

S5 Table The target genes of combinatorial miRNAs

| combination | MicroRNA target prediction | |
|-------------|----------------------------|----------|
| | MicroRNA | Gene |
| | hsa-let-7c | PPP1R15B |
| | | BACH1 |
| | | E2F6 |
| | | AKAP6 |
| | | ACTA1 |
| | | BTBD3 |
| | | THBS1 |
| | hsa-miR-10b | NCOR2 |
| | | DAZAP1 |
| | | ZNF367 |
| | | DOCK11 |
| | | FXR2 |
| | | ELAVL2 |
| | | ARIH2 |
| | | HOXA1 |
| | | NR4A3 |
| | | CECR6 |
| | | GRIN3A |
| | | MTMR3 |
| | | LPHN1 |
| | BCL2L2 | |
| | hsa-miR-27b | RPS6KA5 |
| | | C5orf13 |
| | | TXN2 |
| | | CD28 |
| | | PPARG |
| | | CCNG1 |
| | | ADD3 |
| | | NCOA7 |
| | | VAV3 |
| | | POM121 |
| | | KITLG |
| | | SLC38A4 |
| | | PHB |
| | | KIAA1737 |
| | | CDK5R1 |
| NHS | | |
| XPO1 | | |
| ST14 | | |
| HOXC11 | | |
| INSR | | |
| ANTXR2 | | |
| PLEKHJ1 | | |
| SEMA3B | | |

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|---------|
| ADAM22 |
| STIM2 |
| BAZ2B |
| RAP2C |
| UBE2J1 |
| YTHDF3 |
| FAM43A |
| ZNF644 |
| STK39 |
| ZNRF1 |
| CA10 |
| CADPS |
| CHD7 |
| GOLGA4 |
| GABRA5 |
| ADAM19 |
| TRPM7 |
| ZDHHC21 |
| USP48 |
| USP37 |
| BECN1 |
| RAP1B |
| PAWR |
| COL13A1 |
| FOXD1 |
| CALU |
| PTPN2 |
| ELL2 |
| SOX4 |
| IL1A |
| SOCS3 |
| INSIG2 |
| SOCS1 |
| ARID1A |
| ERG |
| CAMTA1 |
| CALCR |
| JPH4 |
| PSMD7 |
| ADAMTS9 |
| NR5A2 |
| MAP3K5 |
| MEIS2 |
| SNAI1 |
| EML4 |
| DLL4 |
| FBXL17 |

hsa-miR-30a

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|----------|
| SNAI2 |
| ZDHHC17 |
| GLDC |
| SORCS3 |
| YWHAZ |
| SATB2 |
| GALNT3 |
| SEMA6D |
| HIC2 |
| AP2A1 |
| DDIT4 |
| RUNX1 |
| PDE4D |
| DMD |
| MAP3K12 |
| SLC38A2 |
| CLOCK |
| CAMK2D |
| SLC7A10 |
| NRIP1 |
| POU4F2 |
| CARS |
| GRM5 |
| PDCL |
| SLC4A7 |
| FBXL20 |
| ACTR1A |
| SGCB |
| BNC1 |
| SATB1 |
| STC1 |
| NAGPA |
| MYBL2 |
| HOXA11 |
| EPHB2 |
| EAF1 |
| RAI14 |
| SMARCD2 |
| ICK |
| FLJ36031 |
| NRK |
| NFIB |
| IGF2R |
| TIMP3 |
| NEDD4L |
| IDH1 |
| LPP |

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|----------|
| DEXI |
| TSGA14 |
| EIF5A2 |
| UNC5D |
| STK35 |
| EFNA3 |
| ADRB1 |
| CCPG1 |
| USP44 |
| CPEB4 |
| ITGB3 |
| CSNK1G1 |
| EIF2C1 |
| TNXB |
| COPS7B |
| MBD6 |
| THBS2 |
| IER2 |
| ESRRG |
| TP53INP1 |
| ATP2A2 |
| CECR6 |
| RASL12 |
| ARID3A |
| MEF2D |
| SLC6A15 |
| SLC36A1 |
| SCAMP1 |
| NAV3 |
| CAMKK2 |
| ELMO1 |
| FXR1 |
| NR2F2 |
| MKL2 |
| DDX46 |
| MAN1B1 |
| PITX1 |
| BACH1 |
| NR3C2 |
| ARHGEF3 |
| PDP2 |
| RASGEF1A |
| CRKL |
| EGR3 |
| PLXNA1 |
| KLF12 |
| DIO2 |

