

Supplementary file 3. mRNA targets of significantly downregulated miRNAs.

hsa-miR-373	hsa-miR-122	hsa-miR-375	hsa-miR-371	hsa-miR-302		Cell-Cycle Genes
RAD23B	PFAS	TIMM8A	MYC	TRPS1		ABL1
RECK	ZNF275	MTPN	DKK1	MBNL2		ANAPC1
VEGFA	TIGAR	PDK1	PRPF4B	KLF13		ANAPC10
LATS2	LETM1	USP1	SHOC2	ESR1		ANAPC11
CSDC2	SHMT1	JAK2	PLEKHA1	VEGFA		ANAPC13
CD44	NOTCH2NL	ADIPOR2	ARID5B	ERBB4		ANAPC2
KIF23	ZNF682	C1QBP	ACVR1B	NR4A2		ANAPC4
NIPSNAP2	RBM43	PLAG1	GDF11	CCND2		ANAPC5
SLC35F6	NOL10	RASD1	RPS16	CDK4		ANAPC7
PHC2	CCBE1	YY1AP1	TNRC6A	CCND1		ATM
CD24	LATS1	ELAVL4	FNDC3B	CDKN1A		ATR
NUP58	ZFP30	YAP1	CDKN1A	LEFTY1		BUB1
MYBL1	SHROOM4	MTDH	RAD23B	LEFTY2		BUB1B
KLHL12	PRPF38A	SP1	SLC35E2	BMI1		BUB3
HERPUD1	KREMEN1	MAP3K8	BTG2	CDK2		CCNA1
LUC7L2	GRK4	FZD8	DCUN1D2	TGFBR2		CCNA2
LMNB1	GBP4	RRAGB	AMOTL1	RHOC		CCNB1
MKRN1	CLMP	TAF3	NFATC2IP	DAZAP2		CCNB2
ARHGEF3	DENND5B	TPRG1L	LSM14A	SLAIN1		CCNB3
FYCO1	ZMYM1	USP10	CDCA8	TOB2		CCND1
CD83	ALDH5A1	EXO1	CRKL	NR2F2		CCND2
GBP3	NQO2	KLK10	PAG1	BMPR2		CCND3
RNF149	ZNF283	DNAJC8	PTBP3	AKT1		CCNE1
TNFAIP1	ZNF91	GALM	MCM4	TAC1		CCNE2
STX11	WNT2B	BCL2L11	CDK6	MICA		CCNH
FITM2	RNF19B	IFI6	MTX3	HDAC4		CDC14A
GPSM2	GTF2H5	GKAP1	HSP90AA1	EGFR		CDC14B
CENPF	GTDC1	ESPNL	PTENP1	PFKP		CDC16
CFL2	ABL2	BSN	CDH1	TNKS2		CDC20
TUSC2	SEMA3E	APH1B	TOM1L2	MED17		CDC23
INSIG2	TPCN2	ZBTB8A	ZNF75A	WEE1		CDC25A
GLTP	TAS2R5	TNPO3	CACNG8	ULK1		CDC25B
RELA	KCNJ6	TBC1D5	COX15	GDF11		CDC25C

PRC1	KARS	SYNCRIP	PTPRN2	TMEM19		CDC26
BAZ1A	RAB27A	DGLUCY	CHML	FOXJ2		CDC27
USP12	ARL10	PHLDA1	EVX2	EIF2S1		CDC45
NIN	SVOP	TRMT10A	FLT1	CMPK1		CDC6
TBC1D2	GXYLT2	NIN	S1PR2	KIAA0513		CDC7
TFAP4	RAB3B	MED8	NCOA4	YWHAE		CDK1
TMEM14A	GATC	SAMD11	FUT10	GPATCH8		CDK2
STK4	CCS	GATA6	MCM9	MINK1		CDK4
ZNF226	HMGB1	CTGF	ADH5	UNK		CDK6
HSPA14	MYPN	ZFP91	PRICKLE4	FOXK2		CDK7
MFSD4B	MIPOL1	ENAH	PTGFRN	PRKACB		CDKN1A
SLC25A23	LRG1	UBLCP1	HNRNPF	RAB22A		CDKN1B
C9orf78	WDR92	RAB10	TRAF2	BACH1		CDKN1C
MICA	CABP4	SNAPC1	STAT3	LCLAT1		CDKN2A
KDM1B	TMEM106B	DNAJC2	TECPR1	GFPT1		CDKN2B
MED28	RPL34	GSC	PARVB	EIF4A2		CDKN2C
ADAM9	MRM3	CCDC88A	TMEM231	KLF3		CDKN2D
TTC8	APOL1	KLHDC8B	RPP25L	SLAIN2		CHEK1
ZHX1	ZNF843	UCHL3	AAED1	G3BP2		CHEK2
RPIA	FANCM	JAG1	OXGR1	MED10		CREBBP
PCGF5	SNAP29	PIGB	TWISTNB	ZBTB33		CUL1
PDIK1L	PLPP3	EXOC6	RPL37A	XIAP		DBF4
UBXN1	ORAI2	DESI1	CCDC9	TIMM17A		E2F1
CDK19	LRRC58	ASAP2	EIF1AX	RGMB		E2F2
CMTM4	WDPCP	TGFB2	SMAD4	GIN54		E2F3
TMEM9B	MCAT	MRE11	FBXO6	TXNIP		E2F4
RAD52	FUT1	TGM2	ASH2L	MPP5		E2F5
XPA	AMD1	TNFSF13	NCAPD2	TNRC6A		EP300
MRE11	RAD51	CPOX	ZNF223	KPNA2		ESPL1
PACRGL	ACBD5	IGFBP3	SLC38A9	SIK1		FZR1
TEX30	CKS1B	BAK1	BNIP2	TFRC		GADD45A
TMEM263	ERCC6L2	AQP11	NAA50	CREBRF		GADD45B
ANKRD13B	FCAR	WTAP	GUCD1	E2F3		GADD45G
MARCH4	ITGAX	NAGPA	AFF1	PURB		GSK3B
CNOT6	PGPEP1	TMEM25	CNGB1	PRPF4		HDAC1
CYB5R4	PLEKHG3	EIF4EBP2	TPK1	FAM102B		HDAC2
VPS26A	PROSER2	RIDA	ZNF878	LIN7C		MAD1L1
PBK	SLC28A2	GTPBP4	FAR2	RPRD2		MAD2L1
FAM13B	SOAT1	SP110	DROSHA	FLVCR1		MAD2L2

