

Table S2 - Information about DEGs showing the gene name and Ensembl ID, description of annotated gene, LogFoldChange, logCPM, LR, Pvalue and FDR

| Gene name    | Gene stable ID     | Gene description                        | log2FC       | logCPM       | LR          | PValue      | FDR         |
|--------------|--------------------|-----------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC770705    | -----              | envelope glycoprotein gp95-like         | -3.834441674 | 3.582968175  | 39.92271172 | 2.64E-10    | 3.51E-08    |
| LOC107049175 | -----              | withdrawn                               | -3.571429113 | -0.283150349 | 51.80862423 | 6.12E-13    | 1.55E-10    |
| LOC107057413 | -----              | collagen alpha-1(I) chain-like          | -3.434611812 | 1.422895315  | 58.46310716 | 2.07E-14    | 7.41E-12    |
| ERNI         | ENSGALG00010002022 | early response to neural induction ERNI | -3.376783937 | 0.570660426  | 40.12750898 | 2.38E-10    | 3.21E-08    |
| LOC107049890 | -----              | pre-mRNA-splicing factor CWC22-like     | -3.362687627 | 0.261839305  | 109.25655   | 1.43E-25    | 1.68E-22    |
| LOC107049106 | -----              | withdrawn                               | -3.355056209 | 1.21589275   | 83.20416553 | 7.40E-20    | 6.09E-17    |
| LOC776874    | -----              | uncharacterized LOC776874               | -3.091576526 | 0.179454157  | 63.56873732 | 1.55E-15    | 7.28E-13    |
| LOC107049408 | -----              | uncharacterized LOC107049408            | -2.963846945 | 0.518401542  | 34.44422976 | 4.39E-09    | 0.000000417 |
| LOC112531874 | -----              | uncharacterized LOC112531874            | -2.963666595 | 1.329191396  | 32.21810928 | 1.38E-08    | 0.00000117  |
| LOC107051278 | -----              | withdrawn                               | -2.788476999 | 1.453436341  | 113.1360352 | 2.01E-26    | 2.55E-23    |
| HOXD11       | ENSGALG00000039629 | homeobox D11                            | -2.784111567 | 2.034731405  | 7.324851258 | 0.006800759 | 0.047317756 |
| NPHS2        | ENSGALG00000004163 | NPHS2, podocin                          | -2.71261099  | 5.92358938   | 19.79444519 | 0.00000862  | 0.000290771 |
| HOXA11       | ENSGALG00000040021 | homeobox A11                            | -2.604672074 | 0.888594803  | 13.12078973 | 0.000292037 | 0.004825204 |
| LOC112531841 | -----              | uncharacterized LOC112531841            | -2.469602436 | -0.114842144 | 24.9290857  | 0.000000595 | 0.0000312   |
| LOC112530433 | -----              | withdrawn                               | -2.451729506 | 1.421717015  | 38.46352039 | 5.58E-10    | 0.000000066 |
| LOC107051196 | -----              | withdrawn                               | -2.339358501 | 0.800699749  | 19.14530057 | 0.0000121   | 0.000376802 |
| LOC112531766 | -----              | uncharacterized LOC112531766            | -2.334606766 | 1.91041228   | 61.49547528 | 4.44E-15    | 1.74E-12    |
| LOC112533579 | -----              | withdrawn                               | -2.327085944 | 1.045338428  | 38.56554933 | 5.29E-10    | 6.31E-08    |
| LOC112531027 | -----              | withdrawn                               | -2.299465923 | 1.198035149  | 38.89198604 | 4.48E-10    | 5.42E-08    |
| LOC112532782 | -----              | uncharacterized LOC112532782            | -2.251468291 | 1.529337472  | 84.13452596 | 4.62E-20    | 4.00E-17    |
| LOC107053233 | -----              | uncharacterized LOC107053233            | -2.23089548  | 0.115621865  | 47.29457651 | 6.11E-12    | 1.29E-09    |
| GSC          | ENSGALG00000010974 | goosecoid homeobox                      | -2.214525829 | 2.026286806  | 15.01762261 | 0.000106512 | 0.002155577 |
| LOC101747821 | -----              | uncharacterized LOC101747821            | -2.142221072 | 4.911509956  | 39.70663031 | 2.95E-10    | 3.82E-08    |
| LOC112532134 | -----              | uncharacterized LOC112532134            | -2.047310333 | 0.119393937  | 29.17337017 | 6.62E-08    | 0.00000476  |
| LOC112531014 | -----              | withdrawn                               | -2.03739537  | 0.265537528  | 22.44151376 | 0.00000217  | 0.0000902   |
| LOC107052944 | -----              | withdrawn                               | -2.03465637  | -0.249173482 | 52.79478671 | 3.70E-13    | 1.03E-10    |
| LOC112531457 | -----              | withdrawn                               | -2.029516848 | -0.338741146 | 27.61430394 | 0.000000148 | 0.00000963  |
| MYH1F        | ENSGALG00000042257 | myosin, heavy chain 1F, skeletal muscle | -2.019282437 | 1.39987322   | 20.20468447 | 0.00000696  | 0.000242067 |
| LOC107054528 | -----              | uncharacterized LOC107054528            | -2.004321664 | 0.839000804  | 51.83697835 | 6.03E-13    | 1.55E-10    |
| LOC107054238 | -----              | uncharacterized LOC107054238            | -2.001454431 | 1.170641343  | 14.82667765 | 0.000117856 | 0.002335044 |
| CD69L        | -----              | CD69 molecule like                      | -1.986714278 | 6.394111973  | 36.3385817  | 1.66E-09    | 0.000000177 |
| OPN4-1       | ENSGALG00000041662 | photopigment melanopsin-like            | -1.984283704 | 1.29051804   | 45.68123474 | 1.39E-11    | 2.63E-09    |
| CLC2BL1      | -----              | c-type lectin like 13, MHCY region      | -1.966480883 | 2.307683733  | 62.83853698 | 2.24E-15    | 9.72E-13    |
| POMC         | ENSGALG00000016600 | proopiomelanocortin                     | -1.949446582 | -0.135033839 | 18.64782401 | 1.57E-05    | 4.67E-04    |
| LOC107054230 | -----              | uncharacterized LOC107054230            | -1.944529803 | 0.181544893  | 47.10494781 | 6.73E-12    | 1.37E-09    |
| GIMAP1       | -----              | GIMAP1-GIMAP5 readthrough               | -1.932966157 | 2.582912013  | 149.4345856 | 2.30E-34    | 7.58E-31    |
| HOXA10       | ENSGALG00000026631 | homeobox A10                            | -1.925991008 | 0.935420886  | 9.579814093 | 0.001967283 | 0.019921013 |
| LOC107049467 | -----              | uncharacterized LOC107049467            | -1.867271008 | 3.181013831  | 28.81762643 | 7.95E-08    | 0.00000554  |
| LOC107049564 | -----              | uncharacterized LOC107049564            | -1.864997522 | 1.983877756  | 58.85503655 | 1.70E-14    | 6.21E-12    |
| LOC107053000 | -----              | uncharacterized LOC107053000            | -1.838084001 | 0.960852137  | 71.79031308 | 2.39E-17    | 1.27E-14    |
| SLC9A2       | ENSGALG00000016791 | solute carrier family 9 member A2       | -1.820126396 | 0.079337284  | 42.39349102 | 7.46E-11    | 1.17E-08    |
| LOC107057189 | -----              | withdrawn                               | -1.817775155 | 2.708633233  | 42.32216922 | 7.74E-11    | 1.19E-08    |

|              |                    |                                                      |              |              |             |             |             |
|--------------|--------------------|------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| SST          |                    | somatostatin                                         | -1.805450581 | 3.157148807  | 25.72758838 | 0.000000393 | 0.000022    |
| LOC107052779 | -----              | withdrawn                                            | -1.800614419 | 0.740302051  | 76.91932447 | 1.78E-18    | 1.13E-15    |
| LOC107052419 | -----              | withdrawn                                            | -1.788799232 | -0.184710409 | 24.42384563 | 0.000000773 | 0.0000384   |
| LOC107055075 | -----              | withdrawn                                            | -1.787007514 | -0.139219372 | 30.50637814 | 3.33E-08    | 0.00000256  |
| TRBV19       | ENSGALG00000014750 | T cell receptor beta variable 19                     | -1.786144842 | -0.42859861  | 19.56405863 | 0.00000973  | 0.000317615 |
| LOC107056991 | -----              | withdrawn                                            | -1.776241241 | 0.75475272   | 20.88348029 | 0.00000488  | 0.000181297 |
| CCR4         | ENSGALG00000039146 | C-C motif chemokine receptor 4                       | -1.768548139 | -0.106026712 | 26.82264492 | 0.000000223 | 0.0000133   |
| MYH1D        | ENSGALG00000027323 | myosin, heavy chain 1D, skeletal muscle              | -1.763680459 | 4.811090643  | 19.51310059 | 0.00000999  | 0.000324271 |
| LOC112530773 | -----              | withdrawn                                            | -1.75620151  | 2.770595605  | 117.8886359 | 1.83E-27    | 2.74E-24    |
| YF5          | ENSGALG00000047314 | MHC class I antigen YF5                              | -1.744910576 | 0.770014853  | 55.95566847 | 7.41E-14    | 2.54E-11    |
| LOC112531946 | -----              | withdrawn                                            | -1.742878515 | -0.908684615 | 17.59674044 | 0.0000273   | 0.000727045 |
| LOC107052216 | -----              | uncharacterized LOC107052216                         | -1.717827276 | 0.887464624  | 33.02415561 | 9.10E-09    | 7.97E-07    |
| LOC107049103 | -----              | proline-rich protein 36-like                         | -1.712442315 | -0.458512529 | 23.45004174 | 1.28E-06    | 5.84E-05    |
| LOC101748467 | -----              | G2/M phase-specific E3 ubiquitin-protein ligase-like | -1.691342866 | -0.790421616 | 15.19931613 | 0.0000967   | 0.00201753  |
| LOC107055072 | -----              | uncharacterized LOC107055072                         | -1.683842023 | -0.607223469 | 22.58981152 | 0.00000201  | 0.0000848   |
| LOC112531094 | -----              | withdrawn                                            | -1.672437232 | 0.030550323  | 39.23693703 | 3.75E-10    | 4.68E-08    |
| LOC112533488 | -----              | uncharacterized LOC112533488                         | -1.663830968 | 0.118088147  | 36.145675   | 1.83E-09    | 0.000000191 |
| LOC107051988 | -----              | withdrawn                                            | -1.655910787 | -0.501353842 | 18.1207911  | 0.0000207   | 0.00057828  |
| LOC107053477 | -----              | withdrawn                                            | -1.644965883 | 4.18920815   | 22.47849225 | 0.00000213  | 0.000089    |
| LOC107052164 | -----              | uncharacterized LOC107052164                         | -1.64387803  | -0.613134025 | 22.05470618 | 2.65E-06    | 1.07E-04    |
| LOC107053870 | -----              | translation initiation factor IF-2-like              | -1.62978611  | 2.489466673  | 10.57059212 | 0.001149009 | 0.013292521 |
| LOC101748511 | -----              | uncharacterized LOC101748511                         | -1.61993948  | 0.546171271  | 28.33162488 | 1.02E-07    | 0.00000689  |
| HIST1H2A4L3  | ENSGALG00000032645 | histone cluster 1, H2A-IV-like 3                     | -1.612986014 | -0.471223006 | 28.84638392 | 7.84E-08    | 0.00000549  |
| LOC101750546 | -----              | circumsporozoite protein-like                        | -1.612714013 | 0.385402432  | 33.13170969 | 8.61E-09    | 0.000000758 |
| LOC112531945 | -----              | uncharacterized LOC112531945                         | -1.606765962 | 0.215976647  | 13.51765592 | 0.000236329 | 0.00410211  |
| CDKN1A       | ENSGALG00000028318 | cyclin dependent kinase inhibitor 1A                 | -1.604531217 | 0.969855328  | 12.45877526 | 0.000416033 | 0.0062979   |
| C1QC         | ENSGALG00000029669 | complement C1q C chain                               | -1.595836517 | 0.511531095  | 16.61950675 | 0.0000457   | 0.0011119   |
| LOC101750035 | -----              | G2/M phase-specific E3 ubiquitin-protein ligase-like | -1.592212746 | 1.259312327  | 63.28693743 | 1.79E-15    | 8.17E-13    |
| MYH13        | -----              | myosin, heavy chain 13, skeletal muscle              | -1.589640229 | 0.233532752  | 11.64203826 | 0.000644779 | 0.008739572 |
| LOC107053886 | -----              | withdrawn                                            | -1.570756034 | 2.357630156  | 49.75801057 | 1.74E-12    | 4.09E-10    |
| LOC107053584 | -----              | uncharacterized LOC107053584                         | -1.558259047 | -0.403916649 | 21.13805673 | 0.00000427  | 0.000161659 |
| LOC101749515 | -----              | withdrawn                                            | -1.557830293 | 0.33080682   | 41.69562095 | 1.07E-10    | 0.000000016 |
| LOC101749127 | -----              | uncharacterized LOC101749127                         | -1.550598534 | -0.407433099 | 20.79141769 | 0.00000512  | 0.000188945 |
| LOC107055074 | -----              | withdrawn                                            | -1.538836943 | 0.284064618  | 20.63381279 | 0.00000556  | 0.000202879 |
| LOC101752000 | -----              | uncharacterized LOC101752000                         | -1.524547785 | 0.158332104  | 34.88307256 | 3.50E-09    | 0.000000347 |
| FADS1L1      | -----              | fatty acid desaturase 1-like                         | -1.517385541 | 0.762049843  | 19.16203749 | 1.20E-05    | 3.75E-04    |
| LOC112531034 | -----              | withdrawn                                            | -1.504334967 | 1.788427695  | 21.45204832 | 0.00000363  | 0.000140133 |
| C1QA         | ENSGALG00000021569 | complement C1q A chain                               | -1.499199083 | 0.894927153  | 20.40981706 | 0.00000625  | 0.000222433 |
| UROC1        | ENSGALG00000006306 | urocanate hydratase 1                                | -1.494772821 | 2.302936206  | 39.72277862 | 2.93E-10    | 3.82E-08    |
| LOC107055024 | -----              | uncharacterized LOC107055024                         | -1.488146927 | 0.865195319  | 46.29739816 | 1.02E-11    | 1.94E-09    |
| CD44         | ENSGALG00000039080 | CD44 molecule (Indian blood group)                   | -1.487288798 | 1.733693016  | 14.02315757 | 0.000180573 | 0.003286574 |
| ACKR4        | ENSGALG00000041491 | atypical chemokine receptor 4                        | -1.486378386 | -0.185752949 | 27.99393777 | 0.000000122 | 0.00000807  |
| LOC112533411 | -----              | protocadherin beta-15-like                           | -1.478270836 | -0.60698907  | 15.29212441 | 0.0000921   | 0.001942949 |
| LOC107054516 | -----              | uncharacterized LOC107054516                         | -1.470822435 | 0.109378257  | 19.70207474 | 0.00000905  | 0.00029933  |

|              |                    |                                                          |              |              |             |             |             |
|--------------|--------------------|----------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC107053122 | -----              | endogenous retrovirus group K member 18 Pol protein-like | -1.464682919 | 1.358962033  | 15.44990351 | 8.47E-05    | 1.82E-03    |
| VCAM1        | ENSGALG00000005257 | vascular cell adhesion molecule 1                        | -1.464427066 | -0.101808423 | 15.60317634 | 0.0000781   | 0.001718607 |
| LOC112532661 | -----              | uncharacterized LOC112532661                             | -1.453946471 | 0.410595125  | 37.6132855  | 8.63E-10    | 9.79E-08    |
| C14orf180    | ENSGALG00000053336 | chromosome 14 open reading frame 180                     | -1.452942727 | -0.492542336 | 9.237685551 | 0.002370844 | 0.022537402 |
| C1QB         | ENSGALG00000004771 | complement C1q B chain                                   | -1.43654747  | 0.69994396   | 14.58750808 | 0.000133799 | 0.002584103 |
| LOC112532651 | -----              | uncharacterized LOC112532651                             | -1.429940497 | -0.954739046 | 14.41856303 | 0.000146353 | 0.002784082 |
| LOC100859625 | -----              | uncharacterized LOC100859625                             | -1.427274285 | 1.32690718   | 26.13921298 | 0.000000318 | 0.0000183   |
| LOC112532141 | -----              | withdrawn                                                | -1.425692558 | 2.130485995  | 10.71231047 | 0.00106425  | 0.012562584 |
| LOC112530090 | -----              | small nucleolar RNA SNORD49                              | -1.415331869 | 0.099472009  | 17.29636304 | 3.20E-05    | 0.000822232 |
| LOC107050560 | -----              | protocadherin beta-15-like                               | -1.406406169 | -0.14427413  | 8.736441561 | 0.003119126 | 0.027141841 |
| LOC112531208 | -----              | withdrawn                                                | -1.405185853 | 3.499231627  | 22.17919622 | 0.00000248  | 0.000101657 |
| CERS4L       | -----              | ceramide synthase 4-like                                 | -1.399980269 | -0.94793211  | 15.18765279 | 0.0000973   | 0.002024897 |
| LOC107051926 | -----              | uncharacterized LOC107051926                             | -1.388433355 | 2.319430481  | 43.55995046 | 4.11E-11    | 6.82E-09    |
| LOC107051856 | -----              | withdrawn                                                | -1.37832749  | -0.860383474 | 11.10917861 | 0.000859015 | 0.010732799 |
| GUCA1C       | ENSGALG00000015364 | guanylate cyclase activator 1C                           | -1.374883162 | 1.992882875  | 11.91294252 | 0.000557453 | 0.007878029 |
| LOC107050024 | -----              | withdrawn                                                | -1.371482396 | 2.171017345  | 31.14836868 | 2.39E-08    | 0.0000019   |
| LOC107054094 | -----              | withdrawn                                                | -1.354515009 | -0.645230154 | 10.84852501 | 9.89E-04    | 0.011928003 |
| LOC112531155 | -----              | withdrawn                                                | -1.353225436 | 5.408006388  | 124.2262491 | 7.52E-29    | 1.37E-25    |
| LOC107049730 | -----              | protocadherin beta-15-like                               | -1.34147813  | 1.355706491  | 20.38098463 | 0.00000635  | 0.000225041 |
| LOC107051715 | -----              | uncharacterized LOC107051715                             | -1.339731768 | -0.530914667 | 16.21992048 | 0.0000564   | 0.001321977 |
| LOC112532459 | -----              | small nucleolar RNA SNORA26                              | -1.335450483 | 0.230864427  | 14.63601579 | 0.000130399 | 0.002545324 |
| NAT8         | ENSGALG00000050294 | N-acetyltransferase 8 (GCN5-related, putative)           | -1.334511631 | 1.815571882  | 40.22562312 | 2.26E-10    | 3.10E-08    |
| LOC112530111 | -----              | uncharacterized LOC112530111                             | -1.332656557 | 0.782726904  | 23.87607489 | 0.00000103  | 0.0000487   |
| LOC101751866 | -----              | uncharacterized LOC101751866                             | -1.331605206 | -0.081582392 | 23.59661176 | 0.00000119  | 0.0000548   |
| ACHE         | ENSGALG00000047182 | acetylcholinesterase (Cartwright blood group)            | -1.326534545 | 4.755177706  | 82.39395684 | 1.11E-19    | 8.74E-17    |
| LOC107054189 | -----              | uncharacterized LOC107054189                             | -1.325888385 | -0.588646364 | 12.9259851  | 3.24E-04    | 0.005214537 |
| LOC107054055 | -----              | withdrawn                                                | -1.321984372 | 1.273984818  | 28.68819641 | 0.000000085 | 0.00000583  |
| LOC112533200 | -----              | withdrawn                                                | -1.319792921 | 0.878757657  | 22.08064264 | 2.61E-06    | 1.06E-04    |
| LOC107057188 | -----              | borealin-like                                            | -1.318872589 | 5.899385956  | 48.91066416 | 2.68E-12    | 6.12E-10    |
| TIMD4        | ENSGALG00000003876 | T-cell immunoglobulin and mucin domain containing 4      | -1.318203261 | 0.678235116  | 21.05259968 | 4.47E-06    | 0.000168258 |
| LOC107054707 | -----              | withdrawn                                                | -1.317311548 | 1.491845555  | 31.7418924  | 1.76E-08    | 0.00000147  |
| PFKFB4       | ENSGALG00000032385 | 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4    | -1.313489932 | 1.709681637  | 36.59183644 | 1.46E-09    | 0.000000159 |
| LOC107049676 | -----              | uncharacterized LOC107049676                             | -1.312980699 | -0.300807025 | 7.355821325 | 0.006684597 | 0.046846268 |
| LOC101748554 | -----              | uncharacterized LOC101748554                             | -1.309224052 | -0.659648131 | 15.01385002 | 0.000106725 | 0.002155577 |
| TOR1BL       | ENSGALG00000023709 | torsin family 1, member B-like                           | -1.3055788   | -0.746296691 | 14.13188718 | 0.00017043  | 0.003151042 |
| LOC107052166 | -----              | uncharacterized LOC107052166                             | -1.305444453 | -0.625394227 | 15.51800653 | 0.0000817   | 0.00178113  |
| LOC101748762 | -----              | uncharacterized LOC101748762                             | -1.298283612 | -0.102128124 | 20.44505497 | 0.00000614  | 0.000219524 |
| CCL26        | ENSGALG00000014585 | C-C motif chemokine ligand 26                            | -1.297972747 | 0.039087888  | 17.76633336 | 0.000025    | 0.000674855 |
| LOC112532055 | -----              | uncharacterized LOC112532055                             | -1.294623015 | 0.368785819  | 22.30640955 | 0.00000232  | 0.0000966   |
| LOC112532631 | -----              | uncharacterized LOC112532631                             | -1.294544954 | -0.065225224 | 9.347546477 | 0.002232842 | 0.021699324 |
| KRT9L        | -----              | keratin, type I cytoskeletal 9-like                      | -1.293413194 | 0.182592334  | 29.65883911 | 5.15E-08    | 0.0000038   |
| TLX1         | ENSGALG00000007831 | T-cell leukemia homeobox 1                               | -1.280345279 | -0.11559363  | 10.05915627 | 0.001515926 | 0.016282355 |
| LOC101747910 | -----              | uncharacterized LOC101747910                             | -1.264999282 | 1.068635374  | 51.80165228 | 6.14E-13    | 1.55E-10    |
| LOC112531200 | -----              | withdrawn                                                | -1.264349145 | 0.095700946  | 18.86674485 | 0.000014    | 0.000425569 |

