

Common genes down-regulated	Common genes up-regulated	Common genes opposite-regulated
ABCA6	AAK1	AARS2
ABCB6	AATK	AASDH
ABCC3	ABCC4	ABCB9
ABCF2	ABCG1	ABCC5
ABCG2	ABHD2	ABCD3
ABHD10	ABL1	ABHD11
ABHD14B	ABL2	ABHD6
ACAA1	ACAP2	ABI2
ACAD9	ACBD7	ABI3BP
ACAT2	ACHE	ACACA
ACLY	ACSF3	ACADSB
ACP6	ACTN2	ACO2
ACTR3C	ACTN3	ACOT9
ADA	ADAM11	ACOX1
ADAL	ADCY1	ACTA2
ADAM22	ADCY9	ACTR3B
ADAMTS9	ADD2	ACTR8
ADSL	ADORA2A	ACYP1
AGGF1	ADRA2A	ADAMTS3
AGMAT	ADRB1	ADAMTSL5
AGPAT1	AEN	ADARB1
AGPS	AFF4	ADAT2
AGR2	AFG3L2	ADCY6
AGXT2L2	AGAP7	ADHFE1
AHSA1	AHCTF1	ADI1
AIFM1	AHNAK	ADRA1B
AK2	AHRR	ADRA2C
AKR1A1	AKAP12	AFAP1L2
AKR1B10	AKAP8L	AFF1
ALDH7A1	AKIRIN1	AGAP1
ALG10	ALG11	AGBL3
ALG10B	ALKBH1	AGPAT3
ALG6	ALOXE3	AHI1
ALG8	ALS2	AHNAK2
ALPK1	AMFR	AK1
AMDHD2	AMMECR1	AK4
ANAPC16	AMOTL1	AKAP7
ANAPC4	AMOTL2	AKD1
ANGEL1	ANKDD1A	AKT3
ANGPTL6	ANKHD1	ALDH6A1
ANK3	ANKLE2	ALG1L
ANKRD27	ANKMY1	ALMS1
ANKRD42	ANKRD11	ALOX12
ANKS1A	ANKRD13A	AMOT
ANP32A	ANKRD20A2	ANAPC1
ANTXR1	ANKRD33B	ANGEL2

AP2B1	ANKRD43	ANKIB1
APBB1IP	ANKRD50	ANKRD26
APCDD1	APLN	ANKRD54
APITD1	ARAP2	ANKRD6
APOL3	ARC	ANKS6
APTX	ARF4	AP1S2
AQR	ARFGAP1	AP2A2
ARAP1	ARFGEF2	AP3B1
ARHGAP18	ARFIP2	AP3M1
ARHGAP25	ARHGAP19	AP3M2
ARHGEF12	ARHGAP22	APAF1
ARL1	ARHGAP26	APH1B
ARL10	ARHGAP30	APOBEC3F
ARL17A	ARHGEF7	APOM
ARL2	ARID3B	APPBP2
ARMC2	ARID5B	ARFIP1
ARMCX2	ARL5B	ARHGAP8
ARPC1B	ARL8A	ARHGEF10L
ASAH2	ARL8B	ARMC10
ASB4	ARRB1	ARMC8
ASB9	ARRDC4	ARRDC2
ASTN2	ASAP1	ASB7
ATAT1	ASCC3	ASMT
ATG10	ATF3	ASPM
ATG4A	ATP10D	ASRGL1
ATG4C	ATP11A	ATAD1
ATIC	ATP11B	ATG2B
ATM	ATP6V1C2	ATG4B
ATP1A1OS	ATRIP	ATG7
ATP2B4	ATXN2L	ATOH7
ATP2C1	AURKC	ATP2B1
ATP5G1	AXIN1	ATP5S
ATP6AP1L	B4GALNT3	ATP6V1C1
ATP8B2	B4GALT5	ATRN
ATPBD4	BACH1	B3GALTL
ATR	BAG5	B4GALT2
ATXN3	BAIAP2	BACH2
AUH	BARD1	BAHCC1
AVEN	BATF3	BASP1
B3GNT1	BAZ2A	BAZ1B
B3GNTL1	BCL2L1	BAZ2B
BABAM1	BCL2L13	BBS5
BBS10	BCLAF1	BBS7
BBS2	BCOR	BCAP29
BBS9	BECN1	BCAT1
BCAS3	BEND7	BCL2L11
BCKDK	BHLHE41	BET3L

BCL11B	BMP2	BEX2
BCL2A1	BNIP2	BFAR
BCS1L	BRAP	BHLHE40
BIVM	BRIP1	BICD1
BMP5	BRPF1	BIRC2
BNIP3	BRWD1	BMPR1A
BOLA3	BTBD9	BOC
BRCA1	BTF3P11	BOLA1
BRCC3	BTN2A2	BPTF
BRE	CA13	BRAF
BTC	CAB39L	BRWD3
BTN3A1	CALML4	BSPRY
BTN3A2	CARKD	BST1
BTN3A3	CASK	BTRC
CA12	CBX4	C1GALT1C1
CA6	CCDC150	C1QTNF9
CACNB3	CCDC17	CAB39
CALHM2	CCDC43	CACNA1B
CAMKMT	CCDC59	CACNA1I
CAMTA1	CCND1	CACNB1
CAPN14	CCND3	CALM1
CAPS2	CCNYL1	CAMK1
CARD16	CCRN4L	CAMK1D
CARD17	CD99L2	CAMK2D
CASP1	CDC14A	CAMK2G
CASP10	CDC14B	CAMLG
CASP9	CDC25A	CARD14
CAST	CDC42	CARD8
CBLB	CDCA4	CARS
CBR4	CDCP1	CASD1
CBY1	CDHR5	CBL
CC2D2A	CDKN2AIP	CBR3
CCDC14	CEACAM1	CBX1
CCDC18	CEBPA	CCBL1
CCDC24	CECR6	CCDC127
CCDC30	CENPL	CCDC136
CCDC53	CENPN	CCDC144A
CCDC56	CENPO	CCDC144NL
CCDC57	CENPV	CCDC15
CCDC77	CEP95	CCDC22
CCDC85A	CEP97	CCDC3
CCDC90B	CFLAR	CCDC76
CCNL2	CH25H	CCDC80
CCT3	CHD7	CCDC84
CCT5	CHD9	CCDC88A
CDADC1	CHGB	CCDC91
CDH13	CHKA	CCNB1IP1

