Supplementary Table 1. Bio-miR-34a pulldown-enriched genes and their expression during miR-34a overexpression.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Pulldown | | Overexpression | |
| Gene ID | Gene name | Rank | logFC | P value | logFC | P value |
| NM\_000044 | AR | 1 | 8.054093 | 0.00000183 | -3.83336 | 0.0000406 |
| NM\_001987 | ETV6 | 2 | 7.826755 | 0.0000109 | 0.134804 | 0.7536368 |
| NM\_016592 | GNAS | 3 | 7.652488 | 0.0000337 | -0.56241 | 0.2222615 |
| NM\_002609 | PDGFRB | 4 | 7.605421 | 0.0000496 | -1.33072 | 0.006329 |
| NM\_006206 | PDGFRA | 5 | 7.605421 | 0.0000496 | 1.078168 | 0.0294775 |
| NM\_001145442 | POTEM | 6 | 7.400109 | 0.0000196 | -0.10718 | 1 |
| NM\_005211 | CSF1R | 7 | 7.343867 | 0.0000305 | -1.40363 | 0.2359499 |
| NM\_006941 | SOX10 | 8 | 7.343867 | 0.0000305 | 6.76646 | 0.0005173 |
| NM\_003820 | TNFRSF14 | 9 | 7.160653 | 0.0000755 | -1.59239 | 0.001836 |
| NM\_005985 | SNAI1 | 10 | 7.094019 | 0.000120499 | -1.02954 | 0.0193921 |
| NM\_006219 | PIK3CB | 11 | 7.094019 | 0.000120499 | 0.413348 | 0.3382295 |
| NM\_020638 | FGF23 | 12 | 6.873386 | 0.000315208 | -0.49077 | 0.391538 |
| NM\_080862 | SPSB4 | 13 | 6.791647 | 0.000517265 | 0.242397 | 0.5635299 |
| NM\_000452 | SLC10A2 | 14 | 6.704998 | 0.00085757 | NA | NA |
| NM\_001995 | ACSL1 | 15 | 6.704998 | 0.00085757 | -0.24272 | 0.557943 |
| NM\_015259 | ICOSLG | 16 | 6.704998 | 0.00085757 | -0.27432 | 0.528915 |
| NM\_018073 | TRIM68 | 17 | 6.514327 | 0.002434933 | 0.287249 | 0.4909866 |
| NM\_005430 | WNT1 | 18 | 6.408625 | 0.002434933 | NA | NA |
| NM\_016282 | AK3 | 19 | 6.408625 | 0.002434933 | -0.20998 | 0.6251034 |
| NM\_016652 | CRNKL1 | 20 | 6.408625 | 0.002434933 | 0.196113 | 0.6369293 |
| NM\_020845 | PITPNM2 | 21 | 6.408625 | 0.002434933 | -0.1711 | 0.6837028 |
| NM\_153451 | ORAOV1 | 22 | 6.294563 | 0.004174171 | -0.09295 | 0.8239976 |
| NM\_014747 | RIMS3 | 23 | 6.170702 | 0.007243414 | -0.50482 | 0.2305022 |
| NM\_017629 | AGO4 | 24 | 6.170702 | 0.007243414 | -0.26627 | 0.5212689 |
| NM\_173689 | CRB2 | 25 | 6.170702 | 0.007243414 | -1.24965 | 0.0475441 |
| NM\_001014839 | NCDN | 26 | 6.035199 | 0.012730848 | 0.68566 | 0.139462 |
| NM\_003362 | UNG | 27 | 6.035199 | 0.012730848 | 0.211284 | 0.6315229 |
| NM\_004530 | MMP2 | 28 | 6.035199 | 0.012730848 | -1.55776 | 0.0004848 |
| NM\_014746 | RNF144A | 29 | 6.035199 | 0.012730848 | 0.059799 | 0.8874598 |
| NM\_015453 | THUMPD3 | 30 | 6.035199 | 0.012730848 | -0.13622 | 0.766153 |
| NM\_017793 | RPP25 | 31 | 6.035199 | 0.012730848 | -0.77484 | 0.0706152 |
| NM\_025040 | ZNF614 | 32 | 6.035199 | 0.012730848 | 0.028564 | 0.9469931 |
| NM\_025224 | ZBTB46 | 33 | 6.035199 | 0.012730848 | -0.43172 | 0.3094459 |
| NM\_021229 | NTN4 | 34 | 5.885638 | 0.022676824 | -0.18397 | 0.6690496 |
| NM\_000390 | CHM | 35 | 5.71876 | 0.022676824 | 0.185923 | 0.6549108 |
