

Table SIII. Genes assigned to hub modules.

Hub module	Assigned genes
Brown module	A1CF A4GNT AASS AATF ABAT ABCA12 ABCB6 ABCC3 ABCC5-AS1 ABCD2 ABHD14B ABHD4 ABHD6 ABRACL ABTB1 ACADL ACADSB ACAP1 ACBD6 ACOT9 ACPL2 ACSBG2 ACTN1 ACTR1A ACTR2 ACVR1 ACVR2B-AS1 ADAM12 ADAM19 ADAMTS14 ADAMTS2 ADAT2 ADCK1 ADCK3 ADCY2 ADCY3 ADCY7 ADO ADORA3 ADPRM ADSSL1 ADTRP AFAP1 AFAP1L1 AFF1 AGPAT4 AGPAT4-IT1 AK7 AKAP1 AKIP1 AKNA AKR1C2 AKR1C3 ALDH1B1 ALDH1L1 ALKBH2 ALPK3 AMIGO2 AMPD3 ANGPTL1 ANGPTL2 ANGPTL5 ANGPTL7 ANKDD1B ANKH ANKRD20A12P ANKRD30BP3 ANKRD40 ANO1 ANO5 ANXA2 ANXA4 AOC2 AP3M1 AP4B1 APBB1 APEX2 APMAP APOBEC3H APOBEC4 APOF APOO APP AQPEP ARF6 ARG2 ARHGAP18 ARHGAP26 ARHGAP32 ARID5A ARID5B ARMS2 ARNTL2 ARRB1 ARRDC2 ARSB ARSI ARSJ ART3 ARV1 ASAH1 ASB1 ASB13 ASB15 ASB4 ASF1A ASIC4 ASL ASS1 ASUN ASXL1 ATF2 ATG12 ATG16L1 ATG4A ATG9A ATOH8 ATP5SL ATP6V0A2 ATP6V0A4 ATP8B4 ATPBD4 AUH AURKA AURKB AXL AZGP1 B3GNT8 B3GNTL1 B4GALT7 BACE1 BAZ2A BCAP29 BCAS4 BCDIN3D BCKDHA BCL2L11 BCL3 BCL9L BDH1 BDKRB1 BFAR BHLHE22 BIRC7 BLMH BMP4 BMPR1B BNIP1 BPGM BPI BPNT1 BRD4 BRE BRI3BP BRK1 BSG BTBD11 BTD C10orf105 C10orf129 C10orf25 C10orf88 C11orf35 C11orf82 C14orf119 C14orf142 C14orf28 C14orf93 C15orf38 C15orf39 C16orf62 C16orf88 C17orf103 C17orf107 C17orf66 C17orf67 C17orf75 C17orf82 C19orf35 C19orf80 C1orf100 C1orf131 C1orf146 C1orf87 C1QTNF1 C2 C20orf144 C20orf195 C20orf203 C22orf29 C22orf43 C2orf47 C2orf62 C2orf81 C3orf35 C3orf55 C3orf62 C3orf80 C4orf46 C5orf15 C5orf24 C5orf28 C5orf30 C5orf38 C5orf4 C6orf120 C6orf147 C7orf66 C7orf73 C7orf76 C8B CA5B CAAP1 CAB39 CAHM CALCOCO1 CALCOCO2 CALM1 CAMKK2 CAMKMT CAP2 CAPN12 CARD14 CARD8 CARHSP1 CASC3 CASP1 CASP12 CATSPER3 CBFA2T2 CBLB CCBP2 CCDC101 CCDC129 CCDC14 CCDC164 CCDC174 CCDC43 CCDC54 CCDC67 CCDC77 CCDC80 CCDC9 CCDC90A CCL27 CCND1 CCND3 CCNI2 CCNK CCT5 CD101 CD300C CD37 CD4 CD46 CD5 CD55 CD70 CD79B CD97 CDC20 CDC25A CDCA2 CDCA5 CDCA8 CDH10 CDK5R1 CDK6 CDKN2B CDYL2 CELF2-AS2 CELF6 CENPE CENPI CENPJ CENPK CENPN CENPV CENPW CEP250 CERS5 CETN2 CFDP1 CFI CFLAR CGNL1 CHCHD3 CHMP4C CHPF2 CHRNE CHST11 CHST15 CHST4 CHST6 CHSY3 CIDEB CIR1 CITED2 CLDN5 CLDN7 CLEC3B CLK3 CLN8 CLUHP3 CMA1 CMTM4 CNBP CNDP2 CNIH CNOT4 CNOT8 COL13A1 COL15A1 COL18A1 COL1A2 COL21A1 COL2A1 COL3A1 COL5A1 COL5A2 COL6A2 COL6A6 COL8A1 COL8A2 COL9A1 COLEC12 COMMD8 COPZ1 COQ3 COQ7 COTL1 COX18 CPE CPEB2 CPEB3 CPOX CPS1 CPS1-IT1 CPSF4L CPT1A CRABP2 CRBN CREB3L2 CREBZF CRISPLD1 CRLS1 CRTC3 CSF3 CSN1S1 CSNK1E CSRNP2 CTBP2 CTC1 CTIF CTNNBIP1 CTPS1 CTPS2 CTSB CTSK CTSO CTSS CTTNBP2 CWC25 CWF19L1 CYP2W1 CYP3A5 CYP4B1 CYP8B1 CYR61 DAB2IP DAP3 DAPK2 DBIL5P