CDH18	CHRA1	CCRL1
CDH26	CHRNA7	CCT6B
CDK19	CHRNE	CD164
CDK5	CHTOP	CD99P1
CDRT1	CIDEC	CDC42BPA
CEP104	CLASRP	CDH11
CEP55	CLK3	CDH24
CEP57L1	CLN3	CDK12
CEP63	CNOT2	CDK13
CEP78	CNOT4	CDK16
CHMP4A	CNST	CDK2AP2
CHST12	CNTF	CEBPG
CIAO1	COBL	CEL
CKLF	COBLL1	CELF1
CLCC1	COG3	CELSR1
CLCN3	COMP	CENPI
CLDN1	COPS3	CENPM
CLDN11	COQ2	CEP128
CLEC2D	COQ7	CEP135
CLPX	COX19	CEP57
CLYBL	COX7B	CEP76
CMBL	CPNE9	CERK
CNPY4	CPSF7	CERS2
COG6	CRCP	CFB
COL4A5	CREB5	CHCHD3
COL4A6	CROCC	CHCHD7
COMMD3	CRTC2	CHDH
COMT	CRTC3	CHFR
COMTD1	CRY1	CHMP4B
COPB2	CSNK1A1P1	CHRNA5
COQ5	CSRNP1	CHST11
COQ6	CTDNEP1	CIRBP
CORO2A	CTH	CITED2
COX11	CXorf56	CITED4
COX15	CYLD	CKAP5
CPSF3	CYP20A1	CLASP2
CREB3L4	CYP26A1	CLIC5
CRELD1	CYR61	CLMN
CREM	CYTH3	CNOT6
CROCCP3	C1QTNF1	CNP
CRYZ	C1QTNF2	COG2
CTSC	DACT3	COG8
CTSL1	DCP2	COL8A1
CUEDC2	DCTN6	COPZ1
CUL4A	DCUN1D2	COQ9
CUL4B	DDX21	CORO6
CYFIP2	DDX31	CPSF2

CYP1B1-AS1	DEF8	CRCT1
CYP2B6	DENND1B	CREB1
CYP2J2	DENND2C	CRYBB2P1
CYP2R1	DENND5B	CRYZL1
CYP3A7	DEPTOR	CSNK1A1
CYP4B1	DGKE	CSPG5
C1QL2	DHRS3	CSRP1
CYP4V2	DHX30	CTC1
DALRD3	DIDO1	CTNNBIP1
DARS2	DIRC2	CTNND1
DBI	DKFZP586I1420	CTPS
DCUN1D4	DLC1	CTSW
DDX23	DNAH11	CWF19L2
DECR1	DNAJB6	CYB5RL
DEPDC4	DNAJC27	CYBRD1
DET1	DNHD1	CYCS
DFFB	DOT1L	CYHR1
DFNB59	DPP8	CYP27B1
DGAT2	DPYSL4	CYP2E1
DISC1	DST	CYP2U1
DKFZP686I15217	DTL	DAD1
DLAT	DUOXA1	DAPK1
DLEU1	DUSP14	DBT
DNAH14	DUSP15	DCAF7
DNAJA1	DUSP26	DCAF8
DNAJA3	DUSP7	DCAKD
DNAJC13	E2F7	DCBLD1
DNAJC16	EAF1	DCLRE1C
DNAJC19	EDN1	DDHD2
DNAJC21	EEPD1	DDX17
DNAJC3-AS1	EFNA1	DDX20
DNASE1	EGR1	DDX28
DNER	EGR3	DDX3X
DNM1L	EHBP1	DDX46
DOC2A	EHD2	DDX52
DOCK1	EHD4	DDX59
DOCK4	EIF2C2	DENND2D
DPH5	EIF2C4	DFNB31
DPM2	EIF2S1	DGKB
DPY19L2	EIF3F	DHFR
DPY19L2P2	EIF5A2	DHFRL1
DPYD	ELAVL2	DHRS2
DPYSL3	ELK4	DHRS7B
DROSHA	ELL	DHX32
DSCC1	ELL2	DHX33
DUS1L	EML1	DHX58
DUSP18	EMX1	DHX9