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|--------------|----------|
| | PLCG1 |
| | FOXA1 |
| | BCL2 |
| | JUNB |
| | ROD1 |
| | BNC2 |
| | NCALD |
| | SLC1A2 |
| | MECP2 |
| | BCL11A |
| | HIPK1 |
| | FOXP4 |
| | SIAH2 |
| | B4GALT5 |
| | RASAL2 |
| | CHFR |
| | FRMD4A |
| | CORO2A |
| | AP3M1 |
| | NAV1 |
| | SNX27 |
| | DCP2 |
| | BACH2 |
| hsa-miR-30d | SUPT3H |
| | KCTD5 |
| | HSPA5 |
| | SBF1 |
| hsa-miR-133b | PPP2CB |
| | PDIA4 |
| | FOXG1 |
| | NPAS4 |
| | NEUROD1 |
| | SPEG |
| | C5orf41 |
| | TOB2 |
| | C16orf72 |
| | H3F3B |
| | CD3G |
| | SLC2A1 |
| | PAPOLG |
| | CHIT1 |
| | RRP1B |
| | SFT2D3 |
| | ARRDC2 |
| | XPNPEP3 |
| | RPL23A |
| | SOX7 |

hsa-miR-378

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|-----------|
| MREG |
| PDIK1L |
| HDAC4 |
| CRLF3 |
| PAPOLA |
| CACNA2D4 |
| TLK2 |
| PAPPA |
| XPO5 |
| MAPK1 |
| DLAT |
| ZNF507 |
| TRIL |
| SAR1A |
| RIT1 |
| FZD5 |
| KPNA6 |
| ANKRD52 |
| MKL2 |
| MEF2D |
| RNF41 |
| SLC30A8 |
| SARM1 |
| MAPK11P1L |
| DDX3X |
| IGF1 |
| CALN1 |
| WDR37 |
| SEC63 |
| MNT |
| NUFIP2 |
| SLC38A1 |
| LDLRAD2 |
| TFCP2L1 |
| SETD8 |
| CBX5 |
| OTUD7B |
| DBT |
| ELFN2 |
| MTF1 |
| AAK1 |
| MED13L |
| RNF41 |
| PTBP2 |
| BZRAP1 |
| UGT1A10 |
| UGT1A8 |

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|----------|
| UGT1A7 |
| UGT1A6 |
| UGT1A5 |
| UGT1A9 |
| UGT1A4 |
| UGT1A1 |
| UGT1A3 |
| CSNK2B |
| UNC13C |
| LARP1B |
| NT5C2 |
| MSTO1 |
| BTBD11 |
| EIF2C1 |
| CSRNP2 |
| SEMA3A |
| RELT |
| C17orf59 |
| WIBG |
| GPKOW |
| XKR6 |
| CC2D1B |
| C14orf1 |
| KCNIP1 |
| RNF146 |
| LHFPL1 |
| PRDM4 |
| TIMM17A |
| TDRD9 |
| ZNF629 |
| CUX1 |
| C2orf84 |
| WNT10B |
| PTPRU |
| INPP5A |
| AMBRA1 |
| HMI3 |
| ZNF594 |
| GJA5 |
| GLP1R |
| NRXN2 |
| HMX2 |
| C1orf63 |
| FXR2 |
| PPP1R8 |
| ZHX2 |
| CALU |

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|----------|
| TARDBP |
| BSDC1 |
| EMX1 |
| ZBTB6 |
| C22orf29 |
| POU3F1 |
| SORT1 |
| CYTIP |
| UBE2E1 |
| LRRTM4 |
| WDR82 |
| AK2 |
| STMN4 |
| PGM5 |
| PIP5K1A |
| SMOC1 |
| RACGAP1 |
| ZNF544 |
| DBN1 |
| TAF15 |
| DNAJB1 |
| NUMA1 |
| CHRM1 |
| TAOK2 |
| TCF20 |
| FOXMI |
| IPPK |
| MLL4 |
| KDM4A |
| N4BP3 |
| C6orf132 |
| TBX4 |
| FAM120C |
| DCBLD2 |
| SRRM2 |
| ACCN1 |
| SLA2 |
| GREM2 |
| ELK1 |
| GRRP1 |
| UBTF |
| SP6 |
| TAL1 |
| WTAP |
| ERLIN1 |
| ZNF48 |
| NPAS4 |