	DCAF12 DCAF13 DCAF4 DCDC5 DCLRE1B DCST1 DDB2 DDO DDOST DDTL DDX19B DDX25 DDX27 DDX54 DDX55 DDX56 DENND1A DENR DHDH DHFR DHH DHRS12 DHRS3 DHRS4-AS1 DHX33 DHX35 DIAPH1 DIAPH2 DIDO1 DIO2 DKK1 DKK3 DLEU7-AS1 DLG3 DLGAP1 DLGAP2 DLGAP5 DNAAF2 DNAJA4 DNAJB2 DNAJC22 DNAJC27-AS1 DNAJC9 DNER DNM1L DNM3OS DNMBP DOCK6 DOK1 DOLK DONSON DOPEY2 DOT1L DPCD DPH1 DPH2 DPT DPY19L1 DPY19L2 DSCC1 DSE DSEL DTD2 DTL DUSP6 DYM DYNC1LI2 DYRK1B DYSF DYX1C1 DZANK1 E2F6 ECE1 ECHDC1 ECT2 EEPD1 EFCAB9 EFEMP1 EFHC1 EFHD1 EFHD2 EGF EHBP1L1 EHD3 EHF EIF2B3 EIF4E EIF5A2 ELAC1 ELL ELL2 ELMOD2 ELMSAN1 ELN ELOVL4 ELP3 EMC9 EMCN EML1 ENC1 ENDOD1 ENDOU ENO4 ENOPH1 ENOX1 ENOX2 ENPP6 EP400NL EPB41L3 EPM2A EPYC ERCC8 ERH ERICH1 ESPL1 ESRP2 EVA1A EVA1C EVI2A EXOG EXTL2 EXTL3 EYA4 EZH1 EZH2 F5 F8 FABP2 FAM101B FAM107B FAM108C1 FAM133A FAM134A FAM154B FAM160A1 FAM166A FAM180A FAM19A5 FAM207A FAM20A FAM20C FAM212B FAM225A FAM3C FAM49B FAM50B FAM86A FAM98A FANCF FAP FAR1 FASTKD5 FAT2 FAT3 FBLN1 FBXL18 FBXO31 FBXO32 FBXW4 FCN2 FDPSSL2A FDX1 FDXACB1 FECH FEM1A FEZ2 FGD5 FGD5-AS1 FGF1 FGF14 FGF18 FGF7 FGF9 FGFR4 FHDC1 FHL2 FIBIN FLG2 FLJ11235 FLJ31485 FLJ35282 FLJ36777 FLJ39639 FLJ45974 FLRT2 FMR1 FN1 FN3K FNBP1 FNBP4 FNDC1 FOSL2 FOXD2 FOXD2-AS1 FOXI2 FOXO3 FOXP1 FOXR1 FP588 FRMD7 FRMPD4 FSTL1 FTSJ3 FUBP1 FUBP3 FUCA1 FUCA2 FUT2 FUT8 FXYD1 FYCO1 FZD1 FZD10 GAB2 GAB3 GABARAPL1 GABRA4 GAS1 GBP2 GBP7 GCAT GCHFR GDE1 GDF5 GFAP GFRA2 GHR GINS1 GJB2 GK5 GLI3 GLIPR1 GLP2R GLRB GLT8D1 GLTSCR2 GLYATL1 GM2A GNA14 GNB5 GNG2 GNL1 GNL2 GOLGA2P5 GOLGA8I GOLPH3L GORAB GORASP1 GPANK1 GPATCH8 GPBP1 GPD1 GPHA2 GPN3 GPNMB GPR128 GPR133 GPR156 GPR161 GPR171 GPR19 GPR61 GPR68 GPRC5B GPX3 GREB1L GREM1 GRIK1 GRIK3 GRIK4 GRIN2A GRK6 GSE1 GSKIP GSPT2 GTF2E1 GYG1 GYLTL1B GYPB GYS1 H1FX H2AFJ H2AFY2 H6PD HAO1 HAPLN1 HBB HCG27 HCG9 HDAC3 HDAC5 HEMK1 HENMT1 HEPH HEXB HEY1 HHIPL1 HIBCH HIC2 HIF3A HIP1R HIST1H3F HIST1H3J HLA-J HLCS HMGB1 HMGB2 HMGB3 HMGB4 HMGCR HMMR HNRNPC HOGA1 HOXA3 HPN HPS4 HS3ST3A1 HSCB HSD11B2 HSD17B12 HSD17B13 HSD17B7 HSD3BP4 HSDL1 HSPA12A HSPB7 HTRA1 HTRA3 HYDIN2 ICA1 ICMT ID2 IDH3A IDI2-AS1 IFIT1B IFNA1 IFNAR2 IFNE IFT122 IFT46 IGF1 IGF1R IGF2BP2 IGFALS IGFBP3 IGFL2 IGSF10 IKBIP IL11 IL27RA IL6R IMPAD1 IMPG1 INF2 INHBA INHBA-AS1 INMT INPP5E INSC IP6K3 IRAK1 IRF4 IRS2 ISOC2 ITFG1 ITGA5 ITGB5 ITM2B ITPKB ITPKC JAM3 JPH1 KAL1 KATNBL1 KBTBD6 KCND3 KCNH1 KCNK1 KCNK7 KCNQ5 KCNS3 KCTD14 KCTD5 KDEL1 KDEL3 KDM5C KIAA0146 KIAA0226L KIAA0907 KIAA1462 KIAA1522 KIAA1598 KIAA1644 KIAA1737 KIAA1958 KIF12 KIF13B KIF18A KIF20A KIF20B KIF4A KIF4B KIF5C KIT KLF15 KLF5 KLHL29 KLHL34 KLHL42 KLLN KLRB1 KLRG1 KPNA2 KRBA1 KRI1 KRT8 L3MBTL1 LAMB3 LAMC3 LAMP2 LANCL2 LBR LCTL LDHD LDLRAD4 LEF1 LENG1 LGALS8 LGI2 LGR4 LHFPL2 LIAS LIMK2
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	LINC00176 LINC00242 LINC00272 LINC00284 LINC00441 LINC00482 LINC00511 LINC00536 LINC00574 LINC00607 LINC00622 LINC00667 LINC00673 LINC00707 LINC00710 LINC00839 LINGO4 LIPC LIPH LIPJ LMBR1L LNX1 LOC100126784 LOC100128505 LOC100129361 LOC100129794 LOC100129931 LOC100130264 LOC100130301 LOC100130581 LOC100131691 LOC100133161 LOC100133445 LOC100270804 LOC100289473 LOC100294145 LOC100505812 LOC100505912 LOC100505989 LOC100506025 LOC100506321 LOC100506895 LOC100506990 LOC100507462 LOC100507632 LOC100630923 LOC100653515 LOC101054525 LOC148709 LOC150622 LOC255411 