|              |                    |                                                                        |              |              |             |             |             |
|--------------|--------------------|------------------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| OGN          | ENSGALG00000026736 | osteoglycin                                                            | -1.262809425 | 3.303889583  | 18.09572445 | 0.000021    | 0.00058391  |
| IP6K3        | ENSGALG00000026536 | inositol hexakisphosphate kinase 3                                     | -1.262595108 | 0.255783104  | 21.88815481 | 0.00000289  | 0.00011543  |
| GLRA4        | ENSGALG00000004936 | glycine receptor alpha 4                                               | -1.261835981 | 1.844975607  | 30.55178755 | 3.25E-08    | 0.00000251  |
| ZP3L1        | -----              | zona pellucida sperm-binding protein 3-like                            | -1.259272664 | -0.119753755 | 20.19401041 | 0.000007    | 0.000242908 |
| LOC107053858 | -----              | uncharacterized LOC107053858                                           | -1.259242437 | -0.840529734 | 11.07237061 | 0.000876236 | 0.010890076 |
| PHF24        | ENSGALG00000001900 | PHD finger protein 24                                                  | -1.253396767 | 0.833942723  | 17.41786731 | 0.00003     | 0.000784798 |
| ECM2         | ENSGALG00000004695 | extracellular matrix protein 2                                         | -1.251861224 | 3.001401678  | 44.00480724 | 3.28E-11    | 5.61E-09    |
| NRXN3        | ENSGALG00000027255 | neurexin 3                                                             | -1.251697312 | 2.733643183  | 35.55299178 | 2.48E-09    | 0.000000252 |
| HAL          | ENSGALG00000011421 | histidine ammonia-lyase                                                | -1.251291289 | 2.086017056  | 27.27040154 | 0.000000177 | 0.0000111   |
| DRD2         | ENSGALG00000007794 | dopamine receptor D2                                                   | -1.250708808 | -0.067504686 | 17.00459247 | 0.0000373   | 0.000939662 |
| LOC112533486 | -----              | withdrawn                                                              | -1.245407717 | 1.208600879  | 30.71560213 | 2.99E-08    | 0.00000232  |
| SHOX         | ENSGALG00000016698 | short stature homeobox                                                 | -1.244985669 | 1.047554168  | 7.185307493 | 0.007350295 | 0.049965525 |
| LOC107049937 | -----              | solute carrier family 2, facilitated glucose transporter member 4-like | -1.238658018 | 0.527200928  | 23.23002094 | 0.00000144  | 0.0000642   |
| MROH2BL2     | -----              | maestro heat-like repeat-containing protein family member 2B           | -1.23269618  | -0.854554698 | 9.985361108 | 0.001577896 | 0.016805359 |
| LOC112530427 | -----              | withdrawn                                                              | -1.230287264 | 3.143383762  | 10.54782704 | 1.16E-03    | 1.34E-02    |
| LOC112532894 | -----              | uncharacterized LOC112532894                                           | -1.229153998 | 2.019340983  | 36.67729537 | 1.39E-09    | 0.000000154 |
| TMEM61       | ENSGALG00000010801 | transmembrane protein 61                                               | -1.229126503 | 2.24881202   | 14.61351894 | 0.000131964 | 0.002562122 |
| LOC112533473 | -----              | withdrawn                                                              | -1.227329532 | -0.536521726 | 14.62770433 | 0.000130975 | 0.002547508 |
| LOC107049565 | -----              | uncharacterized LOC107049565                                           | -1.211532921 | 1.12718026   | 22.81714935 | 0.00000178  | 0.0000772   |
| TDRD5        | ENSGALG00000033634 | tudor domain containing 5                                              | -1.21149879  | 0.326880773  | 16.39513621 | 0.0000514   | 0.001219116 |
| LOC112531252 | -----              | withdrawn                                                              | -1.210773372 | 1.33954903   | 11.82052574 | 0.000585813 | 0.00812094  |
| FFAR4        | ENSGALG00000026733 | free fatty acid receptor 4                                             | -1.206911533 | -0.796291251 | 12.62165917 | 3.81E-04    | 5.90E-03    |
| LOC112533409 | -----              | withdrawn                                                              | -1.205495684 | 1.025843607  | 19.43862397 | 0.0000104   | 0.000335181 |
| LOC107054197 | -----              | withdrawn                                                              | -1.20235252  | 0.079993584  | 18.65780491 | 0.0000156   | 0.000465399 |
| LOC101748439 | -----              | uncharacterized LOC101748439                                           | -1.202267641 | 2.446954385  | 13.40688855 | 0.000250702 | 0.004310658 |
| LOC107057093 | -----              | c-type lectin like 17, MHCY region                                     | -1.201872859 | -0.36639529  | 17.34890131 | 0.0000311   | 0.000808656 |
| LOC101748259 | -----              | uncharacterized LOC101748259                                           | -1.200681677 | 2.24072302   | 14.45203458 | 0.000143774 | 0.002747745 |
| SLC6A19      | ENSGALG00000019527 | solute carrier family 6 member 19                                      | -1.197768231 | 0.02040011   | 19.18665096 | 0.0000119   | 0.000373695 |
| LOC101751481 | -----              | withdrawn                                                              | -1.197364056 | -0.613504167 | 11.34528085 | 7.56E-04    | 9.80E-03    |
| LOC112531018 | -----              | withdrawn                                                              | -1.196028192 | 1.094868136  | 20.31179661 | 0.00000658  | 0.000231332 |
| CAPN13       | ENSGALG00000020084 | calpain 13                                                             | -1.194497377 | -0.660732253 | 10.54511294 | 0.001164957 | 0.01338643  |
| LOC425214    | -----              | withdrawn                                                              | -1.192572965 | 2.166494268  | 29.43725341 | 5.78E-08    | 0.00000421  |
| LRIT2        | ENSGALG00000002307 | leucine rich repeat, Ig-like and transmembrane domains 2               | -1.187452863 | -0.066234059 | 7.877434108 | 0.005005545 | 0.038274401 |
| LOC100859202 | -----              | c-type lectin like 17, MHCY region                                     | -1.187001489 | 0.065618689  | 15.41281676 | 0.0000864   | 0.001848786 |
| LOC100857473 | -----              | alpha-1,2-mannosyltransferase ALG9-like                                | -1.182429323 | 2.071018909  | 49.14591608 | 2.38E-12    | 5.51E-10    |
| TLR7         | ENSGALG00000016590 | toll like receptor 7                                                   | -1.179730548 | 0.191711492  | 9.615429651 | 0.001929493 | 0.019598648 |
| LOC769128    | -----              | withdrawn                                                              | -1.178941128 | -0.331059235 | 16.22121525 | 0.0000564   | 0.001321977 |
| LOC107054803 | -----              | withdrawn                                                              | -1.174010037 | -0.549134633 | 8.93542426  | 0.002796925 | 0.025139403 |
| WISP1        | ENSGALG00000030115 | WNT1 inducible signaling pathway protein 1                             | -1.172340225 | 0.609577745  | 15.16146397 | 9.87E-05    | 2.04E-03    |
| CNGA3        | ENSGALG00000039826 | cyclic nucleotide gated channel alpha 3                                | -1.171805834 | 3.70799069   | 24.69414933 | 0.000000672 | 0.0000347   |
| LOC107051325 | -----              | uncharacterized LOC107051325                                           | -1.169890626 | -0.186700803 | 12.90224676 | 0.000328188 | 0.005258357 |
| LOC107054433 | -----              | uncharacterized LOC107054433                                           | -1.166162769 | 1.211948549  | 18.56142314 | 0.0000165   | 0.000484278 |
| YF6          | -----              | major histocompatibility complex Y, class I heavy chain 4              | -1.158046567 | 2.143800893  | 36.44223654 | 1.57E-09    | 0.00000017  |
| LOC101748035 | -----              | uncharacterized LOC101748035                                           | -1.157334798 | 0.155738536  | 20.56779203 | 0.00000576  | 0.000208152 |

|              |                    |                                                                  |              |              |             |             |             |
|--------------|--------------------|------------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC107052408 | -----              | uncharacterized LOC107052408                                     | -1.15639252  | 1.429137348  | 15.82529211 | 6.95E-05    | 1.57E-03    |
| FAM135B      | ENSGALG00000039831 | family with sequence similarity 135 member B                     | -1.153557582 | -0.544242735 | 8.42344772  | 3.70E-03    | 3.09E-02    |
| LOC107055022 | -----              | uncharacterized LOC107055022                                     | -1.152657567 | -0.547929482 | 9.465376767 | 0.002093864 | 0.020835945 |
| LOC101750579 | -----              | uncharacterized LOC101750579                                     | -1.143716625 | 1.309463537  | 18.56373607 | 0.0000164   | 0.000484278 |
| LOC100859665 | -----              | uncharacterized LOC100859665                                     | -1.140207941 | -0.425585743 | 11.14014884 | 0.000844791 | 0.010627705 |
| ANXA13       | ENSGALG00000036418 | annexin A13                                                      | -1.136183484 | -0.46085273  | 10.54855456 | 1.16E-03    | 1.34E-02    |
| LOC112531893 | -----              | withdrawn                                                        | -1.132635026 | 4.876708938  | 67.93866485 | 1.69E-16    | 8.41E-14    |
| TSHR         | ENSGALG00000010572 | thyroid stimulating hormone receptor                             | -1.131455105 | -0.368432607 | 11.44426014 | 0.000717152 | 0.009440587 |
| BG8          | ENSGALG00000049461 | MHC B-G antigen                                                  | -1.129339451 | 3.817493716  | 66.97383338 | 2.75E-16    | 1.33E-13    |
| DIRAS2       | ENSGALG00000005323 | DIRAS family GTPase 2                                            | -1.126576602 | 0.641512462  | 10.13803963 | 0.001452405 | 0.015785556 |
| FRMPD3       | ENSGALG00000028975 | FERM and PDZ domain containing 3                                 | -1.121691734 | 2.591590418  | 12.09150374 | 0.000506521 | 0.007330523 |
| LOC101751606 | -----              | withdrawn                                                        | -1.121047041 | -0.681613099 | 9.834818345 | 0.001712392 | 0.017845098 |
| LOC107054464 | -----              | withdrawn                                                        | -1.120835269 | 0.429120716  | 9.195049663 | 0.002426705 | 0.022805148 |
| COR8         | -----              | olfactory receptor family 5 subfamily J member 2                 | -1.118477226 | 0.418769772  | 11.5562288  | 0.000675227 | 0.009047928 |
| LOC112530987 | -----              | trichohyalin-like                                                | -1.118108383 | 1.406547149  | 33.46201438 | 7.27E-09    | 0.000000653 |
| LOC100857439 | -----              | histone H3.2-like                                                | -1.114057278 | -0.753793015 | 11.32038687 | 0.000766607 | 0.00987825  |
| SH3RF2       | ENSGALG00000043904 | SH3 domain containing ring finger 2                              | -1.111415146 | -0.239006945 | 17.01645318 | 0.0000371   | 0.000935443 |
| LOC101747844 | -----              | carbohydrate sulfotransferase 9-like                             | -1.110197152 | 1.865832669  | 16.95895387 | 0.0000382   | 0.000959584 |
| THRB         | ENSGALG00000011294 | thyroid hormone receptor beta                                    | -1.103601994 | 1.890373568  | 8.457602377 | 0.003635207 | 0.030456893 |
| TDRD15       | ENSGALG00000016492 | tudor domain containing 15                                       | -1.094236719 | 0.728599062  | 11.17190863 | 0.000830452 | 0.01050352  |
| LOC101750063 | -----              | uncharacterized LOC101750063                                     | -1.093889983 | 0.898634198  | 14.26866085 | 0.000158482 | 0.002960063 |
| MOG          | ENSGALG00000022875 | myelin oligodendrocyte glycoprotein                              | -1.090764321 | 0.929772627  | 15.05050829 | 0.000104672 | 0.002142262 |
| LDHD         | ENSGALG00000048399 | lactate dehydrogenase D                                          | -1.088400071 | 2.194195655  | 16.16960812 | 5.79E-05    | 1.35E-03    |
| PTER         | ENSGALG00000008728 | phosphotriesterase related                                       | -1.088031994 | 4.743326865  | 77.15228674 | 1.58E-18    | 1.04E-15    |
| LOC101747727 | -----              | uncharacterized LOC101747727                                     | -1.083306324 | 2.176218308  | 27.40370421 | 0.000000165 | 0.0000105   |
| LOC112533302 | -----              | withdrawn                                                        | -1.082725897 | -0.128017447 | 12.1027879  | 0.000503465 | 0.007299132 |
| LOC416951    | -----              | uncharacterized LOC416951                                        | -1.079760069 | -0.647787597 | 8.465222419 | 0.00362001  | 0.030345014 |
| LOC107051082 | -----              | withdrawn                                                        | -1.079342631 | 6.602069866  | 54.27418554 | 1.74E-13    | 5.74E-11    |
| LOC101751655 | -----              | uncharacterized LOC101751655                                     | -1.074297773 | -0.064360542 | 13.46738219 | 0.000242747 | 0.004195796 |
| TRPM2        | ENSGALG00000005631 | transient receptor potential cation channel subfamily M member 2 | -1.073086267 | 2.558135293  | 25.82646453 | 0.000000374 | 0.0000212   |
| LOC112532477 | -----              | fibrinogen-like protein 1-like protein                           | -1.072834686 | 1.095088271  | 27.03472071 | 0.0000002   | 0.0000122   |
| LOC107053147 | -----              | uncharacterized LOC107053147                                     | -1.072654768 | 0.272261058  | 8.390789649 | 0.00377127  | 0.031184047 |
| LOC112533187 | -----              | withdrawn                                                        | -1.069228627 | 1.50605054   | 16.190176   | 5.73E-05    | 1.34E-03    |
| LRIT1        | ENSGALG00000002303 | leucine rich repeat, Ig-like and transmembrane domains 1         | -1.065309225 | 2.394401956  | 7.410844396 | 0.006483189 | 0.045954099 |
| LOC107054716 | -----              | uncharacterized LOC107054716                                     | -1.065185519 | -0.941636747 | 9.235789276 | 0.002373301 | 0.022547728 |
| TMC3         | ENSGALG00000006376 | transmembrane channel like 3                                     | -1.064643973 | 2.218967398  | 17.31755074 | 0.0000316   | 0.000816944 |
| LOC101748916 | -----              | extensin-like                                                    | -1.06185401  | 6.221482946  | 88.32709696 | 5.55E-21    | 5.07E-18    |
| HIST1H2A3    | ENSGALG00000049268 | histone cluster 1, H2A, III                                      | -1.059497931 | 0.047289873  | 11.3443588  | 7.57E-04    | 9.80E-03    |
| PROX2        | -----              | prospero homeobox 2                                              | -1.056975612 | 0.540655108  | 18.94678046 | 0.0000134   | 0.000411118 |
| TBX15        | ENSGALG00000014776 | T-box 15                                                         | -1.05362578  | 4.923496759  | 9.978566859 | 1.58E-03    | 0.016856573 |
| LOC107053136 | -----              | uncharacterized LOC107053136                                     | -1.053440475 | -0.729309795 | 7.861239727 | 5.05E-03    | 0.038439969 |
| CMYA5        | ENSGALG00000026553 | cardiomyopathy associated 5                                      | -1.048912493 | 1.102818399  | 11.31361063 | 0.00076941  | 0.009898861 |
| MSX2         | ENSGALG00000038848 | msh homeobox 2                                                   | -1.046832952 | 4.217202159  | 9.617128824 | 1.93E-03    | 1.96E-02    |
| MR1          | -----              | major histocompatibility complex Y, class I heavy chain like     | -1.045755813 | 2.04645864   | 24.60196392 | 7.05E-07    | 0.0000361   |

|              |                     |                                                        |              |              |             |             |             |
|--------------|---------------------|--------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| CD300LG      | ENSGALG00000007713  | CD300 molecule like family member g                    | -1.042771912 | 1.706390141  | 41.23729436 | 1.35E-10    | 1.98E-08    |
| LOC107052834 | -----               | withdrawn                                              | -1.040482736 | 2.390952979  | 14.55599454 | 0.000136055 | 0.002623253 |
| LOC112531637 | -----               | small nucleolar RNA SNORA40                            | -1.034522265 | 0.774381089  | 13.3099294  | 0.000264004 | 0.0044878   |
| TMEM8C       | ENSGALG000000021520 | transmembrane protein 8C                               | -1.03385864  | -0.079308023 | 9.886399025 | 0.001665049 | 0.017484607 |
| LOC107052588 | -----               | withdrawn                                              | -1.032948254 | 0.532855356  | 11.78046984 | 0.000598554 | 0.008267676 |
| TNFRSF10B    | ENSGALG00000000452  | tumor necrosis factor receptor superfamily, member 10b | -1.032224911 | 3.071537923  | 21.74134118 | 0.00000312  | 0.000123708 |
| LOC112530989 | -----               | periodic tryptophan protein 2 homolog                  | -1.02696182  | -0.165579935 | 7.494160872 | 0.006189937 | 0.044492889 |
| UBXN11       | ENSGALG000000054685 | UBX domain protein 11                                  | -1.025979272 | 0.434383034  | 18.56502715 | 0.0000164   | 0.000484278 |
| FMO3         | ENSGALG000000040573 | flavin containing monooxygenase 3                      | -1.022007633 | 0.312383773  | 14.07137402 | 0.000176002 | 0.003238128 |
| LOC112530944 | -----               | withdrawn                                              | -1.020114437 | 1.166692228  | 15.30563788 | 0.0000914   | 0.001931576 |
| CX3CR1       | ENSGALG000000038000 | C-X3-C motif chemokine receptor 1                      | -1.015771719 | -0.307889133 | 9.087729957 | 0.002573301 | 0.023695391 |
| SYTL2L       | ENSGALG000000008326 | synaptotagmin-like protein 2-like                      | -1.014127409 | 0.869960938  | 18.82650472 | 0.0000143   | 0.000433842 |
| TMEM163      | ENSGALG000000012190 | transmembrane protein 163                              | -1.013561641 | 2.59352829   | 24.38137224 | 0.00000079  | 0.0000392   |
| LOC112533550 | -----               | withdrawn                                              | -1.013461514 | -0.544217557 | 8.302383076 | 0.003959309 | 0.032220766 |
| LOC112531154 | -----               | withdrawn                                              | -1.011522367 | 3.609762128  | 31.39330522 | 2.11E-08    | 0.00000172  |
| TGM3         | ENSGALG000000004804 | transglutaminase 3                                     | -1.009680744 | 0.048230434  | 11.16021094 | 8.36E-04    | 0.010553732 |
| CDH10        | ENSGALG000000032022 | cadherin 10                                            | -1.008959746 | 1.333664289  | 9.826292368 | 0.001720348 | 0.017899277 |
| LOC101748470 | -----               | uncharacterized LOC101748470                           | -1.008276754 | 0.2654487    | 15.55705129 | 0.0000801   | 0.001751681 |
| NDST4        | ENSGALG000000012015 | N-deacetylase and N-sulfotransferase 4                 | -1.005038721 | 0.987133741  | 23.35531025 | 0.00000135  | 0.0000609   |
| CHRNA10      | ENSGALG000000007906 | cholinergic receptor nicotinic gamma subunit           | -1.00110757  | 1.957933855  | 19.28239336 | 1.13E-05    | 0.000360225 |
| ANKK1        | ENSGALG000000007815 | ankyrin repeat and kinase domain containing 1          | -0.998075993 | 0.943370794  | 10.76453117 | 0.001034638 | 0.012345876 |
| LOC107051247 | -----               | uncharacterized LOC107051247                           | -0.993085141 | 0.596675258  | 14.25282387 | 0.000159821 | 0.002981691 |
| CHRNA10      | ENSGALG000000022702 | cholinergic receptor, nicotinic, alpha 10 (neuronal)   | -0.992892087 | 0.98241321   | 10.95019016 | 0.00093594  | 0.011458999 |
| IGSF5        | ENSGALG000000016132 | immunoglobulin superfamily member 5                    | -0.9926959   | -0.48488705  | 10.49204785 | 0.001198894 | 0.013652459 |
| MYL2         | ENSGALG000000004582 | myosin, light chain 2, regulatory, cardiac, slow       | -0.990807958 | 2.36449028   | 10.58892527 | 0.001137671 | 0.013211274 |
| LOC771200    | -----               | uncharacterized LOC771200                              | -0.98939525  | 2.464081023  | 23.95723444 | 0.000000985 | 0.0000476   |
| LOC107054020 | -----               | uncharacterized LOC107054020                           | -0.988585348 | -0.154439471 | 7.334696059 | 0.006763612 | 0.047177115 |
| C5H14orf159  | ENSGALG000000010703 | chromosome 5 C14orf159 homolog                         | -0.988163348 | 3.195465739  | 62.72684949 | 2.37E-15    | 1.00E-12    |
| USH1G        | ENSGALG000000038769 | USH1 protein network component sans                    | -0.986335573 | -0.889165421 | 7.76674057  | 0.005321699 | 0.039858242 |
| NCAM2        | ENSGALG000000015737 | neural cell adhesion molecule 2                        | -0.982104244 | 2.046225508  | 11.52567285 | 0.000686416 | 0.009153141 |
| FSHR         | ENSGALG000000009100 | follicle stimulating hormone receptor                  | -0.981997463 | 0.524494548  | 8.879835092 | 0.002883376 | 0.025771652 |
| LOC107049782 | -----               | uncharacterized LOC107049782                           | -0.976168151 | 0.533723638  | 10.42431342 | 0.001243671 | 0.014026459 |
| ADMP         | ENSGALG000000037408 | anti-dorsalizing morphogenetic protein                 | -0.97389252  | -0.809835532 | 7.870783592 | 0.005023988 | 0.038292634 |
| LOC112531854 | -----               | uncharacterized LOC112531854                           | -0.972299941 | 1.467291047  | 19.63329546 | 0.00000938  | 0.000307531 |
| PLSCR5       | ENSGALG000000006807 | phospholipid scramblase family member 5                | -0.972127051 | 1.732228555  | 24.21887711 | 0.00000086  | 0.0000425   |
| LOC416695    | -----               | tubulin alpha-3 chain-like                             | -0.97067085  | 2.433507901  | 35.27684823 | 2.86E-09    | 0.000000287 |
| SIRPA        | ENSGALG000000025778 | signal-regulatory protein alpha                        | -0.965142199 | 2.001053732  | 20.17738981 | 0.00000706  | 0.000244512 |
| LOC101747373 | -----               | uncharacterized LOC101747373                           | -0.961898549 | 4.790904562  | 72.9961366  | 1.30E-17    | 7.13E-15    |
| NRSN2        | -----               | neurensin 2                                            | -0.960491436 | -0.644066634 | 8.06801412  | 0.004505347 | 0.03543761  |
| C31H17orf49  | -----               | chromosome unknown C17orf49 homolog                    | -0.960302874 | 5.40930949   | 127.5499048 | 1.41E-29    | 2.90E-26    |
| DLX3         | ENSGALG000000040529 | distal-less homeobox 3                                 | -0.959859915 | 1.465461845  | 7.915166715 | 0.004902206 | 0.037747218 |
| ABCA13       | -----               | ATP-binding cassette, sub-family A (ABC1), member 13   | -0.954170524 | -0.673185584 | 8.954640635 | 0.002767656 | 0.024940736 |
| LOC107055338 | -----               | uncharacterized LOC107055338                           | -0.952010681 | -0.327330737 | 9.057553516 | 0.002616118 | 0.023995663 |
| AOAH         | ENSGALG000000035505 | acyloxyacyl hydrolase                                  | -0.950863471 | 1.966462087  | 13.34873375 | 0.000258597 | 0.004418709 |