SEPT2	ZDHHC24	RIMS3	PARP15	CMIP		MCM2
TXNIP	MTG2	GPR157	POU5F1B	ZNF532		MCM3
RABEP1		SGO2	DNTTIP2	SH3GLB1		MCM4
MYC		SYT15	IFRD1	ZNF780A		MCM5
MBD2		RRAGC	BANP	ZNF264		MCM6
RASSF1		STPG1	UCHL3	ZNF805		MCM7
MTOR		LMAN2	HIST1H3E	CCNT2		MDM2
SIRT1		HOXB13	CYP20A1	TGOLN2		MYC
NFIB		PRDX3	ZNF678	CNBP		ORC1
CD24P4		GFM2	SNRNP48	SETD7		ORC2
DKK1		RPN2	PSMG1	REST		ORC3
TGFBR2		ZBED1	SRARP	HSPA9		ORC4
BTG1		FKBP1B	SMC1A	MATR3		ORC5
LEFTY1		KIAA0232	SULT1B1	IL6ST		ORC6
PLEKHA1		ANKRD46	TXNDC16	SERF1A		PCNA
PFKP		NAT10	ACP1	SERF1B		PKMYT1
ARID5B		CCDC59	SEC14L5	POLR3K		PLK1
TNKS2		C1GALT1	LSM8	TTC9		PRKDC
MED17		METTL2B	KLF2	IGF1R		PTTG1
WEE1		STX6	ZNF24	SUZ12		PTTG2
ULK1		ENOPH1	SUZ12	PAK2		RAD21
CCND2		CNN3	SEC22C	HOOK3		RB1
GDF11		SNX25	SAR1B	NUP50		RBL1
TMEM19		VGLL4	RNF20	UBE2B		RBL2
FOXJ2		OGFOD1	PPP2R5D	FOXC1		RBX1
EIF2S1		GATAD1	OMD	KMT2A		SFN
CMPK1		PIP4P2	MYCN	SLC16A1		SKP1
KIAA0513		EBAG9	MELK	SPRED1		SKP2
MINK1		CKAP2	MAPK8	IER3IP1		SMAD2
UNK		NSFL1C	MAP7	CLIP4		SMAD3
FO XK2		PTPMT1	LPP	NAA50		SMAD4
PRKACB		DGKD	LIMA1	FZD6		SMC1A
RPS16		TNS3	HOOK3	HMBOX1		SMC1B
RAB22A		MAP2K4	GDE1	NRARP		SMC3
BACH1		AZI2	ERI1	PTPDC1		STAG1
KLF3		PDGFC	DCDC2	LLPH		STAG2
SLAIN2		OPA1	ARHGEF6	MTHFD2		TFDP1
ZBTB33		OSBPL8	AREL1	FEM1C		TFDP2
TIMM17A		CYP20A1	GAPVD1	ITPRIPL2		TGFB1

RGMB		NUP58	ERCC1	POU2F1		TGFB2
GIN54		HEY1	OIP5	USP37		TGFB3
MPP5		RHOQ	IKZF3	ATP9A		TP53
TNRC6A		KDSR	QTRT2	MBD2		TTK
KPNA2		RAB3B	C17orf105	NANOG		WEE1
SIK1		C11orf54	ZNF860	AKT2		WEE2
FNDC3B		CLDN1	CSE1L	CDK1		YWHAB
CREBRF		SERTAD2	SYNM	FAM9C		YWHAE
CDKN1A		PTPN12	RNF115	FGF7		YWHAG
PRPF4		BIRC3	FBXO28	ABLIM1		YWHAH
FAM102B		NUS1	DCTN6	GLCE		YWHAQ
SLC35E2		PSIP1	ARHGAP12	TRIML2		YWHAZ
DAZAP2		CHSY1	AMOT	EMC1		ZBTB17
DCUN1D2		MINDY2	BAG1	ARHGEF28		
IRF9		UNC13B	PLCXD1	TCEANC		
ZNF532		SLC35B4	VPS37A	FPGT		
SH3GLB1		EIF2S1	TPM3	EML6		
ZNF264		TSC22D2	TCF7L2	HNRNPA2B1		
ZNF805		SUZ12	QSER1	HIP1		
REST		RASSF8	MAPK1	BTBD7		
SERF1A		AGTPBP1	LAMC1	C5orf30		
SERF1B		PAPD4	ITGA2	DNAJC5G		
AMOTL1		CSTF2	EXOC5	SCRN1		
TTC9		RBPJ	ELAVL2	TSR1		
IGF1R		IFT80	BAMBI	SMC3		
SUZ12		ZFP36L2	TRMT112	RAP1A		
PAK2		LSM12	RNPS1	PLCG1		
HOOK3		RLF	DCAF17	OSBPL8		
NFATC2IP		EIF4G3	TUBB2A	MAPK6		
LSM14A		PARP1	STAT2	ITGA2		
SPRED1		CAB39	CEBPB	GMFB		
CLIP4		MIR17HG	NSA2	SORCS2		
FZD6		IFT46	PLEKHG3	SLC35A1		
HMBOX1		PBXIP1	ZMAT3	TPST2		
PAG1		FAM89A	SINHCAF	KLRC4		
PTBP3		GRPEL2	C11orf24	NDST4		
PTPDC1		AXL	ATXN1	SOX12		
FEM1C		SEC24C	CPNE5	IFFO1		
MCM4		CRABP2	ANKRD52	CADM2		