DUSP19	EMX2	DIABLO
DUSP22	ENAH	DIP2B
DUSP3	ENDOU	DKK2
DYM	EPB41L5	DLL3
DYNC1I2	EPC2	DNAH17
DZIP1	ERCC4	DNAH5
DZIP3	ERI1	DNAJA4
ECE2	ERN1	DNAJC1
ECHDC2	ERO1LB	DNASE1L2
EDEM2	ETF1	DNM1P46
EEF2K	ETV1	DNMT3A
EFCAB11	EWSR1	DNTTIP1
EFCAB6	EXOG	DOCK7
EFR3A	EXOSC9	DOK4
EHMT2	EZR	DPY19L1P1
EIF2D	FAM103A1	DPY19L2P3
EIF3E	FAM105A	DSC1
ELMOD2	FAM125B	DSCR3
ELOVL6	FAM126B	DSCR6
ELP2	FAM129A	DTNBP1
ENGASE	FAM13B	DTX3L
ENOSF1	FAM160B1	DUOX1
ENTPD5	FAM171B	DUSP11
EPHX2	FAM177A1	DYNC1LI2
EPM2AIP1	FAM193A	DYNC2H1
ERCC5	FAM19A5	DYNLL1
ERCC6	FAM20B	DYRK2
ERLIN1	FAM57A	E4F1
ERLIN2	FAM7A1	EAPP
ERP27	FAT3	EARS2
ESD	FBXL12	ECM2
EXOC1	FBXL5	EFCAB4B
EXOC4	FBXO32	EFHD2
EXOSC7	FBXO36	EIF2C1
EXTL2	FBXO45	EIF2C3
FADS1	FEM1A	EIF3M
FAHD2A	FEM1C	EIF4G3
FAM104B	FER	ELL3
FAM110B	FGD2	ELP4
FAM114A1	FGD4	EMP1
FAM114A2	FGF2	EMR2
FAM118A	FGFR2	ENC1
FAM120AOS	FGFRL1	ENO1-AS1
FAM120C	FHDC1	ENO2
FAM127A	FIP1L1	ENOX2
FAM13A	FLJ31356	ENY2
FAM149B1	FLVCR2	EP400

FAM162A	FNDC3A	EPM2A
FAM165B	FOSL1	EPPK1
FAM172A	FOSL2	EPSTI1
FAM175A	FOXC1	ERBB3
FAM185A	FOXD1	ERMAP
FAM189B	FOXJ2	ERP44
FAM192A	FOXR1	ESCO2
FAM199X	FRG2	ESPNL
FAM19A2	FUS	ESRRB
FAM41C	FUT4	ESYT1
FAM48A	FZD4	ETFA
FAM50A	FZD5	ETNK1
FAM50B	FZD7	ETS2
FAM63A	GABBR2	EVC
FAM78A	GABPB1	EXO1
FAM81A	GADD45A	EXOC6
FAM95B1	GADD45B	EYA3
FAN1	GAPVD1	F8A1
FANCD2	GAS7	FAM104A
FANCL	GATA6	FAM108C1
FANK1	GCFC1	FAM111A
FARP1	GCH1	FAM111B
FBXL2	GCM1	FAM115C
FBXO15	GNDF	FAM116A
FBXO16	GDPD5	FAM117B
FBXW2	GFI1	FAM120A
FDPS	GGA2	FAM129B
FH	GGNBP2	FAM133B
FIG4	GHRLOS2	FAM161A
FIGF	GJC1	FAM161B
FKBP1A	GLI2	FAM167A
FKTN	GLRX5	FAM178A
FLJ13197	GLT25D2	FAM184A
FLJ14186	GLUD1	FAM188B
FLJ21408	GMEB2	FAM18B2-CDRT4
FLJ22536	GNAS	FAM190B
FLJ31485	GNG10	FAM19A3
FLJ36840	GNL1	FAM204A
FLJ38668	GOLPH3	FAM21A
FLJ39653	GON4L	FAM21C
FLJ40852	GORASP1	FAM26E
FLRT3	GP1BA	FAM36A
FMO4	GPAM	FAM38B
FNTB	GPR146	FAM45A
FONG	GPR157	FAM65B
FPGT	GRB10	FAM65C
FRA10AC1	GRB2	FAM83A

FTO	GSG2	FAM83B
FUT8	GTF3C4	FAM89A
FUT9	GUCA1B	FANCB
GABRE	H2AFJ	FANCM
GAD2	H6PD	FAR1
GALC	HAUS2	FBN2
GALK1	HBP1	FBXL18
GALM	HBS1L	FBXL20
GALNT11	HCCS	FBXO18
GALT	HDAC5	FBXO22
GAMT	HEG1	FBXO3
GATAD1	HERC5	FBXO4
GATS	HEY2	FBXO41
GCFC1-AS1	HIAT1	FCHSD2
GCLM	HIATL1	FDXACB1
GDI2	HIP1R	FECH
GEMIN6	HIST1H1T	FEM1B
GIT2	HIST1H2AB	FGD6
GLB1	HIST1H2AD	FGFR1OP2
GLIPR1L2	HIST1H2AE	FGR
GLRX2	HIST1H2AG	FIGNL1
GLT8D1	HIST1H2AH	FKBP4
GLYATL2	HIST1H2AK	FLCN
GMPR2	HIST1H2AM	FLJ10661
GNPAT	HIST1H2BC	FLJ31306
GOSR2	HIST1H2BI	FLJ37798
GPDI1L	HIST1H2BJ	FLJ39582
GPR110	HIST1H2BL	FLJ45244
GPR124	HIST1H2BM	FLRT2
GPR137B	HIST1H3B	FLT1
GPRC5B	HIST2H2AA4	FMN2
GRAMD1C	HIST2H2AB	FMNL1
GRAMD4	HIST2H2AC	FNBP1
GTDC1	HIST2H2BC	FNBP1L
GTF2E2	HIST3H2A	FND3C3B
GUCY1A3	HIST3H2BB	FOKK1
HARS2	HIVP2	FRAS1
HDAC6	HLA-DOB	FRK
HDAC8	HLA-G	FXR1
HDDC3	HN1	GABPB2
HDHD2	HOXA11	GALK2
HEATR3	HOXA13	GART
HECTD3	HOXB3	GATC
HENMT1	HOXD1	GBP5
HERC4	HOXD11	GCOM1
HEXDC	HS2ST1	GDAP2
HHAT	HSBP1L1	GDF10