| NM\_001037954 | DIXDC1 | 36 | 5.71876 | 0.022676824 | -0.27278 | 0.5790749 |
| NM\_002537 | OAZ2 | 37 | 5.71876 | 0.022676824 | -0.19344 | 0.639204 |
| NM\_005137 | DGCR2 | 38 | 5.71876 | 0.022676824 | -0.09875 | 0.8353475 |
| NM\_005740 | DNAL4 | 39 | 5.71876 | 0.022676824 | -0.05524 | 0.8989449 |
| NM\_006386 | DDX17 | 40 | 5.71876 | 0.022676824 | 0.483342 | 0.257027 |
| NM\_020746 | MAVS | 41 | 5.71876 | 0.022676824 | -0.28729 | 0.5130819 |
| NM\_025248 | SRCIN1 | 42 | 5.71876 | 0.022676824 | -0.66256 | 0.138445 |
| NM\_030806 | C1orf21 | 43 | 5.71876 | 0.022676824 | 0.221475 | 0.5934269 |
| NM\_031297 | RNF208 | 44 | 5.71876 | 0.022676824 | -0.15538 | 0.7150486 |
| NM\_144718 | SPICE1 | 45 | 5.71876 | 0.022676824 | 0.257215 | 0.5444477 |
| NM\_201542 | MED8 | 46 | 5.71876 | 0.022676824 | -0.20762 | 0.6261546 |
| NM\_001010934 | HGF | 47 | 5.530024 | 0.040964585 | -0.10403 | 1 |
| NM\_001012716 | TYMSOS | 48 | 5.530024 | 0.040964585 | 0.43313 | 0.334265 |
| NM\_001014445 | NLE1 | 49 | 5.530024 | 0.040964585 | -0.18734 | 0.6796893 |
| NM\_001172624 | NEO1 | 50 | 5.530024 | 0.040964585 | 0.511133 | 0.2692834 |
| NM\_003630 | PEX3 | 51 | 5.530024 | 0.040964585 | -0.08648 | 0.8373729 |
| NM\_006378 | SEMA4D | 52 | 5.530024 | 0.040964585 | -0.20779 | 0.6233771 |
| NM\_012395 | CDK14 | 53 | 5.530024 | 0.040964585 | 0.172139 | 0.6797526 |
| NM\_021133 | RNASEL | 54 | 5.530024 | 0.040964585 | 0.077611 | 0.8670479 |
| NM\_024619 | FN3KRP | 55 | 5.530024 | 0.040964585 | -0.05878 | 0.8899527 |
| NM\_145207 | SPATA5 | 56 | 5.530024 | 0.040964585 | 0.159134 | 0.7053177 |
| NM\_000435 | NOTCH3 | 57 | 5.508996 | 1.52E-09 | -1.01037 | 0.0157145 |
| NM\_004557 | NOTCH4 | 58 | 4.278244 | 0.000000599 | 0.224475 | 0.7189862 |
| NM\_003632 | CNTNAP1 | 59 | 3.907268 | 0.00000389 | -0.49482 | 0.2436192 |
| NM\_005378 | MYCN | 60 | 3.878786 | 0.00000519 | -2.48206 | 0.0000148 |
| NM\_078469 | BCCIP | 61 | 3.760631 | 0.001597933 | 0.101693 | 0.8069484 |
| NM\_016505 | ZCCHC17 | 62 | 3.445947 | 0.000111734 | -0.02926 | 0.9443163 |
| NM\_006426 | DPYSL4 | 63 | 3.266935 | 0.011832427 | -0.58785 | 0.1694288 |
| NM\_002072 | GNAQ | 64 | 3.191854 | 0.000589 | 0.379759 | 0.3694508 |
| NM\_198514 | NHLRC2 | 65 | 3.180286 | 0.017862218 | 0.23903 | 0.5653711 |
| NM\_003458 | BSN | 66 | 3.132014 | 0.000211448 | 0.084755 | 0.8604669 |
| NM\_014553 | TFCP2L1 | 67 | 3.088098 | 0.02704271 | -0.22837 | 0.5904701 |
| NM\_003839 | TNFRSF11A | 68 | 2.993607 | 0.001665133 | -0.19902 | 0.6739639 |
| NM\_198887 | NUP43 | 69 | 2.993607 | 0.001665133 | 0.061909 | 0.8809413 |
| NM\_014141 | CNTNAP2 | 70 | 2.939475 | 0.002370371 | -0.1425 | 0.7332465 |
| NM\_201269 | ZNF644 | 71 | 2.883913 | 0.041032031 | 0.542305 | 0.1913727 |
| NM\_020245 | TULP4 | 72 | 2.82471 | 0.004849114 | 0.294967 | 0.4960509 |
