAB43, member RAS oncogene family
PTGIR	prostaglandin I2 (prostacyclin) receptor (IP)

PRKRIR	protein-kinase, interferon-inducible double stranded RNA dependent inhibitor, repressor of (P58 repressor)
FUBP1	far upstream element (FUSE) binding protein 1
C10ORF12	chromosome 10 open reading frame 12
PRPF8	pre-mRNA processing factor 8
RNF40	ring finger protein 40, E3 ubiquitin protein ligase
ACTG1	actin, gamma 1
SRRM1	serine/arginine repetitive matrix 1
BET1	Bet1 golgi vesicular membrane trafficking protein
EIF1	eukaryotic translation initiation factor 1
ADPGK	ADP-dependent glucokinase
GEM	GTP binding protein overexpressed in skeletal muscle
XPO7	exportin 7
ESM1	endothelial cell-specific molecule 1
ABHD3	abhydrolase domain containing 3
RGS7	regulator of G-protein signaling 7
TGIF1	TGFB-induced factor homeobox 1
MAB21L1	mab-21-like 1 (C. elegans)
TMEM55B	transmembrane protein 55B
PDAP1	PDGFA associated protein 1
COL3A1	collagen, type III, alpha 1
SNCA	synuclein, alpha (non A4 component of amyloid precursor)
VASP	vasodilator-stimulated phosphoprotein
ZNF24	zinc finger protein 24
UBLCP1	ubiquitin-like domain containing CTD phosphatase 1
VSNL1	visinin-like 1
PTPRS	protein tyrosine phosphatase, receptor type, S
MCHR1	melanin-concentrating hormone receptor 1
TEK	TEK tyrosine kinase, endothelial
ZNF281	zinc finger protein 281
GBAS	glioblastoma amplified sequence
NCKAP1	NCK-associated protein 1
TAGLN2	transgelin 2
HSPD1	heat shock 60kDa protein 1 (chaperonin)
PRLR	prolactin receptor
ZNF521	zinc finger protein 521
ANXA4	annexin A4
GRK6	G protein-coupled receptor kinase 6
NKRF	NFKB repressing factor
LRRC16A	leucine rich repeat containing 16A
GNPDA2	glucosamine-6-phosphate deaminase 2
PIAS3	protein inhibitor of activated STAT, 3
PRPS2	phosphoribosyl pyrophosphate synthetase 2
ZNF146	zinc finger protein 146
ABHD6	abhydrolase domain containing 6
R3HDM1	R3H domain containing 1
SOX2	SRY (sex determining region Y)-box 2
DGKH	diacylglycerol kinase, eta
BIRC6	baculoviral IAP repeat containing 6
GDAP1L1	ganglioside induced differentiation associated protein 1-like 1
DCAF12	DDB1 And CUL4 Associated Factor 12
USP34	ubiquitin specific peptidase 34
C2CD5	C2 Calcium Dependent Domain Containing 5
HAND2	heart and neural crest derivatives expressed 2

ANKRD23	ankyrin repeat domain 23
SLC8A2	solute carrier family 8 (sodium/calcium exchanger), member 2
VPS45	vacuolar protein sorting 45 homolog (S. cerevisiae)
FRK	fyn-related kinase
PDGFC	platelet derived growth factor C
GAS2L1	growth arrest-specific 2 like 1
TMEM178A	Transmembrane Protein 178A
E2F5	E2F transcription factor 5, p130-binding
PNRC1	proline-rich nuclear receptor coactivator 1
CNN3	calponin 3, acidic
KDELR2	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2
HCCS	holocytochrome c synthase
JAK2	Janus kinase 2
FOXF2	forkhead box F2
DLG4	discs, large homolog 4 (Drosophila)
C1GALT1	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-beta-galactosyltransferase, 1
YY1	YY1 transcription factor
TMEM161B	transmembrane protein 161B
TRA2B	Transformer 2 Beta Homolog
SPRY1	sprouty homolog 1, antagonist of FGF signaling (Drosophila)
BPNT1	3'(2'), 5'-bisphosphate nucleotidase 1
EIF3A	eukaryotic translation initiation factor 3, subunit A
OTX2	orthodenticle homeobox 2
LDB2	LIM domain binding 2
LANCL3	LanC lantibiotic synthetase component C-like 3 (bacterial)
PGAM1	phosphoglycerate mutase 1 (brain)
RGAG1	retrotransposon gag domain containing 1
ZNF215	zinc finger protein 215
CDC37L1	cell division cycle 37-like 1
ASRGL1	asparaginase like 1
ZMAT3	zinc finger, matrin-type 3
LETM1	leucine zipper-EF-hand containing transmembrane protein 1
PPP6C	protein phosphatase 6, catalytic subunit
SIAH1	siah E3 ubiquitin protein ligase 1
CAMLG	calcium modulating ligand
FAM117A	family with sequence similarity 117, member A
RBM7	RNA binding motif protein 7
MYO15A	myosin XVA
IL13	interleukin 13
AP3D1	adaptor-related protein complex 3, delta 1 subunit
CTBP2	C-terminal binding protein 2
JAG2	jagged 2
TICRR	TOPBP1 Interacting Checkpoint And Replication Regulator
PRDM12	PR domain containing 12
SP2	Sp2 transcription factor
WDR1	WD repeat domain 1
GALNT15	Polypeptide N-Acetylgalactosaminyltransferase 15
MMD2	monocyte to macrophage differentiation-associated 2
HOXA9	homeobox A9
GTF2I	general transcription factor Iii
SNAI2	snail family zinc finger 2
ZFP36L1	ZFP36 ring finger protein-like 1
VAMP4	vesicle-associated membrane protein 4