HHIP	HSD17B12	GFOD1
HIBCH	HSF2	GGCX
HINT3	HSPA13	GIGYF2
HMGCR	HSPB9	GIN52
HMMR	HSPC159	GJA3
HNRPD	HTR3E	GJC2
HOMEZ	ICA1L	GK
HOOK2	IFFO2	GLCE
HOXB13	IFI44	GLG1
HPS3	IFNGR2	GLP2R
HRSP12	IGF2BP1	GLS
HS1BP3	IKZF5	GMCL1
HSD11B1	IL13RA1	GMPPB
HSD17B4	IL6ST	GNAL
HSD17B6	ILKAP	GNPTAB
HSD17B7	ING3	GOLPH3L
HSDL1	ING5	GORASP2
HSDL2	INO80	GPBP1
HSF4	INPP1	GPR107
HSP90AA1	INSM2	GPR126
HSPA1A	IP6K1	GPR137C
HSPA8	IQCC	GPR150
HSPA1L	IQSEC1	GPR161
HSPH1	IQSEC3	GRB14
HTATIP2	IRS1	GREM2
HYAL2	IRS2	GRPEL2
HYAL3	ISCA1	GSC
IARS2	ISL2	GSDMB
ICA1	ITCH	GTF2IRD2
IDE	ITPK1	GTF3C2
IDH1	ITPRIP	GXYLT1
IDO1	JHDM1D	H3F3B
IFI27L1	JOSD1	HAR1A
IFI44L	JUB	HCAR3
IFITM1	KBTBD4	HDAC4
IFT172	KCNB1	HEATR4
IFT20	KCNC1	HEATR6
IFT27	KCNG3	HFE
IFT46	KCNMB3	HGSNAT
IFT80	KCNN1	HHLA3
IGF2R	KCTD13	HIF1AN
IKBKAP	KDM2B	HIP1
IKBKB	KDM5B	HNRNPA3
IKZF2	KDM6A	HNRNPM
IL17RA	KDM6B	HNRNPR
ILF3	KDSR	HNRNPU
ILK	KIF11	HOOK3

INPP4B	KIF16B	HOXB6
INTS10	KIF1C	HOXD4
INTS3	KIF23	HPGD
INTS8	KIRREL	HSPA4
INVS	KLF15	HSPA5
IPO5	KLF4	HTR1D
IPP	KLHDC5	HTRA2
IQCG	KLHL11	HTT
ITGA2	KLHL15	HUS1
ITGBL1	KLHL18	HUWE1
IVNS1ABP	KPNA1	IDS
JRKL	KPNA3	IFIT5
KATNAL1	KPNA4	IFRD1
KATNAL2	KPNA5	IL15
KAZALD1	KREMEN1	IL18
KBTBD10	KRT80	IL1R1
KBTBD3	LAMP2	IL20
KCND2	LANCL2	IL23A
KDELC1	LATS2	IL2RB
KGFLP1	LCE1F	IMMP2L
KIF20A	LDLRAP1	IMP4
KIF3C	LEPROT	IMPACT
KIFAP3	LGALS3	IMPAD1
KLHDC1	LGALS8	INADL
KLHDC10	LIN52	INHA
KLHDC9	LITAF	INPP5E
KLHL12	LMO4	INPP5J
KLHL3	LNX1	INSIG1
KLHL36	LONRF2	INTS4
KLRAQ1	LRCH1	INTS6
KMO	LRCH3	IP6K2
KRIT1	LRIG2	IQCK
KRT19P2	LRRC37A2	IREB2
KRTCAP3	LRRC37A4	IRF5
KYNU	LRRC70	ISG20
L3MBTL1	LRRFIP2	ISOC1
LANCL1	LRRN3	ITPKB
LARS	LSMD1	ITPR3
LEO1	LY6G5B	ITSN1
LFNG	LY6K	JAK2
LGALS12	LYRM4	JKAMP
LIG3	MAD2L1BP	JPX
LNPEP	MAFG	KALRN
LOH12CR1	MAGT1	KAT2B
LONP2	MAK	KCMF1
LPA	MAML1	KCNJ1
LPCAT1	MAP1LC3B	KCNMA1