| NM\_023067 | FOXL2 | 73 | 2.82471 | 0.004849114 | -0.14362 | 0.7481069 |
| NM\_001080485 | ZNF275 | 74 | 2.733816 | 0.000118807 | -0.01573 | 0.9705782 |
| NM\_000545 | HNF1A | 75 | 2.718662 | 0.002142368 | -0.43665 | 0.3366444 |
| NM\_033113 | ZNF628 | 76 | 2.633385 | 0.010033723 | 0.041855 | 0.9219316 |
| NM\_004655 | AXIN2 | 77 | 2.596717 | 0.000315485 | -0.04477 | 0.9166197 |
| NM\_006045 | ATP9A | 78 | 2.538009 | 0.000519431 | 0.219298 | 0.5946216 |
| NM\_006565 | CTCF | 79 | 2.538009 | 0.000519431 | 0.078311 | 0.8516927 |
| NM\_018036 | ATG2B | 80 | 2.482825 | 0.003149424 | 0.086578 | 0.8351251 |
| NM\_000110 | DPYD | 81 | 2.412752 | 0.020952111 | -0.53686 | 0.2269763 |
| NM\_005896 | IDH1 | 82 | 2.412752 | 0.020952111 | 0.195113 | 0.6370819 |
| NM\_005359 | SMAD4 | 83 | 2.399259 | 0.003489554 | 0.344225 | 0.4058944 |
| NM\_005400 | PRKCE | 84 | 2.399259 | 0.003489554 | 0.00338 | 1 |
| NM\_021946 | BCORL1 | 85 | 2.352671 | 0.0000301 | -0.08033 | 0.8465841 |
| NM\_005080 | XBP1 | 86 | 2.331013 | 0.030348148 | -0.64431 | 0.1214135 |
| NM\_004064 | CDKN1B | 87 | 2.244364 | 0.043991311 | 0.449479 | 0.276284 |
| NM\_015026 | MON2 | 88 | 2.137065 | 0.016492881 | 0.075645 | 0.8555534 |
| NM\_001081550 | THOC2 | 89 | 2.052853 | 0.00360343 | 0.090947 | 0.8252486 |
| NM\_000051 | ATM | 90 | 2.030026 | 0.003605466 | 0.426776 | 0.3024528 |
| NM\_152424 | AMER1 | 91 | 2.024165 | 0.000243382 | -0.09694 | 0.816744 |
| NM\_022835 | PLEKHG2 | 92 | 1.927152 | 0.045202178 | -0.06345 | 0.8799368 |
| NM\_032444 | SLX4 | 93 | 1.920972 | 0.000238795 | 0.232723 | 0.574425 |
| NM\_018304 | PRR11 | 94 | 1.909784 | 0.015305394 | -0.09362 | 0.8203898 |
| NM\_025185 | TANC2 | 95 | 1.909784 | 0.015305394 | 0.394006 | 0.3417108 |
| NM\_080911 | UNG | 96 | 1.814064 | 0.026105331 | 0.067983 | 0.8755633 |
| NM\_015894 | STMN3 | 97 | 1.783463 | 0.004472386 | -0.83504 | 0.0445495 |
| NM\_024296 | CCDC28B | 98 | 1.763711 | 0.034088382 | -0.25528 | 0.542128 |
| NM\_007007 | CPSF6 | 99 | 1.744967 | 0.011463391 | 0.188298 | 0.6469537 |
| NM\_152641 | ARID2 | 100 | 1.728561 | 0.001108941 | 0.253871 | 0.5395617 |
| NM\_015288 | JADE2 | 101 | 1.711538 | 0.034088382 | -0.76072 | 0.0690198 |
| NM\_153367 | ZCCHC24 | 102 | 1.657406 | 0.044489089 | -0.051 | 0.902894 |
| NM\_000346 | SOX9 | 103 | 1.637007 | 0.009083827 | 0.554831 | 0.1838307 |
| NM\_014742 | TM9SF4 | 104 | 1.604181 | 0.034035355 | 0.014862 | 0.9717758 |
| NM\_002657 | PLAGL2 | 105 | 1.571586 | 0.026831883 | -0.02732 | 0.9477479 |
| NM\_003559 | PIP4K2B | 106 | 1.441861 | 0.012346137 | 0.106491 | 0.7963862 |
| NM\_005957 | MTHFR | 107 | 1.423368 | 0.018748976 | 0.053762 | 0.8994224 |
| NM\_012479 | YWHAG | 108 | 1.32043 | 0.036869772 | 0.011576 | 0.9777924 |
| NM\_002224 | ITPR3 | 109 | 1.182832 | 0.038025164 | -0.94411 | 0.0230089 |