TNFRSF21	tumor necrosis factor receptor superfamily, member 21
UBAP2L	ubiquitin associated protein 2-like
CERS2	Ceramide Synthase 2
DNAJC13	DnaJ (Hsp40) homolog, subfamily C, member 13
GIT1	G protein-coupled receptor kinase interacting ArfGAP 1
HOXB4	homeobox B4
HNRNPK	heterogeneous nuclear ribonucleoprotein K
NUP153	nucleoporin 153kDa
TNMX1	Thioredoxin Related Transmembrane Protein 1
SRI	sorcini
RALGAPA1	Ral GTPase Activating Protein Catalytic Alpha Subunit 1
TERF2	telomeric repeat binding factor 2
GPC1	glypican 1
MAN1C1	mannosidase, alpha, class 1C, member 1
JPH3	junctophilin 3
UBE2E2	ubiquitin-conjugating enzyme E2E 2
NOTCH3	notch 3
GAS2	growth arrest-specific 2
TAOK3	TAO kinase 3
CNOT1	CCR4-NOT transcription complex, subunit 1
LHX8	LIM homeobox 8
PMP22	peripheral myelin protein 22
PDGFA	platelet-derived growth factor alpha polypeptide
PPM1D	protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent, 1D
ID4	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein
SALL1	spalt-like transcription factor 1
LHX9	LIM homeobox 9
OTUD5	OTU domain containing 5
KCNH5	potassium voltage-gated channel, subfamily H (eag-related), member 5
LRP6	low density lipoprotein receptor-related protein 6
COL6A3	collagen, type VI, alpha 3
SATB1	SATB homeobox 1
RBPM52	RNA binding protein with multiple splicing 2
SLC25A22	solute carrier family 25 (mitochondrial carrier: glutamate), member 22
EDN1	endothelin 1
BTG1	B-cell translocation gene 1, anti-proliferative
ARHGEF18	Rho/Rac guanine nucleotide exchange factor (GEF) 18
CLIP3	CAP-GLY domain containing linker protein 3
HACE1	HECT domain and ankyrin repeat containing E3 ubiquitin protein ligase 1
PLEKHA7	pleckstrin homology domain containing, family A member 7
EIF1AD	eukaryotic translation initiation factor 1A domain containing
STK3	serine/threonine kinase 3
SFPQ	splicing factor proline/glutamine-rich
CLCN3	chloride channel, voltage-sensitive 3
RAB5A	RAB5A, member RAS oncogene family
KDM5C	Lysine Demethylase 5C
SLC25A25	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 25
AGPAT1	1-acylglycerol-3-phosphate O-acyltransferase 1
DAP	death-associated protein
KHDRBS1	KH domain containing, RNA binding, signal transduction associated 1
INSM1	insulinoma-associated 1
IKBKB	inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
COBLL1	cordons-bleu WH2 repeat protein-like 1

STAG1	stromal antigen 1
SNED1	sushi, nidogen and EGF-like domains 1
NFIA	nuclear factor I/A
KPNB1	karyopherin (importin) beta 1
HIATL1	hippocampus abundant transcript-like 1
SYVN1	synovial apoptosis inhibitor 1, synoviolin
RPL22	ribosomal protein L22
ORC2	Origin Recognition Complex Subunit 2
SPPL3	Signal Peptide Peptidase Like 3
REV3L	REV3-like, polymerase (DNA directed), zeta, catalytic subunit
CPA4	carboxypeptidase A4
BOLL	boule-like RNA-binding protein
LEF1	lymphoid enhancer-binding factor 1
IP6K2	Inositol Hexakisphosphate Kinase 2
YTHDF1	YTH domain family, member 1
DLD	dihydrolipoamide dehydrogenase
RASA1	RAS p21 protein activator (GTPase activating protein) 1
DHX40	DEAH (Asp-Glu-Ala-His) box polypeptide 40
RSPO3	R-spondin 3
TFE3	transcription factor binding to IGHM enhancer 3
PIM1	pim-1 oncogene
GTF2H1	general transcription factor IIH, polypeptide 1, 62kDa
PECAM1	platelet/endothelial cell adhesion molecule 1
TLN2	talin 2
NEUROG2	neurogenin 2
MYH9	myosin, heavy chain 9, non-muscle
EIF4G2	eukaryotic translation initiation factor 4 gamma, 2
SLC37A3	solute carrier family 37, member 3
KAT6B	Lysine Acetyltransferase 6B
GNB1	guanine nucleotide binding protein (G protein), beta polypeptide 1
CTCF	CCCTC-binding factor (zinc finger protein)-like
GABARAPL1	GABA(A) receptor-associated protein like 1
AMPH	amphiphysin
PLEK	pleckstrin
CNOT2	CCR4-NOT transcription complex, subunit 2
ZZZ3	zinc finger, ZZ-type containing 3
SLC6A8	solute carrier family 6 (neurotransmitter transporter), member 8
ZNF292	zinc finger protein 292
TBX3	T-box 3
FAM175A	family with sequence similarity 175, member A
MEOX2	mesenchyme homeobox 2
DEK	DEK oncogene
ACVR1	activin A receptor, type I
MPZ	myelin protein zero
BAIAP2	BAI1-associated protein 2
NSF	N-ethylmaleimide-sensitive factor
FLI1	Fli-1 proto-oncogene, ETS transcription factor
NCK2	NCK adaptor protein 2
LURAP1L	Leucine Rich Adaptor Protein 1 Like
HIAT1	hippocampus abundant transcript 1
RSPO1	R-spondin 1
MINK1	misshapen-like kinase 1
TMOD2	tropomodulin 2 (neuronal)

TMEM185A	transmembrane protein 185A
LRRRC8A	leucine rich repeat containing 8 family, member A
SHOX2	short stature homeobox 2
PSIP1	PC4 and SFRS1 interacting protein 1
ERO1L	ERO1-like (<i>S. cerevisiae</i>)
GNB4	guanine nucleotide binding protein (G protein), beta polypeptide 4
EPS8	epidermal growth factor receptor pathway substrate 8
SEPT9	septin 9
SIPA1L2	signal-induced proliferation-associated 1 like 2
ZCCHC11	zinc finger, CCHC domain containing 11
ABCD3	ATP-binding cassette, sub-family D (ALD), member 3
ZNF532	zinc finger protein 532
KCNMB2	potassium large conductance calcium-activated channel, subfamily M, beta member 2
CLCF1	cardiotrophin-like cytokine factor 1
BIVM	basic, immunoglobulin-like variable motif containing
EPHB1	EPH receptor B1
LITAF	lipopolysaccharide-induced TNF factor
SMIM14	Small Integral Membrane Protein 14
LRRRC4	leucine rich repeat containing 4
RNF145	ring finger protein 145
GPR64	G protein-coupled receptor 64
SEMA3C	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3C
ATP6V1B2	ATPase, H ⁺ transporting, lysosomal 56/58kDa, V1 subunit B2
CDC73	cell division cycle 73
MAP4K3	mitogen-activated protein kinase kinase kinase kinase 3
ANO1	anoctamin 1, calcium activated chloride channel
KDM2B	Lysine Demethylase 2B
TIGD6	tigger transposable element derived 6
FYB	FYN binding protein
THSD7B	thrombospondin, type I, domain containing 7B
ZNF280D	zinc finger protein 280D
KANSL1	KAT8 Regulatory NSL Complex Subunit 1
ANKS1B	ankyrin repeat and sterile alpha motif domain containing 1B
RRN3	RRN3 RNA polymerase I transcription factor homolog (<i>S. cerevisiae</i>)
GORASP2	golgi reassembly stacking protein 2, 55kDa
GOLPH3	golgi phosphoprotein 3 (coat-protein)
MYCN	v-myc avian myelocytomatosis viral oncogene neuroblastoma derived homolog
DPY19L4	dpy-19-like 4 (<i>C. elegans</i>)
COL11A1	collagen, type XI, alpha 1
SMYD4	SET and MYND domain containing 4
GCLC	glutamate-cysteine ligase, catalytic subunit
API5	apoptosis inhibitor 5
SEC63	SEC63 homolog (<i>S. cerevisiae</i>)
ZFPM2	zinc finger protein, FOG family member 2
MAP1A	microtubule-associated protein 1A
ZNF217	zinc finger protein 217
NADK	NAD kinase
VSIG1	V-set and immunoglobulin domain containing 1
GNPTAB	N-acetylglucosamine-1-phosphate transferase, alpha and beta subunits
ZC3H14	zinc finger CCCH-type containing 14
ULK2	Unc-51 Like Autophagy Activating Kinase 2
CHSY1	chondroitin sulfate synthase 1
GAD1	glutamate decarboxylase 1 (brain, 67kDa)