POU2F1		MKRN1	RNF103-CHMP3	ATAD2		
CDK6		PAQR8	TRIM10	FKBP5		
MTX3		NPPB	CHMP3	EIF5AL1		
LEFTY2		CTDSP2	TMPO	ZNF557		
TOM1L2		PAFAH2	TANGO2	ADA2		
FAM9C		TBX19	ANGPT4	MYC		
CACNG8		KHK	SPRYD4	YRDC		
FGF7		SLC39A11	PYGO1	ZNF669		
ABLM1		SUB1	SMS	BACE2		
PTPRN2		DOK7	ATF7IP2	ATP6V0A2		
S1PR2		CYP2U1	TMEM44	CYP8B1		
EMC1		FBXO8	NUDT16	HAVCR2		
NCOA4		ABHD4	NUDCD3	COX10		
HIP1		ARNTL2	UTP20	CTSV		
FUT10		ERP44	KLHL42	ZNF788		
C5orf30		ZNF614	SLC24A4	ZNF639		
MCM9		SNRPA1	INTS7	ZBTB34		
TSR1		DUT	TM4SF20	WIPF2		
ITGA2		CFL2	PRKCA	TMOD3		
SORCS2		BATF2	DCP2	SLC22A23		
ADH5		RBBP8	FGF5	RPS6KA4		
IFFO1		MOSPD3	COQ7	PRR14L		
CADM2		TMEM74B	FAM117B	PPP1CC		
ATAD2		ZNF404	FEM1B	PIK3C2B		
COX10		PEX11B	C11orf74	NR1D2		
ZBTB34		FAM3C	NDUFB5	MYCBP		
SLC22A23		STAP2	JRKL	MARK2		
NR1D2		PEBP1	C22orf39	KLF10		
MARK2		TMEM170A	FPR2	KIF13A		
KIF13A		SESN1	CCDC65	ITCH		
HNRNPF		IQCE	SLCO3A1	HMGB1		
MIGA2		SET	TLN1	FNDC3A		
FAM160B1		CMTM4	RPL3L	MIGA2		
ERGIC2		TMTC4	EIF2S3	FAM160B1		
CSNK1A1		MNS1	WNT9A	ERGIC2		
CAPRIN2		PRDX1	PHACTR2	EML4		
BSCL2		MR1	OTUD7B	CSNK1A1		
BLCAP		CEP44	CASTOR2	CAPRIN2		
APH1A		COX20	EDEM1	BSCL2		

ZNFX1		CENPF	CHRM3	BLCAP		
ZFYVE26		TIMM17A	CD3D	APH1A		
MYO1D		BAZ1A	PAK4	TYRP1		
ARID4B		DNAH11	SPC24	RAD51D		
LPAR2		KLHL7	CCS	ZNFX1		
MKNK2		GOLGA4	DFFA	ZFYVE26		
DUSP2		LHFPL2	CWF19L1	MYO1D		
MORC1		SENP1	EMCN	ARID4B		
TECPR1		AKAP7	GOLGA3	LPAR2		
PARVB		GAS8	ZC3H12B	NDUFB5		
AAED1		CDCA7L	ZBTB7A	MKNK2		
DDR2		USP46	ZBTB3	DUSP2		
OXGR1		PPP2R3C	WDR31	MORC1		
TWISTNB		ZC3HAV1	STK17B	MAF		
SNX5		KCTD10	SP4	DDR2		
RPL37A		RAP2C	RRAGC	SNX5		
SUCO		VEZT	RFFL	RNF6		
RBBP6		ZFHX2	RAD51L3- RFFL	SFT2D2		
ZNF12		SLC35A3	FREM2	XPO4		
C9orf40		NOLC1	C8orf37	SUCO		
PARP1		UBE3A	ANAPC16	SECISBP2L		
YOD1		STRBP	SPN	RBBP6		
UBN2		NXT2	UQCRB	QKI		
RAB11FIP1		RPGRIP1L	SGSM1	EPHA2		
PDPK1		CBWD3	CARHSP1	CCNL1		
HNRNPR		SGMS2	TMEM154	ZNF12		
FZD9		SAMD4A	CMBL	CEP104		
ELK4		PRKX	TTPAL	C9orf40		
EIF1AX		XPR1	SLC4A1	PARP1		
CEP72		INSIG2	RAB13	MAP3K21		
SMAD4		MBD2	LZIC	ARID1B		
ZNF682		AHCYL1	EIF4E	SHC4		
GPR155		TMEM106B	AAK1	VHL		
BMP8B		AEBP2	DLEU1	YOD1		
ASH2L		ACSL3	SLC28A1	UBN2		
MCM7		LDHB	ZNF576	RAB11FIP1		
EFCAB11		SPAG9	YME1L1	PHKA1		
CRISPLD2		PLEKHA3	TMEM132B	PDPK1		
ZNF317		C12orf29	DDX19B	MORF4L1		

