

A4GALT	ADAT3	ALMS1	ARSE	BCKDK
AAGAB	ADCK2	ALOX12B	ARSG	BCS1L
AARS	ADK	ALOXE3	ARSK	BLK
AARS2	ADSL	ALPI	ASAH1	BLOC1S3
AASS	ADSSL1	ALPL	ASL	BLOC1S6
ABAT	AFG3L2	AMACR	ASNS	BLVRA
ABCA1	AGA	AMN	ASPA	BMP6
ABCA12	AGK	AMPD1	ASS1	BMS1
ABCB11	AGL	AMPD2	ATAD1	BOLA3
ABCB4	AGMO	AMPD3	ATAD3A	BORCS5
ABCB6	AGPAT2	AMT	ATG5	BSCL2
ABCB7	AGPS	ANGPTL3	ATIC	BSND
ABCC2	AGXT	ANO10	ATP13A2	BTD
ABCC6	AGXT2	ANO5	ATP2A1	C12orf65
ABCC8	AHCY	ANTXR2	ATP5F1A	C19orf12
ABCD1	AICDA	AP1B1	ATP5F1B	C19orf70
ABCD3	AIFM1	AP1S1	ATP5F1D	C1GALT1C1
ABCD4	AIMP1	AP1S2	ATP5F1E	C1QBP
ABCG5	AIMP2	AP2S1	ATP5MC3	C2orf69
ABCG8	AK1	AP3B1	ATP5MD	CA5A
ABHD12	AK2	AP3B2	ATP5PO	CACNA1S
ABHD5	AK7	AP3D1	ATP6AP1	CAD
ACACA	AKR1C2	AP4B1	ATP6AP2	CANT1
ACACB	AKR1D1	AP4E1	ATP6V0A2	CAPN3
ACAD8	AKT2	AP4M1	ATP6V1A	CARS
ACAD9	ALAD	AP4S1	ATP6V1E1	CARS2
ACADL	ALAS2	AP5B1	ATP7A	CASQ1
ACADM	ALDH18A1	AP5M1	ATP7B	CASR
ACADS	ALDH1L2	AP5Z1	ATP8A2	CAT
ACADSB	ALDH3A2	APOA1	ATP8B1	CAV1
ACADVL	ALDH4A1	APOA5	ATPAF2	CAV3
ACAT1	ALDH5A1	APOB	AUH	CAVIN1
ACAT2	ALDH6A1	APOC2	B3GALNT2	CBS
ACBD5	ALDH7A1	APOC3	B3GALT6	CCDC115
ACER3	ALDOA	APOE	B3GAT3	CCS
ACO2	ALDOB	APOO	B3GLCT	CD320
ACOX1	ALG1	APOPT1	B4GALNT1	CEL
ACOX2	ALG11	APPL1	B4GALT1	CEP89
ACSF3	ALG12	APRT	B4GALT7	CERS1
ACSL4	ALG13	APTX	B4GAT1	CERS2
ACY1	ALG14	AR	BAAT	CERS3
ADA	ALG2	ARCN1	BBOX1	CETP
ADA2	ALG3	ARFGEF2	BCAP31	CHAT
ADAMTSL2	ALG6	ARG1	BCAT2	CHCHD10
ADAR	ALG8	ARSA	BCKDHA	CHCHD2
ADARB1	ALG9	ARSB	BCKDHB	CHKB

CHRNE	COQ2	CYB5R3	DLAT	ELOVL4
CHST11	COQ4	CYBRD1	DLD	ELOVL5
CHST14	COQ5	CYC1	DLST	ELP1
CHST3	COQ6	CYCS	DMD	ELP2
CHST6	COQ7	CYP11A1	DMGDH	EMC1
CHSY1	COQ8A	CYP11B1	DMPK	EMD
CIAO1	COQ8B	CYP11B2	DNA2	EMG1
CIDEC	COQ9	CYP17A1	DNAJB6	ENO3
CISD2	COX10	CYP19A1	DNAJC12	ENPP1
CLCN1	COX11	CYP21A2	DNAJC19	ENTPD1
CLCN2	COX14	CYP24A1	DNAJC21	EOGT
CLCN6	COX15	CYP27A1	DNAJC3	EPG5
CLCN7	COX16	CYP27B1	DNAJC30	EPHX1
CLCNKB	COX18	CYP2R1	DNAJC5	EPM2A
CLDN10	COX20	CYP2U1	DNAJC6	EPRS
CLDN16	COX4I1	CYP4F22	DNM1	ERAL1
CLDN19	COX4I2	CYP51A1	DNM1L	ESR1
CLN3	COX5A	CYP7A1	DNM2	ESR2
CLN5	COX6A1	CYP7B1	DOLK	ETFA
CLN6	COX6A2	D2HGDH	DPAGT1	ETFB
CLN8	COX6B1	DAG1	DPM1	ETFDH
CLP1	COX7B	DALRD3	DPM2	ETHE1
CLPB	COX8A	DAP3	DPM3	EXOSC3
CLPP	CP	DARS	DPYD	EXT1
CLPX	CPOX	DARS2	DPYS	EXT2
CLTC	CPS1	DBH	DSE	EXTL3
CMPK2	CPT1A	DBT	DTNBP1	FA2H
CNNM2	CPT1C	DCAF17	DTYMK	FAAH2
CNNM4	CPT2	DCC	DUT	FAH
COA3	CRAT	DCXR	DYM	FAM111A
COA5	CREB3L3	DDC	DYNC1H1	FAM20B
COA6	CRLS1	DDHD1	DYRK1B	FAR1
COA7	CSGALNACT1	DDHD2	DYSF	FARS2
COASY	CSTB	DDOST	EARS2	FARSA
COG1	CTDP1	DEGS1	EBP	FARSB
COG2	CTH	DGAT1	ECHS1	FASTKD2
COG3	CTNS	DGKE	EDEM3	FASTKD5
COG4	CTPS1	DGUOK	EFL1	FBP1
COG5	CTSA	DHCR24	EGF	FBXL4
COG6	CTSB	DHCR7	EHBP1L1	FDFT1
COG7	CTSC	DHDDS	EHHADH	FDPS
COG8	CTSD	DHFR	EIF2AK3	FDX2
COL11A2	CTSF	DHODH	EIF2B1	FDXR
COL2A1	CTSK	DHRXS	EIF2S3	FECH
COL4A3BP	CUBN	DHTKD1	EIF6	FGFR2
COPA	CYB561	DIABLO	ELAC2	FH
COPB2	CYB5A	DKC1	ELOVL1	FHL1

FICD	GATA6	GPAA1	HFE	IDH3B
FIG4	GATB	GPC3	HGD	IDS
FKRP	GATC	GPD1	HGSNAT	IDUA
FKTN	GATM	GPHN	HIBADH	IER3IP1
FLAD1	GBA	GPI	HIBCH	IFIH1
FLNA	GBA2	GPIHBP1	HJV	IL1RAPL1
FLNB	GBE1	GPT2	HK1	IL2RA
FMO3	GCDH	GPX4	HLCS	IMPAD1
FOLR1	GCH1	GRHPR	HMBS	IMPDH1
FOXP3	GCK	GRIA2	HMGCL	INPP5E
FOXRED1	GCLC	GRIA3	HMGCS2	INPP5K
FTCD	GCSH	GRIA4	HMOX1	INPPL1
FTH1	GDAP1	GRID2	HNF1A	INS
FTL	GFER	GRIN1	HNF1B	INSR
FTSJ1	GFM1	GRIN2A	HNF4A	ISCA1
FUCA1	GFM2	GRIN2B	HOGA1	ISCA2
FUK	GFPT1	GRIN2D	HPD	ISCU
FUT8	GGCX	GRM1	HPDL	ISPD
FXN	GGPS1	GRM6	HPGD	ITPA
FXYD2	GGT1	GRN	HPRT1	ITPR1
G6PC	GIF	GSR	HPS1	ITPR2
G6PC3	GK	GSS	HPS3	IVD
G6PD	GLA	GSTZ1	HPS4	JAGN1
GAA	GLB1	GTPBP3	HPS5	KARS
GABBR2	GLDC	GUF1	HPS6	KCNA1
GABRA1	GLIS3	GUK1	HRAS	KCNJ10
GABRA6	GLRA1	GUSB	HS2ST1	KCNJ11
GABRB1	GLRB	GYG1	HS6ST1	KCNJ2
GABRB2	GLRX5	GYG2	HS6ST2	KCTD7
GABRB3	GLS	GYS1	HSD11B1	KDSR
GABRD	GLUD1	GYS2	HSD11B2	KHK
GABRG2	GLUL	H6PD	HSD17B10	KIAA0391
GAD1	GLYCTK	HAAO	HSD17B3	KIF1A
GALC	GM2A	HACD1	HSD17B4	KIF5A
GALE	GMPPA	HADH	HSD3B2	KIF5C
GALK1	GMPPB	HADHA	HSD3B7	KLF11
GALM	GNE	HADHB	HSPA9	KMO
GALNS	GNMT	HAL	HSPD1	KYNU
GALNT14	GNPAT	HAMP	HSPE1	L2HGDH
GALNT2	GNPNAT1	HAO1	HTRA2	LACC1
GALNT3	GNPTAB	HARS	HYAL1	LAGE3
GALT	GNPTG	HARS2	IARS	LAMA2
GAMT	GNS	HCCS	IARS2	LAMP2
GANAB	GON7	HCFC1	IBA57	LARGE1
GARS	GORAB	HEPHL1	IDH1	LARS
GATA1	GOSR2	HEXA	IDH2	LARS2
GATA4	GOT2	HEXB	IDH3A	LBR