FBXL19	F-box and leucine-rich repeat protein 19
OTUD6B	OTU domain containing 6B
SNAP25	synaptosomal-associated protein, 25kDa
ZBTB26	zinc finger and BTB domain containing 26
DPP6	dipeptidyl-peptidase 6
UBE2H	ubiquitin-conjugating enzyme E2H
PTK2	protein tyrosine kinase 2
KIF11	kinesin family member 11
EML1	echinoderm microtubule associated protein like 1
SEPT2	septin 2
BZRAP1	benzodiazapine receptor (peripheral) associated protein 1
SYNCRIP	synaptotagmin binding, cytoplasmic RNA interacting protein
RAP1A	RAP1A, member of RAS oncogene family
DGKG	diacylglycerol kinase, gamma 90kDa
RAC1	ras-related C3 botulinum toxin substrate 1 (rho family, small GTP binding protein Rac1)
CLIP1	CAP-GLY domain containing linker protein 1
HBEGF	heparin-binding EGF-like growth factor
CTCF	CCCTC-binding factor (zinc finger protein)
VAMP2	vesicle-associated membrane protein 2 (synaptobrevin 2)
PMPCB	peptidase (mitochondrial processing) beta
RPS6KA5	ribosomal protein S6 kinase, 90kDa, polypeptide 5
NTN4	netrin 4
ABCB7	ATP-binding cassette, sub-family B (MDR/TAP), member 7
ATP1B1	ATPase, Na ⁺ /K ⁺ transporting, beta 1 polypeptide
FLRT3	fibronectin leucine rich transmembrane protein 3
CCDC141	coiled-coil domain containing 141
ZFAND3	zinc finger, AN1-type domain 3
LRP8	low density lipoprotein receptor-related protein 8, apolipoprotein e receptor
PREX1	phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1
CAP1	CAP, adenylate cyclase-associated protein 1 (yeast)
STK39	serine threonine kinase 39
EXO1	exonuclease 1
PGM5	phosphoglucomutase 5
WSCD2	WSC domain containing 2
LZTS2	leucine zipper, putative tumor suppressor 2
RAB39B	RAB39B, member RAS oncogene family
ATP2A2	ATPase, Ca ⁺⁺ transporting, cardiac muscle, slow twitch 2
ZDHHC2	zinc finger, DHHC-type containing 2
HBP1	HMG-box transcription factor 1
CPED1	Cadherin Like And PC-Esterase Domain Containing 1
HOOK3	hook microtubule-tethering protein 3
PICALM	phosphatidylinositol binding clathrin assembly protein
GCH1	GTP cyclohydrolase 1
USP33	ubiquitin specific peptidase 33
SYNJ2	synaptojanin 2
BTA1F1	BTA1F1 RNA polymerase II, B-TFIID transcription factor-associated, 170kDa
PTPN1	protein tyrosine phosphatase, non-receptor type 1
INSIG2	insulin induced gene 2
ANKRD29	ankyrin repeat domain 29
SRSF3	Serine And Arginine Rich Splicing Factor 3
DENND4C	DENN/MADD domain containing 4C
PPP1R14C	protein phosphatase 1, regulatory (inhibitor) subunit 14C
FUT9	fucosyltransferase 9 (alpha (1,3) fucosyltransferase)

RAB1B	RAB1B, member RAS oncogene family
TSPYL4	TSPY-like 4
PTPRF	protein tyrosine phosphatase, receptor type, F
GLIS2	GLIS family zinc finger 2
ILDR1	immunoglobulin-like domain containing receptor 1
DDX52	DEAD (Asp-Glu-Ala-Asp) box polypeptide 52
KCNE1	potassium voltage-gated channel, Isk-related family, member 1
CACNA1C	calcium channel, voltage-dependent, L type, alpha 1C subunit
PRPF38B	pre-mRNA processing factor 38B
TNPO2	transportin 2
POU4F1	POU class 4 homeobox 1
SMAP1	small ArfGAP 1
SEC61A1	Sec61 alpha 1 subunit (<i>S. cerevisiae</i>)
ELMO1	engulfment and cell motility 1
ARHGAP24	Rho GTPase activating protein 24
FN1	fibronectin 1
MYH10	myosin, heavy chain 10, non-muscle
PDCD4	programmed cell death 4 (neoplastic transformation inhibitor)
NCBP1	nuclear cap binding protein subunit 1, 80kDa
GNAI1	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 1
SGK3	serum/glucocorticoid regulated kinase family, member 3
MS4A1	membrane-spanning 4-domains, subfamily A, member 1
CDK14	Cyclin Dependent Kinase 14
LAMC2	laminin, gamma 2
TAF4B	TAF4b RNA polymerase II, TATA box binding protein (TBP)-associated factor, 105kDa
YWHAQ	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, theta polypeptide
POLDIP3	polymerase (DNA-directed), delta interacting protein 3
CNOT7	CCR4-NOT transcription complex, subunit 7
UBE2D2	ubiquitin-conjugating enzyme E2D 2
RTN3	reticulon 3
TMEM168	transmembrane protein 168
RPE	ribulose-5-phosphate-3-epimerase
ADAMTS3	ADAM metalloproteinase with thrombospondin type 1 motif, 3
KANK4	KN motif and ankyrin repeat domains 4
RAB27A	RAB27A, member RAS oncogene family
SMARCAD1	SWI/SNF-related, matrix-associated actin-dependent regulator of chromatin, subfamily a, containing DEAD/H box 1
STAG2	stromal antigen 2
CCDC47	coiled-coil domain containing 47
G2E3	G2/M-Phase Specific E3 Ubiquitin Protein Ligase
KATNBL1	Katanin Regulatory Subunit B1 Like 1
STARD7	StAR-related lipid transfer (START) domain containing 7
XPNPEP3	X-prolyl aminopeptidase (aminopeptidase P) 3, putative
HMGXB4	HMG-Box Containing 4
ARFIP1	ADP-ribosylation factor interacting protein 1
ZNF706	zinc finger protein 706
MUM1L1	melanoma associated antigen (mutated) 1-like 1
PHC3	polyhomeotic homolog 3 (<i>Drosophila</i>)
SERPINB8	serpin peptidase inhibitor, clade B (ovalbumin), member 8
DGKD	diacylglycerol kinase, delta 130kDa
MLLT3	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, <i>Drosophila</i>); translocated to, 3
TET3	tet methylcytosine dioxygenase 3
CRISPLD1	cysteine-rich secretory protein LCCL domain containing 1
GTF2E1	general transcription factor IIE, polypeptide 1, alpha 56kDa

