

**Supplemental Table 1. qRT-PCR conditions.**

<b>Official gene symbol</b>	<b>Official gene name</b>	<b>Accession number</b>	<b>Tm (°C)</b>	<b>Sequence Forward (5' to 3')</b>	<b>Sequence Reverse (5' to 3')</b>
<b><i>NMUR1</i></b>	Neuromedin U receptor 1	NM_006056	60	CAGCCAGGTCCAGATACAC	AGCCCAGGTAGAAGAAGATG
<b><i>ACTG2</i></b>	Actin gamma 2 smooth muscle enteric	NM_001615	60	GCTGTCTTCCCCTCCATTG	CATTGTAGAAGGAGTGGTGC
<b><i>SHOX2</i></b>	Short stature homeobox 2	NM_003030	60	AGGAGGTGTAGGAGGAGGA	GCCTCTGCTTGATTTTGGTC
<b><i>BDKRB2</i></b>	Bradykinin receptor B2	NM_000623	58	CCCTGGAAGATATCAATGTTT	ACTCCACTTGGGGGCATTT
<b><i>HOPX</i></b>	Homeodomain-only protein homeobox	NM_139211	60	GGTGGAAATCCTGGAGTACA	GACGGATCTGCACTCTGAG
<b><i>MSX1</i></b>	Msh homeobox 1	NM_002448	60	TCCTCAAGCTGCCAGAAGAT	CTTGTGTTTGCGGAGGGTG
<b><i>CACNA1G</i></b>	Calcium voltage-gated channel subunit alpha1 G	NM_018896	58	CCCTTTATTTTCATTGCCCTC	ATTCGGACTTGTGGCATCT
<b><i>ACTA2</i></b>	Actin alpha 2 smooth muscle aorta	NM_001613	58	AATGGGACAAAAAGACAGCTA	GGGCAACACGAAGCTCATT
<b><i>MYL4</i></b>	Myosin light chain 4	NM_001002841	58	AAGAAGCCTGAGCCTAAGAA	TCTTCATCTCTCCAGTCGG
<b><i>SLC8A1</i></b>	Solute carrier family 8 member A1	NM_021097	58	TTCAAGAGTACTGTGGACAAA	ATTCATCGTCGTCATCATCTT
<b><i>MYH10</i></b>	Myosin heavy chain 10 non-muscle	NM_001256012	58	AAGCAATGGTCAACAAAGATG	ACACAGAAGAGTCCAGAATAA
<b><i>ALDH1A2</i></b>	Aldehyde dehydrogenase 1 family member A2	NM_003888	58	TTTTTATGTGGATTTGCAGGG	AAACATCAGCAGGGGGAAG
<b><i>CHRNE</i></b>	Cholinergic receptor nicotinic epsilon subunit	NM_000080	58	GTCTTTATCACCATCTCTTCA	TGTAGTTGAGTCGGTAATCC
<b><i>HTR2B</i></b>	5-hydroxytryptamine receptor 2B	NM_000867	58	GTTGGATTGTTTGTGATGCC	TGGATGCGGTTGAAAAGAGA
<b><i>HCN2</i></b>	Potassium/sodium hyperpolarization-activated cyclic nucleotide-gated ion channel 2	NM_001194	58	ACTAAGGGCAACAAGGAGAT	CACCTCGTTGAAGTTGTCC
<b><i>TBX20</i></b>	T-box 20	NM_001166220	58	ACAGTTTTTACGGCAGTCAC	CTTCCCTCTCAATGTCAGT

**Supplemental Table 2. GO Biological Process analysis of significantly changed categories, comparing HF vs HD DEGs**

Category	GO-BP Term	Count	Gene symbol	Benjamini*
<b>Upregulated</b>				
GO:0072358	Cardiovascular system development	159	MEF2A, LTBP1, PDE3B, ANKRD1, RNF213, CITED2, CTNNB1, NOV, AGTR2, APOB, GATA6, ROBO1, FAP, SERPINE1, GAB1, PDGFD, INSR, SLC12A6, PTPRM, ROCK1, MYLK3, EFNB2, MED12, MFGE8, MYH7, ACTN2, PROX2, VASH1, NEBL, MAPK1, MYO18B, PLCE1, EP300, BAZ1B, F3, CX3CR1, AKAP6, ATP1F1, TNFAIP3, BBS4, ZFAND5, CYSLTR2, PTK7, SOX6, SOX9, ITGB1, NPHP3, PTK2, PPP1R16B, OBSL1, HEG1, PLXND1, TCF4, FN1, BMP4, KLF5, COL18A1, DVL3, VAV3, SMAD7, SMAD6, PTPN14, SMAD4, WHSC1, RNF207, ACACB, SMYD2, SMAD1, ATM, PTPN11, NOTCH2, LAMA4, PLCG1, TSC1, PRICKLE1, DSG2, PKP2, NEDD4, NOTCH4, PRKAR1A, ANTXR1, HDAC9, SLC9A1, MYH10, PPARA, NRP1, FGF9, TBX20, WASF2, FOXS1, ANKRD17, AP2B1, QKI, ANGPT1, FGF1, LOXL1, SRPK2, FMNL3, NRXN3, MICAL2, TNMD, ADIPOR2, ARHGAP24, NEXN, EIF4G2, EYA1, SGCG, ADM, XIRP2, HIPK2, NPPB, SGCD, NPPA, PARVA, CLUAP1, NACA, COL3A1, FHL2, CDH2, CDH5, ALDH1A2, HAND1, MAP3K3, FAT4, SORBS2, OXCT1, PKD2, CAMK2D, PKD1, PTN, GPNMB, COL8A1, THBS2, RASA1, THBS4, NOX4, SLC8A1, ALPK3, TBX2, RBM20, UBE4B, NF1, HSPG2, COL15A1, STAB2, SPARC, STAT1, SNAI2, FZD4, LEP, TENM4, CDH13, RPS6KA2, HIF3A, JAK1, PTCH1, HTR2B, SETD2, LRP5	$1.2 \times 10^{-13}$
GO:0072359	Circulatory system development	159	MEF2A, LTBP1, PDE3B, ANKRD1, RNF213, CITED2, CTNNB1, NOV, AGTR2, APOB, GATA6, ROBO1, FAP, SERPINE1, GAB1, PDGFD, INSR, SLC12A6, PTPRM, ROCK1, MYLK3, EFNB2, MED12, MFGE8, MYH7, ACTN2, PROX2, VASH1, NEBL, MAPK1, MYO18B, PLCE1, EP300, BAZ1B, F3, CX3CR1, AKAP6, ATP1F1, TNFAIP3, BBS4, ZFAND5, CYSLTR2, PTK7, SOX6, SOX9, ITGB1, NPHP3, PTK2, PPP1R16B, OBSL1, HEG1, PLXND1, TCF4, FN1, BMP4, KLF5, COL18A1, DVL3, VAV3, SMAD7, SMAD6, PTPN14, SMAD4, WHSC1, RNF207, ACACB, SMYD2, SMAD1, ATM, PTPN11, NOTCH2, LAMA4, PLCG1, TSC1, PRICKLE1, DSG2, PKP2, NEDD4, NOTCH4, PRKAR1A, ANTXR1, HDAC9, SLC9A1, MYH10, PPARA, NRP1, FGF9, TBX20, WASF2, FOXS1, ANKRD17, AP2B1, QKI, ANGPT1, FGF1, LOXL1, SRPK2, FMNL3, NRXN3, MICAL2, TNMD, ADIPOR2, ARHGAP24, NEXN, EIF4G2, EYA1, SGCG, ADM, XIRP2, HIPK2, NPPB, SGCD, NPPA, PARVA, CLUAP1, NACA, COL3A1, FHL2, CDH2, CDH5, ALDH1A2, HAND1, MAP3K3, FAT4, SORBS2, OXCT1, PKD2, CAMK2D, PKD1, PTN, GPNMB, COL8A1, THBS2, RASA1, THBS4, NOX4, SLC8A1, ALPK3, TBX2, RBM20, UBE4B, NF1, HSPG2, COL15A1, STAB2, SPARC, STAT1, SNAI2, FZD4, LEP, TENM4, CDH13, RPS6KA2, HIF3A, JAK1, PTCH1, HTR2B, SETD2, LRP5	$1.2 \times 10^{-13}$
GO:0007507	Heart development	98	PPARA, MEF2A, NRP1, LTBP1, FGF9, TBX20, ANKRD1, CTNNB1, CITED2, AGTR2, AP2B1, GATA6, ROBO1, GAB1, INSR, MICAL2, MYLK3, EFNB2, ADIPOR2, MED12, MYH7, ACTN2, NEXN, PROX2, NEBL, EIF4G2, MAPK1, MYO18B, EYA1, PLCE1, EP300, SGCG, ADM, BAZ1B, XIRP2, SGCD, AKAP6, NPPA, PARVA, CLUAP1, BBS4, NACA, COL3A1, PTK7, FHL2, SOX6, SOX9, ITGB1, ALDH1A2, NPHP3, PTK2, HAND1, FAT4, SORBS2, OXCT1, PKD2, CAMK2D, PKD1, PTN, OBSL1, HEG1, PLXND1, BMP4, NOX4, DVL3, SLC8A1, ALPK3, SMAD7, TBX2, RBM20, SMAD6, UBE4B, NF1, SMAD4, WHSC1, RNF207, SPARC, ACACB, SMYD2, SMAD1, SNAI2, ATM, PTPN11, TENM4, NOTCH2, TSC1, PRICKLE1, DSG2, PKP2, RPS6KA2, NEDD4, PRKAR1A, PTCH1, HTR2B, HDAC9, SETD2, MYH10, SLC9A1	$9.0 \times 10^{-11}$
GO:0022610	Biological adhesion	234	CADM1, GLDN, RPL15, POSTN, CITED2, CTNNB1, NOV, SERPINE2, KIFAP3, FAP, CD46, SERPINE1, PATZ1, CDH23, KIF13B, PTPRM, CD3D, ROCK1, MAGI1, CD3E, MPDZ, EFNB2, SSPN, CTNNA1, HLA-DQA2, HLA-DQA1, CTNNA3, BCL2L11, BTN3A1, CD36, CX3CR1, ABAT, HLA-DPA1, HAS3, LAMC1, GRAP2, GIGYF2, HLA-DRA, GCNT2, HLA-DRB1, ITGA10, ASAP1, CD74, ITGBL1, MACF1, HLA-DRB5, HLA-DPB1, LAMB1, LFNG, SPP1, BMP4, COL18A1, SMAD7, ACER2, SMAD6, PPFIBP1, CELSR3, COL16A1, ECM2, PTPN11, PCDH18, DDX6, EPHA3, LAMA2, EPHA4, LAMA4, EPHA7, COL14A1, PKP2, NLGN4X, SLC9A1, PPARA, NUA1, WASF2,	$6.2 \times 10^{-11}$

			<p>FERMT1, ZEB1, ANGPT1, GOLGA3, DPP4, GOLGA2, VEZT, CARD11, EPB41L5, SUSD5, ADAM12, PARVA, HLA-DQB1, COL3A1, PPFIA1, CBLL1, ZBTB16, SORBS1, FAT4, SORBS2, FAT1, PKD1, THBS2, RASA1, THBS4, HAPLN1, COL15A1, IGF2, STAB2, STAT1, SNAI2, FZD4, FZD7, TENM4, CDH13, TJP1, COL19A1, TENM2, CDH19, PHLDB2, ZBTB1, CDH11, SEPT2, LMO7, PDE3B, KANK1, VCL, AZGP1, KIAA1462, ROBO1, TIAM1, ARGLU1, SATB1, PLXNB2, EE2, MFGE8, ACTN2, CBLN1, FNBP1L, USO1, RELN, ERC1, SEPT7, DST, HDLBP, PEAK1, PTK7, ITGB5, ANLN, SOX9, ITGB1, ABI3BP, PCDHAC2, PDXDC1, PTK2, HNRNPK, DOCK1, EIF3E, CLASP1, RUNX2, FN1, VAV3, CKAP5, MYO1B, BMX, DOCK9, MYL12A, ITGA9, P2RX7, OMD, CASS4, TSC1, DSG2, NEDD4, FREM1, PRKAR1A, SPTBN1, ADAM22, ANTXR1, PDZD2, MYH10, IGFBP7, HLA-DMB, PCDHGA3, PCDHGA2, LARP1, CD96, CTTN, SLK, GSN, ARHGAP1, DLG5, MKL2, LRRFIP1, TNIP1, AHNAK, TRPM7, NRXN3, LDB1, PCDH9, EIF4G2, PRNP, GPAM, TNC, CD247, RSAD2, CDH2, CYTH3, CDH5, SMOC2, CD9, ANXA9, COMP, CYP26B1, PTN, TNN, ADAMTS12, GPNMB, COL8A1, HBB, PIK3R1, APC, DPT, SVEP1, COL13A1, CBL, NF1, NFASC, ADIPOQ, AJUBA, LEP, VWF, TMEM47, SP3, ACE2, JAK2, DSC1, IGFBP2, NTM, SPTAN1</p>	
GO:0007155	Cell adhesion	233	<p>CADM1, GLDN, RPL15, POSTN, CITED2, CTNNA1, NOV, SERPINE2, KIFAP3, FAP, CD46, SERPINE1, PATZ1, CDH23, KIF13B, PTPRM, CD3D, ROCK1, MAGI1, CD3E, MPDZ, EFNB2, SSPN, CTNNA1, HLA-DQA2, HLA-DQA1, CTNNA3, BCL2L11, BTN3A1, CD36, CX3CR1, ABAT, HLA-DPA1, HAS3, LAMC1, GRAP2, GIGYF2, HLA-DRA, GCNT2, HLA-DRB1, ITGA10, ASAP1, CD74, ITGBL1, MACF1, HLA-DRB5, HLA-DPB1, LAMB1, LFNG, SPP1, BMP4, COL18A1, SMAD7, ACER2, SMAD6, PPFIBP1, CELSR3, COL16A1, ECM2, PTPN11, PCDH18, DDX6, EPHA3, LAMA2, EPHA4, LAMA4, EPHA7, COL14A1, PKP2, NLGN4X, SLC9A1, PPARA, NUA1, WASF2, FERMT1, ZEB1, ANGPT1, GOLGA3, DPP4, GOLGA2, VEZT, CARD11, EPB41L5, SUSD5, ADAM12, PARVA, HLA-DQB1, COL3A1, PPFIA1, CBLL1, ZBTB16, SORBS1, FAT4, SORBS2, FAT1, PKD1, THBS2, RASA1, THBS4, HAPLN1, COL15A1, IGF2, STAB2, STAT1, SNAI2, FZD4, FZD7, TENM4, CDH13, TJP1, COL19A1, TENM2, CDH19, PHLDB2, ZBTB1, CDH11, SEPT2, LMO7, PDE3B, KANK1, VCL, AZGP1, KIAA1462, ROBO1, TIAM1, ARGLU1, SATB1, PLXNB2, EE2, MFGE8, ACTN2, CBLN1, FNBP1L, USO1, RELN, ERC1, SEPT7, DST, HDLBP, PEAK1, PTK7, ITGB5, ANLN, SOX9, ITGB1, ABI3BP, PCDHAC2, PDXDC1, PTK2, HNRNPK, DOCK1, EIF3E, CLASP1, RUNX2, FN1, VAV3, CKAP5, MYO1B, BMX, DOCK9, MYL12A, ITGA9, P2RX7, OMD, CASS4, TSC1, DSG2, NEDD4, FREM1, PRKAR1A, SPTBN1, ADAM22, ANTXR1, PDZD2, MYH10, IGFBP7, HLA-DMB, PCDHGA3, PCDHGA2, LARP1, CD96, CTTN, SLK, GSN, ARHGAP1, DLG5, MKL2, LRRFIP1, TNIP1, AHNAK, TRPM7, NRXN3, LDB1, PCDH9, EIF4G2, PRNP, GPAM, TNC, CD247, RSAD2, CDH2, CYTH3, CDH5, SMOC2, CD9, ANXA9, COMP, CYP26B1, PTN, TNN, ADAMTS12, GPNMB, COL8A1, HBB, PIK3R1, APC, DPT, SVEP1, COL13A1, CBL, NF1, NFASC, ADIPOQ, AJUBA, LEP, VWF, TMEM47, SP3, JAK2, DSC1, IGFBP2, NTM, SPTAN1</p>	5.6 x 10 <sup>-11</sup>
GO:0048468	Cell development	251	<p>CTHRC1, MEF2A, GLDN, SYT2, ADCY6, STRN, RORB, POSTN, ITS2, DNASE1L3, CTNNA1, CITED2, OGN, AGTR2, SERPINE2, BTBD3, KIF13B, CDH23, PTPRM, ROCK1, MYLK3, EFNB2, MED12, HMG20A, CTNNA1, FRY, PRELP, MAPK1, MYO18B, SIPA1L1, CX3CR1, RAB17, LAMC1, EXT1, UNC13A, GCNT2, NEK3, ASAP1, SEMA5B, ARIH2, MACF1, OBSL1, AGRN, LAMB1, TCF4, SPP1, BMP4, KLF5, COL18A1, SMAD7, SMAD4, CELSR3, ALMS1, MYOZ1, AFG3L2, ECM2, ATM, PTPN11, EPHA3, DDX6, LAMA2, EPHA4, EPHA7, SEMA6D, NOTCH4, MAP2, MAP4, TCF12, RERE, BMP6, ARSB, NRP1, WASF2, ZEB1, RRN3, MAPT, QKI, SEMA3A, TOP2B, GOLGA4, GPR173, TNMD, ADNP, SPEN, HERC1, SGCG, ADM, CLIC5, EPB41L5, SGCD, NPPA, PARVA, FMOD, PHLDB1, PARD3, NACA, COL3A1, FHL2, ZBTB16, FAT4, SORBS2, PER2, ETV1, BCL9L, LIMD1, SNAP25, ETV5, ETV4, TBX6, SLC8A1, MCF2, MXRA8, STAT1, SNAI2, FZD4, FZD7, CAPRIN1, CAPRIN2, TENM4, TJP1, CNTF, HYDIN, RPS6KA2, TENM2, KIF20B, HTR2B, SPG11, PHLDB2, LRP4, CDH11, LRP5, ENAH, SEPT2, SLC6A4, ANKRD1, FOXO3, GDNF, KANK1, VCL, SETX, ROBO1, TIAM1, GATA6, PLXNB2, FMR1, CECR2, ACTN2, ARID1B, NEBL, MAP4K4, SLITRK4, EP300, AKAP6, RELN, STMN1, SMARCA2, BBS4, HMGB2, PEAK1, PTK7, SOX6, SOX9, ITGB1, ZMYND8, BLOC1S6, PTK2, PPP1R16B, DOCK1, HEG1, CLASP1, B3GNT2, SH3TC2, PLXND1, RUNX2, FN1, CFLAR, DIXDC1, PHACTR4, NTN4, NR4A2, EHMT2, SHANK3, SALL3, FBXO38, NREP, OMD, ULK1, NEDD4, ULK2, PRKAR1A, MTR, SPTBN1, ADAM22,</p>	9.3 x 10 <sup>-9</sup>

			ANTXR1, PABPC1L, HDAC9, SYT17, MYH10, KIAA0430, ARID4B, UCHL1, TMF1, CTTN, PRMT2, CXCR4, NCKIPSD, NRXN3, ESR1, PRKCH, KIDINS220, NEXN, UFL1, EIF4G2, EYA1, CUX1, DMC1, IRX3, KMT2D, TNC, USP9X, LUM, CTF1, CDH2, CDH5, CD9, ALDH1A2, HSPA2, POU2F2, LEFTY2, CAMK2D, MSI2, PTN, TNN, KDM3A, CAMK2B, CHD5, NCDN, NF1, UBE4B, NFASC, FRZB, ADIPOQ, LEP, PPP1R9A, IRF6, MYPN, JAK2, ID4, SETD2, NTM, SPTAN1	
GO:0061061	Muscle structure development	101	MEF2A, THRA, ANKRD1, CITED2, CTNNA1, NOV, AGTR2, DDX17, GATA6, MYLK3, EFN2, TANC1, ACTN2, MYH7, EEF2, PROX2, CTNNA1, NEBL, MYO18B, EP300, AKAP6, VGLL2, FBXO40, MYEF2, SOX6, SOX9, ITGB1, PLAGL1, MTPN, HEG1, OBSL1, MBNL3, KLF5, BMP4, CFLAR, EVC, SMAD7, SMAD4, MYOZ1, AFG3L2, FXR1, FOXP2, LAMA2, SYNE1, PRICKLE1, TSC1, PKP2, PRKAR1A, HDAC9, TCF12, SLC9A1, MYH10, HLF, AEBP1, FOXK1, FGF9, UCHL1, TBX20, YBX3, ZEB1, ANKRD17, QKI, MKL2, BHLHE41, NEXN, MURC, ADM, SGCG, XIRP2, SORT1, SGCD, ADAM12, NPPA, NACA, CTF1, COL3A1, CXCL9, FHL2, CDH2, MTM1, TSC22D3, HAND1, SORBS2, NR1D2, CYP26B1, CHD2, CAMK2D, ETV1, BCL9L, NOX4, RBM24, SLC8A1, TBX2, UBE4B, NF1, RCAN1, COL19A1, CNTF, SVIL, MYPN, IGFBP3	1.1 x 10 <sup>-8</sup>
GO:0010646	Regulation of cell communication	350	CTHRC1, LTBP1, PEAR1, CRHBP, LTBP4, RAB3GAP1, POSTN, ITSN2, RNF213, CTNNA1, CITED2, NOV, DDX17, AGTR2, ATP2B4, SERPINE2, GBF1, HTRA1, CD46, GAB1, SERPINE1, GIT2, RAPGEF4, STAM, OGT, CD3E, SKP2, MED12, CTNNA1, PIK3IP1, MECOM, BCL2L11, MAPK1, CD36, BAZ1B, UBR5, SIPA1L1, F3, CX3CR1, ABAT, ATP1F1, GRAP2, UNC13A, GLG1, GCNT2, HLA-DRB1, MST1, CD74, SERINC3, NPHP3, MACF1, HLA-DRB5, TCF4, LFNG, FBXO9, CNKSR2, BMP4, DVL3, SMAD7, SMAD6, CREBBP, SMAD4, CIDEA, RNF207, SMYD2, ATM, FNIP1, PTPN11, LAMA2, NOTCH2, EPHA4, EPHA7, RGS1, NLGN4X, SFRP4, SUPT16H, NCOR1, ADAR, SLC9A1, BMP6, KAT6A, CREBRF, ELF1, SPIN1, NRP1, NUA1, FGF9, TBX20, YBX3, BNIP3, TERF2IP, ZEB1, ANKRD17, AP2B1, NISCH, RRN3, CCNY, ARHGAP11B, ANGPT1, ARHGAP11A, FGF1, RBBP4, CMKLR1, ARHGEF6, ADNP, ARHGEF17, ARHGEF9, ARHGEF12, ARRDC3, PJA2, CARD11, CCND1, RAB11FIP3, BGN, ADM, DOK5, ASH1L, SRGAP3, PLA2G6, TBX18, RAB11FIP1, COL3A1, CXCL9, ZNF366, WTIP, PLCL1, CYLD, SORBS1, NR1D1, SQSTM1, SOS2, PKD2, PER2, PER1, BCL9L, LIMD1, PRKAA2, FBXW11, SNAP25, MTMR4, RASA1, SLC8A1, MCF2, BIRC7, BIRC6, IGF2, DGKI, STAT1, SNAI2, TRIM22, FZD4, FZD7, STAT2, CAPRN2, CDH13, DKK3, DUSP2, CNTF, DUSP1, YWHAQ, USP47, USP46, CALM3, CHN2, PTCH1, HTR2B, LRP4, TP53INP1, DUSP6, LRP5, ASPN, F2RL2, THRA, SLC6A1, SLC6A4, PDE3B, ANKRD1, FOXO3, UBQLN1, GDNF, KANK1, KANK2, CHAD, SEZ6L2, TIAM1, ROBO1, MDFIC, GATA6, AAK1, PUM1, PDGFC, ASPH, PDGFD, INSR, RNF146, FMR1, PSD3, ACTN2, RMI2, IRS1, BICD1, DDIT4, MAP4K4, PLCE1, EP300, NBR1, AKAP6, RELN, TNFAIP3, FGD1, HMGB2, TNFAIP8L1, CYSLTR2, GLUD1, NAPB, SOX9, ZMYND8, SESN1, ITGB1, NR2C1, SESN3, RASAL2, EIF3A, PPP1R16B, PTK2, TAGAP, HNRNPK, RHOBTB1, SH3TC2, BMF, RUNX2, FN1, DIXDC1, TAF1, CFLAR, VAV3, EVC, PHACTR4, SYT12, NR4A2, EHMT2, SHANK3, SAFB2, SALL3, NREP, TNFSF10, P2RX7, UACA, PLCG1, TSC1, PRICKLE1, NEDD4, DYRK1A, IFI6, PODNL1, UCHL1, ARHGAP19, WWC2, ARHGAP17, PDCD4, SPRY4, SPRY2, CTTN, PRMT2, GSN, CXCR4, BOK, DDX60, ARHGAP1, WWC3, PDE8B, KLHL24, TNIP1, PSMD8, TRPM4, ELP2, GPRASP1, ESR1, PRKCH, KIDINS220, ARHGAP24, UFL1, MFN2, MURC, ARHGAP32, EYA1, ARHGAP33, HIPK2, ERN1, NRK, PRNP, SNX13, KMT2D, KMT2A, CTF1, CRLF1, RSAD2, CDH2, CYTH3, FAM13A, MAP3K7CL, TRIB2, IGF1R, MTM1, TMED4, MOAP1, RGS11, ERCC6, MAP3K3, OXCT1, CYP26B1, ARHGAP42, LEFTY2, NFAT5, CAMK2D, PTN, PALM3, VPS35, CAMK2B, SH2B1, ADAMTS12, GPNMB, PLA2R1, CHD5, PIK3R1, APC, NOX4, ECT2L, NCDN, NF1, CBL, L3MBTL1, TMBIM4, EDA2R, RCAN1, FRZB, ADIPOQ, AJUBA, RASL11B, LEP, PPP1R9A, ATXN7, JAK1, ZRANB1, JAK2, APAF1, ARAP3, IGFBP2, IGFBP3, F2R	3.7 x 10 <sup>-8</sup>
GO:0009966	Regulation of signal transduction	321	CTHRC1, PEAR1, LTBP1, LTBP4, CRHBP, POSTN, ITSN2, RNF213, CTNNA1, CITED2, NOV, DDX17, AGTR2, ATP2B4, SERPINE2, GBF1, HTRA1, CD46, GAB1, SERPINE1, GIT2, STAM, OGT, CD3E, SKP2, MED12, CTNNA1, PIK3IP1, MECOM, BCL2L11, MAPK1, CD36, BAZ1B, UBR5, F3, SIPA1L1, CX3CR1, ABAT, ATP1F1, GRAP2, GLG1, GCNT2, MST1, CD74, SERINC3, NPHP3, MACF1, TCF4, LFNG, FBXO9, CNKSR2, BMP4, DVL3, SMAD7, SMAD6, CREBBP, SMAD4, CIDEA, SMYD2, ATM, FNIP1, PTPN11, NOTCH2, EPHA4, EPHA7, RGS1, NLGN4X, SFRP4,	4.8 x 10 <sup>-8</sup>

	<p>SUPT16H, NCOR1, ADAR, SLC9A1, BMP6, KAT6A, CREBRF, ELF1, SPIN1, NRP1, NUAK1, FGF9, TBX20, YBX3, BNIP3, ZEB1, TERF2IP, ANKRD17, AP2B1, RRN3, CCNY, ARHGAP11B, ANGPT1, ARHGAP11A, FGF1, RBBP4, CMKLR1, ARHGEF6, ARHGEF17, ARHGEF9, ARHGEF12, ARRDC3, PJA2, CARD11, CCND1, BGN, ADM, DOK5, ASH1L, SRGAP3, PLA2G6, TBX18, COL3A1, CXCL9, ZNF366, WTIP, CYLD, SORBS1, NR1D1, SQSTM1, SOS2, PKD2, PER1, BCL9L, LIMD1, PRKAA2, FBXW11, MTMR4, RASA1, MCF2, BIRC7, BIRC6, IGF2, DGKI, STAT1, SNAI2, TRIM22, FZD4, FZD7, STAT2, CAPRIN2, CDH13, DKK3, DUSP2, CNTF, DUSP1, YWHAQ, USP47, CHN2, CALM3, PTCH1, HTR2B, LRP4, TP53INP1, DUSP6, LRP5, ASPN, F2RL2, THRA, PDE3B, ANKRD1, FOXO3, UBQLN1, GDNF, KANK1, KANK2, CHAD, SEZ6L2, TIAM1, ROBO1, MDFIC, GATA6, AAK1, PUM1, PDGFC, ASPH, PDGFD, INSR, RNF146, PSD3, ACTN2, RMI2, IRS1, BICD1, DDIT4, MAP4K4, PLCE1, EP300, NBR1, AKAP6, RELN, TNFAIP3, FGD1, HMGB2, TNFAIP8L1, CYSLTR2, SOX9, ZMYND8, ITGB1, SESN1, NR2C1, SESN3, RASAL2, EIF3A, PPP1R16B, PTK2, TAGAP, HNRNPK, RHOBTB1, SH3TC2, BMF, RUNX2, FN1, DIXDC1, TAF1, CFLAR, VAV3, EVC, PHACTR4, NR4A2, EHMT2, SHANK3, SAFB2, SALL3, NREP, TNFSF10, P2RX7, UACA, PLCG1, TSC1, PRICKLE1, NEDD4, DYRK1A, IFI6, PODNL1, UCHL1, ARHGAP19, WWC2, ARHGAP17, PDCD4, SPRY4, SPRY2, CTTN, PRMT2, GSN, CXCR4, BOK, DDX60, ARHGAP1, WWC3, KLHL24, TNIP1, PSMD8, TRPM4, ELP2, GPRASP1, ESR1, PRKCH, KIDINS220, ARHGAP24, UFL1, MFN2, MURC, ARHGAP32, EYA1, ARHGAP33, HIPK2, ERN1, NRK, PRNP, SNX13, KMT2D, CTF1, CRLF1, RSAD2, CDH2, CYTH3, FAM13A, MAP3K7CL, TRIB2, IGF1R, MTM1, TMED4, MOAP1, RGS11, ERCC6, MAP3K3, CYP26B1, ARHGAP42, LEFTY2, CAMK2D, NFAT5, PALM3, VPS35, SH2B1, ADAMTS12, GPNMB, PLA2R1, CHD5, PIK3R1, APC, NOX4, ECT2L, NF1, CBL, L3MBTL1, TMBIM4, EDA2R, RCAN1, FRZB, ADIPOQ, AJUBA, RASL11B, LEP, ATXN7, JAK1, ZRANB1, JAK2, APAF1, ARAP3, IGFBP2, IGFBP3, F2R</p>	
<p>GO:0010468      Regulation of gene expression      467</p>	<p>MEF2A, RORB, MED23, CLK1, ZNF638, MXI1, ZNF251, CTNNA1, CITED2, PGR, EPC2, AGTR2, DIRAS3, SERPINE2, CLK4, SERPINE1, PATZ1, OGT, RXRB, MED12, HMG20A, MED14, ZNF793, MECOM, PROX2, MAPK1, ZNF235, VGLL2, ZZZ3, VGLL4, ZNF41, TNRC18, ZNF610, MST1, ZNF618, ZNF224, KLKB1, PABPC1, TCF4, ZNF528, DVL3, ACACB, KLF15, ZNF627, ATM, FNIP1, FXR1, FNIP2, SRSF5, ZNF217, ZNF211, RERE, SLC9A1, CREBRF, HLF, ELF1, BACH2, ZNF532, FGF9, ZNF41, EZH1, YBX3, ZNF518A, ZNF345, RRN3, ZNF491, QKI, FGF1, GATAD1, BHLHE41, USP13, ATF7IP, ZNF281, SRPK2, CMKLR1, MICAL2, ZNF337, ADNP, TLE4, FOSB, MXD4, ZNF334, CARD11, CCND1, EIF4A2, NAB2, EPB41L5, SORT1, ZNF550, USP22, ZNF740, ZNF275, C7, NACA, FHL2, ZNF366, ZNF169, SF3B1, PER2, PKD2, CSDE1, PER1, ARMCX3, PKD1, WAC, LIMD1, ZNF471, PER3, FBXW11, ZNF266, ZNF160, IGF2, STAB2, TRIM22, PCK1, CDH13, CNTF, RPS6KA2, ZSCAN30, ZNF862, USP47, ZBTB4, SECISBP2L, ZNF462, ZBTB1, MPHOSPH8, LRP4, LRP5, MMS19, XPO1, RBM5, ZXDC, KANK1, KANK2, EIF4EBP3, MDFIC, PUM1, ASPH, INSR, SAMD4A, ZNF594, ZNF441, RBL2, FMR1, EEF2, ARID1B, PKIA, EP300, MGA, RELN, TNFAIP3, SMARCA2, SLC40A1, BBS4, HMGB2, SETD1B, MDK, NR2C1, ZNF322, HNRNPK, ZNF596, TEF, MBNL3, ZNF599, TAF1, CREBZF, EFEMP1, SMG7, NR4A2, WHSC1, EHMT2, RBMX, SAFB2, P2RX7, CDKN1B, TSC1, EBF3, ZNF417, SMARCC2, PRKAR1A, DYRK1A, FABP4, ZNF318, HDAC9, HNRNPH1, PC, ZKSCAN8, HP1BP3, ARID4B, WWC2, ZKSCAN1, ZKSCAN3, TMF1, SPRY2, PRMT2, LBH, ZFYVE16, WWC3, LRRFIP1, KDM5B, AHNAK, ESR1, CDC5L, HLTF, CCNL2, UFL1, ERN1, FHOD1, KMT2E, BTAF1, IRX3, KMT2D, IRX6, KMT2A, FKBP6, KMT2C, NR3C1, NFYA, CALCOCO1, SHQ1, ALDH1A2, TSC22D3, CHD2, VPS35, KDM3A, KDM3B, CHD6, NFATC3, CHD5, NFRKB, NF1, CBL, RCAN1, ZBED8, ADIPOQ, LEP, AJUBA, DBP, HIF3A, ID4, JAK2, TBL1X, HMGN1, RAB3GAP1, NOV, DDX17, APOB, ATP2B4, TRAK2, HTRA1, CD46, CFH, GLE1, BCL7A, CD3D, CD3E, CD36, BAZ1B, RFC1, MLLT10, PRDM5, HAS3, GIGYF2, SUDS3, GLG1, GCNT2, GPBP1L1, PLAGL1, ACE, AGRN, MAML3, KLF5, BMP4, ZBTB47, SMAD9, SMAD7, SMAD6, CREBBP, PTPN14, SMAD4, CIDEA, YTHDC1, RNF207, SMYD2, SMAD1, LARP4B, CIDEA, DDX6, NOTCH2, DMTF1, PTCD3, NOTCH4, SFRP4, SUPT16H, KAT6B, NCOR1, TCF12, CRYM, ADAR, BMP6, KAT6A, PPARA, MITF, TBX20, ZEB2, TERF2IP, ZEB1, FOXS1, WBP2, ZBTB38, DIP2A, MBTD1, THRSP, RBBP4, TBX15, ZNF354C, ZCCHC18, SPEN, ZBTB25, ASH1L, LIN54, RBM39, TBX18, ATG14, ZBTB16, WTIP, POLR2A, CYLD, STAT4, NR1D1, NR1D2,</p>	<p>3.3 x 10<sup>-7</sup></p>