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| AFF3 |
| PTPN11 |
| ATP2B1 |
| ASH1L |
| KCTD12 |
| FAM109B |
| GNPNAT1 |
| CDK16 |
| PLEK |
| STAG2 |
| FXR1 |
| POGZ |
| ETS2 |
| RNF121 |
| BBC3 |
| SCD |
| PTGFRN |
| LAMC2 |
| MLL2 |
| ZNF385A |
| ZNF763 |
| RNF123 |
| KIAA1161 |
| SYNM |
| ZNF781 |
| ETV1 |
| SLC16A3 |
| LDOC1L |
| ZNF740 |
| SREBF2 |
| CD8A |
| KLHDC7A |
| SH3BP5 |
| PI4KB |
| MMP16 |
| TMEM104 |
| TNPO3 |
| DIXDC1 |
| VAMP1 |
| ZNF814 |
| C6orf195 |
| FLT1 |
| DCLK1 |
| DLG2 |
| ETS1 |
| SMYD4 |
| MGLL |

Sub 1

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|----------|
| SEMA4F |
| HOXB5 |
| SUPT4H1 |
| ZNF559 |
| ZNF541 |
| JPH2 |
| CCDC117 |
| ATXN7L3 |
| HOXC10 |
| FBXL19 |
| NCOR2 |
| C12orf53 |
| XPR1 |
| HAS3 |
| SURF4 |
| EFNB1 |
| TSC22D4 |
| RAP2B |
| LIMD2 |
| KNCN |
| SMARCD1 |
| PER1 |
| ST3GAL3 |
| HOXB13 |
| COL1A1 |
| RAPGEFL1 |
| ZNF428 |
| RAB42 |
| ELAVL3 |
| GATAD2B |
| PLCXD3 |
| HOXB9 |
| RPS6KA3 |
| DENND1A |
| ATP8B1 |
| KDM6B |
| BTRC |
| SUFU |
| PDXK |
| AFF4 |
| MEX3A |
| CD83 |
| CCDC93 |
| CCR5 |
| SCRN1 |
| SF3B3 |
| GABI |

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| DPYSL3 |
| ELL2 |
| SFN |
| PRKACA |
| GLT25D2 |
| WWC3 |
| KPNA6 |
| RBMS2 |
| PTPN3 |
| ZFHX2 |
| ANP32A |
| USP27X |
| CENPP |
| SLC2A4 |
| GRB2 |
| DHRS7B |
| CRKL |
| SLC31A1 |
| CUL2 |
| ZBTB46 |
| IGF2BP1 |
| AP3M1 |
| NFIX |
| CNOT6L |
| LRRC55 |
| NFIB |
| LHFPL4 |
| SLC30A5 |
| FZD4 |
| PIGK |
| SOX12 |
| GAB2 |
| EIF2S1 |
| ZNF266 |
| PGP |
| NPTX1 |
| MXD4 |
| NEUROG2 |
| SIK2 |
| MYO5B |
| B3GALNT2 |
| SLA |
| CNKSR2 |
| SESTD1 |
| ANTXR2 |
| MAPRE2 |
| ZFP3 |

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| MMP15 |
| GJB4 |
| ZNF780B |
| PHF21A |
| WIZ |
| FASN |
| ZNF260 |
| AGPS |
| DCAF7 |
| ENAH |
| INO80D |
| GABRA4 |
| VANGL1 |
| KLHL24 |
| C10orf114 |
| PRKCA |
| CCDC97 |
| TNRC6B |
| SLC7A8 |
| TFE3 |
| QKI |
| PPP2R5D |
| BCL2L1 |
| ARFIP2 |
| ADCY6 |
| FGFR1 |
| ALDH5A1 |
| EIF2C1 |
| ZNF436 |
| SENP1 |
| SYNPO2L |
| SLC6A6 |
| NIPA1 |
| FOXP4 |
| C16orf5 |
| KPNA6 |
| TTYH3 |
| FBXL19 |
| HIC2 |
| JDP2 |
| C10orf46 |
| NFAT5 |
| WHSC2 |
| SP1 |
| NLGN2 |
| SNX1 |
| LHFP |