LOC284385 LOC284757 LOC284837 LOC285847 LOC339803 LOC349196 LOC399715 LOC400752 LOC400940 LOC402779 LOC541471 LOC541473 LOC729950 LOC91450 LONP1 LOXL2 LPCAT1 LPIN1 LPPR3 LPXN LRCH1 LRIT3 LRRC1 LRRC15 LRRC8E LRRIQ1 LSAMP LSAMP-AS3 LSM14B LSS LTV1 LUM LYPD6 LYPLA1 LYRM7 LYSMD2 LYVE1 LZTS1 M1AP MAATS1 MAB21L3 MACC1 MACROD2-AS1 MAD1L1 MAMDC4 MAP10 MAP2K4 MAP2K5 MAP3K9 MAPKAP1 MATN2 MATN3 MBLAC2 MBNL1-AS1 MCMD2 MDC1 MDH1 MDM1 ME2 MED10 MED11 MED12 MED16 MED4 MEIS1 MERTK METTL13 METTL21A METTL7A METTL9 MEX3B MEX3D MFSD1 MGAT3 MGLL MICA MICB MILR1 MINK1 MIPEPP3 MIR100HG MIR210 MIR22HG MIR31HG MIR3619 MIR3675 MIR3939 MIR4427 MIR4651 MIR5690 MIR614 MIR942 MKKS MKNK2 MLIP MLXIP MMAA MMD MMP2 MOB3A MOB3C MOSPD1 MOXD1 MPHOSPH6 MPI MPZL1 MPZL2 MRAS MRC2 MRGPRD MRPL1 MRPL10 MRPL15 MRPL3 MRPL39 MRPL47 MRPL50 MRPS36 MRS2 MRTO4 MSANTD3 MSL3 MSX2 MT1A MTA2 MTCH2 MTHFD1L MTHFR MTMR3 MTTP MURC MXD3 MXI1 MXRA5 MYC MYCBPAP MYH7B MYL3 MYLK4 MYLPF MYO15A MYO15B MYO3A MYO7A MYOM3 MYZAP MZT1 N4BP2L1 NAA38 NAALAD2 NACC1 NACC2 NANS NAP1L6 NARF NAT1 NAT2 NAT6 NBEAP1 NCALD NCAM1 NCAM2 NCEH1 NCF2 NCK1 NCKAP1L NCMAP NDC80 NDFIP2 NDP NDRG2 NDUFA9 NEAT1 NECAB3 NET1 NFKBIL1 NFRKB NFYC NGF NGFR NHEJ1 NIF3L1 NIP7 NIPSNAP3A NLGN1 NME5 NMNAT1 NMNAT3 NNAT NOP14 NOP14-AS1 NOTCH1 NOV NPL NPM1 NPR3 NPRL3 NPTN NQO1 NR1H2 NRG1-IT3 NRK NRN1 NRON NRP2 NT5E NTN1 NUDT11 NUMBL NUSAP1 NXT2 NYAP1 OARD1 ODF3L1 OFD1 OGN OPRL1 OPTC OR13J1 OR51M1 OR7E37P ORC5 OSBPL3 OSBPL5 OSTM1 OTUD6B OXNAD1 P2RY6 P4HA3 PABPC1 PABPC4L PABPN1L PAFAH1B2 PAK1IP1 PAK3 PALM2 PANK1 PAQR7 PARG PARN PAX6 PBLD PCCB PCDH1 PCDH18 PCDHB10 PCDHB14 PCDHGA8 PCK2 PCOLCE-AS1 PCSK2 PCSK6 PDCL PDE10A PDE3A PDGFC PDK4 PDP1 PDZD9 PDZRN4 PFAS PGAM5 PHC2 PHF16 PHF17 PHF21A PHF8 PHKA2 PHLDB3 PHLPP1 PHRF1 PHTF1 PIAS4 PID1 PIGK PIGV PIGW PIP5KL1 PITPNA PIWIL4 PKD2 PLA2G12A PLAT PLBD1 PLD6 PLEK2 PLEKHA7 PLEKHG1 PLEKHM1P PLK4 PLSCR4 PLXNA1 PLXNA4 PNPLA7 POGLUT1 POLD2 POLDIP3 POLE POLG POLR2J2 POLR3B POM121C POSTN PPAP2B PPARD PPARGC1A PPFA4 PPIL1 PPP1CC PPP1R14C PPP1R3E PPP4C PQLC3 PRDX1 PREX2 PRKAG2 PRKCQ PRKD1 PRKD2 PRKG1-AS1 PROSER2-AS1 PRPF38A PRPF6 PRPF8 PRR11 PRRX1 PRSS23 PRTFDC1 PSEN1
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	PSEN2 PSIP1 PSMD1 PSMD14 PSME3 PSRC1 PTDSS1 PTGER2 PTGES PTK7 PTN PTPLA PTPLAD1 PTPLAD2 PTPN23 PTPRH PTPRJ PTPRS PTPRU PTPRZ1 PUS7 PVRL4 PXDN R3HDML RAB10 RAB26 RAB27B RAB37 RAB38 RAB41 RABIF RAD51D RAG1 RAI14 RALA RALGDS RAP2C RARRES1 RASAL2-AS1 RASL11B RASSF1 RBBP9 RBM45 RCAN1 RCBTB1 RCBTB2 RCC2 RCN2 RDH11 RDH13 RECQL5 REEP1 REEP3 REEP5 RELA REN REP15 RER1 RET REXO4 RFC2 RFWD2 RFX5 RGAG4 RHOQ RIMS1 RIMS3 RIN2 RIOK1 RIPK1 RIPK3 RMI1 RNF111 RNF128 RNF146 RNF219 RNF220 RNF24 RNF39 RNLS RNPC3 ROBO2 ROR1 RORC RPN2 RPS27 RPSAP52 RREB1 RRH RRP1B RSG1 RSRC2 RSU1 RTDR1 RTN2 RUNX1-IT1 RUVBL1 RYR3 S100A4 S1PR1 S1PR3 SACM1L SAE1 SALL4 SAMD13 SAMD4A SAMD4B SAMD9L SAP30 SAP30BP SAR1A SART3 SBNO2 SBSPON SCAF4 SCAMP1 SCARNA23 SCD5 SCNN1A SCO1 SCOC SCUBE2 SDAD1 