LPCAT2	MAP2K7	KDM4C
LRBA	MAP3K2	KHSRP
LRPPRC	MAPK1IP1L	KIAA0317
LRRC16A	MAPK6	KIAA0319
LRRC23	MAPK8	KIAA0564
LRRC27	MAPKBP1	KIAA0889
LRRC28	MARK1	KIAA0907
LRRC1	MARVELD3	KIAA1644
LRRIQ3	MASTL	KIAA1715
LRTOMT	MATN1	KIAA1797
LTA4H	MB21D2	KIAA2013
LUZP2	MCAT	KIF13A
LYRM7	MCM5	KIF20B
LYST	MCM9	KIF27
LZIC	MCPH1	KIF3B
LZTFL1	MDM4	KLC1
MACROD2	MED1	KLC4
MAGED2	MED12L	KLF11
MAGED4B	MED6	KLF3
MANEA	MED8	KLF6
MANF	MED9	KLF9
MAP2K5	METTL21D	KLHDC7B
MAP2K6	METTL22	KLHDC8A
MAP3K12	MFGE8	KLHL5
MAP4K2	MGAT5	KLRD1
MAVS	MICB	KNTC1
MBLAC2	MIER1	KRBA1
MBOAT2	MLLT6	KRR1
MCF2L	MNT	KRT18P55
MCTP2	MORN2	KRT23
MCTS1	MPDU1	KRT86
MDH2	MPP3	KRTAP3-1
MEF2BNB	MPPE1	KRTDAP
MEGF6	MSI1	LARP1B
MEIS1	MSX1	LARP4
MEIS2	MSX2	LAYN
METAP1D	MTHFD2	LCORL
METTL3	MTMR1	LDOC1L
METTL7A	MTMR12	LHFPL2
MEX3A	MTMR3	LIMS3
MGC21881	MTRF1L	LINS
MGC45800	MTSS1L	LIPT2
MGST2	MUC17	LMAN1
MIAT	MXD1	LMAN2L
MIPEP	MXRA7	LRP2BP
MIPOL1	MYADM	LRP8
MITD1	MYH7B	LRPAP1

MKKS	MYL12A	LRRC37B
MKS1	MYO10	LRRC42
MLKL	N4BP1	LRRC47
MMAB	NAA25	LRWD1
MMACHC	NAB1	LZTS2
MMP11	NAGS	M6PR
MOGS	NCF1	MACC1
MPI	NCKAP5L	MAGI3
MPV17	NCOA5	MAGIX
MPZL2	NCRNA00312	MAGOHB
MRPL18	NDST1	MAN1A2
MRPL24	NEDD4L	MAN1C1
MRPL35	NF2	MAPK1
MRPL52	NFAT5	MAPK10
MRPS16	NFKB1	MAPRE2
MRPS21	NFKBID	MAPT
MRPS25	NFKBIE	MARVELD2
MRPS33	NFKBIZ	MAX
MSL3	NGDN	MBD5
MSL3P1	NHLRC2	MCFD2
MSRB2	NIPAL3	MCM4
MTA3	NKIRAS1	MDH1
MTIF2	NKX6-2	MDM2
MTIF3	NLGN3	ME2
MTL5	NMT2	MECOM
MTMR9LP	NOM1	MED15
MTR	NPAS1	MED23
MUC16	NR1D2	MED31
MUM1	NR2F1	MET
MUS81	NR4A1	METAP1
MUTED	NR4A3	METAP2
MUTYH	NRF1	METTL15
MYCBP	NSUN3	METTL19
MYCBPAP	NT5C3	METTL2B
MYOM1	NTF3	MFSD11
MYOM2	NUBP1	MFSD4
MYOZ3	NUFIP2	MGA
MYPN	NUP153	MGAT3
N6AMT1	NUP160	MGC15705
N6AMT2	NUP50	MGC70870
NAA40	NXT1	MGEA5
NADSYN1	OCLN	MKNK2
NAPEPLD	OSBPL2	MLEC
NAPSA	OSBPL3	MMS22L
NARF	OSGIN2	MOBKL2B
NARG2	OSMR	MOCS1
NARS	OTUD3	MOGAT1

NARS2	OVGP1	MON1B
NCKAP5	OXCT2	MORC2
NCRNA00085	OXR1	MORN4
NCRNA00174	OXSR1	MOSC2
NCRNA00328	PAFAH1B1	MOSPD2
NDN	PAN3	MPHOSPH9
NDUFA7	PANK4	MPP5
NDUFAF1	PANX1	MPP7
NDUFAF4	PAQR9	MPRIP
NDUFB2	PARD3B	MRE11A
NDUFB3	PATL1	MREG
NDUFB4	PAX6	MRPL45
NEIL1	PCDHGB4	MRPL48
NEK9	PDCD7	MRPL51
NFE2	PDP2	MRPS23
NFIA	PDZD8	MRPS6
NFS1	PEAR1	MTCH2
NHEDC2	PEBP4	MTFMT
NHLRC3	PELI1	MTHFD1L
NHP2L1	PER1	MTHFSD
NHS	PER2	MTMR8
NICN1	PER3	MTRF1
NIF3L1	PEX3	MUC4
NIT1	PGAP1	MVP
NIT2	PGBD3	MYB
NKRF	PGGT1B	MYH9
NLN	PGM5	MYL5
NME5	PHACTR2	MYOF
NME7	PHACTR4	MYOZ1
NMRAL1	PHC2	NAA20
NOL7	PHC3	NAAA
NPFFR2	PHF21B	NACC2
NPL	PHF7	NAGLU
NPR2	PHKA1	NAIP
NPRL2	PHKG2	NANS
NR2E3	PHLPP1	NAT6
NRBP2	PHTF2	NBAS
NSMCE1	PHYHIPL	NBEA
NTAN1	PIAS2	NCAPD2
NTHL1	PIGA	NCBP2
NUB1	PIGL	NCOA7
NUDT16P1	PIK3R1	NCRNA00086
NUDT22	PIM1	NCRNA00176
NUDT3	PIP5K1A	NCRNA00219
NUDT5	PISD	NCRNA00247
NUDT7	PITHD1	ND1
OGG1	PKD1	NDFIP1