|              |                    |                                                                                          |              |              |             |             |             |
|--------------|--------------------|------------------------------------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| ADAM5P       | ENSGALG00000009606 | ADAM metallopeptidase domain 5, pseudogene                                               | -0.950485309 | 1.658459045  | 33.56022743 | 6.91E-09    | 6.25E-07    |
| LOC101749363 | -----              | uncharacterized LOC101749363                                                             | -0.948035287 | 4.370189424  | 34.1263229  | 5.16E-09    | 0.000000486 |
| LOC101750312 | -----              | uncharacterized LOC101750312                                                             | -0.947707152 | 1.290513921  | 12.77179401 | 0.000351885 | 0.005535632 |
| LOC112532770 | -----              | putative methyltransferase DDB_G0268948                                                  | -0.947532555 | 4.836247873  | 44.40346938 | 2.67E-11    | 4.68E-09    |
| MB           | ENSGALG00000012541 | myoglobin                                                                                | -0.946304092 | 0.809250957  | 7.482224878 | 0.006231103 | 0.044717367 |
| AKR1D1       | ENSGALG00000012834 | aldo-keto reductase family 1 member D1                                                   | -0.945917382 | 5.807107113  | 47.19676391 | 6.42E-12    | 1.34E-09    |
| LOC112531894 | -----              | VPS28 subunit of ESCRT-I                                                                 | -0.945837152 | 6.054306955  | 167.499115  | 2.60E-38    | 1.07E-34    |
| LOC107051491 | -----              | withdrawn                                                                                | -0.94112109  | 4.321518447  | 25.89164146 | 0.000000361 | 0.0000206   |
| LOC112530177 | -----              | uncharacterized LOC112530177                                                             | -0.940973458 | -0.509704385 | 8.750605326 | 0.003094993 | 0.027019761 |
| PXDNL        | ENSGALG00000036838 | peroxidasin like                                                                         | -0.939796731 | 2.719603082  | 10.59812989 | 0.001132021 | 0.013166942 |
| NPBWR2       | ENSGALG00000029170 | neuropeptides B and W receptor 2                                                         | -0.939570367 | -0.224820972 | 9.20744075  | 0.002410334 | 0.022702947 |
| LOC112529916 | -----              | small nucleolar SNORD12/SNORD106                                                         | -0.936062234 | 1.19786175   | 19.47649107 | 0.0000102   | 0.000329247 |
| LOC112532269 | -----              | uncharacterized LOC112532269                                                             | -0.936013591 | 0.272524305  | 16.00595822 | 0.0000631   | 0.001449129 |
| CRB1         | ENSGALG00000002287 | crumbs cell polarity complex component 1                                                 | -0.934363753 | 2.187718395  | 14.34480525 | 0.000152199 | 0.002862918 |
| LOC112532647 | -----              | uncharacterized LOC112532647                                                             | -0.932797739 | 0.709622536  | 14.36330743 | 0.000150711 | 0.002843973 |
| LDLRAD1      | ENSGALG00000020647 | low density lipoprotein receptor class A domain containing 1                             | -0.931238142 | 3.022496868  | 32.65312299 | 0.000000011 | 0.000000954 |
| LOC100859819 | -----              | cocaine- and amphetamine-regulated transcript protein-like                               | -0.931006863 | 0.645459194  | 15.50775881 | 0.0000822   | 0.001783724 |
| LOC101748820 | -----              | uncharacterized LOC101748820                                                             | -0.930538397 | 1.942116449  | 8.867414493 | 0.00290306  | 0.025835508 |
| DLGAP1L      | -----              | -----                                                                                    | -0.929726033 | -0.379275878 | 9.929112342 | 0.00162685  | 0.017182164 |
| LOC101747354 | -----              | alanine and glycine-rich protein-like                                                    | -0.929714941 | -0.656632157 | 8.341748235 | 0.00387443  | 0.031749872 |
| LOC107054704 | -----              | major histocompatibility complex Y, class I heavy chain 36                               | -0.929570455 | 1.641641664  | 16.1937664  | 0.0000572   | 0.001334652 |
| CPXM2        | -----              | carboxypeptidase X, M14 family member 2                                                  | -0.926652592 | 0.614402467  | 8.639964616 | 0.003288678 | 0.028243841 |
| PTPRQ        | ENSGALG00000010935 | protein tyrosine phosphatase, receptor type Q                                            | -0.921168724 | 4.631836958  | 25.53269367 | 0.000000435 | 0.000024    |
| LOC101747644 | -----              | uncharacterized LOC101747644                                                             | -0.920691393 | -0.703839543 | 8.810324683 | 0.002995307 | 0.026399454 |
| TACR1        | ENSGALG00000036638 | tachykinin receptor 1                                                                    | -0.919383241 | -0.440009594 | 10.0425599  | 0.001529645 | 0.016386918 |
| LOC112533261 | -----              | uncharacterized LOC112533261                                                             | -0.917979079 | -0.536030904 | 7.912936121 | 4.91E-03    | 0.037776111 |
| LOC421892    | -----              | transcription elongation factor B polypeptide 3-like                                     | -0.917703268 | 0.33729887   | 10.28418807 | 0.00134175  | 0.014837704 |
| LOC112530519 | -----              | translation initiation factor IF-2                                                       | -0.917408814 | -0.625472394 | 8.379656228 | 0.003794442 | 0.031312709 |
| TLR2A        | ENSGALG00000034722 | toll-like receptor 2 family member A                                                     | -0.916313941 | 1.787776509  | 12.01892723 | 0.00052663  | 0.007535389 |
| HIST1H4I     | ENSGALG00000048097 | histone cluster 1, H4i                                                                   | -0.915471924 | 2.699888408  | 21.48584646 | 0.00000356  | 0.000138334 |
| AQP3         | ENSGALG00000002452 | aquaporin 3 (Gill blood group)                                                           | -0.914442793 | 1.923450553  | 9.594372011 | 0.001951747 | 0.019775857 |
| TUBA4B       | -----              | -----                                                                                    | -0.913047911 | 1.199109683  | 18.36169181 | 1.83E-05    | 5.23E-04    |
| CYSLTR1      | ENSGALG00000004128 | cysteinyl leukotriene receptor 1                                                         | -0.911800893 | 3.179492471  | 47.62745199 | 5.15E-12    | 1.13E-09    |
| AWAT1        | ENSGALG00000004367 | acyl-CoA wax alcohol acyltransferase 1                                                   | -0.910751345 | 1.462886472  | 21.64266191 | 0.00000328  | 0.000129303 |
| NPR1         | ENSGALG00000015753 | natriuretic peptide receptor A/guanylate cyclase A (atrionatriuretic peptide receptor A) | -0.905533188 | 0.359572602  | 11.34949298 | 7.55E-04    | 0.009785936 |
| TMEM68L      | -----              | -----                                                                                    | -0.905457313 | 0.654396913  | 12.91852345 | 0.000325346 | 0.005223    |
| LOC112532643 | -----              | uncharacterized LOC112532643                                                             | -0.898711401 | -0.665576482 | 7.366381472 | 0.006645453 | 0.046651417 |
| DYNLRB2      | ENSGALG00000005402 | dynein light chain roadblock-type 2                                                      | -0.892253371 | 1.737726104  | 10.07420234 | 0.001503597 | 0.016224058 |
| F7           | ENSGALG00000016833 | coagulation factor VII                                                                   | -0.892140457 | -0.467450656 | 8.98860004  | 0.00271669  | 0.02460272  |
| LOC112531865 | -----              | uncharacterized LOC112531865                                                             | -0.891755318 | -0.447566702 | 7.899973798 | 0.004943551 | 0.037959    |
| RASGRF2      | ENSGALG00000015598 | Ras protein specific guanine nucleotide releasing factor 2                               | -0.890466663 | 2.31708964   | 17.58535118 | 0.0000275   | 0.00073023  |
| LOC112533090 | -----              | small Cajal body-specific RNA 6                                                          | -0.887118045 | -0.141833269 | 7.674488911 | 0.005600695 | 0.041327105 |
| SPTSSBL      | ENSGALG00000048373 | serine palmitoyltransferase small subunit B-like                                         | -0.885486116 | 1.692822059  | 20.22312654 | 0.00000689  | 0.000240763 |
| LOC112530210 | -----              | uncharacterized LOC112530210                                                             | -0.884579924 | 0.552841453  | 9.045316089 | 0.002633687 | 0.024089671 |

|              |                    |                                                                  |              |              |             |             |             |
|--------------|--------------------|------------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC112531846 | -----              | uncharacterized LOC112531846                                     | -0.880308058 | 1.77998967   | 11.36954321 | 0.000746582 | 0.009703802 |
| SP9          | ENSGALG00000043079 | Sp9 transcription factor                                         | -0.879535087 | -0.535852723 | 7.33974679  | 0.006744634 | 0.047114718 |
| LOC107049660 | -----              | glycogen phosphorylase, muscle form-like                         | -0.879269677 | 1.124464073  | 14.45694434 | 0.0001434   | 0.002746456 |
| LOC107054255 | -----              | uncharacterized LOC107054255                                     | -0.878370909 | 0.128445484  | 10.29346748 | 0.00133502  | 0.014783144 |
| KCNK18       | ENSGALG00000009265 | potassium two pore domain channel subfamily K member 18          | -0.877932475 | 0.777019301  | 10.36504068 | 0.001284241 | 0.014367019 |
| THEMIS2      | ENSGALG00000000731 | thymocyte selection associated family member 2                   | -0.876890266 | 1.17809763   | 10.2958463  | 0.0013333   | 0.014776945 |
| TNFSF13B     | ENSGALG00000016852 | tumor necrosis factor superfamily member 13b                     | -0.876678651 | 0.291791779  | 8.265384226 | 0.004040811 | 0.032673977 |
| ITGBL1       | ENSGALG00000016867 | integrin subunit beta like 1                                     | -0.874370437 | 1.113931501  | 15.82281439 | 0.0000696   | 0.001565785 |
| RNASEK       | ENSGALG00000050001 | ribonuclease K                                                   | -0.87365125  | 7.111135405  | 139.7588773 | 3.01E-32    | 8.24E-29    |
| CLDN9        | -----              | -----                                                            | -0.86940956  | -0.034937419 | 12.47645937 | 0.000412113 | 0.0062616   |
| ACTR10L      | -----              | actin related protein 10-like                                    | -0.868909783 | 3.645260992  | 24.51346171 | 7.38E-07    | 3.73E-05    |
| MYH1G        | ENSGALG00000028612 | myosin, heavy chain 1G, skeletal muscle                          | -0.8686914   | 0.882422814  | 7.556887584 | 0.005978115 | 0.043260805 |
| SCML4        | -----              | Scm polycomb group protein like 4                                | -0.868111315 | 3.918286783  | 17.57251766 | 0.0000277   | 0.000733397 |
| BEST4        | ENSGALG00000043605 | bestrophin 4                                                     | -0.867442552 | 1.302005889  | 9.552243892 | 0.001997051 | 0.020148057 |
| PCSK9        | ENSGALG00000047448 | proprotein convertase subtilisin/kexin type 9                    | -0.865284357 | 0.123937023  | 8.062554467 | 0.004518943 | 0.035514684 |
| LOC107050768 | -----              | histone-lysine N-methyltransferase SETD1A-like                   | -0.864408256 | 5.972316841  | 17.01735417 | 0.000037    | 0.000935443 |
| TRPA1        | ENSGALG00000034751 | transient receptor potential cation channel subfamily A member 1 | -0.862799251 | 1.149754225  | 9.095335605 | 0.002562622 | 0.023669926 |
| SLC5A7       | ENSGALG00000016804 | solute carrier family 5 member 7                                 | -0.861917074 | 3.804465538  | 8.326096085 | 0.003907955 | 0.031960935 |
| ST8SIA3Z     | ENSGALG00000039151 | ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 3-Z   | -0.860143259 | 0.957742691  | 9.314319086 | 0.002273699 | 0.021892165 |
| LOC107052234 | -----              | uncharacterized LOC107052234                                     | -0.858120772 | 1.766254863  | 18.90724396 | 0.0000137   | 0.000418172 |
| PAK6         | -----              | p21 (RAC1) activated kinase 6                                    | -0.857381409 | 1.226915987  | 14.07007002 | 0.000176124 | 0.003238128 |
| TNR          | ENSGALG00000004526 | tenascin R                                                       | -0.856281865 | 0.755580275  | 8.219400053 | 0.00414449  | 0.033299601 |
| LOC112531887 | -----              | uncharacterized LOC112531887                                     | -0.856247748 | 1.838249124  | 9.365341755 | 0.002211268 | 0.02155593  |
| ASIP         | ENSGALG00000039101 | agouti signaling protein                                         | -0.853542508 | 1.382368759  | 7.368537162 | 0.006637491 | 0.046615412 |
| CRYBA2       | ENSGALG00000011354 | crystallin beta A2                                               | -0.851386718 | 0.573796191  | 9.460513914 | 0.002099422 | 0.020835945 |
| TRPM8        | ENSGALG00000004116 | transient receptor potential cation channel subfamily M member 8 | -0.850521236 | 0.161363911  | 10.98197203 | 0.000920025 | 0.011306204 |
| LOC107054371 | -----              | uncharacterized LOC107054371                                     | -0.850379313 | -0.33097414  | 9.542857744 | 0.00200729  | 0.020193053 |
| TRIM39.2     | ENSGALG00000037170 | tripartite motif containing 39.2                                 | -0.847299279 | -0.250642567 | 8.935152577 | 0.002797341 | 0.025139403 |
| LOC112531323 | -----              | nephrin-like                                                     | -0.846497648 | 0.32363178   | 8.750598429 | 0.003095005 | 0.027019761 |
| TRIM65       | -----              | tripartite motif containing 65                                   | -0.843226727 | 1.928463543  | 15.06417186 | 0.000103917 | 0.002132114 |
| LOC101749220 | -----              | uncharacterized LOC101749220                                     | -0.842958942 | 1.320291235  | 12.92338615 | 0.000324502 | 0.005214537 |
| LEFTY2       | ENSGALG00010017549 | left-right determination factor 1                                | -0.841598345 | 1.660953072  | 13.09964362 | 0.000295352 | 0.004870847 |
| ITGB4        | ENSGALG00000002389 | integrin subunit beta 4                                          | -0.841338367 | 2.589993443  | 29.74809712 | 4.92E-08    | 0.00000366  |
| LOC112532409 | -----              | uncharacterized LOC112532409                                     | -0.837258215 | 1.705619561  | 13.94989305 | 0.000187748 | 0.003398679 |
| IL16         | ENSGALG00000006388 | interleukin 16                                                   | -0.835276513 | 1.845034412  | 13.12061971 | 0.000292063 | 0.004825204 |
| LOC107049615 | -----              | withdrawn                                                        | -0.835182807 | 3.46357735   | 19.75462389 | 0.0000088   | 0.000296286 |
| NTN4         | ENSGALG00000011406 | netrin 4                                                         | -0.83472758  | 2.289911602  | 18.52142727 | 0.0000168   | 0.000489296 |
| LOC112532757 | -----              | uncharacterized LOC112532757                                     | -0.834569879 | 0.123139708  | 7.941905894 | 0.004830293 | 0.037368349 |
| LOC112531521 | -----              | uncharacterized LOC112531521                                     | -0.83365225  | -0.268743369 | 11.51339922 | 0.000690963 | 0.009191429 |
| ITIH6        | -----              | inter-alpha-trypsin inhibitor heavy chain family member 6        | -0.833300025 | 1.546801511  | 12.64175724 | 0.000377225 | 0.005855888 |
| HOXA9        | ENSGALG00000028983 | homeobox A9                                                      | -0.830609485 | 4.453738076  | 10.35783117 | 0.001289266 | 0.014412275 |
| TNNI3K       | ENSGALG00000011353 | TNNI3 interacting kinase                                         | -0.828200867 | 0.092397044  | 7.418102294 | 0.006457088 | 0.045954099 |
| LOC112532925 | -----              | uncharacterized LOC112532925                                     | -0.827660507 | -0.419728246 | 7.272937072 | 0.007000124 | 0.048276213 |
| CXCR1        | ENSGALG00000036627 | C-X-C motif chemokine receptor 1                                 | -0.824338697 | 0.068072575  | 10.54138826 | 0.001167307 | 0.013404074 |