KIAA1551		POC1B	TFDP2	HNRNPR		
IFNAR2		PTP4A2	RAD51	GPCPD1		
HMGB1		DLG4	ATP5A1	FZD9		
DNAJC10		ITGB1	PIK3C2A	FEM1B		
ZNF223		KMT5A	TTC31	ELK4		
SLC38A9		CASP3	EHD4	CEP72		
SERF2		CDC42	CHAF1B	SMAD4		
FXYD5		YWHAZ	BCLAF3	ZNF682		
FANCA		MAPKAP1	FAM9B	GPR155		
CRCP		PGM2	DEFB105B	BMP8B		
TMEM134		RMDN3	DEFB105A	MCM7		
MFAP2		CARD8	CHST6	HIST2H2AB		
MED18		SKA2	POLR3K	EFCAB11		
GABPB1		CMAS	PRR11	CRISPLD2		
MIXL1		NRBP1	PCLAF	ZNF317		
CAVIN1		EFTUD2	GCLM	RAN		
COX19		FOLR1	FAXC	PER1		
SLC28A1		MLEC	NUDT3	KIAA1551		
PRIM1		DNMT3B	FLYWCH2	IFNAR2		
ZNF514		APPL2	PKP1	HIST1H2BF		
KIF6		RTN2	MAP3K9	DNAJC10		
KCNMB1		BOD1L1	C1orf210	ZNF793		
MED16		ITIH4	SKI	KMO		
NEK8		THRA	TGIF1	PPP1R14C		
GRK7		SFT2D2	C16orf72	NFIB		
PLA2G12A		PPCS	TRIB1	HOXA5		
KCNA7		SH3D19	SRCAP	CALM2		
TMEM38A		IDNK	DCLK3	SERF2		
YIPF4		CHPT1	NFKBID	FXYD5		
WSB1		CHPF	MPV17L	FANCA		
UBXN2A		SLC25A42	VLDLR	CRCP		
TNRC6B		KIAA0513	ZBED1	TMEM134		
TAOK1		CREB3	KLHL25	MFAP2		
SOCS5		LYPD5	PTGDR2	MED18		
SBNO1		FKBP1A	WDR5B	GABPB1		
QSOX1		HK2	CCDC121	MIXL1		
NR2F6		AGPAT5	TRMT10C	CAVIN1		
NR2C2		TMEM145	MYOZ3	COX19		
NAA50		FAM96A	ZNF426	SLC28A1		

MFN1		ZNF540	YIPF4	PRIM1		
IPO9		PROCR	ATIC	ZNF514		
HYPK		SNPH	UTP6	KIF6		
GUCD1		LITAF	UEVLD	KCNMB1		
GPR157		CHGB	TMEM181	MED16		
GIGYF1		PCGF5	SIM2	NEK8		
FOXK1		FAH	PHAX	GRK7		
DCTN6		PRRT3	PARD6B	PLA2G12A		
CYCS		SERP1	HIF1AN	KCNA7		
CREB1		F3	GMEB1	TMEM38A		
CNKSR3		ZDHHC11	GJD3	YIPF4		
BCL2L2		ZNF571	ELAVL4	WSB1		
AGO3		CEP19	CLSPN	UBXN2A		
CNGB1		ANKRD1	RHCG	TUBG1		
ZNF878		HOMER2	ZNF445	TNRC6B		
NHSL2		CBWD2	ZNF321P	TFDP1		
RPRD2		PSME4	SPIRE2	TAOK1		
FAR2		CORO1C	ZSWIM1	SRSF4		
DROSHA		PHTF2	ZNF285	SOCS5		
PARP15		DPY19L1	ZNF554	SBNO1		
POU5F1B		HERPUD1	BORCS5	QSOX1		
NME6		PTPN1	PAICS	PSMA2		
DNTTIP2		RCN2	SLC19A3	PSAT1		
IFRD1		SEMA3C	DHODH	PRNP		
DLGAP5		PUDP	ZFP14	PNISR		
UCHL3		STX3	TXNL1	NR2F6		
HIST1H3E		KPNA4	SMAD2	NR2C2		
CYP20A1		MAT2B	SLC39A9	MFN1		
ICMT		RAB28	SHMT1	IPO9		
PSMG1		RPUSD4	PSMD1	IGF1		
TNFAIP8L1		AMMECR1	OSTF1	HYPK		
HADHB		VASN	CYCS	HIST3H3		
SULT1B1		CDR2	STOML1	GPR157		
ABHD15		DCUN1D4	LRPAP1	GIGYF1		
EXO5		WWC1	FBXL2	FOXK1		
TXNDC16		NLE1	CHCHD5	DUSP5		
TNFRSF10B		MPP5	RSBN1L	DCTN6		
TXK		CDKN2B	GLTP	CYCS		
FHDC1		UXS1	NPHP1	CTC1		

