**Table S2:** 2343 Target mRNAs of 25 DE-miRNAs in EVs from ASMCs (stretch/static)

|  |  |  |  |
| --- | --- | --- | --- |
| No. | DE-miRNA | Regulate | Target mRNAs |
| 1 | miR189-5p | up | UBXN10,ERBB2,TNIK,UNC13B,BMPER,PIGZ,ADARB2,MAFA,SLC22A11,REPIN1,ADAMTS13,ABHD17A,HSPBAP1,VGLL4,TESK1,SIRT5,RPS19BP1,IFFO2,ZAP70,RARG,LHFPL4,BCL2A1,TET3,FHL5,RPTOR,ZNF213,VWA1,ESPNL,NUAK1,ANXA8,SPSB1,SLC9A3,CNPY3,SCRT1,BTBD19,CCND1,ANXA8L1,FZD10,TMEM63C,GIT1,TNRC18,WNT3A,ARHGEF4,LTBP4,ZNF3,UCMA,TNR,OBSCN,REC8,MTSS2 |
| 2 | miR239-5p | up | OBSL1,SP4，SH3BP4，PLD1，PCBP4，SLC45A4，HOXD3，PTPN14，FAM160B2，CACNA2D2，NCOA1，ZIC4，IL20RA，AGAP3，NFIA，AGO2，PRKAR1B，KIF5C，ADAP1，PDAP1，PCDHA9，NT5C1B，RACK1，LBX2，SOX11，SKI，CAMK2B，TLX3，ACOT7，HDAC4，PCGF3，ZNF703，SLC9A3，C3orf80，EXTL3，POU3F1，WDR26，TMUB1，RPL14，FOXL2，HS6ST1，ACYP2，PXDN，NR2C2，TFAP2B，SLC6A9，SORBS2，VOPP1，NRG2，ADD1 |
| 3 | miR-25-3p | up | CD69, G3BP2, SLC12A5, FBXW7, MAN2A1, HIPK3, B3GALT2, MAP2K4, MYO1B, SLC17A6, FNIP1, RAB23, PIKFYVE, BTG2, FBN1, DOCK9, ITGAV, KLF4, EFR3A, NCKAP5, UGP2, SCN8A, FNIP2, ZFC3H1, USP28, DCAF6, LHFPL2, CDK16, MORC3, GOLGA3, PLEKHA1, SNX13, GNAQ, PTAR1, BCL11B, EDEM1, SLC25A32, CDCA7L, HAND2, HIVEP1, SYNJ1, USP36, PPCS, ADAM10, GID4, RGS17, PTEN, RHPN2, KIAA1109, PCDH11X, SESN3, ZEB2, DPP10, RSBN1, ARID1B, BCL2L11, HCN2, CPEB3, CLDN11, TEAD1, CBLN4, TWF1, RBM27, IQGAP2, RNF38, NR4A3, SPRYD4, PIK3R3, ITGA8, LATS2, ERGIC2, ACTC1, MAP1B, ITGA6, APPL1, SLX4, MYO5A, FOXN2, ITPR1, TRIM36, PIAS4, RGL1, NEFH, ZFYVE21, REST, LRCH1, PAX9, CCNJL, ATXN1, JMY, SGK3, MTF1, EPG5, TBL1XR1, TMF1, CALN1, COL27A1, PIK3CB, GLYR1, TEF, MPP1, ST6GAL2, NKX2-3, AGO3, IDH1, TAGAP, ADAMTSL1, MOAP1, NPC1, CACNA1I, PITPNA, FHL2, ESRP1, PAX3, GIT2, C8orf44-SGK3, ADAMTSL3, PCOLCE2, ATG14, TEX2, SGPP1, DYRK2, SNN, GLCE, GFPT2, UBE2W, ADAM19, PDZD2, SSBP2, FNBP4, ATXN3, KBTBD8, PTPRD, ITGA5, RNF180, PHLPP2, WWP2, FMN2, PCDH7, SOX11, OTUD4, KAT2B, MEF2D, PALLD, CXCL5, PPP1R37, ROBO2, OSBPL5, PCGF3, SLC24A3, ARRDC3, GOLGA4, ADRB1, SNAPC1, ADCY3, ANKRD44, SCUBE3, ZNF521, SH3PXD2A, KLHL15, PCDH11Y, CIC, PTPRJ, DAAM1, RNF141, HERPUD2, PEAK1, TOB2, RAB3C, PHTF2, CNEP1R1, BSDC1, RIMS2, PTGER4, PNISR, YIPF4, DDX3X, TCF21, GATA2, PDE10A, NF2, HNF1B, LMBR1L, PCMTD1, TGIF1, TULP4, PLEKHB2, SLC25A36, FAM126B, COL19A1, PTPRK, SOX4, GATA6, SH3D19, PPP1R12C, SLC9A7, ATRX, MTMR9, DUS2, RPS6KA4, SLC7A11, RPL15, SPTBN4, RNF4, JOSD1, NSMF, WASL, ZC2HC1A, TBC1D8, SOCS6, RAB14, DUSP10, ACOX1, EVI5, BCAT2, SLC25A16, PAXBP1, RGS3, FRY, PKDCC, PDZD8, ZFHX4, CHCHD10, SLC4A8, IBTK, PSMD14, CBFA2T3, ARF1, SNAP91, NSMAF, TNPO1, SERTAD3, BAZ2B, RORA, ZNF827, DDX3Y, PITPNM2, CELF2, STYX, OTUD3, HIPK1, RAD21, CPEB4, FXR1, VPS4B, SEMA3A, CCNC, AIDA, MAPK8, DSC2, FKBP1A, LRRC1, DMXL1, TACC2, GPR137C, MMD, LYST, ELOVL4, LIN54, FAM135A, MYCBP2, NRG1, TMEM255A, RAB8B, PLXDC2, GPC6, LONRF3, TBC1D12, AFF3, TRIO, C5orf24, PER2, BMPR2, PLEKHG3, CTTNBP2, ZNF385D, GOLGA7, KLF2, NPNT, NUFIP2 |
| 4 | miR-7704 | up | TARS2，C1orf159，SLC45A4，ZBTB17，PREB，GRM6，SCUBE3， PGGHG，ADARB2，NMNAT3，LFNG，NTNG2，MEF2D，PRDM16，KIF26B，PLXND1，UNC5B，HPCA，CASZ1，TNFRSF8，LEF1，CENPA，NINJ1，KIF1A，SNED1，BBS5，TMEM250，PM20D1，USP19，RUNX1T1，LMX1B，CDC42SE2，C1orf35，FNDC10，TRAPPC9，PLXNB1，HR，NRBP2，MEX3A，CD74，MST1，PIK3CD，HSPG2，DMRT2，MLXIPL，PDGFA，PID1，HMCN2，TNIP1，SORBS3 |
| 5 | miR-486-5p | down | ST6GALNAC6, DNAJC21, TET3, SMAD2, NR2C2, EPB41L1, BTBD3, PIK3R1, ATXN7L3, GOLGA3, PLXNA4, AAK1, ARMC8, GABRB3, MTA3, COPS7B, CCDC85C, TMEM115, GAB2, UBE2N, UNC5C, DYNLL1, KCNQ3, IGF1, CADM1, ZNF740, CTDSPL2, ARHGAP5, ARID4B, TMEM178B, CSPG5, HAT1, GPR153, STK4, GXYLT1, SLAIN2, AFF3, ARHGAP44, TWF1, SLC12A5, NDUFB4, SEMA3A, PLAGL2, SRSF3, SORCS1, SMOC1, CNKSR2, FAT3, DKK2, TSC22D2, ABHD17B, ACTR3, MARK1, ZNF827, CELF2, GRHL2, TENM2, BCORL1, PRRC2C, KDM5B, DAAM1, FNIP2, SCNM1, FOXO1, BTAF1, NCKAP5, COL6A6, TANC1, RAB11FIP4, CDH7, FBN1, FGF9, REV1, DOCK3, CDK4, RASSF3, PDE4A, MAML3, SP5 |