CCBL2	cysteine conjugate-beta lyase 2
NXT2	nuclear transport factor 2-like export factor 2
MEX3C	mex-3 RNA binding family member C
PURA	purine-rich element binding protein A
DDX17	DEAD (Asp-Glu-Ala-Asp) box helicase 17
VAT1	vesicle amine transport 1
MXD4	MAX dimerization protein 4
PURG	purine-rich element binding protein G
DNAJB2	DnaJ (Hsp40) homolog, subfamily B, member 2
RNF114	ring finger protein 114
KIF2A	kinesin heavy chain member 2A
SPTSSA	Serine Palmitoyltransferase Small Subunit A
TSPAN2	tetraspanin 2
SYT14L	synaptotagmin XIV-like
GYP A	glycophorin A (MNS blood group)
SLC25A24	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 24
ZFY	zinc finger protein, Y-linked
HMGCR	3-hydroxy-3-methylglutaryl-CoA reductase
MAPKBP1	mitogen-activated protein kinase binding protein 1
PLEKHO2	pleckstrin homology domain containing, family O member 2
NET1	neuroepithelial cell transforming 1
CELSR3	cadherin, EGF LAG seven-pass G-type receptor 3
SUV420H1	suppressor of variegation 4-20 homolog 1 (Drosophila)
DCAF10	DDB1 And CUL4 Associated Factor 10
PCDH7	protocadherin 7
KCTD15	potassium channel tetramerization domain containing 15
RNF2	ring finger protein 2
ACSL3	acyl-CoA synthetase long-chain family member 3
UTRN	utrophin
KCNIP3	Kv channel interacting protein 3, calsenilin
FGF1	fibroblast growth factor 1 (acidic)
GJA1	gap junction protein, alpha 1, 43kDa
ARAP2	ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 2
NGFR	nerve growth factor receptor
NHLH2	nescient helix loop helix 2
SPEG	SPEG complex locus
FNIP1	folliculin interacting protein 1
CYP11B1	cytochrome P450, family 11, subfamily B, polypeptide 1
BLCAP	bladder cancer associated protein
C2ORF69	chromosome 2 open reading frame 69
FGFR2	fibroblast growth factor receptor 2
SRC	v-src avian sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog
EML4	echinoderm microtubule associated protein like 4
CEP44	Centrosomal Protein 44
JAG1	jagged 1
WDR48	WD repeat domain 48
FZD7	frizzled family receptor 7
ZNF800	zinc finger protein 800
ZC3H11A	zinc finger CCCH-type containing 11A
ETS2	v-ets avian erythroblastosis virus E26 oncogene homolog 2
BAG4	BCL2-associated athanogene 4
HS6ST2	heparan sulfate 6-O-sulfotransferase 2
FRYL	FRY-like

DMRT2	doublesex and mab-3 related transcription factor 2
CAV2	caveolin 2
FBXL3	F-box and leucine-rich repeat protein 3
EIF4E3	eukaryotic translation initiation factor 4E family member 3
HSPA13	heat shock protein 70kDa family, member 13
ADNP	activity-dependent neuroprotector homeobox
SKIDA1	SKI/DACH Domain Containing 1
GRHL1	grainyhead-like 1 (Drosophila)
HMGB1	high mobility group box 1
GALC	galactosylceramidase
WBP1L	WW Domain Binding Protein 1 Like
LRRK1	leucine-rich repeat kinase 1
CAPZA1	capping protein (actin filament) muscle Z-line, alpha 1
NIPBL	Nipped-B homolog (Drosophila)
ADAMTSL3	ADAMTS-like 3
INTS2	integrator complex subunit 2
SLC16A9	solute carrier family 16, member 9
ELOVL7	ELOVL fatty acid elongase 7
TNFSF4	tumor necrosis factor (ligand) superfamily, member 4
PELI1	pellino E3 ubiquitin protein ligase 1
KCNE3	potassium voltage-gated channel, Isk-related family, member 3
ARCN1	archain 1
MMD	monocyte to macrophage differentiation-associated
PHC2	polyhomeotic homolog 2 (Drosophila)
UNC119B	unc-119 homolog B (C. elegans)
CCDC85A	coiled-coil domain containing 85A
ADAM12	ADAM metallopeptidase domain 12
PAPOLG	poly(A) polymerase gamma
THUMPD1	THUMP domain containing 1
CDC42	cell division cycle 42
NRF1	nuclear respiratory factor 1
MBTD1	mbt domain containing 1
BAAT	bile acid CoA: amino acid N-acyltransferase (glycine N-choloyltransferase)
GIMAP6	GTPase, IMAP family member 6
RPRD1B	regulation of nuclear pre-mRNA domain containing 1B
CREBRF	CREB3 Regulatory Factor
UBR3	ubiquitin protein ligase E3 component n-recognin 3 (putative)
NAALADL2	N-acetylated alpha-linked acidic dipeptidase-like 2
C11ORF30	chromosome 11 open reading frame 30
KLF3	Kruppel-like factor 3 (basic)
TMED7	transmembrane emp24 protein transport domain containing 7
ZIC4	Zic family member 4
FBXO33	F-box protein 33
HLTF	helicase-like transcription factor
RARB	retinoic acid receptor, beta
H3F3B	H3 histone, family 3B (H3.3B)
PTPLAD1	protein tyrosine phosphatase-like A domain containing 1
UBQLN1	ubiquilin 1
PHF21A	PHD finger protein 21A
GPR137C	G protein-coupled receptor 137C
ACBD5	acyl-CoA binding domain containing 5
DNAJC5	DnaJ (Hsp40) homolog, subfamily C, member 5
FCHSD2	FCH and double SH3 domains 2