OGT	PKMYT1	NDNL2
OMA1	PLA2G1B	NDRG2
OR4N4	PLCG2	NDUFA10
OSGEP	PLD6	NEBL
OXSM	PLEC	NEK3
PAAF1	PLEKHA3	NETO1
PAFAH1B2	PLEKHM2	NF1
PAFAH1B3	PLEKHM3	NFATC1
PAFAH2	PMAIP1	NFKBIA
PAICS	POLE3	NFX1
PAN2	POLQ	NFYA
PAPSS2	POLR2D	NGF
PAQR8	POLR2K	NHEDC1
PARG	POU2F1	NLK
PARP4	POU4F3	NMNAT3
PARS2	PPAP2A	NOB1
PBX1	PPARGC1B	NOD1
PCBD1	PPM1A	NPAS2
PCCA	PPM1B	NPTX2
PCDHB2	PPP1R13B	NRXN3
PCLO	PPP1R1C	NSF
PCOLCE2	PPP1R8	NSRP1
PCYOX1	PPP2CA	NSUN6
PCYOX1L	PPP3CC	NT5DC2
PCYT1B	PPPDE1	NUCKS1
PCYT2	PPRC1	NUDT16
PDCD2	PPTC7	NUDT4
PDE11A	PRDM11	NUP85
PDK3	PRDM15	NUP98
PDZD11	PRDM6	NUTF2
PDZK1	PRIMA1	NXPH2
PECR	PRKAB1	OBFC2A
PEX12	PRKACB	OCRL
PEX19	PRKCH	ODF3L1
PFKFB1	PRKRIP1	ODZ3
PFKM	ProSAPiP1	OLFM1
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PHKB	PSMC3IP	OR2T8
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PIGM	PTGER2	PABPN1
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PIGV	PTP4A1	PADI1
PIR	PTPN1	PADI2
PLCXD3	PTPRE	PAG1

PLD1	PTPRJ	PAIP1
PLEKHA6	PTPRS	PAIP2B
PLEKHG4B	PUF60	PAK7
PLK1S1	PURB	PANK3
PMS1	PYGM	PAPOLA
PMS2L2	PYGO1	PAQR5
PNKD	QSOX2	PAQR6
PNPO	RAB11FIP1	PARD3
POGK	RAB21	PARL
POGLUT1	RAB22A	PARP6
POLG2	RAB30	PARVA
POLR1B	RAB9A	PBRM1
POMGNT1	RAB9BP1	PBX4
POP1	RABGEF1	PC
POP5	RAD23B	PCDH7
POT1	RAE1	PCDHGB2
PPARG	RAET1K	PCGF3
PPHLN1	RAF1	PCGF5
PPID	RAGE	PCGF6
PPM1M	RALGAPA1	PCNXL2
PPOX	RANBP9	PDCD6IP
PPP1R3B	RAPGEF1	PDCL3
PPP1R3E	RAPGEFL1	PDE4D
PPP3CB	RARRES1	PDE4DIP
PRDX1	RASA2	PDE7A
PRELID2	RASSF1	PDK1
PRKX	RASSF8	PDLIM5
PRKY	RAVER2	PDS5A
PRMT2	RBBP6	PDSS2
PRMT7	RBM19	PDXDC2P
PROC	RBM22	PDZD2
PRPF40B	RBM24	PEAK1
PSPH	RBM39	PELO
PSRC1	RC3H1	PEX14
PTGR2	RC3H2	PEX7
PTPRB	RCL1	PGK1
PTPRG	RCOR1	PGM3
PTPRR	REL	PGPEP1
PURG	RELT	PHF10
PUS10	REM2	PHF11
PUS7L	REST	PHF15
PXDNL	RFC1	PHF17
PYCARD	RFWD3	PHF23
PYDC1	RFX4	PHTF1
QDPR	RGAG1	PIGC
RAB23	RGAG4	PIGG
RAB3D	RGPD5	PIGN

RAB7L1	RGS2	PIGY
RAB9B	RHEBL1	PIH1D1
RABEPK	RHOQ	PIK3IP1
RABL2A	RICTOR	PIK3R3
RAC2	RIMKLB	PITPNA
RAD50	RIMS2	PKD1L2
RAD51B	RIOK3	PKNOX1
RAD51D	RIPK1	PKP4
RAD54B	RLF	PLAA
RAD9B	RNF114	PLAC2
RAP1GDS1	RNF169	PLB1
RAP2B	RNF182	PLDN
RBBP9	RNF19B	PLEKHG5
RBCK1	RNF220	PLGLB1
RBKS	RNF41	PLRG1
RBL2	RNMT	PLS1
RBM41	RNMTL1	PML
RDM1	RNPS1	PMP22
RETSAT	ROD1	PNPLA4
REXO2	ROPN1L	POC5
RGP1	RPL22L1	POGZ
RGS3	RPL32P3	POLA1
RHBDD1	RPP14	POLH
RIC3	RPRD1B	POLR1D
RIMBP3	RRAD	POLR1E
RMND5B	RRAGD	POLR3B
RNASEH2C	RRAS2	POLRMT
RNASEL	RRP1B	POP4
RNF112	RSPH4A	POPDC2
RNFT2	RSPH9	PP7080
RNPC3	RUFY3	PPARA
RPAP2	RUNX3	PPARGC1A
RPGRIP1L	RYBP	PPIE
RPH3AL	SAMD4A	PPIP5K1
RPL13	SAMD8	PPP1R9A
RPL23A	SAR1A	PPP2R2C
RPP40	SAR1B	PPP4R4
RPS6KA6	SASH1	PPPDE2
RSAD1	SAT1	PREPL
RSG1	SCAF8	PRF1
RSRC1	SCARA3	PRIM2
RSU1	SCARF2	PRKAG2
RWDD2B	SCD5	PRKCA
S100A11	SCGB3A1	PRMT10
S100PBP	SCHIP1	PROSC
SAMD12	SCN8A	PRR14L
SAMD13	SCT	PRR7