|              |                    |                                                               |              |              |             |             |             |
|--------------|--------------------|---------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| F13A1        | ENSGALG00000012802 | coagulation factor XIII A chain                               | -0.822205151 | 0.546565613  | 8.922775938 | 0.002816361 | 0.025255162 |
| EDA2R        | ENSGALG00000031094 | ectodysplasin A2 receptor                                     | -0.822132509 | 2.989247955  | 9.485969253 | 0.002070492 | 0.020673511 |
| NEK10        | ENSGALG00000011322 | NIMA related kinase 10                                        | -0.817960136 | 0.34297622   | 10.94201436 | 0.000940079 | 0.011486028 |
| SLC5A1       | ENSGALG00000006728 | solute carrier family 5 member 1                              | -0.817866519 | 1.632511213  | 20.57422956 | 0.00000574  | 0.00020791  |
| LOC107053028 | -----              | uncharacterized LOC107053028                                  | -0.817523236 | 1.137374047  | 9.478947712 | 0.002078431 | 0.020718058 |
| ABLIM3       | ENSGALG00000002790 | actin binding LIM protein family member 3                     | -0.815955933 | 2.637328772  | 33.32125646 | 7.81E-09    | 0.000000695 |
| GAL          | ENSGALG00000007047 | galanin and GMAP prepropeptide                                | -0.815627187 | 0.919804259  | 9.046781446 | 0.002631577 | 0.024083758 |
| LOC112532982 | -----              | uncharacterized LOC112532982                                  | -0.814246251 | 3.017802148  | 11.56688194 | 0.000671369 | 0.009025635 |
| LOC107053889 | -----              | uncharacterized LOC107053889                                  | -0.813549252 | 1.114456769  | 10.98051784 | 0.000920747 | 0.011306636 |
| LOC107052229 | -----              | uncharacterized LOC107052229                                  | -0.81252174  | 2.522686642  | 19.53184659 | 0.00000989  | 0.000321739 |
| LOC101751319 | -----              | uncharacterized LOC101751319                                  | -0.811719295 | 1.265494381  | 8.76578744  | 0.003069335 | 0.026850565 |
| LOC107053148 | -----              | uncharacterized LOC107053148                                  | -0.811220623 | -0.278752442 | 9.23327238  | 0.002376565 | 0.022564277 |
| KCNG4        | ENSGALG00000005502 | potassium voltage-gated channel modifier subfamily G member 4 | -0.81014553  | 0.092198072  | 7.325743361 | 0.006797384 | 0.047314588 |
| LOC112530028 | -----              | uncharacterized LOC112530028                                  | -0.807723902 | 0.127813368  | 7.468433924 | 0.006279015 | 0.044959759 |
| GRM3         | ENSGALG00000006576 | glutamate metabotropic receptor 3                             | -0.806763344 | 4.513530228  | 25.41799544 | 0.000000462 | 0.0000251   |
| SLC26A6      | ENSGALG00000026089 | solute carrier family 26 member 6                             | -0.805990811 | 0.937642223  | 7.841273681 | 0.005106661 | 0.038741407 |
| LOC112532504 | -----              | uncharacterized LOC112532504                                  | -0.803772601 | 2.815170577  | 38.24326712 | 6.25E-10    | 7.29E-08    |
| LOC112533555 | -----              | olfactory receptor 14C36-like                                 | -0.803613868 | 2.174977583  | 11.7142497  | 0.000620233 | 0.008496494 |
| LOC112532781 | -----              | uncharacterized LOC112532781                                  | -0.802942758 | 0.658535467  | 12.57689326 | 3.91E-04    | 6.01E-03    |
| CD109        | ENSGALG00000015910 | CD109 molecule                                                | -0.802848504 | 3.058274897  | 15.99457825 | 0.0000635   | 0.001455835 |
| LOC100858131 | -----              | trichohyalin-like                                             | -0.800262209 | 2.051613445  | 23.22804507 | 0.00000144  | 0.0000642   |
| LOC101749506 | -----              | uncharacterized LOC101749506                                  | -0.797478132 | 1.232235585  | 17.69772638 | 0.0000259   | 0.000697347 |
| VNN1         | ENSGALG00000013993 | vanin 1                                                       | -0.796917827 | -0.014404108 | 10.76741618 | 0.001033026 | 0.012335592 |
| TCEA3        | ENSGALG00000050173 | transcription elongation factor A3                            | -0.796727544 | 1.811343149  | 18.11578359 | 0.0000208   | 0.000578768 |
| LOC422150    | -----              | c-X-C chemokine receptor type 3-like                          | -0.794629958 | -0.264823755 | 9.051194803 | 0.002625232 | 0.024052446 |
| LOC112532109 | -----              | uncharacterized LOC112532109                                  | -0.792510528 | 0.822128798  | 9.337117417 | 0.002245585 | 0.021735939 |
| LOC107053787 | -----              | uncharacterized LOC107053787                                  | -0.791598756 | 0.191318555  | 8.212800828 | 0.00415959  | 0.033404611 |
| CCR7         | ENSGALG00000035733 | C-C motif chemokine receptor 7                                | -0.789254061 | 1.494009884  | 9.295816602 | 0.002296777 | 0.022071093 |
| SNX20        | ENSGALG00000038374 | sorting nexin 20                                              | -0.789110185 | 2.464184323  | 23.49227675 | 0.00000125  | 0.0000575   |
| LOC107053086 | -----              | uncharacterized LOC107053086                                  | -0.788801216 | 1.895587419  | 16.53778011 | 0.0000477   | 0.001148967 |
| LOC107051875 | -----              | uncharacterized LOC107051875                                  | -0.788353621 | 3.36599259   | 17.40246867 | 0.0000302   | 0.000788674 |
| CACNG3       | ENSGALG00000038087 | calcium voltage-gated channel auxiliary subunit gamma 3       | -0.788155731 | 3.238844369  | 25.1015795  | 0.000000544 | 0.0000289   |
| LRRC55       | -----              | leucine rich repeat containing 55                             | -0.787552679 | 0.471622401  | 9.21680891  | 0.002398032 | 0.022664911 |
| LOC112533354 | -----              | maestro heat-like repeat-containing protein family member 7   | -0.786071506 | 3.552141572  | 36.174993   | 1.80E-09    | 0.000000189 |
| SEMA5A       | ENSGALG00000028685 | semaphorin 5A                                                 | -0.784896741 | 5.896589604  | 17.7691673  | 0.0000249   | 0.000674855 |
| HIST1H46L2   | ENSGALG00000053680 | histone cluster 1, H4-IV, germinal H4-like 2                  | -0.783755232 | 0.106947082  | 9.607511354 | 0.001937831 | 0.019659066 |
| C3           | ENSGALG00000030038 | complement component 3                                        | -0.782910847 | 1.987648593  | 11.09080571 | 0.000867568 | 0.010815022 |
| MYOCD        | ENSGALG00000001021 | myocardin                                                     | -0.780845386 | 2.219260214  | 7.769395631 | 0.005313883 | 0.039858242 |
| LOC107052021 | -----              | uncharacterized LOC107052021                                  | -0.780277219 | 1.178996965  | 7.37181861  | 0.00662539  | 0.046550293 |
| AIPL1        | -----              | aryl hydrocarbon receptor interacting protein like 1          | -0.780136294 | 0.796746304  | 11.4503187  | 0.000714817 | 0.00941739  |
| UPK1B        | ENSGALG00000015079 | uroplakin 1B                                                  | -0.780034392 | 3.327856678  | 11.89972969 | 0.000561421 | 0.00788956  |
| AGTR2        | ENSGALG00000005936 | angiotensin II receptor type 2                                | -0.779934201 | 0.78985176   | 8.083425316 | 0.004467193 | 0.035221456 |
| LOC107048987 | -----              | putative methyltransferase DDB_G0268948                       | -0.77922954  | 5.129810682  | 32.10654258 | 1.46E-08    | 0.00000123  |
| LOC107053414 | -----              | mucin 5 like                                                  | -0.773476227 | 1.280096935  | 8.167238649 | 0.004265379 | 0.034005242 |

|              |                     |                                                            |              |              |             |             |             |
|--------------|---------------------|------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC107053617 | -----               | uncharacterized LOC107053617                               | -0.772830258 | -0.144515754 | 7.65837916  | 0.005650925 | 0.041604461 |
| TRMU         | ENSGALG00000031922  | tRNA 5-methylaminomethyl-2-thiouridylate methyltransferase | -0.770493894 | 4.861634015  | 79.30744896 | 5.32E-19    | 3.80E-16    |
| ARL2         | -----               | ADP-ribosylation factor-like 2                             | -0.770286904 | -0.145861784 | 11.03031412 | 0.00089634  | 0.011056423 |
| COL17A1      | ENSGALG00000029617  | collagen type XVII alpha 1 chain                           | -0.767022618 | 3.257025854  | 12.96370956 | 3.18E-04    | 5.14E-03    |
| PDGFD        | ENSGALG00000017179  | platelet derived growth factor D                           | -0.766162284 | 5.023337375  | 53.59118808 | 2.47E-13    | 7.81E-11    |
| C16orf96     | -----               | chromosome 16 open reading frame 96                        | -0.765418304 | 1.608249271  | 12.47142078 | 4.13E-04    | 6.27E-03    |
| LOC112532562 | -----               | translation initiation factor IF-2-like                    | -0.764595058 | 1.395818261  | 12.96617113 | 0.00031717  | 0.005141904 |
| MYLK2        | ENSGALG00000006273  | myosin light chain kinase 2                                | -0.763884557 | 0.038459222  | 11.56770124 | 0.000671073 | 0.009025635 |
| LOC107055181 | -----               | uncharacterized LOC107055181                               | -0.762916843 | -0.191802382 | 9.110729847 | 0.002541145 | 0.02354422  |
| FBP1         | ENSGALG00000012613  | fructose-bisphosphatase 1                                  | -0.762638099 | 1.763903933  | 15.01085402 | 0.000106895 | 0.002155577 |
| LOC112531456 | -----               | uncharacterized LOC112531456                               | -0.762409835 | 3.778828427  | 26.61672628 | 0.000000248 | 0.0000146   |
| BAMBI        | ENSGALG00000040993  | BMP and activin membrane bound inhibitor                   | -0.761367571 | 5.485288018  | 9.546389624 | 0.002003431 | 0.020186263 |
| LOC101747954 | -----               | uncharacterized LOC101747954                               | -0.75815626  | 1.360777515  | 10.25344275 | 0.001364298 | 0.015006361 |
| WDYHV1       | ENSGALG00000030059  | WDYHV motif containing 1                                   | -0.758020074 | 5.543903918  | 41.40299893 | 1.24E-10    | 1.84E-08    |
| LOC112530195 | -----               | uncharacterized LOC112530195                               | -0.757703053 | 0.462869617  | 9.094821002 | 0.002563343 | 0.023669926 |
| DSCAM        | ENSGALG00000016138  | DS cell adhesion molecule                                  | -0.753212404 | 1.511722328  | 8.465967746 | 0.003618527 | 0.030345014 |
| JAKMIP1      | ENSGALG00000015528  | janus kinase and microtubule interacting protein 1         | -0.750517193 | -0.098779432 | 7.238874819 | 0.007134167 | 0.048872908 |
| LOC112532500 | -----               | uncharacterized LOC112532500                               | -0.750121813 | 0.427053563  | 7.927661204 | 0.004868469 | 0.037540136 |
| LOC768418    | -----               | zinc finger FYVE domain-containing protein 16-like         | -0.749531181 | 1.417280646  | 10.17181619 | 1.43E-03    | 1.56E-02    |
| NPAS2        | ENSGALG00000016774  | neuronal PAS domain protein 2                              | -0.748466359 | 1.919598366  | 16.69526428 | 0.0000439   | 0.001073131 |
| ABI3         | ENSGALG00000044071  | ABI family member 3                                        | -0.748004347 | 1.985430629  | 21.45433366 | 0.00000362  | 0.000140133 |
| GALNTL6      | ENSGALG00000030588  | polypeptide N-acetylgalactosaminyltransferase-like 6       | -0.74580459  | 1.032479839  | 13.3254446  | 0.000261829 | 0.004463726 |
| STOX1        | -----               | storkhead box 1                                            | -0.745019188 | 4.496635307  | 23.7998279  | 0.00000107  | 0.0000501   |
| LOC112532293 | -----               | translation initiation factor IF-2-like                    | -0.744630522 | 1.427593078  | 15.89888427 | 0.0000668   | 0.001514451 |
| SEZ6         | ENSGALG00000026431  | seizure related 6 homolog                                  | -0.743187479 | 3.322053309  | 8.588284417 | 0.003383326 | 0.028801153 |
| MLPH         | ENSGALG00000003904  | melanophilin                                               | -0.742378101 | 0.978380605  | 14.63134922 | 0.000130722 | 0.002545595 |
| SLC22A7      | ENSGALG00000001661  | solute carrier family 22 member 7                          | -0.741840448 | 0.013782224  | 7.36133847  | 0.006664117 | 0.046730829 |
| HHLA2        | ENSGALG000000022871 | HERV-H LTR-associating 2                                   | -0.738950531 | 2.4883097    | 17.64651334 | 0.0000266   | 0.000715208 |
| LOC101750376 | -----               | kallikrein-15-like                                         | -0.737773575 | 1.031067611  | 14.94264841 | 0.000110829 | 0.002215908 |
| CSMD1        | ENSGALG00000035230  | CUB and Sushi multiple domains 1                           | -0.736753301 | 2.29119948   | 8.79697771  | 0.0030173   | 0.026536434 |
| DLGAP2       | ENSGALG00000032937  | DLG associated protein 2                                   | -0.735983048 | 1.408374188  | 12.57724065 | 0.000390473 | 0.006006004 |
| CALCR        | ENSGALG00000009509  | calcitonin receptor                                        | -0.734895997 | 1.33885923   | 14.53006323 | 0.000137941 | 0.002651651 |
| C5H11orf16   | -----               | ----                                                       | -0.734508681 | 0.895041031  | 8.598831788 | 0.003363787 | 0.028694202 |
| LOC107056111 | -----               | uncharacterized LOC107056111                               | -0.733076539 | 0.663540244  | 9.935011741 | 0.001621644 | 0.017149198 |
| LOC112530469 | -----               | cytochrome P450 2G1-like                                   | -0.732665388 | 2.58442836   | 8.900112451 | 0.002851531 | 0.025528804 |
| A2ML4        | ENSGALG00000000293  | alpha-2-macroglobulin-like 4                               | -0.73263929  | 4.358890758  | 13.69356845 | 0.00021519  | 0.003795235 |
| NLRC3        | ENSGALG00000033278  | NLR family CARD domain containing 3                        | -0.731921252 | 1.072540683  | 12.94468772 | 0.000320831 | 0.005185267 |
| ATP2C2       | -----               | ATPase secretory pathway Ca2+ transporting 2               | -0.73117966  | 2.703750806  | 11.8243369  | 0.000584615 | 0.008118013 |
| LOC112531849 | -----               | paired mesoderm homeobox protein 2A-like                   | -0.729820941 | 1.978925011  | 7.901099159 | 0.004940477 | 0.037954122 |
| LRRC34       | ENSGALG00000009402  | leucine rich repeat containing 34                          | -0.728656759 | 1.938295605  | 14.09281845 | 0.000174007 | 0.003206364 |
| RGS4         | ENSGALG00000002564  | regulator of G-protein signaling 4                         | -0.728234792 | 2.444329699  | 8.285834256 | 0.003995554 | 0.03241955  |
| SYT15        | ENSGALG00000002046  | synaptotagmin 15                                           | -0.727702195 | 1.885121442  | 11.91192349 | 0.000557758 | 0.007878029 |
| MSLN         | ENSGALG00000005349  | mesothelin                                                 | -0.727236583 | 1.804038421  | 11.71300122 | 0.000620649 | 0.008496494 |
| BTN3A3L1     | -----               | butyrophilin subfamily 3 member A3-like 1                  | -0.726434918 | 1.778050847  | 8.53281152  | 0.003488005 | 0.029433394 |

|              |                    |                                                             |              |             |             |             |             |
|--------------|--------------------|-------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| SNAP91       | ENSGALG00000015846 | synaptosome associated protein 91                           | -0.723150494 | 3.616290328 | 19.03412559 | 0.0000128   | 0.000394746 |
| DUSP18       | -----              | -----                                                       | -0.722633176 | 1.540976569 | 11.15328095 | 0.000838832 | 0.010580014 |
| STK32B       | ENSGALG00000029510 | serine/threonine kinase 32B                                 | -0.717498962 | 1.343709463 | 8.314602685 | 0.003932761 | 0.032115918 |
| KCNJ15       | ENSGALG00000016055 | potassium inwardly rectifying channel subfamily J member 15 | -0.715969488 | 1.662118234 | 18.65846399 | 0.0000156   | 0.000465399 |
| ALKBH8       | ENSGALG00000017170 | alkB homolog 8, tRNA methyltransferase                      | -0.71577306  | 4.20258938  | 19.90518672 | 0.00000814  | 0.000278978 |
| LOC107057099 | -----              | MHCY region zinc finger protein 2                           | -0.71561092  | 2.461290152 | 16.63854461 | 0.0000452   | 0.001104062 |
| STMN2        | ENSGALG00000039690 | stathmin 2                                                  | -0.715134309 | 5.112608589 | 9.545393407 | 0.002004519 | 0.020186263 |
| SNCA         | ENSGALG00000010379 | synuclein alpha                                             | -0.714992067 | 0.765266395 | 12.98285594 | 0.000314356 | 0.005111393 |
| LOC112532090 | -----              | uncharacterized LOC112532090                                | -0.71140357  | 0.708807672 | 8.003394047 | 0.004668975 | 0.036385377 |
| LOC112532494 | -----              | uncharacterized LOC112532494                                | -0.711338604 | 0.332139493 | 7.924279604 | 0.004877576 | 0.037575148 |
| ACACB        | -----              | acetyl-CoA carboxylase beta                                 | -0.708959785 | 1.066580864 | 9.478683593 | 0.002078731 | 0.020718058 |
| DGKK         | ENSGALG00000003841 | diacylglycerol kinase eta                                   | -0.705881757 | 1.624819221 | 15.90420961 | 0.0000666   | 0.001512279 |
| CAPG         | ENSGALG00000036175 | capping actin protein, gelsolin like                        | -0.704502808 | 2.924626894 | 11.64387419 | 6.44E-04    | 0.008738149 |
| C3H1orf95    | ENSGALG00000009219 | chromosome 3 C1orf95 homolog                                | -0.698414946 | 1.79664423  | 7.508827154 | 0.006139734 | 0.044214145 |
| LOC107051601 | -----              | uncharacterized LOC107051601                                | -0.697566778 | 0.302634841 | 8.969256862 | 0.002745602 | 0.024796317 |
| LOC101751026 | -----              | uncharacterized LOC101751026                                | -0.695047508 | 1.948005101 | 17.19008245 | 0.0000338   | 0.000862796 |
| CLRN1        | ENSGALG00000010384 | clarin 1                                                    | -0.691895145 | 0.158846871 | 7.691635353 | 0.005547734 | 0.040991449 |
| RAMP1        | ENSGALG00000003821 | receptor activity modifying protein 1                       | -0.691346031 | 2.487324305 | 13.36698042 | 0.000256093 | 0.004385032 |
| BATF         | ENSGALG00000010323 | basic leucine zipper ATF-like transcription factor          | -0.68664928  | 0.301514749 | 9.018751266 | 0.002672239 | 0.024320626 |
| RBFOX1       | ENSGALG00000034325 | RNA binding protein, fox-1 homolog 1                        | -0.686146307 | 4.665708121 | 30.78687279 | 2.88E-08    | 0.00000226  |
| LOC771422    | -----              | transmembrane protein 151B-like                             | -0.682932828 | 1.69085685  | 8.716336454 | 3.15E-03    | 2.74E-02    |
| KLF2         | ENSGALG00000003939 | Kruppel like factor 2                                       | -0.68198238  | 2.222025541 | 9.224682286 | 0.002387741 | 0.02260647  |
| ADRA1D       | ENSGALG00000038787 | adrenoceptor alpha 1D                                       | -0.680764494 | 0.288477928 | 7.709074353 | 0.005494392 | 0.040725323 |
| TUBA4A       | -----              | -----                                                       | -0.679240097 | 2.565245935 | 17.54443027 | 0.0000281   | 0.000740137 |
| GCNT4        | ENSGALG00000014944 | glucosaminyl (N-acetyl) transferase 4, core 2               | -0.678075454 | 0.983390561 | 7.380610343 | 0.006593079 | 0.046462149 |
| LOC101748220 | -----              | uncharacterized LOC101748220                                | -0.677784403 | 0.823255389 | 7.717215757 | 0.005469669 | 0.040578628 |
| LOC112531072 | -----              | zinc finger protein 135-like                                | -0.677111314 | 1.901945644 | 7.284908789 | 0.006953626 | 0.048015912 |
| LOC112532340 | -----              | uncharacterized LOC112532340                                | -0.67687475  | 0.788546027 | 9.408682287 | 0.002159604 | 0.021203031 |
| LOC112532555 | -----              | uncharacterized LOC112532555                                | -0.673792468 | 1.209393854 | 12.64974916 | 0.000375616 | 0.005836414 |
| MEI1         | -----              | meiotic double-stranded break formation protein 1           | -0.673094223 | 2.325561762 | 15.01109942 | 0.000106881 | 0.002155577 |
| LOC107053805 | -----              | uncharacterized LOC107053805                                | -0.670639599 | 2.866090635 | 23.98266173 | 0.000000972 | 0.0000472   |
| SFRP4        | ENSGALG00000031997 | secreted frizzled related protein 4                         | -0.670263526 | 0.931317117 | 9.174287553 | 0.002454389 | 0.022960188 |
| LOC101748673 | -----              | uncharacterized LOC101748673                                | -0.669634506 | 2.569208588 | 18.32573102 | 0.0000186   | 0.000531861 |
| LOC770617    | -----              | transmembrane protein 100-like                              | -0.668814522 | 4.694043787 | 40.50012363 | 1.97E-10    | 2.77E-08    |
| FBLN5        | ENSGALG00000010747 | fibulin 5                                                   | -0.667000069 | 2.61379334  | 13.24646129 | 0.000273095 | 0.004586857 |
| CA3A         | ENSGALG00000033700 | carbonic anhydrase 3A                                       | -0.66495828  | 1.240248386 | 9.849480001 | 0.001698798 | 0.017759667 |
| LOC107053811 | -----              | uncharacterized LOC107053811                                | -0.664512207 | 2.093155438 | 8.904972324 | 0.002843952 | 0.025488686 |
| LOC112530132 | -----              | uncharacterized LOC112530132                                | -0.664313546 | 0.476157826 | 9.143396588 | 0.002496173 | 0.023219064 |
| CD3E         | ENSGALG00000007416 | CD3e molecule                                               | -0.663148272 | 2.58887894  | 20.41301857 | 0.00000624  | 0.000222433 |
| MREG         | ENSGALG00000003758 | melanoregulin                                               | -0.663126871 | 2.198817551 | 11.62714196 | 0.000649963 | 0.008795353 |
| CYP26C1      | ENSGALG00000043213 | cytochrome P450 family 26 subfamily C member 1              | -0.662257071 | 2.536654573 | 11.37622498 | 0.000743901 | 0.0096766   |
| LOC100859492 | -----              | uncharacterized LOC100859492                                | -0.661945144 | 0.490056384 | 7.375141536 | 0.006613159 | 0.04653862  |
| MTFP1        | ENSGALG00000038952 | mitochondrial fission process 1                             | -0.65382276  | 3.848162265 | 26.58642405 | 0.000000252 | 0.0000148   |
| RXRA         | ENSGALG00000042055 | retinoid X receptor alpha                                   | -0.653331536 | 4.69465868  | 23.13040301 | 1.51E-06    | 6.73E-05    |