SDHA SDHAP3 SEC24B SELL SELP SELRC1 SEMA3C SEMA4C SEMA6C SEPHS1 SERAC1 SERINC3 SERPINA5 SERPINE1 SERPINE2 SERPINH1 SERTAD4 SESN1 SF3A1 SF11 SFXN5 SGCD SGIP1 SGK1 SH3BP2 SH3BP5-AS1 SHC4 SHCBP1 SHMT1 SHMT2 SIMC1 SIN3A SIRT5 SKA3 SLA SLAIN1 SLC12A5 SLC16A10 SLC18A2 SLC25A12 SLC25A20 SLC25A26 SLC25A27 SLC25A28 SLC25A37 SLC26A4 SLC26A4-AS1 SLC26A7 SLC2A12 SLC2A1-AS1 SLC35A1 SLC35B4 SLC35C1 SLC35D2 SLC37A1 SLC37A2 SLC38A3 SLC38A7 SLC39A8 SLC3A2 SLC43A2 SLC44A5 SLC45A2 SLC4A5 SLC6A16 SLC6A8 SLC9A3R1 SLC9C1 SLCO2A1 SLU7 SMARCD1 SMC1B SMCR7 SMIM12 SMIM13 SMIM14 SMKR1 SMOC1 SMOC2 SMYD4 SNHG1 SNHG15 SNORD63 SNORD87 SNORD99 SNRK-AS1 SNX10 SNX20 SNX24 SOGA2 SOX10 SOX11 SOX13 SOX4 SPA17 SPAG4 SPATA13 SPATA17 SPATA6L SPEN SPOCK1 SPON1 SPP1 SPRED2 SPRYD3 SPSB2 SPSB4 SPTBN4 SQLE SREBF1 SRPRB SRSF4 SSH3 SSR1 SSX2IP ST3GAL5 ST6GALNAC2 ST6GALNAC3 ST6GALNAC5 ST6GALNAC6 STAC2 STAG3 STARD7 STAT6 STAU2-AS1 STC1 STEAP3 STK24 STK39 STMN1 STMN3 STON1-GTF2A1L STOX1 STRIP1 STRIP2 STS STX1B STXBP1 STXBP5-AS1 STXBP6 SULF1 SULT1C4 SUMO1 SUMO2 SUPT6H SURF4 SYF2 SYNDIG1 SYNGAP1 SYT11 SYT13 SYTL3 TACSTD2 TAF5L TARBP1 TAS2R9 TBC1D10A TBC1D10C TBC1D24 TBC1D9 TBKBP1 TBL2 TBX19 TBX4 TBX5 TCF24 TDP1 TDRD5 TDRKH TEC TEFM TENM2 TENM3 TEX22 TFCP2L1 TFDP1 TFP12 TGFB3 TGFB1 TGFB1R1 TGFB1R2 TGIF2 THEMIS2 THRA THRB THY1 TIAM1 TIMP3 TIMP4 TIPARP TIPRL TLE2 TLE3 TLE4 TLL1 TM4SF1 TM4SF20 TM7SF3 TMA16 TMC7 TMEM101 TMEM117 TMEM126B TMEM147 TMEM150C TMEM151A TMEM161B-AS1 TMEM164 TMEM167A TMEM181 TMEM182 TMEM184A TMEM19 TMEM196 TMEM206 TMEM216 TMEM231 TMEM253 TMEM26 TMEM30A TMEM47 TMEM88 TMEM92 TMEM95 TMEM99 TMEM9B TMOD1 TMOD4 TMTC4 TMX1 TMX3 TNC TNFAIP6 TNFRSF21 TNFSF11 TNFSF15 TNIP1 TNIP2 TNKS1BP1 TNNC1 TNPO2 TNRC6C TNS1 TOB1 TOB1-AS1 TOM1 TOMM22 TOMM40L TOMM70A TOR3A TOX4 TPBG TPCN1 TPCN2 TPO TPSG1 TPTE2P6 TRAF3 TRAF3IP2 TRAM1L1 TRAPPC13 TREM1 TREML4 TRHR TRIM45 TRIM65 TRIM68 TRIP10 TRIP13 TRMT10A TRMT61A TRNAU1AP TROAP TRPM8 TRPV2 TRPV3 TSC22D3 TSC22D4 TSKS TSNARE1 TSPAN11
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	TSPAN12 TSPAN15 TSPAN17 TSPAN2 TSPYL4 TSSK3 TTC13 TTC17 TTC21A TTC22 TTC38 TTC9 TTL TUBB3 TUFT1 TULP3 TUSC3 TUT1 TWIST1 TXN TXNDC9 TXNIP TYRO3 UAP1L1 UBA3 UBAP1 UBE2C UBE2D1 UBE2D4 UBE2N UBE2T UBLCP1 UBP1 UBDT1 UEVLD UGDH UGP2 UHRF1 ULBP2 ULK1 UNC13D UNKL UPK3B USP17L2 USP19 USP22 USP31 USP36 UTP11L VANG1 VASH1 VAT1 VAT1L VCAM1 VHL VKORC1L1 VMA21 VMP1 VPS45 VPS51 VSNL1 WAC WASF3 WBP4 WDFY2 WDR1 WDR11 WDR46 WDR53 WDR59 WDR66 WDR86 WDR91 WHAMM WHAMMP2 WISP1 WISP2 WISP3 WNT16 WNT3A WNT5B WNT7B WWC1 WWP2 XPO6 XRCC4 YIPF7 YKT6 YPEL4 YTHDC1 YWHAQ ZBTB14 ZBTB16 ZBTB42 ZBTB48 ZBTB8A ZC2HC1B ZC3H11A ZC3HC1 ZCRB1 ZCWPW1 ZDHHC3 ZFAND5 ZFP69B ZFYVE27 ZHX2 ZKSCAN8 ZMPSTE24 ZNF10 ZNF137P ZNF180 ZNF185 ZNF195 ZNF223 ZNF271 ZNF274 ZNF280B ZNF296 ZNF30 ZNF322 ZNF329 ZNF33B ZNF354A ZNF365 ZNF474 ZNF48 ZNF485 ZNF492 ZNF529 ZNF581 ZNF613 ZNF639 ZNF664 ZNF703 ZNF738 ZNF75D ZNF764 ZNF77 ZNF818P ZNF823 ZNF850 ZNF99 ZRANB1 ZRANB2 ZSCAN31 ZSCAN32 ZSCAN9 ZSWIM1 ZSWIM3 ZWILCH ZWINT