LCAT	MAT1A	MRPL12	MT-TC	NDUFA12
LCT	MAT2A	MRPL24	MT-TD	NDUFA13
LDB3	MBOAT7	MRPL3	MT-TE	NDUFA2
LDHA	MBTPS1	MRPL39	MT-TF	NDUFA4
LDHB	MC2R	MRPL44	MT-TG	NDUFA6
LDHD	MCAT	MRPL49	MT-TH	NDUFA8
LDLR	MCCC1	MRPL50	MT-TI	NDUFA9
LDLRAP1	MCCC2	MRPS14	MT-TK	NDUFAF1
LETM1	MCEE	MRPS16	MT-TL1	NDUFAF2
LFNG	MCFD2	MRPS2	MT-TL2	NDUFAF3
LIAS	MCOLN1	MRPS22	MT-TM	NDUFAF4
LIG3	MDH1	MRPS23	MT-TN	NDUFAF5
LIPA	MDH2	MRPS25	MTTP	NDUFAF6
LIPC	MECR	MRPS28	MT-TP	NDUFAF7
LIPE	MFF	MRPS34	MT-TQ	NDUFAF8
LIPH	MFN2	MRPS36	MT-TR	NDUFB10
LIPT1	MFSD2A	MRPS7	MT-TS1	NDUFB11
LIPT2	MFSD8	MSMO1	MT-TS2	NDUFB3
LMAN1	MGAT2	MSTO1	MT-TT	NDUFB7
LMBRD1	MGME1	MTAP	MT-TV	NDUFB8
LMF1	MIA3	MT-ATP6	MT-TW	NDUFB9
LMNA	MICU1	MT-ATP8	MT-TY	NDUFC2
LONP1	MICU2	MT-CO1	MUT	NDUFS1
LPA	MIEF2	MT-CO2	MVD	NDUFS2
LPAR6	MIPEP	MT-CO3	MVK	NDUFS3
LPIN1	MLIP	MT-CYB	MYH1	NDUFS4
LPIN2	MLPH	MTERF3	MYH3	NDUFS6
LPL	MLYCD	MTFMT	MYO5A	NDUFS7
LRAT	MMAA	MTHFD1	MYOT	NDUFS8
LRBA	MMAB	MTHFR	NADK2	NDUFV1
LRPPRC	MMACHC	MTHFS	NADSYN1	NDUFV2
LRRK2	MMADHC	MTM1	NAGA	NEPRO
LSS	MNX1	MTMR2	NAGLU	NEU1
LYRM4	MOCOS	MT-ND1	NAGS	NEUROD1
LYRM7	MOCOS1	MT-ND2	NANS	NEUROG3
LYST	MOCOS2	MT-ND3	NAPB	NFE2L2
MAGT1	MOCOS3	MT-ND4	NARS	NFS1
MAN1B1	MOGS	MT-ND4L	NARS2	NFU1
MAN2A2	MORC2	MT-ND5	NAT8L	NGLY1
MAN2B1	MPC1	MT-ND6	NAXD	NHLRC1
MAN2B2	MPC2	MTO1	NAXE	NHP2
MANBA	MPDU1	MTPAP	NBAS	NIPA2
MANF	MPI	MTR	NBEAL2	NKX2-2
MAOA	MPST	MT-RNR1	NDST1	NME3
MAOB	MPV17	MT-RNR2	NDUFA1	NMNAT1
MARS	MRAP	MTRR	NDUFA10	NNT
MARS2	MRM2	MT-TA	NDUFA11	NOP10

NPC1	PCSK9	PHYKPL	PMVK	PRODH2
NPC2	PCYT1A	PI4K2A	PNKD	PRPS1
NPL	PCYT2	PI4KA	PNLIP	PRRT2
NPM1	PDE12	PIGA	PNP	PSAP
NR1H4	PDHA1	PIGB	PNPLA1	PSAT1
NR3C1	PDHB	PIGC	PNPLA2	PSPH
NR3C2	PDHX	PIGG	PNPLA4	PSTPIP1
NSDHL	PDIA6	PIGH	PNPLA6	PTCD3
NSUN2	PDK3	PIGK	PNPLA8	PTDSS1
NSUN3	PDP1	PIGL	PNPO	PTEN
NT5C3A	PDPR	PIGM	PNPT1	PTF1A
NT5E	PDSS1	PIGN	POC5	PTPMT1
NUBPL	PDSS2	PIGO	POFUT1	PTRH2
NUDT15	PDX1	PIGP	POGLUT1	PTS
NUS1	PDXK	PIGQ	POLD1	PUS1
OAS1	PDZK1IP1	PIGS	POLG	PUS3
OAT	PEPD	PIGT	POLG2	PYCR1
OBSCN	PET100	PIGU	POLR1A	PYCR2
OCRL	PET117	PIGV	POLR1B	PYGL
ODC1	PEX1	PIGW	POLR1C	PYGM
OGDH	PEX10	PIGY	POLR1D	QARS
OGT	PEX11B	PIK3C2A	POLR3A	QDPR
ONECUT1	PEX12	PIK3CA	POLR3B	QRSL1
OPA1	PEX13	PIK3CD	POLR3H	RAB18
OPA3	PEX14	PIK3R1	POLRMT	RAB23
OPLAH	PEX16	PIK3R2	POMGNT1	RAB27A
OSGEP	PEX19	PIK3R5	POMGNT2	RAB3GAP1
OSTC	PEX2	PIKFYVE	POMK	RAB3GAP2
OTC	PEX26	PINK1	POMT1	RAB7A
OXA1L	PEX3	PIP5K1C	POMT2	RAI1
OXCT1	PEX5	PISD	POP1	RANBP2
P4HTM	PEX6	PITRM1	POR	RARS
PAH	PEX7	PKLR	PPA2	RARS2
PAICS	PFKM	PLA2G4A	PPARG	RBCK1
PAM16	PGAM2	PLA2G6	PPCS	RBP4
PANK2	PGAP1	PLCB1	PPM1K	RBSN
PAPSS2	PGAP2	PLCB3	PPOX	RDH12
PARN	PGAP3	PLCB4	PPP1R15B	RDH5
PARS2	PGK1	PLCD1	PPT1	REN
PAX4	PGM1	PLCE1	PRDX1	RFT1
PC	PGM3	PLCG2	PRDX3	RFX6
PCBD1	PHGDH	PLIN1	PREPL	RIC3
PCCA	PHKA1	PLIN5	PRKAG2	RLBP1
PCCB	PHKA2	PLPBP	PRKAG3	RMND1
PCK1	PHKB	PMM2	PRKCSH	RNASEH1
PCK2	PHKG2	PMPCA	PRKN	RNASEH2A
PCSK1	PHYH	PMPCB	PRODH	RNASEH2B