			SQSTM1, GATAD2B, ETV1, BCL9L, HBP1, SNRNP70, PRKAA2, BAZ2A, ETV5, ETV4, TBX6, RBM24, TBX2, RBM20, BIRC7, STAT1, SNAI2, FZD4, FZD7, CAPRIN1, STAT2, CAPRIN2, DKK3, TENM2, GFPT1, YWHAQ, PHF21B, PTCH1, APBB3, TOB2, TP53INP1, GOLGB1, THRA, THRB, SLC6A4, ZNF827, TRIM52, ANKRD1, FOXO3, GDNF, SETX, CIPC, RAD21, SRRM4, GATA6, RNF38, RBMS3, ARGLU1, SATB1, ERC1, ZNF844, SLC38A3, CIART, SOX6, SOX9, ZMYND8, EIF3A, MTPN, EIF3E, EIF3L, RUNX2, FN1, CFLAR, EEF1A1, ZMYM4, EPHX2, MED13L, MAFK, SREBF2, FOXP2, EIF4B, SALL3, PRICKLE1, NEDD4, AEBP1, ZNF83, FOXK1, ZNF81, POU6F2, KIAA0430, PDCD4, LARP1, FUBP1, PCGF5, FUBP3, GSN, MKL2, TPR, TNIP1, PSMD8, SHC4, ELMSAN1, ELP2, LDB1, RUNX1T1, PRKCH, FOXJ3, EIF4G2, MURC, EIF4G3, EYA1, HIPK2, ZNF711, CUX1, PRNP, PROS1, MATR3, TNC, USP9X, LUM, NFIX, HCFC2, NPAS1, ZNF704, ERCC6, HAND1, SAFB, CYP26B1, POU2F2, CAMK2D, NFAT5, TNRC6B, TNRC6A, PIK3R1, NUP153, L3MBTL1, EDA2R, SON, RNF44, IRF6, SP3, ATXN7, SETD7, TSSK4, SETD2, F2R	
GO:0048738	Cardiac muscle tissue development	43	MEF2A, FGF9, TBX20, FHL2, ANKRD1, SOX6, ITGB1, ALDH1A2, AGTR2, HAND1, GATA6, SORBS2, CAMK2D, HEG1, OBSL1, NOX4, BMP4, SLC8A1, TBX2, SMAD7, MYLK3, UBE4B, EFNB2, SMAD4, MYH7, ACTN2, SMAD1, PROX2, NEXN, NEBL, TENM4, MYO18B, TSC1, SGCG, DSG2, XIRP2, PKP2, PRKAR1A, SGCD, AKAP6, NPPA, SLC9A1, MYH10	$8.4 \times 10^{-7}$
GO:0007010	Cytoskeleton organization	148	XPO1, DYNC1LI2, MEF2A, ANKRD1, KANK1, CTNNA1, PLS3, CEP85, LRRC6, ROCK1, MYLK3, CECR2, SPIRE1, ACTN2, KIAA0753, CTNNA1, BICD1, NEBL, FRY, TACC2, PLCE1, SIPA1L1, FCHSD2, STMN1, DST, MYO18A, CCDC8, NEK7, FGD1, BBS4, PTK7, ITGB5, ANLN, SOX9, ITGB1, PTK2, DOCK1, MACF1, DNAAF3, MTPN, OBSL1, CCSER2, CLASP1, AGRN, CFLAR, DIXDC1, KIF3B, PHACTR4, NIN, CROCCP2, ZMYM4, CKAP5, MYO1B, ALMS1, MYOZ1, NDC80, SHANK3, EPHA3, P2RX7, SYNE1, CDKN1B, TSC1, PKP2, PRKAR1A, MAP2, SPTBN1, MAP4, MAP7, ANTXR1, NCOR1, SLC9A1, MYH10, CDC42BPB, WASF2, SYNPO2L, TTLL3, SPRY2, CTTN, NISCH, SLK, GSN, MAPT, NCKIPSD, TPR, DYNC1H1, GOLGA2, FMNL3, TRPM7, MICAL2, SPECC1, MICAL3, ARHGEF17, EPB41L2, MAST4, EYA1, PLEKHH2, XIRP2, LIMCH1, EPB41L5, SPEF2, FHOD1, PARVA, ABLIM1, CLUAP1, KIZ, PHLDB1, SHROOM2, PPFIA1, EPB41L4A, DNAH1, AKAP9, WTIP, CYLD, MTM1, TUBGCP6, NUMA1, SORBS1, SORBS2, CENPA, FAT1, PKD2, WIPF3, MTCL1, LIMD1, PIK3R1, RASA1, APC, NOX4, NES, CAP2, BAIAP2L2, NF1, BIRC7, SUN1, AJUBA, PPP1R9A, SON, HYDIN, MYPN, ATXN7, SVIL, CEP68, ZRANB1, JAK2, SH3D19, ARAP3, PHLDB2, SPTAN1	$2.2 \times 10^{-5}$
GO:0035051	Cardiocyte differentiation	30	MEF2A, FHL2, SOX6, ITGB1, CITED2, AGTR2, GATA6, SORBS2, CAMK2D, OBSL1, NOX4, BMP4, SLC8A1, TBX2, MYLK3, EFNB2, SMAD4, ACTN2, NEXN, PROX2, NEBL, TENM4, MAPK1, MYO18B, PRICKLE1, TSC1, AKAP6, NPPA, SLC9A1, MYH10	$3.5 \times 10^{-5}$
GO:0055007	Cardiac muscle cell differentiation	24	NOX4, BMP4, SLC8A1, MEF2A, MYLK3, EFNB2, FHL2, ACTN2, SOX6, NEXN, PROX2, ITGB1, NEBL, MYO18B, AGTR2, TSC1, GATA6, SORBS2, CAMK2D, AKAP6, OBSL1, NPPA, SLC9A1, MYH10	$3.2 \times 10^{-4}$
GO:0003007	Heart morphogenesis	40	BBS4, CLUAP1, NACA, TBX20, FHL2, ANKRD1, SOX9, CTNNA1, CITED2, ALDH1A2, NPHP3, PTK2, HAND1, GATA6, FAT4, PKD2, HEG1, PLXND1, INSR, BMP4, DVL3, TBX2, SMAD7, MICAL2, SMAD6, UBE4B, SMAD4, RNF207, MYH7, WHSC1, SNAI2, NOTCH2, EYA1, BAZ1B, NEDD4, XIRP2, PKP2, PTCH1, HTR2B, PARVA	$1.3 \times 10^{-3}$
GO:0055013	Cardiac muscle cell development	16	BMP4, SLC8A1, MEF2A, MYLK3, FHL2, ACTN2, NEXN, NEBL, AGTR2, MYO18B, SORBS2, CAMK2D, OBSL1, AKAP6, NPPA, MYH10	$3.3 \times 10^{-3}$
GO:0003300	Cardiac muscle hypertrophy	16	MEF2A, SMAD4, MYH7, KLF15, LEP, AGTR2, ATP2B4, SORBS2, TIAM1, GATA6, MTPN, CAMK2D, AKAP6, HTR2B, NPPA, SLC9A1	$4.7 \times 10^{-3}$
GO:0055006	Cardiac cell development	16	BMP4, SLC8A1, MEF2A, MYLK3, FHL2, ACTN2, NEXN, NEBL, AGTR2, MYO18B, SORBS2, CAMK2D, OBSL1, AKAP6, NPPA, MYH10	$5.6 \times 10^{-3}$
GO:0003279	Cardiac septum	21	BMP4, DVL3, LTBP1, SMAD7, TBX2, SMAD6, TBX20, SMAD4, PTK7, WHSC1, CITED2, NOTCH2, NPHP3, AP2B1, HAND1, XIRP2, GATA6, HEG1, PLXND1, PARVA, MYH10	$5.6 \times 10^{-3}$

	development			
GO:0003205	Cardiac chamber development	26	LTBP1, NACA, TBX20, PTK7, FHL2, CITED2, NPHP3, AP2B1, HAND1, GATA6, HEG1, PLXND1, BMP4, DVL3, SMAD7, TBX2, SMAD6, UBE4B, SMAD4, MYH7, WHSC1, NOTCH2, XIRP2, PKP2, PARVA, MYH10	$3.5 \times 10^{-2}$

### Downregulated

GO:0044699	Single-organism process	399	RBPMS2, LDHA, GDA, TUBB2B, AURKAIP1, TUBB2A, ACTG1, ACTG2, CH25H, FOXF1, PPP1R1A, CDCA2, YARS, MYH6, LPCAT4, RAD1, SSTR2, ADAMTS9, ADAMTS8, MSX1, CD320, TAGLN, SERPINF2, WFDC1, PMP22, GRB14, GATB, ADAMTS4, KCNJ3, PPP1R3C, CACYBP, PLTP, TUBB4B, MAP2K3, VDAC2, RGS9BP, SHOX2, KCNJ5, CD209, RGS6, ZNF385A, LRRC10, PDIA4, PMVK, STAC2, PBXIP1, NMUR1, IL4R, SERPINA5, SERPINA3, ARHGEF4, CDC7, NDUFB11, NDUFB10, ACTA2, ELANE, FBLIM1, PKDCC, MMP15, RNF175, NDUFA12, INHBA, REPS2, DGKB, CRISPLD2, HK3, ALOX5AP, GALNT16, VMP1, PTX3, TBC1D11, ACTC1, IGF1, PTP4A3, AOX1, MT2A, GAMT, LRP8, SERPIND1, HPGD, SELE, CMTM5, NDUFAB1, DLK1, SLC7A5, BATF, MARCO, PACSIN1, TGFBI, TUBG1, CIB2, STMN2, CTRB1, CTRB2, TMSB10, THBD, AKR1B10, HSPB1, MFAP5, CCL2, LITAF, IFITM2, ADAMTSL4, IFITM3, CCL8, KCNA7, PRUNE2, TUBB, OAZ1, P2RY2, TTYH1, HSPE1, NR4A3, CYB561, NDUFV3, ATF4, LYVE1, CXCL14, TDH, CACNA1G, CACNA1E, IER3, PTGES2, HINT1, CYC1, E2F8, PRDX5, PRDX2, PRDX1, NDUFS6, RSPO4, NDUFS5, SLC1A3, OSR1, HMOX1, CABLES2, LBP, PTDSS1, FOSL1, CYCS, TMEM38A, DHRS9, VASP, ARL3, HUNK, PRDX6, PMEPA1, UQCRB, TCAP, C10ORF11, TAC1, ATP5G1, ATP5G3, RGMA, FCN3, ALDH1A3, C1QTNF1, COL27A1, GPSM2, SH2B2, FBN2, GNAO1, TRNP1, BAD, RDH10, VSTM2L, AKR1B1, SNTA1, PVR, S100A4, CADM3, RARRES1, ATP1B3, PDLIM7, EDN2, S100A9, FAM20C, AQP4, CCT3, SYT7, AQP1, ADORA1, AQP3, S1PR3, MEDAG, APOD, CLEC4G, CREB3L1, ABRA, CFD, GPT2, MRPL34, GJD2, OSBP2, MRPL51, STC2, PIM1, HTR4, ATP5C1, TUBA4A, RAB15, BIN1, VSIG4, DBN1, MDH2, ALDOA, ALDOC, ELN, BDKRB2, CDC37, KCNMB1, LIF, TPI1, LGALS3BP, IDH2, COX6B1, FCER1G, RAP1GAP2, NKX2-5, TRPC4, CRIP2, S100A10, TPD52L1, CSRP3, PPA1, GPR153, SFRP5, CEL, SEMA6B, ATP2A2, SFRP2, CD59, ETS2, NTRK1, HOPX, PLAU, NNMT, ATP5D, TIMM17A, KCNIP2, HVCN1, CKB, AES, SAA1, SLC25A3, TUBB6, ATP5O, LMOD1, COX17, ATP5J, FUNDC2, C10ORF54, SLC25A4, FLOT1, ACKR1, ACKR3, ECSIT, PTGDS, GADD45G, NPPC, SH3KBP1, SLC27A6, RBM38, ADAM15, LIMS2, CA14, POLR2L, CCR1, STARD10, FNDC5, STK40, BCL3, DDIT4L, THBS1, QSOX1, LRRN3, SPSB4, ATP1A1, SOD1, CDKN3, SOD3, FBLN1, PYGM, GRIA1, MRPL27, GFPT2, TMEM176B, CD14, TMEM176A, F2RL3, GABRB3, F13A1, COX5A, PNP, COX5B, ITPKA, SLC25A25, GATA5, SLC25A26, GLP2R, SOCS3, SLC04A1, CST3, MRGPRF, ARNTL, PPP1CC, CHPT1, COX6C, TNNT2, ASB2, EMP3, MVP, FGFR2, MYL6, SLC38A4, FXYP3, MYL4, COX7B, CLU, COX7C, MYL9, PAQR5, HOXA3, PSMB6, HOXA5, PPL, MTCH1, RNF10, NDRG1, TESC, AK1, COX8A, MRPS24, TOMM40, PPIF, CADPS2, FPGS, SCARA5, ETNPPL, NAMPT, UQCRC1, IGFBP6, UQCRCFS1, RAMP1, TUBA1C, MT3, CPTP, HMBS, MPP3, COX4I1, RASL12, DAPK2, STOM, CTSB, XIRP1, UBE2M, ITGB1BP2, CTSB, NDUFB3, NDUFB4, GLRX5, SBNO2, NDUFB6, RTN4RL1, CD248, NDUFB9, TPM2, GPRC5A, TPM4, NDUFB1, GPR4, NDUFB2, KRT8, PLCD3, TUBA3D, PGA3, ENO3, TUBA3E, PGA4, MYOG, PGA5, CNN1, KLHL41, GAPDH, CAMK2A, HRC, ACTB, NDUFA4, NDUFA5, NDUFA6, MAP1B, RHAG, NDUFA1, SIRT2, ENDOG, KCNN2, LSM10, SYNM, IGFBP4	$4.2 \times 10^{-7}$
GO:0032501	Multicellular organismal process	236	S100A4, RBPMS2, LDHA, GDA, ATP1B3, TUBB2B, PDLIM7, EDN2, FAM20C, S100A9, AQP4, SYT7, AQP1, ADORA1, AQP3, ACTG1, ACTG2, S1PR3, APOD, FOXF1, CREB3L1, GJD2, OSBP2, STC2, PIM1, MYH6, RAD1, SSTR2, ADAMTS9, MSX1, TAGLN, SERPINF2, SMPX, VSIG4, PMP22, BIN1, DBN1, ADAMTS4, ALDOA, ELN, BDKRB2, KCNJ3, KCNMB1, LIF, TPI1, CACYBP, COX6B1, FCER1G, RAP1GAP2, NKX2-5, PLTP, TRPC4, CRIP2, CSRP3, RGS9BP, SFRP5, KCNJ5, SHOX2, CEL, SEMA6B, ATP2A2, SFRP2, CD59, ETS2, NTRK1, HOPX, ZNF385A, PLAU, NNMT, LRRC10, KCNIP2, CKB, AES, PBXIP1, NMUR1, SAA1, SERPINA5, IL4R, SERPINA3, LMOD1, COX17,	$1.8 \times 10^{-5}$

			ATP5J, ACTA2, FLOT1, ELANE, ACKR1, PKDCC, ACKR3, MMP15, NDUFA12, INHBA, SERPINB6, PTGDS, GADD45G, NPPC, ADAM15, LIMS2, POLR2L, CCR1, DGKB, STK40, CRISPLD2, ALOX5AP, BCL3, VMP1, THBS1, ACTC1, LRRN3, IGF1, ATP1A1, SOD1, FBLN1, PTP4A3, GRIA1, LRP8, GAMT, SERPIND1, HPGD, TMEM176B, CD14, TMEM176A, F2RL3, GABRB3, F13A1, PNP, ITPKA, SLC7A5, COX5B, BATF, PACSIN1, SLC25A25, GATA5, TGFB1, CIB2, SOCS3, STMN2, CTRB1, CTRB2, CST3, ARNTL, PPP1CC, TNNT2, THBD, AKR1B10, HSPB1, ASB2, MFAP5, FGFR2, MYL6, MYL7, MYL4, FXYD3, CCL2, LITAF, CLU, COX7B, PAQR5, MYL9, HOXA3, PSMB6, HOXA5, P2RY2, PPL, MTCH1, HSPE1, NDRG1, RNF10, TESC, NR4A3, ATF4, CXCL14, CACNA1G, FPGS, SCARA5, NAMPT, E2F8, PRDX5, PRDX1, NDUFS6, RSPO4, SLC1A3, OSR1, HMOX1, LBP, RAMP1, FOSL1, MT3, VASP, ARL3, CTSL, HUNK, XIRP1, ITGB1BP2, CTSB, SBNO2, GLRX5, RTN4RL1, TCAP, CD248, NDUFB9, TAC1, TPM2, TPM4, GPR4, RGMA, ALDH1A3, C1QTNF1, COL27A1, KRT8, PLCD3, PGA3, GPSM2, ENO3, SH2B2, PGA4, MYOG, CNN1, KLHL41, FBN2, PGA5, CAMK2A, HRC, ACTB, GNAO1, TRNP1, MAP1B, BAD, RHAG, SIRT2, RDH10, ENDOG, KCNN2, AKR1B1, SYNM, IGFBP4, SNTA1	
GO:0032502	Developmental process	187	RBPMS2, S100A4, GDA, LDHA, GABRB3, PDLIM7, TUBB2B, EDN2, FAM20C, S100A9, AQP1, PNP, ADORA1, ITPKA, SLC7A5, AQP3, BATF, ACTG1, S1PR3, ACTG2, PACSIN1, SLC25A25, APOD, GATA5, FOXF1, TGFB1, CREB3L1, OSBP2, STC2, STMN2, SOCS3, CST3, PIM1, ARNTL, MYH6, PPP1CC, RAD1, TNNT2, ADAMTS9, SSTR2, MSX1, TAGLN, SERPINF2, HSPB1, ASB2, BIN1, PMP22, DBN1, MFAP5, ADAMTS4, ALDOA, MYL6, FGFR2, CCL2, LITAF, ALDOC, ADAMTSL4, CLU, ELN, COX7B, KCNMB1, PAQR5, LIF, TP11, HOXA3, PSMB6, HOXA5, PPL, MTCH1, CACYBP, MTERF3, COX6B1, FCER1G, RNF10, NDRG1, RAP1GAP2, NKX2-5, TRPC4, TESC, CRIP2, S100A10, NR4A3, CSRP3, SHOX2, SFRP5, CEL, SEMA6B, LYVE1, ATP2A2, CXCL14, SFRP2, ETS2, NTRK1, HOPX, FPGS, ZNF385A, NNMT, IER3, LRRRC10, NAMPT, E2F8, KCNIP2, PRDX1, CKB, RSPO4, NDUFS6, SLC1A3, AES, OSR1, PBXIP1, HMOX1, IL4R, LMOD1, RAMP1, FOSL1, COX17, MT3, ATP5J, CDC7, ACTA2, FLOT1, DHRS9, FBLIM1, ACKR3, PKDCC, MMP15, VASP, ARL3, INHBA, HUNK, XIRP1, ITGB1BP2, GADD45G, SH3KBP1, NPPC, RBM38, CTSB, ADAM15, GLRX5, SBNO2, LIMS2, RTN4RL1, POLR2L, TCAP, CCR1, CD248, GPR4, RGMA, STK40, CRISPLD2, ALDH1A3, COL27A1, KRT8, PLCD3, ENO3, GPSM2, BCL3, SH2B2, MYOG, VMP1, KLHL41, FBN2, TBC1D1, THBS1, CAMK2A, ACTB, ACTC1, GNAO1, TRNP1, MAP1B, LRRN3, IGF1, BAD, SOD1, RHAG, SIRT2, RDH10, FBLN1, ENDOG, AKR1B1, LRP8, GAMT, HPGD, TMEM176B, IGFBP4, CMTM5, TMEM176A	1.1 x 10 <sup>-3</sup>
GO:0051179	Localization	193	CADM3, ATP1B3, PDLIM7, TUBB2B, EDN2, S100A9, AQP4, SELENBP1, SYT7, CCT3, AQP1, ADORA1, AQP3, ACTG1, APOD, FOXF1, CH25H, CREB3L1, ABRA, CFD, GJD2, OSBP2, STC2, ADAMTS9, MSX1, ADAMTS8, CD320, SERPINF2, ATP5C1, RAB15, TUBA4A, BIN1, DBN1, GRB14, ALDOA, BDKRB2, KCNJ3, KCNMB1, CDC37, LIF, LGALS3BP, COX6B1, FCER1G, NKX2-5, PLTP, TRPC4, S100A10, VDACC2, CSRP3, SFRP5, KCNJ5, CEL, SEMA6B, ATP2A2, SFRP2, CD209, CD59, ZNF385A, PLAU, ATP5D, TIMM17A, PDIA4, KCNIP2, HVCN1, NMUR1, SAA1, SERPINA5, IL4R, SERPINA3, SLC25A3, ATP5O, COX17, ATP5J, CDC7, SLC25A4, ELANE, FLOT1, ACKR3, PKDCC, INHBA, PTGDS, SH3KBP1, SLC27A6, ADAM15, CA14, CCR1, STARD10, HK3, BCL3, VMP1, THBS1, TBC1D1, PTX3, QSOX1, IGF1, ATP1A1, SOD1, LCN10, FBLN1, PTP4A3, GRIA1, LRP8, SELE, CD14, F2RL3, GABRB3, F13A1, COX5A, SLC7A5, COX5B, PNP, MARCO, PACSIN1, SLC25A25, SLC25A26, SLC04A1, LRP1B, TMSB10, ARNTL, PPP1CC, COX6C, TNNT2, THBD, HSPB1, MVP, SLC38A4, FXYD3, CCL2, LITAF, CLU, COX7B, COX7C, CCL8, KCNA7, TUBB, OAZ1, HOXA5, P2RY2, MTCH1, TTYH1, LMAN1L, TESC, COX8A, TOMM40, NR4A3, CYB561, PPIF, LYVE1, ATF4, CXCL14, CADPS2, CACNA1G, CACNA1E, SCARA5, PTGES2, CLTB, UQCRC1, CYC1, UQCRCFS1, PRDX1, SLC1A3, OSR1, HMOX1, LBP, RAMP1, TUBA1C, MT3, CPTP, TMEM38A, COX41, DAPK2, ARL3, STOM, UQCRCB, CD248, TAC1, ATP5G1, ATP5G3, FCN3, C1QTNF1, SNX22, GPSM2, FBN2, CAMK2A, HRC, ACTB, NDUFA4, GNAO1, MAP1B, BAD, RHAG, KCNN2, SNTA1	1,0 x 10 <sup>-3</sup>
GO:0040007	Growth	42	FGFR2, S100A9, IGFBP6, NDUFS6, RGMA, FAM107A, SLC25A25, STK40, MT1A, APOD, HOXA5, COL27A1, ENO3, MYOG, LBP, NKX2-5, MT3, MT1L, MT1M, STC2, ELANE, MAP1B, IGF1, PKDCC, MYH6, SOD1, CHPT1, CEL, INHBA, SEMA6B, RDH10, MSX1, CD320, SFRP2, MT2A,	4.8 x 10 <sup>-3</sup>



			HOPX, NPPC, WFDC1, GAMT, EMP3, IGFBP4, ADAM15	
GO:0002376	Immune system process	87	PVR, ATP1B3, EDN2, FAM20C, S100A9, AQP4, PNP, PRDX1, SLC7A5, ADORA1, AQP3, BATF, MARCO, ACTG1, APOD, SAA1, CLEC4G, FOXF1, HMOX1, IL4R, CH25H, LILRA5, LBP, CFD, PPP1R14B, SOCS3, FLOT1, ELANE, ECSIT, DAPK2, INHBA, CTSL, THBD, CTSB, VSIG4, MFAP5, GRB14, ADAM15, FGFR2, SBNO2, GLRX5, CCL2, IFITM2, IFITM3, CD248, CCR1, CLU, CCL8, TAC1, CDC37, LIF, TUBB, PSMB6, HOXA3, HOXA5, FCN3, BCL3, FCER1G, SH2B2, NDRG1, PTX3, THBS1, NKX2-5, CAMK2A, GAPDH, TUBB4B, ACTB, TESC, CRIP2, CD300E, IGF1, BAD, NR4A3, SOD1, RHAG, SIRT2, CXCL14, SFRP2, CD59, NTRK1, CD209, MT2A, SELE, ZNF385A, TMEM176B, CD14, TMEM176A	$1.5 \times 10^{-2}$
GO:0098754	Detoxification	8	PRDX6, S100A9, PRDX5, PRDX2, SOD1, PRDX1, SOD3, MT3	$3.4 \times 10^{-2}$
GO:0050896	Response to stimulus	246	PVR, S100A4, RBPMS2, LDHA, EDN2, FAM20C, S100A9, AQP4, SYT7, AQP1, ADORA1, AQP3, HMCN2, ACTG1, S1PR3, APOD, PPP1R1A, FOXF1, CH25H, CLEC4G, LILRA5, ABRA, CREB3L1, CFD, YARS, STC2, HTR4, PIM1, MYH6, RAD1, SSTR2, MSX1, SERPINF2, WFDC1, RAB15, VSIG4, GRB14, BDKRB2, KCNJ3, KCNMB1, CDC37, LIF, LGALS3BP, CACYBP, FCER1G, RAP1GAP2, NKX2-5, TUBB4B, S100A16, MAP2K3, CD300E, TPD52L1, VDAC2, CSRP3, RGS9BP, GPR153, SFRP5, SHOX2, SEMA6B, ATP2A2, SFRP2, CD59, NTRK1, CD209, HOPX, RGS6, ZNF385A, AHS1, PLAU, NNMT, ATP5D, PDIA4, KCNIP2, PMVK, HVCN1, AES, STAC2, NMUR1, SAA1, SERPINA5, IL4R, SERPINA3, ARHGEF4, CDC7, ACTA2, FLOT1, ELANE, ACKR1, ACKR3, MMP15, RNF175, ECSIT, NDUFA12, INHBA, SERPINB6, PTGDS, GADD45G, SH3KBP1, NPPC, RBM38, ADAM15, REPS2, LIMS2, POLR2L, CCR1, STARD10, FNDC5, DGKB, MT1A, STK40, ALOX5AP, BCL3, DDIT4L, PTX3, THBS1, MT1L, ACTC1, MT1M, SPSB4, IGF1, ATP1A1, SOD1, SOD3, FBLN1, PTP4A3, GRIA1, MT2A, AOX1, LRP8, SERPIND1, SELE, HPGD, CD14, CMTM5, F2RL3, GABRB3, F13A1, DLK1, PNP, ITPKA, BATF, MARCO, SLC25A25, GATA5, TGFBI, GLP2R, CIB2, STMN2, SOCS3, CST3, MRGPRF, ARNTL, PPP1CC, TNNT2, THBD, HSPB1, ASB2, MVP, FGFR2, CCL2, LITAF, IFITM2, IFITM3, CLU, CCL8, PAQR5, MYL9, TUBB, PSMB6, P2RY2, MTCH1, HSPE1, NDRG1, TESC, NR4A3, PPIF, ATF4, LYVE1, CADPS2, CXCL14, CACNA1G, FPGS, SCARA5, NAMPT, IER3, UQCRC1, HINT1, CYC1, IGFBP6, PRDX5, PRDX2, UQCRC1, PRDX1, RSPO4, SLC1A3, OSR1, HMOX1, LBP, PPP1R14B, RAMP1, FOSL1, MT3, MPP3, CYCS, COX4I1, DAPK2, RASL12, VASP, ARL3, STOM, CTSL, HUNK, PRDX6, ITGB1BP2, UBE2M, CTSB, PMPA1, NDUFB4, SBNO2, RTN4RL1, TCAP, TAC1, GPRC5A, GPR4, RGMA, FCN3, ALDH1A3, C1QTNF1, KRT8, PLCD3, ENO3, GPSM2, SH2B2, MYOG, FBN2, GAPDH, CAMK2A, HRC, ACTB, GNAO1, NDUFA6, BAD, SIRT2, ENDOG, AKR1B1, IGFBP4	$3.2 \times 10^{-2}$
GO:0071840	Cellular component organization or biogenesis	190	PVR, S100A4, F2RL3, CADM3, ATP1B3, TUBB2B, PDLIM7, AURKAIP1, TUBB2A, S100A9, NDUFAB1, AQP4, CCT3, SYT7, AQP1, ADORA1, ITPKA, AQP3, ACTG1, PACSIN1, APOD, FOXF1, TGFBI, CDCA2, CREB3L1, TUBG1, MRPL34, MRPL51, STMN2, CTRB1, CTRB2, CST3, TMSB10, MYH6, PPP1CC, CHPT1, RAD1, TNNT2, MSX1, CD320, SERPINF2, WFDC1, TUBA4A, EMP3, PMP22, BIN1, DBN1, MFAP5, GATB, ADAMTS4, ALDOA, FGFR2, CCL2, ADAMTSL4, CLU, ELN, KCNA7, CDC37, LIF, TUBB, PPL, TTYH1, MTCH1, MTERF3, EIF3K, FCER1G, NDRG1, RAP1GAP2, NKX2-5, PLTP, TUBB4B, LMAN1L, TESC, MRPS24, S100A10, TOMM40, NR4A3, VDAC2, CSRP3, SHOX2, PPIF, NDUFV3, CEL, SEMA6B, ATP2A2, CADPS2, SFRP2, CD59, NTRK1, HOPX, ZNF385A, SCARA5, TIMM17A, IGFBP6, KCNIP2, NDUFS6, NDUFS5, SLC1A3, NMUR1, SERPINA5, HMOX1, IL4R, TUBB6, LMOD1, RAMP1, FOSL1, COX17, TUBA1G, MT3, FUNDC2, CDC7, ARHGEF4, NDUFB11, NDUFB10, SLC25A4, FLOT1, ELANE, CYCS, FBLIM1, TMEM70, PKDCC, MMP15, ECSIT, NDUFA12, VASP, ARL3, STOM, INHBA, CTSL, XIRP1, SH3KBP1, PMPA1, UQCRB, ADAM15, NDUFB3, NDUFB4, REPS2, LIMS2, NDUFB6, RTN4RL1, TCAP, NDUFB9, TAC1, TPM2, TPM4, NDUFB1, NDUFB2, RGMA, FAM107A, CRISPLD2, ALOX5AP, C1QTNF1, COL27A1, KRT8, TUBA3D, BCL3, GPSM2, SH2B2, TUBA3E, MYOG, CNN1, VMP1, KLHL41, FBN2, PTX3, TBC1D1, THBS1, GAPDH, CAMK2A, ACTB, NDUFA5, ACTC1, GNAO1, NDUFA6, MAP1B, LRRN3, IGF1, BAD, SOD1, NDUFA1, SIRT2, FBLN1, GRIA1, MRPL27, ENDOG, LRP8, SYNM, SELE, CD14, IGFBP4	$3.4 \times 10^{-2}$

GO:0022610	Biological adhesion	61	PVR, CADM3, LDHA, S100A9, PNP, PRDX1, HMCN2, ACTG1, BATF, APOD, SAA1, IL4R, FOXF1, CLEC4G, TGFBI, C10ORF54, ELANE, FLOT1, FBLIM1, ACKR3, VASP, PRDX6, SERPINF2, HSPB1, VSIG4, DBN1, ADAM15, ALDOA, CCL2, LIMS2, CCR1, GPRC5A, MYL9, LGALS3BP, PSMB6, PPL, C1QTNF1, TTYH1, BCL3, FCER1G, NDRG1, VMP1, THBS1, ACTB, TESC, S100A10, IGF1, NR4A3, BAD, EMILIN2, SOD1, CEL, LYVE1, FBLN1, ATP2A2, SFRP2, CD59, CD209, SELE, AHSA1, PLAU	3.1 x 10 <sup>-2</sup>
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Gene Ontology (GO) hierarchy containing Biological Process (BP) sub-ontology.