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| SLC6A1 |
| UBA2 |
| NUP153 |
| SGPP1 |
| CLTA |
| PTPRZ1 |
| VPS54 |
| EIF4A1 |
| SEC61B |
| SMARCD1 |
| PPP2CA |
| SOX4 |
| SUMO1 |
| PTPRO |
| TIMM17A |
| GPM6A |
| SH3GL2 |
| SNRK |
| SEPHS2 |
| BAZ2A |
| FTL |
| SP3 |
| TFAP2D |
| PTBP2 |
| PFN2 |
| BNIP3L |
| TBPL1 |
| RARB |
| RAP2C |
| GCH1 |
| EPHA7 |
| ADCYAP1 |
| PEX5L |
| MEIS2 |
| SACMIL |
| VAMP2 |
| SYT1 |
| AKAP9 |
| CRTAM |
| CSNK1G3 |
| ARHGAP12 |
| KCNMA1 |
| ATP6AP2 |
| TMOD3 |
| FBXW11 |
| BTBD3 |
| SOLH |

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| DOLPP1 |
| LASP1 |
| TRHDE |
| FBXL2 |
| MTMR4 |
| RB1CC1 |
| RAVER1 |
| SV2A |
| ANKRD12 |
| LRRC7 |
| FOXL2 |
| MAML1 |
| SLC4A1 |
| MCL1 |
| PAN3 |
| GRM5 |
| USP32 |
| PTPRD |
| MEIS1 |
| GDI2 |
| ELAVL1 |
| YES1 |
| TCF7 |
| SUPT16H |
| BCORL1 |
| RAPH1 |
| ARHGDI1A |
| JAZF1 |
| CRK |
| CASC3 |
| RCE1 |
| TRAM2 |
| ELF2 |
| NDRG1 |
| XPO4 |
| MLLT3 |
| BCL2L2 |
| PRDM16 |
| USP6 |
| PPFIA3 |
| MAP3K3 |
| GABARAPL1 |
| NRIP3 |
| VAPB |
| SESN1 |
| CD47 |
| PFKFB3 |

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|----------|
| PREX1 |
| WASF1 |
| H3F3B |
| RBM15 |
| AKT3 |
| NET1 |
| ARPC5 |
| GATM |
| FAM49B |
| SEPHS1 |
| STK39 |
| CPEB1 |
| CHD9 |
| BOLL |
| OGN |
| RGS2 |
| SIRT1 |
| STAG2 |
| POGK |
| CHD7 |
| MAX |
| RAB5B |
| LRRC1 |
| PTEN |
| IL13RA1 |
| TRIB2 |
| SATB2 |
| CDX2 |
| HOXA4 |
| LAMC1 |
| TRUB1 |
| RSBN1 |
| FMNL2 |
| FNBP4 |
| CSF1R |
| RFXANK |
| CALCR |
| TYRO3 |
| EMILIN3 |
| COPS7B |
| DNM3 |
| MAPK14 |
| FBXL19 |
| EP300 |
| ERBB3 |
| CAV3 |
| TP53INP1 |

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| LIN7C |
| PPP1R15B |
| AMOT |
| PTPN9 |
| SMAP1 |
| ODF1 |
| ESR1 |
| ARFIP2 |
| FBXW7 |
| ZFYVE9 |
| JARID2 |
| NDEL1 |
| MAP3K12 |
| NUDT4 |
| SNRK |
| BCL9L |
| BCL9 |
| MTHFD2 |
| KIAA1274 |
| NR3C1 |
| FBN2 |
| DNAJB5 |
| SV2A |
| DPP10 |
| EPC1 |
| FOSL1 |
| BTG1 |
| WDTC1 |
| DPF2 |
| IPO7 |
| PTPN1 |
| CUL3 |
| DPYSL3 |
| PLEKHA6 |
| SLC2A1 |
| SLC16A2 |
| SLC1A3 |
| RAPGEFL1 |
| RIMS4 |
| PHF13 |
| GALNT4 |
| TAGLN |
| DGKI |
| CALM3 |
| WDFY3 |
| HSPG2 |
| SLC9A5 |

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| IL17RD |
| PURB |
| BIN1 |
| NFYA |
| MXD4 |
| LGALS1 |
| ASB6 |
| CDKN1A |
| ARID3B |
| KIAA0355 |
| USP37 |
| TLK2 |
| KCNK10 |
| TTYH3 |
| ZCCHC8 |
| ARHGEF12 |
| MAP3K3 |
| PPP1R16B |
| SLC17A5 |
| MECP2 |
| FURIN |
| MBP |
| MAPK8IP3 |
| USP46 |
| HDAC4 |
| ULK2 |
| C20orf112 |
| SP1 |
| PPARA |
| PTPN13 |
| WDR7 |
| UBE2V2 |
| LRRC17 |
| PAPD4 |
| LPPR4 |
| NT5E |
| PRDM1 |
| NAALADL2 |
| HLF |
| DOLPP1 |
| CCNT2 |
| ATP2B1 |
| ELOVL5 |
| SCN3A |
| NR4A2 |
| UBE2I |
| LGI1 |