RNASEH2C	SCARB2	SLC18A2	SLC35A2	SNX14
RNASET2	SCN4A	SLC19A1	SLC35A3	SORCS3
RNF213	SCO1	SLC19A2	SLC35C1	SPART
RNF31	SCO2	SLC19A3	SLC35D1	SPATA5
RPE65	SCP2	SLC1A1	SLC36A2	SPG11
RPIA	SCYL1	SLC1A2	SLC37A4	SPG7
RPL10	SCYL2	SLC1A3	SLC38A8	SPNS1
RPL11	SDHA	SLC1A4	SLC39A13	SPNS2
RPL13	SDHAF1	SLC22A12	SLC39A14	SPR
RPL15	SDHAF2	SLC22A5	SLC39A4	SPTLC1
RPL18	SDHB	SLC25A1	SLC39A8	SPTLC2
RPL21	SDHC	SLC25A10	SLC3A1	SQOR
RPL26	SDHD	SLC25A11	SLC40A1	SRD5A2
RPL27	SDR9C7	SLC25A12	SLC45A1	SRD5A3
RPL35	SEC23A	SLC25A13	SLC46A1	SSBP1
RPL35A	SEC23B	SLC25A15	SLC52A1	SSR3
RPL5	SECISBP2	SLC25A19	SLC52A2	SSR4
RPS10	SELENBP1	SLC25A20	SLC52A3	ST3GAL3
RPS15A	SELENOI	SLC25A21	SLC5A1	ST3GAL5
RPS19	SEPSECS	SLC25A22	SLC5A2	STAB1
RPS20	SERAC1	SLC25A24	SLC5A6	STAC3
RPS23	SERPINA1	SLC25A26	SLC5A7	STAP1
RPS24	SETX	SLC25A3	SLC6A1	STAR
RPS26	SFXN4	SLC25A32	SLC6A17	STAT1
RPS27	SGCA	SLC25A36	SLC6A19	STAT2
RPS28	SGCB	SLC25A38	SLC6A2	STAT3
RPS29	SGCD	SLC25A4	SLC6A20	STATH
RPS7	SGCG	SLC25A42	SLC6A3	STEAP3
RPSA	SGMS1	SLC25A46	SLC6A5	STRA6
RRM1	SGMS2	SLC26A1	SLC6A6	STS
RRM2B	SGPL1	SLC26A2	SLC6A8	STT3A
RTN4IP1	SGSH	SLC26A3	SLC6A9	STT3B
RUBCN	SHMT2	SLC27A4	SLC7A14	STX11
RXYLT1	SHPK	SLC27A5	SLC7A2	STX1B
RYR1	SI	SLC28A1	SLC7A3	STX5
SACS	SIDT2	SLC29A1	SLC7A5	STXBP1
SAMHD1	SIL1	SLC29A3	SLC7A7	STXBP2
SAR1B	SKIV2L	SLC2A1	SLC7A9	SUCLA2
SARDH	SLC10A1	SLC2A10	SLC9A7	SUCLG1
SARS	SLC10A2	SLC2A2	SLCO1B1	SUGCT
SARS2	SLC10A7	SLC2A9	SLCO1B3	SULT2B1
SAT1	SLC11A2	SLC30A10	SLCO2A1	SUMF1
SBDS	SLC12A3	SLC30A2	SMPD1	SUOX
SBF1	SLC13A3	SLC30A9	SMPD4	SUPV3L1
SBF2	SLC13A5	SLC31A1	SMS	SURF1
SC5D	SLC16A1	SLC33A1	SNAP25	SV2A
SCARB1	SLC17A5	SLC35A1	SNAP29	SYN1

SYNJ1	TMLHE	TWNK	VPS16
SYT1	TMPRSS6	TXN2	VPS33A
SYT14	TNPO3	TXNRD2	VPS33B
SYT2	TOMM7	TYMP	VPS45
TACO1	TOMM70	TYR	WARS
TAF1A	TOP3A	TYROBP	WARS2
TALDO1	TOR1A	UBIAD1	WDR4
TANGO2	TP53RK	UBTF	WDR45
TARS	TPI1	UCP2	WFS1
TARS2	TPK1	UGCG	XDH
TAT	TPMT	UGDH	XPNPEP3
TAZ	TPP1	UGGT1	XYLT1
TBC1D24	TPRKB	UGP2	XYLT2
TBC1D4	TRAK1	UGT1A1	YARS
TBK1	TRAP1	UMOD	YARS2
TBXAS1	TRAPPC11	UMPS	YIPF5
TCAP	TRAPPC12	UNC13D	YME1L1
TCF4	TRAPPC2	UNG	YRDC
TCN1	TRAPPC2L	UPB1	ZBTB20
TCN2	TRAPPC4	UQCC2	ZFP57
TCOF1	TRAPPC6B	UQCC3	ZFYVE26
TDO2	TRAPPC9	UQCRB	ZMPSTE24
TECPR2	TREH	UQCRC1	ZNF143
TECR	TREX1	UQCRC2	ZNF808
TEFM	TRIM32	UQCRFS1	ZNHIT3
TF	TRIM37	UQCRH	
TFAM	TRIP11	UQCRQ	
TFR2	TRIT1	UROC1	
TFRC	TRMT1	UROD	
TH	TRMT10A	UROS	
THAP11	TRMT10C	VAC14	
THG1L	TRMT5	VAMP1	
TIMM22	TRMU	VAMP2	
TIMM50	TRNT1	VAPB	
TIMM8A	TRPM6	VAR5	
TIMMDC1	TRPM7	VAR52	
TK2	TSEN15	VCP	
TKFC	TSEN2	VDR	
TKT	TSEN34	VIPAS39	
TMEM126A	TSEN54	VKORC1	
TMEM126B	TSFM	VLDLR	
TMEM165	TSR2	VMA21	
TMEM167A	TTC19	VPS11	
TMEM173	TTC37	VPS13A	
TMEM199	TTPA	VPS13B	
TMEM65	TUFM	VPS13C	
TMEM70	TUSC3	VPS13D	

A4GALT	ADAT3	ALOX12B	ASAH1	BLOC1S3
AAGAB	ADCK2	ALOXE3	ASL	BLOC1S6
AARS	ADK	ALPI	ASNS	BLVRA
AARS2	ADSL	ALPL	ASPA	BMP6
AASS	ADSSL1	AMACR	ASS1	BMS1
ABAT	AFG3L2	AMN	ATAD1	BOLA3
ABCA1	AGA	AMPD1	ATAD3A	BSCL2
ABCA12	AGK	AMPD2	ATG5	BSND
ABCB11	AGL	AMPD3	ATIC	BTD
ABCB4	AGMO	AMT	ATP13A2	C12orf65
ABCB6	AGPAT2	ANGPTL3	ATP2A1	C19orf12
ABCB7	AGPS	ANO10	ATP5F1A	C19orf70
ABCC2	AGXT	ANO5	ATP5F1B	C1GALT1C1
ABCC6	AGXT2	ANTXR2	ATP5F1D	C1QBP
ABCC8	AHCY	AP1B1	ATP5F1E	C2orf69
ABCD1	AICDA	AP1S1	ATP5MC3	CA5A
ABCD3	AIFM1	AP1S2	ATP5MD	CACNA1S
ABCD4	AIMP1	AP2S1	ATP5PO	CAD
ABCG5	AIMP2	AP3B1	ATP6AP1	CANT1
ABCG8	AK1	AP3B2	ATP6AP2	CAPN3
ABHD12	AK2	AP3D1	ATP6V0A2	CARS
ABHD5	AK7	AP4B1	ATP6V1A	CARS2
ACACA	AKR1C2	AP4E1	ATP6V1E1	CASQ1
ACACB	AKR1D1	AP4M1	ATP7A	CASR
ACAD8	AKT2	AP4S1	ATP7B	CAT
ACAD9	ALAD	AP5Z1	ATP8A2	CAV1
ACADL	ALAS2	APOA1	ATP8B1	CAV3
ACADM	ALDH18A1	APOA5	ATPAF2	CAVIN1
ACADS	ALDH1L2	APOB	AUH	CBS
ACADSB	ALDH3A2	APOC2	B3GALNT2	CCDC115
ACADVL	ALDH4A1	APOC3	B3GALT6	CCS
ACAT1	ALDH5A1	APOE	B3GAT3	CD320
ACAT2	ALDH6A1	APOO	B3GLCT	CEP89
ACBD5	ALDH7A1	APOPT1	B4GALNT1	CERS1
ACER3	ALDOA	APPL1	B4GALT1	CERS2
ACO2	ALDOB	APRT	B4GALT7	CERS3
ACOX1	ALG1	APTX	B4GAT1	CETP
ACOX2	ALG11	AR	BAAT	CHAT
ACSF3	ALG12	ARCN1	BBOX1	CHCHD10
ACSL4	ALG13	ARFGEF2	BCAP31	CHCHD2
ACY1	ALG14	ARG1	BCAT2	CHKB
ADA	ALG2	ARSA	BCKDHA	CHRNE
ADA2	ALG3	ARSB	BCKDHB	CHST11
ADAMTSL2	ALG6	ARSE	BCKDK	CHST14
ADAR	ALG8	ARSG	BCS1L	CHST3
ADARB1	ALG9	ARSK	BLK	CHST6