|              |                    |                                                        |              |              |             |             |             |
|--------------|--------------------|--------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC101747725 | -----              | uncharacterized LOC101747725                           | -0.652897044 | 0.816756733  | 12.12608464 | 0.000497214 | 0.007234003 |
| LOC107052937 | -----              | uncharacterized LOC107052937                           | -0.651860006 | -0.002488454 | 8.597281637 | 0.003366652 | 0.028703757 |
| LCP1         | ENSGALG00000016986 | lymphocyte cytosolic protein 1                         | -0.650394134 | 4.158913335  | 18.89884758 | 0.0000138   | 0.00041924  |
| CLCN4        | ENSGALG00000016607 | chloride voltage-gated channel 4                       | -0.649397587 | 4.26643612   | 21.78757501 | 0.00000305  | 0.000121054 |
| LOC107053523 | -----              | uncharacterized LOC107053523                           | -0.648177256 | 1.83250346   | 13.97314276 | 0.000185441 | 0.003360603 |
| SOUL         | ENSGALG00000012464 | SOUL protein                                           | -0.647655993 | 0.60918637   | 7.880960432 | 0.004995794 | 0.038252947 |
| FAM46C       | ENSGALG00000014453 | family with sequence similarity 46 member C            | -0.646557532 | 0.95833081   | 8.853307269 | 2.93E-03    | 0.025951735 |
| SAT1         | ENSGALG00000016348 | spermidine/spermine N1-acetyltransferase 1             | -0.642088967 | 5.761271971  | 76.73825751 | 1.95E-18    | 1.19E-15    |
| LOC101747455 | -----              | uncharacterized LOC101747455                           | -0.641242849 | 2.41629296   | 8.581908552 | 0.003395193 | 0.028839264 |
| TYW3         | ENSGALG00000032549 | tRNA-yW synthesizing protein 3 homolog                 | -0.640820321 | 4.153887078  | 23.68614674 | 0.00000113  | 0.0000527   |
| PPFIA2       | ENSGALG00000010958 | PTPRF interacting protein alpha 2                      | -0.636556749 | 2.927029538  | 12.95018373 | 0.00031989  | 0.005175803 |
| GJB5         | ENSGALG00000054289 | gap junction protein beta 5                            | -0.636347893 | 1.031053482  | 7.795806747 | 0.005236762 | 0.039472239 |
| LOC107054593 | -----              | uncharacterized LOC107054593                           | -0.634359641 | 1.24654208   | 14.52168564 | 0.000138555 | 0.00266036  |
| FAM43B       | ENSGALG00000026367 | family with sequence similarity 43 member B            | -0.63408401  | 2.30468725   | 11.79126623 | 0.000595092 | 0.008228778 |
| GHDC         | ENSGALG00000003333 | GH3 domain containing                                  | -0.63383811  | 3.549892959  | 19.0313352  | 0.0000129   | 0.000394746 |
| LOC107053391 | -----              | uncharacterized LOC107053391                           | -0.632606557 | 2.036567238  | 15.75357524 | 0.0000722   | 0.001615309 |
| LOC112533362 | -----              | uncharacterized LOC112533362                           | -0.631270338 | 1.504176805  | 8.828406333 | 0.002965773 | 0.026245656 |
| LOC112530592 | -----              | uncharacterized LOC112530592                           | -0.63101529  | 1.309280518  | 11.24445432 | 0.000798613 | 0.010171186 |
| ABCA12       | ENSGALG00000003553 | ATP binding cassette subfamily A member 12             | -0.630281232 | 2.321115532  | 11.49410771 | 0.000698172 | 0.00924249  |
| LOC107051864 | -----              | uncharacterized LOC107051864                           | -0.628196606 | 1.250305366  | 8.895331307 | 0.002859007 | 0.025581819 |
| LOC101749170 | -----              | uncharacterized LOC101749170                           | -0.627856712 | 2.592745846  | 9.549892123 | 0.001999612 | 0.020161526 |
| SCEL         | ENSGALG00000027514 | sciellin                                               | -0.627633758 | 2.143409705  | 14.03120792 | 0.000179802 | 0.003280084 |
| RANBP17      | -----              | RAN binding protein 17                                 | -0.627522213 | 4.073104083  | 10.03882393 | 0.00153275  | 0.016409503 |
| MIR1683      | ENSGALG00000025224 | microRNA 1683                                          | -0.627008644 | 1.048604571  | 9.920085157 | 0.001634848 | 0.017244504 |
| GABRA1       | ENSGALG00000001698 | gamma-aminobutyric acid type A receptor alpha1 subunit | -0.624896588 | 0.774939464  | 7.769207352 | 0.005314436 | 0.039858242 |
| APCDD1       | ENSGALG00000050840 | APC down-regulated 1                                   | -0.624693383 | 7.597365289  | 8.224024208 | 0.004133943 | 0.033263583 |
| LOC101749495 | -----              | uncharacterized LOC101749495                           | -0.624535988 | 3.834828241  | 26.94757518 | 0.000000209 | 0.0000127   |
| MYO3A        | ENSGALG00000007647 | myosin IIIA                                            | -0.623649656 | 2.366515336  | 11.55164975 | 0.000676892 | 0.009062858 |
| C1H11ORF87   | -----              | -----                                                  | -0.623584444 | 4.450091098  | 22.78926278 | 1.81E-06    | 0.0000775   |
| LOC107051956 | -----              | uncharacterized LOC107051956                           | -0.620661228 | 0.275581049  | 7.615336646 | 5.79E-03    | 4.23E-02    |
| C10orf10     | -----              | withdrawn                                              | -0.620350121 | 1.026323856  | 10.41824381 | 0.001247765 | 0.014034157 |
| LOC107052369 | -----              | uncharacterized LOC107052369                           | -0.61897716  | 2.883427177  | 13.99572232 | 0.000183227 | 0.003327815 |
| ANKRD34B     | ENSGALG00000044727 | ankyrin repeat domain 34B                              | -0.617872614 | 2.497358773  | 15.46096574 | 0.0000842   | 0.001814074 |
| AVD          | ENSGALG00000025945 | avidin                                                 | -0.61741051  | 0.893883653  | 7.344087542 | 0.006728367 | 0.04705282  |
| ZNF408       | -----              | -----                                                  | -0.617081827 | 3.846452372  | 34.54525819 | 4.16E-09    | 0.000000401 |
| SERPINB6L    | -----              | -----                                                  | -0.617067201 | 3.765518842  | 36.58617438 | 1.46E-09    | 0.000000159 |
| LOC101749148 | -----              | uncharacterized LOC101749148                           | -0.616725125 | 1.33839424   | 10.01858981 | 0.001549681 | 0.016569199 |
| KIAA1257     | ENSGALG00000044299 | KIAA1257                                               | -0.616497658 | 2.39587091   | 8.270591058 | 0.004029239 | 0.032644571 |
| TMEM240      | ENSGALG00000035387 | transmembrane protein 240                              | -0.614602002 | 2.868900931  | 15.30994664 | 0.0000912   | 0.001931576 |
| LOC107052653 | -----              | uncharacterized LOC107052653                           | -0.613769915 | 2.289893605  | 12.06889224 | 0.000512702 | 0.007388296 |
| LOC100858386 | ENSGALG00000050166 | uncharacterized LOC100858386                           | -0.612588261 | 4.671726874  | 52.1752576  | 5.08E-13    | 1.35E-10    |
| LOC101750048 | -----              | uncharacterized LOC101750048                           | -0.611875495 | 1.059527325  | 9.295123061 | 0.002297647 | 0.022071093 |
| IQUB         | ENSGALG00000008823 | IQ motif and ubiquitin domain containing               | -0.611285869 | 2.061361952  | 13.55772252 | 0.000231338 | 0.004023954 |
| LOC107055206 | -----              | uncharacterized LOC107055206                           | -0.610406792 | 2.301200928  | 13.03042668 | 0.000306471 | 0.005017886 |

|              |                     |                                                                  |              |             |             |             |             |
|--------------|---------------------|------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| CES1L1       | -----               | -----                                                            | -0.609763926 | 2.058519382 | 9.238355761 | 0.002369977 | 0.022537402 |
| RPE65        | ENSGALG00000011259  | RPE65, retinoid isomerohydrolase                                 | -0.609463587 | 1.970017035 | 7.961853455 | 0.004777347 | 0.037063292 |
| SLC9A5       | ENSGALG00000007867  | solute carrier family 9 member A5                                | -0.608940602 | 1.19524913  | 10.99818597 | 0.000912011 | 0.011241305 |
| PNOC         | ENSGALG00000016620  | prepronociceptin                                                 | -0.608557823 | 1.456721707 | 9.325528343 | 0.002259832 | 0.021835307 |
| LOC101751097 | -----               | uncharacterized LOC101751097                                     | -0.608316585 | 4.012733744 | 9.332218536 | 0.002251596 | 0.021781311 |
| NINJ2        | ENSGALG00000012989  | ninjurin 2                                                       | -0.608256734 | 3.442043672 | 16.78919882 | 0.0000418   | 0.001034611 |
| LOC101748935 | -----               | uncharacterized LOC101748935                                     | -0.608179686 | 1.233458122 | 9.542530832 | 0.002007647 | 0.020193053 |
| EVA1B        | ENSGALG00000022440  | eva-1 homolog B                                                  | -0.606554845 | 4.540897731 | 19.5898107  | 0.0000096   | 0.000313985 |
| CFAP57       | ENSGALG00000009902  | cilia and flagella associated protein 57                         | -0.605926835 | 0.849771699 | 10.45058662 | 0.001226105 | 0.01388545  |
| PDK4         | ENSGALG00000009700  | pyruvate dehydrogenase kinase 4                                  | -0.605314546 | 1.585096898 | 10.24136627 | 0.001373258 | 0.015094834 |
| RGS9         | ENSGALG00000029610  | regulator of G-protein signaling 9                               | -0.60448673  | 4.499085952 | 13.77737753 | 0.0002058   | 0.003653108 |
| PLEKHD1      | ENSGALG00000009431  | pleckstrin homology and coiled-coil domain containing D1         | -0.602126592 | 3.227166846 | 20.85646433 | 0.00000495  | 0.000183458 |
| GRID1        | ENSGALG00000037366  | glutamate ionotropic receptor delta type subunit 1               | -0.599201011 | 1.8335421   | 10.86579441 | 0.000979567 | 0.011860764 |
| LOC112531640 | -----               | small nucleolar RNA SNORD89                                      | -0.598272027 | 0.828419541 | 8.516035015 | 0.003520306 | 0.02966003  |
| LXN          | ENSGALG00000009651  | latexin                                                          | -0.596782229 | 0.81338631  | 9.527085557 | 0.002024614 | 0.020320301 |
| ENTPD8L      | -----               | -----                                                            | -0.594840302 | 2.603817115 | 14.24523638 | 0.000160466 | 0.002986963 |
| TTC9         | ENSGALG00000017652  | tetratricopeptide repeat domain 9                                | -0.59439802  | 2.574652953 | 13.91380016 | 0.000191388 | 0.003449388 |
| FCN2         | ENSGALG00000040771  | ficolin 2                                                        | -0.59279804  | 2.129387748 | 14.91039254 | 1.13E-04    | 2.25E-03    |
| LOC107054619 | -----               | uncharacterized LOC107054619                                     | -0.592642047 | 0.609300654 | 9.667473031 | 0.001875591 | 0.019199521 |
| FAM129A      | ENSGALG00000004812  | family with sequence similarity 129 member A                     | -0.592492952 | 4.073340473 | 25.7121779  | 0.000000396 | 0.0000221   |
| RAB39A       | ENSGALG00000017166  | RAB39A, member RAS oncogene family                               | -0.591239385 | 2.070683022 | 16.4636624  | 4.96E-05    | 1.19E-03    |
| NOX3         | ENSGALG00000013659  | NADPH oxidase 3                                                  | -0.591136666 | 1.867889377 | 7.944117215 | 0.004824395 | 0.037368349 |
| LOC107051605 | -----               | uncharacterized LOC107051605                                     | -0.590535629 | 0.440066385 | 8.581342892 | 0.003396248 | 0.028839264 |
| ALKBH1       | ENSGALG00000010485  | alkB homolog 1, histone H2A dioxygenase                          | -0.590295558 | 4.854734364 | 73.74060562 | 8.91E-18    | 5.05E-15    |
| IGFN1        | ENSGALG00000000295  | immunoglobulin-like and fibronectin type III domain containing 1 | -0.589794422 | 2.43793909  | 10.45905682 | 0.001220496 | 0.013840977 |
| LOC107054771 | -----               | N-alpha-acetyltransferase 38, NatC auxiliary subunit-like        | -0.588753373 | 2.540881562 | 13.35281359 | 0.000258035 | 0.004413689 |
| CDH23        | ENSGALG00000036824  | cadherin related 23                                              | -0.58830285  | 3.183451715 | 11.42164046 | 0.000725936 | 0.009518145 |
| ZNF764L      | -----               | -----                                                            | -0.587310732 | 3.730403006 | 12.49487892 | 0.000408069 | 0.006217386 |
| LOC101748755 | -----               | copine-5-like                                                    | -0.583588697 | 0.929784215 | 8.40618088  | 0.003739474 | 0.031033114 |
| PTPRO        | ENSGALG00000013085  | protein tyrosine phosphatase, receptor type O                    | -0.581963768 | 5.193038252 | 16.70447811 | 0.0000437   | 0.001069521 |
| DTX3L        | ENSGALG00000012075  | deltex E3 ubiquitin ligase 3L                                    | -0.581797093 | 2.856643949 | 16.76821476 | 0.0000422   | 0.001043506 |
| LOC107049475 | -----               | uncharacterized LOC107049475                                     | -0.581758271 | 4.942964967 | 11.06776766 | 0.000878414 | 0.010906527 |
| CLMN         | ENSGALG000000030719 | calmin                                                           | -0.581682042 | 5.718834446 | 12.52376982 | 0.000401807 | 0.006156183 |
| TUBAL3       | ENSGALG00000008444  | tubulin alpha like 3                                             | -0.581624298 | 4.912390327 | 20.31892683 | 0.00000655  | 0.000231332 |
| SULT1B1      | ENSGALG00000023120  | sulfotransferase family cytosolic 1B member 1                    | -0.58050612  | 3.144781356 | 16.02767143 | 0.0000624   | 0.001436612 |
| XKR8         | ENSGALG00000030305  | XK related 8                                                     | -0.577780231 | 3.143650034 | 17.61197591 | 0.0000271   | 0.000724426 |
| LOC414835    | -----               | cHz-cadherin                                                     | -0.576095443 | 1.972869969 | 8.773086995 | 0.003057076 | 0.026758985 |
| OCA2         | ENSGALG00000016740  | OCA2 melanosomal transmembrane protein                           | -0.573968395 | 2.308275724 | 9.324013425 | 2.26E-03    | 2.18E-02    |
| TESC         | ENSGALG00000008206  | tescalcin                                                        | -0.573616924 | 3.733676025 | 17.51152772 | 0.0000286   | 0.00075065  |
| LOC112531294 | -----               | withdrawn                                                        | -0.573541106 | 5.401594079 | 13.29724132 | 0.000265797 | 0.00451361  |
| GLRB         | ENSGALG00000009395  | glycine receptor beta                                            | -0.573214683 | 2.444144384 | 7.851634366 | 5.08E-03    | 3.86E-02    |
| TMCC3        | ENSGALG00000011320  | transmembrane and coiled-coil domain family 3                    | -0.5729576   | 3.234832896 | 7.796712666 | 5.23E-03    | 3.95E-02    |
| LOC107054482 | -----               | protocadherin gamma-B1 pseudogene                                | -0.572799337 | 0.697956336 | 7.932234906 | 0.004856178 | 0.037480491 |
| SCIN         | ENSGALG00000010770  | scinderin                                                        | -0.572460185 | 3.176366937 | 11.41995928 | 0.000726593 | 0.009519177 |

|              |                    |                                                                  |              |             |             |             |             |
|--------------|--------------------|------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| LOC107055055 | -----              | uncharacterized LOC107055055                                     | -0.572025822 | 2.644747105 | 7.858741584 | 0.005057558 | 0.038475321 |
| MKRN3        | -----              | makorin ring finger protein 3                                    | -0.571977491 | 1.85227486  | 8.73337954  | 0.003124369 | 0.027173089 |
| PROKR2       | -----              | -----                                                            | -0.571960646 | 1.799352185 | 7.601212081 | 0.005832908 | 0.042525108 |
| TPD52L1      | ENSGALG00000014843 | tumor protein D52-like 1                                         | -0.569968785 | 2.236175492 | 11.57604591 | 0.000668068 | 0.008995963 |
| LOC107052050 | -----              | uncharacterized LOC107052050                                     | -0.569304201 | 1.760225436 | 9.506966416 | 2.05E-03    | 2.05E-02    |
| LOC112531576 | -----              | translation initiation factor IF-2-like                          | -0.567302061 | 1.891257425 | 10.36489179 | 0.001284344 | 0.014367019 |
| ACTN2        | ENSGALG00000014463 | actinin alpha 2                                                  | -0.5663484   | 4.191564914 | 8.027681723 | 0.004606777 | 0.036028759 |
| BAALC        | ENSGALG00000051919 | brain and acute leukemia, cytoplasmic                            | -0.566164323 | 2.248126654 | 8.082569088 | 0.004469304 | 0.035221456 |
| FAM184B      | ENSGALG00000041854 | family with sequence similarity 184 member B                     | -0.563846384 | 2.343471757 | 10.14341497 | 0.001448176 | 0.015749994 |
| MCF2         | ENSGALG00000006562 | MCF.2 cell line derived transforming sequence                    | -0.561613443 | 5.118486957 | 31.25989424 | 2.26E-08    | 0.00000183  |
| LOC107050638 | -----              | vinexin-like                                                     | -0.560770343 | 1.571177606 | 7.882714561 | 0.004990951 | 0.038241869 |
| GPR17        | -----              | G protein-coupled receptor 17                                    | -0.560731912 | 3.399137071 | 9.698678139 | 0.001844006 | 0.018952605 |
| KCNQ5        | ENSGALG00000037249 | potassium voltage-gated channel subfamily Q member 5             | -0.558289083 | 3.077828253 | 13.66037304 | 0.000219028 | 0.003849022 |
| TEX14        | -----              | testis expressed 14, intercellular bridge forming factor         | -0.557245067 | 3.185119772 | 13.24638051 | 0.000273107 | 0.004586857 |
| ACBD7        | ENSGALG00000019663 | acyl-CoA binding domain containing 7                             | -0.555172128 | 3.163285065 | 19.03195911 | 0.0000129   | 0.000394746 |
| PIGP         | -----              | phosphatidylinositol glycan anchor biosynthesis class P          | -0.554078343 | 4.044042027 | 14.98076838 | 0.000108612 | 0.002179534 |
| SELENOM      | ENSGALG00000047792 | selenoprotein M                                                  | -0.554004238 | 6.07080025  | 46.87193846 | 7.58E-12    | 1.50E-09    |
| TAPBP        | ENSGALG00000008022 | TAP binding protein                                              | -0.553796612 | 3.12305532  | 9.837781897 | 0.001709635 | 0.017827661 |
| SUSD5        | ENSGALG00000042289 | sushi domain containing 5                                        | -0.553096346 | 4.685646877 | 15.85027076 | 0.0000686   | 0.001547464 |
| VEGFD        | ENSGALG00000016558 | vascular endothelial growth factor D                             | -0.552562328 | 6.870901568 | 12.24251503 | 0.000467128 | 0.006881464 |
| EFHC1        | ENSGALG00000016674 | EF-hand domain containing 1                                      | -0.551728572 | 1.969282965 | 8.221522549 | 0.004139645 | 0.033293189 |
| PHACTR1      | ENSGALG00000012732 | phosphatase and actin regulator 1                                | -0.550045704 | 2.384009958 | 9.03083422  | 0.002654633 | 0.024187147 |
| CYP26A1      | ENSGALG00000033695 | cytochrome P450 family 26 subfamily A member 1                   | -0.548256862 | 4.893461007 | 9.308491639 | 0.002280942 | 0.021936235 |
| EML5         | ENSGALG00000010639 | echinoderm microtubule associated protein like 5                 | -0.547401595 | 2.425887481 | 8.202476012 | 0.004183326 | 0.033546117 |
| CNNM1        | ENSGALG00000007489 | cyclin and CBS domain divalent metal cation transport mediator 1 | -0.545905022 | 3.157809785 | 9.092949171 | 0.002565968 | 0.023680874 |
| EHHADH       | ENSGALG00000053254 | enoyl-CoA hydratase and 3-hydroxyacyl CoA dehydrogenase          | -0.54563633  | 3.962085429 | 20.7642681  | 0.00000519  | 0.000191213 |
| LOC107054545 | -----              | uncharacterized LOC107054545                                     | -0.5445523   | 1.663055575 | 8.300647976 | 3.96E-03    | 3.22E-02    |
| LOC101749129 | -----              | uncharacterized LOC101749129                                     | -0.544141592 | 2.739256623 | 15.52265327 | 8.15E-05    | 0.001779113 |
| LOC112530163 | -----              | SH2B adapter protein 1-like                                      | -0.544085234 | 5.422641437 | 21.62894927 | 0.00000331  | 0.00012992  |
| LOC107050463 | -----              | serine-aspartate repeat-containing protein F-like                | -0.542876058 | 6.754134433 | 27.84732651 | 0.000000131 | 0.00000864  |
| ABCG1        | ENSGALG00000016164 | ATP binding cassette subfamily G member 1                        | -0.540502201 | 3.199095274 | 12.77385725 | 0.000351497 | 0.005534821 |
| PLEKHS1      | ENSGALG00000020679 | pleckstrin homology domain containing S1                         | -0.537136399 | 1.666522394 | 9.68102478  | 0.001861808 | 0.019087878 |
| ENPP3        | ENSGALG00000037587 | ectonucleotide pyrophosphatase/phosphodiesterase 3               | -0.537072674 | 2.62750907  | 10.7028647  | 0.001069698 | 0.012608794 |
| TMF1         | ENSGALG00000013408 | TATA element modulatory factor 1                                 | -0.53681473  | 6.189734937 | 82.09656124 | 1.30E-19    | 9.69E-17    |
| PIK3IP1      | ENSGALG00000006942 | phosphoinositide-3-kinase interacting protein 1                  | -0.534953263 | 6.964039554 | 50.44032341 | 1.23E-12    | 3.02E-10    |
| FRRS1L       | ENSGALG00000025792 | ferric chelate reductase 1 like                                  | -0.534601604 | 5.776169578 | 39.36388566 | 3.52E-10    | 4.45E-08    |
| XKR6         | -----              | XK related 6                                                     | -0.534570076 | 5.745560823 | 14.66839102 | 0.000128178 | 0.002510913 |
| SLCO4A1      | ENSGALG00000005460 | solute carrier organic anion transporter family member 4A1       | -0.532334707 | 3.322855289 | 9.159801534 | 0.002473894 | 0.023077055 |
| LOC769704    | -----              | fatty acyl-CoA hydrolase precursor, medium chain-like            | -0.531327325 | 2.042353702 | 10.45544942 | 1.22E-03    | 1.39E-02    |
| CLIC6        | ENSGALG00000016020 | chloride intracellular channel 6                                 | -0.529430201 | 2.533537836 | 11.5601095  | 0.000673819 | 0.009047748 |
| KIAA1024     | ENSGALG00000006519 | KIAA1024                                                         | -0.528332002 | 3.525870011 | 10.0063562  | 0.001560009 | 0.016647174 |
| ZNF226L      | ENSGALG00000032405 | zinc finger protein 226-like                                     | -0.527893444 | 3.594875413 | 16.20469929 | 0.0000569   | 0.001330746 |
| CAPNS2       | -----              | calpain small subunit 2                                          | -0.527861045 | 1.92145218  | 10.88374533 | 0.000970119 | 0.011781036 |
| LOC101748706 | -----              | ATP-dependent DNA helicase Q4-like                               | -0.526754214 | 6.323436279 | 26.55235694 | 0.000000256 | 0.0000149   |