| 6 | let-7c-5p | down | RBM38, A1CF, KIAA0930, SMUG1, EOGT, TMC7, POTEM, SLC25A24, ACVR2A, SYT1, FARP1, MSI2, TEX261, UBE2G2, DMD, MYRIP, CCR7, CBX5, ELF4, MAP3K3, PBX3, PBX1, CASP3, BIN3, EPHA4, ARHGAP28, RALB, SMAD2, HOOK1, GJC1, ZNF652, FAM135A, RNF38, KCNC2, ATP8B4, USP32, ZNF280B, IKZF2, TTLL4, SLC5A9, ZNF583, SENP5, BTBD9, HIF3A, BRWD3, RDH10, CAPN3, PGM2L1, SOWAHA, CCDC71L, SYT2, AGO3, PDE12, ARL5A, RSPO2, USP12, DST, DHX57, WARS2, GIPC1, LRRC8B, KCTD16, BCAP29, AAK1, COL9A1, MAP4K4, CNOT6L, CRTAP, PLXNA4, LCORL, MGA, FOXP2, TMOD2, SLK, LRIG2, ZBTB39, LPGAT1, PARM1, PPP1R16B, TMED5, PLEKHO1, LIMK2, AGO4, HIF1AN, FIGN, ETNK2, TMEM143, MLLT10, AMMECR1L, CALU, PRLR, SEC14L1, ACSL6, GHR, ARHGEF38, SKIL, C19orf47, RNF165, RDX, CLOCK, SESN3, TP53, ZBTB10, FRS2, SURF4, BTBD3, CCNY, ZNF341, AP1S1, MED6, MAP3K9, MRS2, FRMD5, B3GAT3, FAM104A, PAG1, ETNK1, SSH1, XRN1, MIEF1, GPCPD1, UGGT1, PCDH19, SLC7A14, IGDCC4, CRY2, TMX4, GPATCH3, ELOVL4, VASH2, FRAS1, ZBTB8B, CACNB4, BEND4, SYNCRIP, MGAT4A, RNF170, TSC1, PTAFR, OSMR, AFF2, EIF4G2, STX3, BCAT1, GYG2, PEX11B, BACH1, POLR2D, ONECUT2, SCD, SH2B3, INPP5A, MDFI, TMPRSS2, DNAJA2, MAP3K1, SPATA2, IGF2BP2, LYVE1, ERP29, HS2ST1, GAB2, EEF2K, SLC30A4, GPR132, GLRX, HMGA1, LBR, MXD1, NRAS, RBMS2, SLC1A4, STRN, ZNF202, DYRK2, MBD2, CYTH3, AKAP6, ZNF784, DPH3, PPP1R15B, EDEM3, USP38, ABCC5, CPSF4, RBFOX2, GXYLT1, IGF1, KCNC1, TET2, CLCN5, PPP3CA, CYB561D1, LRIG3, RBFOX1, SCN4B, ZNF644, DDI2, ZNF566, CGNL1, RAB11FIP4, NKD1, FBXO32, CD200R1, LIPH, KLHL23, OSBPL3, SYT11, GRPEL2, PRDM5, TRIM67, RAB15, TSPAN2, SLC10A7, FAM214B, RB1, GABRA6, IGF1R, MGLL, NHLRC3, PEG10, ANKRD46, PALM3, MON2, C1GALT1, SENP2, TNFSF9, EPHA3, TPP1, NAA30, TAF9B, HDX, PPP2R2A, KHNYN, MAPK8, PLXNC1, FZD4, SLC31A1, CCND1, KLHL31, USP44, STEAP3, BBX, FZD3, TMEM65, FNIP1, SRGAP1, DYRK1A, ARMC8, DCUN1D2, RPS6KA3, NAP1L1, ERGIC1, STX17, RASGRP1, GAS7, AGAP1, HOXA9, SNX16, CADM2, ATP2A2, KCNQ4, SLC9A9, CRB2, SREK1IP1, HECTD2, SLC16A9, ZNF710, SOCS4, RAG1, SEC14L5, ZBTB5, CEP164, FRMD4B, DTX4, ZNF10, SLC22A23, LTN1, GOLT1B, IMPG2, CDV3, NKIRAS2, TRPM6, FAM118A, PDPR, GPATCH2, CDCA8, SBNO1, FGD6, MEF2C, TMEM178B, SLC25A27, MDM4, BZW1, CFL2, ASAP1, ANKFY1, YOD1, E2F6, FNDC3A, NR6A1, STK40, KIAA1958, COL4A6, TXLNG, STRBP, KIAA1549, SNX6, GAN, XYLT1, PRRX1, AEN, ADIPOR2, SRD5A3, ZNF322, LIN28A, CSRNP3, MED28, LBH, APBA1, AMT, ABL2, ARG2, ZNF641, MYCN, DAGLA, RANBP2, ESPL1, MYCBP, ICMT, LIMD1, DLST, ELK4, PPP1R12B, NOVA1, OLR1, ST8SIA1, THBS1, BSN, SNAP23, E2F2, FGF11, PRKAR2A, GALNT2, FREM2, LIN28B, VAV3, DMP1, FBXO45, PIK3IP1, NIPA1, KATNAL1, FBXO30, LOXL4, FAXC, PARD6B, SFT2D3, SMIM3, TSPYL5, TRIM41, GALNT15, TSPAN18, AMOT, GRIN3A, MARS2, SMCR8, POGLUT1, RUFY3, FASLG, ARPP19, CCDC141, ITGB3, HTR4, SNX30, C14orf28, WIPI2, KREMEN1, MTUS1, YY1, HAND1, ADRB3, STOX2, PLAGL2, SMARCC1, GALNT4, BCL2L1, GPR26, CNTRL, PARP8, SAMD12, MTDH, DARS2, POU2F1, STARD13, SOCS7, WNK3, RNF217, CPA4, TMEM234, SLC16A14, AMER3, TTL, DCUN1D3, LSM11, C8orf58, TXLNA, CBFA2T3, SCYL3, GDPD1, CPM, NRK, UTRN, GRID2IP, PALD1, ZNF516, MBTPS2, VGLL3, GDAP2, XKR8, PLEKHA8, KLF9, DPP3, KCNJ3, RPUSD2, NME4, CCNJ, RNF20, GALNT1, MIB1, PDP2, FNIP2, GNPTAB, L2HGDH, LIPT2, RRM2, NIPAL4, DOCK3, SOX13, PCGF3, ARID3B, TUSC2, PXDN, RAB3GAP2, TRHDE, WDR37, ATP2B4, CCND2, IL13, ITGB8, P2RX1, RGS16, HMGA2, SOCS1, EIF2S2, CDC34, DVL3, SPRYD4, MEX3A, SH3RF3, LEPROTL1, TMEM41A, ERCC6, KLHL13, TGFBR1, GCNT4, C15orf39, GOLGA4, LMX1A, MED8, TBKBP1, GTF2I, PCDH20, DLC1, BZW2, E2F5, PDGFB, NDST2, TENM2, USP6, ACVR1C, SMIM13, EGLN2, YPEL2, SP8, GRAMD1B, TMEM167A, MAP3K2, SLC38A9, TRIB1, CHIC1, MEIS2, KIF21B, DUSP16, SLC20A1, PIK3CA, AIFM1, LINGO1, SDK1, RUNX1T1, HDLBP, DTX2, ARHGEF15, TEAD3, HIC2, DNA2, STXBP5, CANT1, SMARCAD1, PAX3, DAPK1, HELZ, SCN11A, INTS2, NSD1, SPTBN4, RORC, ZFYVE26, LIMD2, SPEG, TRANK1, CDC25A, POGZ, RICTOR, HOXA1, ANKRD52, TBX5, CPEB2, OTOF, KCNJ11, USP49, COL14A1, BEGAIN, SEMA4G, DICER1, CLASP2, DLGAP4, ANKRD28, MOB4, PLA2G3, RBMS1, SOX6, ATAD2B, SEMA4C, SECISBP2L, TGFBR3, PLD5, EGR3, HSPE1-MOB4, CACNA1E, SLC12A9, YTHDF3, SMC1A, KCTD17, CPEB1, SALL4, STARD9, ABHD17C, FNDC3B, KATNBL1, CEP135, SCN5A, PTPRD, CPEB3, CLDN12, ERCC4, GABBR2, MMP11, MYO1F, OSTF1, GATM, POLR3D, WNT9B, KMT2D, EEA1, MAP4K3, IRS2, CHST3, DUSP1, SREBF2, ZNF275, LDB1, ADAMTS15, KLK10, CHRD, ADRB2, COL3A1, CACNA1I, PLD3, TMPPE, ZC3H3, AGO1, TAB2, AHCTF1, TECPR2, PLEKHG7, USP24, SBK1, TSPEAR, ACER2, MAPK6, ARRDC4, SLC52A3, HIP1, CERCAM, GABPA, PRDM1, POC1B-GALNT4, NPEPL1, ABCB9, ENTPD7, PLEKHH1, ZSWIM5, TRIB2, TRABD, IGF2BP1, HAS2, ADAMTS5, NID2, ICOS, ATP6V1C1, PAPPA, PIGA, UGCG, SKIDA1, GDF6, KCTD21, TRIM71, CHSY3, SFMBT1, DUSP22, PRKAA2, TET3, KLHDC8B, RFX6, RNF44, PLXND1, SEC31B, PGRMC1, CPED1, NYNRIN, PPARGC1B, IGDCC3, COL4A2, DUSP7, COIL, SLC45A4, MYO5B, COL1A1, ADRB1 |
| 7 | miR293-5p | down | OBSL1，SP4，SH3BP4，PLD1， PCBP4，SLC45A4，HOXD3，PTPN14，FAM160B2，CACNA2D2，NCOA1，ZIC4，IL20RA，AGAP3，NFIA，AGO2，PRKAR1B，KIF5C，ADAP1，PDAP1，PCDHA9，NT5C1B，RACK1，LBX2，SOX11，SKI，CAMK2B，TLX3，ACOT7，HDAC4，PCGF3，ZNF703，SLC9A3，C3orf80，EXTL3，POU3F1，WDR26，TMUB1，RPL14，FOXL2，HS6ST1，ACYP2，PXDN，NR2C2，TFAP2B，SLC6A9，SORBS2，VOPP1，NRG2，ADD1 |