SAMD15	SEC14L1	PRRC2B
SAMD9L	SEC22C	PRSS23
SAP30L	SEC61A2	PRTG
SCFD2	SEL1L3	PSAT1
SCN9A	SELS	PSD2
SCRN3	SENP2	PSMB2
SDAD1	12-Sep	PSMD6
SDCCAG8	08-Sep	PSMF1
SDSL	SERTAD2	PSPC1
SEC22B	SERTAD4	PTP4A2
SEC31A	SESTD1	PTPDC1
SEMA3A	SETD2	PTPLA
SEMA3C	SF3A1	PTRHD1
SENP8	SF3B4	PTTG1
SEPHS1	SFSWAP	PURA
06-Sep	SGMS2	PXK
SEPX1	SH3GL3	PXN
SERGEF	SHBG	PYROXD1
SERPINB3	SHOC2	R3HCC1
SETDB1	SIRPA	RAB10
SETDB2	SIRPB1	RAB11FIP4
SFI1	SIX4	RAB18
SH3BGR	SKA2	RAB1A
SH3TC2	SLC23A2	RAB24
SHMT1	SLC25A26	RAB3C
SIDT2	SLC25A30	RAB3GAP1
SIP1	SLC25A33	RAB43
SIRT5	SLC25A38	RAB6B
SKA3	SLC2A13	RAB8B
SLC11A2	SLC2A8	RABL3
SLC13A3	SLC31A1	RABL5
SLC1A1	SLC31A2	RAD21L1
SLC24A1	SLC34A2	RAD54L
SLC25A12	SLC3A2	RALBP1
SLC27A3	SLC41A1	RALGAPA2
SLC27A5	SLC4A4	RASGRP3
SLC2A11	SLC6A16	RB1
SLC2A12	SLC6A6	RBBP4
SLC2A9	SLC7A1	RBBP7
SLC30A5	SLC7A5	RBL1
SLC33A1	SLC7A6	RBM18
SLC35E2	SLK	RBM27
SLC38A6	SLU7	RBM3
SLC38A9	SMAGP	RBM45
SLC39A11	SMC4	RBM47
SLC44A3	SMEK2	RBM8A
SLN	SMG1	RBMXL1

SMAD2	SMG6	RCOR3
SMARCAL1	SMG8	RER1
SNRPB2	SMPD4	RERE
SNRPN	SNAI1	RFC3
SNX14	SNED1	RFX3
SORL1	SNIP1	RG9MTD2
SPAG16	SNTA1	RGS16
SPATA24	SNX19	RIC8B
SPATA6	SNX25	RIPK2
SPIB	SNX5	RIT1
SPIN2B	SOCS3	RLIM
SPIN3	SOD2	RLN1
SPR	SON	RMND5A
SPTLC2	SP2	RNF10
SPTLC3	SP3	RNF34
SQLE	SP8	RNF7
SRI	SPAG1	RP1L1
SRPX2	SPAG7	RPAP1
SSR2	SPATA13	RPE
ST13	SPDEF	RPL15
ST6GALNAC5	SPHK1	RPL34
ST8SIA4	SPIRE1	RPP25
STAC	SPPL3	RPP38
STAT6	SPRY2	RPS6KA5
STEAP2	SPTLC1	RPUSD2
STEAP3	SRF	RRM2
STX17	SRPK2	RSC1A1
STX4	SRRM1	RTKN2
STX8	SRRT	RUNX2
STXBP5	SRSF10	RWDD2A
STYXL1	SSH2	RWDD4
SUCLG1	SSU72	S100A5
SULT2B1	ST3GAL1	SALL4
SUMF1	ST7	SAMD1
SUPT3H	ST7L	SATB2
SYK	STARD5	SBNO1
SYNPO2	STARD9	SCAF11
SYTL1	STK11IP	SCAI
SYTL2	STK17B	SCARB2
SYTL4	STK24	SCN4B
TALDO1	STX11	SDCCAG3
TAP2	STX18	SDF2
TBC1D16	SUZ12	SEC23IP
TBC1D19	SYBU	SEC24A
TBC1D22A	SYT15	SEMA4F
TBC1D5	TAB3	SENP5
TBC1D7	TANK	SERBP1