PPAP2B phosphatidic acid phosphatase type 2B
 FMNL2 formin-like 2
 PCLO piccolo presynaptic cytomatrix protein
 TXNDC5 thioredoxin domain containing 5 (endoplasmic reticulum)
 NDRG3 NDRG family member 3
 PCSK2 proprotein convertase subtilisin/kexin type 2
 HMBOX1 homeobox containing 1
 RALA v-ral simian leukemia viral oncogene homolog A (ras related)
 PPF1A1 protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 1
 TMEM39A transmembrane protein 39A
 ZBTB38 zinc finger and BTB domain containing 38
 PEA15 phosphoprotein enriched in astrocytes 15
 GDF6 growth differentiation factor 6
 PHF2 PHD finger protein 2
 VGLL4 vestigial like 4 (Drosophila)
 CHD2 chromodomain helicase DNA binding protein 2
 MARK1 MAP/microtubule affinity-regulating kinase 1
 ZIC5 Zic family member 5
 UBL3 ubiquitin-like 3
 RAPGEFL1 Rap guanine nucleotide exchange factor (GEF)-like 1
 NUP50 nucleoporin 50kDa
 C15ORF41 chromosome 15 open reading frame 41
 C11ORF57 chromosome 11 open reading frame 57
 ZC3H7B zinc finger CCCH-type containing 7B
 GOLGA1 golgin A1
 ZBTB6 zinc finger and BTB domain containing 6
 NRXN1 neurexin 1
 GXYLT1 Glucoside Xylosyltransferase 1
 MAGI2 membrane associated guanylate kinase, WW and PDZ domain containing 2
 SENP6 SUMO1/sentrin specific peptidase 6
 CORO1C coronin, actin binding protein, 1C
 TNKS2 tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase 2
 HECW2 HECT, C2 and WW domain containing E3 ubiquitin protein ligase 2
 ANKRD50 ankyrin repeat domain 50
 NDFIP2 Nedd4 family interacting protein 2
 ARID4B AT rich interactive domain 4B (RBP1-like)
 CPEB1 cytoplasmic polyadenylation element binding protein 1
 IQSEC2 IQ motif and Sec7 domain 2
 B4GALT6 UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 6
 ASPH aspartate beta-hydroxylase
 ST18 suppression of tumorigenicity 18 (breast carcinoma) (zinc finger protein)
 LMBR1 limb development membrane protein 1
 DMTF1 cyclin D binding myb-like transcription factor 1
 SPTLC3 serine palmitoyltransferase, long chain base subunit 3
 RP2 retinitis pigmentosa 2 (X-linked recessive)
 GALNT7 UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 7 (GalNAc-T7)
 GNE glucosamine (UDP-N-acetyl)-2-epimerase/N-acetylmannosamine kinase
 NECAB1 N-terminal EF-hand calcium binding protein 1
 ZNF280C zinc finger protein 280C
 KMT2C Lysine Methyltransferase 2C
 WDR7 WD repeat domain 7
 SSR1 signal sequence receptor, alpha
 EMP1 epithelial membrane protein 1

AIF1L	allograft inflammatory factor 1-like
FBXO45	F-box protein 45
FBXW7	F-box and WD repeat domain containing 7, E3 ubiquitin protein ligase
JARID2	jumonji, AT rich interactive domain 2
CD164	CD164 molecule, sialomucin
DAAM1	dishevelled associated activator of morphogenesis 1
USP15	ubiquitin specific peptidase 15
B3GNT5	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 5
UBE3A	ubiquitin protein ligase E3A
OTUB2	OTU domain, ubiquitin aldehyde binding 2
RERE	arginine-glutamic acid dipeptide (RE) repeats
KCTD10	potassium channel tetramerization domain containing 10
SLC6A20	solute carrier family 6 (proline IMINO transporter), member 20
MED1	mediator complex subunit 1
TWF1	twinfilin actin-binding protein 1
NLK	nemo-like kinase
SMG7	SMG7 nonsense mediated mRNA decay factor
TGFBR3	transforming growth factor, beta receptor III
KIF3C	kinesin family member 3C
GNPNAT1	glucosamine-phosphate N-acetyltransferase 1
TPPP	tubulin polymerization promoting protein
SFRP1	secreted frizzled-related protein 1
ANKRD13A	ankyrin repeat domain 13A
INSIG1	insulin induced gene 1
PPP1R3B	protein phosphatase 1, regulatory subunit 3B
FCHO2	FCH domain only 2
UBXN7	UBX domain protein 7
SLC10A7	solute carrier family 10, member 7
LASP1	LIM and SH3 protein 1
THBS1	thrombospondin 1
SOX5	SRY (sex determining region Y)-box 5
FSTL1	follistatin-like 1
RBPJ	recombination signal binding protein for immunoglobulin kappa J region
SPRED1	sprouty-related, EVH1 domain containing 1
GRPEL2	GrpE-like 2, mitochondrial (E. coli)
POGK	pogo transposable element with KRAB domain
FOSB	FBJ murine osteosarcoma viral oncogene homolog B
C6ORF120	chromosome 6 open reading frame 120
TSPAN9	tetraspanin 9
LPHN1	latrophilin 1
PFN2	profilin 2
KIAA0947	KIAA0947
ANK3	ankyrin 3, node of Ranvier (ankyrin G)
DCUN1D3	DCN1, defective in cullin neddylation 1, domain containing 3
FBXO21	F-box protein 21
SOX4	SRY (sex determining region Y)-box 4
DDX6	DEAD (Asp-Glu-Ala-Asp) box helicase 6
SLC24A3	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
RNF138	ring finger protein 138, E3 ubiquitin protein ligase
OTUD7B	OTU domain containing 7B
CLDN1	claudin 1
LRCH1	leucine-rich repeats and calponin homology (CH) domain containing 1
MYEF2	myelin expression factor 2

TEF	thyrotrophic embryonic factor
RAB11FIP2	RAB11 family interacting protein 2 (class I)
FAM102A	family with sequence similarity 102, member A
NRCAM	neuronal cell adhesion molecule
MSL2	male-specific lethal 2 homolog (Drosophila)
ZBTB21	Zinc Finger And BTB Domain Containing 21
MPP5	membrane protein, palmitoylated 5 (MAGUK p55 subfamily member 5)
TRHDE	thyrotropin-releasing hormone degrading enzyme
MSL1	male-specific lethal 1 homolog (Drosophila)
TGIF2	TGFB-induced factor homeobox 2
HECTD2	HECT domain containing E3 ubiquitin protein ligase 2
CPLX2	complexin 2
RBM24	RNA binding motif protein 24
RAP2C	RAP2C, member of RAS oncogene family
PPP2R2C	protein phosphatase 2, regulatory subunit B, gamma
JOSD1	Josephin domain containing 1
STK24	serine/threonine kinase 24
TBC1D4	TBC1 domain family, member 4
ZNF398	zinc finger protein 398
EIF4E	eukaryotic translation initiation factor 4E
CCND1	cyclin D1
TMEM135	transmembrane protein 135
PARD6B	par-6 family cell polarity regulator beta
RNF141	ring finger protein 141
FAM131B	family with sequence similarity 131, member B
RAPGEF2	Rap guanine nucleotide exchange factor (GEF) 2
STXBP5	syntaxin binding protein 5 (tomosyn)
VAMP1	vesicle-associated membrane protein 1 (synaptobrevin 1)
ARHGEF3	Rho guanine nucleotide exchange factor (GEF) 3
NCOA1	nuclear receptor coactivator 1
CREM	cAMP responsive element modulator
MATR3	matrin 3
PTP4A1	protein tyrosine phosphatase type IVA, member 1
MPP7	membrane protein, palmitoylated 7 (MAGUK p55 subfamily member 7)
NMT2	N-myristoyltransferase 2
PAPOLA	poly(A) polymerase alpha
WNK3	WNK lysine deficient protein kinase 3
SNRK	SNF related kinase
AP1S3	adaptor-related protein complex 1, sigma 3 subunit
SLC16A14	solute carrier family 16, member 14
YWHAZ	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide
GPR158	G protein-coupled receptor 158
MAL2	mal, T-cell differentiation protein 2 (gene/pseudogene)
PDS5A	PDS5, regulator of cohesion maintenance, homolog A (S. cerevisiae)
MRAS	muscle RAS oncogene homolog
DOCK4	dedicator of cytokinesis 4
STC2	stanniocalcin 2
CSNK1G3	casein kinase 1, gamma 3
SCAF11	SR-Related CTD Associated Factor 11
SLC16A2	solute carrier family 16, member 2 (thyroid hormone transporter)
SULF1	sulfatase 1
CLTC	clathrin, heavy chain (Hc)
FGF7	fibroblast growth factor 7