hsa-miR-30e

| |
|-----------|
| PAPOLA |
| CAPZA1 |
| ADAMTS3 |
| PFN2 |
| CHST2 |
| NRXN3 |
| C9orf72 |
| FAP |
| RAB15 |
| PCDH17 |
| UNC5C |
| RAB32 |
| BNIP3L |
| RAB11A |
| ADAM9 |
| AP4E1 |
| FRMPD1 |
| SLC5A11 |
| GATM |
| EIF2C3 |
| IRS1 |
| CTNND2 |
| MMD |
| NRP2 |
| PON2 |
| PAPOLB |
| NHLH2 |
| RAB38 |
| LPHN3 |
| DHX40 |
| PPARGC1B |
| PTP4A1 |
| PDCD10 |
| PPARGC1A |
| PGM1 |
| CBFB |
| C20orf108 |
| GFPT2 |
| RHEBL1 |
| CALB2 |
| E2F3 |
| SSBP2 |
| GJA1 |
| ABL1 |
| SIRT1 |
| KIAA0355 |
| PLS1 |

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| | ESPN |
| | GTF2H1 |
| | CNTN4 |
| | SEMA6B |
| | RGL1 |
| | RNF122 |
| | TAB3 |
| | PRICKLE1 |
| | ITPK1 |
| | PPP3CB |
| | KCTD3 |
| | NRBF2 |
| | KCTD7 |
| | CAPN5 |
| | SEC61A2 |
| | JDP2 |
| | VAT1 |
| | TBPL1 |
| | TRPS1 |
| | EYA2 |
| | TUBGCP3 |
| | PDGFRB |
| | PGGT1B |
| | NFAT5 |
| | BDNF |
| | OSBPL8 |
| | SOX12 |
| | GPT2 |
| | PLCB4 |
| | IRX4 |
| | GOT2 |
| | PLCXD3 |
| | SLC6A6 |
| | COTL1 |
| | PHF13 |
| | HMGB3 |
| | SLC39A11 |
| | PTPN21 |

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|--|----------|
| | GJA1 |
| | DHX15 |
| | MET |
| | HS3ST3B1 |
| | CXorf23 |
| | ANXA4 |
| | NRP1 |
| | GNPDA2 |

hsa-miR-1

| |
|-----------|
| EIF4E |
| CLCN3 |
| FBXO33 |
| CPEB1 |
| MYLK |
| JARID2 |
| BPNT1 |
| H3F3B |
| OSBPL7 |
| NAP1L5 |
| RARB |
| TBC1D15 |
| MEOX2 |
| SNAP25 |
| SLC25A22 |
| HMGCR |
| ADAM12 |
| RNF138 |
| BCL11A |
| HOXB4 |
| UBE4A |
| MEIS1 |
| KCTD10 |
| VAMP2 |
| ZNF146 |
| CORO1C |
| EIF1AX |
| BSCL2 |
| OTX2 |
| FRAS1 |
| GDF6 |
| SP2 |
| GAS2L1 |
| BOLL |
| CORO1B |
| STAG2 |
| C20orf112 |
| JUND |
| SERP1 |
| SNAI2 |
| RAP1B |
| LIN7C |
| QKI |
| ARF3 |
| GIT1 |
| EYA4 |
| CAP1 |

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|----------|
| EAF1 |
| KCTD13 |
| SEC63 |
| PREX1 |
| SMARCA4 |
| CDK9 |
| SYT1 |
| CRIM1 |
| PAFAH1B1 |
| KLF4 |
| HDAC4 |
| KLF13 |
| BLCAP |
| NFAT5 |
| GCLC |
| ARHGAP21 |
| DNAJC5 |
| EIF2C1 |
| EML4 |
| CCND1 |
| DLC1 |
| CELSR3 |
| SLC38A2 |
| CCND2 |
| ATP6V1B2 |
| RIMS4 |
| SLC31A1 |
| PGAM1 |
| MAP4K2 |
| MUM1L1 |
| TRPS1 |
| NGFR |
| GNPNAT1 |
| TFE3 |
| IGFBP5 |
| HSPE1 |
| MTX1 |
| NRP2 |
| PIMI1 |
| LETM1 |
| CDK6 |
| HIC2 |
| THR3 |
| ZFP91 |
| TBX3 |
| SLC25A1 |
| STC1 |