| NM\_005184 | CALM3 | 110 | 1.113746 | 0.023239237 | 0.024177 | 0.953088 |

Supplementary Table 2. List of downregulated genes with miR-34a-5p seed match, compared with the pulled down genes.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Overexpression | | Pulldown | |
| gene ID | gene name | Rank | logFC | p value | logFC | p value |
| NM\_198827 | GPR133 | 1 | -7.523618117 | 0.00000828 | NA | NA |
| NM\_001135153 | SLC39A14 | 2 | -7.235852766 | 0.0000478 | NA | NA |
| NM\_031292 | PUS7L | 3 | -6.876014723 | 0.000517265 | NA | NA |
| NM\_001167880 | LHPP | 4 | -6.531437318 | 0.002434933 | NA | NA |
| NM\_001199693 | SLC4A2 | 5 | -6.531437318 | 0.002434933 | -4.460634146 | 0.509803922 |
| NM\_153247 | SLC29A4 | 6 | -6.395492562 | 0.004174171 | 3.79868713 | 0.509803922 |
| NM\_001244666 | STX5 | 7 | -6.245392344 | 0.007243414 | NA | NA |
| NM\_000258 | MYL3 | 8 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_001038493 | DLX1 | 9 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_001145122 | CAPN14 | 10 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_001200031 | HYAL3 | 11 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_001256154 | ALOX5 | 12 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_001565 | CXCL10 | 13 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_144967 | ARHGAP36 | 14 | -6.077842414 | 0.012730848 | NA | NA |
| NM\_001160225 | RNF170 | 15 | -5.888245265 | 0.022676824 | NA | NA |
| NM\_015264 | KIAA0930 | 16 | -5.888245265 | 0.022676824 | NA | NA |
| NM\_001136503 | SMIM24 | 17 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_001160124 | KLF6 | 18 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_001167670 | TMEM239 | 19 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_001204888 | RAB43 | 20 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_002885 | RAP1GAP | 21 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_003006 | SELPLG | 22 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_005187 | CBFA2T3 | 23 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_016352 | CPA4 | 24 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_016835 | MAPT | 25 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_033326 | SOX6 | 26 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_144720 | JAKMIP1 | 27 | -5.669906757 | 0.040964585 | NA | NA |
| NM\_000044 | AR | 28 | -3.833359863 | 0.0000406 | 8.05409339 | 0.00000183 |
| NM\_001177644 | DAG1 | 29 | -3.754173109 | 0.003346055 | NA | NA |
| NM\_001020820 | MYADM | 30 | -3.350397937 | 0.000739506 | NA | NA |
| NM\_002429 | MMP19 | 31 | -3.350397937 | 0.000739506 | NA | NA |
| NM\_207322 | C2CD4A | 32 | -3.305144627 | 0.00000183 | NA | NA |
| NM\_207419 | C1QTNF8 | 33 | -3.276850957 | 0.001084588 | NA | NA |
| NM\_015493 | KANK2 | 34 | -3.19935228 | 0.001597933 | NA | NA |