SEC14L5		CTSC	CYTIP	CREB1		
LSM8		SH3BP4	LIPG	CNKSRR3		
KLF2		FYTTD1	KIF1B	BCL2L2		
ZNF385A		ABI2	RABGAP1L	AGO3		
SEC22C		TMED5	WISP3	NHSL2		
SAR1B		B3GALNT1	SHE	GMDS		
RNASEH1		CUL5	KLHDC8A	JAKMIP2		
RNF20		STK38L	TNFAIP8L1	LSAMP		
RASGEF1A		FZD4	ATXN3	RBM48		
PIGA		RAB6A	BCL2L15	NME6		
PER1		SPRED1	RPL37	COL4A3		
OMD		BCL10	PARP2	ZNF134		
MCUR1		EMC3	SGTB	DLGAP5		
MBNL1		TCF12	ENSA	NUP58		
MAPK8		PHF3	PHLDA3	FEZ2		
MAP7		DIP2C	ZNF34	HES2		
MAP1B		CIP2A	MFSD11	ZMYM1		
LPP		EIF2AK2	PIGO	CAMK2A		
LIMA1		BCL2	ARPC2	MALT1		
KREMEN1		NCAM1	MYADM	ICMT		
KCNJ8		RHOA	MMAB	TNFAIP8L1		
IRF2		CALU	ARHGEF39	HADHB		
INO80D		RPGR	CPM	ABHD15		
HIVEP2		PPP1R2	MCM10	EXO5		
HAS3		CCDC88B	CDK9	TNFRSF10B		
HABP4		TMED8	COX18	NOM1		
GDE1		CRLF1	TMEM184C	TXK		
GALNT3		EMP1	ENAH	TFCP2L1		
FBXL7		WDR1	C5AR2	FHDC1		
ETNK1		FSTL3	NXN	MRPL36		
ERI1		SIPA1L3	NAA30	FKBP9		
ELAVL2		SLC4A1AP	PLA2G2C	DUSP4		
DPYSL2		NDST1	SGSM2	DHX33		
DPP8		CCDC32	IPP	ZNF385A		
DCDC2		IL17RA	LARS	WNK1		
CUL3		BDH2	EXOSC2	WASF3		
CLCN3		RAPGEF1	ORC1	TMEM30A		
CECR2		KCNN4	LGSN	TAF1D		
CCSAP		KRT8	GLRX2	SOCS3		

BRI3BP		ARHGAP11 A	CENPL	SLC35G1		
AVL9		ALMS1	MXRA7	SAR1B		
ATP6V1C1		SDC1	BACE2	SAR1A		
ARL10		CRLF3	CLPB	RNASEH1		
ADAT2		VPS37D	TMEM199	RASGEF1A		
GAPVD1		LIMD2	C1orf216	RAB8B		
FAM89A		SLC25A15	ZNF174	PTPN14		
MASTL		RAB3D	LYZ	PSPC1		
ERCC1		TNNI3	NIP7	PIGA		
GLO1		DR1	SUGP1	MCUR1		
IKZF3		LPCAT1	TSPAN6	MBNL1		
DIS3L		DCTN5	TRPM7	MAP1B		
HSPA4L		ZNF785	TNFRSF13C	LIMA1		
QTRT2		COL12A1	TES	KREMEN1		
C17orf105		TMX3	TBC1D15	KMT2B		
ZNF860		PIK3IP1	RNF38	KCTD10		
CSE1L		OXNAD1	REL	KCNJ8		
SATB2		IFIT1	MITF	IRF2		
RNF115		MREG	IGFBP3	INO80D		
MBNL3		ARL2BP	HEATR5A	INIP		
LCLAT1		REEP3	HAS2	HIVEP2		
HSPA13		SCLY	GABPB1	HAS3		
FBXO28		DISP2	FNBP1	HABP4		
DNAJB14		NELFCD	CHST2	GREB1		
ARHGAP12		METTL2A	CDC73	GALNT3		
AMOT		FAM126B	GRIN2A	FGF2		
PLCXD1		NUDT21	OLR1	FBXL7		
SNAP47		RDH11	LYRM7	ETNK1		
DAD1		CEP70	HMBBOX1	ESRP2		
F2RL3		NETO2	CYBRD1	ELOVL7		
ZNF24		SLC7A6	NDUFV3	ELAVL2		
VPS37A		GDAP1	PHF7	DPYSL2		
TMEM100		CEP128	USF3	DPP8		
TCF7L2		ELL2	TBC1D21	DIAPH2		
SAMD8		SLC6A6	SCOC	DDX6		
SAMD12		EFNB2	MTF1	CYR61		
RHOC		DUSP6	KLHL36	CUL3		
POLR3A		KIAA1191	RPF2	CLOCK		
LIN52		ATG7	KCNK5	CLCN3		

LAMC1		NSD3	SYDE2	CECR2		
HOXB3		DAZAP2	WIPF2	CDK6		
GATA6		COG2	PDP2	CCSAP		
BAMBI		EBPL	FBXO31	CASP16P		
ACVR1B		TTC7B	ADAMTS17	BTG1		
TRMT112		CRIM1	COQ10B	BRI3BP		
RNPS1		MYBL1	SEPT5	AVL9		
KLHL21		ODF2	SESTD1	ATXN7L1		
DCAF17		PHF20L1	TRABD2A	ATP6V1C1		
ZBTB18		CEP57L1	CNOT6	ARL10		
TUBB2A		PRKCA	TRIM66	AREL1		
STAT2		USP31	KCNS2	AGO2		
CEBPB		NUMB	B4GALNT3	ADAT2		
PLEKHG3		SETD7	C11orf54	EIF3H		
ZMAT3		EEA1	UNC80	FAM89A		
PRRG4		CELF2	SH3D19	MASTL		
KBTBD2		PAFAH1B1	SIRPB2	CXCL10		
SINHCAF		EXT1	MOGAT1	ZNF367		
CRK		UGCG	GEMIN4	GLO1		
COX6B1		TPR	CTC1	CDKN1B		
CCDC6		JPT1	PKDREJ	CBX4		
C11orf24		TOR1AIP2	CRAMP1	SLC25A46		
RPL17-C18orf32		OTX1	RIMBP2	DIS3L		
PSD3		IL1RAP	PRDX6	HSPA4L		
C18orf32		DPYSL3	PLCB4	TMEM117		
RNF103-CHMP3		ACSL4	STX12	INTS2		
AGMAT		CXADR	SOX2	ANXA5		
CHMP3		SEC23A	ADD1	YWHAQ		
RBM12B		HSP90AA1	TRAF7	TWF1		
TMPO		WWC2	ZNF726	TPD52		
NR2F2		NT5C2	AGTRAP	SATB2		
HAUS8		NCOA7	BCL2L1	RAB10		
TANGO2		C15orf41	CCSER2	PURA		
ANGPT4		RPN1	MON2	NUCKS1		
SPRYD4		RB1CC1	PKMYT1	MBNL3		
MYH9		LEPROTL1	SF1	HSPA13		
SMS		KCNQ2	COX6C	DNAJB14		
ATF7IP2		TP53	RGP1	CREBBP		
TMEM44		ERBB2	UBE2S	TMEM101		