CAMK2G	calcium/calmodulin-dependent protein kinase II gamma
LPPR4	lipid phosphate phosphatase-related protein type 4
NAB1	NGFI-A binding protein 1 (EGR1 binding protein 1)
JPH1	junctionophilin 1
NR4A2	nuclear receptor subfamily 4, group A, member 2
SLTM	SAFB-like, transcription modulator
FAM160B1	family with sequence similarity 160, member B1
SERP1	stress-associated endoplasmic reticulum protein 1
ATP6V1A	ATPase, H ⁺ transporting, lysosomal 70kDa, V1 subunit A
C7ORF60	chromosome 7 open reading frame 60
SOX6	SRY (sex determining region Y)-box 6
PARVA	parvin, alpha
NCOA3	nuclear receptor coactivator 3
RIT1	Ras-like without CAAX 1
MID1	midline 1 (Opitz/BBB syndrome)
IGFBP5	insulin-like growth factor binding protein 5
ADAR	adenosine deaminase, RNA-specific
LARP1	La ribonucleoprotein domain family, member 1
RAPGEF6	Rap guanine nucleotide exchange factor (GEF) 6
GAN	gigaxonin
ZBTB5	zinc finger and BTB domain containing 5
MIPOL1	mirror-image polydactyly 1
PHTF2	putative homeodomain transcription factor 2
ASH1L	ash1 (absent, small, or homeotic)-like (Drosophila)
FAM91A1	family with sequence similarity 91, member A1
CLOCK	clock circadian regulator
EBF3	early B-cell factor 3
SMARCC1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1
MPZL1	myelin protein zero-like 1
WAPAL	wings apart-like homolog (Drosophila)
LMO3	LIM domain only 3 (rhombotin-like 2)
PDE5A	phosphodiesterase 5A, cGMP-specific
MEGF10	multiple EGF-like-domains 10
CAP41	Centrosomal Protein 41
SLC39A10	solute carrier family 39 (zinc transporter), member 10
CRIM1	cysteine rich transmembrane BMP regulator 1 (chordin-like)
CALM1	calmodulin 1 (phosphorylase kinase, delta)
SP4	Sp4 transcription factor
ITGAV	integrin, alpha V
DDX3Y	DEAD (Asp-Glu-Ala-Asp) box helicase 3, Y-linked
KCND2	potassium voltage-gated channel, Shal-related subfamily, member 2
RNGTT	RNA guanylyltransferase and 5'-phosphatase
HNRNPU	heterogeneous nuclear ribonucleoprotein U (scaffold attachment factor A)
HS3ST3B1	heparan sulfate (glucosamine) 3-O-sulfotransferase 3B1
FAF2	Fas associated factor family member 2
ARMC8	armadillo repeat containing 8
MAP4	microtubule-associated protein 4
UVRAG	UV radiation resistance associated
ZBTB4	zinc finger and BTB domain containing 4
MED13L	mediator complex subunit 13-like
SLC2A13	solute carrier family 2 (facilitated glucose transporter), member 13
MEIS2	Meis homeobox 2
ADAMTSL1	ADAMTS-like 1

SLMAP	sarcolemma associated protein
KPNA3	karyopherin alpha 3 (importin alpha 4)
ARF3	ADP-ribosylation factor 3
ARID2	AT rich interactive domain 2 (ARID, RFX-like)
LCOR	ligand dependent nuclear receptor corepressor
YTHDC1	YTH domain containing 1
CXORF23	chromosome X open reading frame 23
GAD2	glutamate decarboxylase 2 (pancreatic islets and brain, 65kDa)
SOCS5	suppressor of cytokine signaling 5
EIF4G3	eukaryotic translation initiation factor 4 gamma, 3
MIER1	mesoderm induction early response 1, transcriptional regulator
SORBS1	sorbin and SH3 domain containing 1
CCSAP	Centriole, Cilia And Spindle Associated Protein
SYT1	synaptotagmin I
CGGBP1	CGG triplet repeat binding protein 1
NHS	Nance-Horan syndrome (congenital cataracts and dental anomalies)
ANKRD12	ankyrin repeat domain 12
MOB3B	MOB Kinase Activator 3B
ZC3HAV1	zinc finger CCCH-type, antiviral 1
PDS5B	PDS5, regulator of cohesion maintenance, homolog B (<i>S. cerevisiae</i>)
ETF1	eukaryotic translation termination factor 1
VTI1A	vesicle transport through interaction with t-SNAREs 1A
PHACTR2	phosphatase and actin regulator 2
CCNT2	cyclin T2
SBF2	SET binding factor 2
ATG14	Autophagy Related 14
LRAT	lecithin retinol acyltransferase (phosphatidylcholine--retinol O-acyltransferase)
SEC24A	SEC24 family member A
ZFYVE20	zinc finger, FYVE domain containing 20
ROCK2	Rho-associated, coiled-coil containing protein kinase 2
MAP3K1	mitogen-activated protein kinase kinase kinase 1, E3 ubiquitin protein ligase
FRAS1	Fraser syndrome 1
COL4A3	collagen, type IV, alpha 3 (Goodpasture antigen)
PUM2	pumilio RNA-binding family member 2
TMEM47	transmembrane protein 47
SPOCK1	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican) 1
GABBR2	gamma-aminobutyric acid (GABA) B receptor, 2
USP6	ubiquitin specific peptidase 6 (Tre-2 oncogene)
NLN	neurolysin (metallopeptidase M3 family)
GLCC11	glucocorticoid induced transcript 1
NACC2	NACC family member 2, BEN and BTB (POZ) domain containing
CHD9	chromodomain helicase DNA binding protein 9
STX6	syntaxin 6
WDFY1	WD repeat and FYVE domain containing 1
DIO2	deiodinase, iodothyronine, type II
FAM155B	family with sequence similarity 155, member B
DAG1	dystroglycan 1 (dystrophin-associated glycoprotein 1)
DUSP3	dual specificity phosphatase 3
ZNF652	zinc finger protein 652
UST	uronyl-2-sulfotransferase
PVRL1	poliavirus receptor-related 1 (herpesvirus entry mediator C)
SLC8A1	solute carrier family 8 (sodium/calcium exchanger), member 1
ITGB3	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)