| 8 | miR-1246 | down | MFAP3L，IVNS1ABP，ZEB2，NCOA1，B3GALNT1，NFIA-AS2，NLGN1，RNF39，CD22，DUBR，MZT2A，DENND1C，NDUFA11，CRISPLD2，SRP72，HES2，SLC7A14-AS1，GLIPR1L1，TMEM267，SLC35G2，DENND6A-DT，GMNC，LZTFL1，AHCYL1，DENND2D，RXFP1，ANK2，NCKAP5 |
| 9 | miR146-3p | down | OBSL1，SP4，SH3BP4，PLD1， PCBP4，SLC45A4，HOXD3，PTPN14，FAM160B2，CACNA2D2，NCOA1，PRKAG2，ZIC4，IL20RA，AGAP3，NFIA，AGO2，PRKAR1B，KIF5C，ADAP1，PDAP1，NT5C1B，RACK1，LBX2，SOX11，SKI，CAMK2B，TLX3，ACOT7，HDAC4，PCGF3，ZNF703，SLC9A3，C3orf80，EXTL3，POU3F1，WDR26，TMUB1，RPL14，FOXL2，HS6ST1，ACYP2，PXDN，NR2C2，TFAP2B，SLC6A9，SORBS2，VOPP1，NRG2，ADD1 |
| 10 | miR-143-3p | down | VASH1, ABL2, MSI2, GXYLT1, ITM2B, ZBTB44, AHCYL1, HIPK2, MOGS, ARHGAP26, VAPB, FNDC3B, ADD3, FRS2, ITGB8, FGF9, HTR2C, SECISBP2L, ABHD17B, STOX2, FADS6, CPD, FOSL2, MAPK7, INO80D, ZNF583, CBFB, SH3PXD2A, AFF1, PDIA6, SLC4A8, FAR1, PTPN4, KCNK10, SLC7A11, FRMD5, RICTOR, ITGA6, ERBB3, ZBTB20, CRLF3, PRKCE, A1CF, TARDBP, NOVA2, KCNB1, TMOD2, ATP11C, ESRRG, PTBP3, MAF, ZC4H2, AMMECR1, PDPR, AAK1, AP2B1, DAPK1, PHTF2, TRPS1, QKI, EBF1, ZNF275, OTUD4, PAG1, LRRC8B, TANC2, TET2, SOX6, RMND5A, KCNC1, NFIC, ERCC6, CSNK1G3, NFATC2, BCORL1, LBH, PLAGL2 |
| 11 | let-7i-5p | down | SPEG, ZNF710, DTX4, CLASP2, CDKN1A, SLC7A14, SNX6, OLR1, LIN28B, ZNF275, GXYLT1, ACVR1C, CFL2, HIF1AN, MYRIP, STX3, CBX5, CLP1, MAP3K3, PPP1R12B, SLC38A9, SAMD12, PBX1, EPHA4, MEF2C, CPEB1, ARPP19, SOCS7, RNF217, FAM135A, CPA4, TMEM234, ZNF280B, AGAP1, TTLL4, NME6, BBX, SENP5, BTBD9, HOXA9, SNX16, PXT1, GPR26, ATP2A2, CD200R1, CAPN3, DCUN1D3, TXLNA, AGO3, PDE12, ARL5A, NAT8L, UBE2G2, TMEM65, SLC16A9, RNF38, SOCS4, MOB4, GIPC1, LRRC8B, A1CF, KCTD16, REEP1, AAK1, PLD5, GRID2IP, SEC14L5, SLK, ZBTB5, ZNF652, RRP1B, FAM189A1, LEPROTL1, TAF9B, RAB8B, ATAD2B, SEMA4C, STX17, USP47, SLC1A4, TMEM178B, GABPA, CALU, POC1B-GALNT4, EGR3, HSPE1-MOB4, SLC25A27, PRLR, SEC14L1, ACSL6, BZW1, CCNT2, GHR, ZNF322, HIP1, SMUG1, ASAP1, RDX, ANKRD46, TP53, ZBTB10, NR6A1, ACVR2A, SMC1A, STK40, CDV3, XRN1, MRS2, NME4, FRMD5, USP49, STK24, SLC35D2, B3GAT3, PAG1, PRDM5, MIEF1, UGGT1, CASKIN1, PCDH19, GAN, FKRP, SRD5A3, MED28, RNF170, POTEM, CACNB4, SYNCRIP, CANT1, IGF2BP1, GDPD1, LCORL, KCNJ11, KLHL13, AFF2, CSRNP3, ZNF641, PPARGC1B, CPEB2, HDX, BCAT1, BACH1, ABL2, ERCC4, RASGRP1, SMAD2, MAP3K1, DAGLA, PIK3CA, PRKAA2, TUSC2, ICOS, FZD4, HS2ST1, EEF2K, SLC25A24, WDR37, POLR3D, EDN1, ELK4, IDH2, ITGB8, KCNJ3, MXD1, RALB, ST8SIA1, THBS1, KMT2D, GALNT4, TNFSF9, OSMR, NAP1L1, SREBF2, DPH3, FREM2, SKIDA1, SYT1, SLC5A6, TRIM67, ABCC5, SLC10A7, KLK10, INSR, GJC1, MEX3A, FBXO45, IGF1, AIFM1, SLC5A9, SYT2, NIPA1, KATNAL1, LOXL4, FAM104A, CCND1, SNAP23, DCAF15, SESN3, SMCR8, SYT11, POGLUT1, IGF1R, IGF2BP2, TMC7, HMGA2, FASLG, PLEKHO1, ARID3B, RAB15, TSPAN2, AGO1, RSPO2, TBX5, ITGB3, IL10, PLCXD3, ACER2, NHLRC3, KREMEN1, CCND2, MSI2, ZNF516, PLEKHA8, PBX3, HOXA1, FGD6, SALL4, KLF8, APBA1, DYRK2, ERP29, TRHDE, PRKAR2A, COL5A2, NAA30, SLC16A14, SLC45A4, GLRX, GRAMD1B, HELZ, FNIP1, SRGAP1, DYRK1A, DDX19B, VSNL1, RPS6KA3, FNDC3B, C1GALT1, STRBP, USP44, ATP8B4, GAS7, RNF165, RICTOR, CADM2, TTL, MEIS2, RDH10, LSM11, HECTD2, CCDC141, EOGT, CRB2, CCDC71L, STEAP3, DHX57, WARS2, SLC52A3, MAP3K2, MAP4K4, RBFOX2, ZBTB39, TECPR2, SRGAP3, PLXND1, ZFYVE26, SLC22A23, OSBPL3, LTN1, TMED5, NKIRAS2, AGO4, PDPR, DDX19A, TGFBR3, AMMECR1L, MDM4, KLF9, FBXO32, ARHGEF38, SKIL, C19orf47, DPP3, KCNC2, CLOCK, SURF4, ZNF341, TRIB1, MED6, MAP3K9, RPUSD2, TXLNG, CCNJ, GPCPD1, SMARCAD1, ENTPD7, PDP2, XK, RAB40C, XYLT1, ELOVL4, PCDH20, LIN28A, ARHGEF15, FRAS1, PITPNM3, ZBTB8B, AMT, PTAFR, NIPAL4, POLR2D, ONECUT2, KCNC1, SCD, SH2B3, MMP11, SUB1, MGLL, MYCBP, MYO1F, PSORS1C2, ATP6V1C1, IL13, NOVA1, RBMS2, SMARCC1, STRN, EIF2S2, CYTH3, CHST3, KIAA1958, FRMD4B, THOC2, AMOT, STXBP5, CLCN5, PPP3CA, SMIM13, SPATA2, LRIG3, FAXC, PARD6B, SFT2D3, CGNL1, SMIM3, TSPAN18, GRIN3A, ZNF689, TEX261, B3GNT7, FZD3, GRPEL2, CHIC1, ZNF202, RAB11FIP4, LPGAT1, ERCC6, YPEL2, C14orf28, TSC22D2, SOX6, CEP135, DOCK3, MYO5B, AMER3, PRPF38B, BIN3, BCAP29, ARHGAP28, GCNT4, DCUN1D2, LIMD2, USP32, IKZF2, TRANK1, SDK1, SALL3, SREK1IP1, CPM, ZNF644, HK2, TMPRSS2, CRTAP, KHNYN, GOLT1B, TET2, GDAP2, CDCA8, YOD1, SSH1, GALNT1, IGDCC4, CRY2, PRRX1, ADIPOR2, VASH2, RRM2, ARG2, IGDCC3, SOX13, APBB3, IGF2BP3, RAB3GAP2, LIMD1, ELF4, DST, COL4A1, SLC31A1, KPNA1, PLAGL2, THRSP, MBD2, SPRYD4, SBK1, DDI2, PPP1R15B, ZNF566, EGLN2, TSPEAR, WNT9B, TPP1, ADRB1, HTR4, GDF6, TRIM71, DARS2, FAM214B, DICER1, COL14A1, BTBD3, TRIB2, DNAJC1, GYG2, CLDN12, CBFA2T3, SLC20A1, BCL2L1, HTR1E, ZNF200, DLGAP4, POU2F1, FAM118A, HOOK1, PTPRD, UHRF2, AEN, CACNA1E, ANKRD28, ZNF10, PRDM1, GNG5, PKN2, MGAT4A, TGFBR1, USP6, GALC, POGZ, ZNF583, RUNX1T1, INTS2, CNTRL, MTUS1, P4HA2, NSD1, PALM3, TENM2, MON2, RBFOX1, C15orf39, GOLGA4, YTHDF3, KCNQ4, LMX1A, STARD13, SCYL3, PAX3, CYB561D1, OTOF, UTRN, BEGAIN, CNOT6L, SEMA4G, PDSS1, FOXP2, LRIG2, FNDC3A, SLC8A2, HIC2, ZC3H3, PACS2, SEC31B, CERCAM, IMPG2, CRK, RBMS1, KIF21B, TRPM6, XKR8, FIGN, MLLT10, ANKFY1, SLC12A9, SEMA4F, GPR132, GTF2I, PGRMC1, CCNY, RNF20, STOX2, PLXNA4, SPTBN4, GPATCH3, LRFN4, HOXD1, DLC1, NYNRIN, SULF2, MGA, MYCN, PLXNC1, BTG2, DKK3, PAPPA, BSN, NDST2, SUCLG2, LDB1, DMD, AKAP6, DUSP1, DVL3, COIL, AHCTF1, FARP1, TAB2, RUFY3, PIK3IP1, TMEM41A, KLHL6, SLC2A12, TMEM143, ADRB3, GALE, RAG1, RORC, CACNA1I, USP38, CHD4, PARP8, STARD3NL, PALD1, MAP4K3, HIF3A, PGM2L1, EPHA3, ARRDC4, SCN5A, TEAD3, USP24, SBNO1, SECISBP2L, NPEPL1, FRS2, STARD9, FNIP2, ZSWIM5, SENP2, EFHD2, CPED1, BEND4, TSC1, HAND1, INPP5A, ESPL1, GAB2, GATM, ARL4D, E2F5, P2RX1, SOCS1, IRS2, PEX11B, SYT7, EDEM3, ZNF697, FBXO30, COL27A1, MARS2, ADAMTS15, TRABD, ADRB2, RB1, LIMK2, MBTD1, WNK3, SCN11A, ERGIC1, MSN, BRWD3, RFX6, ANKRD52, PARM1, VGLL3, KDM3A, DUSP16, PEG10, HAS2, DUSP7, NKD1, TSPYL5, KCTD21 |
| 12 | miR235-3p | down | OBSL1，SP4，SH3BP4，PLD1，PCBP4，SLC45A4，HOXD3，PTPN14，FAM160B2，CACNA2D2，NCOA1，ZIC4，IL20RA，AGAP3，NFIA，AGO2，PRKAR1B，ADAP1，PDAP1，NT5C1B，RACK1，LBX2，SOX11，SKI，CAMK2B，TLX3，ACOT7，HDAC4，PCGF3，ZNF703，SLC9A3，C3orf80，EXTL3，POU3F1，WDR26，TMUB1，RPL14，FOXL2，HS6ST1，ACYP2，PXDN，NR2C2，EGFL7，TFAP2B，SLC6A9，SORBS2，VOPP1，NRG2，ADD1，ARC |
| 13 | miR-222-3p | down | ETS1, HMBOX1, TRPS1, GPBP1, RALGAPA1, DYRK1A, TMCC1, TCF7L2, TMSB15B, GRB10, DLG2, MAPK10, ARHGEF7, SEMA6D, ZFPM2, CTCF, MPRIP, TMEM132B, RFX7, RUNX2, SHANK2, MON2, TLE3, VEZF1, CDH2, WNK3, PPP2R2A, NAP1L1, ZNF652, VGLL4, SLC4A4, SLAIN2, MIER3, PIK3R1, KCNQ3, PLEKHA2, CREBZF, PITPNM2, FRY, DPP8, RNPS1, KSR1, PIEZO2, SUN2, CACNB4, AGPS, HIPK1, GAB1, POGZ, KHDRBS2, DGKH, RBM24, BRWD3, CAMK1D, CPNE8, NAP1L5, SKP1, NFATC2, NFATC3, UBN2, ANKRD52, FGF14, DICER1, CMTM4, HECTD2, PAIP1, ZMYM2, TSC22D3, NRK, RSBN1L, GALNT18, MIA3, CD47, NANOS1, GPM6A, REV3L, FOXN2, USP49, SLITRK5, KIT, ZFHX3, MIDN, USP6NL, TNRC6C, BMF, BBC3, SLC40A1, TOX, ZFYVE16, RIMS3, VASH1, CPEB3, CHSY1, FNDC3A, WDR47, DCUN1D4, PLCL2, CUX2, AMMECR1, NIPBL, DCAF12, ZNF385A, MAGI1, OSBPL3, UBE2J1, ADAM22, CTDSPL2, PAIP2, SLC25A37, ATAD2B, NSMCE4A, AGO4, ANKHD1, CASZ1, TBC1D22B, CHD7, TRABD2B, VAPB, KMT2A, KIF16B, BCL2L11, PDIK1L, PTBP3, URI1, POLR3E, CDK8, TUBA1A, KLF7, GRM1, ZFAND5, WSB2, RFX3, MARK1, DYNC1LI2, FAM214A, PCMTD1, AJAP1, PCDHAC2, PCDHA1, PCDHA10, PCDHA11, PCDHA12, PCDHA13, PCDHA2, PCDHA3, PCDHA4, PCDHA5, PCDHA6, PCDHA7, PCDHA8, DDIT4, STOX2, DCUN1D1, NUFIP2, TAOK1, FNIP2, RECK, DMRT3, HNRNPH3, HIPK2, AIDA, BCL11B, PHACTR4, PANK3, NAA25, NDFIP1, MYBL1, ETV3, BEND4, SYNCRIP, NRG1, RREB1, SLC16A6, BEAN1, RNF4, FMR1, AKAP5, CRKL, ERBB4, ETS2, FOS, TP53BP2, STMN1, PLXNC1, LHFPL2, DCAF7, ARID1A, NFYB, RANBP2, NOVA1, GNAI3, IGF2BP2, HNRNPA0, SOX10, PDCD10, MYO10, RAB3GAP2, MYLIP, PDZRN4, OSTM1, FAT2, GBX2, GTF2B, ARF4, ATP1B1, FBN2, KDR, KPNA1, KPNA2, LIFR, SNCB, SOX11, TCF12, THBS1, SEC62, TRPC3, SNX4, MBD2, CDKN1B, AGFG1, MED1, NDST3, MSL2, ZNF629, MEGF9, NTF3, ESR1, GABRA1, STYX, PCDHA9, KBTBD8, BRWD1, ZNF518B, PKDCC, SESN3, ITGB3, ATXN1, CD4, PPP3R1, PLCXD3, CLVS2, KCNK2, SH3PXD2B, C3orf70, C6orf120, NGRN, SCD5, EML6 |
| 14 | let-7e-5p | down | DLGAP4, UHRF2, CLOCK, CRY2, FKRP, SYT1, DYRK1A, NME6, AGO1, GDF6, PLCXD3, SESTD1, A1CF, SRD5A3, DMD, ARHGEF15, ZNF202, GIPC1, TGFBR3, SUB1, FNIP1, SLC38A9, PRPF38B, INTS2, PBX1, CASP3, MTDH, BCAP29, EPHA4, DARS2, GCNT4, STARD13, ZNF652, C1GALT1, RNF38, RDX, MAPK6, LIMD2, GAS7, C19orf47, AGAP1, SLC16A14, HIF3A, PXT1, CD200R1, PGM2L1, SLC9A9, SCN4B, TXLNA, PAX3, UBE2G2, STEAP3, TMEM65, ZNF710, ZNF644, CDC25A, KCTD16, REEP1, COL9A1, SLC22A23, IL10, GRAMD1B, FOXP2, ZNF516, ZBTB39, ZBTB5, RNF44, CEP164, FRMD4B, KIAA0930, LEPROTL1, MYRIP, MBD2, WARS2, VGLL3, RAB8B, ATAD2B, TET2, PDPR, GPATCH2, SLC1A4, C8orf58, EGR3, MXD1, PRLR, BZW1, MEIS2, CDKN1A, ZNF322, CFL2, SMUG1, RNF165, ANKRD46, SEMA4F, BBX, YOD1, TP53, ZBTB10, SURF4, KCTD17, CCNY, MAP3K9, RICTOR, DUSP22, FAM104A, BIN3, PRDM5, XRN1, TMEM234, UGGT1, PIGA, GALNT1, STARD9, DTX2, PLXNA4, IGDCC4, RAB40C, ABHD17C, TRIB2, XYLT1, AEN, TMC7, CEP135, NYNRIN, MED28, POTEM, ZBTB8B, KLF8, SYNCRIP, MGAT4A, AMT, PITPNM3, ABL2, AFF2, ARG2, PEG10, ZNF641, BACH1, ONECUT2, IGDCC3, CBX2, ARID3A, HAS2, RASGRP1, PLXNC1, SMAD2, APBB3, SMC1A, NOVA1, IGF2BP2, MAP3K2, TUSC2, MGLL, ARL5A, RAB3GAP2, SLC30A4, TRHDE, ELF4, NR6A1, ACVR2A, CCND2, KCNJ3, KPNA1, OLR1, RALB, SEC14L1, STRN, VSNL1, IRS2, SYT7, SLC25A27, CDC34, HDLBP, FARP1, ERCC4, LIN28B, ABCC5, TNFRSF1B, GYG2, VAV3, SH3RF3, KCNC1, AMOT, CBX5, AIFM1, TMPRSS2, SMIM13, SYT2, FBXO30, USP44, SFT2D3, RAB11FIP4, PDGFB, NKD1, GALNT15, GAB2, GRIN3A, MSI2, NAP1L1, TEX261, SMCR8, ACVR1C, SYT11, POGLUT1, SLC10A7, CHIC1, TRIM67, LINGO1, CACNB4, RAB15, ADRB2, ERCC6, GALE, MED8, NHLRC3, SBK1, BCL7A, KREMEN1, MRS2, SALL4, CACNA1E, ATP2A2, MDM4, HOXA1, STX17, STK40, SOX6, ICMT, SNN, PBX3, PRKAR2A, HTR4, DVL3, IGF1R, MAP3K3, HELZ, MTUS1, PARP8, PPP1R12B, SRGAP1, ANKRD28, SAMD12, RBFOX2, DDX19B, P4HA2, POU2F1, MON2, GJC1, FNDC3B, RNF217, FAM214B, STX3, C15orf39, ZNF280B, AMER3, NEK3, BTBD9, KCNQ4, DCUN1D3, GXYLT1, EOGT, CCDC71L, PDE12, BTBD3, EPHA3, ARRDC4, OTOF, E2F6, CPM, UTRN, KCNJ11, PLEKHG7, COL14A1, BEGAIN, CNOT6L, HABP4, PALD1, SEC14L5, SECISBP2L, LRIG2, AAK1, SLC8A2, ZNF10, ARMC8, WIPI2, DKK3, TMED5, GOLT1B, CPA4, ANKFY1, LIMK2, FZD3, FAM118A, CDCA8, SBNO1, ETNK2, TMEM143, TMEM178B, GLRX, SMARCAD1, SESN3, FRS2, MAPK8, TRIB1, HECTD2, SLC45A4, B3GAT3, IDH2, PAG1, SSH1, MIEF1, RNF20, PLEKHH1, ZSWIM5, SNX6, PRRX1, GNPTAB, VASH2, AGO3, L2HGDH, EDEM3, DUSP16, RNF170, LIPT2, ZNF566, TSC1, NIPAL4, PPARGC1B, BCAT1, POLR2D, HAND1, SCD, SOX13, PIK3CA, PRKAA2, CCL7, LYVE1, ADAMTS5, PXDN, MYCBP, GPR132, PSORS1C2, LIMD1, GATM, ATP2B4, ATP6V1C1, POLR3D, DLST, DUSP7, IL13, NGF, PBX2, RBMS1, RGS16, ST8SIA1, THBS1, THRSP, YY1, EEA1, SOCS1, GALNT4, TNFSF9, SNAP23, CYTH3, MLLT10, ZNF784, DPH3, AMMECR1L, INSR, MEX3A, IGF1, PPP3CA, TGFBR1, PIK3IP1, NIPA1, KATNAL1, FAXC, PARD6B, CCND1, TSPAN18, ADAMTS15, B3GNT7, GRPEL2, CCR7, FASLG, ARPP19, CCDC141, BCL2L1, ITGB3, TPP1, ARHGAP28, NAA30, SNX30, RUFY3, TRIM71, MYCN, TTL, ATP8B4, ENTPD7, FGF11, PTAFR, TMEM167A, GDAP2, CRCT1, CPED1, MSN, TSPYL5, FBXO32, CNTRL, ZNF275, RPS6KA3, WNK3, SPEG, SLC5A9, ZNF583, SENP5, CADM2, RDH10, CAPN3, LSM11, ANKRD52, CRB2, SREK1IP1, SOWAHA, CBFA2T3, NAT8L, SCYL3, GDPD1, CYB561D1, RBM38, SOCS4, TRIM41, PLD5, CRTAP, TBKBP1, TEAD3, MGA, TGDS, SLK, TSC22D2, TRANK1, LPGAT1, CPEB3, DTX4, PACS2, KHNYN, PARM1, LTN1, PPP1R16B, TAF9B, CERCAM, IMPG2, NKIRAS2, TRPM6, HIF1AN, XKR8, FIGN, DDX19A, FGD6, PLEKHA8, CALU, ACSL6, KLF9, GHR, ABCB9, SKIL, KCNC2, NME4, FRMD5, USP49, KIAA1958, TXLNG, GPCPD1, PDP2, KIAA1549, SLC7A14, XK, TMX4, SENP2, GAN, GPATCH3, LIN28A, CSRNP3, BEND4, IGF2BP1, RRM2, KLHL13, CLDN12, RORC, SH2B3, INPP5A, SPATA2, PCGF3, DYRK2, CPSF4, FZD4, HS2ST1, EEF2K, SLC25A24, GTF2I, E2F5, ELK4, ITGB8, P2RX1, PLAGL2, KLK10, RBMS2, WNT9B, EIF2S2, OSMR, E2F2, CHST3, SREBF2, SPRYD4, FREM2, SKIDA1, PPP1R15B, SLC5A6, LIPH, FBXO45, CLCN5, DDI2, CGNL1, ZNF689, SLC2A12, RPUSD2, COL4A1, HK2, GABRA6, KLHL31, C14orf28, ERP29, LCORL, NRK, CLASP2, RAG1, KIF21B, HMGA2, NDST2, PLEKHO1, ARL4D, RBFOX1, RUNX1T1, PRSS22, ELOVL4, GABPA, USP38, FNDC3A, USP6, ASAP1, STRBP, ZNF200, DST, ETNK1, LRFN4, HOXD1, DLC1, HMGA1, DICER1, YTHDF3, ZNF341, CASKIN1, TENM2, PTPRD, FAM135A, BZW2, MEF2C, HOOK1, ZFYVE26, USP32, MAP4K3, SNX16, LRIG3, GPR26, CHSY3, LMX1A, PRDM1, SCN5A, DHX57, SLC52A3, MAP4K4, SULF2, POGZ, USP24, AHCTF1, PLA2G3, SFMBT1, SLC12A9, RSPO2, AP1S1, MED6, SLC35D2, CACNA1I, KATNBL1, SPTBN4, CANT1, CPEB2, PEX11B, NEFM, GABBR2, DAGLA, OSTF1, COL4A2, COL4A6, LBR, UGCG, SUCLG2, LDB1, DMP1, DNA2, EGLN2, MARS2, TAB2, SLC25A18, ADRB3, COL1A1, GALC, PLD3, STOX2, SCN11A, CHD4, ERGIC1, IKZF2, SDK1, GPR156, BRWD3, TBX5, SP8, HIP1, SEMA4G, TTLL4, TECPR2, PLXND1, ZC3H3, SEC31B, MBTPS2, CRK, ARHGEF38, FNIP2, FRAS1, LBH, GRID2IP, MDFI, MMP11, RANBP2, IGF2BP3, ESPL1, WDR37, PAPPA, BSN, AKAP6, DUSP1, HIC2, THOC2, LOXL4, COL27A1, TMEM41A, COL1A2, CCNJ, ADIPOR2, MAP3K1, CPEB1, NSD1, DCUN1D2, IQCB1, KLHDC8B, USP12, LRRC8B, OSBPL3, CDV3, POC1B-GALNT4, NPEPL1, DPP3, PCDH20, DNAJA2, SLC31A1, SMARCC1, COIL, LMLN, TMPPE, HTR1E, YPEL2, KCTD21 |