UTP20		IGF1R	ZNF787	SNAP47		
RANGAP1		PIK3CA	ADAM22	OTX1		
SLC24A4		PHLPP1	ESCO2	GGA3		
INTS7		MYC	F2RL2	TRIM59		
WDR53		TRIM66	GABARAP	RNF157		
SPIB		CCDC115	TMEM169	DAD1		
FGF5		UBN2	CAMLG	F2RL3		
COQ7		SLC7A1	DBNL	YIPF6		
ELOC		NUFIP2	FBXO47	UBE2H		
FAM117B		G2E3	FOXJ3	TMEM100		
FEM1B		NUP54	GCM1	TFAP4		
FEM1A		PHACTR2	GEMIN6	TBL1XR1		
DPF3		ADAT2	HMG2N	SUMO2		
C11orf74		HOXB3	INTS13	SNRBP2		
NDUFB5		ELAVL2	MTHFD1	SAMD8		
JRKL		CBX3	OCIAD2	SAMD12		
ESR1		BBS10	PDF	RRS1		
C22orf39		SDCCAG3	PPFIBP1	PPP2CB		
FPR2		MAP3K21	PXMP4	POLR3A		
POLM		DEK	RBM23	PNRC2		
CCDC65		TRPS1	RHD	PMEPA1		
SLCO3A1		MAL2	RNF44	PDCD10		
TLN1		SPOP	RTCB	MRFP1		
TM4SF5		ICOSLG	SCYL3	MB21D2		
RPL3L		XIAP	STMP1	MAP3K5		
EIF2S3		TFRC	SUGT1	LIN52		
OTUD7B		SEC24A	SYNJ2BP	LEPROT		
CASTOR2		ZNF799	TMEM65	RTL6		
EDEM1		FAM196B	TOR1B	LCOR		
CHRM3		NCAPG2	TRAF3IP1	KMT2D		
CD3D		FAM200B	TSPEAR-AS2	KLHL28		
PAK4		TAF2	VHL	ISOC1		
SPC24		BCAS2	VWCE	HOXB3		
CCS		ZNF470	WDR12	GNB1		
DFFA		AP3B1	WT1	GATA6		
SLC35C2		TNS1	ZNF157	FRS2		
CWF19L1		LRP5	ZNF451	DCUN1D1		
PNRC1		CTNNB1	ZNF487	CBX1		
EMCN		DEPTOR	BROX	BTN3A3		

HIST1H2BG		MST1R	GPR37L1	ASF1A		
GOLGA3		SOX2-OT	ZNF317	AP1AR		
ZBTB7A		SOX2	FUT11	GXYLT2		
ZBTB3		STAT3	GNPTAB	KLHL21		
WDR31		MAPK3	OTULIN	BUB3		
STK17B		GPHN	TMEM136	HIST1H1T		
SP4		MALAT1	TRPS1	ZBTB18		
RRAGC		RUNX3	ZNF446	MOCS2		
RFFL		MYCN	XRRA1	CBY1		
RAD51L3-RFFL		KLF4	HSD17B12	UBE2V2		
FREM2		ARHGDI		SACS		
C8orf37		SON		RRP1B		
ANAPC16		ATOH8		RCC2		
UQCRB		REEP5		RACGAP1		
SGSM1		WFDC6		PRRG4		
CARHSP1				PHF13		
TMEM154				LRP12		
CMBL				KCNB1		
TTPAL				KBTBD2		
SLC4A1				CRK		
RAB13				COX6B1		
LZIC				CCDC6		
EIF4E				GDNF		
CBX5				ACVR2A		
DLEU1				INSIG1		
ZNF576				FAM69A		
APOH				RPL36A-HNRNPH2		
TMEM132B				RPL17-C18orf32		
DDX19B				PSD3		
GTF2H2C				C18orf32		
TFDP2				PAPLN		
RAD51				DHRS13		
PIK3C2A				AGMAT		
TTC31				ITGA9		
EHD4				RBM12B		
CHAF1B				MLLT10		
BCLAF3				TFAP2A		
FAM9B				PRC1		
DEFB105B				HNRNPDL		

DEFB105A			HAUS8		
CHST6			SATB1		
POLR3K			MYH9		
PRR11			USP27X		
PCLAF			ELP2		
GCLM			NRIP3		
FAXC			TMEM79		
NUDT3			ZNF175		
FLYWCH2			RANGAP1		
PKP1			GABRB1		
OSTM1			CEP97		
C1orf210			WDR53		
SKI			LHX1		
TGIF1			NECTIN4		
C16orf72			COLEC12		
TRIB1			SPIB		
TM4SF20			SPATA12		
SPCS1			ELOC		
SRCAP			COX7A2L		
DCLK3			SIPA1L2		
NFKBID			FEM1A		
MPV17L			COL4A4		
VLDLR			POLM		
ZBED1			TM4SF5		
POLR3F			FAM153B		
KLHL25			WT1		
PTGDR2			TNPO2		
CCDC121			ONECUT3		
TRMT10C			NRXN1		
MYOZ3			HOXD4		
ZNF426			GGCX		
ATIC			CREG2		
UTP6			CCDC171		
SIM2			USP6NL		
PHAX			CKAP2L		
PARD6B			SLC35C2		
MELK			MYLIP		
GJD3			MRRF		
ELAVL4			PNRC1		