Black module	AAR2 ABCA1 ABCA17P ABCC10 ABCC5 ABCC6P1 ACAP3 ACE ACER2 ACOX2 ACSL4 ACTC1 ADAMTS9 ADAMTSL5 ADIG ADM2 ADRB2 ADRBK2 AEBP1 AGPAT5 AJAP1 AK1 AKAP12 AKR1B1 ALAD ALDH16A1 ALDH3A2 ALG2 ALG5 ALG6 ALOX15B ALPL ALYREF AMTN ANAPC7 ANKRD65 ANXA5 AOC3 AOX1 APIB1 API1M1 AP2M1 APOBEC3B AQP3 ARF5 ARHGAP44 ARHGAP9 ARHGDIB ARHGEF38 ARL2BP ARMC6 ARMC9 ARNTL ARPC1B ARSD ASCC1 ASPHD1 ATIC ATP5J2 ATP6AP2 ATP6V1B1 ATP8A1 AVEN B3GALT4 B3GALT6 B3GNT4 B4GALT2 BAALC BABAM1 BCLAF1 BCR BEAN1 BEND3 BFSP1 BMP1 BOLA3 BRD7 BRPF3 BRS3 BTBD16 BTG2 C10orf2 C11orf24 C11orf85 C11orf87 C12orf70 C14orf182 C15orf48 C15orf57 C17orf85 C1orf115 C1orf21 C1orf233 C1orf85 C1QTNF2 C1R C20orf85 C20orf96 C22orf15 C22orf31 C3orf17 C3orf58 C5orf51 C6orf118 C7orf43 C7orf71 C8orf56 C9orf142 C9orf174 C9orf72 CACNA1I CACYBP CALD1 CAMK2D CAPN10 CAPN2 CAPZB CBR1 CCDC102A CCDC112 CCDC13 CCDC136 CCDC147 CCDC28A CCDC59 CCDC78 CCKAR CCNB1IP1 CCNB3 CCNDBP1 CCNE1 CCNG2 CCNI CCNL1 CD160 CD274 CD63 CD99L2 CDC37L1 CDC42 CDCA4 CDCA7L CDCP1 CDHR5 CDK19 CDK2 CDK5 CDV3 CEBPG CEBPZ CEP41 CEP57 CEP68 CEP95 CFL1 CFL2 CHD1L CHD2 CHFR CHMP6 CHST13 CHST5 CIAO1 CLASP1 CLCN7 CLEC11A CLIC3 CLK1 CLPTM1L CNNM2 CNPY4 COL6A1 COMMD7 COPS2 COQ2 CPM CPNE2 CPPED1 CPT1B CPT1C CPZ CREBRF CRELD2 CRTAC1 CRYGS CRYL1 CSRNPI CST2 CSTF2 CTBP1-AS1 CTH CTHRC1 CTNNA1 CTU1 CUEDC1 CXCL14 CXorf28 CXXC4 CYB5A CYBASC3 CYP19A1 CYP27C1 CYP4Z1 DACH1 DAW1 DBIL5P2 DBNDD1 DBNL DCAF16 DCUN1D4 DDX49 DDX50 DEGS1 DERL3 DGAT2 DHX40 DIP2A DKFZP434I0714 DLG4 DLK2 DMBT1 DNAH9 DNAJB9 DNAJC15 DNAJC18 DNM1 DNMT1 DOLPP1 DPH3 DPP9 DSCR6 E2F2 E2F4 E2F8 EFNA4 EFN3 EGLN1 EGLN3 EHHADH EI24 EID1 EIF3I EIF4A3 ELAC2 ELF3 ELFN1 ELOVL1 EMC8 EML2 EN1 EPDR1 EPM2AIP1 ERI2 ERO1LB ERP27 ERFFI1 ESR2 EVI5L FADD FADS2 FAM102A FAM115C FAM161B FAM162A FAM195B FAM19A4 FAM210A

FAM213B FAM214A FAM45B FAM58A FAM84B FBLN5 FBXO10 FBXO21 FBXO42 FGD1 FIGN FIGNL2 FKRP FLAD1 FLJ13224 FLJ27352 FLJ46906 FLT1 FMO5 FNIP1 FOXD4 FOXN3 FOXP2 FSCN3 FSD2 FUT8-AS1 FZD8 G6PC3 GAB1 GAL3ST4 GALNT15 GAP43 GBA2 GCKR GDNF GGA2 GGH GINS3 GIPC1 GLB1 GLDN GLIPR2 GLRX3 GLRX5 GMFG GNG11 GNN GNRH1 GOT2 GPBP1L1 GPC1 GPCPD1 GPM6B GPR153 GPR158 GPX7 GPX8 GRIN2D GRIP2 GRM3 GRM6 GRN GSDMD GSTK1 GTF3A GTF3C6 H19 HAGHL HAPLN3 HBA2 HECTD3 HERC5 HIST1H1D HIST1H2BG HK2 HLA-L HMGN1 HMOX2 HNMT HNRNPAB HOXA13 HOXC9 HRCT1 HS3ST1 HSD17B6 HSD3B7 HSF2 HSPA6 HYAL2 ICA1L ICAM1 ICAM4 IER3IP1 IFFO1 IGDCC4 IGFBP1 IGSF21 IKBKB IKZF5 IL21R IMM2L INADL INPP5B INSR IPMK IPO13 IQCE IRAK3 ISLR ISM1 ISM2 ITGB1BP1 JMY KCNE3 KCNG1 KCNJ6 KCNN4 KCTD1 KCTD10 KCTD2 KCTD7 KDEL2 KDM3A KDM4C KIAA1211L KIAA1549L KIAA2022 KIF5A KIF7 KIFC3 KLF11 KLF16 KLF9 KLHDC8B KRTAP5-9 KRTDAP L3MBTL3 L3MBTL4 LACC1 LACTB LAMA2 LAMB2 LBX2 LECT1 LEO1 LEPREL4 LEPROTL1 LHFPL3-AS1 LHFPL3-AS2 LIMD1-AS1 LIME1 LIMK1 LINC00160 LINC00167 LINC00327 LINC00842 LMO1 LOC100130894 LOC100131496 LOC100134229 LOC100216545 LOC100287846 LOC100289230 LOC100498859 LOC100499405 LOC100499489 