RIMS4	regulating synaptic membrane exocytosis 4
AKAP6	A kinase (PRKA) anchor protein 6
ITCH	itchy E3 ubiquitin protein ligase
MMGT1	membrane magnesium transporter 1
EYA4	eyes absent homolog 4 (Drosophila)
NR5A2	nuclear receptor subfamily 5, group A, member 2
DICER1	dicer 1, ribonuclease type III
PPP2R5C	protein phosphatase 2, regulatory subunit B', gamma
GPR85	G protein-coupled receptor 85
TAL1	T-cell acute lymphocytic leukemia 1
PALLD	palladin, cytoskeletal associated protein
MAP3K7	Mitogen-Activated Protein Kinase Kinase Kinase 7
PSIP1	PC4 And SFRS1 Interacting Protein 1
SATB2	SATB homeobox 2
MEIS1	Meis homeobox 1
ACVR2A	activin A receptor, type IIA
BCL7A	B-cell CLL/lymphoma 7A
AFF3	AF4/FMR2 family, member 3
SYT14	synaptotagmin XIV
FAM63B	family with sequence similarity 63, member B
FNBP1L	formin binding protein 1-like
CTTNBP2NL	CTTNBP2 N-terminal like
GPD2	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)
SH2B3	SH2B adaptor protein 3
ASXL2	additional sex combs like 2 (Drosophila)
ZNF236	zinc finger protein 236
ZNF148	zinc finger protein 148
STK38L	serine/threonine kinase 38 like
SLC23A2	solute carrier family 23 (ascorbic acid transporter), member 2
NCOA6	nuclear receptor coactivator 6
DYNC1LI2	dynein, cytoplasmic 1, light intermediate chain 2
ABCA1	ATP-binding cassette, sub-family A (ABC1), member 1
EPB41L5	erythrocyte membrane protein band 4.1 like 5
FAM135B	family with sequence similarity 135, member B
MED13	mediator complex subunit 13
MON2	MON2 homolog (<i>S. cerevisiae</i>)
ZBTB39	zinc finger and BTB domain containing 39
FBXO34	F-box protein 34
SEPT11	septin 11
GMFB	glia maturation factor, beta
ZNF592	zinc finger protein 592
QSER1	glutamine and serine rich 1
GLS	glutaminase
ZNF365	zinc finger protein 365
CNR1	cannabinoid receptor 1 (brain)
PCDH11Y	protocadherin 11 Y-linked
CD28	CD28 molecule
AFAP1	actin filament associated protein 1
OLFML2A	olfactomedin-like 2A
FAM178A	family with sequence similarity 178, member A
MAP2	microtubule-associated protein 2
OSBP3	oxysterol binding protein-like 3
ABL2	c-abl oncogene 2, non-receptor tyrosine kinase

PTGFR	prostaglandin F receptor (FP)
NRP1	neuropilin 1
KMT2E	Lysine Methyltransferase 2E
CREBL2	cAMP responsive element binding protein-like 2
PI15	peptidase inhibitor 15
CDON	cell adhesion associated, oncogene regulated
PPM1E	protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent, 1E
PTPRG	protein tyrosine phosphatase, receptor type, G
KAT6A	Lysine Acetyltransferase 6A
SIX4	SIX homeobox 4
SLC7A2	solute carrier family 7 (cationic amino acid transporter, y ⁺ system), member 2
ACAP2	ArfGAP with coiled-coil, ankyrin repeat and PH domains 2
GRM1	glutamate receptor, metabotropic 1
ATRN	attractin
MSRB3	methionine sulfoxide reductase B3
UBE2W	ubiquitin-conjugating enzyme E2W (putative)
CDC42BPA	CDC42 binding protein kinase alpha (DMPK-like)
PTGS1	prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)
TFEC	transcription factor EC
SPRY4	sprouty homolog 4 (Drosophila)
PCDH11X	protocadherin 11 X-linked
CUL3	cullin 3
C8ORF79	Probable TRNA Methyltransferase 9-Like Protein
SLC12A6	solute carrier family 12 (potassium/chloride transporter), member 6
WIPF2	WAS/WASL interacting protein family, member 2
ZFH3	zinc finger homeobox 3
SH3PXD2B	SH3 and PX domains 2B
WNT5A	wingless-type MMTV integration site family, member 5A
CPM	carboxypeptidase M
MTPN	myotrophin
PTPRK	protein tyrosine phosphatase, receptor type, K
RAPGEF5	Rap guanine nucleotide exchange factor (GEF) 5
MYLK	myosin light chain kinase
SLC35F1	solute carrier family 35, member F1
EPB41	erythrocyte membrane protein band 4.1 (elliptocytosis 1, RH-linked)
PRRX1	paired related homeobox 1
KIF3B	kinesin family member 3B
AKAP11	A kinase (PRKA) anchor protein 11
PHF6	PHD finger protein 6
MAPK1	mitogen-activated protein kinase 1
DDX3X	DEAD (Asp-Glu-Ala-Asp) box helicase 3, X-linked
PAX3	paired box 3
BSN	bassoon presynaptic cytomatrix protein
NOTCH2	notch 2
RSBN1	round spermatid basic protein 1
WDR37	WD repeat domain 37
MITF	microphthalmia-associated transcription factor
BTRC	beta-transducin repeat containing E3 ubiquitin protein ligase
MIER3	mesoderm induction early response 1, family member 3
ABCC5	ATP-binding cassette, sub-family C (CFTR/MRP), member 5
CPEB4	cytoplasmic polyadenylation element binding protein 4
TMCC1	transmembrane and coiled-coil domain family 1
SLC31A1	solute carrier family 31 (copper transporter), member 1