TBC1D8	TAOK1	SERF2
TBCK	TAPT1	SERINC3
TCEA3	TASP1	SERPINB1
TCEANC2	TBC1D12	SERPINB10
TCFL5	TBC1D15	SETMAR
TCP10L	TBC1D22B	SETX
TCTN1	TBC1D30	SF3B3
TDP1	TBX21	SH2B3
TDRD3	TCERG1	SH2D4A
TFB1M	TCF12	SH2D4B
TGFB1	TCF25	SH3RF3
THAP8	TCF7	SH3TC1
THNSL1	TEC	SHC1
THTPA	TEF	SIK1
TIMMDC1	TET3	SKP2
TLE6	TFAP2E	SLAIN2
TLR5	TFDP2	SLC15A2
TMC5	TGFBRAP1	SLC16A7
TMCO6	TGOLN2	SLC22A23
TMEM107	THAP5	SLC23A3
TMEM126B	THUMPD2	SLC25A13
TMEM136	TIGD6	SLC25A20
TMEM141	TIPARP	SLC25A4
TMEM14A	TJAP1	SLC25A40
TMEM150A	TJP2	SLC26A1
TMEM187	TLE4	SLC27A2
TMEM218	TM9SF3	SLC29A1
TMEM219	TMC8	SLC35A1
TMEM234	TMEM11	SLC35B1
TMEM25	TMEM111	SLC35D1
TMEM26	TMEM146	SLC37A3
TMEM41B	TMEM18	SLC38A10
TMEM44	TMEM192	SLC45A4
TMEM45A	TMEM200B	SLC5A6
TMEM48	TMEM22	SMAD3
TMEM5	TMEM231	SMARCA5
TMEM80	TMEM237	SMC1A
TMLHE	TMEM27	SMC5
TMOD2	TMEM30B	SMCR7L
TMTC4	TMEM87A	SMYD4
TNIK	TMX4	SNHG12
TOP1MT	TNFRSF10B	SNHG5
TP53	TNFRSF12A	SNN
TP53BP1	TNFRSF8	SNX18
TP53TG1	TNKS	SOCS2
TPR	TNNC1	SORT1
TPRG1L	TNPO1	SOX6

TRABD	TOB1	SP1
TRADD	TOE1	SP100
TRAF5	TOMM20	SP140
TRAK2	TOMM34	SP140L
TRIB2	TOPORS	SPG11
TRIM45	TP53AIP1	SPG7
TRIM69	TPMT	SPICE1
TRMT1L	TRA2B	SPIRE2
TRNT1	TRAM2	SPOP
TSEN2	TRAPPC6B	SQRDL
TSGA14	TRIM11	SRRD
TSNAXIP1	TRIO	SRSF1
TSPAN31	TRIP11	SRSF2
TTC13	TSPYL2	SRXN1
TTC14	TTBK2	SSBP1
TTC15	TTC26	SSBP3
TTC23	TTC32	SSBP4
TTC9C	TTC9	SSH1
TTPAL	TTL	SSR3
TUBD1	TUBB2A	ST6GALNAC2
TUBGCP6	TUBB6	ST7-AS1
TUSC2	TUBGCP3	ST8SIA3
UBD	TXNDC11	STAG3
UBE2CBP	TXNIP	STAG3L4
UBE2D4	TXNL4B	STAMBP
UBE2I	TYW3	STAT5B
UBQLNL	UAP1L1	STAU2
UBR1	UBA6	STMN1
UBXN8	UBE2J1	STRBP
UGGT1	UBE2J2	STRN
UGT1A6	UBE2K	STX1A
UQCC	UBE2L3	STXBP1
USO1	UBE2N	STXBP4
USP28	UBE2Q1	STYX
UTP6	UBE3C	SUB1
VAMP8	UBIAD1	SUCLA2
VAV3	UBR7	SUGP2
VIPAR	UCP1	SULT4A1
VIT	UGCG	SUPT7L
VPS16	UHRF1BP1L	SUSD4
VPS26B	UHRF2	SUV39H2
VPS35	ULK2	SUV420H1
VPS36	UNC5CL	SV2A
VPS41	USP12	SYCN
VPS52	USP15	SYNC
VSNL1	USP2	SYNCRIP
WDR12	USP24	SYNE1

WDR27	USP25	SYNM
WDR3	USP3	SYNPO
WDR31	USP31	SYNRG
WDR54	USP36	TADA2A
WDR5B	USP49	TAF11
WDR67	UVRAG	TAF13
WDR70	VAMP3	TAF7L
WDR77	VAPA	TANC2
WDR89	VCPIP1	TAOK3
WDR92	VEZF1	TBC1D1
WDR96	VGf	TBC1D2B
WFDC10B	VPRBP	TBC1D4
WSCD1	VPREB3	TBCB
XIST	WAC	TBCC
XPO5	WBP4	TBRG1
XPOT	WDR20	TBX19
XRCC1	WDR26	TCEAL1
XRCC5	WDR35	TCTE3
XYLT2	WDR48	TDRKH
YBX2	WDR66	TERF2
YPEL1	WDR76	TFPI
ZCWPW1	WHAMM	TGFBR3
ZDHHHC16	WIPF3	TGIF2
ZDHHHC21	WNK1	TGM4
ZFHX2	WTAP	THADA
ZFP112	WWP2	THAP2
ZFP14	XPC	THAP6
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ZMAT4	YAP1	THEM4
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ZMYND8	YTHDC2	THSD1
ZNF177	YTHDF1	THUMPD3
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ZNF239	ZBED3	TIMELESS
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ZNF252	ZBTB34	TK2
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ZNF285	ZBTB7C	TLR6
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ZNF302	ZC3H7A	TM7SF2
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ZNF337	ZC3HC1	TMCO7
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ZNF577	ZFP91	TMEM182
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	ZNF398	TNRC6C
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	ZNF44	TOMM20L
	ZNF440	TOP1P2
	ZNF45	TOR1AIP2
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	ZNF498	TPM3
	ZNF507	TPST2
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	ZNF614	TRAF3IP2
	ZNF622	TRAF3IP2-AS1
	ZNF625	TRAM1L1
	ZNF669	TRIM4
	ZNF695	TRIM7
	ZNF704	TRMT12
	ZNF75A	TRNP1
	ZNF764	TSHZ1
	ZNF77	TSPAN11
	ZNF776	TSPAN2
	ZNF791	TSPAN9
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		TTC39B

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