| NM\_017564 | STAB2 | 35 | -3.12355073 | 0.034866602 | NA | NA |
| NM\_130766 | INPP5K | 36 | -3.12355073 | 0.034866602 | NA | NA |
| NM\_001051 | SSTR3 | 37 | -2.938230842 | 0.007864773 | NA | NA |
| NM\_001127898 | CLCN5 | 38 | -2.839514237 | 0.011832427 | NA | NA |
| NM\_001010917 | GOLGA7B | 39 | -2.792912768 | 0.0000006 | NA | NA |
| NM\_001195737 | FAM213B | 40 | -2.733543534 | 0.017862218 | NA | NA |
| NM\_001198807 | MSANTD3 | 41 | -2.733543534 | 0.017862218 | NA | NA |
| NM\_002638 | PI3 | 42 | -2.733543534 | 0.017862218 | NA | NA |
| NM\_002246 | KCNK3 | 43 | -2.619167453 | 0.02704271 | 3.79868713 | 0.509803922 |
| NM\_000682 | ADRA2B | 44 | -2.58725081 | 0.000511792 | NA | NA |
| NM\_001145657 | RAP1GAP | 45 | -2.494936832 | 0.041032031 | NA | NA |
| NM\_005378 | MYCN | 46 | -2.482063424 | 0.0000148 | 3.878786033 | 0.00000519 |
| NM\_145912 | NFAM1 | 47 | -2.445822921 | 0.0000733 | NA | NA |
| NM\_152889 | CHST13 | 48 | -2.383319578 | 0.000332559 | NA | NA |
| NM\_001270640 | JOSD2 | 49 | -2.38287533 | 0.020952111 | 2.898802279 | 1 |
| NM\_001004439 | ITGA11 | 50 | -2.329338939 | 0.0000764 | NA | NA |
| NM\_020160 | MEIS3 | 51 | -2.310672498 | 0.0000405 | NA | NA |
| NM\_052906 | ELFN2 | 52 | -2.25427753 | 0.000000216 | 1.258126325 | 0.543330377 |
| NM\_014460 | CSDC2 | 53 | -2.112674852 | 0.00000318 | NA | NA |
| NM\_001134364 | MAP4 | 54 | -2.092724958 | 0.00360343 | NA | NA |
| NM\_001177640 | DAG1 | 55 | -2.08686682 | 0.008135331 | NA | NA |
| NM\_052896 | CSMD2 | 56 | -2.08686682 | 0.008135331 | NA | NA |
| NM\_001122772 | AGAP2 | 57 | -2.082207821 | 0.01323105 | NA | NA |
| NM\_207360 | ZC3H12D | 58 | -2.082207821 | 0.01323105 | NA | NA |
| NM\_138732 | NRXN2 | 59 | -2.025778864 | 0.010811714 | 3.79868713 | 0.509803922 |
| NM\_052854 | CREB3L1 | 60 | -2.007874113 | 0.0000348 | NA | NA |
| NM\_001145306 | CDK6 | 61 | -1.961989455 | 0.014380224 | NA | NA |
| NM\_001199944 | SH3GL1 | 62 | -1.961989455 | 0.014380224 | -4.460634146 | 0.509803922 |
| NM\_003459 | SLC30A3 | 63 | -1.927654851 | 0.0000195 | NA | NA |
| NM\_144489 | RGS3 | 64 | -1.909325961 | 0.000931706 | 3.79868713 | 0.509803922 |
| NM\_000565 | IL6R | 65 | -1.88338694 | 0.001106608 | NA | NA |
| NM\_004102 | FABP3 | 66 | -1.883228655 | 0.000125032 | -4.460634146 | 0.509803922 |
| NM\_004321 | KIF1A | 67 | -1.840020998 | 0.001171348 | NA | NA |
| NM\_006340 | BAIAP2 | 68 | -1.836307947 | 0.0032271 | NA | NA |
| NM\_001004342 | TRIM67 | 69 | -1.825269761 | 0.025475297 | 3.79868713 | 0.509803922 |
| NM\_001185096 | AIF1L | 70 | -1.825269761 | 0.025475297 | NA | NA |
| NM\_020350 | AGTRAP | 71 | -1.736263716 | 0.00191984 | NA | NA |
| NM\_012306 | FAIM2 | 72 | -1.733487361 | 0.016654638 | NA | NA |
| NM\_013279 | MYRF | 73 | -1.715519452 | 0.000239092 | 4.745897678 | 0.264705882 |
| NM\_000358 | TGFBI | 74 | -1.68905106 | 0.00259576 | NA | NA |