CLSPN				AP3B1		
CHCHD5				HIST1H2BG		
RHCG				LINC00598		
ZNF445				PAN2		
ICA1L				KCNJ13		
SPIRE2				ETF1		
ZSWIM1				SORD		
SEC23B				CRSL1		
ZNF285				UNC93A		
ZNF554				PLCL1		
BORCS5				MSANTD4		
LSM3				CBX5		
CYB5A				FAM53B		
ATP5A1				APOH		
SLC19A3				SYAP1		
DHODH				GTF2H2C		
ZFP14				HOXD12		
TXNL1				SIX3		
SLC39A9				OSTM1		
SHMT1				SLC30A4		
PSMD1				SPCS1		
AAK1				MYADM		
STOML1				FUT11		
FBXL2				RABAC1		
RSBN1L				ZNF581		
NPHP1				GDPGP1		
CYTIP				CHCHD7		
LIPG				SNX24		
KIF1B				GOLIM4		
RABGAP1L				NEK1		
WISP3				POLR3F		
OSTF1				SLC26A9		
WDR5B				PTGDR2		
SHE				ZNF550		
MFSD2A				SMPD1		
KLHDC8A				FANCC		
ATXN3				CDC14B		
BCL2L15				ZPR1		
HIF1AN				ZNF638		

RPL37				ZMAT4		
PARP2				ZBTB38		
ZNF321P				ULK2		
SGTB				TRIM44		
ENSA				TMEM2		
PHLDA3				SLC35B3		
ZNF34				RPL14		
DEGS1				PRKAA2		
C15orf40				MELK		
PIGO				LONRF2		
ARPC2				KCNK5		
MYADM				HIC2		
PAICS				HHIP		
MMAB				GAPVD1		
ARHGEF39				DIP2C		
GATAD1				CHCHD5		
ZNF785				ARIH1		
WDR73				APP		
RMND1				ICA1L		
ABI2				MAGEB4		
N4BP2L2				SEC23B		
RAB42				ZNF554		
CPM				LSM3		
FAAP24				CD209		
ESR2				CYB5A		
ZNF7				UTP15		
C11orf54				TRPM7		
OCIAD1				OLA1		
MYLK3				NUDT3		
QRFPR				DCP2		
TLR7				TMEM105		
MCM10				MFSD2A		
CEP104				DEGS1		
MSRB2				C15orf40		
BCAS4				SRCAP		
GPR137B				FBXL2		
ORAI2				GATAD1		
GTF2IRD2B				ZNF785		
PDE4C				WDR73		

LRRD1				RMND1		
DNAJB13				ABI2		
MYO1F				KCNE4		
CD28				N4BP2L2		
DCTN5				RAB42		
F2RL1				UBL3		
COX18				FAAP24		
ASB16				ESR2		
CCL5				ZNF7		
MSH3				C11orf54		
KCNK6				OCIAD1		
C12orf49				MYLK3		
C11orf1				QRFPR		
BHMT2				TLR7		
C12orf65				MSRB2		
RTN2				BCAS4		
PTGIS				GPR137B		
TNIP3				ORAI2		
HS3ST1				GTF2IRD2B		
WWC1				PDE4C		
VPS53				OR7D2		
USP15				LRRD1		
UBE2V2				DNAJB13		
LINC00598				MYO1F		
TRIOBP				CD28		
TRAF3IP2				DCTN5		
TMOD3				F2RL1		
TMEM184C				ASB16		
TIMM10				CCL5		
SLC7A11				MSH3		
SLC1A5				KCNK6		
SERINC1				C12orf49		
PDHB				C11orf1		
MANEAL				BHMT2		
LRIF1				C12orf65		
ISCA2				ZNF426		
GTF2IRD2				RTN2		
GEMIN8				PTGIS		
FKBP14				TNIP3		

FAM213A				HS3ST1		
DNAJB4				WWC1		
DDI2				VPS53		
CAPZA2				USP15		
ZNF665				TRIOBP		
C5AR2				TRAF3IP2		
NXN				TIMM10		
NAA30				SLC7A11		
GTF2H3				SLC1A5		
HIST1H2BJ				SGTB		
IRAK4				SERINC1		
PLA2G2C				RNF115		
SGSM2				RABGAP1L		
ZNF578				PDHB		
NUGGC				MANEAL		
KIAA1841				LRIF1		
FOXRED2				ISCA2		
CCDC125				GTF2IRD2		
IPP				GEMIN8		
LARS				FKBP14		
ACOT9				FAM213A		
CXorf38				DNAJB4		
NOL9				DDI2		
RFK				CPS1		
LY6G5B				CAPZA2		
METTL8				ZNF665		
APEX2				GTF2H3		
PARD3				HIST1H2BJ		
GDF5OS				IRAK4		
SYNPO2L				ZNF578		
C1orf50				RDH13		
RBM41				NUGGC		
EXOSC2				KIAA1841		
ORC1				FOXRED2		
LGSN				CCDC125		
THEM4				IPP		
RNF34				ACOT9		
CENPL				CXorf38		
MXRA7				NOL9		