|              |                    |                                                                 |              |             |             |             |             |
|--------------|--------------------|-----------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| TMEM79       | ENSGALG00000039643 | transmembrane protein 79-like                                   | -0.52663186  | 1.867476175 | 9.337860446 | 0.002244674 | 0.021735939 |
| MANBA        | ENSGALG00000012308 | mannosidase beta                                                | -0.525547592 | 4.139418429 | 19.83602147 | 0.00000844  | 0.000285686 |
| HIST1H110    | ENSGALG00000031159 | histone cluster 1, H1.10                                        | -0.524614109 | 1.629351893 | 7.755102404 | 0.0053561   | 0.040042995 |
| LOC107051764 | -----              | uncharacterized LOC107051764                                    | -0.524092918 | 3.569338934 | 25.03065916 | 0.000000564 | 0.0000298   |
| C1HXORF59    | ENSGALG00000016268 | chromosome 1 open reading frame, human CXORF59                  | -0.524012063 | 3.085754549 | 7.828745103 | 0.005142179 | 0.038921137 |
| LOC112532476 | -----              | uncharacterized LOC112532476                                    | -0.523792827 | 1.419141912 | 9.490995476 | 0.002064828 | 0.020642004 |
| SLC9B2       | ENSGALG00000012319 | solute carrier family 9 member B2                               | -0.523005867 | 3.847694333 | 20.82570366 | 0.00000503  | 0.000186009 |
| MCF2L2       | ENSGALG00000008744 | MCF.2 cell line derived transforming sequence-like 2            | -0.522902886 | 3.526568195 | 10.71667562 | 0.001061743 | 0.012550988 |
| GABRG2       | ENSGALG00000038042 | gamma-aminobutyric acid type A receptor gamma2 subunit          | -0.520579047 | 2.355994042 | 8.689463387 | 0.003200548 | 0.027631177 |
| RPS6KA2      | ENSGALG00000011473 | ribosomal protein S6 kinase A2                                  | -0.520309226 | 2.430405471 | 10.87926621 | 9.72E-04    | 0.011800852 |
| EPHA10       | ENSGALG00000001912 | EPH receptor A10                                                | -0.519189983 | 2.589724675 | 9.209849196 | 2.41E-03    | 0.022701934 |
| SMAD6        | ENSGALG00000025898 | SMAD family member 6                                            | -0.517653245 | 4.560652824 | 8.690356372 | 0.003198981 | 0.027631177 |
| GPC5         | ENSGALG00000016902 | glypican 5                                                      | -0.516956318 | 3.880451476 | 9.959372191 | 0.001600326 | 0.017011219 |
| LOC101749699 | -----              | uncharacterized LOC101749699                                    | -0.516249373 | 2.207654036 | 7.347110776 | 0.006717062 | 0.047000783 |
| LOC112530196 | -----              | transmembrane protein 79-like                                   | -0.516102802 | 2.678923137 | 9.372495954 | 0.002202654 | 0.021535752 |
| HIST2H3D     | ENSGALG00000035244 | histone cluster 2 H3 family member d                            | -0.515101029 | 2.635645527 | 8.525632311 | 0.003501791 | 0.02953458  |
| JADE2        | ENSGALG00000006424 | jade family PHD finger 2                                        | -0.512416178 | 2.853360221 | 12.47437778 | 0.000412572 | 0.006262798 |
| CCNG1        | ENSGALG00000001718 | cyclin G1                                                       | -0.511800376 | 6.839602104 | 13.79742209 | 0.000203615 | 0.003626073 |
| GAS6         | ENSGALG00000016820 | growth arrest specific 6                                        | -0.511218916 | 3.436081365 | 10.9214929  | 0.00095055  | 0.011576627 |
| USH2A        | ENSGALG00000009652 | usherin                                                         | -0.510911936 | 1.106618368 | 8.237616394 | 0.004103098 | 0.033080098 |
| ARAP2        | ENSGALG00000041373 | ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 2       | -0.510606349 | 2.891442027 | 13.65910847 | 0.000219176 | 0.003849022 |
| FBLN1        | ENSGALG00000014233 | fibulin 1                                                       | -0.509793844 | 6.828447686 | 29.34483454 | 6.06E-08    | 0.00000437  |
| DGKG         | ENSGALG00000005721 | diacylglycerol kinase gamma                                     | -0.509523618 | 1.758108404 | 7.787595571 | 0.005260616 | 0.039617133 |
| PPP1R9A      | ENSGALG00000009686 | protein phosphatase 1 regulatory subunit 9A                     | -0.505632885 | 3.512918437 | 12.46791967 | 0.000414001 | 0.006272914 |
| ADAMTS8      | ENSGALG00000001370 | ADAM metallopeptidase with thrombospondin type 1 motif, 8       | -0.505430712 | 4.31061096  | 11.94745372 | 5.47E-04    | 0.007773013 |
| MAP10        | ENSGALG00000049034 | microtubule associated protein 10                               | -0.502252974 | 3.192661556 | 15.91419094 | 0.0000663   | 0.001506403 |
| OGFOD3       | ENSGALG00000001618 | 2-oxoglutarate and iron dependent oxygenase domain containing 3 | -0.501311442 | 5.200323099 | 29.49267696 | 5.61E-08    | 0.00000412  |
| RERGL        | ENSGALG00000013112 | RERG like                                                       | -0.499061149 | 4.761705468 | 12.81076616 | 0.00034463  | 0.00545803  |
| JARID2       | ENSGALG00000012702 | jumonji and AT-rich interaction domain containing 2             | -0.49876713  | 7.010350488 | 13.3238934  | 0.000262046 | 0.004463726 |
| APLN         | ENSGALG00000054286 | apelin                                                          | -0.497691897 | 2.032768853 | 7.707479524 | 0.005499248 | 0.040742967 |
| LOC107052651 | -----              | uncharacterized LOC107052651                                    | -0.497112787 | 3.527225489 | 11.32681926 | 0.000763956 | 0.009851805 |
| MNR2         | ENSGALG00000011349 | homeodomain protein                                             | -0.496139084 | 5.676774738 | 7.452533998 | 0.006334721 | 0.045281419 |
| LOC112530211 | -----              | uncharacterized LOC112530211                                    | -0.495528475 | 1.719399607 | 8.305380437 | 0.00395278  | 0.032205321 |
| TEC          | ENSGALG00000014124 | tec protein tyrosine kinase                                     | -0.495216669 | 1.893283889 | 9.110928416 | 0.002540869 | 0.02354422  |
| NT5C1A       | ENSGALG00000003816 | 5'-nucleotidase, cytosolic 1A                                   | -0.492636052 | 2.441007288 | 11.68177048 | 0.000631154 | 0.008583179 |
| AIFM2        | ENSGALG00000004777 | apoptosis inducing factor, mitochondria associated 2            | -0.492049006 | 2.914522932 | 8.328396263 | 0.00390301  | 0.031936364 |
| LOC112532097 | -----              | uncharacterized LOC112532097                                    | -0.491676336 | 2.687311391 | 10.99202351 | 0.000915049 | 0.011270302 |
| SLC36A4      | ENSGALG00000017227 | solute carrier family 36 member 4                               | -0.491073491 | 3.169935661 | 17.2797404  | 0.0000323   | 0.000827303 |
| STK11IP      | ENSGALG00000033515 | serine/threonine kinase 11 interacting protein                  | -0.487581067 | 4.21296882  | 22.79017374 | 0.00000181  | 0.0000775   |
| TRIM7.2      | ENSGALG00000038278 | Gallus gallus tripartite motif containing 7.2 (TRIM7.2), mRNA.  | -0.485386609 | 5.52965783  | 25.13900975 | 0.000000533 | 0.0000284   |
| NOL7         | ENSGALG00000012695 | nucleolar protein 7                                             | -0.484307172 | 6.017912664 | 45.52311728 | 1.51E-11    | 2.82E-09    |
| NACAD        | ENSGALG00000050931 | NAC alpha domain containing                                     | -0.482813943 | 4.79645624  | 12.82646386 | 0.000341751 | 0.005438601 |
| COLGALT2     | ENSGALG00000038320 | collagen beta(1-O)galactosyltransferase 1                       | -0.482080392 | 4.414037135 | 10.50992711 | 0.001187349 | 0.01356794  |
| UNC80        | ENSGALG00000041563 | unc-80 homolog, NALCN activator                                 | -0.480209008 | 3.664288043 | 9.024429738 | 0.00266395  | 0.024258606 |

|              |                    |                                                                      |              |             |             |             |             |
|--------------|--------------------|----------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| LOC101751423 | -----              | uncharacterized LOC101751423                                         | -0.479566814 | 6.761894128 | 23.95385014 | 0.000000987 | 0.0000476   |
| LPIN1        | ENSGALG00000016456 | lipin 1                                                              | -0.479312519 | 4.615524106 | 17.60765321 | 0.0000271   | 0.000724426 |
| FAM20C       | ENSGALG00000038768 | FAM20C, golgi associated secretory pathway kinase                    | -0.478154122 | 4.143334465 | 8.291402932 | 0.00398332  | 0.032368166 |
| TFCP2L1      | ENSGALG00000011635 | transcription factor CP2 like 1                                      | -0.476829425 | 4.417593347 | 9.717736515 | 0.001824981 | 0.018804051 |
| SORBS2       | ENSGALG00000013427 | sorbin and SH3 domain containing 2                                   | -0.475215769 | 4.84851823  | 18.52476562 | 0.0000168   | 0.000489296 |
| LOC107054413 | -----              | uncharacterized LOC107054413                                         | -0.474442164 | 3.749555727 | 12.06331192 | 0.000514239 | 0.007403145 |
| LOC107051951 | -----              | uncharacterized LOC107051951                                         | -0.472805017 | 2.373187113 | 7.767518045 | 0.005319409 | 0.039858242 |
| DGKI         | ENSGALG00000012890 | diacylglycerol kinase iota                                           | -0.472767051 | 2.017086861 | 7.43397585  | 0.006400378 | 0.045612047 |
| PCDH15       | ENSGALG00000002744 | protocadherin related 15                                             | -0.472254333 | 4.307992113 | 8.288847901 | 3.99E-03    | 3.24E-02    |
| GDAP1L1      | ENSGALG00000004309 | ganglioside induced differentiation associated protein 1 like 1      | -0.472093005 | 4.8988927   | 33.58340845 | 6.83E-09    | 0.000000621 |
| LOC422757    | -----              | uncharacterized LOC422757                                            | -0.471891803 | 4.805389419 | 14.38267352 | 0.000149169 | 0.002821343 |
| SULT6B1      | ENSGALG00000046375 | sulfotransferase family, cytosolic, 6B, member 1                     | -0.471195349 | 2.607140897 | 10.6230475  | 0.001116868 | 0.013006418 |
| LOC107049262 | -----              | uncharacterized LOC107049262                                         | -0.471183895 | 3.085190703 | 10.70015137 | 0.001071268 | 0.01261826  |
| TRHDE        | ENSGALG00000010200 | thyrotropin releasing hormone degrading enzyme                       | -0.470184741 | 2.929933471 | 11.63134681 | 0.000648496 | 0.008782715 |
| IFNGR1       | ENSGALG00000013865 | interferon gamma receptor 1                                          | -0.468566874 | 5.181548032 | 21.79612009 | 0.00000303  | 0.000120808 |
| COBL         | ENSGALG00000013102 | cordon-bleu WH2 repeat protein                                       | -0.468539025 | 3.263818899 | 7.374020616 | 6.62E-03    | 4.65E-02    |
| ITM2C        | ENSGALG00000036111 | integral membrane protein 2C                                         | -0.468390199 | 3.469947034 | 18.68497935 | 1.54E-05    | 4.61E-04    |
| NAV3         | ENSGALG00000010311 | neuron navigator 3                                                   | -0.467139798 | 3.527458685 | 13.1816739  | 0.0002827   | 0.004717881 |
| MFSD9        | -----              | major facilitator superfamily domain containing 9                    | -0.463895712 | 4.564675457 | 33.74245226 | 6.29E-09    | 0.000000578 |
| GABRD        | ENSGALG00000001282 | gamma-aminobutyric acid type A receptor delta subunit                | -0.463697244 | 1.853506777 | 7.193377723 | 0.007317311 | 0.049816449 |
| TCTN1        | ENSGALG00000041861 | tectonic family member 1                                             | -0.463598345 | 2.16076467  | 11.61502683 | 6.54E-04    | 8.83E-03    |
| TAL2         | ENSGALG00000054131 | T-cell acute lymphocytic leukemia 2                                  | -0.462565549 | 3.232428413 | 7.572919279 | 0.005925174 | 0.042984717 |
| ARSI         | ENSGALG00000005616 | arylsulfatase family member I                                        | -0.461395733 | 6.211454266 | 13.17598804 | 0.000283559 | 0.00472413  |
| GPR1         | ENSGALG00000008589 | G protein-coupled receptor 1                                         | -0.459848663 | 5.244045431 | 39.83930977 | 2.76E-10    | 3.63E-08    |
| MSH4         | ENSGALG00000011392 | mutS homolog 4                                                       | -0.459827288 | 5.588101383 | 21.49232878 | 0.00000355  | 0.000138194 |
| ARRDC1       | ENSGALG00000008475 | arrestin domain containing 1                                         | -0.459202634 | 3.923022348 | 15.70213884 | 0.0000741   | 0.001646395 |
| C1QTNF5      | ENSGALG00000006758 | C1q and tumor necrosis factor related protein 5                      | -0.458494392 | 2.396326631 | 7.22641407  | 0.007183856 | 0.049131485 |
| TMEM173      | ENSGALG00000041129 | transmembrane protein 173                                            | -0.458162667 | 2.591062148 | 8.986035522 | 0.002720506 | 0.024611462 |
| SCG5         | ENSGALG00000009725 | secretogranin V                                                      | -0.457440317 | 2.649831443 | 9.377135069 | 0.002197087 | 0.021506877 |
| DUSP27       | ENSGALG00000015453 | dual specificity phosphatase 27 (putative)                           | -0.455772517 | 3.091691709 | 7.320686712 | 0.006816536 | 0.047407482 |
| RWDD2A       | ENSGALG00000015851 | RWD domain containing 2A                                             | -0.455677324 | 3.243304617 | 10.92027293 | 0.000951176 | 0.011576627 |
| ASCC2        | ENSGALG00000008059 | activating signal cointegrator 1 complex subunit 2                   | -0.455002938 | 5.847184047 | 53.11901925 | 3.14E-13    | 9.39E-11    |
| RFT1         | ENSGALG00000001945 | RFT1 homolog                                                         | -0.450285447 | 5.504537938 | 23.83567078 | 0.00000105  | 0.0000496   |
| ACAD6L       | ENSGALG00000035994 | probable acyl coa dehydrogenase 6-like                               | -0.447689073 | 4.180590369 | 23.93107521 | 0.000000998 | 0.0000479   |
| LIMCH1       | -----              | LIM and calponin homology domains 1                                  | -0.447034884 | 5.364195595 | 18.79059828 | 1.46E-05    | 0.000439657 |
| COL9A1       | ENSGALG00000015970 | collagen type IX alpha 1 chain                                       | -0.44638718  | 4.714920606 | 11.82940731 | 0.000583025 | 0.008108258 |
| OCLN         | ENSGALG00000037316 | occludin                                                             | -0.445583623 | 4.108319839 | 23.77229716 | 0.00000108  | 0.0000507   |
| ADGRB2       | ENSGALG00000043209 | adhesion G protein-coupled receptor B2                               | -0.445026358 | 3.176231351 | 7.712920673 | 0.005482697 | 0.040656956 |
| MAGI2        | ENSGALG00000038834 | membrane associated guanylate kinase, WW and PDZ domain containing 2 | -0.444855861 | 4.165273369 | 12.26223671 | 0.000462217 | 0.006827454 |
| MOB3C        | ENSGALG00000025946 | MOB kinase activator 3C                                              | -0.44292495  | 2.443018982 | 7.718060206 | 0.005467111 | 0.040577946 |
| STAMBPL1     | ENSGALG00000006331 | STAM binding protein like 1                                          | -0.442910432 | 2.803522019 | 10.63925241 | 1.11E-03    | 0.012919401 |
| LOC112533257 | -----              | uncharacterized LOC112533257                                         | -0.442755044 | 2.961147471 | 8.635909732 | 0.003296006 | 0.028292008 |
| PSEN1        | ENSGALG00000009320 | presenilin 1                                                         | -0.442703514 | 5.981549327 | 41.92519909 | 9.48E-11    | 1.44E-08    |
| AR           | ENSGALG00000030879 | androgen receptor                                                    | -0.441980308 | 4.689238353 | 8.581766316 | 0.003395458 | 0.028839264 |

|              |                     |                                                             |              |             |             |             |             |
|--------------|---------------------|-------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| CA10         | ENSGALG00000002993  | carbonic anhydrase 10                                       | -0.441880501 | 3.62820558  | 7.817954512 | 5.17E-03    | 0.039082295 |
| SELENBP1     | ENSGALG00000000866  | selenium binding protein 1                                  | -0.441428142 | 3.904360163 | 11.82814758 | 0.00058342  | 0.008108258 |
| PQLC3        | -----               | PQ loop repeat containing 3                                 | -0.439753685 | 4.451670212 | 19.17559172 | 0.0000119   | 0.000373695 |
| GUCY1B4      | ENSGALG00000005076  | guanylate cyclase 1, soluble, beta 4                        | -0.439175855 | 3.020571302 | 11.3607583  | 0.000750122 | 0.009742112 |
| ADRA2B       | ENSGALG000000052016 | adrenoceptor alpha 2B                                       | -0.43739447  | 2.664772351 | 7.304393625 | 0.006878621 | 0.047738381 |
| PASD1        | ENSGALG000000009063 | PAS domain containing 1                                     | -0.437297793 | 3.335018899 | 10.09009725 | 0.001490682 | 0.016116412 |
| POSTN        | ENSGALG000000017046 | periostin                                                   | -0.437231883 | 7.826274199 | 21.72682147 | 0.00000314  | 0.000124348 |
| NQO2         | ENSGALG000000025747 | NAD(P)H quinone dehydrogenase 2                             | -0.436790293 | 4.103762517 | 20.31347833 | 0.00000657  | 0.000231332 |
| LOC396224    | -----               | lamin A/C                                                   | -0.434771986 | 4.634431661 | 19.39343583 | 0.0000106   | 0.000341866 |
| LOC107052740 | -----               | uncharacterized LOC107052740                                | -0.43377362  | 4.048090038 | 25.33198488 | 0.000000483 | 0.000026    |
| KIAA1143     | ENSGALG000000035952 | KIAA1143                                                    | -0.433308428 | 5.734583    | 22.28794468 | 0.00000235  | 0.0000973   |
| MEGF11       | ENSGALG000000007631 | multiple EGF like domains 11                                | -0.432988822 | 3.097421304 | 8.602863454 | 0.003356349 | 0.028660467 |
| CPQ          | ENSGALG000000030866 | carboxypeptidase Q                                          | -0.432571797 | 3.874959825 | 8.308706051 | 0.003945549 | 0.032188403 |
| NTL          | ENSGALG000000005156 | neurotrypsin-like                                           | -0.432562192 | 4.54261402  | 22.25560537 | 0.00000239  | 0.0000987   |
| PPP1R17      | ENSGALG000000036390 | protein phosphatase 1 regulatory subunit 17                 | -0.432315652 | 4.711365877 | 7.874759272 | 0.005012954 | 0.038284066 |
| DNAH1        | ENSGALG000000004297 | dynein axonemal heavy chain 1                               | -0.432012777 | 3.226189899 | 8.465770388 | 0.003618919 | 0.030345014 |
| HS3ST3B1L    | -----               | heparan sulfate glucosamine 3-O-sulfotransferase 3B1-like   | -0.431178036 | 4.926607661 | 7.557587652 | 0.005975793 | 0.043260805 |
| LOC101747846 | -----               | uncharacterized LOC101747846                                | -0.430578299 | 2.677009803 | 8.79028967  | 0.003028382 | 0.026604583 |
| LOC112529987 | -----               | uncharacterized LOC112529987                                | -0.430415289 | 2.933324483 | 8.651663453 | 0.003267629 | 0.028107075 |
| SCUBE3       | ENSGALG000000002675 | signal peptide, CUB domain and EGF like domain containing 3 | -0.430308357 | 6.860659276 | 12.00430929 | 0.000530777 | 0.007581538 |
| PGGHG        | ENSGALG000000004234 | protein-glucosylgalactosylhydroxylysine glucosidase         | -0.430043308 | 3.615324246 | 16.59738129 | 0.0000462   | 0.001120129 |
| MYBL1        | ENSGALG000000033304 | MYB proto-oncogene like 1                                   | -0.429670528 | 4.211162605 | 13.20309262 | 0.000279488 | 0.004673747 |
| HELB         | ENSGALG000000009885 | DNA helicase B                                              | -0.429645425 | 4.884004499 | 33.78608187 | 6.15E-09    | 0.000000569 |
| LOC107050995 | -----               | neuralized-like protein 4                                   | -0.428512057 | 5.441133703 | 33.98566181 | 5.55E-09    | 0.000000519 |
| SYTL4        | ENSGALG000000006786 | synaptotagmin like 4                                        | -0.428093438 | 4.453451089 | 20.2811721  | 0.00000669  | 0.00023427  |
| CTBS         | ENSGALG000000008780 | chitobiase                                                  | -0.426690995 | 3.761740613 | 15.01479917 | 0.000106671 | 0.002155577 |
| CACNA1D      | ENSGALG000000005332 | calcium voltage-gated channel subunit alpha1 D              | -0.424805126 | 4.464915764 | 10.9866756  | 0.000917693 | 0.011285975 |
| MAT2B        | ENSGALG000000001750 | methionine adenosyltransferase 2B                           | -0.424007176 | 5.587615338 | 40.29894117 | 2.18E-10    | 3.03E-08    |
| RNF144B      | ENSGALG000000012683 | ring finger protein 144B                                    | -0.423549745 | 1.877442778 | 7.580481571 | 0.005900368 | 0.042878815 |
| TBC1D8       | ENSGALG000000016776 | TBC1 domain family member 8                                 | -0.423282167 | 4.402545334 | 17.25466665 | 0.0000327   | 0.000836553 |
| LOC112533441 | -----               | uncharacterized LOC112533441                                | -0.422904657 | 3.420047556 | 13.4126048  | 2.50E-04    | 0.004302038 |
| THBS4        | ENSGALG000000014804 | thrombospondin 4                                            | -0.422195271 | 5.564572329 | 20.12939324 | 0.00000724  | 0.000250198 |
| KLB          | ENSGALG000000041663 | klotho beta                                                 | -0.421569664 | 3.605421328 | 13.52622598 | 0.000235253 | 0.004087732 |
| TATDN3       | ENSGALG000000009811 | TatD DNase domain containing 3                              | -0.421402771 | 4.137455017 | 19.04566893 | 0.0000128   | 0.000394016 |
| MAP7D2       | ENSGALG000000016415 | MAP7 domain containing 2                                    | -0.420770332 | 5.114597717 | 19.72535932 | 0.00000894  | 0.000298416 |
| SLC7A2       | ENSGALG000000013627 | solute carrier family 7 member 2                            | -0.420246612 | 4.130425802 | 14.73715262 | 1.24E-04    | 2.43E-03    |
| AKR1B10L3    | ENSGALG000000019284 | aldo-keto reductase family 1 member B10-like                | -0.419847066 | 5.483130722 | 13.05614965 | 0.00030229  | 0.004954368 |
| PROCR        | ENSGALG000000006547 | protein C receptor                                          | -0.419558367 | 2.283441247 | 9.312511213 | 0.002275943 | 0.021900962 |
| UVRAG        | ENSGALG000000000845 | UV radiation resistance associated                          | -0.419069332 | 4.220234941 | 15.69009685 | 0.0000746   | 0.001654677 |
| MYH11        | ENSGALG000000006520 | myosin, heavy chain 11, smooth muscle                       | -0.41816305  | 5.509074533 | 8.446146362 | 0.003658178 | 0.030579826 |
| LOC112531627 | -----               | small nucleolar RNA SNORA31                                 | -0.418113752 | 2.744372464 | 8.36336253  | 0.003828615 | 0.031452747 |
| ARHGAP40     | ENSGALG000000003550 | Rho GTPase activating protein 40                            | -0.417442607 | 4.483814791 | 10.42068614 | 0.001246116 | 0.014031704 |
| ADAMTS3      | ENSGALG000000011623 | ADAM metallopeptidase with thrombospondin type 1 motif 3    | -0.417269997 | 5.855921196 | 24.57266768 | 0.000000716 | 0.0000365   |
| GPC6         | ENSGALG000000016900 | glypican 6                                                  | -0.417034174 | 2.693629949 | 7.193834614 | 0.007315448 | 0.049816449 |