| 15 | miR-221-3p | down | ETS1, HMBOX1, TRPS1, GPBP1, RALGAPA1, DYRK1A, TMCC1, GRB10, DLG2, MAPK10, ARHGEF7, ATXN1, SEMA6D, ZFPM2, TCF7L2, CTCF, MPRIP, TMEM132B, RFX7, RUNX2, SHANK2, CDON, MON2, TLE3, VEZF1, CDH2, WNK3, PPP2R2A, NAP1L1, NFYB, ZNF652, SLC4A4, SLAIN2, MIER3, PIK3R1, OSTM1, KCNQ3, PLEKHA2, CREBZF, PITPNM2, FRY, DPP8, RNPS1, KSR1, SUN2, BCL2L11, CACNB4, AGPS, TFG, HIPK1, GAB1, POGZ, NXPH1, PDIK1L, DGKH, RBM24, BRWD3, CPNE8, NAP1L5, SKP1, NFATC2, NFATC3, UBN2, ANKRD52, FGF14, MIDN, DICER1, CMTM4, PAIP1, ZMYM2, NRK, RSBN1L, GALNT18, MIA3, CD47, SYT10, REV3L, FOXN2, USP49, SLITRK5, FAM214A, KIT, ZFHX3, USP6NL, TNRC6C, BMF, SLC40A1, ZFYVE16, RIMS3, RNF44, VASH1, FNDC3A, WDR47, DCUN1D4, FBXO28, PLCL2, AMMECR1, NIPBL, DCAF12, ZNF385A, MAGI1, UBE2J1, NLK, ADAM22, CTDSPL2, PAIP2, SLC25A37, ATAD2B, NSMCE4A, AGO4, ANKHD1, CASZ1, TBC1D22B, CHD7, POLR3E, MSL2, TRABD2B, VAPB, KMT2A, KIF16B, PTBP3, URI1, KLF7, SESN3, GRM1, ZFAND5, RFX3, HECTD2, EIF3J, MARK1, DYNC1LI2, PCMTD1, PCDHAC1, PCDHAC2, PCDHA1, PCDHA12, PCDHA13, PCDHA3, PCDHA6, BRWD1, ANKIB1, DDIT4, STOX2, EIF5A2, CAMK1D, DCUN1D1, LRFN2, NUFIP2, FNIP2, RECK, DMRT3, HNRNPH3, CBFB, BCL11B, PHACTR4, PANK3, NAA25, KLHL18, NDFIP1, MYBL1, ETV3, STMN1, BEND4, SYNCRIP, NRG1, PDZRN4, EMX2, RREB1, NIPAL4, BEAN1, CPEB3, CTTN, RNF4, FMR1, AKAP5, CRKL, ERBB4, ETS2, FOS, TP53BP2, GTF2E1, LHFPL2, DCAF7, IRX5, TUBA1A, ARID1A, RANBP2, NOVA1, GNAI3, IGF2BP2, HNRNPA0, ZFP36L2, PDCD10, ANGPTL2, MYO10, RAB3GAP2, MYLIP, PCDHA9, KCNK2, FAT2, GBX2, ARF4, ATP1B1, FBN2, KDR, KPNA1, KPNA2, LIFR, ST8SIA1, SNCB, TCF12, THBS1, SEC62, TRPC3, SMARCA5, SNX4, MBD2, SOCS3, CDKN1B, TSC22D3, MED1, SNAP29, NDST3, C11orf87, SBK1, ZNF629, MEGF9, MEX3A, ESR1, BBC3, GABRA1, STYX, AGFG1, PCDHA7, PCDHA8, PCDHA10, KBTBD8, SLC2A13, PKDCC, SPPL3, OSBPL3, ARHGAP42, ITGB3, CD4, PLCXD3, CLVS2, SH3PXD2B, C3orf70, C6orf120, EML6, AJAP1 |
| 16 | miR-423-3p | down | RAP2C,BCORL1,PABPC1 |
| 17 | miR-191-5p | down | BDNF, BNC2, AMMECR1, RFX3, SATB2, ZCCHC14, NRCAM, CDK6, MAPRE2, SLC16A2, ZBTB34, IFFO2, TMC7, CTDSP2, SATB1, WIZ, TJP1, GLYR1, NEURL4 |
| 18 | miR-24-3p | down | TMEM161B, NAV2, LIMD2, RNF2, RBBP4, MTHFR, KIF21B, BCL2L11, IL2RB, MNT, BNIP3L, SNX27, SNX13, NDRG4, PLA2G2C, SRL, AVL9, FERMT1, CLTCL1, SCN3A, RC3H1, NFASC, RNF165, ABHD2, CAMK2B, RNF138, SP6, RAP1A, ZBTB44, SEMA4A, ZNF532, WSCD1, SEMA4G, SH3PXD2A, HIC2, RAD54L2, PLCL2, CRTC1, CHD5, VGLL3, TMEM9, BET1L, REEP2, ADD3, ADD2, CDV3, HIF1AN, SESN1, ARHGAP19, TNFRSF19, ABCB9, CLCN3, GFPT1, RAB5B, RAP2C, RPS6KB1, YOD1, NFXL1, GUCD1, STX6, GRAMD1B, PTGFRN, CRY2, IL21R, MARCKSL1, NREP, APBA1, ROR1, EXOG, DIAPH1, RALA, LHFPL2, DAGLA, CD28, ZER1, SLC16A2, PSKH1, SCML1, MGAT4A, GAB2, ATP6V0A2, NDUFAF4, KCNK2, LIMD1, KPNA3, MAFG, MATN3, PER1, SP1, SSR1, NIPSNAP1, STC2, USP2, ACVR1B, PIAS2, KDM5A, MCC, PIK3R3, ADM, UCK1, LMNB2, PML, FAM78A, BMF, HTRA3, COL26A1, CITED4, MAPK14, VTI1A, MOB3C, SVIP, NDST1, LAMTOR4, SFXN5, IGFBP5, GRIK3, FAM168B, KCTD21, KCNIP1, DLGAP4, PAK4, EML4, PROX2, LAMB3, BVES, ATXN7L3, DCBLD2, TAOK1, SIRPA, ARHGAP26, DAZAP1, GSK3B, CSK, B3GALT5, GGA1, TAF7L, AGPS, ST3GAL1, CMTM4, DCAF11, ISM2, CYB561D1, DLC1, PLOD2, NAIF1, GALNT10, NRP2, REEP1, BBC3, AAK1, ANGEL1, MBTPS2, DNAJB12, AGO4, PNPO, NEK4, C8orf58, ARID5B, CDX2, AP2B1, CCNI2, FURIN, AGPAT3, DHX33, LRFN2, RANBP10, PRKRIP1, CCDC134, RAB11FIP1, SOST, CSRNP2, LIPT2, NEK6, KLF8, KLF6, MBNL3, SCAMP5, PCBP2, GDF11, MMP16, SCML2, ZNF217, KAT6A, SERTAD1, SHROOM2, LOX, NOVA2, TOP1, PPM1D, TNKS, NRP1, FREM2, SSTR1, IFFO2, GAL3ST3, CHMP7, ZNF572, FASLG, ARSB, IL1A, IFNG, GABRA4, PTGER4, ERBB3, FAM78B, MAGI1, PAQR3, GNE, KCNJ2, HRH1, GBA2, TCF7, TSPAN14, IRF1, SLC12A6, SCARB1, GRIP1, PRKCH, CACHD1, PTPRF, LMBR1L, WDTC1, PLEKHH2, FADS6, RSBN1L, MLEC, FAM20B, TBC1D30, SPATS2L, ANGPT4, LIMK2, TBC1D22B, APPL2, TMEM178B, TGIF2, CACNA1E, STRADB, STX5, ADAM12, PDP2, SNTB1, RAP2A, EBF2, VCPIP1, DUSP16, SOX7, CCDC85C, NR5A1, NEFM, SNCAIP, SMYD5, EXOC5, CBX5, PDGFRB, CDKN1B, ELP5, AREL1, HNF1B, MBOAT1, LYRM1, TRIM55, MMAB, ADAMTS14, CHIC1, CREBL2, ZNF740, EDA, GK5, ELL, OGT, MTMR14, ATP1B2, DVL3, SKIDA1, GAD1, PTPRD, TSC22D2, PRDM1, AMOTL2, DEDD, SMG6, KLHL1, MED13, GBX2, NPAT, TP53INP1, ATL2, CCT3, INSIG1, TCERG1, PDGFRA, FGFR3, SZT2, CNOT6, FCGRT, ERC2, ANKRD52, MIDN, S1PR1, DENND4B, LMTK2, ZCCHC14, TRPM6, EDA2R, MARK4, RAB3IL1, IL1R1, TMEM165, RCN3, PER2, SEMA6C, TMEM50B, DYRK2, NFAT5, PIM2, ZXDA, ZXDB, NEUROD1, PROX1, PRSS8, UGCG, BSN, SLC7A6, PLK3, CDH7, DUSP8, PHC1, REPS2, ARHGAP44, NET1, PPIL6, CDKN1C, SMARCD1, SLC19A2, VSTM4, MAPK7, ZMYM3, MATR3, NLK, OTUD5, TTC17, GPR155, ZNF395, RBM27, HEG1, PCDH10, TENM1, MMP14, DLL1, KPNA4, TNFSF9, BTAF1, ZNF697, MIA3, TRPC4AP, POLR3D, RHBDL1, ZMAT3, KCNB1, FZD5, DCHS1, ATG4A |