BACE2				RFK		
ZNF446				LY6G5B		
ZNF347				METTTL8		
C14orf119				APEX2		
STX4				PARD3		
ANKS4B				GDF5OS		
SLC25A33				SYNPO2L		
CLPB				C1orf50		
TMEM199				RBM41		
MAN2B2				LGSN		
ABCG8				THEM4		
ZNF174				RNF34		
EIF2B2				ZNF70		
GNB5				ZNF446		
LYZ				ZNF347		
NIP7				C14orf119		
SUGP1				STX4		
UBOX5				ANKS4B		
CCDC198				SLC25A33		
ZYG11A				PIGO		
TSPAN6				MAN2B2		
TNFRSF13C				ABCG8		
TMEM127				ZNF174		
TES				EIF2B2		
TBC1D15				GNB5		
SLC6A4				SUGP1		
SLC35F5				UBOX5		
SH3BP5				CCDC198		
SF3B3				ZYG11A		
RPL14				ZMAT3		
RNF38				WASL		
RNF19B				TSPAN6		
PAPD5				TMEM127		
MYPN				TM4SF1		
MITF				SLC6A4		
KCND3				SLC35F5		
HEATR5A				SH3BP5		
GPRIN3				SF3B3		
FNBP1				RNF19B		

DRAXIN				REL		
DNAL1				PAPD5		
LDHD				MYPN		
CPT1A				LDHA		
CHST2				KCND3		
CDKN2AIPNL				GPRIN3		
CDC73				FAM126B		
ABHD18				DRAXIN		
ATP1B3				DNAL1		
ENTPD4				LDHD		
CCDC30				CPT1A		
STAC2				CNEP1R1		
HAS2				CDKN2AIPNL		
LIAS				ABHD18		
MTMR9				ATP1B3		
GLRX2				ENTPD4		
PCNX2				SLC35F6		
CDIPT				CCDC30		
GRIN2A				STAC2		
MAPKAPK5				HAS2		
OLR1				LIAS		
LYRM7				MTMR9		
FAHD1				PCNX2		
KBTBD6				PPP1R3D		
CYBRD1				CDIPT		
NDUFV3				MAPKAPK5		
PHF7				CCDC71L		
USF3				FAHD1		
SCOC				ZBED1		
MTF1				KBTBD6		
KLHL36				CAPRIN1		
RPF2				ZNF597		
KCNK5				AMOTL2		
SYDE2				SMAD5		
WIPF2				FAM13A		
ZNF454				GPR75		
PDP2				XRCC2		
FBXO31				ZNF454		
ADAMTS17				TBC1D16		

COQ10B				HSPA4		
ADAM17				F9		
GOLGA2				ADAM17		
TRABD2A				ASB11		
FAM114A1				RPL24		
TRIM66				PALM2		
ACOX1				GOLGA2		
KCNS2				TRAF1		
B4GALNT3				FGF1		
UNC80				FAM114A1		
SH3D19				ACOX1		
NUDT16				CD44		
SIRPB2				SLC15A4		
MOGAT1				TXNDC17		
PKDREJ				TMEM218		
CRAMP1				MSANTD3-TMEFF1		
RIMBP2				VTI1A		
JAK1				TMEFF1		
PIK3CA				SIGLEC14		
COX6C				CKS2		
KLHDC10				PEX11A		
KLHL8				MMD		
PLEKHM1				MAP3K1		
RAB3IP				CXCL8		
SBF1				MCL1		
SYNJ2BP				NFIA		
AGTRAP				MTDH		
BCL2L1				PTEN		
CCSER2				MMP9		
MON2				MMP2		
DPP9				E2F1		
DSTYK				MAP4K4		
GCNT3				GAB2		
GRB10				SDC1		
HNRNPUL1				DPYD		
ISY1				IRF9		
KPNA6				ABCA1		
LRCH3				COX6C		
NDUFAF3				KLHDC10		

SLC12A6				KLHL8		
TRIM65				PLEKHM1		
VAMP3				RAB3IP		
ZNF70				SBF1		
BROX				SYNJ2BP		
CAMLG				PIK3R1		
DBNL				RHBDD1		
FBXO47				ZNF436		
FOXJ3				GRK2		
GEMIN6				FURIN		
GPR37L1				PPARD		
HMG2				RNF4		
INTS13				STK10		
LRPAP1				EREG		
MTHFD1				DPP9		
OCIAD2				DSTYK		
PDF				GCNT3		
PPFIBP1				GRB10		
PXMP4				HNRNPUL1		
RBM23				ISY1		
RHD				KPNA6		
RNF44				LRCH3		
RTCB				NDUFAF3		
SCYL3				SLC12A6		
STMP1				TRIM65		
SUGT1				VAMP3		
TMEM65				ABHD12		
TOR1B				CDR1		
TRAF3IP1				MAP2K6		
TSPEAR-AS2				SIRT3		
VHL				SRRD		
VWCE				TTL		
WDR12				CLDN12		
WT1				IPO7		
ZNF157				SPATA2		
ZNF451				SLC12A7		
ZNF487				FAM227A		
ARMT1				MYO18A		
C17orf75				ARMT1		

FAM241A				C17orf75		
LRRC58				FAM241A		
MPPE1				LRRC58		
MRPS10				MPPE1		
OLAH				MRPS10		
SON				OLAH		
SP2				SON		
WDR92				SP2		
ZNF786				WDR92		
FUT11				ZNF786		
GNPTAB				IGDCC3		
HSD17B12				CADM1		
OTULIN				DFFA		
TMEM136				VCAN		
TRPS1				ZYG11B		