LOC100506801 LOC100507032 LOC100507217 LOC100507250 LOC100507472 LOC100873065 LOC254128 LOC283038 LOC283174 LOC285627 LOC339874 LOC374443 LOC375295 LOC401074 LOC440434 LOC493754 LOC643355 LOC645638 LOC646719 LOC648987 LOC729970 LOXL1 LOXL1-AS1 LPHN1 LRP1B LRRC20 LRRC42 LRRC43 LRRC49 LRRN2 LRRN4CL LTBP2 LY6D LZTR1 MAB21L2 MAGED1 MAMLD1 MAP7D1 MAPK15 MARK2P9 MASTL MATK MC1R MCM6 MCTP2 MEF2A MEOX1 METRN MFSD12 MGAT4B MGEA5 MICALL2 MIR1203 MIR1305 MIR1322 MIR1908 MIR219-1 MIR3132 MIR3605 MIR3909 MIR4461 MIR4505 MIR4639 MIR4796 MIR5188 MIR5685 MIR597 MKL2 MLLT3 MOAP1 MOGAT1 MON1A MPC2 MPDZ MPP3 MRPS11 MRPS16 MSL3P1 MSX1 MTMR10 MTO1 MTRNR2L8 MUT MXD1 MYBPC3 MYL12B NAA35 NAGPA NAMPT NDNF NDOR1 NDUFC2 NEFH NFAM1 NFATC2 NFIB NFIL3 NFKB2 NFKBIE NHLRC1 NINJ2 NKX3-2 NLRX1 NOS2 NOVA1 NPEPPS NPHP1 NPTX2 NR3C2 NREP NRG1 NSG1 NT5C2 NTM NTNG2 NUP98 NUPL2 NUTF2 ODF3B OLFM2 OR51B5 ORC4 OSBP OSBPL7 OSR1 OTOF OXSR1 PABPC5 PAIP2B PAQR4 PAQR5 PARD6B PARPBP PART1 PAX1 PBX4 PCBP4 PCDH7 PCNA PCOLCE PCSK7 PCYOX1L PDCD2 PDCL3 PDDC1 PDE6D PDGFRL PDK1 PDLIM7 PDPN PELI2 PENK PEX5 PFKFB4 PGP PGRMC1 PHF20 PHKA1 PI4K2A PIGA PKDCC PKMYT1 PKN3 PKP3 PLD2 PLEKHA2 PLEKHA4 PLEKHG4 PLEKHS1 PLIN2 PLK1 PLK3 PM20D2 PNO1 PNOC POLN POLR1E POLR2K PON2 POPDC2 POU1F1 PPFIA2 PPIC PPM1K PPP1R26 PPP1R3B PPP1R3C PPP1R42 PPP2R2A PPP2R5D PPP4R4 PRADC1 PREPL PRKAA2 PRKAB2 PRKAG1 PRKX PRKXP1 PROSER2 PRPF4 PRRG2 PRRT4 PRUNE PRX PSMA4 PSMB3 PSMB6 PSMC3 PSMD2 PSMD6 PSMG3 PTGES2 PTGES3 PTGS2 PTP4A1 PTPN13 PTPN22 PTPRM PTTG1 PVR PVRL1 PYCR1 PYGL RAB11FIP1 RAB15 RAB5C RABGGTB RAMP3 RAPGEF1 RBM14 RBPJ RCOR1 RECQL4 RFPL1-AS1 RGS19 RHBDD2

	RHBDD3 RHOB RHOBTB3 RHPN2 RIN1 RIOK3 RLF RMI2 RND1 RNF114 RNF149 RNF166 RNFT2 RNMT RNU12 RPA1 RPIA RPS6KA5 RPUSD1 RRAGD RRN3 RRP36 RSL1D1 RTN1 RYBP S100A2 S100A3 SAMD8 SARS2 SASH1 SAT1 SAV1 SBDSP1 SBF2-AS1 SBSN SCG3 SCRG1 SDC2 SDC4 SDE2 SEC23B SERPINA11 SERTAD2 SETD5-AS1 SEZ6L2 SFXN3 SH3RF3 SHANK1 SHC2 SHISA9 SKA2 SLC16A1 SLC18B1 SLC19A2 SLC24A3 SLC25A36 SLC25A38 SLC25A45 SLC35B2 SLC35E1 SLC35E2B SLC35G5 SLC36A3 SLC38A5 SLC39A13 SLC39A14 SLC39A3 SLC41A1 SLC46A3 SLC5A6 SLC6A7 SLC6A9 SLC9A5 SLC9A7 SLCO3A1 SLIT3 SLITRK6 SMIM10 SMYD2 SNF8 SNORA67 SNORA71A SNORA75 SNORA84 SNORD11B SNORD82 SNPH SNX25 SNX9 SORL1 SOWAHA SP7 SPAG5 SPARC SPIN2A SPR SPTSSB SRG7 SRP72 SRRM3 SS18L2 SSC5D SSR3 STAT5B STEAP1 STOM STON1 STX2 SUGP2 SULT1A2 SUMO3 SVEP1 SYCP2L SYN3 SYNGR3 SYNPO2L SYT12 SYT8 TAB2 TAF6 TANC1 TAOK3 TBC1D15 TBC1D2B TBCD TBXA2R TBXAS1 TCF7 TCHP TCTEX1D4 TCTN1 TECPR1 TECPR2 TESK2 TEX10 TEX30 TFDP2 TGM2 THAP5 TIMELESS TIMM22 TIPARP-AS1 TJP2 TLE1 TLN2 TMBIM1 TMC3 TMCO4 TMED3 TMED9 TMEM104 TMEM116 TMEM129 TMEM132A TMEM132B TMEM14A TMEM176B TMEM180 TMEM184B TMEM189 TMEM190 TMEM203 TMEM230 TMEM255A TMEM50A TMEM8A TNFRSF10D TNFRSF8 TNFSF10 TNIP3 TNNI2 TNR TPBGL TPPP3 TPST2 TPTE2P1 TRAF3IP1 TRAF3IP3 TRAFD1 TRAPPC3 TRIB3 TRIM4 TRIM5 TRIM62 TSGA10 TSNAX TSPAN3 TSSC1 TSTA3 TTC7B TUBA3D TUBB2A TXNL4A UACA UBE2G2 UBE2H UBE2Q1 UBE2R2 UBL4A UCP2 UCP3 UFM1 UFSP2 ULK3 UNC119B UPRT USH1C USP28 USP3 USP30 USP4 USP42 USP5 VAC14 VARS VEZT VOPP1 VPS16 VWA1 VWC2 WDR19 WDR33 WDR4 WEE1 WIPI1 YBEY YEATS2 YIF1A ZBTB21 ZC2HC1C ZC3H15 ZC3H7A ZC3H7B ZCCHC5 ZDHHC1 ZNF160 ZNF174 ZNF215 ZNF263 ZNF330 ZNF395 ZNF423 ZNF428 ZNF442 ZNF497 ZNF516 ZNF618 ZNF668 ZNF815P ZNF821 ZSCAN5A