| 19 | let-7d-5p | down | KHNYN, P4HA2, MAPK8, DUSP22, MDFI, PCDH19, LYVE1, ARPP19, SNX30, FZD4, UGGT1, MDM4, CASP3, STARD9, TTL, BTBD3, RNF165, PKN2, ANKRD46, GRPEL2, TGFBR1, LIPH, GCNT4, CDCA8, LRIG2, DOCK3, PLD5, DTX4, PRLR, ADRB1, STOX2, SYT11, PRPF38B, CCNT2, TSC1, FOXP2, SYT2, COL1A1, CHIC1, CPEB3, GALNT4, GTF2I, KIAA0930, HTR1E, TMEM41A, SCD, NGF, TBKBP1, GPATCH3, EDEM3, TXLNA, DCUN1D3, ABL2, SLC20A1, PEX11B, PDPR, LMX1A, FNDC3B, TBX5, SLC25A24, DICER1, SLC45A4, USP24, GPATCH2, SNX16, COL14A1, MYCBP, TMOD2, FNDC3A, MXD1, MRS2, IGDCC4, MYO5B, TRHDE, AFF2, SREBF2, RBMS1, PBX2, ZBTB10, KLF9, SLC5A9, HIP1, DDX19A, MTUS1, DUSP7, B3GNT7, IRS2, AKAP6, NEFM, SOX6, MED28, TET2, IGDCC3, RGS16, ARID3A, LTN1, CCDC93, E2F5, FRMD5, PBX3, SCN4B, SLC16A14, CRB2, C14orf28, STK24, SFMBT1, RFX6, ABCC5, DLST, FBXO32, PLEKHH1, ADIPOR2, CNTRL, ESPL1, PDGFB, E2F6, GHR, SBNO1, TAF9B, DPP3, CCND2, AGAP1, TMX4, HDX, SMARCAD1, NME6, ARL5A, CPA4, HECTD2, FASLG, KDM3A, GALNT1, DAPK1, RSPO2, PRDM1, TET3, PAX3, ICOS, CCNJ, PITPNM3, DCAF15, UTRN, SOX13, ETNK2, SLC25A27, PLCXD3, CBX2, CDC34, TGDS, CACNA1I, SMUG1, KCNC2, CYTH3, MYCN, CHD4, SEMA4C, SMARCC1, CCL7, BTBD9, CCND1, SLC30A4, ARMC8, SDK1, SPTBN4, B3GAT3, SCN5A, SESN3, PLXNA4, OTOF, PRKAR2A, BEGAIN, SENP5, ADRB2, ATP2B4, PTAFR, TNFSF9, SECISBP2L, FIGN, DVL3, PARD6B, BRWD3, TAB2, STARD3NL, WDR37, PPP1R15B, TRIB2, LIN28A, STRN, POC1B-GALNT4, KLK10, COL1A2, PLAGL2, ELF4, POLR3D, RDH10, RICTOR, TPP1, EIF2S2, ADAMTS5, DLGAP4, SENP2, HTR4, CNOT6L, LPGAT1, FBXO30, ARID3B, TSPEAR, GJC1, POGLUT1, AP1S1, FRMD4B, DLC1, RRM2, SLC52A3, MIB1, SLC12A9, NHLRC3, ZBTB39, HOXA9, PPP1R16B, SLC25A18, NDST2, ANKRD28, LOXL4, GIPC1, IGF2BP3, ACVR1C, OLR1, CBX5, PARM1, STARD13, USP47, MGLL, KIAA1958, TRIM41, FARP1, ERGIC1, PLEKHG7, EDN1, ARHGEF15, OSBPL3, RORC, RANBP2, TMEM65, MTDH, ERCC6, GDF6, CDC25A, TXLNG, STEAP3, DHX57, ARHGEF38, ZNF583, ACER2, ZNF10, PLEKHO1, COL3A1, RNF44, ITGB3, TTLL4, CFL2, SLC16A9, SSH1, SYT7, NAP1L1, GPR156, RDX, C19orf47, GYG2, DMD, FREM2, MAP3K2, TEX261, TMEM167A, NIPAL4, RASGRP1, PIGA, GALC, MSN, TMPPE, USP6, EPHA4, GNPTAB, FAM214B, ATAD2B, NR6A1, PLD3, SYT1, PGM2L1, AMOT, STX17, NRAS, SCYL3, ZNF644, GDAP2, VGLL3, CSRNP3, ARL4D, DYRK2, POGZ, FKRP, CCR7, LBR, ZNF641, KCNQ4, PTPRD, ZNF566, NKD1, ZNF689, SLK, EIF4G2, TMC7, LIMD2, CCDC141, SLC5A6, BACH1, LSM11, SOWAHA, SOCS4, HS2ST1, CPM, WARS2, COL5A2, TP53, SPEG, KLHDC8B, NME4, EFHD2, KCNJ3, P2RX1, RNF20, CLASP2, COL4A6, NPEPL1, ADAMTS15, FAM118A, CDKN1A, NEK3, THBS1, RCN1, E2F2, HMGA2, THRSP, GAS7, PACS2, EOGT, ATP6V1C1, CPED1, ANKRD52, TEAD3, BSN, SLC35D2, FAM189A1, PDP2, FNIP2, POLR2D, RAG1, FGF11, ZNF516, VAV3, LRRC8B, SPRYD4, CPEB2, PLA2G3, CALU, DARS2, KCTD21, ZNF784, SMC1A, BTG2, FGD6, USP44, SLC1A4, ATP2A2, PCDH20, CCDC71L, KLHL6, ELOVL4, ACSL6, UGCG, GPCPD1, HAS2, CPSF4, SRD5A3, EEF2K, DUSP16, GAN, PLXND1, CEP164, HIC2, ZNF280B, ZBTB5, CBFA2T3, OSMR, POU2F1, TMEM234, XYLT1, NAT8L, LINGO1, INTS2, RNF38, LIN28B, PRSS22, RBFOX1, MSI2, PXT1, PBX1, SMAD2, ZNF341, IGF2BP1, SPATA2, TSPAN18, ZNF710, ELK4, MON2, TRIB1, PGRMC1, SEC31B, MEF2C, TMED5, IKZF2, EPHA3, ASAP1, PDE12, AMMECR1L, KIF21B, HDLBP, SCN11A, CLCN5, DDX19B, IL13, CDV3, SEMA4F, STRBP, ZNF275, PLXNC1, CD200R1, ZSWIM5, ONECUT2, LIMK2, WIPI2, TSPAN2, XRN1, USP38, FAM135A, RPS6KA3, ZC3H3, CRY2, GPR132, RALB, ZFYVE26, SRGAP1, GDPD1, HOOK1, GRIN3A, TSC22D2, PIK3CA, C1GALT1, RNF170, BIN3, SLC31A1, VSNL1, EGLN2, BZW2, PALD1, NAA30, UBE2G2, ZNF652, NRK, SH2B3, PIK3IP1, MEIS2, AHCTF1, MGAT4A, HMGA1, CGNL1, MAP3K3, POTEM, PEG10, YY1, SURF4, RPUSD2, TRANK1, TECPR2, CACNB4, LRIG3, ZNF200, SEMA4G, FAM104A, HOXD1, FBXO45, MAP4K3, BCL7A, KATNAL1, ATP8B4, COL4A2, DDI2, WNK3, SOCS1, LRFN4, NSD1, SKIDA1, LBH, HAND1, TRPM6, SNAP23, HIF3A, XKR8, C15orf39, AMT, USP12, PPP1R12B, PALM3, CLOCK, TMEM178B, COIL, PCGF3, RAB8B, TGFBR3, UHRF2, MBD2, CERCAM, ARHGAP28, TUSC2, PPARGC1B, PAPPA, IGF1R, MARS2, COL4A1, ADAMTS8, ICMT, KCNJ11, YOD1, RAB15, RUFY3 |
| 20 | miR30-3p | down | OBSL1，SP4，SH3BP4，PLD1， PCBP4,SLC45A4，HOXD3，PTPN14,FAM160B2,CACNA2D2,NCOA1,ZIC4,IL20RA,AGAP3,NFIA,AGO2,PRKAR1B,ADAP1,PDAP1,NT5C1B,RACK1,LBX2,SOX11,SKI,CAMK2B,TLX3,ACOT7,HDAC4,PCGF3,ZNF703,SLC9A3,C3orf80,EMILIN1,EXTL3,POU3F1,WDR26,TMUB1,RPL14,FOXL2,HS6ST1,ACYP2,PXDN,NR2C2,TFAP2B,SLC6A9,SORBS2,VOPP1,NRG2,ADD1, ARC |
| 21 | miR286-3p | down | OBSL1,SP4,SH3BP4,PLD1,PCBP4,SLC45A4,HOXD3,PTPN14,FAM160B2,CACNA2D2,NCOA1,ZIC4,IL20RA,AGAP3,NFIA,AGO2,PRKAR1B,KIF5C,ADAP1,PDAP1,PCDHA9,NT5C1B,RACK1,LBX2,SOX11,SKI,CAMK2B,TLX3,ACOT7,HDAC4,ZNF703,SLC9A3,C3orf80,EMILIN1,EXTL3,POU3F1,WDR26,TMUB1,RPL14,FOXL2,HS6ST1,ACYP2,PXDN,NR2C2,TFAP2B,SLC6A9,SORBS2,VOPP1,NRG2,ADD1 |