\**p value* was corrected by the accepted Benjamini-Hochberg correction method.

Supplemental Table 3. GO Molecular Function analysis of significantly changed categories, comparing HF vs HD DEGs

Category	GO-MF Term	Count	Gene symbol	Benjamini*
	Upregulated			
GO:0005515	Protein binding	1072	LDHB, CTHRC1, MEF2A, CRHBP, MED23, RORB, ITS2, TMEM140, OGN, SH3YL1, USP53, AGTR2, SERPINE2, DIRAS3, BTBD1, SERPINE1, BTBD3, ZNF106, OGT, CDH23, LRRC6, VPS45, MED12, VPS41, MED14, MYH7, MECOM, PIK3IP1, MAPK1, DCAF8, F3, SIPA1L1, BACE1, ROR1, ABAT, UNC13A, HLA-DRA, KIAA1109, PABPC4, CNTRL, ARIH2, KLKB1, KBTBD7, OBSL1, CCSER2, PABPC1, PPP2R2B, SGIP1, SPP1, LAPTM4B, ZC3H13, KIF3B, ATP11A, NDC80, ACACB, COL16A1, SEPT11, ATM, FNIP1, FNIP2, SRSF5, RGS1, COL14A1, PKP2, FAM214A, NLGN4X, SPNS1, RERE, CDC42BPB, CREBRF, ELF1, SPIN1, FGF9, NUA1, ATP10A, YBX3, BNP3, ATP10D, NISCH, QKI, USP11, BHLHE41, FGF1, USP13, ATF7IP, ANP32E, ADNP, ZNF337, ARHGEF12, VPS8, ZNF334, EPB41L2, CARD11, IGFN1, DOK5, EIF4A2, CLIC5, EPB41L5, PLXDC2, GRIP2, SORT1, ZNF550, USP22, PARVA, FMOD, RABGAP1, LIN9, EPB41L4A, ZNF366, CBL1, AZIN2, ZNF169, SF3B1, MTMR3, SCAF11, SORBS1, CFAP58, SORBS2, PKD2, PKD1, WAC, SNAP23, FAM156B, SNAP25, MTMR4, PHLDA1, PDK1, SLC8A1, IGF2, STAB2, TRIM23, TRIM22, APPL2, CDH13, DUSP2, CNTF, DUSP1, NRAP, PLSCR4, USP47, USP46, SECISBP2L, CP, PHLDB2, LRP4, LRP5, USP44, ENAH, PRPF4B, ENAM, ZXDC, KIAA1328, TXLNB, EIF4EBP3, AZGP1, MDFIC, ANKZF1, RNF146, SAMD4A, FMR1, PKIA, BICD1, TACC2, EP300, DCUN1D2, MGA, RELN, STMN1, VAMP1, SSC5D, SMARCA2, CCDC8, FGD1, HDLBP, ADAMTSL3, CYSLTR2, SETD1B, GLUD1, PTK7, MDK, ABI3BP, TTC3, PDXDC1, NR2C1, PTK2, RNF169, TMEM30B, ZNF599, UNKL, PHACTR2, PHACTR4, CREBZF, MYO1B, SYT12, MYO1D, NR4A2, NTN4, EHMT2, NREP, P2RX7, CDKN1B, DSG2, DYRK1A, SMARCC2, FBXO32, HDAC9, SYT17, PC, ATP7B, DENND5A, HP1BP3, GABBR1, HLA-DMB, SPRY4, TMF1, SPRY2, PRMT2, LRRFIP1, AHNAC, DDB1, NEXN, KIF1B, SNRNP200, ERN1, MAPRE2, TXNRD1, DMC1, FHOD1, FKBP6, SSFA2, CRLF1, SHQ1, CD9, BRICD5, LEFTY2, VPS35, GPNMB, NFATC3, EHD3, NOX4, WDFY3, NFRKB, CBL, C1ORF21, ZBED8, FRZB, ADIPOQ, COL5A2, AJUBA, ICK, HIF3A, ID4, SNX33, SNX30, HMG1, PNMA2, HMG2, CADM1, GLDN, RSRP1, RAB3GAP1, PRKG2, APOB, DDX17, ATP2B4, GBF1, CD46, KIFAP3, NT5C2, GLE1, CD3D, CD3E, BTN3A1, CD36, LRCH1, COLQ, BAZ1B, LCA5, MLLT10, UBR5, PRDM5, RAB17, NEK9, EXT1, CHGB, GPATCH11, MYH7B, SUDS3, GLG1, FUS, CHKA, RBP7, NEK3, OAS3, MME, OAS2, AFAP1L1, ACAT1, CD74, CALU, SEMA5B, ACE, STX16, LETMD1, FBXO3, FBXO9, KLF5, COL18A1, CNKSR2, NOTCH2NL, CELSR3, ALMS1, CIDEA, RNF207, C10ORF76, AFG3L2, LARP4B, HNRNPA1, EPHA3, DDX6, EPHA4, EPHA7, SEMA6D, PTC3, SUPT16H, BEGAIN, KAT6B, NCOR1, TCF12, KAT6A, ZMAT1, PPARA, NRP1, GNL3L, ZEB2, ZEB1, TERF2IP, CANX, ZBTB38, DIP2A, AP2B1, CCNY, SEMA3A, GOLGA4, GOLGA3, GOLGA2, RBBP4, GZMA, LENG8, ARRDC3, ZBTB25, EFHC1, RAB11FIP3, ADM, PTGDR, PLA2G6, NPPB, LIN54, RAB11FIP1, NPPA, CLUAP1, KIZ, TF, PARD3, PPFIA4, ATG14, PPFIA1, ATG13, COL3A1, CXCL9, ZBTB16, FAM117B, NR1D1, NR1D2, ETV1, PRKAA2, FYCO1, ETV5, BAZ2A, ETV4, MYO5B, FYB, CAP2, DLGAP4, BIRC7, HSPG2, BIRC6, NPR3, SNAI2, MSRB3, COG3, C4ORF46, TOM1L2, SVIL, SLC16A9, KIF20B, YWHAQ, ATP6V0A1, CHN2, PTCH1, APBB3, UBXN7, GOLGB1, F2RL2, MKRN1, SEPT2, FOXO3, VIPR1, GDNF, SETX, RAD21, ROBO1, GATA6, TRIM44, PDGFC, PDGFD, CEP85, TUB, SMCR8, PLXNB2, TOR1AIP1, TRIM41, MFGE8, NEBL, CBLN1, FNBP1L, RIOK3, NBR1, AKAP6, SLU7, SEPT6, ERC1, CLIP4, DST, SEPT7, ANKFY1, SEPT8, PACS1, ZNF844, TNFAIP8L1, CEP95, SNX8, PEAK1, CIART, ITGB5, RABGAP1L, ITGB1, ZMYND8, KLHDC10, BLOC1S6, EIF3A, EIF3E, LMTK2, EIF3L, PLXND1, BMF, FN1, RHOBTB3, EEF1A1, CFLAR, BMX, FOXP2, SREBF2, EIF4B, ITGA9, PLEKHA5, UACA, ULK1, NEDD4, ULK2, MTR, SPTBN1, ANTXR1, FAM84B, IFI6, COPA, AEBP1, FOXP1, IGFBP7, ARHGAP17, CCDC36, PDCD4, SYNPO2L, LARP1, ARHGAP21, FUBP1, FUBP3, CXCR4, BOK, MKL2, TPR, TNIP1, ELMSAN1,	2.5 x 10 <sup>-17</sup>

SHC4, ADIPOR2, PRKCH, UBE2H, ARHGAP24, NLRP1, MFN2, EYA1, ARHGAP32, ARHGAP33, XPC, TMEM182, CEMIP, KLHL11, PRNP, CUX1, MATR3, EXOC6B, SHCBP1, TNC, AKAP9, CYTH3, MAP3K7CL, GPR1, TRIB2, TMEM159, MTM1, ERCC5, TUBGCP6, ERCC6, MAP3K3, OXCT1, SAFB, COMP, POU2F2, CAMK2D, NFAT5, PALM3, TNN, MTCL1, CAMK2B, MR1, TNRC6B, PLA2R1, TNRC6A, CRIM1, PIK3R1, GPR107, APC, NUP153, IL2RB, UBE4A, L3MBTL1, UBE4B, NFASC, TMIM4, WSB1, VWF, IRF6, CEP68, ATXN7, TMEM43, CSGALNACT2, IGFBP2, ARAP3, IGFBP3, LTBP1, DBF4B, LTBP2, LTBP3, LTBP4, SLC9A3, RPL15, STRN, INTS3, CLK1, MXI1, GOLGA80, CITED2, CTNNA1, CCDC141, PGR, ACBD3, FAP, CLK4, GIT2, LUC7L3, PLS3, PTPRM, GBP5, ROCK1, MAGI1, RXRB, MPDZ, SKP2, HMG20A, SPIRE1, MAGED2, CTNNA1, CTNNA3, BCL2L11, MYO18B, MAGEE1, FCHSD2, ZZZ3, VGLL2, ATP1F1, VGLL4, GRAP2, SCAF8, MYO18A, ZNF41, CCDC93, HLA-DRB1, MST1, UBA7, RUNDC3A, KCNJ2, NPHP3, ZNF224, TCF4, DVL3, ODC1, GPD1, RANBP17, PPF1BP1, KLF15, ZNF627, FXR1, KCNJ4, SYNE1, ZNF217, PENK, MAP2, CMYA5, FAM161A, MAP4, SYTL5, ZNF385B, MAP7, TNK2, SLC9A1, FAM3C, TRPV3, COPB2, RRN3, MAPT, GUCY1A3, SYNJ2, ANGPT1, DPP4, ZNF281, SRPK2, FMNL3, CMKLR1, MICAL2, ARHGFE6, TTC37, MICAL3, TNMD, TLE4, FOSB, BBS10, MXD4, WDR48, PJA2, CCND1, PLEKHH2, CCND2, NAB2, SRGAP3, GUCY1B3, GNB4, GRAMD1C, ENOX1, TBC1D8, TBC1D9, FHL2, NUMA1, MYOM2, PDE1C, SOS2, CSDE1, KCNE1, BUB1, PER2, WIPF3, TBC1D4, PER1, LIMD1, MYOM1, PER3, FBXW11, RASA1, TRIP12, ZNF266, DGKI, MARCH6, VAT1L, RASSF4, RPS6KA2, ZNF862, ZBTB4, MYCBPAP, SPG11, HTR2B, ZBTB1, MPHOSPH8, ASPN, MMS19, XPO1, MAU2, RBM5, LNX2, OSGIN2, PDE3B, KANK1, KANK2, VCL, PRKAR2B, AAK1, PUM1, CTDSP2, ASPH, INSR, RBL2, CECR1, EEF2, ACTN2, ARID1B, DIS3L, IRS1, DDI4, COG1, TNFAIP3, SLC40A1, BBS4, HMGB2, KCNA4, ANLN, SESN1, DOCK1, HNRNPK, TEF, MBNL3, ANGPTL2, DDX42, HCN2, TAF1, VAV3, NIN, EFEMP1, SMG7, DOCK9, SMG1, WHSC1, MYL12A, WIPI1, RBMX, SHANK3, SAFB2, TNFSF10, CRBN, TSC1, ZNF417, PRKAR1A, ADAM22, NKG7, HNRNPH1, XPO7, NOMO2, MYH10, CYB5R1, ARID4B, UCHL1, WWC2, ZKSCAN1, ZKSCAN3, ZFYVE16, DDX60, WWC3, OIT3, DLG5, KDM5B, TRPM4, TRPM7, ESR1, CDC5L, KIDINS220, HLTf, ZFR, CCNL2, UFL1, RECQL, IPO7, PPM1K, LIMCH1, IPO5, INPP4B, INPP4A, ABLIM1, KMT2E, KMT2D, KMT2A, KMT2C, ACCS, CTF1, WBP11, NFYA, CDH2, NR3C1, CALCOCO1, CDH5, ESYT3, ADPRHL1, IGF1R, TSC22D3, ANXA9, HSPA2, CHD2, KDM3A, ADAMTS12, SH2B1, CHD6, COL8A1, CHD5, HBB, NES, NCDN, COL13A1, SLC12A4, NF1, RCAN1, DBI, SMC4, LEP, RASL11B, IFIT2, PPP1R9A, CCDC113, ACE2, JAK1, ZRANB1, JAK2, APAF1, TBL1X, SEC31A, SYT2, ADCY6, PTPN21, RNF216, POSTN, ERLEC1, KIF13A, NOV, GET4, HOOK2, TRAK2, GAB2, HTRA1, GAB1, CFH, STAM, RAPGEF4, BCL7A, KIF13B, PAN2, SLC12A6, POLH, EFN2, KIAA0141, VASH1, RFC1, RHCG, HUWE1, NAV2, CX3CR1, GIGYF2, TBC1D8B, SRSF11, PFKFB1, ASAP2, ITGA10, ASAP1, ASB15, ASB18, STX16-NPEPL1, MACF1, SERINC1, CEP170, AGRN, BMP4, RGPDP8, OSBPL2, SMAD9, SMAD7, SMAD6, OSBPL7, CREBBP, PTPN14, SMAD4, YTHDC1, MYOZ1, SMAD1, SMYD2, ECM2, PTPN11, ABCG2, LAMA2, NOTCH2, LAMA4, SFRP4, NOTCH4, POF1B, AHS2, CRYM, BMP6, ADAR, SLC15A2, TBX20, MITF, WASF2, WBP1, WBP2, ANKRD17, DYNC1H1, TOP2B, THRSP, ZFYVE1, IP6K2, TBX15, RBM41, POGZ, VEZT, SPEN, SGCG, RBM39, ORMDL3, ADAM12, TBX18, USP6, SHROOM2, ABTB2, ABTB1, WTIP, POLR2A, CYLD, PLCL1, STAT4, FAT4, SQSTM1, FAT1, GATAD2B, BCL9L, HBP1, SNRNP70, THBS2, THBS4, TBX6, BAIAP2L2, MCF2, TBX2, STAT1, FZD4, FZD7, INMT, CAPRIN2, STAT2, TENM4, SNRNP44, ANKRD44, TJP1, COL19A1, TENM2, PHF21B, CALM3, TOB2, PYGB, TP53INP1, THRA, THRB, SLC6A4, ANKRD1, UBQLN1, KLHL3, CIPC, TIAM1, SRRM2, SRRM1, ARGLU1, SATB1, SNRPN, KIAA0753, MOXD1, MAP4K4, TNNT3, PLCE1, TNS1, USO1, COL24A1, ZFAND5, CACUL1, MRAP2, NAPB, SOX6, SOX9, DERL3, RASAL2, PPP1R16B, SLC30A2, CLASP1, RUNX2, HECTD1, LPL, LSMEM1, DIXDC1, TBC1D2B, ZMYM4, CKAP5, EPHX2, MAFK, PRICKLE1, PLCG1, TXNDC16, GLS, ZNF83, PYROXD1, PCGF5, CTTN, KCNQ4, KCNQ3, SLK, GSN, SDPR, ARHGAP1, NCKIPSD, CYS1, KIAA0907, ELP2, NRXN3, CCDC88C, LDB1, GPRASP1, RUNX1T1, SACM1L, EIF4G2, SBF2, XIRP2, HIPK2, ZNF711, LUM, USP9X, CD247, RSAD2, NFIX, NPAS1, RGS11, MOAP1, HAND1, CENPA, PTN, MSI2, TNPO2, FGFBP2, MSH3, EDA2R, FRMPD4, SUN1, SPARC, SON, SP3, MYPN, SETD7, SH3D19, SETD2, TSSK4, LIPE, NTM, F2R, SPTAN1

<p>GO:0044877</p> <p>Macromolecular complex binding</p> <p>164</p>	<p>ASPN, HMG1, MEF2A, HMG2, THRA, THRB, LTBP4, SLC6A4, STRN, FOXO3, CITED2, CTNNA1, NOV, RAD21, GATA6, FAP, AAK1, GIT2, PATZ1, PLS3, TUB, SATB1, RBL2, CD3E, FMR1, MED12, EEF2, MFGE8, ACTN2, CTNNA1, IRS1, CTNNA3, NEBL, EP300, CD36, BAZ1B, LCA5, DST, SMARCA2, MYO18A, HLA-DRA, HLA-DRB1, TNRC18, ITGA10, SOX9, ITGB1, ZMYND8, CD74, ABI3BP, BLOC1S6, MACF1, RNF169, CLASP1, LETMD1, TCF4, RUNX2, FN1, CFLAR, SMAD7, MYO1B, SMAD6, SMG7, CREBBP, MYO1D, SMAD4, WHSC1, SMYD2, COL16A1, ECM2, EHMT2, RBMX, ATM, PTPN11, EIF4B, ITGA9, SYNE1, COL14A1, CDKN1B, PKP2, ULK1, PTCDD3, MSL1, SMARCC2, SUPT16H, SPTBN1, ADAM22, ANTXR1, KAT6B, RERE, MYH10, PPARA, HP1BP3, EZH1, WASF2, ZEB1, HLA-DMB, ZKSCAN3, WBP2, ANKRD17, AP2B1, NISCH, MAPT, TPR, FGF1, TOP2B, USP13, ELP2, RBBP4, LDB1, MBD6, ESR1, ADNP, TLE4, NEXN, CCND1, DOK5, ASH1L, GNB4, SHROOM2, KMT2A, SSFA2, LUM, COL3A1, NR3C1, CALCOCO1, CD9, IGF1R, MTM1, ERCC6, SORBS1, CENPA, COMP, SAFB, GATAD2B, WIPF3, PER1, TNN, KDM3A, WAC, PRKAA2, SNRNP70, KDM3B, GPNMB, PIK3R1, THBS4, FYB, NES, SVEP1, L3MBTL1, IGF2, STAB2, SPARC, SNAI2, AJUBA, VWF, CDH13, PPP1R9A, SP3, SVIL, ATXN7, PHF21B, SECISBP2L, SETD7, PTCH1</p>	<p><math>1.0 \times 10^{-5}</math></p>
<p>GO:0043167</p> <p>Ion binding</p> <p>449</p>	<p>DBF4B, LTBP1, LTBP2, LTBP3, LTBP4, CYP2D6, RORB, ITS2, ZNF638, ZNF251, PGR, HMCN1, GIT2, ZNF106, PATZ1, PLS3, CDH23, ROCK1, RXRB, FAXDC2, VPS41, ZNF793, MECOM, ZNF235, ABAT, ZZZ3, UNC13A, ZNF41, ZNF610, DIDO1, ZNF618, P3H2, ARIH2, ZNF224, KLKB1, LFNG, ZNF528, ZC3H13, ATP11A, ACACB, KLF15, ZNF627, PCDH18, ZNF217, ZNF211, NLGN4X, SYTL5, PAPP2, ZNF385B, TNK2, CHRNE, RERE, CDC42BPB, CYP2J2, ZNF532, NUA1, ZNF9X1, ATP10A, ATP10D, ZNF518A, ZNF345, ZNF491, GATAD1, USP13, DPEP2, ZNF281, SRPK2, MICAL2, MICAL3, ZNF337, ADNP, MMP16, ZNF334, VPS8, ZSWIM5, PJA2, MAST4, ZNF550, GUCY1B3, USP22, ZNF740, HLA-DQB1, ZMYND12, ZNF275, TBC1D9, FHL2, ZNF366, CBLL1, ZNF169, MTMR3, SCAF11, DGKE, PDE1C, SORBS2, PKD2, LIMD1, ZNF471, ZNF266, MTMR4, SLC8A1, ZNF160, PPP1R10, DGKI, STAB2, TRIM23, MARCH6, TRIM22, PCK1, CDH13, VAT1L, NRAP, PLSR4, RPS6KA2, ZSCAN30, ZNF862, CDH19, MCFD2, ZBTB4, ZNF462, CP, ZBTB1, LRP4, CDH11, USP44, ASPN, LNX2, ADH1C, RBM5, ZXDC, PDE3B, ADH1B, LMO7, MIPEP, IDS, CTDSP2, ASPH, ANKZF1, RNF146, ZNF594, ZNF441, CECR1, ACTN2, CDO1, EP300, MARC1, ATP9A, RELN, TNFAIP3, FGD1, FBXO40, ADAMTSL3, GLUD1, KCNA4, SESN1, TTC3, NR2C1, PDXDC1, ZNF322, CSAD, ZNF596, RNF169, MBNL3, ZNF599, UNKL, VAV3, NIN, EFEMP1, SYT12, NR4A2, SMG1, WHSC1, MYL12A, EHMT2, WIPI1, SHANK3, MAN2C1, TNFSF10, CRBN, DSG2, EBF3, ZNF417, FREM1, FABP4, ZNF318, HDAC9, SYT17, ATP7B, PC, ZKSCAN8, ZKSCAN1, ZKSCAN3, ZFYVE16, EXOG, PDE8B, OIT3, ZCCHC5, KDM5B, LOXL1, TRPM7, ESR1, PCDH9, HLT, ZFR, PPM1K, LIMCH1, CAPN14, ERN1, CA3, KMT2E, CYP2U1, ABLIM1, KMT2D, KMT2A, GALNT5, ACCS, KMT2C, NR3C1, CDH2, CDH5, PKD1L2, ESYT3, ADPRHL1, COL9A1, SMO2, ANXA9, KDM3A, KDM3B, XAF1, ADAMTS12, CHD5, HBB, EHD3, WDFY3, NF1, CBL, COL5A2, ADIPOQ, AJUBA, ICK, ACE2, ZRANB1, JAK1, JAK2, DSC1, PNMA3, SYT2, ADCY6, RNF216, POSTN, DNASE1L3, RNF213, ATP2B4, GAB2, GBF1, NT5C2, POLH, HERC2P3, BAZ1B, UBR5, MLLT10, PRDM5, NEK9, EXT1, TBC1D8B, NEK7, FUS, CHKA, NEK3, ASAP2, OAS3, ASAP1, MME, ITGA10, OAS2, ACAT1, PPAT, CALU, PLAGL1, ACE, MACF1, AGRN, COL18A1, KLF5, ZBTB47, SMAD9, CRIP3, SMAD7, SCD, SMAD6, CREBBP, FTO, SMAD4, NOTCH2NL, CELSR3, RNF207, SMYD2, SMAD1, ATP13A3, AFG3L2, PXDNL, NOTCH2, NOTCH4, HEPH, CLCN6, KAT6B, ADAR, KAT6A, ZMAT1, ARSB, PPARA, NRP1, HELZ, ZEB2, ZEB1, CANX, ZBTB38, MBTD1, TOP2B, ZFYVE1, POGZ, ZNF354C, ZCCHC18, ZCCHC14, ZBTB25, EFHC1, RAB11FIP3, ASH1L, ADAM12, YPEL1, TF, YPEL2, COL3A1, YPEL3, ZBTB16, WTIP, POLR2A, CYLD, NR1D1, NR1D2, SQSTM1, FAT4, FAT1, GATAD2B, PRKAA2, BAZ2A, THBS2, FYCO1, THBS4, RBM20, MEX3B, HSPG2, BIRC7, SNAI2, MSRB3, TENM2, PHF21B, CHN2, CALM3, PYGB, MKRN1, THRA, SLC6A1, THRB, SLC6A4, ZNF827, TRIM52, GATA6, TRIM44, TRIM45, RNF38, SCUBE2, TRIM41, MOXD1, NEBL, PLCE1, CHPF, RIOK3, NBR1, SLU7, ANKFY1, DST, FRAS1, ZFAND5, ZNF844, ZMYND8, ITGB1, PCDHAC2, TRIM73, TRIM66, PLCH1, HEG1, CYP19A1, HECTD1, ZMYM4, EPHX2, BMX, KCTD7, FOXP2, SALL3, ITGA9, PHF3, PLEKHA5, PFCG1, PRICKLE1, NEDD4, MTR, ANTXR1, ZNF137P, AEBP1, ZNF83, ZNF81, PCDHGA3, PCDHGA2, PCGF5, GSN, ATP8B2, PHC1, HMGCLL1, WBSCR17, NRXN3, ADIPOR2, RUNX1T1, PRKCH, EYA1, ZNF711, PRNP, PROS1, MATR3, RSAD2</p>	<p><math>6.7 \times 10^{-5}</math></p>

			ERCC5, ZNF704, MAP3K3, COMP, CYP26B1, ZNF608, DTX4, NUP153, SVEP1, L3MBTL1, SPARC, FRRS1, RNF44, SP3, CSGALNACT2, CYP4F3, ARAP3, TSSK4, IGFBP3, SPTAN1	
GO:0000989	Transcription factor activity, transcription factor binding	84	MMS19, PPARA, AEBP1, MEF2A, THRB, TBX20, YBX3, MED23, ANKRD1, ZEB1, MXI1, WBP2, CITED2, CTNNB1, TMF1, DDX17, PRMT2, MKL2, BHLHE41, KDM5B, ZNF281, ATF7IP, ELP2, TBX15, CD3D, RXRB, LDB1, RUNX1T1, MED12, TLE4, ZCCHC18, ACTN2, MED14, CDC5L, ARID1B, SPEN, MXD4, CCND1, EP300, NAB2, HIPK2, VGLL2, USP22, TBX18, SMARCA2, KMT2E, FUS, NACA, FHL2, ZNF366, HCFC2, NR3C1, WTIP, ZMYND8, CALCOCO1, NR1D1, HAND1, PER2, PER1, LIMD1, BCL9L, MAML3, TCF4, TBX6, TAF1, CREBBP, PTPN14, SMAD4, MED13L, TRIM22, AJUBA, NOTCH2, DMTF1, SMARCC2, HIF3A, PHF21B, ID4, TBL1X, HDAC9, NCOR1, TOB2, CRYM, RERE, KAT6A	$1.8 \times 10^{-4}$
GO:0003700	Transcription factor activity, sequence-specific DNA binding	145	MEF2A, THRA, THRB, ZXDC, RORB, FOXO3, ZNF251, CITED2, CTNNB1, PGR, RAD21, GATA6, PATZ1, SATB1, RXRB, HMG20A, ZNF793, MECOM, PROX2, ZNF235, EP300, MLLT10, PRDM5, MGA, VGLL2, ZNF41, HMGB2, GPBP1L1, SOX6, SOX9, NR2C1, PLAGL1, ZNF322, HNRNPK, ZNF224, TEF, TCF4, RUNX2, KLF5, ZNF528, TAF1, SMAD9, CREBZF, ZMYM4, SMAD7, SMAD6, CREBBP, NR4A2, SMAD4, KLF15, SMAD1, MAFK, SREBF2, FOXP2, SALL3, ZNF217, ZNF211, DMTF1, EBF3, ZNF137P, TCF12, RERE, CREBRF, HLF, PPARA, ZNF83, ELF1, AEBP1, BACH2, ZKSCAN8, ZNF81, FOXK1, ZNFX1, ZNF532, POU6F2, TBX20, MITF, YBX3, ZEB2, ZKSCAN1, ZEB1, ZNF518A, ZKSCAN3, ZNF345, ZBTB38, FOXS1, FUBP1, FUBP3, GATAD1, BHLHE41, KDM5B, ELMSAN1, ZNF281, TBX15, ZNF354C, RUNX1T1, ESR1, TLE4, CDC5L, FOSB, FOXJ3, HLTF, ZBTB25, ZNF334, ZNF711, TBX18, BTAF1, ZNF275, KMT2A, NFIX, NR3C1, NFYA, ZBTB16, NPAS1, STAT4, TSC22D3, HAND1, NR1D1, NR1D2, POU2F2, NFAT5, ETV1, GATAD2B, KDM3A, ZNF471, ETV5, NFATC3, ETV4, TBX6, TBX2, CBL, L3MBTL1, RCAN1, ZBED8, STAT1, SNAI2, TRIM22, STAT2, DBP, ZSCAN30, IRF6, SP3, ZBTB4, HIF3A, GOLGB1	$6.6 \times 10^{-4}$
GO:1901681	Sulfur compound binding	36	FMOD, ACADSB, NRP1, LTBP2, FGF9, POSTN, MDK, ABI3BP, ACBD5, ACBD4, NOV, OGN, ACBD3, SMOCK, APOB, SERPINE2, COMP, CFH, PTN, AGRN, GPNMB, FGF1, THBS2, THBS4, FN1, BMP4, ALDH6A1, LPL, COL13A1, CECR1, ACADL, ECM2, DBI, PRELP, NAV2, PTCH1	$8.3 \times 10^{-3}$
GO:0005085	Guanyl-nucleotide exchange factor activity	42	FGD1, DENND5A, FGF9, RAB3GAP1, AKAP9, CYTH3, ITSN2, GDNF, PTK2, TAGAP, DOCK1, GBF1, TIAM1, SOS2, CAMK2D, ANGPT1, CAMK2B, RAPGEF4, FGF1, ECT2L, IL2RB, VAV3, MCF2, ARHGEF6, DOCK9, PSD3, ARHGEF17, ACTN2, ARHGEF9, HERC1, ARHGEF12, IRS1, FNIP1, PLCE1, FNBP1L, SBF2, RIN2, JAK1, CALM3, SPTBN1, JAK2, SPTAN1	$2.9 \times 10^{-2}$
GO:0005201	Extracellular matrix structural constituent	16	HAPLN1, LUM, COL3A1, ENAM, COL15A1, COL5A2, PRELP, COL9A1, LAMA4, BGN, COL19A1, COL14A1, COMP, LAMC1, LAMB1, COL24A1	$3.2 \times 10^{-2}$
<b>Downregulated</b>				
GO:0016491	Oxidoreductase activity	53	LDHA, PTGES2, UQCRC1, NDUFB1, PRDX5, PRDX2, UQCRC1, COX5A, PRDX1, COX5B, NDUFS6, NDUFS5, CH25H, HMOX1, ATP5J, NDUFB10, COX4I1, DHRS9, ECSIT, NDUFA12, COX6C, PRDX6, AKR1B10, MDH2, UQCRB, NDUFB3, NDUFB4, GLRX5, NDUFB6, NDUFB9, COX7B, COX7C, NDUFB1, NDUFB2, ALOX5AP, ALDH1A3, IDH2, COX6B1, QSOX1, GAPDH, NDUFA4, NDUFA5, NDUFA6, COX8A, SOD1, CYB561, NDUFA1, SOD3, NDUFV3, RDH10, AOX1, AKR1B1, HPGD	$8.0 \times 10^{-9}$
GO:0004129	Cytochrome-c oxidase activity	9	NDUFA4, COX7B, COX8A, COX7C, COX6B1, COX4I1, COX5A, COX5B, COX6C	$2.0 \times 10^{-5}$
GO:0022857	Transmembrane transporter	53	ATP5D, UQCRC1, ATP1B3, GABRB3, TIMM17A, AQP4, HVCN1, UQCRC1, COX5A, KCNIP2, AQP1, SLC7A5, COX5B, AQP3, SLC1A3, SLC25A3, ATP5O, SLC25A26, ATP5J, GJD2, SLC25A4, SLC04A1, TMEM38A, COX4I1, COX6C, ADAMTS8, ATP5C1, UQCRB, SLC38A4, FXYD3, COX7B,	$6.4 \times 10^{-5}$

	activity		COX7C, ATP5G1, ATP5G3, KCNJ3, KCNA7, KCNMB1, TTYH1, COX6B1, NDUFA4, TRPC4, COX8A, TOMM40, ATP1A1, VDAC2, RHAG, CYB561, KCNJ5, ATP2A2, GRIA1, KCNN2, CACNA1G, CACNA1E	
GO:0005200	Structural constituent of cytoskeleton	14	ACTB, TUBB2B, TUBB2A, ACTG1, TUBB, PPL, TUBB6, TUBA3D, TUBA4A, TUBA3E, SYNM, TUBG1, TUBA1C, TUBB4B	$8.0 \times 10^{-5}$
GO:0022892	Substrate-specific transporter activity	54	ATP5D, UQCRC1, ATP1B3, GABRB3, TIMM17A, AQP4, HVCN1, UQCRC1, COX5A, KCNIP2, AQP1, SLC7A5, COX5B, AQP3, SLC1A3, APOD, SLC25A3, ATP5O, RAMP1, ATP5J, CPTP, SLC25A4, SLCO4A1, TMEM38A, COX4I1, COX6C, ADAMTS8, ATP5C1, SLC27A6, UQCRB, SLC38A4, FXD3, COX7B, COX7C, ATP5G1, ATP5G3, KCNJ3, KCNA7, KCNMB1, TTYH1, COX6B1, NDUFA4, TRPC4, COX8A, TOMM40, ATP1A1, VDAC2, RHAG, KCNJ5, ATP2A2, GRIA1, KCNN2, CACNA1G, CACNA1E	$2.8 \times 10^{-4}$
GO:0008307	Structural constituent of muscle	7	MYL6, TCAP, SYNM, TPM2, CSRP3, TPM4, MYL9	$6.9 \times 10^{-3}$
GO:0051920	Peroxiredoxin activity	4	PRDX6, PRDX5, PRDX2, PRDX1	$7.4 \times 10^{-3}$
GO:1901681	Sulfur compound binding	15	FGFR2, PTGES2, CCL2, ADAMTS15, ELANE, CCL8, SOD3, RSPO4, CEL, ADAMTS8, SAA1, CRISPLD2, SERPINA5, SERPIND1, THBS1	$2.3 \times 10^{-2}$

Gene Ontology (GO) hierarchy containing Molecular Function (MF) sub-ontology.