CAPRIN1	cell cycle associated protein 1
TIMP3	TIMP metalloproteinase inhibitor 3
CPEB3	cytoplasmic polyadenylation element binding protein 3
RNF144A	ring finger protein 144A
SEC62	SEC62 homolog (<i>S. cerevisiae</i>)
TRIO	trio Rho guanine nucleotide exchange factor
LIN28A	Lin-28 Homolog A
TNPO1	transportin 1
PIKFYVE	Phosphoinositide Kinase, FYVE-Type Zinc Finger Containing
NCAM1	neural cell adhesion molecule 1
ETNK1	ethanolamine kinase 1
LPP	LIM domain containing preferred translocation partner in lipoma
KRAS	Kirsten rat sarcoma viral oncogene homolog
RTKN2	rhotekin 2
ST8SIA2	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 2
TRIM2	tripartite motif containing 2
HIC2	hypermethylated in cancer 2
AGPAT3	1-acylglycerol-3-phosphate O-acyltransferase 3
GAPVD1	GTPase activating protein and VPS9 domains 1
MOB1B	MOB Kinase Activator 1B
ATXN7L1	ataxin 7-like 1
PDE7B	phosphodiesterase 7B
MEGF9	multiple EGF-like-domains 9
WDR26	WD repeat domain 26
NPTX1	neuronal pentraxin I
HDAC4	histone deacetylase 4
BCL2L2	BCL2-like 2
UBR1	ubiquitin protein ligase E3 component n-recognin 1
GABRB3	gamma-aminobutyric acid (GABA) A receptor, beta 3
RPS6KB1	ribosomal protein S6 kinase, 70kDa, polypeptide 1
DCBLD2	discoidin, CUB and LCCL domain containing 2
EDA	ectodysplasin A
BTBD7	BTB (POZ) domain containing 7
SRGAP2	SLIT-ROBO Rho GTPase activating protein 2
FNDC3A	fibronectin type III domain containing 3A
NFASC	neurofascin
KCTD12	potassium channel tetramerization domain containing 12
C18ORF25	chromosome 18 open reading frame 25
PHLPP2	PH Domain And Leucine Rich Repeat Protein Phosphatase 2
STX16	syntaxin 16
COL19A1	collagen, type XIX, alpha 1
PAN3	PAN3 poly(A) specific ribonuclease subunit homolog (<i>S. cerevisiae</i>)
SHANK2	SH3 and multiple ankyrin repeat domains 2
KCNJ2	potassium inwardly-rectifying channel, subfamily J, member 2
NR4A3	nuclear receptor subfamily 4, group A, member 3
MGAT4A	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase, isozyme A
PCGF3	polycomb group ring finger 3
FKTN	fukutin
RUNX1	runt-related transcription factor 1
OTUD4	OTU domain containing 4
DCP2	decapping mRNA 2
RAB6B	RAB6B, member RAS oncogene family
ZFP91	ZFP91 zinc finger protein

PTBP3	Polypyrimidine Tract Binding Protein 3
KPNA6	karyopherin alpha 6 (importin alpha 7)
FAM46C	family with sequence similarity 46, member C
MBNL2	muscleblind-like splicing regulator 2
KLF13	Kruppel-like factor 13
JADE2	Jade Family PHD Finger 2
VCPIP1	valosin containing protein (p97)/p47 complex interacting protein 1
FOXP2	forkhead box P2
PTCH1	patched 1
RAPH1	Ras association (RalGDS/AF-6) and pleckstrin homology domains 1
MAG11	membrane associated guanylate kinase, WW and PDZ domain containing 1
YPEL2	yippee-like 2 (Drosophila)
FNDC3B	fibronectin type III domain containing 3B
ATP2B4	ATPase, Ca ⁺⁺ transporting, plasma membrane 4
SNX27	sorting nexin family member 27
NRP2	neuropilin 2
SLC7A6	solute carrier family 7 (amino acid transporter light chain, y ⁺ L system), member 6
AFF1	AF4/FMR2 family, member 1
MBNL1	muscleblind-like splicing regulator 1
ZAK	sterile alpha motif and leucine zipper containing kinase AZK
KIF1B	kinesin family member 1B
RNF165	ring finger protein 165
CCND2	cyclin D2
HNRNPA3	heterogeneous nuclear ribonucleoprotein A3
RC3H1	ring finger and CCCH-type domains 1
RAB11FIP4	RAB11 family interacting protein 4 (class II)
KALRN	kalirin, RhoGEF kinase
ZBTB34	zinc finger and BTB domain containing 34
THRB	thyroid hormone receptor, beta
RBM33	RNA binding motif protein 33
FAM46A	family with sequence similarity 46, member A
KIAA2018	KIAA2018
ITGB8	integrin, beta 8
PLCXD3	phosphatidylinositol-specific phospholipase C, X domain containing 3
IGF1	insulin-like growth factor 1 (somatomedin C)
GK5	glycerol kinase 5 (putative)
PPP1R9A	protein phosphatase 1, regulatory subunit 9A
TET2	tet methylcytosine dioxygenase 2
RPS6KA3	ribosomal protein S6 kinase, 90kDa, polypeptide 3
SSH2	slingshot protein phosphatase 2
RAB3IP	RAB3A interacting protein
XIAP	X-linked inhibitor of apoptosis
AP1G1	adaptor-related protein complex 1, gamma 1 subunit
DYRK1A	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 1A
VPS13B	vacuolar protein sorting 13 homolog B (yeast)
KIAA1045	KIAA1045
SLC44A1	solute carrier family 44 (choline transporter), member 1
HS2ST1	heparan sulfate 2-O-sulfotransferase 1
MTF1	metal-regulatory transcription factor 1
MKL2	MKL/myocardin-like 2
ST8SIA3	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 3
ZC3H12B	zinc finger CCCH-type containing 12B
IGF1R	insulin-like growth factor 1 receptor

CBL	Cbl proto-oncogene, E3 ubiquitin protein ligase
BACH2	BTB and CNC homology 1, basic leucine zipper transcription factor 2
TPM3	tropomyosin 3
TANC2	tetratricopeptide repeat, ankyrin repeat and coiled-coil containing 2
AGO1	Argonaute 1, RISC Catalytic Component
ABHD2	abhydrolase domain containing 2
JHDM1D	jumonji C domain containing histone demethylase 1 homolog D (<i>S. cerevisiae</i>)
SLC5A3	solute carrier family 5 (sodium/myo-inositol cotransporter), member 3
ADCY1	adenylate cyclase 1 (brain)
BMPR2	bone morphogenetic protein receptor, type II (serine/threonine kinase)
TRPS1	trichorhinophalangeal syndrome I
RALGPS1	Ral GEF with PH domain and SH3 binding motif 1
PURB	purine-rich element binding protein B
IKZF2	IKAROS family zinc finger 2 (Helios)
SRGAP3	SLIT-ROBO Rho GTPase activating protein 3
FOXP1	forkhead box P1
DLGAP2	discs, large (<i>Drosophila</i>) homolog-associated protein 2
ZC3H6	zinc finger CCCH-type containing 6
CSNK1G1	casein kinase 1, gamma 1
TEAD1	TEA domain family member 1 (SV40 transcriptional enhancer factor)
SOX11	SRY (sex determining region Y)-box 11
PGAP1	post-GPI attachment to proteins 1
NFIB	nuclear factor I/B
CLCN5	chloride channel, voltage-sensitive 5
DCX	doublecortin
KMT2A	Lysine Methyltransferase 2A
CDK6	cyclin-dependent kinase 6
SH3TC2	SH3 domain and tetratricopeptide repeats 2
PTPRT	protein tyrosine phosphatase, receptor type, T
BNC2	basonuclin 2
KLF12	Kruppel-like factor 12
ONECUT2	one cut homeobox 2