Magenta module	ABHD10 ABLIM3 ACVRL1 ADAM33 ADAMTS12 ADAMTS7 ADAP2 AIF1 ALOX5 ALOX5AP ANGPT1 ANKRD13A ANLN ANPEP AP1S3 APBB1IP APOBR ARHGAP15 ARHGAP30 ARNT2 ASPM AUNIP BASP1 BCL6B BIN2 BIRC5 BLNK BNC1 BTK BUB1 BUB1B C10orf55 C10orf90 C11orf45 C16orf54 C1QA C1QB C1QC C1QL1 C20orf118 C3AR1 CA12 CARD10 CASC5 CBX8 CCBE1 CCDC64B CCR1 CD163 CD163L1 CD209 CD248 CD28 CD33 CD53 CD74 CD84 CD86 CDC45 CDCA7 CDH2 CDK1 CELF2 CENPF CEP55 CHN1 CIT CKAP2L CLEC5A CLEC7A CLSPN CNN1 CNTN1 COL1A1 COL5A3 CORO1A CPNE4 CPXM1 CRYM CSF1R CSF2RB CTSH CXCL12 CYBB CYTH4 CYTIP DACT2 DCLK1 DENND2A DEPDC1 DEPDC1B DIAPH3 DOCK10 DOCK2 DOK2 EDNRA EFCAB4B EMB ESCO2 EXO1 FAM216B FAM64A FAM78A FAM83D FAM83H FBN2 FCER1G FCGBP FCGR2A FCGR2B FCGR2C FCGR3A FGD2 FGD3 FHOD3 FLNC FMNL1 FOLR2 FPR1 FPR3 GABRB2 GGN GGTA1P GIMAP4 GIMAP6 GJC1 GNA15 GPC4 GPR1 GPR124 GPR176 GPRIN1 HCK HECW2 HJURP HK3 HLA-DMB HLA-DOA HLA-DPA1 HLA-DQA1 HLA-DRA HLA-DRB1 HLA-DRB5 HLA-DRB6 HPGDS HSPA12B HUNK IFT88 IKZF1 IL10RA IL31RA INHBB IQGAP2 IQGAP3 IRX3 ITGA4 ITGAM ITGAX ITGB2 KCNK2 KCNQ3 KHDRBS3 KIF14 KIF15 KIF18B KIFC1 KLF17

	KLHL4 KRT222 KRT8P41 KYNU LAIR1 LAMA5 LANCL3 LAPTM5 LCP1 LCP2 LILRA6 LILRB1 LILRB3 LILRB4 LILRB5 LIPA LOC100132891 LOC100505702 LOC100506083 LOC286190 LOC340113 LOC401164 LRRC17 LRRC32 LRRC33 LYZ MAGEE2 MARCKS MARCO MCM10 MDGA1 MEIS3 MELK MIR143HG MIR4324 MKI67 MLF1IP MME MMP11 MMP15 MMP28 MMP9 MNDA MPEG1 MRC1 MS4A4A MS4A6A MS4A7 MSC MSR1 MTSS1 MYBL2 MYEF2 MYO1H NAV3 NCAPG NCAPH NCF4 NCKAP5 NEBL-AS1 NEIL3 NEK2 NELL1 NETO2 NEURL1B NFASC NLRP12 NLRP3 NOTCH3 NUF2 OAS2 OLFML2A OLFML2B OLFML3 P2RY13 PBK PCP4L1 PDGFB PDLIM1 PFKFB1 PHLDB2 PIK3AP1 PIK3CG PIK3R5 PITPNM3 PLAUI PLCB2 PLEK PLXDC1 PODN POLQ PRC1 PTAFR PTGDR PTPRC RAC2 RAET1E RASSF2 RBM47 RFX8 RGS1 RGS21 RNASE1 RNU11 ROBO4 RRM2 SAMSN1 SCG2 SCN8A SEC63 SELPLG SEMA5A SERPINF1 SFRP4 SHC3 SHROOM2 SIGLEC1 SIRPB2 SKA1 SLC39A1 SLC4A8 SLCO2B1 SNCAIP SPC25 SPON2 ST14 ST6GAL2 ST8SIA4 STK32C SYK SYT7 TBC1D2 TEK TFEC THBS2 TLR7 TLR8 TMEM119 TMEM132E TMEM59L TNFRSF11A TNFRSF9 TNFSF8 TNN TOP2A TPX2 TRAK1 TRIM22 TRIM39 TRPA1 TSHZ2 TTK TVP23A TYROBP VAV1 VENTX VEPH1 VGLL3 VSIG4 WNT5A ZNF85
Purple module	ABCG5 ACAT1 ACVR1B ADAMTS16 ADCY1 ADCYAP1R1 ADM AGPAT9 AIFM1 AK5 ANGPTL4 ANK3 ANKRD52 ANKS6 ARC ARHGEF2 ARHGEF25 ASNS ASTN2 ATF3 AVPI1 BCL7A BCOR BEND5 BEX4 BHLHE40 BHLHE41 BICD2 BNIP3L BRD2 BRE-AS1 C10orf10 C15orf41 C17orf78 C1orf227 C1QTNF7 C2CD4B C6orf163 C8orf37 C8orf48 CANT1 CARS CCDC85C CCNA2 CCNJ CDKN1A CEBPA CECR5 CERK CHAC1 CHI3L2 CHMP1B CISH CNN3 COL4A2-AS1 COL7A1 CRLF3 CSDA CSRNP3 CTSC CYB561D1 DCP1A DDIT3 DDIT4 DDX24 DDX46 DENND3 DFFB DHRS13 DNAJB1 DNAJC12 DUSP1 DUSP2 