| NM\_001010898 | SLC6A17 | 75 | -1.685176436 | 0.000188405 | NA | NA |
| NM\_006286 | TFDP2 | 76 | -1.683818882 | 0.008764824 | NA | NA |
| NM\_001135663 | RAB29 | 77 | -1.66580223 | 0.00080299 | NA | NA |
| NM\_012101 | TRIM29 | 78 | -1.627046503 | 0.026720022 | 3.79868713 | 0.509803922 |
| NM\_015193 | ARC | 79 | -1.622037697 | 0.000139459 | NA | NA |
| NM\_003820 | TNFRSF14 | 80 | -1.592388348 | 0.001835996 | 7.160653341 | 0.0000755 |
| NM\_004530 | MMP2 | 81 | -1.557759177 | 0.000484831 | 6.035199329 | 0.012730848 |
| NM\_001167871 | ATP5SL | 82 | -1.542349348 | 0.012302827 | NA | NA |
| NM\_178335 | CCDC50 | 83 | -1.531297604 | 0.033533086 | NA | NA |
| NM\_138469 | R3HCC1L | 84 | -1.512122493 | 0.042814164 | NA | NA |
| NM\_145902 | HMGA1 | 85 | -1.503275697 | 0.002446697 | NA | NA |
| NM\_001039141 | TRIOBP | 86 | -1.484239808 | 0.006676975 | -4.460634146 | 0.509803922 |
| NM\_001170635 | LPPR2 | 87 | -1.477281998 | 0.001480631 | NA | NA |
| NM\_001035513 | SDHC | 88 | -1.477095758 | 0.041903977 | NA | NA |
| NM\_001127392 | MYRF | 89 | -1.472454137 | 0.001967103 | NA | NA |
| NM\_024577 | SH3TC2 | 90 | -1.470256537 | 0.002847878 | 2.898802279 | 1 |
| NM\_001015508 | PURG | 91 | -1.461913608 | 0.007610251 | NA | NA |
| NM\_001312 | CRIP2 | 92 | -1.458055855 | 0.003187396 | NA | NA |
| NM\_001098797 | TOX2 | 93 | -1.45757006 | 0.011440165 | -4.460634146 | 0.509803922 |
| NM\_012219 | MRAS | 94 | -1.401170846 | 0.026780029 | NA | NA |
| NM\_001145028 | PALM3 | 95 | -1.386236471 | 0.001673407 | NA | NA |
| NM\_002531 | NTSR1 | 96 | -1.370290488 | 0.008367745 | NA | NA |
| NM\_147161 | ACOT11 | 97 | -1.355927112 | 0.003397136 | NA | NA |
| NM\_004535 | MYT1 | 98 | -1.33467804 | 0.005631701 | NA | NA |
| NM\_002609 | PDGFRB | 99 | -1.330715116 | 0.006329035 | 7.605420926 | 0.0000496 |
| NM\_007286 | SYNPO | 100 | -1.302819316 | 0.006624038 | NA | NA |
| NM\_012323 | MAFF | 101 | -1.283767859 | 0.038410682 | 2.898802279 | 1 |
| NM\_001039583 | PICK1 | 102 | -1.273611889 | 0.037620819 | 2.898802279 | 1 |
| NM\_001145176 | SHISA7 | 103 | -1.273611889 | 0.037620819 | NA | NA |
| NM\_000966 | RARG | 104 | -1.273028356 | 0.008027516 | NA | NA |
| NM\_001144026 | NDOR1 | 105 | -1.264581838 | 0.036869772 | NA | NA |
| NM\_173689 | CRB2 | 106 | -1.24964511 | 0.04754413 | 6.170701576 | 0.007243414 |
| NM\_152468 | TMC8 | 107 | -1.240853158 | 0.046163285 | -4.460634146 | 0.509803922 |
| NM\_001004356 | FGFRL1 | 108 | -1.231186309 | 0.02918508 | NA | NA |
| NM\_003087 | SNCG | 109 | -1.225070425 | 0.006668304 | -5.427495236 | 0.075101739 |
| NM\_021220 | OVOL2 | 110 | -1.213357954 | 0.027887688 | 3.79868713 | 0.509803922 |
| NM\_001111307 | PDE4A | 111 | -1.204085275 | 0.010353086 | NA | NA |
| NM\_138347 | ZNF551 | 112 | -1.200121568 | 0.026786598 | -4.460634146 | 0.509803922 |