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|----------|
| FLRT3 |
| GLTSCR1 |
| ZNF207 |
| MYCN |
| ASPN |
| CDYL |
| ZFHX4 |
| ATP1B1 |
| PAPOLG |
| RAP1B |
| EYA1 |
| UBE2D1 |
| MYRIP |
| MAP3K13 |
| EZH2 |
| NOVA1 |
| CAMTA1 |
| SLC12A2 |
| PRKAA1 |
| ZNF532 |
| NUDT11 |
| FOS |
| SEL1L |
| ZCCHC2 |
| NEUROD1 |
| CPEB3 |
| SMARCA1 |
| C20orf20 |
| APP |
| SOCS5 |
| ERBB2IP |
| MBNL1 |
| CDH11 |
| ARID1A |
| UBE2D2 |
| PPFIA1 |
| GNB1 |
| MTMR2 |
| KHDRBS3 |
| ANKRD17 |
| ID4 |
| REV3L |
| RANBP9 |
| KCNH7 |
| NLK |
| BTBD3 |
| FZD6 |

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|----------|
| NDVIP1 |
| FBN2 |
| GJA1 |
| DUSP1 |
| DR1 |
| RAP2C |
| AEBP2 |
| ADAMTSL3 |
| RAB39B |
| NRK |
| COL10A1 |
| STMN1 |
| BICD2 |
| PBX3 |
| CDH5 |
| DCBLD2 |
| STAG2 |
| DNMT3A |
| RAB1A |
| SULT4A1 |
| AP3S1 |
| STIM2 |
| SOX9 |
| ZFX |
| RAB14 |
| SACMIL |
| PACRG |
| BCL9 |
| SOCS2 |
| LRRN1 |
| EED |
| CACNB2 |
| ING3 |
| KIAA1409 |
| CTTNBP2 |
| CPEB2 |
| FZD4 |
| ATRX |
| USP38 |
| EMP1 |
| ACSL4 |
| RBBP7 |
| GPR85 |
| FGA |
| CDK5R1 |
| MET |
| RXRβ |

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| |
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| PCDH8 |
| FBXW11 |
| TOP1 |
| PTGS2 |
| MARK1 |
| USP47 |
| CBFA2T2 |
| HDGFRP3 |
| TGFBR1 |
| DAG1 |
| ATP5G2 |
| IPO8 |
| CAV3 |
| LRRFIP2 |
| SLC1A1 |
| ELF5 |
| PUM2 |
| SMARCA4 |
| TERF2 |
| RASD2 |
| RNF38 |
| ICK |
| CTCF |
| TULP4 |
| PHLDA1 |
| SLC19A2 |
| MKL2 |
| SMARCD1 |
| MITF |
| FLRT2 |
| LRRC4 |
| SORCS3 |
| TRIB1 |
| MEIS2 |
| TAL1 |
| DDIT4 |
| STRN3 |
| KIAA0182 |
| DYRK1A |
| RAC1 |
| TLK2 |
| POGZ |
| PURB |
| CCNJ |
| ZNF238 |
| PNRC1 |
| KIAA1244 |

Sub 2

| |
|----------|
| G3BP2 |
| PANK1 |
| BZW1 |
| BAZ2A |
| ARID4B |
| PTPN9 |
| PHF3 |
| SPRED1 |
| PDE4D |
| BRPF1 |
| PCDH18 |
| NR2F2 |
| EPN2 |
| QKI |
| GDF10 |
| PPP2R5E |
| ATXN1 |
| MYO1E |
| TEAD3 |
| ACCN2 |
| MAP3K4 |
| RBL2 |
| ZNF24 |
| SCAMP1 |
| ALDH1A3 |
| RNF139 |
| KPNA3 |
| TFAP4 |
| SHANK2 |
| RAPH1 |
| ADCY6 |
| CDC42EP3 |
| STAT6 |
| OGT |
| FMR1 |
| CCNT2 |
| ABLIM3 |
| ATP1B2 |
| RREB1 |
| DMD |
| TTN |
| CPEB1 |
| ATP2B2 |
| CXCL12 |
| AMMECR1 |
| TGIF2 |
| PPP2R2A |