\**p value* was corrected by the accepted Benjamini-Hochberg correction method.

**Supplemental Table 4. GO Cellular Component analysis of significantly changed categories, comparing HF vs HD DEGs.**

Category	GO-CC Term	Count	Gene symbol	Benjamini*
<b>Upregulated</b>				
GO:0030054	Cell junction	178	ENAH, SEPT2, CADM1, SYT2, GRIK4, RPL15, STRN, LMO7, AQP7, CTNNA1, VCL, NOV, USP53, KIAA1462, HMCN1, TIAM1, FAP, CD46, GIT2, SAMD4A, ARGLU1, PTPRM, MAGI1, CD3E, MPDZ, EFNB2, FMR1, TANC1, PSD3, EEF2, ACTN2, SSPN, CTNNA1, CTNNA3, MAPK1, CBLN1, TNS1, COLQ, FNBP1L, SIPA1L1, USO1, AKAP6, ERC1, VAMP1, SEPT7, DST, GIGYF2, UNC13A, HDLBP, PEAK1, PTK7, MME, ITGB5, ASAP1, ANLN, AFAP1L1, KCNJ2, ITGB1, PDXDC1, PTK2, HNRNPK, MACF1, EIF3E, STX16, OBSL1, HEG1, CLASP1, PABPC1, AGRN, DIXDC1, SMAD7, CKAP5, MYO1B, SYT12, DOCK9, PPFIBP1, SEPT11, SHANK3, DDX6, EPHA4, KCNJ4, P2RX7, CASS4, PLCG1, DSG2, PKP2, NLGN4X, SPTBN1, POF1B, TNK2, PDZD2, CHRNE, SLC9A1, CDC42BPB, NRP1, WASF2, FERMT1, YBX3, GABBR1, ARHGAP17, SPRY4, LARP1, ARHGAP21, CD96, CTTN, SLK, GSN, CXCR4, ARHGAP1, LRRFIP1, DLG5, MKL2, AHNAK, GOLGA3, DPP4, SHC4, GOLGA2, CLMP, PCDH9, PRKCH, VEZT, ARHGAP24, NEXN, PJA2, EPB41L2, EIF4G2, ARHGAP32, CCND1, XIRP2, EPB41L5, ASH1L, FHOD1, PARVA, PARD3, SHROOM2, TNC, PPFIA1, FHL2, CDH2, WTIP, CDH5, CD9, SORBS1, SORBS2, FAT1, PKD2, CAMK2D, LIMD1, SNAP23, SNAP25, PIK3R1, EHD3, APC, NOX4, FYB, SLC8A1, BAIAP2L2, COL13A1, CBL, HSPG2, NFASC, STAT1, FZD4, AJUBA, CDH13, TJP1, PPP1R9A, TMEM47, NRAP, TENM2, CEP68, SVIL, YWHAQ, JAK1, DSC1, HTR2B, PHLDB2, SPTAN1	8.8 x 10 <sup>-8</sup>
GO:0031012	Extracellular matrix	84	ASPN, CTHRC1, AEBP1, PODNL1, LTBP1, COL21A1, GLDN, LTBP2, FGF9, LTBP3, IGFBP7, LTBP4, ENAM, POSTN, CANX, CHAD, NOV, OGN, HMCN1, SERPINE2, HTRA1, SERPINE1, FGF1, DYNC1H1, LOXL1, COL22A1, EEF2, MMP16, MFGE8, PRELP, BGN, COLQ, NAV2, F3, RELN, LAMC1, COL24A1, SSC5D, DST, FRAS1, GLG1, FMOD, ADAMTSL3, TNC, LUM, COL3A1, ABI3BP, P3H2, COL9A1, SMO2, HNRNPK, COMP, LEFTY2, PTN, TNN, AGRN, ADAMTSL2, COL8A1, LAMB1, THBS2, DPT, FN1, THBS4, COL18A1, BMP4, LPL, HAPLN1, NES, EFEMP1, COL15A1, NTN4, HSPG2, SPARC, ECM2, COL16A1, COL5A2, EMILIN3, LAMA2, VWF, OMD, LAMA4, COL19A1, COL14A1, FREM1	2.1 x 10 <sup>-7</sup>
GO:0043226	Organelle	1196	LDHB, MEF2A, CRHBP, MED23, RORB, ITSN2, OGN, EPC2, HMCN1, SERPINE2, BTBD1, SERPINE1, BTBD3, ZNF106, PATZ1, OGT, DHX35, CDH23, LRRC6, GATM, FAXDC2, VPS45, MYLK3, MED12, VPS41, PKHD1L1, MED14, MYH7, ZNF793, PROX2, TMEM130, MECOM, PIK3IP1, PTPDC1, HLA-DQA2, HLA-DQA1, MAPK1, DCAF8, F3, SIPA1L1, BACE1, ABAT, HLA-DRA, KIAA1109, TNRC18, MTX3, PABPC4, CNTRL, GOLGA6L3, ARIH2, KLKB1, OBSL1, CCSER2, FGL2, PABPC1, PPP2R2B, LFNG, SGIP1, SPP1, ZNF528, ZC3H13, KIF3B, ACER2, ATP11A, NDC80, ACACB, COL16A1, GOLGA6L4, SEPT11, ATM, FNIP2, SRSF5, COL14A1, PKP2, NLGN4X, DHX40, SPNS1, TMEM119, RERE, CDC42BPB, CREBRF, ELF1, SPIN1, CYP2J2, BACH2, FGF9, ZNFX1, ZNF532, NUAK1, EZH1, ATP10A, YBX3, BNIP3, ATP10D, ZNF345, ASAH1, DDI2, NISCH, QKI, USP11, BHLHE41, GATAD1, FGF1, PRSS35, ATF7IP, ANP32E, PRSS50, ADNP, ZNF337, MMP16, ARHGEF12, VPS8, ZNF334, EPB41L2, CARD11, IGFN1, CLIC5, EPB41L5, PLXDC2, MGEA5, GRIP2, SORT1, ZNF550, USP22, ZNF740, PARVA, HLA-DQB1, FMOD, C7, RABGAP1, LIN9, EPB41L4A, ZNF366, CBLL1, AZIN2, ZNF169, SF3B1, MTMR3, SCAF11, ACSL1, NHLRC3, CFAP58, SORBS1, SORBS2, FMO2, FMO3, PKD2, PKD1, ARMCX3, WAC, SNAP23, FAM156B, SNAP25, MTMR4, PHLDA1, PDK1, SLC8A1, ATRN, ZNF160, IGF2, STAB2, TRIM23, TRIM22, APPL2, CDH13, DUSP2, DUSP1, NRAP, PLSCR4, ZSCAN30, USP47, CP, PHLDB2, LRP4, DUSP6, LRP5, USP44, CDH11, ENAH, PRPF4B, ZXDC, LMO7, AZGP1, SEZ6L2, IDS, MDFIC, ANKZF1, RNF146, SAMD4A, ZNF594, FMR1, RMI2, XRR1, PKIA, BICD1, TACC2, PNPLA7, EP300, MARC1, ATP9A, MGA, STMN1, NEU3, VAMP1, SMARCA2, CCDC8, FGD1, HDLBP, SETD1B, GLUD1, ABCA6, TTC3, PDXDC1, NR2C1, ZNF322, PTK2, CERS1, ZNF596, RNF169, ZNF599, UNKL, PHACTR2, CREBZF,	1.8 x 10 <sup>-7</sup>



MYO1B, SYT12, MYO1D, NR4A2, EHMT2, FBXO38, NREP, P2RX7, MAN2C1, CASS4, CDKN1B, DSG2, ST8SIA6, EBF3, DYRK1A, SMARCC2, FABP4, FBXO32, ZNF318, HDAC9, PDZD2, SYT17, ATP7B, PC, DENND5A, HP1BP3, HLA-DMB, SPRY4, TMF1, SPRY2, PRMT2, SLC35D1, EXOG, LRRFIP1, AHNAK, DDB1, NEXN, ACADL, KIF1B, CAPN14, SNRNP200, ERN1, SPEF2, TXNRD1, MAPRE2, DMC1, SNX13, FHOD1, CYP2U1, FKBP6, SSFA2, SLC47A1, SHQ1, COL9A1, CD9, TMED4, LEFTY2, VPS35, XAF1, FIBIN, GPNMB, NFATC3, EHD3, VPS39, NOX4, WDFY3, NFRKB, CBL, ZBED8, ADIPOQ, COL5A2, AJUBA, ICK, HIF3A, DSC1, ID4, SNX33, SNX30, HMGN1, PNMA3, PNMA2, HMGN2, CADM1, RAB3GAP1, PRKG2, APOB, DDX17, ATP2B4, GBF1, CD46, KIFAP3, GLE1, PLD4, TANC1, FRY, CD36, BAZ1B, LCA5, MLLT10, UBR5, RAB17, PRDM5, NEK9, EXT1, CHGB, GPATCH11, MYH7B, SUDS3, NEK7, GLG1, FUS, NEK3, OAS3, MME, OAS2, AFAP1L1, ACAT1, TK2, CD74, CALU, PLAGL1, ACE, STX16, LETMD1, FBXO3, MAML3, KLF5, COL18A1, CNKSR2, ZBTB47, FTO, ALMS1, CIDEA, AFG3L2, LARP4B, HNRNPA1, CIDEA, EPHA3, DDX6, EPHA4, DMTF1, PTC3, SUPT16H, KAT6B, CLCN6, NCOR1, TCF12, ALG13, KAT6A, ZMAT1, ARSB, PPARA, NRP1, COL21A1, FERMT1, GNL3L, ZEB2, HELZ, ZEB1, TERF2IP, CANX, FOXS1, TTLL3, ZBTB38, DIP2A, AP2B1, MBTD1, CCNY, GOLGA4, GOLGA3, GOLGA2, RBBP4, GZMA, SPECC1, MBD6, ARRDC3, ZBTB25, SLC26A4, EFHC1, RAB11FIP3, BGN, PLA2G6, LIN54, RAB11FIP1, NPPA, CLUAP1, KIZ, TF, PARD3, ATG14, COL3A1, ATG13, ZBTB16, CPED1, SAMD9L, NR1D1, PLIN1, NR1D2, ETV1, PRKAA2, FYCO1, ETV5, BAZ2A, ETV4, MYO5B, FYB, CAP2, PLA2G15, BIRC7, HSPG2, BIRC6, NPR3, SNAI2, MSRB3, COG3, TOM1L2, GFPT1, SVIL, KIF20B, YWHAQ, ATP6V0A1, PTCH1, APBB3, UBXN7, GOLGB1, SEPT2, ZNF827, FOXO3, DEX1, SLC25A20, RAD21, C7ORF55-LUC7L2, GATA6, TRIM45, SLC25A29, SLC25A27, PDGFC, PDGFD, TUB, ALDH6A1, CEP85, C2CD2, SMCR8, PLXNB2, TOR1AIP1, TRIM41, MFGE8, METTL7A, NEBL, CFAP70, SLC25A30, CHPF, FNBP1L, NBR1, AKAP6, SLU7, SEPT6, ERC1, GBP4, DST, SEPT7, ANKFY1, SEPT8, PACS1, ZNF844, CEP95, SNX8, PEAK1, CIART, ITGB5, RABGAP1L, ITGB1, ZMYND8, KLHDC10, BLOC1S6, EIF3A, TRIM66, EIF3E, MTPN, LMTK2, EIF3L, BMF, CYP19A1, FN1, RHOBTB3, EEF1A1, AK4, FOXP2, SREBF2, SALL3, OMD, FAM198B, PLEKHA5, UACA, ULK1, NEDD4, ULK2, TANGO2, SPTBN1, ANTXR1, ZNF137P, IFI6, COPA, AEBP1, HECW2, FOXK1, POU6F2, IGFBP7, AMT, KIAA0430, ARHGAP19, PDCD4, SYNPO2L, LARP1, ARHGAP21, FUBP1, FUBP3, HEATR5B, CXCR4, BOK, MKL2, TPR, TNIP1, PHC1, ELMSAN1, PARM1, PRK2H, FOXJ3, UBN2, ARHGAP24, NLRP1, MFN2, EYA1, ARHGAP32, XPC, ARCN1, CEMIP, CUX1, PRNP, PROS1, MATR3, SHCBP1, DNAH3, AKAP9, HCFC2, DNAH1, CYTH3, MAP3K7CL, TRIB2, MTM1, C5ORF46, ERCC5, TUBGCP6, ERCC6, COMP, OXCT1, SAFB, POU2F2, CAMK2D, NFAT5, MTCL1, CAMK2B, SLC25A45, MR1, TNRC6B, PLA2R1, TNRC6A, PIK3R1, CRIM1, DPT, GPR107, APC, NUP153, UBE4A, UBE4B, L3MBTL1, NFASC, TMBIM4, VWF, IRF6, CEP68, ATXN7, TMEM43, CSGALNACT2, ARAP3, IGFBP2, IGFBP3, GOLGA8T, GOLGA8R, DBF4B, KIAA0556, LTBP2, LTBP3, LTBP4, SLC9A3, RPL15, CYP2D6, GOLGA8M, STRN, GOLGA8K, INTS3, GOLGA8J, PNISR, ZNF638, CLK1, MXI1, GOLGA8Q, ZNF251, ACBD5, GOLGA8O, CTNNB1, CITED2, GOLGA8N, CCDC141, PGR, ACBD3, GOLGA8B, GOLGA8H, CLK4, ACRC, GIT2, GOLGA8A, LUC7L3, PLS3, GBP5, ROCK1, MAGI1, RXRB, MPDZ, SKP2, HMG20A, SPIRE1, SSPN, CTNNA1, CTNNA3, BCL2L11, MYO18B, MAGEE1, ZNF235, FCHSD2, ZZZ3, VGLL2, ATP1F1, HLA-DPA1, VGLL4, GRAP2, SCAF8, MYO18A, TM6SF1, ZNF41, ACADSB, CCDC93, HLA-DRB1, ZNF610, UBA7, MST1, MYEF2, KCNJ2, ZNF618, DIDO1, P3H2, NPHP3, ZNF224, HLA-DRB5, HLA-DPB1, TCF4, DVL3, GPD1, RANBP17, CROCCP2, KLF15, ZNF627, FXR1, KCNJ4, SYNE1, ZNF217, ZNF211, MAP2, CMYA5, FAM161A, MAP4, SYTL5, ZNF385B, PAPP2, MAP7, TNK2, RANBP10, SLC9A1, HLF, FAM3C, NAP1L3, ZNF518A, BOD1L1, CFHR1, COPB2, RRN3, MAPT, ZNF491, SERTAD4, SYNJ2, ANGPT1, DHTKD1, DPP4, ZNF281, SRPK2, CLMP, MICAL2, TTC37, MICAL3, TNMD, TLE4, FOSB, BBS10, MXD4, WDR48, PJA2, CCND1, XPR1, PLEKHH2, CCND2, NAB2, GNB4, GUCY1B3, KIAA1429, ZNF275, NACA, FHL2, NUMA1, MYOM2, CRISPLD1, PDE1C, CSDE1, KCNE1, BUB1, PER2, WIPF3, TBC1D4, PER1, ZNF471, LIMD1, MYOM1, PER3, FBXW11, TRIP12, ZNF266, CES2, COL15A1, PPP1R10, MXRA8, DGKI, MARCH6, MXRA5, PCK1, RPS6KA2, ZNF862, MCFD2, ZBTB4, ZNF462, SPG11, ZBTB1, MPHOSPH8, MMS19, XPO1, MAU2, RBM5, PDE3B, MIPEP, KANK1, KANK2, VCL, PRKAR2B, AAK1, DDX24, ST3GAL6, PUM1, CTDSP2, ASPH, GCOM2, INSR,

			<p>NMNAT2, RBL2, ZNF441, PSD3, CECR2, EEF2, ACTN2, ARID1B, DIS3L, IRS1, TRIQK, DDIT4, COG1, TNFAIP3, SLC40A1, BBS4, HMGB2, LRRCC1, SLC38A11, ANLN, LRIG3, SESN1, SESN3, DOCK1, HNRNPK, TEF, PCYT1B, MBNL3, DOPEY1, SH3TC2, ANGPTL2, DDX42, TAF1, VAV3, NIN, EFEMP1, SMG7, GOLIM4, SMG1, WHSC1, MYL12A, WIPI1, RBMX, SHANK3, SAFB2, TNFSF10, CRBN, LOXHD1, TSC1, ZNF417, PRKAR1A, RNPC3, PABPC1L, HNRNPH1, XPO7, NOMO2, MYH10, CYB5R1, ZKSCAN8, ARID4B, UCHL1, IFI44L, ZKSCAN1, CHPF2, ZKSCAN3, LBH, ZFYVE16, DDX60, OIT3, LOXL1, KDM5B, LINC01547, TRPM4, ESR1, CDC5L, KIDINS220, HLTF, ZFR, CCNL2, UFL1, RECQL, FAM120A, IPO7, PPM1K, PPM1H, IPO5, GPAM, ABLIM1, KMT2E, KMT2D, BTA1, IRX3, IRX6, KMT2A, GALNT5, KMT2C, WBP11, NFYA, CDH2, NR3C1, CALCOCO1, ESYT3, IGF1R, TSC22D3, ANXA9, AP3M2, HSPA2, CHD2, B4GALNT3, KDM3A, KDM3B, SH2B1, CHD6, COL8A1, CHD5, HBB, NES, NCDN, ALPK3, COL13A1, SLC12A4, NF1, RCAN1, GYG2, DBI, SMC4, IFIT2, PPP1R9A, HSDL2, DBP, CCDC113, ACE2, JAK1, ZRANB1, JAK2, APAF1, TBL1X, DYNC1LI2, SEC31A, SYT2, ADCY6, PTPN21, RNF216, POSTN, DNASE1L3, RNF213, ERLEC1, KIF13A, NOV, HOOK2, TRAK2, HTRA1, CFH, STAM, KIF13B, PAN2, POLH, KIAA0141, VASH1, PRELP, RFC1, HUWE1, RHCG, NAV2, LAMC1, C11ORF24, GCNT2, GPBP1L1, SRSF11, ASAP2, ASB15, ASB18, SERINC3, SERINC5, MACF1, SERINC1, CEP170, AGRN, LAMB1, RGPD8, SMAD9, SMAD7, SMAD6, KANSL3, SCD, OSBPL7, CREBBP, PTPN14, SMAD4, YTHDC1, MYOZ1, SMAD1, SMYD2, ATP13A3, PTPN11, ABCG2, LAMA2, NOTCH2, LAMA4, SFRP4, NOTCH4, CRYM, BMP6, ADAR, TM7SF2, NARS, SLC15A2, WASF2, TBX20, MITF, WBP2, ANKRD17, ANKRD11, ZYNC1H1, TOP2B, SARDH, THRSP, ZFYVE1, IP6K2, TBX15, RBM41, POGZ, ZNF354C, LGALS12, CCCHC18, VEZT, SPEN, HERC1, SGCG, EEF1A1P5, ASH1L, SGCD, RBM39, ORMDL3, ADAM12, TBX18, USP6, YPEL1, SHROOM2, ABTB2, YPEL2, YPEL3, ABTB1, AASS, ATP6V1G2, WTIP, POLR2A, CYLD, STAT4, FAT4, SQSTM1, FAT1, FNDC1, CLEC2D, GATAD2B, PREPL, BCL9L, HBP1, SNRNP70, THBS2, THBS4, TBX6, RBM24, BAIAP2L2, MCF2, TBX2, MEX3B, RBM20, STAT1, FZD4, CAPRIN1, CAPRIN2, STAT2, TENM4, TJP1, COL19A1, HYDIN, TENM2, PHF21B, CALM3, TOB2, PYGB, TP53INP1, THRA, THRB, SLC6A4, ANKRD1, UBQLN1, KLHL3, CIPC, SRRM4, TIAM1, SRRM2, RNF38, SRRM1, ARGLU1, SATB1, SNRPN, COL22A1, KIAA0753, MOXD1, TNNT3, GOLGA2P5, PLCE1, TNS1, USO1, CELF2, COL24A1, COPZ2, CACUL1, MRAP2, NAPB, SOX6, SOX9, DERL3, B3GNT9, PPP1R16B, B3GNT5, PLCH1, SLC30A2, HECTD4, CLASP1, B3GNT2, RUNX2, HECTD1, LPL, EVC, ZMYM4, CKAP5, EPHX2, MAFK, MED13L, PLCG1, PRICKLE1, TXNDC16, MSL1, GLS, ZNF83, CPT2, ZNF81, ECHDC2, DPY19L4, PCGF5, CTTN, SLK, GSN, SH3D21, ARHGAP1, URB1, ATP8B2, NCKIPSD, CYS1, PSMD8, KIAA0907, ELP2, HMGCLL1, WBSR17, LDB1, RUNX1T1, SACM1L, MURC, SBF2, XIRP2, HIPK2, ZNF711, LUM, RSAD2, NFIX, NPAS1, ZNF704, MOAP1, HAND1, CENPA, CYP26B1, PTN, TNPO2, MSH3, FRMPD4, ANKAR, SUN1, SPARC, SON, RNF44, RPRD2, SP3, MYPN, SETD7, CYP4F3, SH3D19, SETD2, TSSK4, LIPE, F2R, SPTAN1</p>	
GO:0044420	Extracellular matrix component	30	<p>FRAS1, LTBP1, FGF9, LUM, TNC, COL3A1, P3H2, SMO2, HMCN1, PTN, AGRN, COL8A1, LAMB1, LOXL1, THBS2, THBS4, FN1, COL18A1, HSPG2, COL15A1, NTN4, SPARC, COL5A2, LAMA2, LAMA4, COL14A1, COLQ, FREM1, LAMC1, DST</p>	$3.4 \times 10^{-6}$
GO:0044422	Organelle part	793	<p>MEF2A, CRHBP, RORB, MED23, ITSN2, OGN, EPC2, SERPINE1, PATZ1, ZNF106, DHX35, OGT, CDH23, GATM, FAXDC2, VPS45, MED12, MYH7, MED14, VPS41, MECOM, TMEM130, PTPDC1, HLA-DQA2, HLA-DQA1, MAPK1, BACE1, ABAT, HLA-DRA, TNRC18, MTX3, CNTRL, OBSL1, PABPC1, PPP2R2B, LFNG, SGIP1, ZC3H13, KIF3B, ACER2, ATP11A, NDC80, ACACB, COL16A1, ATM, SEPT11, FNIP2, SRSF5, COL14A1, PKP2, DHX40, TMEM119, SPNS1, RERE, CDC42BPB, CREBRF, ELF1, SPIN1, CYP2J2, NUAQ1, EZH1, ATP10A, BNIP3, ATP10D, ASAH1, DDI2, FGF1, GATAD1, ATF7IP, ANP32E, MMP16, VPS8, EPB41L2, IGFN1, CLIC5, SORT1, USP22, PARVA, HLA-DQB1, FMOD, RABGAP1, LIN9, CBLL1, AZIN2, MTMR3, SF3B1, ACSL1, SCAF11, SORBS1, SORBS2, FMO2, FMO3, PKD2, ARMCX3, PKD1, WAC, SNAP23, FAM156B, SNAP25, MTMR4, PHLDA1, PDK1, SLC8A1, IGF2, STAB2, TRIM23, APPL2, TRIM22, CP, USP44, DUSP6, PRPF4B, SEZ6L2, IDS, MDFIC, ANKZF1, FMR1, RMI2, BICD1, TACC2, PNPLA7, EP300, MARC1, ATP9A,</p>	$1.3 \times 10^{-5}$

MGA, STMN1, VAMP1, SMARCA2, CCDC8, GLUD1, SETD1B, TTC3, NR2C1, ZNF322, PTK2, CERS1, RNF169, PHACTR2, MYO1B, MYO1D, SYT12, NR4A2, EHMT2, P2RX7, CDKN1B, ST8SIA6, SMARCC2, DYRK1A, ZNF318, FBXO32, HDAC9, SYT17, PC, ATP7B, DENND5A, HP1BP3, HLA-DMB, TMF1, SPRY2, PRMT2, SLC35D1, EXOG, AHNAK, DDB1, ACADL, NEXN, KIF1B, CAPN14, SNRNP200, ERN1, SPEF2, MAPRE2, TXNRD1, DMC1, SNX13, FHOD1, CYP2U1, FKBP6, SHQ1, CD9, COL9A1, TMED4, LEFTY2, VPS35, NFATC3, VPS39, EHD3, NOX4, WDFY3, NFRKB, ZBED8, COL5A2, AJUBA, ICK, HIF3A, SNX33, HMGN1, PNMA3, PNMA2, HMGN2, RAB3GAP1, PRKG2, DDX17, APOB, ATP2B4, GBF1, CD46, KIFAP3, GLE1, PLD4, FRY, CD36, BAZ1B, LCA5, UBR5, MLLT10, RAB17, NEK9, EXT1, GPATCH11, SUDS3, MYH7B, NEK7, FUS, GLG1, NEK3, OAS3, AFAP1L1, ACAT1, CD74, TK2, CALU, PLAGL1, STX16, LETMD1, FBXO3, MAML3, KLF5, COL18A1, FTO, CIDEA, ALMS1, AFG3L2, HNRNPA1, LARP4B, DDX6, EPHA4, PTC3, DMTF1, SUPT16H, CLCN6, KAT6B, TCF12, NCOR1, ALG13, KAT6A, ARSB, PPARA, NRP1, COL21A1, FERMT1, GNL3L, ZEB1, TERF2IP, CANX, TTLL3, AP2B1, GOLGA4, GOLGA3, GOLGA2, RBBP4, SPECC1, MBD6, ZBTB25, EFHC1, RAB11FIP3, BGN, PLA2G6, LIN54, RAB11FIP1, TF, KIZ, CLUAP1, ATG14, COL3A1, ZBTB16, NR1D1, NR1D2, PRKAA2, ETV5, BAZ2A, MYO5B, ETV4, CAP2, HSPG2, BIRC7, BIRC6, SNAI2, COG3, SVIL, YWHAQ, KIF20B, ATP6V0A1, PTCH1, UBXN7, GOLGB1, SEPT2, FOXO3, SETX, SLC25A20, RAD21, C7ORF55-LUC7L2, GATA6, TRIM45, SLC25A29, PDGFC, SLC25A27, PDGFD, CEP85, ALDH6A1, SMCR8, TOR1AIP1, TRIM41, NEBL, SLC25A30, CHPF, FNBP1L, NBR1, SLU7, AKAP6, GBP4, ERC1, SEPT6, SEPT7, DST, ANKFY1, PACS1, SNX8, CEP95, CIART, PEAK1, BLOC1S6, EIF3A, TRIM66, MTPN, EIF3E, EIF3L, BMF, FN1, RHOTB3, CYP19A1, EEF1A1, AK4, SREBF2, OMD, PLEKHA5, FAM198B, NEDD4, ULK1, ULK2, SPTBN1, ANTXR1, COPA, AMT, PDCD4, SYNPO2L, LARP1, FUBP1, ARHGAP21, BOK, TPR, TNIP1, PHC1, ELMSAN1, PARM1, UBN2, MFN2, EYA1, ARHGAP32, XPC, ARCN1, CEMIP, PRNP, CUX1, PROS1, MATR3, SHCBP1, DNAH3, DNAH1, HCFC2, AKAP9, CYTH3, MTM1, TUBGCP6, ERCC5, ERCC6, OXCT1, SAFB, POU2F2, NFAT5, CAMK2D, MTCL1, CAMK2B, SLC25A45, MR1, TNRC6A, PIK3R1, APC, NUP153, L3MBTL1, TMBIM4, VWF, ATXN7, TMEM43, CEP68, CSGALNACT2, DBF4B, KIAA0556, CYP2D6, RPL15, PNISR, INTS3, ZNF638, MXI1, ACBD5, CITED2, CTNBN1, CCDC141, PGR, ACBD3, GOLGA8B, GIT2, GOLGA8A, PLS3, LUC7L3, GBP5, MAGI1, ROCK1, RXRB, SKP2, SPIRE1, BCL2L11, MYO18B, ZZZ3, ATP1F1, HLA-DPA1, SCAF8, GRAP2, MYO18A, TM6SF1, ACADSB, HLA-DRB1, UBA7, MYEF2, DIDO1, P3H2, NPHP3, ZNF224, HLA-DRB5, HLA-DPB1, TCF4, RANBP17, DVL3, CROCCP2, FXR1, KCNJ4, SYNE1, ZNF217, MAP2, CMYA5, MAP4, FAM161A, MAP7, TNK2, SLC9A1, FAM3C, BOD1L1, COPB2, RRN3, MAPT, DHTKD1, DPP4, ZNF281, SRPK2, CLMP, TNMD, MICAL3, TTC37, TLE4, PJA2, CCND1, CCND2, PLEKHH2, GNBA4, KIAA1429, FHL2, NUMA1, MYOM2, BUB1, PER2, KCNE1, CSDE1, WIPF3, TBC1D4, MYOM1, FBXW11, TRIP12, CES2, COL15A1, PPP1R10, DGKI, MARCH6, RPS6KA2, MCFD2, SPG11, ZBTB1, MPHOSPH8, MMS19, XPO1, MAU2, RBM5, MIPEP, VCL, PRKAR2B, DDX24, ST3GAL6, CTDSP2, GCOM2, ASPH, INSR, NMNAT2, RBL2, CECR2, ACTN2, ARID1B, DIS3L, TRIQK, COPG1, BBS4, HMGB2, LRRCC1, ANLN, LRIG3, HNRNPK, DOCK1, DOPEY1, PCYT1B, DDX42, TAF1, NIN, SMG7, GOLIM4, WHSC1, MYL12A, WIP1, RBMX, SHANK3, SAFB2, CRBN, LOXHD1, TSC1, PRKAR1A, RNPC3, HNRNPH1, XPO7, NOMO2, MYH10, CYB5R1, UCHL1, ARID4B, IFI44L, CHPF2, ZFYVE16, OIT3, KDM5B, TRPM4, ESR1, CDC5L, HLTf, ZFR, CCNL2, UFL1, RECQL, IPO7, PPM1K, IPO5, GPAM, KMT2E, ABLIM1, BTAF1, KMT2D, KMT2A, KMT2C, GALNT5, WBP11, NR3C1, CDH2, NFYA, CALCOCO1, ESYT3, AP3M2, HSPA2, CHD2, B4GALNT3, KDM3A, KDM3B, COL8A1, CHD6, HBB, CHD5, NES, COL13A1, SLC12A4, NF1, GYG2, DBI, SMC4, PPP1R9A, CCDC113, ZRANB1, JAK2, TBL1X, DYNC1LI2, SEC31A, SYT2, POSTN, RNF213, ERLEC1, KIF13A, HOOK2, STAM, KIF13B, POLH, PRELP, HUWE1, RFC1, NAV2, GCNT2, SRSF11, ASAP2, SERINC3, MACF1, CEP170, SERINC1, AGRN, RGPD8, SMAD9, SMAD7, SCD, KANSL3, CREBBP, OSBPL7, PTPN14, SMAD4, YTHDC1, MYOZ1, SMYD2, SMAD1, ABCG2, NOTCH2, NOTCH4, CRYM, ADAR, TM7SF2, MITF, WBP2, ANKRD17, ANKRD11, TOP2B, DYNC1H1, THRSP, SARDH, ZFYVE1, IP6K2, RBM41, TBX15, POGZ, ZNF354C, ZCCHC18, VEZT, SPEN, ASH1L, ORMDL3, RBM39, ADAM12, SHROOM2, ABTB2, YPEL2, ABTB1, YPEL3, AASS, ATP6V1G2, POLR2A, CYLD, STAT4, SQSTM1, FNDC1, GATAD2B, BCL9L, HBP1, SNRNP70, BAIAP2L2, STAT1, FZD4, STAT2, CAPRN2, HYDIN,