CHSY1	COX10	CYP27A1	DOLK	EXT1
CIDEC	COX11	CYP2U1	DPAGT1	EXT2
CISD2	COX14	CYP4F22	DPM1	EXTL3
CLCN1	COX15	CYP51A1	DPM2	FA2H
CLCN2	COX16	CYP7A1	DPM3	FAAH2
CLCN7	COX20	CYP7B1	DPYD	FAH
CLCNKB	COX4I1	D2HGDH	DPYS	FAM111A
CLDN16	COX4I2	DAG1	DSE	FAM20B
CLDN19	COX5A	DALRD3	DTNBP1	FAR1
CLN3	COX6A1	DARS	DTYMK	FARS2
CLN5	COX6A2	DARS2	DUT	FARSA
CLN6	COX6B1	DBH	DYM	FARSB
CLN8	COX7B	DBT	DYNC1H1	FASTKD2
CLP1	COX8A	DCC	DYSF	FBP1
CLPB	CP	DCXR	EARS2	FBXL4
CLPP	CPOX	DDC	EBP	FDFT1
CLPX	CPS1	DDHD1	ECHS1	FDPS
CLTC	CPT1A	DDHD2	EDEM3	FDX2
CMPK2	CPT1C	DDOST	EFL1	FDXR
CNNM2	CPT2	DEGS1	EGF	FECH
CNNM4	CRAT	DGAT1	EHBP1L1	FGFR2
COA3	CRLS1	DGKE	EHHADH	FH
COA5	CSGALNACT1	DGUOK	EIF6	FHL1
COA6	CSTB	DHCR24	ELAC2	FIG4
COA7	CTDP1	DHCR7	ELOVL1	FKRP
COASY	CTH	DHDDS	ELOVL4	FKTN
COG1	CTNS	DHFR	ELOVL5	FLAD1
COG2	CTPS1	DHODH	ELP1	FLNA
COG3	CTSA	DHTKD1	ELP2	FLNB
COG4	CTSB	DIABLO	EMC1	FMO3
COG5	CTSC	DKC1	EMD	FOLR1
COG6	CTSD	DLAT	EMG1	FOXRED1
COG7	CTSF	DLD	ENO3	FTCD
COG8	CTSK	DLST	ENPP1	FTH1
COL11A2	CUBN	DMD	ENTPD1	FTL
COL2A1	CYB561	DMGDH	EOGT	FTSJ1
COL4A3BP	CYB5A	DMPK	EPG5	FUCA1
COPA	CYB5R3	DNA2	EPHX1	FUK
COPB2	CYBRD1	DNAJB6	EPM2A	FUT8
COQ2	CYC1	DNAJC12	EPRS	FXN
COQ4	CYCS	DNAJC19	ERAL1	FXD2
COQ5	CYP11A1	DNAJC21	ESR1	G6PC
COQ6	CYP11B1	DNAJC5	ESR2	G6PC3
COQ7	CYP11B2	DNAJC6	ETFA	G6PD
COQ8A	CYP17A1	DNM1	ETFB	GAA
COQ8B	CYP19A1	DNM1L	ETFDH	GABBR2
COQ9	CYP21A2	DNM2	ETHE1	GABRA1

GABRA6	GLS	GYS2	HSD11B2	KIAA0391
GABRB1	GLUD1	H6PD	HSD17B10	KIF1A
GABRB2	GLUL	HAAO	HSD17B3	KIF5A
GABRB3	GLYCTK	HACD1	HSD17B4	KIF5C
GABRD	GM2A	HADH	HSD3B2	KLF11
GABRG2	GMPPA	HADHA	HSD3B7	KMO
GAD1	GMPPB	HADHB	HSPA9	KYNU
GALC	GNE	HAL	HSPD1	L2HGDH
GALE	GNMT	HAMP	HSPE1	LACC1
GALK1	GNPAT	HAO1	HTRA2	LAGE3
GALM	GNPNAT1	HARS	HYAL1	LAMA2
GALNS	GNPTAB	HARS2	IARS	LAMP2
GALNT14	GNPTG	HCCS	IARS2	LARGE1
GALNT2	GNS	HCFC1	IBA57	LARS
GALNT3	GON7	HEPHL1	IDH1	LARS2
GALT	GORAB	HEXA	IDH2	LBR
GAMT	GOSR2	HEXB	IDH3A	LCAT
GANAB	GOT2	HFE	IDH3B	LCT
GARS	GPAA1	HGD	IDS	LDB3
GATA1	GPC3	HGSNAT	IDUA	LDHA
GATB	GPD1	HIBADH	IER3IP1	LDHB
GATC	GPHN	HIBCH	IFIH1	LDHD
GATM	GPI	HJV	IL1RAPL1	LDLR
GBA	GPIHBP1	HK1	IMPAD1	LDLRAP1
GBA2	GPT2	HLCS	IMPDH1	LETM1
GBE1	GPX4	HMBS	INPP5E	LFNG
GCDH	GRHPR	HMGCL	INPP5K	LIAS
GCH1	GRIA2	HMGCS2	INPPL1	LIG3
GCK	GRIA3	HMOX1	INS	LIPA
GCLC	GRIA4	HNF1A	INSR	LIPC
GCSH	GRID2	HNF1B	ISCA1	LIPE
GDAP1	GRIN1	HNF4A	ISCA2	LIPH
GFER	GRIN2A	HOGA1	ISCU	LIPT1
GFM1	GRIN2B	HPD	ISPD	LIPT2
GFM2	GRIN2D	HPDL	ITPA	LMAN1
GFPT1	GRM1	HPGD	ITPR1	LMBRD1
GGCX	GRM6	HPRT1	ITPR2	LMF1
GGPS1	GRN	HPS1	IVD	LMNA
GGT1	GSR	HPS3	JAGN1	LONP1
GIF	GSS	HPS4	KARS	LPA
GK	GSTZ1	HPS5	KCNA1	LPAR6
GLA	GTPBP3	HPS6	KCNJ10	LPIN1
GLB1	GUF1	HRAS	KCNJ11	LPIN2
GLDC	GUSB	HS2ST1	KCNJ2	LPL
GLRA1	GYG1	HS6ST1	KCTD7	LRPPRC
GLRB	GYG2	HS6ST2	KDSR	LRRK2
GLRX5	GYS1	HSD11B1	KHK	LSS