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|----------|
| PDE4A |
| SLC4A4 |
| KBTBD2 |
| ABCA1 |
| CXorf23 |
| STARD8 |
| SLC25A3 |
| JUNB |
| PIM1 |
| N4BP1 |
| C6orf62 |
| EPB41L1 |
| SGPL1 |
| SLC30A7 |
| MEF2D |
| APLP2 |
| MGRN1 |
| RGL1 |
| RAPGEF5 |
| C13orf23 |
| HAPLN1 |
| SNN |
| NPTX1 |
| IGFBP5 |
| EIF5 |
| PKNOX1 |
| RNF44 |
| DYRK2 |
| SRF |
| TIMP3 |
| ETS1 |
| APPBP2 |
| RUNX1 |
| TBC1D14 |
| PPP1R16B |
| NDRG4 |
| STK4 |
| BBC3 |
| DGCR2 |
| DLC1 |
| ANTXR2 |
| SIK2 |
| ARHGAP26 |
| GRM1 |
| NANOS1 |
| LIFR |
| MSI1 |

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|--|-------------|----------|--------|
| | | ANKRD12 | |
| | | KLF12 | |
| | hsa-miR-136 | MTMR4 | |
| | | RGS4 | |
| | | MTPN | |
| | | MDM1 | |
| | | GLT6D1 | |
| | | TRPC4AP | |
| | | RAP2C | |
| | | INO80 | |
| | | ETF1 | |
| | | HOXC10 | |
| | | GDF6 | |
| | | PPARGC1A | |
| | | RNF139 | |
| | | ZIC3 | |
| | | ESRRG | |
| | | NOVA1 | |
| | | MOSPD1 | |
| | | EXTL3 | |
| | | CPEB2 | |
| | | PSME4 | |
| | | SLC7A3 | |
| | | SNRK | |
| | | ZNF436 | |
| | | NRK | |
| | | GNG3 | |
| | | IGFBP5 | |
| | | ELK1 | |
| | | USP37 | |
| | | PURB | |
| | | PLCXD3 | |
| | | COL3A1 | COL3A1 |
| | | | HBP1 |
| | COL15A1 | | |
| | COL4A1 | | |
| | ZFP36L1 | | |
| | CAV2 | | |
| | BCL11A | | |
| | C5orf13 | | |
| | COL4A5 | | |
| | ADAMTS9 | | |
| | PPIC | | |
| | CCNT2 | | |
| | COL2A1 | | |
| | BLMH | | |
| | ADAMTS6 | | |

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|----------|
| RARB |
| COL7A1 |
| PAIP2 |
| NKRF |
| PPM1D |
| LAMC1 |
| CAMK2G |
| MAFB |
| GPX7 |
| HAS3 |
| C13orf23 |
| TFAP2C |
| MFAP2 |
| BMF |
| FBXW9 |
| ADAMTS7 |
| CAMK1D |
| CNR1 |
| ARMC8 |
| TP53INP2 |
| ZBTB5 |
| HDAC4 |
| EML5 |
| PRR3 |
| BCORL1 |
| ADAMTS18 |
| PLEKHA1 |
| SS18L1 |
| SCHIP1 |
| PER3 |
| HPCAL4 |
| FRAS1 |
| IMPDH1 |
| CIQTNF6 |
| PKNOX2 |
| GNG12 |
| ZFP36 |
| SOX12 |
| PPP1R3D |
| ENTPD7 |
| ZFP91 |
| NAV1 |
| MAP2K6 |
| BCL11B |
| INA |
| RAB40C |
| CACNG4 |

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|----------|
| ITGA6 |
| GPR85 |
| SP1 |
| SLC16A2 |
| RERE |
| CBX6 |
| RNF122 |
| AQP4 |
| FCHSD1 |
| C1orf21 |
| GAP43 |
| DYRK2 |
| ITPR1 |
| BCL11A |
| PAX3 |
| RSBN1 |
| DNAJB9 |
| BCL2L11 |
| NOX4 |
| INSIG1 |
| GATA6 |
| RGS3 |
| CPEB4 |
| HIVEP1 |
| DPP10 |
| SMAD7 |
| PPP1R12A |
| HAND2 |
| PHF15 |
| SYNJ1 |
| SLC32A1 |
| PER2 |
| SMAD6 |
| TWIST1 |
| GOLGA3 |
| SESN3 |
| TRIO |
| PIK3AP1 |
| PDE4D |
| GLCE |
| ARMC1 |
| CACNA1H |
| EPC2 |
| SUV420H1 |
| C6orf62 |
| MYLIP |
| KIF5B |