	<p>COL19A1, TENM2, CALM3, TP53INP1, THRA, THRB, SLC6A4, ANKRD1, UBQLN1, TIAM1, SRRM2, RNF38, SRRM1, ARGLU1, SATB1, SNRPN, COL22A1, KIAA0753, MOXD1, TNNT3, PLCE1, USO1, COL24A1, COPZ2, CACUL1, MRAP2, NAPB, SOX6, SOX9, DERL3, B3GNT9, B3GNT5, SLC30A2, CLASP1, B3GNT2, RUNX2, EVC, ZMYM4, CKAP5, MED13L, MAFK, PRICKLE1, PLCG1, TXNDC16, GLS, MSL1, CPT2, DPY19L4, PCGF5, CTTN, GSN, URB1, ATP8B2, NCKIPSD, CYS1, PSMD8, ELP2, HMGCLL1, WBSCR17, LDB1, RUNX1T1, SACM1L, MURC, XIRP2, SBF2, HIPK2, LUM, RSAD2, MOAP1, HAND1, CENPA, CYP26B1, TNPO2, MSH3, SPARC, SUN1, SON, RNF44, RPRD2, SP3, MYPN, SETD7, CYP4F3, SH3D19, SETD2, SPTAN1</p>	
<p>GO:0044464                      Cell part                      1430</p>	<p>LDHB, CTHRC1, MEF2A, CRHBP, MED23, RORB, ITSN2, OGN, SH3YL1, EPC2, AGTR2, HMCN1, SERPINE2, DIRAS3, BTBD1, SERPINE1, BTBD3, ZNF106, PATZ1, OGT, DHX35, CDH23, KLRB1, LRRC6, SCN2B, GATM, FAXDC2, VPS45, MYLK3, MED12, VPS41, PKHD1L1, MED14, MYH7, ZNF793, PROX2, TMEM130, PIK3IP1, MECOM, HLA-DQA2, PTPDC1, HLA-DQA1, MAPK1, DCAF8, F3, SIPA1L1, BACE1, ROR1, ABAT, UNC13A, HLA-DRA, NCR3LG1, KIAA1109, TNRC18, MTX3, PABPC4, CNTRL, GOLGA6L3, ARIH2, KLKB1, KBTBD7, OBSL1, CCSE2, PABPC1, PPP2R2B, LFNG, SGIP1, SPP1, LAPTM4B, ZNF528, ZC3H13, KIF3B, ACER2, ATP11A, NDC80, ACACB, COL16A1, GOLGA6L4, EMILIN3, SEPT11, FNIP1, ATM, FNIP2, SRSF5, RGS1, COL14A1, PKP2, NLGN4X, DHX40, SPNS1, TMEM119, RERE, CDC42BPB, CREBRF, ELF1, SPIN1, CYP2J2, BACH2, NUAKE1, FGF9, ZNFX1, ZNF532, EZH1, ATP10A, YBX3, BNIP3, ATP10D, ZNF345, ASAH1, DDI2, NISCH, QKI, USP11, BHLHE41, GATAD1, FGF1, PRSS35, ATF7IP, ANP32E, PRSS50, ADNP, ZNF337, ARHGFE17, MMP16, RFTN2, ARHGFE12, VPS8, ZNF334, EPB41L2, CARD11, IGFN1, DOK5, EIF4A2, CLIC5, EPB41L5, MGEA5, GRIP2, SORT1, ZNF550, USP22, ZNF740, PARVA, ZMYND12, HLA-DQB1, PHLDB1, FMOD, C7, RABGAP1, LIN9, EPB41L4A, ZNF366, CBLL1, AZIN2, ZNF169, SF3B1, MTMR3, SCAF11, ACSL1, CFAP58, SORBS1, SORBS2, FMO2, FMO3, PKD2, PKD1, ARMCX3, WAC, SNAP23, FAM156B, SNAP25, MTMR4, PHLDA1, PDK1, SLC8A1, ATRN, ZNF160, IGF2, STAB2, TRIM23, TRIM22, APPL2, CDH13, DUSP2, CNTF, DUSP1, NRAP, PLSCR4, ZSCAN30, CDH19, USP47, SLFN13, SECISBP2L, CP, PHLDB2, LRP4, DUSP6, LRP5, USP44, CDH11, ENAH, PRPF4B, GRIK4, ZXDC, LMO7, TXLNB, EIF4EBP3, AZGP1, SEZ6L2, IDS, MDFIC, ANKZF1, RNF146, SAMD4A, ZNF594, FMR1, RMI2, XRR1, PKIA, BICD1, TACC2, PNPLA7, EP300, DCUN1D2, PRC1, MARC1, ATP9A, MGA, RELN, STMN1, NEU3, VAMP1, SMARCA2, SSC5D, CCDC8, FGD1, HDLBP, FBXO40, PAFAH2, CYSLTR2, SETD1B, GLUD1, FN3K, PTK7, MDK, ABCA6, TTC3, PDXDC1, NR2C1, ZNF322, PTK2, CERS1, ZNF596, TMEM30B, RNF169, ZNF599, UNKL, PHACTR2, PHACTR4, CREBZF, MYO1B, SYT12, MYO1D, NR4A2, NTN4, EHMT2, FBXO38, NREP, MAN2C1, P2RX7, CASS4, CDKN1B, DSG2, ST8SIA6, EBF3, DYRK1A, SMARCC2, FABP4, FBXO32, ZNF318, PDZD2, HDAC9, SYT17, ATP7B, PC, DENND5A, PODNL1, HP1BP3, GABBR1, HLA-DMB, SPRY4, TMF1, SPRY2, PRMT2, SLC35D1, EXOG, LRRFIP1, SCN7A, AHNAK, DDB1, PCDH9, NEXN, ACADL, KIF1B, SNRNP200, CAPN14, ERN1, SPEF2, TXNRD1, MAPRE2, CA3, DMC1, SNX13, FHOD1, CYP2U1, FKBP6, SSFA2, SLC47A1, FAM13A, SHQ1, COL9A1, CD9, TMED4, LEFTY2, VPS35, XAF1, FIBIN, GPNMB, NFATC3, EHD3, VPS39, WDFY3, NOX4, CNNM2, NFRKB, CBL, ZBED8, UBE2Q2, ADIPOQ, COL5A2, AJUBA, ICK, HIF3A, DSC1, ID4, SNX33, SNX30, HMG1, PNMA3, HMG2, PNMA2, CADM1, GLDN, RAB3GAP1, PRKG2, APOB, DDX17, ATP2B4, GBF1, KIFAP3, CD46, NT5C2, GLE1, CD3D, CD3E, PLD4, TANC1, IFI44, FRY, BTN3A1, CD36, COLQ, BAZ1B, LCA5, MLLT10, UBR5, RAB17, PRDM5, NEK9, HAS3, EXT1, GPATCH11, CHGB, MYH7B, SUDS3, NEK7, GLG1, FUS, CHKA, RBP7, NEK3, OAS3, MME, OAS2, AFAP1L1, ACAT1, TK2, CD74, PPAR, CALU, PLAGL1, ACE, XG, STX16, LETMD1, MAML3, FBXO3, FBXO9, CNKSR2, COL18A1, KLF5, ZBTB47, CRIP3, FTO, NOTCH2NL, CELSR3, ALMS1, CIDEA, RNF207, AFG3L2, LARP4B, HNRNPA1, CIDEC, EPHA3, PXDNL, DDX6, EPHA4, EPHA7, SEMA6D, DMTF1, PTC3, SUPT16H, HEPH, BEGAIN, KAT6B, CLCN6, NCOR1, TCF12, ALG13, KAT6A, ZMAT1, ARSB, PPARA, NRP1, COL21A1, FERMT1, HELZ, GNL3L, ZEB2, TERF2IP, ZEB1, CANX, ZBTB38, FOXS1, TTL3, ART4, DIP2A, AP2B1, MBTD1, CCNY, SEMA3A, GOLGA4, GOLGA3, GOLGA2, GPR173, RBBP4, GPR176, GZMA, SPECC1, MBD6, ARRDC3, ZBTB25, SLC26A4, EFHC1, RAB11FIP3, BGN, ADM, PTGDR, RIN2, PLA2G6, LIN54, RAB11FIP1, NPPA, CLUAP1, KIZ, TF, PARD3, PPFIA4, ATG14, COL3A1, PPFIA1, ATG13, CXCL9, ZBTB16, CPED1, SAMD9L, FAM117B, NR1D1,</p>	<p>1.9 x 10<sup>-5</sup></p>

SULT1C4, PLIN1, NR1D2, ETV1, PRKAA2, FYCO1, BAZ2A, ETV5, ETV4, MYO5B, FYB, CAP2, PLA2G15, BIRC7, HSPG2, BIRC6, NPR3, SNAI2, MSRB3, COG3, SLC16A5, C4ORF46, SLC16A7, TOM1L2, GFPT1, SVIL, SLC16A9, SLC16A8, KIF20B, YWHAQ, ATP6V0A1, CHN2, PTCH1, APBB3, UBXN7, GOLGB1, F2RL2, SEPT2, ZNF827, TRIM52, FOXO3, VIPR1, GDNF, SETX, SLC25A20, RAD21, ARL10, C7ORF55-LUC7L2, ROBO1, GATA6, TRIM44, TRIM45, SLC25A29, RBMS3, SLC25A27, PDGFC, PDGFD, TUB, ALDH6A1, CEP85, C2CD2, SMC8, PLXNB2, TOR1AIP1, TRIM41, MFGE8, METTL7A, NEBL, CFAP70, SLC25A30, CBLN1, CHPF, RIOK3, FNBP1L, NBR1, ASB1, AKAP6, SLU7, SEPT6, ERC1, GBP4, DST, SEPT7, ANKFY1, SEPT8, PACS1, ZNF844, TNFAIP8L1, CEP95, SNX8, PEAK1, CIART, ITGB5, RABGAP1L, ITGB1, ZMYND8, PCDHAC2, KLHDC10, TRIM73, BLOC1S6, TAGAP, TRIM66, EIF3A, EIF3E, MTPN, LMTK2, HEG1, EIF3L, RHOBTB1, PLXND1, BMF, CYP19A1, FN1, RHOBTB3, EEF1A1, CFLAR, PRSS53, BMX, AK4, KCTD7, FOXP2, SREBF2, EIF4B, SALL3, ITGA9, OMD, FAM198B, PLEKHA5, UACA, ULK1, NEDD4, ULK2, MTR, TANGO2, SPTBN1, ANTXR1, ZNF137P, FAM84B, IFI6, C6ORF62, COPA, AEBP1, HECW2, FOXK1, POU6F2, AMT, KIAA0430, ARHGAP19, ARHGAP17, PDCC4, SYNPO2L, LARP1, ARHGAP21, FUBP1, CD96, FUBP3, CXCR4, BOK, KLHL24, MKL2, TPR, TNIP1, PHC1, SHC4, ELMSAN1, PARM1, ADIPOR2, PRKCH, UBE2H, FOXJ3, UBN2, ARHGAP24, NLRP1, MFN2, EYA1, ARHGAP32, XPC, ARHGAP33, ARCN1, CEMIP, KLHL11, CUX1, PRNP, PROS1, MATR3, EXOC6B, SHCBP1, DNAH3, AKAP9, HCFC2, DNAH1, CYTH3, MAP3K7CL, GPR1, TRIB2, MTM1, ERCC5, TUBGCP6, ERCC6, MAP3K3, SAFB, OXCT1, POU2F2, CAMK2D, NFAT5, PALM3, TNN, MTCL1, CAMK2B, MR1, SLC25A45, TNRC6B, PLA2R1, TNRC6A, PIK3R1, CRIM1, GPR107, APC, IL2RB, NUP153, SVEP1, UBE4A, UBE4B, L3MBTL1, NFASC, TMBIM4, WSB1, VWF, TMEM47, KLHL36, IRF6, CEP68, TMEM43, ATXN7, CSGALNACT2, ARAP3, IGFBP2, KLHL34, IGFBP3, GOLGA8T, GOLGA8R, PEAR1, DBF4B, KIAA0556, LTBP2, SLC9A5, SLC9A3, RPL15, CYP2D6, GOLGA8M, STRN, GOLGA8K, CLK1, ZNF638, INTS3, GOLGA8J, PNISR, MXI1, GOLGA8Q, ZNF251, GOLGA8O, ACBD5, CTNNB1, GOLGA8N, CITED2, PGR, CCDC141, ACBD3, GOLGA8B, GOLGA8H, FAP, CLK4, GIT2, ACRC, GOLGA8A, LUC7L3, PLS3, PTPRM, GBP5, ROCK1, MAGI1, RXRB, MPDZ, SKP2, HMG20A, SPIRE1, SSPN, CTNNA1, CTNNA3, BCL2L11, MYO18B, MAGEE1, ZNF235, FCHSD2, ZZZ3, VGLL2, HLA-DPA1, ATP1F1, VGLL4, GRAP2, SCAF8, TM6SF1, MYO18A, ZNF41, ACADSB, HLA-DRB1, CCDC93, ZNF610, UBA7, MST1, RUNDC3A, MYEF2, NPY6R, KCNJ2, ZNF618, DIDO1, P3H2, NPHP3, ZNF224, HLA-DRB5, HLA-DPB1, TCF4, DVL3, ODC1, GPD1, RANBP17, CROCCP2, PPFIBP1, KLF15, ZNF627, FXR1, PCDH18, KCNJ4, SYNE1, ZNF217, PENK, ZNF211, CMYA5, MAP2, FAM161A, MAP4, SYTL5, ZNF385B, PAPPAA2, MAP7, TNK2, CHRNE, RANBP10, SLC9A1, HLF, FAM3C, TRPV3, NAP1L3, ZNF518A, BOD1L1, COPB2, RRN3, MAPT, ZNF491, SERTAD4, SYNJ2, GUCY1A3, ARHGAP11B, ANGPT1, ARHGAP11A, DHTKD1, DPP4, ZNF281, SRPK2, FMNL3, CLMP, CMKLR1, MICAL2, ARHGEF6, TTC37, MICAL3, TNMD, TLE4, ARHGEF9, FOSB, BBS10, MXD4, WDR48, PJA2, MAST4, CCND1, XPR1, PLEKHH2, CCND2, NAB2, SRGAP3, UNC80, GNB4, GUCY1B3, ENOX1, KIAA1429, ZNF275, NACA, TBC1D8, TBC1D9, FHL2, NUMA1, MYOM2, DGKE, PDE1C, SOS2, CSDE1, KCNE1, PER2, BUB1, PER1, TBC1D4, WIPF3, ZNF471, LIMD1, MYOM1, PER3, FBXW11, RASA1, TRIP12, ZNF266, CES2, COL15A1, PPP1R10, MXRA8, DGKI, MARCH6, KANK4, PCK1, RPS6KA2, ZNF862, MCFD2, ZBTB4, MYCBPAP, ZNF462, HTR2B, SPG11, ZBTB1, MPHOSPH8, MMS19, ASPN, XPO1, MAU2, SLC44A5, RBM5, ADH1C, PDE3B, ADH1B, MIPEP, KANK1, SLC7A6, VCL, KANK2, CHAD, PRKAR2B, AAK1, ST3GAL6, DDX24, PUM1, CTDSP2, ASPH, GCOM2, INSR, NMNAT2, RBL2, ZNF441, CECR1, PSD3, CECR2, EEF2, ACTN2, ARID1B, DIS3L, CDO1, IRS1, TRIQK, DDIT4, COPG1, PCMTD2, TNFAIP3, SLC40A1, BBS4, HMGB2, KCNA4, LRRCC1, SLC38A11, ANLN, LRIG3, CCNG2, SESN1, SESN3, GPR22, DOCK1, HNRNPK, TEF, PCYT1B, MBNL3, DOPEY1, SH3TC2, DDX42, HCN2, TAF1, VAV3, NIN, SMG7, DOCK9, GOLIM4, SMG1, WHSC1, MYL12A, ANKH, RBMX, WIP1, SHANK3, SAFB2, TNFSF10, LOXHD1, CRBN, TSC1, SLC7A2, ZNF417, PRKAR1A, ADAM22, RNPC3, XPO7, HNRNPH1, NKG7, NOMO2, MYH10, CYB5R1, ZKSCAN8, ARID4B, UCHL1, WWC2, IFI44L, ZKSCAN1, CHPF2, ZKSCAN3, LBH, DDX60, ZFYVE16, WWC3, OIT3, PDE8B, DLG5, LOXL1, KDM5B, LINC01547, NBPf8, TRPM4, TRPM7, ESR1, CDC5L, KIDINS220, HLTf, ZFR, CCNL2, UFL1, RECQL, FAM120A, PPM1K, IPO7, PPM1H, IPO5, INPP4B, INPP4A, GPAM, ABLIM1,

	<p>KMT2E, KMT2D, IRX3, BTAF1, IRX6, KMT2A, GALNT5, KMT2C, WBP11, NFYA, CDH2, NR3C1, CALCOCO1, CDH5, ESYT3, ADPRHL1, IGF1R, ALDH1A2, TSC22D3, ANXA9, AP3M2, HSPA2, CHD2, B4GALNT3, KDM3A, KDM3B, SH2B1, CHD6, COL8A1, CHD5, HBB, NES, NCDN, ALPK3, COL13A1, SLC12A4, NF1, RCAN1, GYG2, DBI, SMC4, LEP, RASL11B, IFIT2, PPP1R9A, HSDL2, DBP, CCDC113, ACE2, JAK1, ZRANB1, JAK2, APAF1, TBL1X, DYNC1L12, SEC31A, SYT2, ADCY6, PTPN21, AQP7, RNF216, POSTN, DNASE1L3, RNF213, ERLEC1, KIF13A, GET4, NOV, HOOK2, TRAK2, GAB2, HTRA1, GAB1, STAM, RAPGEF4, KIF13B, SLC12A6, PAN2, POLH, EFNB2, KIAA0141, VASH1, PRELP, RFC1, HUWE1, RHCG, NAV2, CX3CR1, C11ORF24, TBC1D8B, SLC2A12, GCNT2, GSDMB, GPBP1L1, SRSF11, PFKFB1, ASAP2, ITGA10, ASAP1, ASB15, ASB18, SERINC3, STX16-NPEPL1, SERINC5, MACF1, DAAAF3, SERINC1, CEP170, AGRN, LAMB1, RGPD8, SMAD9, SMAD7, RGPD4, SMAD6, KANSL3, SCD, OSBPL7, CREBBP, PTPN14, SMAD4, YTHDC1, MYOZ1, SMAD1, SMYD2, ATP13A3, PTPN11, ABCG2, LAMA2, NOTCH2, SMAD4, NOTCH4, CRYM, ADAR, BMP6, MTRNR2L8, TM7SF2, DLEC1, NARS, SLC15A2, SLC16A12, WASF2, MITF, TBX20, FCRL6, WBP2, ANKRD17, ANKRD11, DYNC1H1, TOP2B, SARDH, THRSF, MTRNR2L9, ZFYVE1, IP6K2, TBX15, RBM41, POGZ, ZNF354C, LGALS12, VEZT, ZCCHC18, SPEN, HERC1, SGCG, EEF1A1P5, ASH1L, SGCD, RBM39, ORMDL3, ADAM12, TBX18, USP6, YPEL1, SHROOM2, YPEL2, ABTB2, YPEL3, ABTB1, AASS, ATP6V1G2, WTIP, POLR2A, CYLD, PLCL1, STAT4, FAT4, SQSTM1, FNDC1, FAT1, CLEC2D, GATAD2B, PREPL, BCL9L, HBP1, SNRNP70, THBS2, THBS4, TBX6, RBM24, BAIAP2L2, MCF2, TBX2, MEX3B, RBM20, STAT1, FZD4, CAPRIN1, INMT, FZD7, CAPRIN2, STAT2, TENM4, TJP1, COL19A1, HYDIN, TENM2, PHF21B, CALM3, TOB2, PYGB, TP53INP1, THRA, THRB, SLC6A1, SLC6A4, ANKRD1, GDAP1L1, UBQLN1, KLHL3, CIPC, SRRM4, TIAM1, SRRM2, RNF38, SRRM1, ARGLU1, SATB1, SNRPN, COL22A1, KIAA0753, MOXD1, MAP4K4, GOLGA2P5, TNNT3, PLCE1, TNS1, KCNT2, USO1, CELF2, COL24A1, NRBP2, COPZ2, FRAS1, ZFAND5, SLC38A3, CACUL1, PAQR6, MRAP2, NAPB, SOX6, SOX9, DERL3, RASAL2, B3GNT9, PPP1R16B, B3GNT5, PLCH1, SLC30A2, HECTD4, CLASP1, B3GNT2, RUNX2, HECTD1, LPL, LSMEM1, DIXDC1, TBC1D2B, EVC, ZMYM4, CKAP5, EPHX2, FN3KRP, MAFK, MED13L, PLCG1, PRICKLE1, TXNDC16, MSL1, GLS, ZNF83, CPT2, ZNF81, ECHDC2, DPY19L4, PCDHGA3, PCDHGA2, PCGF5, CTTN, KCNQ4, KCNQ3, SLK, GSN, SDPR, URB1, ARHGAP1, ATP8B2, NCKIPSD, CYS1, PSMD8, KIAA0907, ELP2, HMGCLL1, NRXN3, WBSR17, CCDC88C, LDB1, GPRASP1, RUNX1T1, SACM1L, EIF4G2, MURC, EIF4G3, SBF2, XIRP2, HIPK2, ZNF711, NRK, LUM, USP9X, CD247, RSAD2, NFIX, NPAS1, ZNF704, RGS11, MOAP1, HAND1, CENPA, CYP26B1, PTN, MSI2, TNPO2, DTX4, MSH3, EDA2R, ANKAR, FRMPD4, SUN1, SPARC, SON, RNF44, RPRD2, MYPN, SP3, SLC6A6, SETD7, CYP4F3, SH3D19, SETD2, TSSK4, LIPE, NTM, F2R, SPTAN1</p>	
<p>GO:0031974</p> <p>Membrane-enclosed lumen</p> <p>447</p>	<p>MEF2A, DBF4B, KIAA0556, RORB, MED23, PNISR, INTS3, ZNF638, MXI1, ACBD5, CTNNB1, CITED2, PGR, OGN, EPC2, SERPINE1, GIT2, PATZ1, ZNF106, OGT, LUC7L3, MAGI1, GATM, RXRB, MED12, SKP2, MED14, MECOM, PTPDC1, MAPK1, MYO18B, BACE1, ABAT, ZZZ3, SCAF8, GRAP2, MYO18A, ACADSB, TNRC18, UBA7, MYEF2, P3H2, TCF4, ZC3H13, DVL3, NDC80, COL16A1, ATM, FXR1, FNIP2, SRSF5, SYNE1, ZNF217, COL14A1, PKP2, MAP2, DHX40, RERE, SLC9A1, CREBRF, ELF1, SPIN1, NUA1, FAM3C, EZH1, BNIP3, ATP10D, ASAH1, BOD1L1, DDI2, RRN3, MAPT, DHTKD1, FGF1, GATAD1, ATF7IP, ZNF281, SRPK2, TTC37, MICAL3, ANP32E, TLE4, MMP16, EPB41L2, CCND1, CCND2, USP22, KIAA1429, FMO2, LIN9, FHL2, CBLL1, MTRM3, SF3B1, NUMA1, SCAF11, SORBS1, PER2, BUB1, WAC, SNAP23, TRIP12, PHLDA1, PDK1, CES2, COL15A1, PPP1R10, IGF2, DGKI, TRIM22, APPL2, RPS6KA2, SPG11, ZBTB1, MPHOSPH8, USP44, DUSP6, MMS19, XPO1, PRPF4B, MAU2, RBM5, MIPEP, IDS, MDFIC, DDX24, CTDSP2, ASPH, GCOM2, RBL2, FMR1, CECR2, ACTN2, RMI2, ARID1B, DIS3L, TACC2, EP300, MGA, SMARCA2, HMGB2, GLUD1, SETD1B, LRRCC1, ANLN, TTC3, NR2C1, DOCK1, HNRNP, RNF169, DDX42, TAF1, NIN, GOLIM4, NR4A2, WHSC1, EHMT2, RBMX, SAFB2, CDKN1B, CRBN, SMARCC2, DYRK1A, ZNF318, FBXO32, RNPC3, HDAC9, HNRNP1, PC, UCHL1, ARID4B, IFI44L, PRMT2, KDM5B, TRPM4, DDB1, ESR1, CDC5L, HLT, ACADL, ZFR, CCNL2, RECQL, IPO7, PPM1K, IPO5, CAPN14, SNRNP200, TXNRD1, DMC1, KMT2E, BTAF1, KMT2D, KMT2A, FKBP6, KMT2C, WBP11, NR3C1, NFYA, CALCOCO1, SHQ1, COL9A1, HSPA2, LEFTY2, CHD2, KDM3A, KDM3B, COL8A1,</p>	<p><math>2.2 \times 10^{-5}</math></p>