LYRM4	MOGS	MT-RNR2	NDUFA1	NOP10
LYRM7	MPC1	MTRR	NDUFA10	NPC1
LYST	MPDU1	MT-TA	NDUFA11	NPC2
MAGT1	MPI	MT-TC	NDUFA12	NPL
MAN1B1	MPST	MT-TD	NDUFA13	NPM1
MAN2B1	MPV17	MT-TE	NDUFA2	NR1H4
MAN2B2	MRAP	MT-TF	NDUFA4	NR3C1
MANBA	MRM2	MT-TG	NDUFA6	NR3C2
MAOA	MRPL12	MT-TH	NDUFA8	NSDHL
MAOB	MRPL24	MT-TI	NDUFA9	NSUN2
MARS	MRPL3	MT-TK	NDUFAF1	NSUN3
MARS2	MRPL44	MT-TL1	NDUFAF2	NT5C3A
MAT1A	MRPS14	MT-TL2	NDUFAF3	NT5E
MAT2A	MRPS16	MT-TM	NDUFAF4	NUBPL
MBOAT7	MRPS2	MT-TN	NDUFAF5	NUDT15
MBTPS1	MRPS22	MTTP	NDUFAF6	NUS1
MC2R	MRPS23	MT-TP	NDUFAF7	OAS1
MCAT	MRPS25	MT-TQ	NDUFAF8	OAT
MCCC1	MRPS28	MT-TR	NDUFB10	OBSCN
MCCC2	MRPS34	MT-TS1	NDUFB11	OCRL
MCEE	MRPS7	MT-TS2	NDUFB3	ODC1
MCFD2	MSMO1	MT-TT	NDUFB7	OGDH
MCOLN1	MSTO1	MT-TV	NDUFB8	OGT
MDH1	MTAP	MT-TW	NDUFB9	OPA1
MDH2	MT-ATP6	MT-TY	NDUFC2	OPA3
MECR	MT-ATP8	MUT	NDUFS1	OPLAH
MFF	MT-CO1	MVD	NDUFS2	OSGEP
MFN2	MT-CO2	MVK	NDUFS3	OSTC
MFS2A	MT-CO3	MYH1	NDUFS4	OTC
MFS2B	MT-CYB	MYH3	NDUFS6	OXA1L
MGAT2	MTFMT	MYO5A	NDUFS7	OXCT1
MGME1	MTHFD1	MYOT	NDUFS8	PAH
MICU1	MTHFR	NADK2	NDUFV1	PAICS
MICU2	MTHFS	NADSYN1	NDUFV2	PAM16
MIEF2	MTM1	NAGA	NEPRO	PANK2
MIPEP	MTMR2	NAGLU	NEU1	PAPSS2
MLIP	MT-ND1	NAGS	NEUROD1	PARN
MLPH	MT-ND2	NANS	NFE2L2	PARS2
MLYCD	MT-ND3	NAPB	NFS1	PAX4
MMAA	MT-ND4	NARS	NFU1	PC
MMAB	MT-ND4L	NARS2	NGLY1	PCBD1
MMACHC	MT-ND5	NAT8L	NHLRC1	PCCA
MMADHC	MT-ND6	NAXD	NHP2	PCCB
MOCOS	MTO1	NAXE	NIPA2	PCK1
MOCS1	MTPAP	NBAS	NME3	PCK2
MOCS2	MTR	NBEAL2	NMNAT1	PCSK1
MOCS3	MT-RNR1	NDST1	NNT	PCSK9

PCYT1A	PI4KA	PNP	PTDSS1	RPL27
PCYT2	PIGA	PNPLA1	PTEN	RPL35
PDE12	PIGB	PNPLA2	PTF1A	RPL35A
PDHA1	PIGC	PNPLA4	PTRH2	RPL5
PDHB	PIGG	PNPLA6	PTS	RPS10
PDHX	PIGH	PNPLA8	PUS1	RPS15A
PDK3	PIGK	PNPO	PUS3	RPS19
PDP1	PIGL	PNPT1	PYCR1	RPS20
PDPR	PIGM	POFUT1	PYCR2	RPS23
PDSS1	PIGN	POGLUT1	PYGL	RPS24
PDSS2	PIGO	POLG	PYGM	RPS26
PDX1	PIGP	POLG2	QARS	RPS27
PDXK	PIGQ	POLR1A	QDPR	RPS28
PDZK1IP1	PIGS	POLR1B	QRSL1	RPS29
PEPD	PIGT	POLR1C	RAB18	RPS7
PET100	PIGU	POLR1D	RAB23	RPSA
PET117	PIGV	POLR3A	RAB27A	RRM2B
PEX1	PIGW	POLR3B	RAB3GAP1	RTN4IP1
PEX10	PIGY	POLR3H	RAB3GAP2	RUBCN
PEX11B	PIK3C2A	POLRMT	RAB7A	RXYLT1
PEX12	PIK3CA	POMGNT1	RAI1	RYR1
PEX13	PIK3CD	POMGNT2	RANBP2	SACS
PEX14	PIK3R1	POMK	RARS	SAMHD1
PEX16	PIK3R2	POMT1	RARS2	SAR1B
PEX19	PIK3R5	POMT2	RBCK1	SARDH
PEX2	PIKFYVE	POP1	RBP4	SARS
PEX26	PINK1	POR	RBSN	SARS2
PEX3	PIP5K1C	PPA2	REN	SAT1
PEX5	PISD	PPARG	RFT1	SBDS
PEX6	PITRM1	PPCS	RFX6	SBF1
PEX7	PKLR	PPM1K	RIC3	SBF2
PFKM	PLA2G4A	PPOX	RMND1	SC5D
PGAM2	PLA2G6	PPT1	RMRP	SCARB1
PGAP1	PLCB1	PRDX1	RNASEH1	SCARB2
PGAP2	PLCB3	PRKAG2	RNASEH2A	SCN4A
PGAP3	PLCB4	PRKAG3	RNASEH2B	SCO1
PGK1	PLCD1	PRKCSH	RNASEH2C	SCO2
PGM1	PLCE1	PRKN	RNASET2	SCP2
PGM3	PLCG2	PRODH	RNF31	SCYL1
PHGDH	PLIN1	PRODH2	RPIA	SCYL2
PHKA1	PLIN5	PRPS1	RPL10	SDHA
PHKA2	PLPBP	PRRT2	RPL11	SDHAF1
PHKB	PMM2	PSAP	RPL13	SDHAF2
PHKG2	PMPCA	PSAT1	RPL15	SDHB
PHYH	PMPCB	PSPH	RPL18	SDHC
PHYKPL	PMVK	PSTPIP1	RPL21	SDHD
PI4K2A	PNKD	PTCD3	RPL26	SDR9C7

SEC23A	SLC25A19	SLC52A2	SSR4	TDO2
SEC23B	SLC25A20	SLC52A3	ST3GAL3	TECPR2
SECISBP2	SLC25A21	SLC5A1	ST3GAL5	TECR
SELENBP1	SLC25A22	SLC5A2	STAB1	TEFM
SELENOI	SLC25A24	SLC5A6	STAC3	TF
SEPSECS	SLC25A26	SLC5A7	STAP1	TFAM
SERAC1	SLC25A3	SLC6A1	STAR	TFR2
SERPINA1	SLC25A32	SLC6A17	STAT2	TFRC
SETX	SLC25A36	SLC6A19	STATH	TH
SFXN4	SLC25A38	SLC6A2	STEAP3	THAP11
SGCA	SLC25A4	SLC6A20	STS	THG1L
SGCB	SLC25A42	SLC6A3	STT3A	TIMM22
SGCD	SLC25A46	SLC6A5	STT3B	TIMM50
SGCG	SLC26A1	SLC6A6	STX11	TIMM8A
SGMS2	SLC26A2	SLC6A8	STX1B	TIMMDC1
SGPL1	SLC26A3	SLC6A9	STXBP1	TK2
SGSH	SLC27A4	SLC7A14	STXBP2	TKFC
SHMT2	SLC27A5	SLC7A2	SUCLA2	TKT
SHPK	SLC28A1	SLC7A3	SUCLG1	TMEM126A
SI	SLC29A1	SLC7A5	SUGCT	TMEM126B
SIL1	SLC29A3	SLC7A7	SULT2B1	TMEM165
SKIV2L	SLC2A1	SLC7A9	SUMF1	TMEM173
SLC10A1	SLC2A10	SLC9A7	SUOX	TMEM199
SLC10A2	SLC2A2	SLCO1B1	SURF1	TMEM65
SLC10A7	SLC2A9	SLCO1B3	SV2A	TMEM70
SLC11A2	SLC30A10	SLCO2A1	SYN1	TMLHE
SLC12A3	SLC30A2	SMPD1	SYNJ1	TMPRSS6
SLC13A3	SLC30A9	SMPD4	SYT1	TNPO3
SLC13A5	SLC31A1	SMS	SYT14	TOMM70
SLC16A1	SLC33A1	SNAP25	SYT2	TOP3A
SLC17A5	SLC35A1	SNAP29	TACO1	TOR1A
SLC18A2	SLC35A2	SNX14	TAF1A	TP53RK
SLC19A1	SLC35A3	SORCS3	TALDO1	TPI1
SLC19A2	SLC35C1	SORD	TANGO2	TPK1
SLC19A3	SLC35D1	SPART	TARS	TPMT
SLC1A1	SLC36A2	SPATA5	TARS2	TPP1
SLC1A2	SLC37A4	SPG11	TAT	TPRKB
SLC1A3	SLC38A8	SPG7	TAZ	TRAK1
SLC1A4	SLC39A13	SPNS2	TBC1D24	TRAP1
SLC22A12	SLC39A14	SPR	TBC1D4	TRAPPC11
SLC22A5	SLC39A4	SPTLC1	TBK1	TRAPPC12
SLC25A1	SLC39A8	SPTLC2	TBXAS1	TRAPPC2
SLC25A10	SLC3A1	SQOR	TCAP	TRAPPC2L
SLC25A11	SLC40A1	SRD5A2	TCF4	TRAPPC4
SLC25A12	SLC45A1	SRD5A3	TCN1	TRAPPC6B
SLC25A13	SLC46A1	SSBP1	TCN2	TRAPPC9
SLC25A15	SLC52A1	SSR3	TCOF1	TREH