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|------------|----------|
| | RAB14 |
| | NPC1 |
| | HERC2 |
| | ADAM23 |
| | CNNM4 |
| | PAIP1 |
| | CTTNBP2 |
| | FBXO33 |
| | SDC2 |
| | TAF15 |
| | IRS2 |
| | PHF3 |
| | NELF |
| | NETO1 |
| | PCDH10 |
| | NOTCH1 |
| | ZNF521 |
| | PCDH9 |
| | PRKAR2B |
| | TOP1 |
| | SSBP3 |
| | STAG2 |
| | TBX3 |
| | LRRC4 |
| | CPEB1 |
| | PLEKHM1 |
| | ZDHHC21 |
| | FSTL1 |
| | LRRC20 |
| | C18orf1 |
| | ULK1 |
| | NEGR1 |
| | FBXO28 |
| | CREB1 |
| | PBX3 |
| | MAP4K3 |
| | RDH10 |
| | FGF11 |
| | KIAA1274 |
| | PRRX1 |
| | ULK2 |
| | SCD |
| | ABCB9 |
| | SYT7 |
| | SCN4B |
| | GHR |
| | PAPPA |
| hsa-miR-98 | |

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|--------------|-------------|----------|
| | | SLC16A14 |
| | | SEC24C |
| | | COL4A2 |
| | | EPB41L4B |
| | | RECK |
| | | PCDHA13 |
| | | PCDHA5 |
| | | PCDHA4 |
| | | PCDHA12 |
| | | PCDHA11 |
| | | PCDHA10 |
| | | PCDHAC2 |
| | | PCDHAC1 |
| | | PCDHA6 |
| | | PCDHA7 |
| | | PCDHA8 |
| | | PCDHA2 |
| | | PCDHA1 |
| | | PCDHA3 |
| | | PCDHA9 |
| | | ESRRA |
| | | MAP4 |
| | | MAP2K1 |
| | | ADAMTSL3 |
| | | KCNJ2 |
| | | SPTLC1 |
| | | NLGN1 |
| | | KPNA4 |
| | | DEDD |
| | | PDCD4 |
| | | FBXO21 |
| | | NFATC3 |
| | | ARL2 |
| | | CECR6 |
| | | CACNB1 |
| | | CLOCK |
| | | CHORDC1 |
| | | ABCG4 |
| | | WDR47 |
| | | TGIF2 |
| | | ASPH |
| | | SLC6A4 |
| | | ZNF423 |
| | | EIF4E |
| | | KLC2 |
| | | WISP1 |
| Sub 3 | hsa-miR-15b | |

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|--------------|------------|----------|
| | | TRIP10 |
| | | GRIN1 |
| | | MNT |
| Sub 4 | hsa-let-7f | SMARCAD1 |
| | | BZW1 |
| | | EIF2C3 |
| | | NPHP3 |
| | | TRIM41 |
| | | CYP19A1 |
| | | ZBTB5 |
| | | TGFBR1 |
| | | CCR7 |
| | | RGAG1 |
| | | EFHD2 |
| | | ADIPOR2 |
| | | NPEPL1 |
| | | SORCS1 |
| | ETF1 | |
| | HAND1 | |
| | PCDH9 | |
| | CRIM1 | |
| | F13A1 | |
| | NR4A3 | |
| | ZMPSTE24 | |
| | ISL1 | |
| | CALU | |
| | DAAMI | |
| | CHFR | |
| | RPRM | |
| | HOXD8 | |
| | STIM2 | |
| | RASA1 | |
| | LPHN2 | |
| | SNIP1 | |
| | RNF141 | |
| | SRPR | |
| | NRXN1 | |
| | ADCY3 | |
| | FMR1 | |
| | CCNT2 | |
| | EPHA4 | |
| | TPST1 | |
| | MAX | |
| | UBE2G1 | |
| | ATP1B1 | |
| KDELRL1 | | |

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| | | ADAM19 |
| | | SYN2 |
| | | CDH11 |
| | | MOSPD1 |
| | | PSD3 |
| | | BCL11B |
| | | MBNL1 |
| | | EEF2K |
| | | MAP3K2 |
| | | MAP2 |
| | | PRKD1 |
| | | SP1 |
| | | CRKL |
| | | BPIL1 |
| | | PGF |
| | | N4BP1 |
| | | MYO1D |
| | | HPCAL4 |
| | | HIC2 |

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|--------------|----------------|------|
| | | |
| Sub 5 | hsa-miR-361-3p | None |
| | hsa-miR-362-5p | None |