	<p>CHD6, NFATC3, CHD5, HBB, WDFY3, NOX4, COL13A1, NFRKB, NF1, GYG2, ZBED8, COL5A2, SMC4, CCDC113, HIF3A, ZRANB1, JAK2, TBL1X, HMGN1, PNMA3, PNMA2, RNF213, ERLEC1, DDX17, APOB, GBF1, KIFAP3, POLH, PRELP, HUWE1, BAZ1B, RFC1, NAV2, UBR5, MLLT10, SUDS3, NEK7, FUS, SRSF11, OAS3, ACAT1, CD74, TK2, CALU, PLAGL1, MAML3, FBXO3, AGRN, COL18A1, KLF5, SMAD9, SMAD7, KANSL3, CREBBP, FTO, PTPN14, SMAD4, YTHDC1, SMYD2, SMAD1, LARP4B, HNRNPA1, DDX6, NOTCH2, DMTF1, NOTCH4, SUPT16H, KAT6B, NCOR1, TCF12, CRYM, ADAR, KAT6A, ARSB, PPARA, COL21A1, MITF, GNL3L, TERF2IP, ZEB1, CANX, WBP2, ANKRD11, TOP2B, THRSP, GOLGA4, SARDH, GOLGA3, IP6K2, RBBP4, TBX15, POGZ, MBD6, VEZT, ZCCHC18, SPEN, ZBTB25, RAB11FIP3, BGN, ASH1L, LIN54, RBM39, ADAM12, TF, CLUAP1, YPEL2, ABTB2, COL3A1, ABTB1, YPEL3, AASS, ZBTB16, POLR2A, STAT4, NR1D1, NR1D2, SQSTM1, FNDC1, GATAD2B, BCL9L, HBP1, PRKAA2, SNRNP70, BAZ2A, ETV5, ETV4, HSPG2, STAT1, SNAI2, STAT2, COG3, COL19A1, TENM2, KIF20B, ATP6V0A1, CALM3, UBXN7, TP53INP1, SEPT2, THRA, THRB, ANKRD1, FOXO3, UBQLN1, SETX, RAD21, GATA6, SRRM2, TRIM45, RNF38, SRRM1, PDGFC, PDGFD, ARGLU1, SATB1, ALDH6A1, CEP85, SMCR8, COL22A1, TRIM41, CHPF, USO1, SLU7, COL24A1, SEPT7, CIART, PEAK1, SOX6, SOX9, BLOC1S6, EIF3A, TRIM66, EIF3E, EIF3L, RUNX2, FN1, EEF1A1, ZMYM4, AK4, MED13L, MAFK, SREBF2, OMD, PLEKHA5, TXNDC16, MSL1, GLS, SPTBN1, CPT2, AMT, PDCD4, LARP1, FUBP1, PCGF5, URB1, TPR, TNIP1, PHC1, PSMD8, ELMSAN1, ELP2, LDB1, RUNX1T1, UBN2, EYA1, XPC, HIPK2, CUX1, PROS1, MATR3, LUM, HCFC2, ERCC5, ERCC6, HAND1, CENPA, SAFB, OXCT1, POU2F2, CAMK2D, NFAT5, CAMK2B, TNPO2, TNRC6A, APC, NUP153, MSH3, L3MBTL1, SPARC, VWF, SON, RNF44, RPRD2, SP3, ATXN7, TMEM43, SETD7, SH3D19, SETD2</p>	
<p>GO:0005623</p>	<p>LDHB, CTHRC1, MEF2A, CRHBP, MED23, RORB, ITSN2, OGN, SH3YL1, EPC2, AGTR2, HMCN1, SERPINE2, DIRAS3, BTBD1, SERPINE1, BTBD3, ZNF106, PATZ1, OGT, DHX35, CDH23, KLRB1, LRRC6, SCN2B, GATM, FAXDC2, VPS45, MYLK3, MED12, VPS41, PKHD1L1, MED14, MYH7, ZNF793, PROX2, TMEM130, PIK3IP1, MECOM, HLA-DQA2, PTPDC1, HLA-DQA1, MAPK1, DCAF8, F3, SIPA1L1, BACE1, ROR1, ABAT, UNC13A, HLA-DRA, NCR3LG1, KIAA1109, TNRC18, MTX3, PABPC4, CNTRL, GOLGA6L3, ARIH2, KLKB1, KBTBD7, OBSL1, CCSER2, PABPC1, PPP2R2B, LFNG, SGIP1, SPP1, LAPTM4B, ZNF528, ZC3H13, KIF3B, ACER2, ATP11A, NDC80, ACACB, COL16A1, GOLGA6L4, EMILIN3, SEPT11, FNIP1, ATM, FNIP2, SRSF5, RGS1, COL14A1, PKP2, NLGN4X, DHX40, SPNS1, TMEM119, RERE, CDC42BPB, CREBRF, ELF1, SPIN1, CYP2J2, BACH2, NUAK1, FGF9, ZNFX1, ZNF532, EZH1, ATP10A, YBX3, BNIP3, ATP10D, ZNF345, ASAH1, DDI2, NISCH, QKI, USP11, BHLHE41, GATAD1, FGF1, PRSS35, ATF7IP, ANP32E, PRSS50, ADNP, ZNF337, ARHGEF17, MMP16, RFTN2, ARHGEF12, VPS8, ZNF334, EPB41L2, CARD11, IGFN1, DOK5, EIF4A2, CLIC5, EPB41L5, MGEA5, GRIP2, SORT1, ZNF550, USP22, ZNF740, PARVA, ZMYND12, HLA-DQB1, PHLDB1, FMOD, C7, RABGAP1, LIN9, EPB41L4A, ZNF366, CBLL1, AZIN2, ZNF169, SF3B1, MTMR3, SCAF11, ACSL1, CFAP58, SORBS1, SORBS2, FMO2, FMO3, PKD2, PKD1, ARMCX3, WAC, SNAP23, FAM156B, SNAP25, MTMR4, PHLDA1, PDK1, SLC8A1, ATRN, ZNF160, IGF2, STAB2, TRIM23, TRIM22, APPL2, CDH13, DUSP2, CNTF, DUSP1, NRAP, PLSCR4, ZSCAN30, CDH19, USP47, SLFN13, SECISBP2L, CP, PHLDB2, LRP4, DUSP6, LRP5, USP44, CDH11, ENAH, PRPF4B, GRIK4, ZXDC, LMO7, TXLNB, EIF4EBP3, AZGP1, SEZ6L2, IDS, MDFIC, ANKZF1, RNF146, SAMD4A, ZNF594, FMR1, RMI2, XRR1A, PKIA, BICD1, TACC2, PNPLA7, EP300, DCUN1D2, PRCD, MARC1, ATP9A, MGA, RELN, STMN1, NEU3, VAMP1, SMARCA2, SSC5D, CCDC8, FGD1, HDLBP, FBXO40, PAFAH2, CYSLTR2, SETD1B, GLUD1, FN3K, PTK7, MDK, ABCA6, TTC3, PDXDC1, NR2C1, ZNF322, PTK2, CERS1, ZNF596, TMEM30B, RNF169, ZNF599, UNKL, PHACTR2, PHACTR4, CREBZF, MYO1B, SYT12, MYO1D, NR4A2, NTN4, EHMT2, FBXO38, NREP, MAN2C1, P2RX7, CASS4, CDKN1B, DSG2, ST8SIA6, EBF3, DYRK1A, SMARCC2, FABP4, FBXO32, ZNF318, PDZD2, HDAC9, SYT17, ATP7B, PC, DENND5A, PODNL1, HP1BP3, GABBR1, HLA-DMB, SPRY4, TMF1, SPRY2, PRMT2, SLC35D1, EXOG, LRRFIP1, SCN7A, AHNAK, DDB1, PCDH9, NEXN, ACADL, KIF1B, SNRNP200, CAPN14, ERN1, SPEF2, TXNRD1, MAPRE2, CA3, DMC1, SNX13, FHOD1, CYP2U1, FKBP6, SSFA2, SLC47A1, FAM13A, SHQ1, COL9A1, CD9, TMED4, LEFTY2, VPS35, XAF1, FIBIN, GPNMB, NFATC3, EHD3, VPS39, WDFY3, NOX4, CNNM2, NFRKB, CBL, ZBED8, UBE2Q2, ADIPOQ, COL5A2, AJUBA, ICK, HIF3A, DSC1, ID4, SNX33, SNX30,</p>	<p>3.7 x 10<sup>-5</sup></p>

HMGN1, PNMA3, HMGN2, PNMA2, CADM1, GLDN, RAB3GAP1, PRKG2, APOB, DDX17, ATP2B4, GBF1, KIFAP3, CD46, NT5C2, GLE1, CD3D, CD3E, PLD4, TANC1, IFI44, FRY, BTN3A1, CD36, COLQ, BAZ1B, LCA5, MLLT10, UBR5, RAB17, PRDM5, NEK9, HAS3, EXT1, GPATCH11, CHGB, MYH7B, SUDS3, NEK7, GLG1, FUS, CHKA, RBP7, NEK3, OAS3, MME, OAS2, AFAP1L1, ACAT1, TK2, CD74, PPAT, CALU, PLAGL1, ACE, XG, STX16, LETMD1, MAML3, FBXO3, FBXO9, CNKSR2, COL18A1, KLF5, ZBTB47, CRIP3, FTO, NOTCH2NL, CELSR3, ALMS1, CIDEA, RNF207, AFG3L2, LARP4B, HNRNPA1, CIDEA, EPHA3, PXDNL, DDX6, EPHA4, EPHA7, SEMA6D, DMTF1, PTCDC3, SUPT16H, HEPH, BEGAIN, KAT6B, CLCN6, NCOR1, TCF12, ALG13, KAT6A, ZMAT1, ARSB, PPARA, NRP1, COL21A1, FERMT1, HELZ, GNL3L, ZEB2, TERF2IP, ZEB1, CANX, ZBTB38, FOXS1, TTLL3, ART4, DIP2A, AP2B1, MBTD1, CCNY, SEMA3A, GOLGA4, GOLGA3, GOLGA2, GPR173, RBBP4, GPR176, GZMA, SPECC1, MBD6, ARRDC3, ZBTB25, SLC26A4, EFHC1, RAB11FIP3, BGN, ADM, PTGDR, RIN2, PLA2G6, LIN54, RAB11FIP1, NPPA, CLUAP1, KIZ, TF, PARD3, PPFIA4, ATG14, COL3A1, PPFIA1, ATG13, CXCL9, ZBTB16, CPED1, SAMD9L, FAM117B, NR1D1, SULT1C4, PLIN1, NR1D2, ETV1, PRKAA2, FYCO1, BAZ2A, ETV5, ETV4, MYO5B, FYB, CAP2, PLA2G15, BIRC7, HSPG2, BIRC6, NPR3, SNAI2, MSRB3, COG3, SLC16A5, C4ORF46, SLC16A7, TOM1L2, GFPT1, SVIL, SLC16A9, SLC16A8, KIF20B, YWHAQ, ATP6V0A1, CHN2, PTCH1, APBB3, UBXN7, GOLGB1, F2RL2, SEPT2, ZNF827, TRIM52, FOXO3, VIPR1, GDNF, SETX, SLC25A20, RAD21, ARL10, C7ORF55-LUC7L2, ROBO1, GATA6, TRIM44, TRIM45, SLC25A29, RBMS3, SLC25A27, PDGFC, PDGFD, TUB, ALDH6A1, CEP85, C2CD2, SMCR8, PLXNB2, TOR1AIP1, TRIM41, MFGE8, METTL7A, NEBL, CFAP70, SLC25A30, CBLN1, CHPF, RIOK3, FNBP1L, NBR1, ASB1, AKAP6, SLU7, SEPT6, ERC1, GBP4, DST, SEPT7, ANKFY1, SEPT8, PACS1, ZNF844, TNFAIP8L1, CEP95, SNX8, PEAK1, CIART, ITGB5, RABGAP1L, ITGB1, ZMYND8, PCDHAC2, KLHDC10, TRIM73, BLOC1S6, TAGAP, TRIM66, EIF3A, EIF3E, MTPN, LMTK2, HEG1, EIF3L, RHOTB1, PLXND1, BMF, CYP19A1, FN1, RHOTB3, EEF1A1, CFLAR, PRSS53, BMX, AK4, KCTD7, FOXP2, SREBF2, EIF4B, SALL3, ITGA9, OMD, FAM198B, PLEKHA5, UACA, ULK1, NEDD4, ULK2, MTR, TANGO2, SPTBN1, ANTXR1, ZNF137P, FAM84B, IFI6, C6ORF62, COPA, AEBP1, HECW2, FOXK1, POU6F2, AMT, KIAA0430, ARHGAP19, ARHGAP17, PDCC4, SYNPO2L, LARP1, ARHGAP21, FUBP1, CD96, FUBP3, CXCR4, BOK, KLHL24, MKL2, TPR, TNIP1, PHC1, SHC4, ELMSAN1, PARM1, ADIPOR2, PRKCH, UBE2H, FOXJ3, UBN2, ARHGAP24, NLRP1, MFN2, EYA1, ARHGAP32, XPC, ARHGAP33, ARCN1, CEMIP, KLHL11, CUX1, PRNP, PROS1, MATR3, EXOC6B, SHCBP1, DNAH3, AKAP9, HCFC2, DNAH1, CYTH3, MAP3K7CL, GPR1, TRIB2, MTM1, ERCC5, TUBGCP6, ERCC6, MAP3K3, SAFB, OXCT1, POU2F2, CAMK2D, NFAT5, PALM3, TNN, MTCL1, CAMK2B, MR1, SLC25A45, TNRC6B, PLA2R1, TNRC6A, PIK3R1, CRIM1, GPR107, APC, IL2RB, NUP153, SVEP1, UBE4A, UBE4B, L3MBTL1, NFASC, TMBIM4, WSB1, VWF, TMEM47, KLHL36, IRF6, CEP68, TMEM43, ATXN7, CSGALNACT2, ARAP3, IGFBP2, KLHL34, IGFBP3, GOLGA8T, GOLGA8R, PEAR1, DBF4B, KIAA0556, LTBP2, SLC9A5, SLC9A3, RPL15, CYP2D6, GOLGA8M, STRN, GOLGA8K, CLK1, ZNF638, INTS3, GOLGA8J, PNISR, MXI1, GOLGA8Q, ZNF251, GOLGA8O, ACBD5, CTNNB1, GOLGA8N, CITED2, PGR, CCDC141, ACBD3, GOLGA8B, GOLGA8H, FAP, CLK4, GIT2, ACRC, GOLGA8A, LUC7L3, PLS3, PTPRM, GBP5, ROCK1, MAGI1, RXRB, MPDZ, SKP2, HMG20A, SPIRE1, SSPN, CTNNA1, CTNNA3, BCL2L11, MYO18B, MAGEE1, ZNF235, FCHSD2, ZZZ3, VGLL2, HLA-DPA1, ATP1F1, VGLL4, GRAP2, SCAF8, TM6SF1, MYO18A, ZNF41, ACADSB, HLA-DRB1, CCDC93, ZNF610, UBA7, MST1, RUNDC3A, MYEF2, NPY6R, KCNJ2, ZNF618, DIDO1, P3H2, NPHP3, ZNF224, HLA-DRB5, HLA-DPB1, TCF4, DVL3, ODC1, GPD1, RANBP17, CROCCP2, PPFIBP1, KLF15, ZNF627, FXR1, PCDH18, KCNJ4, SYNE1, ZNF217, PENK, ZNF211, CMYA5, MAP2, FAM161A, MAP4, SYTL5, ZNF385B, PAPP2, MAP7, TNK2, CHRNE, RANBP10, SLC9A1, HLF, FAM3C, TRPV3, NAP1L3, ZNF518A, BOD1L1, COPB2, RRN3, MAPT, ZNF491, SERTAD4, SYNJ2, GUCY1A3, ARHGAP11B, ANGPT1, ARHGAP11A, DHTKD1, DPP4, ZNF281, SRPK2, FMNL3, CLMP, CMKLR1, MICAL2, ARHGEF6, TTC37, MICAL3, TNMD, TLE4, ARHGEF9, FOXB, BBS10, MXD4, WDR48, PJA2, MAST4, CCND1, XPR1, PLEKHH2, CCND2, NAB2, SRGAP3, UNC80, GNB4, GUCY1B3, ENOX1, KIAA1429, ZNF275, NACA, TBC1D8, TBC1D9, FHL2, NUMA1, MYOM2, DGKE, PDE1C, SOS2, CSDE1, KCNE1, PER2, BUB1, PER1, TBC1D4, WIPF3, ZNF471, LIMD1, MYOM1, PER3, FBXW11, RASA1, TRIP12, ZNF266, CES2, COL15A1,



	<p>PPP1R10, MXRA8, DGKI, MARCH6, KANK4, PCK1, RPS6KA2, ZNF862, MCFD2, ZBTB4, MYCBPAP, ZNF462, HTR2B, SPG11, ZBTB1, MPHOSPH8, MMS19, ASPN, XPO1, MAU2, SLC44A5, RBM5, ADH1C, PDE3B, ADH1B, MIPEP, KANK1, SLC7A6, VCL, KANK2, CHAD, PRKAR2B, AAK1, ST3GAL6, DDX24, PUM1, CTDSP2, ASPH, GCOM2, INSR, NMNAT2, RBL2, ZNF441, CECR1, PSD3, CECR2, EEF2, ACTN2, ARID1B, DIS3L, CDO1, IRS1, TRIQK, DDIT4, COPG1, PCMTD2, TNFAIP3, SLC40A1, BBS4, HMGB2, KCNA4, LRRCC1, SLC38A11, ANLN, LRIG3, CCNG2, SESN1, SESN3, GPR22, DOCK1, HNRNPK, TEF, PCYT1B, MBNL3, DOPEY1, SH3TC2, DDX42, HCN2, TAF1, VAV3, NIN, SMG7, DOCK9, GOLIM4, SMG1, WHSC1, MYL12A, ANKH, RBMX, WIP1, SHANK3, SAFB2, TNFSF10, LOXHD1, CRBN, TSC1, SLC7A2, ZNF417, PRKAR1A, ADAM22, RNPC3, XPO7, HNRNPH1, NKG7, NOMO2, MYH10, CYB5R1, ZKSCAN8, ARID4B, UCHL1, WWC2, IFI44L, ZKSCAN1, CHPF2, ZKSCAN3, LBH, DDX60, ZFYVE16, WWC3, OIT3, PDE8B, DLG5, LOXL1, KDM5B, LINC01547, NBPF8, TRPM4, TRPM7, ESR1, CDC5L, KIDINS220, HLTF, ZFR, CCNL2, UFL1, RECQL, FAM120A, PPM1K, IPO7, PPM1H, IPO5, INPP4B, INPP4A, GPAM, ABLIM1, KMT2E, KMT2D, IRX3, BTAF1, IRX6, KMT2A, GALNT5, KMT2C, WBP11, NFYA, CDH2, NR3C1, CALCOCO1, CDH5, ESYT3, ADPRHL1, IGF1R, ALDH1A2, TSC22D3, ANXA9, AP3M2, HSPA2, CHD2, B4GALNT3, KDM3A, KDM3B, SH2B1, CHD6, COL8A1, CHD5, HBB, NES, NCDN, ALPK3, COL13A1, SLC12A4, NF1, RCAN1, GYG2, DBI, SMC4, LEP, RASL11B, IFIT2, PPP1R9A, HSDL2, DBP, CCDC113, ACE2, JAK1, ZRANB1, JAK2, APAF1, TBL1X, DYNC1L12, SEC31A, SYT2, ADCY6, PTPN21, AQP7, RNF216, POSTN, DNASE1L3, RNF213, ERLEC1, KIF13A, GET4, NOV, HOOK2, TRAK2, GAB2, HTRA1, GAB1, STAM, RAPGEF4, KIF13B, SLC12A6, PAN2, POLH, EFNB2, KIAA0141, VASH1, PRELP, RFC1, HUWE1, RHCG, NAV2, CX3CR1, C11ORF24, TBC1D8B, SLC2A12, GCNT2, GSDMB, GPBP1L1, SRSF11, PFKFB1, ASAP2, ITGA10, ASAP1, ASB15, ASB18, SERINC3, STX16-NPEPL1, SERINC5, MACF1, DNAAF3, SERINC1, CEP170, AGRN, LAMB1, RGPD8, SMAD9, SMAD7, RGPD4, SMAD6, KANSL3, SCD, OSBPL7, CREBBP, PTPN14, SMAD4, YTHDC1, MYOZ1, SMAD1, SMYD2, ATP13A3, PTPN11, ABCG2, LAMA2, NOTCH2, SFRP4, NOTCH4, CRYM, ADAR, BMP6, MTRNR2L8, TM7SF2, DLEC1, NARS, SLC15A2, SLC16A12, WASF2, MITF, TBX20, FCRL6, WBP2, ANKRD17, ANKRD11, DYNC1H1, TOP2B, SARDH, THRSF, MTRNR2L9, ZFYVE1, IP6K2, TBX15, RBM41, POGZ, ZNF354C, LGALS12, VEZT, ZCCHC18, SPEN, HERC1, SGCG, EEF1A1P5, ASH1L, SGCD, RBM39, ORMDL3, ADAM12, TBX18, USP6, YPEL1, SHROOM2, YPEL2, ABTB2, YPEL3, ABTB1, AASS, ATP6V1G2, WTIP, POLR2A, CYLD, PLCL1, STAT4, FAT4, SQSTM1, FNDC1, FAT1, CLEC2D, GATAD2B, PREPL, BCL9L, HBP1, SNRNP70, THBS2, THBS4, TBX6, RBM24, BAIAP2L2, MCF2, TBX2, MEX3B, RBM20, STAT1, FZD4, CAPRN1, INMT, FZD7, CAPRN2, STAT2, TENM4, TJP1, COL19A1, HYDIN, TENM2, PHF21B, CALM3, TOB2, PYGB, TP53INP1, THRA, THRB, SLC6A1, SLC6A4, ANKRD1, GDAP1L1, UBQLN1, KLHL3, CIPC, SRRM4, TIAM1, SRRM2, RNF38, SRRM1, ARGLU1, SATB1, SNRPN, COL22A1, KIAA0753, MOXD1, MAP4K4, GOLGA2P5, TNNT3, PLCE1, TNS1, KCNT2, USO1, CELF2, COL24A1, NRBP2, COPZ2, FRAS1, ZFAND5, SLC38A3, CACUL1, PAQR6, MRAP2, NAPB, SOX6, SOX9, DERL3, RASAL2, B3GNT9, PPP1R16B, B3GNT5, PLCH1, SLC30A2, HECTD4, CLASP1, B3GNT2, RUNX2, HECTD1, LPL, LSMEM1, DIXDC1, TBC1D2B, EVC, ZMYM4, CKAP5, EPHX2, FN3KRP, MAFK, MED13L, PLCG1, PRICKLE1, TXNDC16, MSL1, GLS, ZNF83, CPT2, ZNF81, ECHDC2, DPY19L4, PCDHGA3, PCDHGA2, PCGF5, CTTN, KCNQ4, KCNQ3, SLK, GSN, SDPR, URB1, ARHGAP1, ATP8B2, NCKIPSD, CYS1, PSMD8, KIAA0907, ELP2, HMGCLL1, NRXN3, WBSCR17, CCDC88C, LDB1, GPRASP1, RUNX1T1, SACM1L, EIF4G2, MURC, EIF4G3, SBF2, XIRP2, HIPK2, ZNF711, NRK, LUM, USP9X, CD247, RSAD2, NFIX, NPAS1, ZNF704, RGS11, MOAP1, HAND1, CENPA, CYP26B1, PTN, MS12, TNPO2, DTX4, MSH3, EDA2R, ANKAR, FRMPD4, SUN1, SPARC, SON, RNF44, RPRD2, MYPN, SP3, SLC6A6, SETD7, CYP4F3, SH3D19, SETD2, TSSK4, LIPE, NTM, F2R, SPTAN1</p>	
<p>GO:0032991</p>	<p>Macromolecular complex</p> <p>479</p>	<p>5.5 x 10<sup>-5</sup></p>

			<p>PABPC1, PPP2R2B, TCF4, SGIP1, GPD1, DVL3, KIF3B, NDC80, COL16A1, ATM, FXR1, KCNJ4, SYNE1, ZNF217, COL14A1, MAP2, MAP4, MAP7, TNK2, CHRNE, RERE, SLC9A1, BACH2, EZH1, TRPV3, YBX3, COPB2, MAPT, GUCY1A3, DHTKD1, ATF7IP, TTC37, ANP32E, VPS8, EPB41L2, CARD11, CCND1, CCND2, EIF4A2, CLIC5, GUCY1B3, USP22, KIAA1429, HLA-DQB1, C7, RABGAP1, NACA, LIN9, CBLL1, SF3B1, NUMA1, SORBS1, MYOM2, CSDE1, PKD2, KCNE1, BUB1, PKD1, WAC, LIMD1, MYOM1, SNAP23, FBXW11, SNAP25, PDK1, COL15A1, PPP1R10, DGKI, MARCH6, APPL2, CNTF, RPS6KA2, USP47, SECISBP2L, ATP6AP1L, MPHOSPH8, LRP4, LRP5, MMS19, XPO1, PRPF4B, MAU2, GRIK4, RBM5, LMO7, PDE3B, VCL, EIF4EBP3, PRKAR2B, PUM1, ASPH, GCOM2, ANKZF1, INSR, SAMD4A, RBL2, FMR1, CECR2, EEF2, ARID1B, DIS3L, IRS1, BICD1, EP300, DCUN1D2, COPG1, MGA, VAMP1, SMARCA2, CCDC8, BBS4, HDLBP, HMGB2, SETD1B, KCNA4, SESN1, SESN3, DOCK1, HNRNPK, HCN2, TAF1, NIN, MYO1B, SMG7, MYO1D, MYL12A, EHMT2, RBMX, CDKN1B, CRBN, TSC1, SMARCC2, PRKAR1A, DYRK1A, FBOX32, RNPC3, HDAC9, HNRNPH1, MYH10, DENND5A, HP1BP3, GABBR1, HLA-DMB, PRMT2, EXOG, SCN7A, TRPM4, DDB1, ESR1, CDC5L, KIDINS220, CCNL2, UFL1, KIF1B, SNRNP200, ERN1, KMT2E, KMT2D, KMT2A, KMT2C, CRLF1, WBP11, NR3C1, CDH2, NFYA, CALCOCO1, C1QTNF7, IGF1R, COL9A1, HSPA2, AP3M2, VPS35, KDM3A, KDM3B, COL8A1, CHD6, CHD5, HBB, VPS39, WDFY3, NOX4, COL13A1, NFRKB, CBL, COL5A2, ADIPOQ, SMC4, AJUBA, CCDC113, APAF1, TBL1X, HMGN1, DYNC1LI2, SEC31A, HMGN2, GLDN, RAB3GAP1, RNF216, KIF13A, GET4, HOOK2, APOB, ATP2B4, KIFAP3, STAM, GLE1, KIF13B, PAN2, CD3D, CD3E, CD36, BAZ1B, RFC1, COLQ, MLLT10, LAMC1, GPATCH11, SUDS3, MYH7B, FUS, PFKFB1, ITGA10, AFAP1L1, ASB15, CD74, ASB18, STX16-NPEPL1, STX16, LAMB1, FBXO9, COL18A1, SMAD9, SMAD7, KANSL3, SMAD6, CREBBP, SMAD4, SMAD1, AFG3L2, LARP4B, HNRNPA1, PTPN11, DDX6, NOTCH2, SUPT16H, KAT6B, NCOR1, TCF12, ALG13, ADAR, KAT6A, TM7SF2, NRP1, COL21A1, MITF, WASF2, FERMT1, GNL3L, TERF2IP, ZEB1, CANX, WBP2, ANKRD17, AP2B1, CCNY, TOP2B, DYNC1H1, GOLGA3, RBBP4, TBX15, RBM41, POGZ, SPECC1, SPEN, SGCG, SGCD, NPPB, ORMDL3, TF, CLUAP1, PARD3, ATG14, ABTB2, COL3A1, ATG13, ABTB1, ATP6V1G2, ZBTB16, WTIP, POLR2A, NR1D1, SQSTM1, GATAD2B, SNRNP70, PRKAA2, BAZ2A, MYO5B, BAIAP2L2, TBX2, MEX3B, STAT1, SNAI2, CAPRIN1, CAPRIN2, COG3, COL19A1, SVIL, KIF20B, YWHAQ, ATP6V0A1, CALM3, UBXN7, SEPT2, THRB, ANKRD1, VIPR1, UBQLN1, KLHL3, RAD21, C7ORF55-LUC7L2, GATA6, SRRM2, SRRM1, SATB1, SNRPN, PLXNB2, COL22A1, TNNT3, KCNT2, SLU7, AKAP6, SEPT6, COL24A1, ERC1, SEPT7, ANKFY1, COPZ2, CACUL1, SNX8, ITGB5, NAPB, SOX9, ITGB1, BLOC1S6, EIF3A, MTPN, EIF3E, EIF3L, CLASP1, PLXND1, RUNX2, BMF, FN1, LPL, CFLAR, EEF1A1, CKAP5, MED13L, SREBF2, EIF4B, ITGA9, PLCG1, NEDD4, ULK1, MSL1, SPTBN1, COPA, LARP1, PCGF5, CTTN, KCNQ4, KCNQ3, GSN, KLHL24, NCKIPSD, TPR, PHC1, PSMD8, ELMSAN1, ELP2, NRXN3, LDB1, NLRP1, SACM1L, EIF4G2, EIF4G3, EYA1, XPC, ARCN1, HIPK2, KLHL11, EXOC6B, LUM, CD247, DNAH3, DNAH1, AKAP9, TUBGCP6, RGS11, ERCC5, ERCC6, HAND1, CENPA, CAMK2D, MSI2, MR1, TNRC6B, PLA2R1, TNRC6A, PIK3R1, APC, NUP153, MSH3, UBE4A, UBE4B, L3MBTL1, SUN1, SON, KLHL36, RPRD2, SP3, ATXN7, IGFBP3, KLHL34</p>	
GO:0045202	Synapse	94	<p>ENAH, SEPT2, CADM1, RAB3GAP1, SYT2, GRIK4, SLC6A4, GABBR1, BNIP3, STRN, POSTN, CANX, PRKAR2B, CTTN, SERPINE2, TIAM1, AAK1, MAPT, SAMD4A, SHC4, NMNAT2, NRXN3, MPDZ, FMR1, PSD3, TANC1, ACTN2, SSPN, PJA2, CBLN1, ARHGAP32, MAGEE1, COLQ, SIPA1L1, FCHSD2, GRIP2, SEPT6, ERC1, VAMP1, SLC40A1, UNC13A, FUS, PPFIA4, PPFIA1, MME, ASAP1, ATP6V1G2, AKAP9, CDH2, KCNJ2, ZMYND8, ITGB1, BLOC1S6, NR1D1, CAMK2D, PTN, VPS35, AGRN, SNAP23, SNAP25, CNKSR2, SLC8A1, CAP2, COL13A1, SYT12, NF1, DLGAP4, FRMPD4, DGKI, SEPT11, SHANK3, FXR1, LAMA2, KCNJ4, EPHA4, P2RX7, EPHA7, PPP1R9A, SYNE1, PENK, TENM2, NLGN4X, PRKAR1A, SYTL5, MAP4, SPTBN1, PTCH1, HTR2B, SPG11, CHRNE, SYT17, LRP4, F2R, MYH10</p>	$2.3 \times 10^{-4}$
GO:0044456	Synapse part	77	<p>RAB3GAP1, SYT2, GRIK4, SLC6A4, GABBR1, STRN, BNIP3, CANX, PRKAR2B, CTTN, TIAM1, AAK1, MAPT, SHC4, NRXN3, MPDZ, FMR1, PSD3, TANC1, ACTN2, SSPN, PJA2, CBLN1, ARHGAP32, MAGEE1, COLQ, SIPA1L1, GRIP2, SEPT6, ERC1, VAMP1, SLC40A1, UNC13A, FUS, PPFIA4, PPFIA1, MME, ASAP1, AKAP9, ATP6V1G2, KCNJ2, ZMYND8, ITGB1, BLOC1S6, NR1D1, VPS35, SNAP23, SNAP25, CNKSR2, SLC8A1, CAP2, COL13A1, SYT12, NF1, FRMPD4, DGKI,</p>	$5.4 \times 10^{-4}$

	SEPT11, SHANK3, FXR1, LAMA2, KCNJ4, EPHA4, P2RX7, PPP1R9A, EPHA7, SYNE1, TENM2, NLGN4X, SYTL5, MAP4, SPTBN1, PTCH1, SYT17, CHRNE, LRP4, F2R, MYH10	
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### Downregulated