TREX1	UQCRQ
TRIM32	UROC1
TRIM37	UROD
TRIP11	UROS
TRIT1	VAC14
TRMT1	VAMP1
TRMT10A	VAMP2
TRMT10C	VAPB
TRMT5	VARS
TRMU	VARS2
TRNT1	VIPAS39
TRPM6	VKORC1
TSEN15	VLDLR
TSEN2	VMA21
TSEN34	VPS11
TSEN54	VPS13A
TSFM	VPS13B
TSR2	VPS13C
TTC19	VPS13D
TTC37	VPS16
TTPA	VPS33A
TUFM	VPS33B
TUSC3	VPS45
TWNK	WARS
TXN2	WARS2
TXNRD2	WDR4
TYMP	WDR45
TYR	WFS1
TYROBP	XDH
UBIAD1	XPNPEP3
UBTF	XYLT1
UCP2	XYLT2
UGCG	YARS
UGDH	YARS2
UGP2	YME1L1
UGT1A1	YRDC
UMOD	ZFYVE26
UMPS	ZMPSTE24
UNC13D	ZNF143
UNG	ZNHIT3
UPB1	
UQCC2	
UQCC3	
UQCRB	
UQCRC1	
UQCRC2	
UQCRFS1	

Metabolia laaja	Geenejä 1489 kpl			Versio 3	30.5.2024
A4GALT	ADCK2	ALPI	ASPA	BMS1	
AAGAB	ADK	ALPL	ASS1	BOLA3	
AARS	ADSL	AMACR	ATAD1	BSCL2	
AARS2	ADSSL1	AMN	ATAD3A	BSND	
AASS	AFG3L2	AMPD1	ATG5	BTD	
ABAT	AGA	AMPD2	ATIC	C12orf65	
ABCA1	AGK	AMPD3	ATP13A2	C19orf12	
ABCA12	AGL	AMT	ATP2A1	C19orf70	
ABCB11	AGMO	ANGPTL3	ATP5F1B	C1GALT1C1	
ABCB4	AGPAT2	ANO10	ATP5F1A	C1QBP	
ABCB6	AGPS	ANO5	ATP5F1D	C2orf69	
ABCB7	AGXT	ANTXR2	ATP5F1E	CA5A	
ABCC2	AGXT2	AP1B1	ATP5MC3	CACNA1S	
ABCC6	AHCY	AP1S1	ATP5MD	CAD	
ABCC8	AICDA	AP1S2	ATP5PO	CANT1	
ABCD1	AIFM1	AP2S1	ATP6AP1	CAPN3	
ABCD3	AIMP1	AP3B1	ATP6AP2	CARS	
ABCD4	AIMP2	AP3B2	ATP6V0A2	CARS2	
ABCG5	AK1	AP3D1	ATP6V1A	CASQ1	
ABCG8	AK2	AP4B1	ATP6V1E1	CASR	
ABHD12	AK7	AP4E1	ATP7A	CAT	
ABHD5	AKR1C2	AP4M1	ATP7B	CAV1	
ACACA	AKR1D1	AP4S1	ATP8A2	CAV3	
ACACB	AKT2	AP5Z1	ATP8B1	CAVIN1	
ACAD8	ALAD	APOA1	ATPAF2	CBS	
ACAD9	ALAS2	APOA5	AUH	CCDC115	
ACADL	ALDH18A1	APOB	B3GALNT2	CCS	
ACADM	ALDH1L2	APOC2	B3GALT6	CD320	
ACADS	ALDH3A2	APOC3	B3GAT3	CEP89	
ACADSB	ALDH4A1	APOE	B3GLCT	CERS1	
ACADVL	ALDH5A1	APOO	B4GALNT1	CERS2	
ACAT1	ALDH6A1	APOPT1	B4GALT1	CERS3	
ACAT2	ALDH7A1	APPL1	B4GALT7	CETP	
ACBD5	ALDOA	APRT	B4GAT1	CHAT	
ACER3	ALDOB	APTX	BAAT	CHCHD10	
ACO2	ALG1	AR	BBOX1	CHCHD2	
ACOX1	ALG11	ARCN1	BCAP31	CHKB	
ACOX2	ALG12	ARFGEF2	BCAT2	CHRNE	
ACSF3	ALG13	ARG1	BCKDHA	CHST11	
ACSL4	ALG14	ARSA	BCKDHB	CHST14	
ACY1	ALG2	ARSB	BCKDK	CHST3	
ADA	ALG3	ARSE	BCS1L	CHST6	
ADA2	ALG6	ARSG	BLK	CHSY1	
ADAMTSL2	ALG8	ARSK	BLOC1S3	CIDEC	
ADAR	ALG9	ASAH1	BLOC1S6	CISD2	
ADARB1	ALOX12B	ASL	BLVRA	CLCN1	
ADAT3	ALOXE3	ASNS	BMP6	CLCN2	