|              |                     |                                                           |              |             |             |             |             |
|--------------|---------------------|-----------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| LOC112532514 | -----               | golgin subfamily B member 1-like                          | -0.416928896 | 3.447788592 | 12.10052893 | 0.000504075 | 0.007301547 |
| GRTP1        | ENSGALG00000016828  | growth hormone regulated TBC protein 1                    | -0.416246139 | 3.153490741 | 10.72929889 | 0.001054524 | 0.012501579 |
| MICU2        | ENSGALG00000017125  | mitochondrial calcium uptake 2                            | -0.415953544 | 6.067638532 | 59.86666889 | 1.02E-14    | 3.88E-12    |
| ABCG4        | ENSGALG00000006795  | ATP binding cassette subfamily G member 4                 | -0.415125363 | 3.335831487 | 9.13940355  | 0.002501626 | 0.023243513 |
| SFI1         | ENSGALG000000051488 | SFI1 centrin binding protein                              | -0.414859229 | 5.194052883 | 34.12785512 | 5.16E-09    | 0.000000486 |
| UNC79        | ENSGALG00000010874  | unc-79 homolog (C. elegans)                               | -0.414409667 | 4.313856324 | 7.79801752  | 0.005230359 | 0.039461511 |
| JMJD4        | ENSGALG00000005417  | jumonji domain containing 4                               | -0.413839717 | 6.431342865 | 43.81554331 | 3.61E-11    | 6.12E-09    |
| TMEM106B     | ENSGALG00000035140  | transmembrane protein 106B                                | -0.413467361 | 5.562948201 | 21.12959313 | 0.00000429  | 0.000162002 |
| PMLL         | -----               | promyelocytic leukemia-like                               | -0.410711572 | 2.792114868 | 9.180602746 | 0.002445935 | 0.022894115 |
| SLX4         | ENSGALG00000031841  | SLX4 structure-specific endonuclease subunit homolog      | -0.410450847 | 6.425689531 | 23.9059849  | 0.00000101  | 0.0000482   |
| TBC1D19      | ENSGALG00000029673  | TBC1 domain family member 19                              | -0.409848984 | 4.497153335 | 26.57181437 | 0.000000254 | 0.0000148   |
| GON4L        | -----               | gon-4 like                                                | -0.408915408 | 6.305751859 | 23.03143763 | 0.00000159  | 0.0000697   |
| ACADSB       | ENSGALG00000041417  | acyl-CoA dehydrogenase, short/branched chain              | -0.408492262 | 5.796067686 | 20.20589876 | 0.00000695  | 0.000242067 |
| ISPD         | ENSGALG00000010795  | isoprenoid synthase domain containing                     | -0.408408695 | 4.757158427 | 19.167767   | 0.000012    | 0.000374517 |
| ZFAND2A      | ENSGALG00000003122  | zinc finger AN1-type containing 2A                        | -0.408289136 | 4.0704695   | 9.488271824 | 0.002067895 | 0.020660118 |
| SLC16A14     | ENSGALG00000002897  | solute carrier family 16 member 14                        | -0.40732998  | 4.879621553 | 9.792871026 | 0.001751897 | 0.018199159 |
| INF2         | ENSGALG00000011608  | inverted formin, FH2 and WH2 domain containing            | -0.407299698 | 3.494853633 | 10.22317653 | 1.39E-03    | 0.01522409  |
| FAM84B       | -----               | family with sequence similarity 84 member B               | -0.405960437 | 4.799419467 | 9.75641246  | 0.001786983 | 0.018493587 |
| MPP3         | ENSGALG00000042521  | membrane palmitoylated protein 3                          | -0.403916552 | 4.429975591 | 14.18253126 | 0.000165904 | 0.003077727 |
| SLC9A7       | ENSGALG00000016734  | solute carrier family 9 member A7                         | -0.40239856  | 3.36380195  | 10.85922181 | 0.00098305  | 0.011888369 |
| DNASE2B      | ENSGALG00000028790  | deoxyribonuclease 2 beta                                  | -0.401727561 | 3.362409829 | 13.09465473 | 0.00029614  | 0.004877855 |
| MANBAL15     | -----               | -----                                                     | -0.399657365 | 4.25463164  | 10.94169354 | 0.000940242 | 0.011486028 |
| DGAT2        | ENSGALG00000040418  | diacylglycerol O-acyltransferase 2                        | -0.39962673  | 2.520687678 | 7.78609319  | 0.005264992 | 0.039631953 |
| PHKA2        | ENSGALG00000016518  | phosphorylase kinase regulatory subunit alpha 2           | -0.39835561  | 4.912232298 | 27.1374881  | 0.000000189 | 0.0000117   |
| HEMK1        | ENSGALG00000002253  | HemK methyltransferase family member 1                    | -0.397766262 | 4.822361068 | 14.23280982 | 0.00016153  | 0.002999964 |
| DERA         | ENSGALG00000013095  | deoxyribose-phosphate aldolase                            | -0.397588146 | 4.568532913 | 11.61569799 | 0.000653975 | 0.008831043 |
| TMEM130      | ENSGALG00000003569  | transmembrane protein 130                                 | -0.39745063  | 2.925834782 | 12.03308249 | 5.23E-04    | 0.007497938 |
| ACBD5        | ENSGALG00000007519  | acyl-CoA binding domain containing 5                      | -0.397223398 | 4.824529407 | 19.49470016 | 0.0000101   | 0.000326765 |
| LOC107050437 | -----               | plectin-like                                              | -0.395789016 | 3.011918257 | 7.247647562 | 0.007099396 | 0.048695523 |
| AFMID        | ENSGALG00000000109  | arylformamidase                                           | -0.395342053 | 5.582318391 | 22.09096021 | 0.0000026   | 0.000106174 |
| NRDE2        | ENSGALG00000010677  | NRDE-2, necessary for RNA interference, domain containing | -0.393630542 | 5.514812398 | 27.75989252 | 0.000000137 | 0.00000897  |
| TCP11L2      | -----               | -----                                                     | -0.392541385 | 5.126936583 | 20.01741146 | 0.00000767  | 0.000264176 |
| NDRG4        | ENSGALG00000043662  | NDRG family member 4                                      | -0.392484212 | 5.363746769 | 18.78508908 | 0.0000146   | 0.000440123 |
| LHFPL3       | ENSGALG00000043367  | LHFPL tetraspan subfamily member 3                        | -0.392306489 | 3.279924981 | 10.06516556 | 0.00151099  | 0.016278211 |
| SPRTN        | ENSGALG00000011065  | SprT-like N-terminal domain                               | -0.3909908   | 5.325932697 | 23.35632575 | 0.00000135  | 0.0000609   |
| MT           | -----               | -----                                                     | -0.388163571 | 4.5123123   | 12.296886   | 0.000453715 | 0.006732078 |
| IL17RA       | ENSGALG00000033887  | interleukin 17 receptor A                                 | -0.386306312 | 5.328004419 | 18.28583262 | 0.000019    | 0.000541238 |
| LOC107053353 | -----               | dispanin subfamily A member 2b-like                       | -0.38620527  | 3.382447022 | 9.077720811 | 0.002587423 | 0.023774878 |
| CILP         | ENSGALG00000007358  | cartilage intermediate layer protein                      | -0.386109048 | 3.068719471 | 9.389597612 | 0.002182201 | 0.021373879 |
| RAB4A        | ENSGALG00000036218  | RAB4A, member RAS oncogene family                         | -0.3852936   | 5.228082102 | 23.30024165 | 0.00000139  | 0.0000621   |
| MMRN1        | ENSGALG00000010391  | multimerin 1                                              | -0.384571021 | 3.789826436 | 10.32672818 | 0.001311174 | 0.014597681 |
| IRF5         | ENSGALG00000039982  | interferon regulatory factor 5                            | -0.383996423 | 3.120189661 | 9.833420935 | 0.001713693 | 0.017847357 |
| ANKRD52      | ENSGALG00000031973  | ankyrin repeat domain 52                                  | -0.383217647 | 5.912973235 | 18.53114892 | 0.0000167   | 0.000488536 |
| ZNF692       | ENSGALG00000041845  | zinc finger protein 692                                   | -0.379825929 | 4.494376413 | 7.83170978  | 0.005133752 | 0.038875233 |

|              |                     |                                                  |              |             |             |             |             |
|--------------|---------------------|--------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| BAIAP2       | ENSGALG00000042538  | BAI1 associated protein 2                        | -0.379177076 | 4.68908487  | 13.06536035 | 3.01E-04    | 0.004939905 |
| IFT57        | ENSGALG00000015356  | intraflagellar transport 57                      | -0.378988147 | 4.874495338 | 12.86208528 | 0.000335307 | 0.005346388 |
| MSRB3        | ENSGALG00000026661  | methionine sulfoxide reductase B3                | -0.377796362 | 3.867960384 | 9.321432825 | 0.002264888 | 0.021845683 |
| RIN3         | ENSGALG00000010806  | Ras and Rab interactor 3                         | -0.377759192 | 3.30860716  | 10.18361057 | 0.001416945 | 0.015523184 |
| GALNT13      | ENSGALG00000012536  | polypeptide N-acetylgalactosaminyltransferase 13 | -0.377283121 | 4.297223753 | 9.775561561 | 0.001768467 | 0.018325015 |
| COG3         | ENSGALG00000016980  | component of oligomeric golgi complex 3          | -0.376851258 | 5.509094209 | 28.23933586 | 0.000000107 | 0.00000717  |
| BTN1         | ENSGALG000000052240 | B-butyrophilin 1                                 | -0.376254776 | 4.515873397 | 15.1193811  | 0.000100922 | 0.002078434 |
| CAPN2        | ENSGALG00000009360  | calpain 2                                        | -0.375672283 | 3.926642317 | 11.09455477 | 8.66E-04    | 1.08E-02    |
| LOC107057318 | -----               | uncharacterized LOC107057318                     | -0.375621147 | 4.990671668 | 23.94439841 | 0.000000992 | 0.0000477   |
| LOC100858295 | -----               | uncharacterized LOC100858295                     | -0.373428328 | 4.036908775 | 8.261494206 | 0.004049478 | 0.032707643 |
| AZIN2        | ENSGALG00000003614  | arginine decarboxylase                           | -0.373119686 | 3.667874678 | 9.342653467 | 0.002238811 | 0.021721486 |
| TNFRSF11A    | ENSGALG00000045642  | TNF receptor superfamily member 11a              | -0.372790698 | 3.442291659 | 9.207789792 | 0.002409875 | 0.022702947 |
| NPNT         | ENSGALG00000043555  | nephronectin                                     | -0.37139174  | 4.891184963 | 9.552615228 | 0.001996647 | 0.020148057 |
| CHRD         | ENSGALG000000026983 | chordin                                          | -0.370045689 | 3.314854705 | 9.553713814 | 0.001995453 | 0.020148057 |
| BTBD11       | ENSGALG000000039595 | BTB domain containing 11                         | -0.36998872  | 4.947661746 | 14.12352939 | 0.000171189 | 0.003161521 |
| CKLF         | ENSGALG000000005254 | chemokine like factor                            | -0.369083338 | 3.251238336 | 9.406501325 | 2.16E-03    | 0.021215608 |
| MED12L       | ENSGALG000000010370 | mediator complex subunit 12 like                 | -0.367957935 | 5.530265021 | 22.4806506  | 0.00000212  | 0.000089    |
| KIF21A       | ENSGALG000000007098 | kinesin family member 21A                        | -0.367499934 | 6.645040255 | 25.44336942 | 0.000000456 | 0.0000249   |
| RMDN2        | ENSGALG000000010554 | regulator of microtubule dynamics 2              | -0.366930683 | 2.890739606 | 8.179175476 | 0.004237402 | 0.033847788 |
| LOC107052931 | -----               | uncharacterized LOC107052931                     | -0.36645392  | 3.032900894 | 7.946244362 | 0.004818727 | 0.037349108 |
| RPS6KC1      | ENSGALG000000009796 | ribosomal protein S6 kinase C1                   | -0.366252286 | 5.521512205 | 22.53179111 | 0.00000207  | 0.000087    |
| KLHL42       | ENSGALG000000017296 | kelch like family member 42                      | -0.364844303 | 2.608092298 | 7.745981135 | 0.005383221 | 0.040190968 |
| LYRM2        | ENSGALG000000015762 | LYR motif containing 2                           | -0.364438723 | 3.761931531 | 12.58335854 | 0.000389197 | 0.006002092 |
| TTBK1        | ENSGALG000000008627 | tau tubulin kinase 1                             | -0.363988105 | 5.70799523  | 19.37127245 | 0.0000108   | 0.000345182 |
| LAMA2        | -----               | laminin subunit alpha 2                          | -0.36359316  | 4.630027311 | 12.26270832 | 4.62E-04    | 6.83E-03    |
| TTLL7        | ENSGALG000000008850 | tubulin tyrosine ligase like 7                   | -0.363416287 | 3.867731943 | 11.69677089 | 0.000626087 | 0.008542773 |
| CNST         | ENSGALG000000010649 | consortin, connexin sorting protein              | -0.362913519 | 4.496619865 | 17.16097794 | 0.0000343   | 0.000873409 |
| FRRS1        | ENSGALG000000005418 | ferric chelate reductase 1                       | -0.362880619 | 4.446906655 | 9.877561629 | 0.001673065 | 0.01755758  |
| KLHL14       | ENSGALG000000036969 | kelch like family member 14                      | -0.362108583 | 3.577805244 | 9.444893592 | 2.12E-03    | 2.09E-02    |
| CGN          | ENSGALG000000000920 | cingulin                                         | -0.360915495 | 4.124906672 | 9.347661799 | 0.002232701 | 0.021699324 |
| EDNRB        | ENSGALG000000016912 | endothelin receptor type B                       | -0.360695601 | 4.87683259  | 10.5301463  | 0.001174429 | 0.013454499 |
| CNTN3        | ENSGALG000000007862 | contactin 3                                      | -0.360640109 | 3.465183414 | 11.45289746 | 0.000713826 | 0.009411866 |
| PDLIM1       | ENSGALG000000005422 | PDZ and LIM domain 1                             | -0.359153989 | 4.036105791 | 10.76303695 | 0.001035473 | 0.012346894 |
| ACSS3        | ENSGALG000000010940 | acyl-CoA synthetase short-chain family member 3  | -0.358650555 | 4.176989284 | 9.151974989 | 0.002484498 | 0.02313662  |
| C4HCXorf57   | -----               | ----                                             | -0.358644827 | 4.13176672  | 11.49560754 | 0.000697609 | 0.00924247  |
| TESK2        | ENSGALG000000010230 | testis-specific kinase 2                         | -0.358311716 | 3.947323626 | 9.091130653 | 0.00256852  | 0.023691145 |
| LOC107051594 | -----               | uncharacterized LOC107051594                     | -0.358229088 | 3.372581104 | 12.55711116 | 0.000394701 | 0.00606425  |
| MOGAT1       | ENSGALG000000005217 | monoacylglycerol O-acyltransferase 1             | -0.357955473 | 2.827104686 | 8.445652088 | 0.003659172 | 0.030579826 |
| FAM198A      | -----               | family with sequence similarity 198 member A     | -0.357258925 | 4.585273387 | 9.871796129 | 0.001678316 | 0.017601458 |
| DPH2         | ENSGALG000000010089 | DPH2 homolog                                     | -0.356573152 | 4.243247312 | 15.33058283 | 0.0000902   | 0.001913608 |
| LOC100858426 | -----               | uncharacterized LOC100858426                     | -0.355126799 | 3.270340294 | 9.436242038 | 0.00212739  | 0.02094925  |
| FZD6         | ENSGALG000000030626 | frizzled class receptor 6                        | -0.355021906 | 5.508745398 | 21.37373016 | 3.78E-06    | 0.000145294 |
| PATJ         | ENSGALG000000010934 | PATJ, crumbs cell polarity complex component     | -0.354904925 | 4.43414405  | 11.2925203  | 0.0007782   | 0.009988515 |
| ZYG11B       | -----               | ----                                             | -0.354766095 | 5.388915535 | 24.51040265 | 7.39E-07    | 3.73E-05    |