| NM\_014405 | CACNG4 | 113 | -1.19579931 | 0.014580783 | 5.312825543 | 0.075101739 |
| NM\_203318 | MYO18A | 114 | -1.193356689 | 0.017121806 | NA | NA |
| NM\_000878 | IL2RB | 115 | -1.187306077 | 0.006227314 | 5.312825543 | 0.075101739 |
| NM\_020730 | DLG3 | 116 | -1.185623663 | 0.023030426 | NA | NA |
| NM\_005438 | FOSL1 | 117 | -1.176631844 | 0.005785591 | -5.742703215 | 0.040964585 |
| NM\_033425 | DIXDC1 | 118 | -1.175713681 | 0.040567706 | NA | NA |
| NM\_000623 | BDKRB2 | 119 | -1.175342536 | 0.029661305 | NA | NA |
| NM\_001009813 | MEIS3 | 120 | -1.157600896 | 0.020430416 | 3.79868713 | 0.509803922 |
| NM\_001197 | BIK | 121 | -1.154673881 | 0.015983445 | 3.79868713 | 0.509803922 |
| NM\_013346 | SNX12 | 122 | -1.149331786 | 0.028675344 | NA | NA |
| NM\_002055 | GFAP | 123 | -1.139338758 | 0.020239176 | NA | NA |
| NM\_020431 | TMEM63C | 124 | -1.122892246 | 0.013149533 | -4.460634146 | 0.509803922 |
| NM\_002507 | NGFR | 125 | -1.068315083 | 0.01457207 | -4.460634146 | 0.509803922 |
| NM\_145901 | HMGA1 | 126 | -1.064681672 | 0.019172365 | NA | NA |
| NM\_178493 | NOTUM | 127 | -1.047212478 | 0.024086683 | NA | NA |
| NM\_025078 | PQLC1 | 128 | -1.046923965 | 0.019074463 | NA | NA |
| NM\_000148 | FUT1 | 129 | -1.043107788 | 0.024652225 | 3.79868713 | 0.509803922 |
| NM\_194272 | RBPMS2 | 130 | -1.041157677 | 0.015666634 | NA | NA |
| NM\_198993 | STAC2 | 131 | -1.040365331 | 0.032896727 | NA | NA |
| NM\_033387 | FAM78A | 132 | -1.0400484 | 0.015397334 | -4.460634146 | 0.509803922 |
| NM\_005985 | SNAI1 | 133 | -1.029538784 | 0.019392147 | 7.094019223 | 0.000120499 |
| NM\_006034 | TP53I11 | 134 | -1.012794904 | 0.036981402 | -4.460634146 | 0.509803922 |
| NM\_000435 | NOTCH3 | 135 | -1.010368603 | 0.01571454 | 5.508996113 | 0.00000000152 |
| NM\_001242485 | EIF1AD | 136 | -1.004014473 | 0.044945988 | NA | NA |
| NM\_001785 | CDA | 137 | -1.002486258 | 0.021654105 | 5.312825543 | 0.075101739 |
| NM\_020655 | JPH3 | 138 | -1.000506035 | 0.019481209 | 5.312825543 | 0.075101739 |
| NM\_016257 | HPCAL4 | 139 | -1.000147249 | 0.024708927 | 4.745897678 | 0.264705882 |

Supplementary Table 3. Oligos used in the study

|  |  |  |  |
| --- | --- | --- | --- |
| Oligo name | Oligo sequence (5’ – 3’) | | Purpose |
| miR-34a mimic  (duplex) | Guide: Phosphate/UGGCAGUGUCUUAGCUGGUUGU/biotin  Passenger: ACAACCAGCUAAGACACUGCCAAG | Pulldown/overexpression | |
| PDGFRA (F) | AGATCGCCGTGTAATTCTAGAACAGGGTTGGCATTCAACC | | For luciferase plasmid construction |
| PDGFRA (R) | GCCGGCCGCCCCGACTCTAGACACCACACCATTGTTTTGGG | |
| NOTCH4 (F) | AGATCGCCGTGTAATTCTAGAACATGGTAGGGAGGAATTCC | |
| NOTCH4 (R) | GCCGGCCGCCCCGACTCTAGATAGCGATAGCAGTGGCTAG | |
| CNTNAP1(F) | AGATCGCCGTGTAATTCTAGAGTCAGAAGGGCTTCTGGGAC | |
| CNTNAP1 (R) | GCCGGCCGCCCCGACTCTAGAAACGGCTCCGCGTCTGAG | |
| MYCN (F) | AGATCGCCGTGTAATTCTAGAACGCTTCTCAAAACTGGAC | |