CLCN7	COX4I1	DAG1	DTNBP1	FARS2
CLCNKB	COX4I2	DALRD3	DTYMK	FARSA
CLDN16	COX5A	DARS	DUT	FARSB
CLDN19	COX6A1	DARS2	DYM	FASTKD2
CLN3	COX6A2	DBH	DYNC1H1	FBP1
CLN5	COX6B1	DBT	DYSF	FBXL4
CLN6	COX7B	DCC	EARS2	FDFT1
CLN8	COX8A	DCXR	EBP	FDPS
CLP1	CP	DDC	ECHS1	FDX2
CLPB	CPOX	DDHD1	EDEM3	FDXR
CLPP	CPS1	DDHD2	EFL1	FECH
CLPX	CPT1A	DDOST	EGF	FGFR2
CLTC	CPT1C	DEGS1	EHBP1L1	FH
CMPK2	CPT2	DGAT1	EHHADH	FHL1
CNNM2	CRAT	DGKE	EIF6	FIG4
CNNM4	CRLS1	DGUOK	ELAC2	FKRP
COA3	CSGALNACT1	DHCR24	ELOVL1	FKTN
COA5	CSTB	DHCR7	ELOVL4	FLAD1
COA6	CTDP1	DHDDS	ELOVL5	FLNA
COA7	CTH	DHFR	ELP1	FLNB
COASY	CTNS	DHODH	ELP2	FMO3
COG1	CTPS1	DHTKD1	EMC1	FOLR1
COG2	CTSA	DIABLO	EMD	FOXRED1
COG3	CTSB	DKC1	EMG1	FTCD
COG4	CTSC	DLAT	ENO3	FTH1
COG5	CTSD	DLD	ENPP1	FTL
COG6	CTSF	DLST	ENTPD1	FTSJ1
COG7	CTSK	DMD	EOGT	FUCA1
COG8	CUBN	DMGDH	EPG5	FUK
COL11A2	CYB561	DMPK	EPHX1	FUT8
COL2A1	CYB5A	DNA2	EPM2A	FXN
COL4A3BP	CYB5R3	DNAJB6	EPRS	FXD2
COPA	CYBRD1	DNAJC12	ERAL1	G6PC
COPB2	CYC1	DNAJC19	ESR1	G6PC3
COQ2	CYCS	DNAJC21	ESR2	G6PD
COQ4	CYP11A1	DNAJC5	ETFA	GAA
COQ5	CYP11B1	DNAJC6	ETFB	GABBR2
COQ6	CYP11B2	DNM1	ETFDH	GABRA1
COQ7	CYP17A1	DNM1L	ETHE1	GABRA6
COQ8A	CYP19A1	DNM2	EXT1	GABRB1
COQ8B	CYP21A2	DOLK	EXT2	GABRB2
COQ9	CYP27A1	DPAGT1	EXTL3	GABRB3
COX10	CYP2U1	DPM1	FA2H	GABRD
COX11	CYP4F22	DPM2	FAAH2	GABRG2
COX14	CYP51A1	DPM3	FAH	GAD1
COX15	CYP7A1	DPYD	FAM111A	GALC
COX16	CYP7B1	DPYS	FAM20B	GALE
COX20	D2HGDH	DSE	FAR1	GALK1

GALM	GNPTAB	HCCS	IBA57	LARS2
GALNS	GNPTG	HCFC1	IDH1	LBR
GALNT14	GNS	HEPHL1	IDH2	LCAT
GALNT2	GON7	HEXA	IDH3A	LCT
GALNT3	GORAB	HEXB	IDH3B	LDB3
GALT	GOSR2	HFE	IDS	LDHA
GAMT	GOT2	HGD	IDUA	LDHB
GANAB	GPAA1	HGSNAT	IER3IP1	LDHD
GARS	GPC3	HIBADH	IFIH1	LDLR
GATA1	GPD1	HIBCH	IL1RAPL1	LDLRAP1
GATB	GPHN	HJV	IMPAD1	LETM1
GATC	GPI	HK1	IMPDH1	LFNG
GATM	GPIHBP1	HLCS	INPP5E	LIAS
GBA	GPT2	HMBS	INPP5K	LIG3
GBA2	GPX4	HMGCL	INPPL1	LIPA
GBE1	GRHPR	HMGCS2	INS	LIPC
GCDH	GRIA2	HMOX1	INSR	LIPE
GCH1	GRIA3	HNF1A	ISCA1	LIPH
GCK	GRIA4	HNF1B	ISCA2	LIPT1
GCLC	GRID2	HNF4A	ISCU	LIPT2
GCSH	GRIN1	HOGA1	ISPD	LMAN1
GDAP1	GRIN2A	HPD	ITPA	LMBRD1
GFER	GRIN2B	HPDL	ITPR1	LMF1
GFM1	GRIN2D	HPGD	ITPR2	LMNA
GFM2	GRM1	HPRT1	IVD	LONP1
GFPT1	GRM6	HPS1	JAGN1	LPA
GGCX	GRN	HPS3	KARS	LPAR6
GGPS1	GSR	HPS4	KCNA1	LPIN1
GGT1	GSS	HPS5	KCNJ10	LPIN2
GIF	GSTZ1	HPS6	KCNJ11	LPL
GK	GTPBP3	HRAS	KCNJ2	LRPPRC
GLA	GUF1	HS2ST1	KCTD7	LRRK2
GLB1	GUSB	HS6ST1	KDSR	LSS
GLDC	GYG1	HS6ST2	KHK	LYRM4
GLRA1	GYG2	HSD11B1	KIAA0391	LYRM7
GLRB	GYS1	HSD11B2	KIF1A	LYST
GLRX5	GYS2	HSD17B10	KIF5A	MAGT1
GLS	H6PD	HSD17B3	KIF5C	MAN1B1
GLUD1	HAAO	HSD17B4	KLF11	MAN2B1
GLUL	HACD1	HSD3B2	KMO	MAN2B2
GLYCTK	HADH	HSD3B7	KYNU	MANBA
GM2A	HADHA	HSPA9	L2HGDH	MAOA
GMPPA	HADHB	HSPD1	LACC1	MAOB
GMPPB	HAL	HSPE1	LAGE3	MARS
GNE	HAMP	HTRA2	LAMA2	MARS2
GNMT	HAO1	HYAL1	LAMP2	MAT1A
GNPAT	HARS	IARS	LARGE1	MAT2A
GNPNAT1	HARS2	IARS2	LARS	MBOAT7

MBTPS1	MRPS23	MT-TQ	NDUFB10	OCRL
MC2R	MRPS25	MT-TR	NDUFB11	ODC1
MCAT	MRPS28	MT-TS1	NDUFB3	OGDH
MCCC1	MRPS34	MT-TS2	NDUFB7	OGT
MCCC2	MRPS7	MT-TT	NDUFB8	OPA1
MCEE	MSMO1	MT-TV	NDUFB9	OPA3
MCFD2	MSTO1	MT-TW	NDUFC2	OPLAH
MCOLN1	MTAP	MT-TY	NDUFS1	OSGEP
MDH1	MT-ATP6	MUT	NDUFS2	OSTC
MDH2	MT-ATP8	MVD	NDUFS3	OTC
MECR	MT-CO1	MVK	NDUFS4	OXA1L
MFF	MT-CO2	MYH1	NDUFS6	OXCT1
MFN2	MT-CO3	MYH3	NDUFS7	PAH
MFSD2A	MT-CYB	MYO5A	NDUFS8	PAICS
MFSD8	MTFMT	MYOT	NDUFV1	PAM16
MGAT2	MTHFD1	NADK2	NDUFV2	PANK2
MGME1	MTHFR	NADSYN1	NEPRO	PAPSS2
MICU1	MTHFS	NAGA	NEU1	PARN
MICU2	MTM1	NAGLU	NEUROD1	PARS2
MIEF2	MTMR2	NAGS	NFE2L2	PAX4
MIPEP	MT-ND1	NANS	NFS1	PC
MLIP	MT-ND2	NAPB	NFU1	PCBD1
MLPH	MT-ND3	NARS	NGLY1	PCCA
MLYCD	MT-ND4	NARS2	NHLRC1	PCCB
MMAA	MT-ND4L	NAT8L	NHP2	PCK1
MMAB	MT-ND5	NAXD	NIPA2	PCK2
MMACHC	MT-ND6	NAXE	NME3	PCSK1
MMADHC	MTO1	NBAS	NMNAT1	PCSK9
MOCOS	MTPAP	NBEAL2	NNT	PCYT1A
MOCS1	MTR	NDST1	NOP10	PCYT2
MOCS2	MT-RNR1	NDUFA1	NPC1	PDE12
MOCS3	MT-RNR2	NDUFA10	NPC2	PDHA1
MOGS	MTRR	NDUFA11	NPL	PDHB
MPC1	MT-TA	NDUFA12	NPM1	PDHX
MPDU1	MT-TC	NDUFA13	NR1H4	PDK3
MPI	MT-TD	NDUFA2	NR3C1	PDP1
MPST	MT-TE	NDUFA4	NR3C2	PDPR
MPV17	MT-TF	NDUFA6	NSDHL	PDSS1
MRAP	MT-TG	NDUFA8	NSUN2	PDSS2
MRM2	MT-TH	NDUFA9	NSUN3	PDX1
MRPL12	MT-TI	NDUFAB1	NT5C3A	PDXK
MRPL24	MT-TK	NDUFAB2	NT5E	PDZK1IP1
MRPL3	MT-TL1	NDUFAB3	NUBPL	PEPD
MRPL44	MT-TL2	NDUFAB4	NUDT15	PET100
MRPS14	MT-TM	NDUFAB5	NUS1	PET117
MRPS16	MT-TN	NDUFAB6	OAS1	PEX1
MRPS2	MTTP	NDUFAB7	OAT	PEX10
MRPS22	MT-TP	NDUFAB8	OBSCN	PEX11B