EGR1 EGR3 ELL3 ERLIN1 ERMN ETS2 F13A1 FAM111B FAM131A FAM163A FAM71A FASN FEM1C FGL2 FOS FOSB FOSL1 GADD45A GADD45B GALNT7 GARS GPM6A GPR88 GPRC5A GPT2 GRIA2 GRIK1-AS2 GRPEL1 GTPBP1 HAVCR1P1 HERPUD1 HES1 HILPDA HIP1 HK1 HMGA2 HOMER2 HOXD1 IER2 IER3 IER5 IFNA5 IGHMBP2 ING1 IPW IRF2BP2 ITPRIP JMJD6 JOSD1 JUN JUNB KBTBD11 KCNJ15 KCTD21 KIAA1683 KIF23 KIF26A KLF10 KLF2 KLF4 KLHL13 LATS2 LINS LMO2 LOC100132077 LOC100272217 LOC100288637 LOC100506136 LOC100506844 LOC143666 LOC158376 LOC285740 LOC441666 LOC90784 LONRF3 LPAL2 LRRC27 LRRC66 MAFF MAGOHB MAK16 MAP1LC3B MAT2A MCTS1 METRNL MIDN MIR1827 MIR3653 MLLT10P1 MMP13 MMP19 MMP23B MTFP1 MYOG NALCN NAP1L5 NDNL2 NOD2 NPAS2 NR4A2 NR4A3 NRCAM NSL1 NUPL1 NXF1 NXT1 OR13D1 OR9A4 PARP15 PARS2 PCDHGA1 PCK1 PCSK9 PDCD4 PDE8B PELO PFKFB3 PGF PGM5P2 PHACTR3 PHF13 PIEZO2 PIGS PIM2 PIM3 PIP4K2B PKI55 PKNOX2 PLCB4 PLEKHG2 PLK2 PMS2CL POMT2 PPP1R15A PPP1R27 PPP3CC PRMT2 PROZ PTGS1 PWWP2A RAB11FIP5 RARA RASSF5 RBM24 RELT RGS16 RGS17 RNU4ATAC ROR2 RRAGC RUNDC3A SAMD14 SAMD3 SARS SEC14L1P1 SEC14L2 SEC61A2 SERPINB9 SERTAD1 SERTAD3 SESN2 SGCE SIAH1 SIAH2 SIK1 SKP2 SLC22A4 SLC2A1

	SLC2A3 SLC47A1 SLC5A10 SLC7A1 SLC7A5 SMOX SNAI1 SNAPC1 SNN SNORA80B SNORD116-24 SNW1 SOX9 SPAG17 SPRY1 SPRY4 SRR ST3GAL4 STX11 SUCNR1 SYT2 TACR2 TAP1 TAS2R10 TBCCD1 TCEB3 TFPI TGOLN2 THAP3 THSD1 THSD4 TINAGL1 TNFRSF1B TPRG1 TSACC TTLL1 TUBA8 TUBB4B TXNRD3NB UBE2O VEGFA VEZF1 VIT VPS37D VSTM5 VWA5B2 WDR5B YARS ZBTB39 ZC3H12A ZFP62 ZKSCAN3 ZKSCAN4 ZKSCAN7 ZNF200 ZNF273 ZNF331 ZNF493 ZNF547 ZNF599 ZNF662 ZNF763 ZNF772 ZNF879 ZNF93 ZSCAN16
Salmon module	AASDHPPT ACP6 AEN AIMP1 ALDH1L1-AS2 ALG9 AMPH AMY2B ANTXR1 APOLD1 AQP1 ARAP3 ARHGAP4 ARHGEF37 ARMCX5 ATAD3A ATG14 ATL1 BICD1 BSDC1 C11orf71 C12orf23 C16orf59 C1orf43 C1QTNF3 C22orf24 C8orf42 CAMLG CASC1 CBX7 CCDC47 CCNG1 CD276 CDKL3 CDKN1B CDNF CENPBD1 CKAP2 CLEC2D CLTB CLUL1 CNIH3 CRB1 CRLF1 CSMD2 CYB561D2 CYB5D1 DBN1 DDX39A DDX42 DGKQ DNAJC27 DOK4 DYNC11I EBPL ECM1 EIF3D ENOSF1 ERGIC1 FAM173A FAM8A1 FGGY FLRT1 G0S2 G3BP2 GDPD5 GEMIN4 GID8 GKAP1 GLT25D1 GOLM1 GPR108 GRAMD1C GRAMD2 GSC GUSBP5 HAC1 HEG1 HLA-F HN1 HNRNPA3 HOMER3 HOXC4 HOXC6 HOXC8 HSD11B1 HYDIN IGSF9B INSIG2 ISM1-AS1 ITGA11 IVNS1ABP JAK3 KCNAB1 KHDRBS1 KIAA0930 KIF3C LAYN LBH LGALS1 LOC100129034 LOC100130417 LOC100505783 LOC100506394 LOC338758 LOC339894 LOC645212 LOC729852 MAMDC2 MAN2B1 MAP1A MAP1B MARK3 MAT2B MEGF8 METTL15 MRPL49 MTERFD3 MTHFD2 MYH9 MYL9 MYLIP MYO1F MYOM1 NBR1 NDUFAF7 NF2 NGDN NIPSNAP3B NT5DC2 OGDH OSR2 PAN2 PAPD4 PAPD5 PARP16 PHOSPHO2 PIK3IP1 PLEKHH2 PLOD3 PMPCB POU2F3 PPIF PPP1R9B PPP6R1 PRPS2 PRPSAP2 PTGR2 PYCRL RAB23 RAB33B RBM39 RBM7 RCL1 RPF2 RSL24D1 RUSC1 SAMD12 SCML1 SEPN1 SFR1 SGSM1 SH3KBP1 SHKBP1 SLC30A5 SLC36A1 SMG7-AS1 SNORD116-1 SNORD127 SNX7 SPAG5-AS1 SRGAP3 SRSF7 STAB1 SVIP TARBP2 TARSL2 THBS3 TMEM167B TMEM38B TMSB4X TRERF1 TRMT11 TSHZ3 TTC28-AS1 TTF1 TUBA1A TWF2 TYMP TYW1 UBE2D3 UNC93B1 WDR45B WDR81 WIPF1 ZDHHC12 ZDHHC23 ZMAT4 ZNF181 ZNF281 ZNF513 ZNRD1