GO:0044421	Extracellular region part	189	PVR, S100A4, GDA, LDHA, RARRES1, ATP1B3, TUBB2A, F13A1, EDN2, FAM20C, S100A9, SELENBP1, CCT3, DLK1, SYT7, COX5A, AQP1, PNP, SLC7A5, COX5B, HMCN2, ACTG1, ACTG2, SLC25A25, APOD, PPP1R1A, LILRA5, TGFBI, CFD, CIB2, SMIM1, PI15, YARS, STC2, CTRB1, CTRB2, CST3, MRGPRF, ADAMTS9, ADAMTS8, THBD, CD320, SERPINF2, AKR1B10, ATP5C1, WFDC1, TUBA4A, RAB15, HSPB1, VSIG4, MFAP5, MDH2, MVP, ADAMTS4, ALDOA, MYL6, FXYD3, CCL2, ALDOC, PPIL1, ADAMTSL4, IFITM3, CLU, ELN, CCL8, CDC37, LIF, TUBB, LGALS3BP, TPI1, PSMB6, PPL, CACYBP, EIF3K, IDH2, HSPE1, NDRG1, PLTP, TUBB4B, S100A16, AK1, CD300E, S100A10, TOMM40, VDAC2, EMILIN2, PPA1, SFRP5, CEL, PRADC1, LYVE1, CXCL14, SFRP2, CD59, CD209, FAM184A, AHSA1, PLAU, SNRNP25, NAMPT, HINT1, IGFBP6, PRDX5, PRDX2, PMVK, PRDX1, CKB, SLC1A3, SAA1, SERPINA5, HMOX1, IL4R, SLC25A3, SERPINA3, TUBB6, ATP50, LBP, RAMP1, MT3, CDC7, EPN3, NDUFB10, ACTA2, FLOT1, ELANE, TMEM38A, COX4I1, VASP, ARL3, STOM, INHBA, CTSL, SERPINB6, PTGDS, PRDX6, UBE2M, NPPC, CTSB, ADAM15, NDUFB3, NDUFB4, RTN4RL1, CD248, NDUFB9, ADAMTS15, TAC1, GPRC5A, TPM4, NDUFB1, RGMA, CRISPLD2, FCN3, ALDH1A3, C1QTNF1, COL27A1, KRT8, PGA3, GALNT16, ENO3, BCL3, PGA4, PGA5, FBN2, PTX3, THBS1, QSOX1, GAPDH, MYO5C, ACTB, NDUFA4, BCAS1, RNASE1, ACTC1, IGF1, ATP1A1, SOD1, SOD3, FBLN1, PYGM, AKR1B1, AOX1, PTP4A2, GAMT, SERPIND1, SELE, HPGD, CD14, IGFBP4, CMTM5	$1.9 \times 10^{-21}$
GO:0005576	Extracellular region	198	PVR, S100A4, LDHA, GDA, RARRES1, ATP1B3, TUBB2A, EDN2, FAM20C, S100A9, SELENBP1, SYT7, CCT3, AQP1, ACTG1, HMCN2, ACTG2, APOD, PPP1R1A, LILRA5, CFD, PI15, YARS, STC2, ADAMTS9, ADAMTS8, CD320, SERPINF2, ATP5C1, WFDC1, RAB15, TUBA4A, VSIG4, MDH2, ADAMTS4, ALDOA, ALDOC, ELN, CDC37, LIF, TPI1, LGALS3BP, CACYBP, IDH2, PLTP, TUBB4B, S100A16, CD300E, S100A10, EMILIN2, VDAC2, PPA1, SFRP5, CEL, SFRP2, CD59, CD209, FAM184A, AHSA1, SNRNP25, PLAU, PMVK, CKB, SAA1, SERPINA5, IL4R, SERPINA3, SLC25A3, TUBB6, ATP50, CDC7, NDUFB10, ACTA2, ELANE, FLOT1, PKDCC, INHBA, PTGDS, SERPINB6, NPPC, ADAM15, FNDC5, CRISPLD2, BCL3, GALNT16, THBS1, PTX3, QSOX1, MYO5C, BCAS1, ACTC1, IGF1, ATP1A1, SOD1, LCN10, SOD3, FBLN1, PYGM, PTP4A2, AOX1, GAMT, LRP8, SERPIND1, SELE, HPGD, CD14, CMTM5, F2RL3, F13A1, DLK1, COX5A, SLC7A5, COX5B, PNP, SLC25A25, TGFBI, CIB2, SMIM1, CTRB1, CTRB2, CST3, MRGPRF, THBD, AKR1B10, HSPB1, MFAP5, MVP, FGFR2, MYL6, FXYD3, CCL2, PPIL1, ADAMTSL4, IFITM3, CLU, CCL8, TUBB, PSMB6, PPL, EIF3K, NDRG1, HSPE1, AK1, TOMM40, LYVE1, PRADC1, FAM198A, CXCL14, NAMPT, HINT1, IGFBP6, PRDX5, PRDX2, PRDX1, RSPO4, SLC1A3, HMOX1, LBP, RAMP1, MT3, EPN3, TMEM38A, COX4I1, VASP, ARL3, STOM, CTSL, PRDX6, UBE2M, CTSB, NDUFB3, NDUFB4, RTN4RL1, CD248, NDUFB9, ADAMTS15, TAC1, GPRC5A, NDUFB1, TPM4, RGMA, FCN3, ALDH1A3, C1QTNF1, COL27A1, KRT8, PGA3, ENO3, PGA4, PGA5, FBN2, GAPDH, ACTB, NDUFA4, RNASE1, AKR1B1, VSTM2L, IGFBP4	$2.0 \times 10^{-16}$
GO:0031012	Extracellular matrix	35	FGFR2, MYL6, ADAMTSL4, CD248, ADAMTS15, S100A9, ELN, CLU, PRDX1, HMCN2, ACTG1, TUBB, LGALS3BP, SLC1A3, CRISPLD2, COL27A1, TGFBI, ATP50, FBN2, THBS1, GAPDH, TUBB4B, CRIP2, CST3, MMP15, EMILIN2, SOD1, SOD3, ADAMTS9, FBLN1, ADAMTS8, SFRP2, HSPB1, MFAP5, ADAMTS4	$3.5 \times 10^{-6}$
GO:0016020	Membrane	276	PVR, CADM3, LDHA, RARRES1, ATP1B3, AURKAIP1, S100A9, AQP4, SELENBP1, CCT3, SYT7, AQP1, ADORA1, AQP3, HMCN2, ACTG1, S1PR3, CH25H, CLEC4G, LILRA5, ABRA, CREB3L1, MRPL34, GJD2, OSBP2, MRPL51, HTR4, PIM1, LPCAT4, SSTR2, CD320, ATP5C1, SMPX, RAB15, VSIG4, PMP22, BIN1, DBN1, GRB14, MDH2, ADAMTS4, ALDOA, BDKRB2, TMEM229B, KCNJ3, KCNMB1, TMCC2, LGALS3BP, IDH2, MTERF3, COX6B1, FCER1G, RAP1GAP2, TRPC4, UAP1, S100A16, MAP2K3, CD300E, S100A10, VDAC2, RGS9BP, GPR153, KCNJ5, SFRP5, CEL, SEMA6B, ATP2A2, SFRP2, CD59, NTRK1, ETS2, CD209, RGS6, PLAU, ATP5D, TIMM17A, HVCN1, KCNIP2,	$7.6 \times 10^{-4}$

			PMVK, PBXIP1, NMUR1, SERPINA5, IL4R, SLC25A3, ATP50, LMOD1, ATP5J, FUNDC2, ARHGEF4, C10ORF54, NDUFB11, NDUFB10, SLC25A4, FLOT1, ACKR1, ACKR3, MMP15, RNF175, ECSIT, NDUFA12, PTGDS, SH3KBP1, SLC27A6, ADAM15, LIMS2, CA14, CCR1, STARD10, FNDC5, DGKB, ALOX5AP, GALNT16, VMP1, THBS1, QSOX1, ACTC1, LRRN3, IGF1, ATP1A1, SOD1, FAM180B, PTP4A3, GRIA1, MRPL27, PTP4A2, LRP8, SELE, HPGD, CD14, TMEM176B, TMEM176A, CMTM5, F2RL3, GABRB3, NDUFAB1, DLK1, COX5A, NFXL1, SLC7A5, COX5B, MARCO, MINOS1, PACSIN1, SLC25A25, TGFBI, SMIM12, SLC25A26, GLP2R, CIB2, SMIM1, STMN2, SLCO4A1, LRP1B, CST3, MRGPRF, PPP1CC, CHPT1, COX6C, THBD, HSPB1, EMP3, MVP, FGFR2, MYL6, SLC38A4, FXYD3, LITAF, IFITM2, IFITM3, CLU, COX7B, COX7C, KCNA7, PAQR5, PRUNE2, P2RY2, PPL, FAM189A1, TTYH1, MTCH1, EIF3K, HSPE1, NDRG1, LMAN1L, TESC, AK1, MRPS24, COX8A, TOMM40, CYB561, NDUFV3, PPIF, ATF4, LYVE1, CADPS2, TDH, CACNA1G, CACNA1E, FPGS, SCARA5, IER3, PTGES2, CLTB, UQCRC1, HINT1, MRV1, CYC1, UQCRFS1, NDUFS6, NDUFS5, SLC1A3, OSR1, HMOX1, LBP, PTDSS1, FOSL1, RAMP1, MT3, EPN3, CPTP, MPP3, CYCS, TMEM38A, DHRS9, COX4I1, TMEM70, TMEM189, DAPK2, RASL12, VASP, ARL3, STOM, PRDX6, PMEPA1, UQCRB, NDUFB3, NDUFB4, NDUFB6, RTN4RL1, CD248, NDUFB9, TAC1, ATP5G1, ATP5G3, GPRC5A, TPM4, GPR4, NDUFB1, NDUFB2, RGMA, C1QTNF1, KRT8, PLCD3, ENO3, SNX22, SH2B2, KLHL41, FBN2, GAPDH, RNF122, CAMK2A, HRC, ACTB, NDUFA4, NDUFA5, GNAO1, NDUFA6, MAP1B, BAD, RHAG, NDUFA1, SIRT2, RDH10, KCNN2, SYNM, SNTA1	
GO:0030054	Cell junction	52	PVR, NAMPT, LDHA, CADM3, GABRB3, PDLIM7, SYT7, PRDX1, AQP3, ACTG1, HMCN2, PACSIN1, CIB2, GJD2, C10ORF54, FLOT1, FBLIM1, PPP1CC, VASP, XIRP1, PRDX6, SH3KBP1, HSPB1, SMPX, PMP22, DBN1, ADAM15, ALDOA, LIMS2, STARD10, GPRC5A, TPM4, PSMB6, PPL, KRT8, NDRG1, CNN1, CAMK2A, ACTB, ACTC1, TRPC4, MAP1B, ATP1A1, SIRT2, CADPS2, GRIA1, CD59, AKR1B1, SYNM, AHSA1, PLAU, SNTA1	$1.2 \times 10^{-2}$
GO:0044425	Membrane part	204	PVR, LDHA, CADM3, RARRES1, ATP1B3, AQP4, SYT7, AQP1, ADORA1, AQP3, S1PR3, CH25H, CLEC4G, LILRA5, CREB3L1, GJD2, HTR4, LPCAT4, SSTR2, CD320, ATP5C1, SMPX, VSIG4, PMP22, BIN1, ADAMTS4, BDKRB2, TMEM229B, KCNJ3, KCNMB1, TMCC2, FCER1G, TRPC4, CD300E, S100A10, VDAC2, RGS9BP, GPR153, SFRP5, KCNJ5, CEL, SEMA6B, ATP2A2, SFRP2, CD59, NTRK1, CD209, RGS6, ATP5D, TIMM17A, KCNIP2, HVCN1, PBXIP1, NMUR1, SERPINA5, IL4R, SLC25A3, ATP50, ATP5J, ARHGEF4, FUNDC2, C10ORF54, NDUFB11, NDUFB10, SLC25A4, FLOT1, ACKR1, ACKR3, RNF175, MMP15, NDUFA12, PTGDS, SH3KBP1, SLC27A6, ADAM15, CA14, CCR1, FNDC5, ALOX5AP, GALNT16, VMP1, THBS1, QSOX1, LRRN3, IGF1, ATP1A1, FAM180B, GRIA1, LRP8, SELE, HPGD, TMEM176B, CD14, TMEM176A, CMTM5, F2RL3, GABRB3, NDUFAB1, DLK1, COX5A, NFXL1, SLC7A5, COX5B, MINOS1, MARCO, PACSIN1, SLC25A25, SMIM12, GLP2R, SLC25A26, SMIM1, SLCO4A1, LRP1B, MRGPRF, CHPT1, COX6C, THBD, EMP3, FGFR2, SLC38A4, FXYD3, LITAF, IFITM2, IFITM3, COX7B, COX7C, KCNA7, PAQR5, PRUNE2, P2RY2, FAM189A1, MTCH1, TTYH1, LMAN1L, TESC, COX8A, TOMM40, CYB561, PPIF, NDUFV3, LYVE1, ATF4, CADPS2, CACNA1G, CACNA1E, SCARA5, IER3, PTGES2, CLTB, UQCRC1, MRV1, CYC1, UQCRFS1, NDUFS6, NDUFS5, SLC1A3, OSR1, HMOX1, PTDSS1, RAMP1, FOSL1, EPN3, CPTP, MPP3, CYCS, TMEM38A, TMEM70, COX4I1, DHRS9, TMEM189, DAPK2, VASP, STOM, PMEPA1, UQCRB, NDUFB3, NDUFB4, NDUFB6, RTN4RL1, CD248, NDUFB9, ATP5G1, ATP5G3, GPRC5A, NDUFB1, GPR4, NDUFB2, RGMA, C1QTNF1, KRT8, KLHL41, FBN2, RNF122, CAMK2A, HRC, NDUFA4, NDUFA5, GNAO1, NDUFA6, RHAG, NDUFA1, RDH10, KCNN2, SNTA1	$1.9 \times 10^{-2}$
GO:0044420	Extracellular matrix component	9	HMCN2, FBLN1, SLC1A3, COL27A1, TGFBI, ELN, CST3, FBN2, MFAP5	$4.1 \times 10^{-2}$
GO:0044422	Organelle part	234	S100A3, TUBB2B, PDLIM7, AURKAIP1, TUBB2A, SELENBP1, CCT3, SYT7, AQP1, ACTG1, ACTG2, CH25H, CDCA2, ABRA, CREB3L1, CFD, GPT2, MRPL34, MRPL51, MYH6, LPCAT4, RAD1, MSX1, CD320, SERPINF2, ATP5C1, SMPX, RAB15, TUBA4A, BIN1, DBN1, GRB14, MDH2, ALDOA, LGALS3BP, CACYBP, MTERF3, COX6B1, IDH2, RAP1GAP2, NKX2-5, TUBB4B, UAP1, S100A16, MAP2K3, VDAC2, CSRP3, ATP2A2, CD59, ETS2, NTRK1, ZNF385A, SNRNP25, ATP5D, LRRC10,	$4.4 \times 10^{-2}$

			GTF3A, TIMM17A, PDIA4, PBXIP1, SAA1, SERPINA5, SLC25A3, SERPINA3, TUBB6, ATP5O, LMOD1, COX17, ATP5J, FUNDC2, CDC7, NDUFB11, NDUFB10, SLC25A4, ACTA2, FLOT1, FBLIM1, RNF175, ECSIT, NDUFA12, PTGDS, SH3KBP1, SSU72, POLR2L, FNDC5, STK40, ALOX5AP, GALNT16, BCL3, VMP1, THBS1, QSOX1, MYO5C, ACTC1, IGF1, SOD1, SOD3, CFAP45, GRIA1, MRPL27, LRP8, HPGD, TMEM176B, CD14, F13A1, NDUFAB1, COX5A, COX5B, MARCO, MINOS1, PACSIN1, SLC25A25, GATA5, TGFBI, SLC25A26, TUBG1, CIB2, CST3, TMSB10, MRGPRF, ARNTL, PPP1CC, CHPT1, COX6C, TNNT2, THBD, HSPB1, MVP, FGFR2, MYL6, MYL7, MYL4, FXYD3, LITAF, PPIL1, IFITM3, ADAMTSL4, CLU, COX7B, COX7C, MYL9, TUBB, HOXA3, PSMB6, TTYH1, MTCH1, HSPE1, NDRG1, LMAN1L, PHACTR3, AK1, COX8A, MRPS24, TOMM40, NR4A3, PPIF, NDUFV3, ATF4, CADPS2, TDH, FPGS, ETNPPL, NAMPT, CLTB, PTGES2, UQCRC1, HINT1, MRVI1, CYC1, PRDX5, UQCRFS1, NDUFS6, NDUFS5, HMOX1, PTDSS1, TUBA1C, MT3, EPN3, CPTP, CYCS, TMEM38A, TMEM70, COX4I1, DHRS9, TMEM189, DAPK2, ARL3, CTSL, ITGB1BP2, MZT2A, CTSB, PMEPA1, UQCRB, NDUFB3, NDUFB4, GLRX5, NDUFB6, TCAP, NDUFB9, ATP5G1, TPM2, ATP5G3, GPRC5A, TPM4, NDUFB1, NDUFB2, COL27A1, KRT8, TUBA3D, SNX22, PGA3, GPSM2, SH2B2, TUBA3E, PGA4, MYOG, KLHL41, PGA5, GAPDH, CAMK2A, HRC, ACTB, NDUFA4, NDUFA5, TRNP1, NDUFA6, MAP1B, BAD, NDUFA1, SIRT2, RDH10, AKR1B1, KCNN2, LSM10, SYNM	
GO:0099512	Supramolecular fiber	28	TUBB2B, TUBB2A, CCT3, TPM2, TPM4, ACTG1, TUBB, PBXIP1, SAA1, KRT8, TUBB6, TUBA3D, NDRG1, TUBA3E, SH2B2, TUBG1, LMOD1, TUBA1C, TUBB4B, MT3, ACTC1, AK1, MAP1B, TMSB10, SIRT2, ARL3, TUBA4A, SYNM	$3.9 \times 10^{-2}$

Gene Ontology (GO) hierarchy containing Cellular Component (CC) sub-ontology.  
*\*p value* was corrected by the accepted Benjamini-Hochberg correction method.

**Supplemental Table 5. GO KEGG Pathway analysis of significantly changed categories, comparing HF vs HD DEGs.**

<b>GO KEGG Pathway</b>	<b>Count</b>	<b>Gene symbol</b>	<b>Benjamini*</b>
Alzheimer's disease	47	NDUFB3, ATP5D, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, COX7C, NDUFAB1, MME, ATP5G1, UQCRFS1, COX5A, COX5B, ATP5G3, NDUFB1, NDUFB2, NDUFS6, NDUFS5, MAPT, COX6B1, ATP5O, GAPDH, ATP5J, NDUFA4, NDUFA5, LPL, NDUFB11, NDUFB10, NDUFA6, CYCS, COX8A, COX4I1, BAD, NDUFA1, NDUFA12, COX6C, NDUFV3, MAPK1, ATP2A2, BACE1, ERN1, ATP5C1, CALM3, APAF1, UQCRB	$3.3 \times 10^{-6}$
Parkinson's disease	42	ATP5D, NDUFB3, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, UCHL1, COX7C, NDUFAB1, UBA7, ATP5G1, UQCRFS1, COX5A, COX5B, ATP5G3, NDUFB1, NDUFB2, NDUFS6, NDUFS5, COX6B1, ATP5O, ATP5J, NDUFA4, NDUFA5, NDUFB11, NDUFB10, SLC25A4, NDUFA6, CYCS, COX8A, COX4I1, VDAC2, NDUFA1, NDUFA12, COX6C, NDUFV3, PPIF, ATP5C1, APAF1, UQCRB	$2.0 \times 10^{-6}$
Huntington's disease	50	ATP5D, CLTB, UQCRC1, CYC1, NDUFAB1, UQCRFS1, COX5A, COX5B, NDUFS6, AP2B1, NDUFS5, CREB3L1, ATP5O, ATP5J, NDUFB11, NDUFB10, SLC25A4, CYCS, COX4I1, NDUFA12, COX6C, EP300, ATP5C1, UQCRB, NDUFB3, NDUFB4, NDUFB6, POLR2L, NDUFB9, COX7B, COX7C, DNAH3, DNAH1, ATP5G1, ATP5G3, NDUFB1, POLR2A, NDUFB2, COX6B1, NDUFA4, NDUFA5, NDUFA6, CREBBP, COX8A, VDAC2, SOD1, NDUFA1, PPIF, NDUFV3, APAF1	$4.4 \times 10^{-6}$
Oxidative phosphorylation	39	ATP5D, NDUFB3, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, COX7C, NDUFAB1, ATP6V1G2, ATP5G1, UQCRFS1, COX5A, ATP5G3, COX5B, NDUFB1, NDUFB2, NDUFS6, NDUFS5, COX6B1, ATP5O, COX17, ATP5J, NDUFA4, NDUFA5, NDUFB11, NDUFB10, NDUFA6, COX8A, COX4I1, NDUFA1, NDUFA12, COX6C, PPA1, NDUFV3, ATP5C1, ATP6V0A1, UQCRB	$4.6 \times 10^{-6}$
Non-alcoholic fatty liver disease (NAFLD)	42	NDUFB3, PPARA, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, COX7C, NDUFAB1, UQCRFS1, COX5A, COX5B, NDUFB1, NDUFB2, NDUFS6, NDUFS5, COX6B1, PRKAA2, INSR, PIK3R1, NDUFA4, NDUFA5, NDUFB11, NDUFB10, SOCS3, NDUFA6, CYCS, COX8A, ADIPOR2, COX4I1, IRS1, ADIPOQ, NDUFA1, NDUFA12, BCL2L11, COX6C, NDUFV3, LEP, ATF4, ERN1, UQCRB	$5.4 \times 10^{-6}$
Focal adhesion	50	CHAD, VCL, CTNBN1, ACTG1, PDGFC, PDGFD, SHC4, ROCK1, MYLK3, ACTN2, PPP1CC, VASP, MAPK1, CCND1, CCND2, RELN, LAMC1, COL24A1, PARVA, MYL7, TNC, COL3A1, ITGA10, ITGB5, ITGB1, MYL9, IGF1R, PTK2, DOCK1, COMP, COL27A1, SOS2, TNN, LAMB1, THBS1, THBS2, PIK3R1, FN1, THBS4, SPP1, ACTB, VAV3, IGF1, BAD, MYL12A, COL5A2, LAMA2, ITGA9, VWF, LAMA4	$2.3 \times 10^{-5}$
Phagosome	38	HLA-DQB1, DYNC1LI2, TUBB2B, HLA-DRB1, TUBB2A, ITGB5, ATP6V1G2, HLA-DMB, ITGB1, CANX, MARCO, ACTG1, TUBB, COMP, TUBB6, HLA-DRB5, TUBA3D, TUBA3E, HLA-DPB1, DYNC1H1, THBS1, PLA2R1, THBS2, TUBA1C, TUBB4B, THBS4, ACTB, COLEC11, HLA-DQA2, HLA-DQA1, CTSL, CD36, CD209, ATP6V0A1, TUBA4A, HLA-DPA1, CD14, HLA-DRA	$3.3 \times 10^{-4}$
ECM-receptor interaction	26	TNC, COL3A1, ITGB5, ITGA10, ITGB1, CHAD, COL27A1, COMP, TNN, AGRN, THBS1, LAMB1, THBS2, SPP1, THBS4, FN1, HSPG2, COL5A2, LAMA2, VWF, ITGA9, LAMA4, CD36, RELN, LAMC1, COL24A1	$3.7 \times 10^{-4}$
Viral myocarditis	19	ACTB, HLA-DQB1, HLA-DRB1, CYCS, MYH7, MYH6, HLA-DMB, HLA-DQA2, HLA-DQA1, ACTG1, EIF4G2, EIF4G3, CCND1, SGCG, HLA-DRB5, SGCD, HLA-DPA1, HLA-DPB1, HLA-DRA	$1.4 \times 10^{-3}$

Cardiac muscle contraction	22	MYL4, ACTC1, UQCRC1, ATP1B3, COX7B, COX8A, CYC1, COX7C, COX4I1, ATP1A1, MYH7, MYH6, TPM2, COX5A, UQCRFS1, COX5B, TPM4, COX6C, TNNT2, COX6B1, SLC9A1, UQCRB	$2.3 \times 10^{-3}$
Thyroid hormone signaling pathway	28	THRA, ATP1B3, THRB, CTNNB1, ACTG1, PLCD3, TBC1D4, PIK3R1, ACTB, RXRB, CREBBP, MED12, ESR1, MED14, ATP1A1, RCAN1, BAD, MED13L, STAT1, NOTCH2, MAPK1, PLCE1, CCND1, EP300, PLCG1, NOTCH4, NCOR1, SLC9A1	$5.0 \times 10^{-3}$
Adherens junction	20	ACTB, PARD3, PTPRM, CREBBP, WASF2, SMAD4, LMO7, ACTN2, SNAI2, CTNNA1, CTNNA3, CTNNB1, VCL, ACTG1, IGF1R, MAPK1, TJP1, EP300, SORBS1, INSR	$7.7 \times 10^{-3}$
Bacterial invasion of epithelial cells	21	ACTB, CLTB, SEPT2, CBL, WASF2, CTNNA1, ITGB1, CTNNA3, SEPT11, VCL, CTNNB1, ACTG1, PTK2, CTTN, DOCK1, GAB1, SEPT6, PIK3R1, SEPT8, FN1, SHC4	$9.2 \times 10^{-3}$
Pathogenic Escherichia coli infection	16	ACTB, ROCK1, TUBB2B, TUBB2A, ITGB1, CTNNB1, ACTG1, TUBB, CTTN, TUBB6, TUBA3D, TUBA4A, TUBA3E, CD14, TUBA1C, TUBB4B	$9.2 \times 10^{-3}$
Protein digestion and absorption	22	COL18A1, SLC8A1, ATP1B3, COL21A1, COL13A1, SLC9A3, COL3A1, COL22A1, ELN, COL15A1, MME, ATP1A1, COL5A2, COL9A1, COL14A1, COL27A1, ACE2, PGA3, PGA4, PGA5, COL24A1, DPP4	$1.6 \times 10^{-2}$
PI3K-Akt signaling pathway	60	FGF9, FOXO3, CHAD, IL4R, CREB3L1, PDGFC, ANGPT1, PDGFD, FGF1, INSR, RBL2, IRS1, BCL2L11, DDIT4, MAPK1, CCND1, CCND2, GNB4, RELN, LAMC1, COL24A1, FGFR2, TNC, COL3A1, ITGB5, ITGA10, ITGB1, CDC37, IGF1R, PTK2, COL27A1, COMP, SOS2, TNN, PRKAA2, LAMB1, THBS1, PPP2R2B, THBS2, PIK3R1, FN1, THBS4, SPP1, IL2RB, IGF1, BAD, COL5A2, PCK1, LAMA2, EIF4B, VWF, ITGA9, LAMA4, ATF4, CDKN1B, TSC1, YWHAQ, JAK1, JAK2, F2R	$2.1 \times 10^{-2}$
Proteoglycans in cancer	39	NDUFB3, ATP5D, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, COX7C, NDUFAB1, MME, ATP5G1, UQCRFS1, COX5A, COX5B, ATP5G3, NDUFB1, NDUFB2, NDUFS6, NDUFS5, MAPT, COX6B1, ATP5O, GAPDH, ATP5J, NDUFA4, NDUFA5, LPL, NDUFB11, NDUFB10, NDUFA6, CYCS, COX8A, COX4I1, BAD, NDUFA1, NDUFA12, COX6C, NDUFV3, MAPK1, ATP2A2, BACE1, ERN1, ATP5C1, CALM3, APAF1, UQCRB	$2.2 \times 10^{-2}$
Complement and coagulation cascades	18	ATP5D, NDUFB3, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, UCHL1, COX7C, NDUFAB1, UBA7, ATP5G1, UQCRFS1, COX5A, COX5B, ATP5G3, NDUFB1, NDUFB2, NDUFS6, NDUFS5, COX6B1, ATP5O, ATP5J, NDUFA4, NDUFA5, NDUFB11, NDUFB10, SLC25A4, NDUFA6, CYCS, COX8A, COX4I1, VDAC2, NDUFA1, NDUFA12, COX6C, NDUFV3, PPIF, ATP5C1, APAF1, UQCRB	$2.8 \times 10^{-2}$
Toxoplasmosis	26	ATP5D, CLTB, UQCRC1, CYC1, NDUFAB1, UQCRFS1, COX5A, COX5B, NDUFS6, AP2B1, NDUFS5, CREB3L1, ATP5O, ATP5J, NDUFB11, NDUFB10, SLC25A4, CYCS, COX4I1, NDUFA12, COX6C, EP300, ATP5C1, UQCRB, NDUFB3, NDUFB4, NDUFB6, POLR2L, NDUFB9, COX7B, COX7C, DNAH3, DNAH1, ATP5G1, ATP5G3, NDUFB1, POLR2A, NDUFB2, COX6B1, NDUFA4, NDUFA5, NDUFA6, CREBBP, COX8A, VDAC2, SOD1, NDUFA1, PPIF, NDUFV3, APAF1	$2.7 \times 10^{-2}$

cGMP-PKG signaling pathway	33	ATP5D, NDUFB3, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, COX7C, NDUFAB1, ATP6V1G2, ATP5G1, UQCRC1, COX5A, ATP5G3, COX5B, NDUFB1, NDUFB2, NDUFS6, NDUFS5, COX6B1, ATP5O, COX17, ATP5J, NDUFA4, NDUFA5, NDUFB11, NDUFB10, NDUFA6, COX8A, COX4I1, NDUFA1, NDUFA12, COX6C, PPA1, NDUFV3, ATP5C1, ATP6V0A1, UQCRB	$3.4 \times 10^{-2}$
PPAR signaling pathway	17	NDUFB3, PPARA, NDUFB4, UQCRC1, NDUFB6, NDUFB9, CYC1, COX7B, COX7C, NDUFAB1, UQCRC1, COX5A, COX5B, NDUFB1, NDUFB2, NDUFS6, NDUFS5, COX6B1, PRKAA2, INSR, PIK3R1, NDUFA4, NDUFA5, NDUFB11, NDUFB10, SOCS3, NDUFA6, CYCS, COX8A, ADIPOR2, COX4I1, IRS1, ADIPOQ, NDUFA1, NDUFA12, BCL2L11, COX6C, NDUFV3, LEP, ATF4, ERN1, UQCRB	$4.5 \times 10^{-2}$
Regulation of actin cytoskeleton	39	FGFR2, MYL7, FGD1, ENAH, FGF9, WASF2, ITGB5, ITGA10, BDKRB2, ITGB1, MYL9, VCL, ACTG1, PTK2, DOCK1, TIAM1, GSN, SOS2, PDGFC, PDGFD, FGF1, PIK3R1, FN1, APC, ACTB, ARHGEF4, VAV3, ROCK1, ARHGEF6, MYLK3, ACTN2, MYL12A, ARHGEF12, PPP1CC, MAPK1, ITGA9, CD14, SLC9A1, F2R	$4.5 \times 10^{-2}$

\**p value* was corrected by the accepted Benjamini-Hochberg correction method.