| 22 | miR-23a-3p | down | SFXN5, HELZ, BNIP3L, TNRC6A, TRPS1, DOCK7, PPARGC1A, ELF2, GPBP1, FNIP1, ZNF287, DENND5A, SETD2, DNM3, SGIP1, SRPK2, DLG2, RAPGEF2, STK4, CEP63, ATP11C, MITF, IRF1, PPP2R5E, TJP1, SEMA6D, PSD3, ACO1, NCOA1, AZIN1, CCDC82, MAP3K3, CCNG1, CSNK1G3, EBF1, IL1RAP, CNR1, NLGN1, TET3, OTUD4, NRXN3, VSNL1, STON2, AMBRA1, PALLD, ZNF469, WT1, SOX6, PRDM10, GREM1, NFIB, TMEM135, ZC3H12C, GPC6, GNG2, BTBD7, ZNF839, TMEM170A, MAF, STAT5B, NEDD4L, EPG5, NCOA6, PAK3, WNK3, KDM6A, NDUFA5, PDPK1, ZNF652, SLFN12, SLC4A4, KIAA1109, GNPDA1, LMNB1, SLC12A2, ADAM19, PRDM1, TNFAIP3, ETV1, LBR, MET, CCM2, PTK2B, ASAP1, RNF38, BNC2, STX17, TMOD1, CELF2, LARP4B, CELF1, WEE1, MAML2, FGD4, ALDH1L2, MED13L, HDAC7, WNK1, INTS6, TTLL7, PTP4A2, ZBTB1, PPP1R13B, SNX27, ENTPD5, CEP350, TANC2, RNF43, SOCS6, NACC1, ZNF793, ADNP, SYNJ1, SATB2, CCSAP, REEP1, MED12L, ESRRG, GAB1, DCP2, DOK6, TAB3, FAS, N4BP1, HS6ST3, C2orf69, CACUL1, CBLB, MEIS2, ALDH1A2, EYA1, PLEKHH2, UBR3, EIF4E3, MMGT1, PRR14L, UBN2, GXYLT1, C8orf58, SREK1IP1, CLCN3, CHSY3, UHMK1, CCDC71L, FGF14, CBFA2T3, STX12, TRAPPC6B, PPM1A, DLX1, IGSF10, ANO4, STT3B, NLGN4X, IL6R, BTLA, TMED7, PKIA, APAF1, UBE2D3, CPEB2, TXNRD1, ZMYM2, ELF5, NEDD4, PAQR9, SEMA4B, SERINC3, ALAS1, BLOC1S5, RGS8, RAP1A, SS18L2, AKAP12, SCN2A, MYCT1, GCNT2, EBF3, LPP, TRRAP, ATXN7, ROBO2, FREM1, ATXN7L3, MAP4K4, ZFHX3, SIPA1L1, CNOT6L, DTNA, SH3PXD2A, STXBP6, PBRM1, EXOC3L4, ZBTB34, PAK6, TNRC6C, SSBP2, TENM1, CAPN6, GHITM, NEK6, SNX5, PCLO, ATP11B, SAFB2, KDM4A, ULK2, TOX, SRGAP3, ARNT2, CHST15, DIP2C, ZNF292, TNRC6B, LRCH1, TBC1D9, RCOR1, RPRD2, BICD2, USP24, TECPR1, RCHY1, THUMPD3, MTMR9, PHF19, FILIP1, INTU, CRLF3, TMED5, RRP15, VGLL3, NLK, GPRC5B, VRK3, RAB8B, KLF3, LGSN, EPHB2, MYH2, KLHL28, ESRP1, FNBP1L, ANKHD1, INO80D, PNRC2, MTMR10, CHD7, UACA, FIGN, NDC1, SLC25A36, CTCF, TCF24, TMEM178B, CGGBP1, VAPB, TGFBR3, SYS1, NOL4, MAP7, POU2F1, CPD, SAFB, SEC14L1, IGSF8, CASP7, FBXO32, ZIC4, RAD23B, PPP1R12A, SEC24A, CHL1, S100PBP, CSE1L, HTR2C, CUL3, SLC9A7, JARID2, SESN3, BBX, YOD1, SDHD, LRRC31, CXCL12, CHUK, EOMES, MPP2, SLC38A1, RAD17, TGIF1, IDH1, PDIA6, TRIB1, MAP3K9, PHF21B, VKORC1L1, PDXDC1, MARK1, PKNOX1, KIAA1958, STK32A, C18orf54, BAZ2B, TXLNG, RSBN1, CHST11, MYNN, ZNF395, ZC4H2, FAM114A2, CTTNBP2NL, SLC25A40, RBM27, EML4, EIF4ENIF1, CHST7, CTNNBIP1, ANKRD50, RIPK4, TMCC3, STRIP2, RNF150, PCDH19, NUFIP2, SYT4, TAOK1, TRMT5, FNIP2, OSBPL8, TSHZ3, CADM3, RBM25, BACH2, TEAD1, UBE2O, PJA1, AZI2, IPPK, CASD1, MARCKSL1, SOWAHC, ZNF655, PRRG4, DDX4, ACSS3, C3orf52, GALNT12, ZFHX4, GGNBP2, VCPIP1, TNKS2, SPHKAP, KLHL15, ATXN3, ZEB1, CSRNP2, C6orf62, SEH1L, COG3, MYL12B, SMAD3, FKBP5, ROBO1, MOGS, TOX3, TMEM64, EPS15, VCAN, CALCR, HTR2A, MDFIC, AFF1, BLCAP, VEPH1, CDK17, FOXO4, SLC6A2, PRRG1, SERINC5, SLC16A6, HDX, CEP85L, MINPP1, CLDN12, NKX3-2, NRXN1, GRAP2, IGDCC3, CBFA2T2, ERBB4, GPR22, GRK5, HAS2, PRKCE, CCDC6, INPP5A, MDFI, RBL2, LHFPL2, MAT2A, MAP3K5, MYH1, UQCRFS1, MRC2, APPBP2, HEXIM1, HIC1, RASA2, FUT9, TBR1, SPIN1, MSMO1, NUDT21, TRIOBP, ADAMTS5, SEC23IP, ZHX1, SLC6A14, PNMA2, PLA2R1, TARDBP, ELL2, CBX5, G3BP2, YWHAG, HOOK2, OLA1, ZBTB43, ZBTB44, ELF4, EPAS1, SHROOM2, ATP6V1B2, AUH, COL4A1, EFNA5, EGR1, FBN2, FMR1, FUT4, GAP43, HMGB2, ISL1, KCNK3, KPNA4, LRP5, LSAMP, MRC1, PDE4B, PDE7A, PIK3C2A, PTPN4, PTPN11, RAP2B, RCN1, RORA, SLC7A1, SRPK1, STRN, TGFA, TGFB2, ZIC1, ZNF267, PIP4K2B, EEA1, TPST1, PKP4, PIK3R3, ENC1, KCNK5, ADAM23, CDS2, MCM3AP, PRPF4B, BTAF1, CLK3, EIF4EBP2, SLC1A1, MFHAS1, CBLN1, CREBBP, DDX5, HNRNPU, SPOCK1, REPS2, LRAT, CAPRIN1, CAMSAP2, QKI, TMEM33, TMEM38B, NAA15, PPIF, TAB2, ARSB, HS6ST2, ASAH2B, WHAMM, POM121C, RALYL, TMEM170B, ADAM10, ACVR1C, PPP6C, TET2, AUTS2, STXBP5, ORMDL1, MEF2A, SESN2, DCUN1D5, KBTBD8, ZIC5, BRWD1, EGLN2, TADA1, CCND1, COL11A2, ISM1, STK35, DCBLD2, A1BG, NEK7, NUS1, LIPH, ATRN, MAPK1IP1L, NACC2, ZNF420, SPICE1, NDST1, PFKFB4, SPRY2, BNIP2, JAK1, FRMD5, ELAVL4, RUFY2, HSPA12A, CA2, COL4A4, GRM5, PTGER4, SPOPL, PLCXD3, SNX30, ACTBL2, LONRF3 |
| 23 | miR-100-5p | down | MTMR3, ST6GALNAC4, AP1AR, TAOK1, TRIB2, RMND5A, THAP2, AGO2, HES7, HS3ST3B1, HS3ST2, PPP3CA, FZD8, KBTBD8, CDYL2 |
| 24 | miR255-5p | down | OBSL1,CDC42BPA,SEMA3F,SH3BP4,ADD2,DISP3,LUZP1,CTDSP1,PLEKHG5,NELFA,CACNA2D2,COL9A2,PIGZ,SLC1A4,TNK2,VWA5B2,NFIA,PRDM16,POMGNT1,GSK3B,TP73,LHFPL4,PER2,BEND4,LBX2,SOX11,SKI,PLXNA2,FAHD2A,HDAC4,SLC9A3,C3orf80,EMILIN1,POU3F1,ARSJ,BTBD19,P4HTM,HOXD11,FOXL2,SSU72,POLR1A,ACYP2,SLC6A9,INTS11,SNORC,PSD4,FAHD2B,SRGAP3,SPTBN1,OTX1 |
| 25 | miR-127-3p | down | ATP2B2,ZC3H4,KIF3B,MAPK4 |