| MYCN (R) | GCCGGCCGCCCCGACTCTAGAAGTGCTATAAGATGCAGCAC | |
| GNAQ (F) | AGATCGCCGTGTAATTCTAGAAGGTAATGGAGGCCTGTGG | |
| GNAQ (R) | GCCGGCCGCCCCGACTCTAGAGAATCCAGCAAGGAGTTGC | |
| CNTNAP2 (F) | AGATCGCCGTGTAATTCTAGACCTGGTGTGTAACGACAC | |
| CNTNAP2 (R) | GCCGGCCGCCCCGACTCTAGACCTCTTAACCTCTCCCAG | |
| NOTCH3 (F) | AGATCGCCGTGTAATTCTAGATCCTGCCTCCTTTCTTTCTC | |
| NOTCH3 (R) | GCCGGCCGCCCCGACTCTAGAATGGGTCCAAGGTTATCTCC | |
| OAZ2 (F) | AGATCGCCGTGTAATTCTAGATCCTCGCTGTCTAGGGAAG | |
| OAZ2 (R) | GCCGGCCGCCCCGACTCTAGAACACAACACACTTGCCTCC | |
| SOX10 (F) | AGATCGCCGTGTAATTCTAGATGACTACTCTGACCATCAGC | |
| Sox10 (R) | GCCGGCCGCCCCGACTCTAGATGTCAGACCCTCACTATCTG | |
| TRIM68 (F) | AGATCGCCGTGTAATTCTAGAGGTGTCACAGTTCAGTCAG | |
| TRIM68 (R) | GCCGGCCGCCCCGACTCTAGAGGCAGGACAATCATATGAGG | |
| AGO4 (F) | AGATCGCCGTGTAATTCTAGATGATCTCTGCAGACTTGTGC | |
| AGO4 (R) | GCCGGCCGCCCCGACTCTAGAACTGATGCTCGCTTTAGAGC | |
| ZNF614 (F) | AGATCGCCGTGTAATTCTAGAGTGACAGTATTGATGGCAGG | |
| ZNF614 (R) | GCCGGCCGCCCCGACTCTAGACCACATCAGATGCCACTCA | |
| SPICE1 (F) | AGATCGCCGTGTAATTCTAGAAGCAGGTAAGAGTGGTTGCA | |
| SPICE1 (R) | GCCGGCCGCCCCGACTCTAGATCCCTAGTTGTGTGACCTTGAG | |
| CDK14 (F) | AGATCGCCGTGTAATTCTAGAGAGAAAGCACTGGAATG | |
| CDK14 (R) | GCCGGCCGCCCCGACTCTAGACCATTCTCCTTACTATGTGTC | |
| FOXL2 (F) | AGATCGCCGTGTAATTCTAGATGAAGCTGCCTCTCTGCG | |
| FOXL2 (R) | GCCGGCCGCCCCGACTCTAGAGCCACAAGACCGCCTAGGTC | |
| TYMSOS (F) | AGATCGCCGTGTAATTCTAGAAGCCAGGACTTTGAGACC | |
| TYMSOS (R) | GCCGGCCGCCCCGACTCTAGACCCAGGAAAGCTGTGACG | |
| MMP2 (F) | AGATCGCCGTGTAATTCTAGATAGGCTGCTGAGCTGGC | |
| MMP2 (R) | GCCGGCCGCCCCGACTCTAGACTTACTCTCCCTGAGGTTC | |
| GPR133 (F) | AGATCGCCGTGTAATTCTAGAAGGTAGCACAGTGCGCTCCG | |
| GRP133 (R) | GCCGGCCGCCCCGACTCTAGAGCAGAAGCCAAAACATAGAGCC | |
| SLC4A2 (F) | AGATCGCCGTGTAATTCTAGATCCCTTAACGGGATCCAGTTC | |
| SLC4A2 (R) | GCCGGCCGCCCCGACTCTAGAAGCACTTTACTGCAGGGGCAG | |
| SLC29A4 (F) | AGATCGCCGTGTAATTCTAGACCCACTGCCAGGGACGCCGA | |
| SLC29A4 (R) | GCCGGCCGCCCCGACTCTAGATACAGTTAGTGGACAGACGG | |
| CAPN14 (F) | AGATCGCCGTGTAATTCTAGAAGGGAAGGGAGGAAGTAA | |
| CAPN14 (R) | GCCGGCCGCCCCGACTCTAGATTGGGACCAGAAGTGTTTCA | |
| RAP1GAP (F) | AGATCGCCGTGTAATTCTAGAACTGAGCAGATGAGGCCACA | |
| RAP1GAP (R) | GCCGGCCGCCCCGACTCTAGATGTTACCGACATCCACACG | |
| STAB2 (F) | AGATCGCCGTGTAATTCTAGACCAGCCATCACTCACTGCCA | |
| STAB2 (R) | GCCGGCCGCCCCGACTCTAGATTGTGCACAGTTCCTGTG | |
| AGAP2 (F) | AGATCGCCGTGTAATTCTAGATCACCTCTCCGATCCGCAC | |
| AGAP2 (R) | GCCGGCCGCCCCGACTCTAGAGACACAGACAGCCCAAGGGC | |
| TRIM67 (F) | AGATCGCCGTGTAATTCTAGAAGGAAGCCATCAGCTTTGG | |
| TRIM67 (R) | GCCGGCCGCCCCGACTCTAGAGCTATGTATGCAGTGAGGTG | |
| TGFB1 (F) | AGATCGCCGTGTAATTCTAGAACTACAGGAGGAATGCACC | |
| TGFB1 (R) | GCCGGCCGCCCCGACTCTAGAAAACACACCATGGCTCTGTC | |
| CRB2 (F) | AGATCGCCGTGTAATTCTAGAAAGCCAGAGCCAGTCATGCG | |
| CRB2 (R) | GCCGGCCGCCCCGACTCTAGAAGCGTCTGCTGACTTCC | |