PEX12	PIK3CD	POMK	RARS2	SARDH
PEX13	PIK3R1	POMT1	RBCK1	SARS
PEX14	PIK3R2	POMT2	RBP4	SARS2
PEX16	PIK3R5	POP1	RBSN	SAT1
PEX19	PIKFYVE	POR	REN	SBDS
PEX2	PINK1	PPA2	RFT1	SBF1
PEX26	PIP5K1C	PPARG	RFX6	SBF2
PEX3	PISD	PPCS	RIC3	SC5D
PEX5	PITRM1	PPM1K	RMND1	SCARB1
PEX6	PKLR	PPOX	RMRP	SCARB2
PEX7	PLA2G4A	PPT1	RNASEH1	SCN4A
PFKM	PLA2G6	PRDX1	RNASEH2A	SCO1
PGAM2	PLCB1	PRKAG2	RNASEH2B	SCO2
PGAP1	PLCB3	PRKAG3	RNASEH2C	SCP2
PGAP2	PLCB4	PRKCSH	RNASET2	SCYL1
PGAP3	PLCD1	PRKN	RNF31	SCYL2
PGK1	PLCE1	PRODH	RPIA	SDHA
PGM1	PLCG2	PRODH2	RPL10	SDHAF1
PGM3	PLIN1	PRPS1	RPL11	SDHAF2
PHGDH	PLIN5	PRRT2	RPL13	SDHB
PHKA1	PLPBP	PSAP	RPL15	SDHC
PHKA2	PMM2	PSAT1	RPL18	SDHD
PHKB	PMPCA	PSPH	RPL21	SDR9C7
PHKG2	PMPCB	PSTPIP1	RPL26	SEC23A
PHYH	PMVK	PTCD3	RPL27	SEC23B
PHYKPL	PNKD	PTDSS1	RPL35	SECISBP2
PI4K2A	PNP	PTEN	RPL35A	SELENBP1
PI4KA	PNPLA1	PTF1A	RPL5	SELENOI
PIGA	PNPLA2	PTRH2	RPS10	SEPSECS
PIGB	PNPLA4	PTS	RPS15A	SERAC1
PIGC	PNPLA6	PUS1	RPS19	SERPINA1
PIGG	PNPLA8	PUS3	RPS20	SETX
PIGH	PNPO	PYCR1	RPS23	SFXN4
PIGK	PNPT1	PYCR2	RPS24	SGCA
PIGL	POFUT1	PYGL	RPS26	SGCB
PIGM	POGLUT1	PYGM	RPS27	SGCD
PIGN	POLG	QARS	RPS28	SGCG
PIGO	POLG2	QDPR	RPS29	SGMS2
PIGP	POLR1A	QRSL1	RPS7	SGPL1
PIGQ	POLR1B	RAB18	RPSA	SGSH
PIGS	POLR1C	RAB23	RRM2B	SHMT2
PIGT	POLR1D	RAB27A	RTN4IP1	SHPK
PIGU	POLR3A	RAB3GAP1	RUBCN	SI
PIGV	POLR3B	RAB3GAP2	RXYLT1	SIL1
PIGW	POLR3H	RAB7A	RYR1	SKIV2L
PIGY	POLRMT	RAI1	SACS	SLC10A1
PIK3C2A	POMGNT1	RANBP2	SAMHD1	SLC10A2
PIK3CA	POMGNT2	RARS	SAR1B	SLC10A7

SLC11A2	SLC30A9	SMS	SYT2	TOR1A
SLC12A3	SLC31A1	SNAP25	TACO1	TP53RK
SLC13A3	SLC33A1	SNAP29	TAF1A	TPI1
SLC13A5	SLC35A1	SNX14	TALDO1	TPK1
SLC16A1	SLC35A2	SORCS3	TANGO2	TPMT
SLC17A5	SLC35A3	SORD	TARS	TPP1
SLC18A2	SLC35C1	SPART	TARS2	TPRKB
SLC19A1	SLC35D1	SPATA5	TAT	TRAK1
SLC19A2	SLC36A2	SPG11	TAZ	TRAP1
SLC19A3	SLC37A4	SPG7	TBC1D24	TRAPPC11
SLC1A1	SLC38A8	SPNS2	TBC1D4	TRAPPC12
SLC1A2	SLC39A13	SPR	TBK1	TRAPPC2
SLC1A3	SLC39A14	SPTLC1	TBXAS1	TRAPPC2L
SLC1A4	SLC39A4	SPTLC2	TCAP	TRAPPC4
SLC22A12	SLC39A8	SQOR	TCF4	TRAPPC6B
SLC22A5	SLC3A1	SRD5A2	TCN1	TRAPPC9
SLC25A1	SLC40A1	SRD5A3	TCN2	TREH
SLC25A10	SLC45A1	SSBP1	TCOF1	TREX1
SLC25A11	SLC46A1	SSR3	TDO2	TRIM32
SLC25A12	SLC52A1	SSR4	TECPR2	TRIM37
SLC25A13	SLC52A2	ST3GAL3	TECR	TRIP11
SLC25A15	SLC52A3	ST3GAL5	TEFM	TRIT1
SLC25A19	SLC5A1	STAB1	TF	TRMT1
SLC25A20	SLC5A2	STAC3	TFAM	TRMT10A
SLC25A21	SLC5A6	STAP1	TFR2	TRMT10C
SLC25A22	SLC5A7	STAR	TFRC	TRMT5
SLC25A24	SLC6A1	STAT2	TH	TRMU
SLC25A26	SLC6A17	STATH	THAP11	TRNT1
SLC25A3	SLC6A19	STEAP3	THG1L	TRPM6
SLC25A32	SLC6A2	STS	TIMM22	TSEN15
SLC25A36	SLC6A20	STT3A	TIMM50	TSEN2
SLC25A38	SLC6A3	STT3B	TIMM8A	TSEN34
SLC25A4	SLC6A5	STX11	TIMMDC1	TSEN54
SLC25A42	SLC6A6	STX1B	TK2	TSFM
SLC25A46	SLC6A8	STXBP1	TKFC	TSR2
SLC26A1	SLC6A9	STXBP2	TKT	TTC19
SLC26A2	SLC7A14	SUCLA2	TMEM126A	TTC37
SLC27A4	SLC7A2	SUCLG1	TMEM126B	TTPA
SLC27A5	SLC7A3	SUGCT	TMEM165	TUFM
SLC28A1	SLC7A5	SULT2B1	TMEM173	TUSC3
SLC29A1	SLC7A7	SUMF1	TMEM199	TWINK
SLC29A3	SLC7A9	SUOX	TMEM65	TXN2
SLC2A1	SLC9A7	SURF1	TMEM70	TXNRD2
SLC2A10	SLCO1B1	SV2A	TMLHE	TYMP
SLC2A2	SLCO1B3	SYN1	TMPRSS6	TYR
SLC2A9	SLCO2A1	SYNJ1	TNPO3	UBIAD1
SLC30A10	SMPD1	SYT1	TOMM70	UBTF
SLC30A2	SMPD4	SYT14	TOP3A	UCP2

UGCG	YARS2
UGDH	YME1L1
UGP2	YRDC
UGT1A1	ZFYVE26
UMOD	ZMPSTE24
UMPS	ZNF143
UNC13D	
UNG	
UPB1	
UQCC2	
UQCC3	
UQCRB	
UQCRC1	
UQCRC2	
UQCRFS1	
UQCRQ	
UROC1	
UROD	
UROS	
VAC14	
VAMP1	
VAMP2	
VAPB	
VAR5	
VAR52	
VIPAS39	
VKORC1	
VLDLR	
VMA21	
VPS11	
VPS13A	
VPS13B	
VPS13C	
VPS13D	
VPS16	
VPS33A	
VPS33B	
VPS45	
WARS	
WARS2	
WDR4	
WDR45	
WFS1	
XDH	
XPNPEP3	
XYLT1	
XYLT2	
YARS	