**Supplemental Table 6. GO Tissue category analysis of significantly DEGs, comparing HF vs HD.**

Tissue Category	DEGs Number	Gene symbol	<i>Benjamini*</i>
Brain	1056	<p>LDHB, GDA, MEF2A, MED23, RORB, ITSN2, TMEM140, USP53, EPC2, BTBD1, BTBD3, PATZ1, CDH23, LRRC6, SCN2B, VPS45, MED12, VPS41, MYH7, ZNF793, PIK3IP1, TMEM130, PTPDC1, LPCAT4, MAPK1, TAGLN, CD320, SIPA1L1, BACE1, ROR1, ABAT, UNC13A, HLA-DRA, KIAA1107, KIAA1109, TNRC18, PABPC4, ARIH2, KBTBD7, PPP2R2B, SGIP1, SPP1, LAPTM4B, ZNF528, ZC3H13, KIF3B, ATP11A, NDC80, ACACB, VDAC2, FAM131C, ATM, FNIP1, SEPT11, FNIP2, TMEM116, SRSF5, COL14A1, PKP2, FAM214A, NLGN4X, RGS6, DHX40, SPNS1, RERE, SPATA6L, CDC42BPB, BACH2, ZNFX1, ZNF532, NUA1, EZH1, ATP10A, BNIP3, ATP10D, STAC2, NISCH, SERPINA3, QKI, USP11, GATAD1, PRSS35, ATF7IP, ADNP, ZNF337, ARHGFEF17, MMP16, RNF175, MMP15, RFTN2, ARHGFEF12, VPS8, ZNF334, EPB41L2, SERPINB6, DOK5, EIF4A2, EPB41L5, MGEA5, GRIP2, SORT1, ZNF550, USP22, PARVA, PHLDB1, FMOD, RABGAP1, AZIN2, ZNF169, SF3B1, MTMR3, SORBS1, SORBS2, FMO3, PKD2, ARMCX3, PKD1, WAC, FAM156B, PTX3, SNAP25, MTMR4, PHLDA1, SLC8A1, ATRN, ZNF160, IGF1, TRIM23, APPL2, CDH13, CNTF, DUSP1, USP47, SLFN12, SERPIND1, ATP6AP1L, PHLDB2, LRP4, CDH11, PRPF4B, ZXDC, LMO7, KIAA1328, NFXL1, EIF4EBP3, SEZ6L2, PACSIN1, MTURN, CIB2, RNF146, ZNF594, STMN2, FMR1, XRR1, TACC2, PNPLA7, ATP9A, RPL15P3, MGA, STMN1, VAMP1, NEU3, SMARCA2, CCDC8, FGD1, FBXO40, ADAMTSL3, PAFAH2, CES4A, SETD1B, IFITM3, GLUD1, FN3K, PTK7, TTC3, PDXDC1, ZNF322, PRUNE2, PTK2, CERS1, CSAD, TTYH1, RNF169, ZNF599, PHACTR2, PHACTR3, CREBZF, MYO1B, MYO1D, SYT12, NR4A2, EHMT2, CYB561, THSD7B, NREP, P2RX7, MAN2C1, DYRK1A, SMARCC2, HDAC9, PDZD2, ATP7B, DENND5A, PTGES2, CYC1, GABBR1, SPRY4, TMF1, SPRY2, SLC1A3, PRMT2, SLC35D1, DDB1, CYCS, DHRS9, ACADL, ARL3, KIF1B, SNRNP200, ERN1, SPEF2, MAPRE2, TXNRD1, SNX13, CYP2U1, CRYBG3, FKBP6, SSFA2, FAM13A, COL9A1, TMED4, BRICD5, COL27A1, SNX22, GPSM2, VPS35, FIBIN, GPNMB, NFATC3, EHD3, VPS39, WDFY3, RNF5P1, COL5A2, ICK, VSTM2L, SNX33, HMG1, PNMA3, CADM3, PNMA2, HMG2, FAM110D, PRR12, RAB3GAP1, CCT3, APOB, ATP2B4, KIFAP3, GLE1, PI15, ATRNL1, TANC1, FRY, LRCH1, MLLT10, UBR5, PRDM5, RAB17, NEK9, RAB15, FAM177A1, HAS3, EXT1, BIN1, CHGB, GPATCH11, MYH7B, SUDS3, ALDOA, FUS, ALDOC, MME, TMEM229B, EP400NL, ACAT1, PPAT, CALU, SEMA5B, ACE, STX16, LETMD1, FBXO3, MAML3, RAP1GAP2, FBXO9, KLF5, CNKSR2, ZBTB47, FTO, NOTCH2NL, CELSR3, ALMS1, RNF207, PPA1, GPR153, EPHA4, EPHA7, SEMA6B, DESI1, SEMA6D, DMTF1, NTRK1, ETS2, SUPT16H, HOPX, HEPH, BEGAIN, KAT6B, CLCN6, NCOR1, TCF12, PLA2G6, ZMAT1, ATP5D, COL21A1, FERMT1, ZEB2, ZEB1, KCNIP2, TTLL3, ZBTB38, ART4, AP2B1, AES, CCNY, ATP5O, GOLGA4, GOLGA2, ATP5J, GPR173, C10ORF54, KIAA1324L, RBBP4, MBD6, LENG8, ARRDC3, RAB11FIP3, BGN, PTGDS, PTGDR, NPPC, PLA2G6, LIN54, CLUAP1, TF, PPFIA4, LIMS2, ATG14, PPFIA1, ATG13, ZBTB16, SAMD9L, PGBD5, NR1D2, ETV1, BAZ2A, MYO5B, LRRN3, DLGAP4, BIRC6, FBLN1, GRIA1, YWHAQ, ATP6V0A1, CHN2, PTCH1, UBXLN7, APBB3, TCAF1P1, TMEM176B, CD14, MKRN1, SEPT2, F13A1, NT5DC2, TRIM52, COX5A, GDNF, SETX, ARL10, SLC25A25, CFAP61, TRIM44, SLC25A27, PDGFC, SMIM12, ALDH6A1, TUB, C6ORF48, PHC1P1, PLXNB2, CST3, MRGPRF, CHPT1, NEBL, SLC25A30, FAM222A, CBLN1, CHPF, FNBP1L, RIOK3, ASB1, AKAP6, ERC1, CLIP4, GBP4, DST, SEPT7, ANKFY1, FGFR2, PACS1, PEA3, CIART, ITGB5, RABGAP1L, ZMYND8, PCDHAC2, BLOC1S6, TRIM66, EIF3E, MTCH1, LMTK2, HEG1, RHOBTB1, EIF3L, PLXND1, FN1, RHOBTB3, EEF1A1, AK4, KCTD7, FOXP2, EIF4B, ITGA9, OMD, PLEKHA6, PLEKHA5, UACA, FAM198B, CADPS2, FAM198A, ULK1, ULK2, TANGO2, SPTBN1, FAM84B, NYNRIN, C6ORF62, AEBP1, HECW2, UQCRC1, FOXK1, AMT, KIAA0430, MRV11, ARHGAP17, UQCRC1, PDCD4, LARP1, ARHGAP21, FUBP1, FUBP3, HEATR5B, ITIH5, MKL2, TPR, PHC1, TUBA1C, ELMSAN1, MT3, PARM1, HMBS, COX4I1, FOXJ3, ARHGAP24, UBN2, TMEM189, NLRP1, ARHGAP32, ARCN1, CEMIP, PRNP, MATR3, EXOC6B, TNC, HCFC2, DNAH1, AKAP9, CYTH3, MAP3K7CL, TUBGCP6, ERCC6, MAP3K3, OXCT1, SAFB, NFAT5, CAMK2D, TNN, MTCL1, CAMK2B, ZNF608, TNRC6B, CAMK2A, GAPDH, TNRC6A, CRIM1, PIK3R1, DPT, GPR107, APC, L3MBTL1, UBE4B, MAP1B, NFASC, SIRT2, WSB1, TMEM47, ENDOG, CEP68, TMEM43, IGFBP2, LTBP1, KIAA0556, TUBB2B,</p>	1.3 x 10 <sup>-12</sup>

		<p>SLC9A5, TUBB2A, RPL15, CYP2D6, GOLGA8M, SELENBP1, INTS3, PNISR, ZNF251, ACBD5, ACBD4, CTNNB1, ACTG1, ACBD3, GOLGA8B, PPP1R1A, CLK4, GOLGA8A, LUC7L3, PTPRM, GBP5, ROCK1, MAGI1, RXRB, MPDZ, SPIRE1, SSPN, CTNNA1, CTNNA3, ADAMT59, MAGEE1, ADAMT58, FCHSD2, ZZZ3, ATP1F1, HLA-DPA1, SCAF8, MYO18A, TM6SF1, ADAMT54, ZNF41, ZNF610, RUND3A, MYEF2, KCNJ2, ZNF618, KCNJ3, DIDO1, NPHP3, CACYBP, HLA-DPB1, PLTP, TUBB4B, DVL3, MAP2K3, PPFIBP1, PCDH18, KCNJ4, SYNE1, PENK, ZNF211, MAP2, MAP4, PAPP2, ZNF385B, TNK2, RANBP10, HLF, FAM3C, NAP1L3, ZNF518A, MAPT, ZNF491, GUCY1A3, SYNJ2, C20ORF166-AS1, DHTKD1, CDC7, ARHGEF4, FMNL3, MICAL2, TTC37, MICAL3, TLE4, FBLIM1, ARHGEF9, FOSB, ZSWIM5, MXD4, WDR48, PJA2, MAST4, CCND1, PLEKHH2, SRGAP3, UNC80, GUCY1B3, GNB4, KIAA1429, REPS2, NACA, TBC1D9, SMTNL2, NUMA1, DGKB, DGKE, PDE1C, SOS2, CSDE1, KCNE1, PER2, GALNT16, TBC1D4, PER1, ZNF471, LIMD1, PER3, TBC1D1, FBXW11, RASA1, ZNF266, PPP1R10, MXRA8, DGKI, MARCH6, MXRA5, VAT1L, RASSF4, RPS6KA2, ZNF862, MT2A, MCFD2, ZBTB4, ZNF462, SPG11, HTR2B, ZBTB1, CMTM5, MMS19, XPO1, SLC44A5, ADH1C, RBM5, ADH1B, PDE3B, DLK1, KANK1, CHAD, VCL, PRKAR2B, KIAA1462, AAK1, DDX24, ST3GAL6, ASPH, GCOM2, INSR, NMNAT2, CHAC2, CECR1, PSD3, CECR2, EEF2, TMSB10, ACTN2, ARID1B, DIS3L, CDO1, DDI4, THBD, PCMTD2, HSPB1, KCNA4, LRRCC1, TUBB, GPR22, OAZ1, HNRNPK, TEF, PCYT1B, DOPEY1, KIAA1211, SH3TC2, ANGPTL5, HCN2, TAF1, NOMO3, NIN, EFEMP1, SMG7, DOCK9, SMG1, WHSC1, ANKH, NDUFV3, CRBN, LOXHD1, CACNA1G, CACNA1E, RNPC3, ADAM22, NOMO1, HNRNPH1, XPO7, NOMO2, MYH10, ARID4B, UCHL1, PRDX5, WWC2, PRDX2, ZKSCAN1, PRDX1, LBH, ZFYVE16, DDX60, WWC3, PDE8B, DLG5, PTDSS1, NBPF8, ESR1, CDC5L, KIDINS220, HLTf, CCNL2, UFL1, FAM120A, PRDX6, PPM1H, LIMCH1, INPP4B, INPP4A, LINC01341, GPAM, KMT2E, KMT2D, BTAF1, KMT2A, KMT2C, CTF1, TAC1, ATP5G1, CDH2, PKD1L2, CALCOCO1, CDH5, ESYT3, TSC22D3, AP3M2, HSPA2, KDM3A, KDM3B, SH2B1, CHD6, CHD5, NES, GNAO1, NCDN, ALPK3, NF1, TRANK1, DBI, RASL11B, PPP1R9A, DBP, CCDC113, AKR1B1, ACE2, JAK1, APAF1, SEC31A, PDLIM7, FAM20C, ADCY6, AQP4, AQP1, RNF213, ADORA1, S1PR3, TRAK2, GAB2, HTRA1, STAM, RAPGEF4, BCL7A, KIF13B, PAN2, SLC12A6, OSBP2, EFNB2, KIAA0141, HTR4, VASH1, HUWE1, NAV2, VSIG4, GIGYF2, TBC1D8B, GCNT2, ELN, ASAP2, ASAP1, KCNMB1, ITGBL1, TMCC2, TPI1, MACF1, DNAAF3, SERINC1, CEP170, AGRN, RGPD8, OSBPL2, SMAD9, S100A16, SMAD7, RGPD4, SMAD6, SCD, KANSL3, CREBBP, YTHDC1, S100A10, SMYD2, LAMA2, NOTCH2, LAMA4, FAM184A, GLTSCR1L, AHS2, CRYM, TM7SF2, GTF3A, SLC15A2, TIMM17A, NHSL1, WBP2, CKB, ANKRD17, C14ORF132, ANKRD11, SLC25A3, DYNC1H1, TOP2B, SARDH, ZFYVE1, FUND2, POGZ, SLC25A4, SPEN, ZCCHC14, EEF1A1P5, ASH1L, GADD45G, SLC27A6, SUSD5, ORMDL3, ADAM15, YPEL1, RBM33, CA14, ABTB2, ATP6V1G2, CYLD, PLCL1, STAT4, FNDC5, STK40, FAT4, FNDC1, GATAD2B, PREPL, BCL9L, HBP1, QSOX1, TBX6, RBM24, MCF2, TBX2, MEX3B, SPSB4, ATP1A1, STAT1, CAPRN2, TENM4, HYDIN, SLC25A25-AS1, MRPL27, TENM2, CALM3, TOB2, PYGB, THRA, THRB, SLC6A1, HSPB1P1, GPRIN3, SLC6A4, GDAP1L1, UBQLN1, ITPKA, KLHL3, CIPC, TIAM1, SRRM2, RNF38, PHYHIP, SNRPN, COL22A1, LRP1B, ARNTL, KIAA0753, MOXD1, MAP4K4, SLITRK4, PLCE1, TNS1, KCNT2, CELF2, COL24A1, MYL6, FRAS1, SLC38A3, CLU, PAQR6, MRAP2, NAPB, RASAL2, PPP1R16B, PSMB6, B3GNT5, PPL, PLCH1, HECTD4, CLASP1, NDRG1, RNF10, B3GNT2, HECTD1, LPL, DIXDC1, TBC1D2B, EVC, ZMYM4, CKAP5, TOMM40, MAFK, MED13L, PRICKLE1, PLCG1, TXNDC16, GLS, ETNPPL, ZNF83, ZNF81, ECHDC2, PCDHGA3, PCDHGA2, PCGF5, KCNQ3, URB1, ATP8B2, NCKIPSD, RAMP1, KIAA0907, BTNL9, CPTP, HMGCLL1, NRXN3, MPP3, LDB1, GPRASP1, EIF4BP7, RASL12, SACM1L, EIF4G2, EIF4G3, SBF2, CTSB, NDUFB4, SBNO2, NDUFB6, RTN4RL1, USP9X, CD248, NDUFB9, NFIX, TPM4, NPAS1, ZNF704, RGS11, FAM107A, HAND1, PLCD3, PTN, PGA3, PGA4, CNN1, PGA5, TNPO2, DTX4, ACTB, NDUFA4, EDA2R, FRMPD4, SUN1, ISOC2, SON, RNF44, RPRD2, SP3, KCNN2, SLC6A6, SETD7, SYNM, SH3D19, SETD2, TCP11L2, SETD5, SPTAN1</p>	
Heart	128	<p>ASPN, S100A4, MEF2A, PDLIM7, LTBP4, FAM179A, SELENBP1, ANKRD1, COX5A, ADORA1, CCDC141, MEDAG, ATP2B4, GATA6, PPP1R1A, GCOM2, ASPH, C2CD2, SCN2B, HTR4, VPS41, CHPT1, NEBL, TNNT2, MYO18B, PLCE1, TNS1, RFC1, UBR5, ATP5C1, CELF2, ATP1F1, MYL7, COX7B, COX7C, KCNA4, ITGA10, NPY6R, KCNJ2, KCNA7, ITGB1, RASAL2, IDH2, TMEM30B, ANGPTL2, NKX2-5, ZNF528, EEF1A1, HCN2, EVC, CRIP2, COX8A, PTPN14, MYOZ1, ACACB, CSRP3, PPA1, PXDNL, KCNJ5, SYNE1, NREP, LAMA4, CD59, NOTCH4, HOPX, MAP4, SLC9A1, LRR10, HECW2, NAP1L3, KCNIP2, SYNPO2L, SLC25A3, ATP50, NCKIPSD, SCN7A, LRRFIP1, GOLGA2, NRXN3, CYCS, GPRASP1, COX4I1, DHRS9, NEXN, EPB41L2, MURC, SERPINB6, XIRP1, XIRP2, CCND2, EEF1A1P5, TMEM182, ITGB1BP2, NDUFB3, TF, PPFIA4, CA14, LIN9, CTF1, FHL2, ZNF366, TMEM159, SMOC2, HAND1, SULT1C4, CRISPLD1, NHLRC3, PDE1C, OXCT1, PER1,</p>	8.8 x 10 <sup>-12</sup>

		PRKAA2, FYCO1, GAPDH, HRC, THBS4, SLC8A1, NDUFA6, ANKAR, RCAN1, FZD4, RHAG, MCFD2, KCNN2, ACE2, UBXN7, APAF1, PHLDB2, SNTA1	
Epithelium	422	PNISR, INTS3, ITS2, ZNF638, CLK1, ACBD5, CTNNA1, CLK4, GIT2, CDCA2, ZNF106, FAXDC2, SKP2, MED12, SPIRE1, MED14, CTNNA1, MAGED2, CTNNA3, MAPK1, MYO18B, ADAMTS8, SIPA1L1, SCAF8, MYO18A, KIAA1109, CNTRL, DIDO1, KCNJ3, ZNF224, TUBB4B, ZC3H13, PPFIBP1, NDC80, VDAC2, ATM, FXR1, WDR66, SRSF5, SYNE1, ZNF217, CMYA5, MAP2, MAP4, MAP7, TNK2, RERE, CDC42BPB, ELF1, ZNF532, YBX3, ZNF518A, DDI2, COPB2, PBXIP1, MAPT, ARHGAP11B, C20ORF166-AS1, ARHGAP11A, ATF7IP, ARHGEF6, MICAL3, ADNP, TLE4, PJA2, EPB41L2, MAST4, NAB2, MGEA5, ZNF740, KIAA1429, PHLDB1, NACA, LIN9, EPB41L4A, ZNF169, SF3B1, NUMA1, SCAF11, SORBS2, PKD2, CSDE1, PKD1, PER1, ARMCX3, TBC1D4, WAC, TRIP12, ZNF160, PPP1R10, CFAP45, CNTF, MT2A, USP47, PHLDB2, MPHOSPH8, ENAH, PRPF4B, RBM5, LMO7, NFXL1, SLC7A5, KANK2, VCL, AAK1, DDX24, PUM1, ASPH, ANKZF1, INSR, FNDC3B, EEF2, TMSB10, CDO1, IRS1, TACC2, EP300, MGA, HSPB1, STMN1, TNFAIP3, SMARCA2, SLC40A1, HDLBP, SETD1B, FN3K, ANLN, PDXDC1, PRUNE2, PTK2, HNRNPK, DOCK1, RNF169, DOPEY1, KIAA1211, DDX42, PHACTR2, SMG7, GOLIM4, NR4A2, WHSC1, MYL12A, EHMT2, RBMX, SAFB2, FBXO38, MAN2C1, CDKN1B, DSG2, SMARCC2, PRKAR1A, ZNF318, NRPC3, HDAC9, HNRNPH1, PC, MYH10, HP1BP3, ARID4B, WWC2, ZKSCAN1, TMF1, LBH, HMOX1, DLG5, LRRFIP1, KDM5B, AHNAK, CDC5L, NEXN, HLTFF, ZFR, CCNL2, UFL1, KIF1B, FAM120A, LIMCH1, IPO5, SNRNP200, MAPRE2, GPAM, FHOD1, KMT2E, ABLIM1, BTAF1, KMT2D, SSFA2, KMT2C, C10ORF11, WBP11, CDH2, FAM13A, TSC22D3, ANXA9, COL27A1, ADAMTS12, KDM3B, CHD6, HBB, NES, NCDN, NFRKB, CBL, NF1, SMC4, AJUBA, IFIT2, DSC1, APAF1, SNTA1, HMGN1, DYNC1L12, SEC31A, PDLIM7, RAB3GAP1, PRR12, ADCY6, RNF216, CCT3, RNF213, KIF13A, DDX17, APOB, GBF1, STAM, PAN2, STC2, POLH, EFN2, NKTR, FRY, RFC1, HUWE1, BAZ1B, UBR5, TUBA4A, NEK9, BIN1, DBN1, GIGYF2, SUDS3, ALDOA, NEK3, ALDOC, SRSF11, ASAP2, CALU, ACE, TPI1, MACF1, CEP170, SERINC1, TRPC4, RGPDB, S100A16, SMAD9, KANSL3, RGPD4, CREBBP, PTPN14, CELSR3, YTHDC1, ATP13A3, HNRNPA1, PTPN11, NOTCH2, LAMA4, ATP2A2, SFRP2, SUPT16H, BEGAIN, KAT6B, NCOR1, HNRNPA1P10, ADAR, KAT6A, NARS, WASF2, HELZ, TERF2IP, ZEB1, CANX, ZBTB38, ANKRD17, CCNY, ANKRD11, TOP2B, DYNC1H1, GOLGA4, GOLGA3, GOLGA2, FUNDC2, POGZ, SPEN, LENG8, HERC1, EEF1A1P5, SH3KBP1, RBM39, RAB11FIP1, PARD3, SHROOM2, RBM33, ATG14, PPFIA1, SAMD9L, CYLD, NR1D1, SQSTM1, FAT1, GATAD2B, BCL9L, SNRNP70, BAZ2A, NPR3, CAPRIN1, TJP1, TOM1L2, GFPT1, SVIL, TENM2, GFPT2, PYGB, SEPT2, HSPB1P1, SETX, ROBO1, SRRM2, SRRM1, ARGLU1, SMC8, SLCO4A1, TOR1AIP1, TRIM41, MAP4K4, TNS1, USO1, SLU7, GBP4, ERC1, SEPT7, DST, PACS1, CCDC18, PEAK1, ZMYND8, RASAL2, PPL, LMTK2, EIF3K, CLASP1, NDRG1, FN1, CYP19A1, EEF1A1, ZMYM4, CKAP5, EIF4B, PLEKHA6, PHF3, UACA, PLEKHA5, PLCG1, ULK1, SPTBN1, ANTXR1, COPA, UQCRC1, FOXK1, KIAA0430, PDCD4, LARP1, FUBP1, ARHGAP21, CTTN, KCNQ3, SLK, URB1, MKL2, TPR, PPP1R14B, TNIP1, TUBA1C, ELMSAN1, NRXN3, EIF4BP7, DAPK2, EIF4G2, EIF4G3, XPC, MATR3, SHCBP1, USP9X, DNAH1, GPRC5A, MTM1, TUBGCP6, ERCC5, ERCC6, MAP3K3, CENPA, SAFB, KRT8, CAMK2D, TUBA3D, MTCL1, TUBA3E, GAPDH, PIK3R1, GIGYF1, APC, NUP153, MAP1B, UBE4B, SUN1, SON, RPRD2, ATXN7, MYPN, SYNM, SETD2, SPTAN1	$7.2 \times 10^{-12}$
Skeletal muscle	117	MEF2A, PTPN21, AQP7, ANKRD1, ITS2, TXLNB, ABRA, ZNF106, SLC25A26, SOCS3, CECR2, MYH7, ACTN2, SSPN, PPP1CC, MAGED2, IRS1, PKIA, TACC2, TNNT3, MYO18B, CD36, COLQ, HUWE1, SMPX, VGLL2, ATP1F1, NEU3, BIN1, VAMP1, MFAP5, MYL4, ACADSB, CIART, COX7C, KCNA4, ITGB1, PPP1R3C, TPI1, CACYBP, EIF3K, COX6B1, LSMEM1, MYO1B, AK1, MYOZ1, TPD52L1, MYL12A, NR4A3, CSRP3, FNIP1, SYNE1, PRADC1, RGS1, SLC7A2, CMYA5, SPTBN1, FBXO32, IER3, SLC16A12, CFHR1, PCGF5, C10ORF71, MSS51, FUNDC2, NDUFB10, TNMD, CYCS, COX411, PKDCC, DAPK2, NEXN, EPB41L2, IGFN1, C6ORF106, XIRP1, XIRP2, DOK5, LIMCH1, EIF4A2, CLIC5, ITGB1BP2, SGCD, SSU72, TCAP, ABTB1, CD247, FHL2, SORBS1, MYOM2, FMO2, CHD2, PGA3, MYOG, CAMK2B, PGA4, ZNF471, PRKAA2, MYOM1, PGA5, KLHL41, HBB, FYCO1, SNAP25, NFATC3, PIK3R1, HRC, NDUFA5, UBE4A, NDUFA6, BAD, INMT, NRAP, PTP4A3, MYPN, SYNM, GAMT	$3.8 \times 10^{-9}$

Plasma	63	PVR, NRP1, CADM1, F13A1, POSTN, HLA-DMB, ASAH1, MARCO, CFHR1, AZGP1, APOB, APOD, SERPINA5, FAP, SERPINA3, CFH, DPP4, DPEP2, PTPRM, CTSL, PTGDS, SERPINF2, PLXDC2, LAMC1, PROS1, C7, TF, ADAMTSL4, LUM, TNC, CLU, MST1, ITGB1, MDK, CDH5, AZGP1P1, LGALS3BP, ACE, FCN3, KLKB1, PTN, HEG1, FGL2, TNN, B3GNT2, LAMB1, THBS1, PLXND1, QSOX1, PLTP, FN1, ATRN, HSPG2, SOD3, LAMA2, VWF, CDH13, LYVE1, DSG2, CP, SERPIND1, IGFBP3, CD14	$1.7 \times 10^{-5}$
Liver	310	PVR, HMG1, CADM1, LTBP3, CRHBP, CYP2D6, FAM20C, S100A9, POSTN, INTS3, DNASE1L3, RNF213, ACBD5, OGN, APOB, AGTR2, APOD, CD46, CLEC4G, CFH, OGT, GLE1, PLS3, ROCK1, SKP2, CTNNA1, CTNNA3, PRELP, MYO18B, CD36, ZNF235, SERPINF2, MLLT10, ATP5C1, ABAT, LAMC1, MYO18A, SUDS3, HLA-DRA, ALDOA, ACADSB, HLA-DRB1, GPBP1L1, PFKFB1, MST1, CNTRL, ASB15, CD74, PPAT, CALU, LGALS3BP, TPI1, ACE, SERINC1, KLKB1, STX16, CACYBP, OBSL1, FGL2, AGRN, LAMB1, PLTP, SPP1, GPD1, SCD, NOTCH2NL, TPD52L1, ACACB, EMILIN2, VDACC2, HNRNPA1, LAMA2, LAMA4, COL14A1, CMYA5, MAP4, ZNF385A, HNRNPA1P10, NNMT, ARSB, ATP5D, PPARA, CYP2J2, NRP1, NARS, PMVK, CANX, ASAH1, CFHR1, SAA1, SERPINA5, SERPINA3, FGF1, SARDH, DPP4, GOLGA3, ATP5J, GOLGA2, CDC7, ZNF281, TBX15, RBBP4, SLC25A4, GZMA, ELANE, LGALS12, SPEN, ARHGEF12, HERC1, PJA2, BGN, CKM, ADM, PTGDS, EEF1A1P5, PLXDC2, RIN2, SLC27A6, RBM39, SSU72, FMOD, TF, C7, RBM33, COL3A1, AASS, FNDC5, ACSL1, SORBS1, MT1A, FAT1, HK3, FMO3, CSDE1, ARMCX3, WAC, SNRNP70, THBS1, FYB, PDK1, CES2, SLC8A1, MT1L, ATRN, HSPG2, IGF1, IGF2, STAB2, SOD3, PCK1, CDH13, DKK3, TJP1, CNTF, GFPT1, CDH19, MT2A, AOX1, GAMT, ZNF462, TCAF1P1, SERPIND1, CP, CD14, MPHOSPH8, DUSP6, ASPN, SEPT2, ADH1C, ZNF827, ADH1B, C20ORF194, MIPEP, COX5A, VIPR1, PNP, COX5B, SLC7A5, MARCO, AZGP1, PRKAR2B, SLC25A20, IDS, SRRM2, ST3GAL6, TGFB1, DDX24, SRRM1, ASPH, INSR, ALDH6A1, PLXNB2, FMR1, TOR1AIP1, CECR1, CECR2, CDO1, TRIQK, PNPLA7, TNNT3, TNS1, USO1, RELN, SMARCA2, MFAP5, SLC38A4, CCDC18, HDLBP, SLC38A3, GLUD1, CLU, PTK7, ANLN, ZMYND8, ITGB1, ABI3BP, ABCA6, AZGP1P1, EIF3A, CSAD, EIF3E, RNF10, PLXND1, FN1, EEF1A1, TBC1D2B, NOMO3, COX8A, EPHX2, NR4A3, EIF4B, ITGA9, LYVE1, NREP, DSG2, SLC7A2, TDH, PRKAR1A, MTR, FPGS, NOMO1, HDAC9, NOMO2, ATP7B, PC, MYH10, AEBP1, CPT2, UQCRC1, PRDX5, SLC35D1, OIT3, LBP, AHNAK, ELP2, TRPM7, EIF4BP7, DHRS9, COX4I1, NEXN, CCNL2, STOM, UFL1, EIF4G2, CTSL, XPC, XIRP1, PRDX6, SBF2, TMEM182, HIPK2, SNRNP200, ERN1, CTSB, CUX1, GPAM, PROS1, MATR3, KMT2E, BTAF1, GLRX5, TNC, SSFA2, LUM, CDH2, ATP5G1, ATP5G3, TMED4, ANXA9, FCN3, SAFB, KRT8, CAMK2D, FBN2, GPNMB, GAPDH, RNF122, NDUFA4, NES, MAP1B, GYG2, NDUFA1, RHAG, AJUBA, VWF, SON, ITPRIPL2, ACE2, IGFBP3, SNTA1	$3.3 \times 10^{-5}$
Platelet	97	S100A4, PEAR1, LTBP1, SEPT2, HSPB1P1, PDLIM7, SLC6A4, ADCY6, PNP, VCL, ACTG1, PGR, ACBD3, GBF1, KIF13B, YARS, MAGED2, MAPK1, MYO18B, TNS1, CD36, HUWE1, UBR5, HSPB1, TUBA4A, FAM177A1, SEPT6, GRAP2, DBN1, MYO18A, GATB, ALDOA, CLU, ASAP2, UBA7, ASAP1, CALU, FCER1G, CLASP1, VDACC2, SHANK3, SEPT11, CASS4, TSC1, DYRK1A, PRKAR1A, MAP4, SPTBN1, SLC9A1, CYB5R1, HINT1, CANX, ASAH1, LARP1, TTLL3, COPB2, CTTN, GSN, SDPR, CCNY, ARHGAP1, ATP5O, NCKIPSD, ARHGEF12, VASP, EIF4G2, EIF4G3, PRDX6, IPO7, SRGAP3, SORT1, SGCD, MAPRE2, FHOD1, ABLIM1, PARD3, C10ORF11, TPM4, MTM1, CD9, TSC22D3, SNAP23, THBS1, GAPDH, EHD3, ACTB, FYB, UBE4A, MAP1B, DBI, SIRT2, COG3, VWF, SVIL, USP47, YWHAQ, PYGB	$5.8 \times 10^{-4}$
Uterus	251	DYNC1LI2, MEF2A, SEC31A, ATP1B3, PDLIM7, LTBP3, RNF216, CCT3, ZNF638, INTS3, AQP1, RNF213, ACTG1, OGN, ACTG2, AGTR2, SH3YL1, GBF1, SLC12A6, KIAA0141, HMG20A, PKHD1L1, PROX2, RFC1, TAGLN, WFDC1, ATP1F1, SCAF8, GIGYF2, ZNF41, NEK7, ALDOA, RBP7, HLA-DRB1, GPBP1L1, ALDOC, SRSF11, AFAP1L1, OAS2, KCNMB1, NPHP3, TPI1, MACF1, ZNF224, LETMD1, TUBB4B, LAPTM4B, ZC3H13, DVL3, KANSL3, SMAD6, CELSR3, SMAD1, FAM131C, ZNF627, PPA1, FNIP2, ZNF211, TNK2, ZNF385A, EZH1, MITF, WASF2, PMVK, TTLL3, ANKRD17, DIP2A, STAC2, TUBB6, ARHGAP11B, ARHGAP11A, GATAD1, DHTKD1, GOLGA4, DPP4, IP6K2, DPEP2, USP13, FUNDC2, RBBP4, ACTA2, ADNP, LENG8, ARRDC3, C6ORF106, CCND2, EIF4A2, EEF1A1P5, SH3KBP1, RIN2, USP22, KIAA1429, ZNF275, KIZ, RABGAP1, LIMS2, LIN9, STARD10, SAMD9L, SF3B1, CYLD, STAT4, NUMA1, SORBS1, DGKE, SQSTM1, NR1D2, SORBS2, CSDE1, HBP1, PHLDA1, RBM24, ZNF160, ATP1A1, SNAI2, MSRB3, CAPRIN2, TJP1, TOM1L2, SVIL, YWHAQ, ZBTB4, USP46, HTR2B, TOB2, MMS19, HSPB1P1, MAU2, MIPEP, VCL, SETX, EIF4EBP3, MINOS1, KIAA1462, GATA5, AAK1, DDX24, SMIM12, PDGFC, GCOM2, C2CD2, CHAC2, SNRPN, TOR1AIP1, TRIM41, TMSB10, MRGPRF, XRR1A, METTL7A, KIAA0753, CHPT1, DDI4, TNNT2, USO1, MGA, HSPB1, ASB2, VAMP1, SEPT7, SMARCA2, MFAP5, SLC40A1, CCDC8, PACS1, BBS4, CES4A, MDK, ABI3BP, MYL9, ZNF322, EIF3A, TUBB, HOXA3, EIF3K, RNF169, HSPE1, SLC30A2, HECTD4, PLXND1, DDX42, EEF1A1, DIXDC1, PHACTR2, CKAP5,	$1.5 \times 10^{-3}$

		DOCK9, TOMM40, EHMT2, RBMX, EIF4B, FBXO38, MAN2C1, UACA, TSC1, MSL1, PRKAR1A, PDZD2, C6ORF62, COPA, DENND5A, CPT2, HECW2, IGFBP7, IFI44L, DPY19L4, FUBP1, SLC35D1, SLK, DDX60, WWC3, ATP8B2, LRRFIP1, AHNAK, NBPf8, ELMSAN1, ELP2, ADIPOR2, ESR1, EIF4BP7, TMEM70, UBN2, TMEM189, ZFR, NLRP1, IPO7, PROS1, C16ORF58, KMT2E, ABLIM1, USP9X, ACCS, AKAP9, TRIB2, RGMA, ALDH1A2, GENPA, NCDN, L3MBTL1, NFASC, RCAN1, UBE2Q2, RNF44, HSDL2, SP3, ENDOG, CEP68, TMEM43, JAK1, ID4, JAK2, IGFBP2, SPTAN1	
Fetal kidney	40	FRAS1, YPEL1, PARD3, HDLBP, SPIN1, NRP1, KMT2C, ELN, WWC2, ZKSCAN1, INTS3, GDNF, SETX, PLAGL1, NPHP3, USP53, TSC22D3, CD46, KDM3A, NOX4, TBX2, BIRC7, EDA2R, CDC5L, MED13L, NKTR, TENM4, PHF3, CRBN, LIMCH1, FREM1, GLS, NRK, GRAMD1C, PHLDB2, ANKFY1, GIGYF2, MATR3, KIAA1429, ADAR	$4.1 \times 10^{-3}$
Cartilage	11	ASPN, CTSL, FMOD, HTRA1, LUM, COL27A1, COMP, COL22A1, CTSB, COL24A1, FN1	$8.1 \times 10^{-3}$
Fibroblast	30	ALDOA, LTBP1, UQCRC1, GABRB3, IGFBP6, PTK7, NR3C1, TPM2, CANX, TPM4, ASAH1, LGALS3BP, OAZ1, FAP, RBMS3, THBS2, NFATC3, NR4A2, COL16A1, HNRNPA1, ATM, MOXD1, SHOX2, ATF4, TAGLN, MTR, NEK9, BIN1, HNRNPA1P10, UQCRB	$3.8 \times 10^{-2}$

\**p value* was corrected by the accepted Benjamini-Hochberg correction method.