|              |                    |                                                                        |              |             |             |             |             |
|--------------|--------------------|------------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| PLEKHA6      | ENSGALG00000038399 | pleckstrin homology domain containing A6                               | -0.3539639   | 5.349097648 | 13.76295683 | 0.000207385 | 0.003677292 |
| ODF3L15      | -----              | -----                                                                  | -0.353588346 | 6.304775494 | 9.598697823 | 0.001947154 | 0.019741479 |
| ST3GAL2L     | -----              | -----                                                                  | -0.353470523 | 3.37006528  | 10.02525244 | 0.001544085 | 0.016520104 |
| PCK2         | ENSGALG00000052014 | phosphoenolpyruvate carboxykinase 2, mitochondrial                     | -0.352362132 | 5.626963894 | 15.40477038 | 0.0000868   | 0.001851859 |
| TMOD2        | ENSGALG00000004740 | tropomodulin 2                                                         | -0.352017311 | 4.281284219 | 9.43950356  | 0.00212361  | 0.020924549 |
| WWP1         | ENSGALG00000041795 | WW domain containing E3 ubiquitin protein ligase 1                     | -0.351864758 | 5.318167762 | 14.59677343 | 0.000133142 | 0.00257445  |
| ZFYVE26      | ENSGALG00000028762 | zinc finger FYVE-type containing 26                                    | -0.351849095 | 5.102360373 | 16.06769416 | 0.0000611   | 0.001412492 |
| SMYD3        | ENSGALG00000010653 | SET and MYND domain containing 3                                       | -0.35124022  | 3.419997299 | 8.377371318 | 0.003799215 | 0.031320685 |
| CHRM4        | ENSGALG00000008365 | Gallus gallus cholinergic receptor muscarinic 4 (CHRM4), mRNA.         | -0.35074147  | 4.656665417 | 8.43004524  | 0.003690712 | 0.030780872 |
| LRP8         | ENSGALG00000010692 | LDL receptor related protein 8                                         | -0.350737727 | 5.110046228 | 14.3018763  | 0.00015571  | 0.002921552 |
| GNG11        | -----              | G protein subunit gamma 11                                             | -0.350414643 | 3.398027042 | 7.331563284 | 0.00677541  | 0.047201258 |
| RMND1        | ENSGALG00000012968 | required for meiotic nuclear division 1 homolog                        | -0.350376102 | 5.21068831  | 33.30907479 | 7.86E-09    | 0.000000695 |
| MBTPS2       | ENSGALG00000016382 | membrane bound transcription factor peptidase, site 2                  | -0.349516967 | 4.265482857 | 14.66424018 | 0.00012846  | 0.002513456 |
| ZFYVE19      | ENSGALG00000008460 | zinc finger FYVE-type containing 19                                    | -0.349218013 | 6.397931631 | 15.03900054 | 0.000105312 | 0.002147351 |
| CSGALNACT1   | ENSGALG00000010125 | chondroitin sulfate N-acetylgalactosaminyltransferase 1                | -0.347822461 | 3.172844679 | 8.619194546 | 0.003326389 | 0.028478528 |
| PLTP         | ENSGALG00000036686 | phospholipid transfer protein                                          | -0.347670561 | 4.526042119 | 7.30040323  | 0.006893914 | 0.047809051 |
| ABCC3        | ENSGALG00000007522 | ATP binding cassette subfamily C member 3                              | -0.347106593 | 6.281371535 | 13.15823518 | 0.000286258 | 0.004757961 |
| CUL9         | -----              | cullin 9                                                               | -0.346170309 | 5.224717172 | 18.77379663 | 0.0000147   | 0.000441929 |
| PECR         | ENSGALG00000011497 | peroxisomal trans-2-enoyl-CoA reductase                                | -0.345558659 | 4.779322902 | 20.54428263 | 0.00000583  | 0.000210262 |
| TFB1M        | ENSGALG00000013647 | transcription factor B1, mitochondrial                                 | -0.345342959 | 4.392496466 | 10.73590598 | 1.05E-03    | 1.25E-02    |
| MORC2        | ENSGALG00000007512 | MORC family CW-type zinc finger 1                                      | -0.344572328 | 6.540793874 | 20.89355823 | 4.86E-06    | 1.81E-04    |
| PIK3CD       | ENSGALG00000002583 | phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta | -0.34219433  | 4.228211634 | 11.96854517 | 0.000541062 | 0.007701704 |
| MYL12B       | ENSGALG00000038635 | myosin light chain 12B                                                 | -0.342118522 | 4.356371933 | 11.19302857 | 0.000821052 | 0.010432753 |
| SIL1         | ENSGALG00000002457 | SIL1 nucleotide exchange factor                                        | -0.341716251 | 3.564836326 | 7.623284867 | 0.005761944 | 0.042101594 |
| ELMO3        | ENSGALG00000030220 | engulfment and cell motility 3                                         | -0.340920615 | 3.49181243  | 10.13322448 | 0.001456204 | 0.015800397 |
| ELP6         | ENSGALG00000031227 | elongator acetyltransferase complex subunit 6                          | -0.340599462 | 4.083654116 | 7.205191861 | 7.27E-03    | 4.96E-02    |
| SOX11        | ENSGALG00000016397 | SRY-box 11                                                             | -0.338419513 | 6.814788872 | 19.26977411 | 0.0000113   | 0.000361211 |
| ALCAM        | ENSGALG00000015348 | activated leukocyte cell adhesion molecule                             | -0.337813044 | 6.597696165 | 8.563787172 | 0.003429153 | 0.029070953 |
| COL25A1      | ENSGALG00000039411 | collagen type XXV alpha 1 chain                                        | -0.336957729 | 4.690853445 | 10.33979503 | 0.001301925 | 0.014504516 |
| ISM2         | -----              | isthmin 2                                                              | -0.336854043 | 4.895923239 | 11.13391455 | 0.000847635 | 0.010647204 |
| TBCEL        | ENSGALG00000018819 | tubulin folding cofactor E like                                        | -0.335920634 | 4.670979765 | 15.48002246 | 0.0000834   | 0.001803625 |
| LOC107057415 | -----              | uncharacterized LOC107057415                                           | -0.33545473  | 5.032548061 | 16.22445306 | 0.0000563   | 0.001321977 |
| DOCK10       | ENSGALG00000005030 | dedicator of cytokinesis 10                                            | -0.334583959 | 4.521471068 | 7.767186922 | 0.005320384 | 0.039858242 |
| RNF169       | ENSGALG00000017309 | ring finger protein 169                                                | -0.33370703  | 4.052050125 | 8.653855902 | 0.003263699 | 0.028087957 |
| STAGL        | -----              | -----                                                                  | -0.333007149 | 5.898564313 | 20.44559788 | 0.00000614  | 0.000219524 |
| SARAF        | ENSGALG00000011395 | store-operated calcium entry associated regulatory factor              | -0.332799461 | 4.539079843 | 12.74646135 | 0.000356683 | 0.005600405 |
| TUB          | ENSGALG00000005986 | tubby bipartite transcription factor                                   | -0.332699626 | 5.476771486 | 11.90801011 | 5.59E-04    | 7.88E-03    |
| MAN2B2       | ENSGALG00000015537 | mannosidase alpha class 2B member 2                                    | -0.332495243 | 5.124524187 | 12.51219354 | 4.04E-04    | 6.19E-03    |
| DHCR24       | ENSGALG00000010798 | 24-dehydrocholesterol reductase                                        | -0.332358311 | 6.12915371  | 18.47697095 | 0.0000172   | 0.000497322 |
| TRAF4        | ENSGALG00000003987 | TNF receptor associated factor 4                                       | -0.332056887 | 4.686511681 | 17.6066824  | 0.0000272   | 0.000724426 |
| LOC107050300 | -----              | withdrawn                                                              | -0.331559662 | 3.299367743 | 7.337180751 | 0.006754269 | 0.047133796 |
| CHST12       | ENSGALG00000004276 | carbohydrate sulfotransferase 12                                       | -0.329511114 | 4.086484224 | 10.69602788 | 0.001073658 | 0.012631907 |
| NUDT1        | ENSGALG00000004245 | nudix hydrolase 1                                                      | -0.328588845 | 6.031349226 | 18.43774257 | 0.0000176   | 0.000505887 |
| C5H15orf57   | ENSGALG00000029332 | chromosome 5 C15orf57 homolog                                          | -0.328504088 | 5.458854787 | 17.24610442 | 0.0000328   | 0.000839026 |

|              |                    |                                                        |              |             |             |             |             |
|--------------|--------------------|--------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| TMEM169      | ENSGALG00000011493 | transmembrane protein 169                              | -0.326901046 | 6.363408287 | 16.07951521 | 0.0000607   | 0.001405676 |
| PRICKLE4     | ENSGALG00000028262 | prickle planar cell polarity protein 4                 | -0.326052541 | 4.010774462 | 12.74153969 | 0.000357623 | 0.005604466 |
| PIEZO2       | ENSGALG00000042134 | piezo type mechanosensitive ion channel component 2    | -0.325515426 | 4.442187831 | 9.429805908 | 0.002134869 | 0.021007195 |
| NUDT9        | ENSGALG00000010932 | nudix hydrolase 9                                      | -0.325041356 | 4.430450828 | 10.74846414 | 0.001043659 | 0.012426489 |
| OGFRL1       | ENSGALG00000015951 | opioid growth factor receptor like 1                   | -0.324982259 | 4.447116787 | 11.12389743 | 0.000852225 | 0.010688541 |
| RGN          | ENSGALG00000016724 | regucalcin                                             | -0.324287258 | 4.671709098 | 9.445016223 | 2.12E-03    | 0.020892566 |
| ATR          | ENSGALG00000002663 | ATR serine/threonine kinase                            | -0.324238974 | 6.589372667 | 15.44670373 | 0.0000849   | 0.001823043 |
| MRPL43       | ENSGALG00000034352 | mitochondrial ribosomal protein L43                    | -0.323144795 | 4.764115329 | 7.938138217 | 0.004840361 | 0.037393492 |
| NUMBL        | -----              | ----                                                   | -0.323094624 | 4.419703564 | 11.26967456 | 0.000787835 | 0.010072907 |
| JMJD7        | ENSGALG00000026846 | jumonji domain containing 7                            | -0.322902021 | 3.542412145 | 10.54739396 | 0.00116352  | 0.013379263 |
| COBLL1       | ENSGALG00000011068 | cordon-bleu WH2 repeat protein like 1                  | -0.322449771 | 4.241068452 | 9.846921134 | 0.001701162 | 0.017773097 |
| LOC107051290 | -----              | withdrawn                                              | -0.320714692 | 7.233011964 | 9.730026604 | 0.001812819 | 0.018690433 |
| CADM2        | ENSGALG00000043393 | cell adhesion molecule 2                               | -0.32063576  | 3.757141574 | 7.543436657 | 0.006022906 | 0.043467944 |
| PDPR         | ENSGALG00000002690 | pyruvate dehydrogenase phosphatase regulatory subunit  | -0.320311396 | 5.958137571 | 19.84939535 | 0.00000838  | 0.000284279 |
| PCTP         | ENSGALG00000003099 | phosphatidylcholine transfer protein                   | -0.319849397 | 5.015182459 | 8.183302723 | 0.004227772 | 0.033787267 |
| DNAJC27      | ENSGALG00000028967 | DnaJ heat shock protein family (Hsp40) member C27      | -0.319799882 | 4.125827593 | 11.12994445 | 0.000849451 | 0.010661878 |
| ANAPC5       | ENSGALG00000004179 | anaphase promoting complex subunit 5                   | -0.318547195 | 5.758833446 | 14.8581626  | 0.000115905 | 0.00230341  |
| TOR3A        | ENSGALG00000004216 | torsin family 3 member A                               | -0.317198506 | 3.995361325 | 11.38300127 | 0.000741193 | 0.009664283 |
| CECR1        | ENSGALG00000013031 | cat eye syndrome chromosome region, candidate 1        | -0.316596932 | 3.251478577 | 7.597727306 | 0.005844192 | 0.042570245 |
| GSTO1        | -----              | ----                                                   | -0.316533145 | 5.501958309 | 16.78730971 | 0.0000418   | 0.001034611 |
| MFSD4B       | ENSGALG00000049668 | major facilitator superfamily domain containing 4B     | -0.31612144  | 5.512258233 | 19.74872204 | 0.00000883  | 0.000296595 |
| LOC101750715 | -----              | uncharacterized LOC101750715                           | -0.316120755 | 4.719653215 | 13.29281098 | 0.000266426 | 0.004519624 |
| TOP1MT       | ENSGALG00000029572 | DNA topoisomerase I mitochondrial                      | -0.314522712 | 5.537473694 | 23.06061385 | 0.00000157  | 0.0000691   |
| DYNC1I1      | ENSGALG00000009722 | dynein cytoplasmic 1 intermediate chain 1              | -0.314484374 | 4.678827719 | 7.481367374 | 0.006234071 | 0.044717367 |
| IMPA1        | ENSGALG00000034487 | inositol monophosphatase 1                             | -0.313031478 | 5.530069093 | 12.54984628 | 0.000396239 | 0.006082193 |
| LOC107057416 | -----              | uncharacterized LOC107057416                           | -0.312616005 | 4.713502132 | 8.581172436 | 0.003396566 | 0.028839264 |
| PRKAA2       | ENSGALG00000010826 | protein kinase AMP-activated catalytic subunit alpha 2 | -0.312452494 | 3.621970295 | 7.504297448 | 0.006155195 | 0.044306092 |
| NEXN         | ENSGALG00000008945 | nexilin F-actin binding protein                        | -0.311364763 | 5.238856771 | 9.352533986 | 0.002226774 | 0.021681398 |
| GLYCTK       | ENSGALG00000054430 | glycerate kinase                                       | -0.310914984 | 5.303348007 | 10.84585556 | 0.000990171 | 0.011936459 |
| LOC101751615 | -----              | uncharacterized LOC101751615                           | -0.310832485 | 3.049628751 | 7.275877797 | 6.99E-03    | 4.82E-02    |
| SLC25A30     | ENSGALG00000016979 | solute carrier family 25 member 30                     | -0.309300952 | 4.433123481 | 8.376372174 | 0.003801304 | 0.031322216 |
| CMTM6        | ENSGALG00000011490 | CKLF like MARVEL transmembrane domain containing 6     | -0.308703585 | 5.522941774 | 17.31192558 | 0.0000317   | 0.000818082 |
| DMXL2        | ENSGALG00000039924 | Dmx like 2                                             | -0.308342006 | 4.697905624 | 9.173001591 | 0.002456114 | 0.022963271 |
| NFKBIZ       | ENSGALG00000015346 | NFKB inhibitor zeta                                    | -0.308206953 | 3.852519733 | 8.990634896 | 0.002713667 | 0.024588872 |
| CCDC80       | ENSGALG00000015193 | coiled-coil domain containing 80                       | -0.307338487 | 6.709553075 | 15.09397607 | 0.000102289 | 0.002103961 |
| VASN         | ENSGALG00000047356 | vasorin                                                | -0.306511731 | 6.132754298 | 17.85648034 | 0.0000238   | 0.000652195 |
| FKBP9        | ENSGALG00000037669 | FK506 binding protein 9                                | -0.305718527 | 8.221934132 | 16.32968295 | 0.0000532   | 0.001258152 |
| PEX26        | ENSGALG00000019286 | peroxisomal biogenesis factor 26                       | -0.305104633 | 4.979010422 | 19.73371048 | 0.0000089   | 0.000297719 |
| LMINA        | -----              | ----                                                   | -0.304337415 | 4.056681085 | 8.255881334 | 0.004062018 | 0.032781025 |
| KIF5C        | ENSGALG00000012462 | kinesin family member 5C                               | -0.303819569 | 6.597840064 | 13.50540334 | 0.000237878 | 0.004124631 |
| TECPR1       | ENSGALG00000003507 | tectonin beta-propeller repeat containing 1            | -0.303817264 | 3.910377577 | 7.942709631 | 0.004828149 | 0.037368349 |
| CTSB         | ENSGALG00000030016 | cathepsin B                                            | -0.303093774 | 5.893608147 | 14.05885858 | 0.000177177 | 0.003239391 |
| SNAPIN       | ENSGALG00000026796 | SNAP associated protein                                | -0.302491566 | 5.048180773 | 23.00554716 | 0.00000162  | 0.0000703   |
| EVC2         | ENSGALG00000015029 | EvC ciliary complex subunit 2                          | -0.302368819 | 4.475595024 | 13.25571066 | 0.000271751 | 0.004586857 |

|             |                    |                                                                                  |              |             |             |             |             |
|-------------|--------------------|----------------------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| MIOS        | ENSGALG00000010699 | meiosis regulator for oocyte development                                         | -0.302022359 | 5.904478843 | 13.15621045 | 0.000286568 | 0.004758299 |
| TCP11L1     | ENSGALG00000011688 | t-complex 11 like 1                                                              | -0.301238236 | 5.367232481 | 12.48118978 | 0.00041107  | 0.006251536 |
| TMEM60      | ENSGALG00000008330 | transmembrane protein 60                                                         | -0.301192058 | 4.355646922 | 9.077516455 | 0.002587712 | 0.023774878 |
| C24H11orf57 | -----              | ----                                                                             | -0.300308065 | 5.156537043 | 18.80496301 | 0.0000145   | 0.000437159 |
| TTPAL       | ENSGALG00000004244 | alpha tocopherol transfer protein like                                           | -0.299338625 | 5.197627848 | 17.94404399 | 0.0000227   | 0.000627041 |
| GALNT5      | -----              | polypeptide N-acetylgalactosaminyltransferase 5                                  | -0.299185555 | 3.825408703 | 8.421709475 | 0.00370767  | 0.030890995 |
| CDKL2       | ENSGALG00000010119 | cyclin dependent kinase like 2                                                   | -0.298658559 | 3.849484627 | 7.662964204 | 0.005636582 | 0.041536033 |
| OSGIN2      | ENSGALG00000042840 | oxidative stress induced growth inhibitor family member 2                        | -0.298579341 | 4.473998852 | 8.542170944 | 0.003470115 | 0.029297457 |
| LOC420294   | -----              | cyldromatosis-like                                                               | -0.297669033 | 4.661430657 | 13.60992788 | 0.000224993 | 0.003934381 |
| DNAJC12     | ENSGALG00000002769 | DnaJ heat shock protein family (Hsp40) member C12                                | -0.297388902 | 4.85394515  | 15.01860022 | 0.000106457 | 0.002155577 |
| TRADD       | ENSGALG00000003195 | TNFRSF1A associated via death domain                                             | -0.297388504 | 4.514109516 | 12.37360981 | 0.000435445 | 0.006531674 |
| DNAJC5G     | -----              | DnaJ heat shock protein family (Hsp40) member C5 gamma                           | -0.297370347 | 3.461649261 | 7.346841005 | 0.00671807  | 0.047000783 |
| AATK        | ENSGALG00000006901 | apoptosis associated tyrosine kinase                                             | -0.297340366 | 5.054243904 | 10.57990814 | 0.001143233 | 0.013238498 |
| PMVK        | ENSGALG00000046656 | phosphomevalonate kinase                                                         | -0.296730099 | 4.877379705 | 11.98002311 | 5.38E-04    | 7.66E-03    |
| CTPS2       | ENSGALG00000016549 | CTP synthase 2                                                                   | -0.295592617 | 3.822617268 | 10.6587257  | 0.001095528 | 0.012821423 |
| ARMC1       | ENSGALG00000036567 | armadillo repeat containing 1                                                    | -0.29514774  | 5.294127723 | 9.777651952 | 0.001766458 | 0.018315727 |
| PCMTD2      | ENSGALG00000005901 | protein-L-isoaspartate (D-aspartate) O-methyltransferase domain containing 2     | -0.294805052 | 5.299147023 | 15.78214705 | 0.0000711   | 0.001595438 |
| PLCD1       | ENSGALG00000005805 | phospholipase C delta 1                                                          | -0.294717732 | 5.95434904  | 9.140718386 | 0.002499829 | 0.023239939 |
| KIAA1147    | -----              | ----                                                                             | -0.294017562 | 4.435149434 | 10.66306605 | 0.001092961 | 0.012818723 |
| IFNAR2      | ENSGALG00000041867 | interferon alpha and beta receptor subunit 2                                     | -0.293180059 | 5.400308918 | 19.1793203  | 0.0000119   | 0.000373695 |
| PLEKHA7     | ENSGALG00000029679 | pleckstrin homology domain containing A7                                         | -0.292814542 | 5.64262351  | 8.628622565 | 0.003309217 | 0.028375803 |
| FBXO25      | ENSGALG00000016359 | F-box protein 25                                                                 | -0.292767089 | 3.86465218  | 8.480163314 | 0.003590399 | 0.030142862 |
| FBXL8       | ENSGALG00000003201 | F-box and leucine rich repeat protein 8                                          | -0.291699243 | 3.694805028 | 7.650970615 | 5.67E-03    | 0.041738313 |
| DAP         | ENSGALG00000013002 | death associated protein                                                         | -0.291261323 | 5.891044106 | 18.82220602 | 0.0000143   | 0.000434021 |
| AFG1L       | ENSGALG00000015303 | lactation elevated 1                                                             | -0.290961324 | 4.114194717 | 10.29783532 | 0.001331864 | 0.014776945 |
| IRAK4       | ENSGALG00000009586 | interleukin 1 receptor associated kinase 4                                       | -0.290841574 | 3.688915619 | 8.877813645 | 0.00288657  | 0.025771652 |
| TRPC1       | ENSGALG00000002639 | transient receptor potential cation channel subfamily C member 1                 | -0.290101367 | 5.758185227 | 20.69395954 | 5.39E-06    | 1.97E-04    |
| ITPR2       | ENSGALG00000014071 | inositol 1,4,5-trisphosphate receptor type 2                                     | -0.288047003 | 6.158216372 | 7.286013381 | 0.006949352 | 0.048015912 |
| APPL1       | ENSGALG00000005527 | adaptor protein, phosphotyrosine interacting with PH domain and leucine zipper 1 | -0.287770435 | 5.767843881 | 11.55929629 | 6.74E-04    | 9.05E-03    |
| TTC12       | ENSGALG00000007833 | tetratricopeptide repeat domain 12                                               | -0.287289725 | 4.582881336 | 11.43037624 | 0.000722531 | 0.00950308  |
| RECQL       | ENSGALG00000013174 | RecQ like helicase                                                               | -0.286074455 | 5.147578432 | 15.97093192 | 0.0000643   | 0.001470039 |
| ELMO1       | ENSGALG00000035492 | engulfment and cell motility 1                                                   | -0.285954991 | 4.386197242 | 9.867950392 | 0.001681828 | 0.017627053 |
| UNC5B       | ENSGALG00000004569 | unc-5 netrin receptor B                                                          | -0.284383956 | 5.549961965 | 7.979373065 | 0.004731332 | 0.036810437 |
| NOX5        | ENSGALG00000008063 | NADPH oxidase 5                                                                  | -0.284038321 | 6.276689365 | 8.262561543 | 0.004047098 | 0.032707643 |
| PTGES3L     | ENSGALG00000038129 | prostaglandin E synthase 3 (cytosolic)-like                                      | -0.283551211 | 4.179844911 | 9.840319322 | 0.001707279 | 0.017814375 |
| LOC425117   | -----              | uncharacterized LOC425117                                                        | -0.283475149 | 6.441772509 | 15.50163243 | 0.0000824   | 0.001787157 |
| PLK3        | ENSGALG00000010129 | polo like kinase 3                                                               | -0.283216223 | 4.531106539 | 10.0570496  | 0.001517661 | 0.01628494  |
| EPG5        | -----              | ectopic P-granules autophagy protein 5 homolog                                   | -0.282841531 | 5.236178978 | 9.347144345 | 0.002233332 | 0.021699324 |
| SLC7A6      | -----              | solute carrier family 7 member 6                                                 | -0.28236983  | 5.182294276 | 11.3300495  | 0.000762629 | 0.009851805 |
| TMEM170A    | ENSGALG00000002861 | transmembrane protein 170A                                                       | -0.281782486 | 4.743558515 | 10.72582062 | 0.001056508 | 0.012516083 |
| BBS5        | ENSGALG00000009846 | Bardet-Biedl syndrome 5                                                          | -0.281639181 | 5.070179412 | 10.41393467 | 0.00125068  | 0.014057334 |
| TMX4        | ENSGALG00000028587 | thioredoxin related transmembrane protein 4                                      | -0.281227991 | 5.98787899  | 12.8237185  | 0.000342253 | 0.005441324 |
| CEP350      | ENSGALG00000003955 | centrosomal protein 350                                                          | -0.2786961   | 6.283560633 | 13.2323905  | 0.000275153 | 0.004605938 |
| FANCG       | ENSGALG00000002009 | Fanconi anemia complementation group G                                           | -0.278550062 | 5.251725731 | 7.837835699 | 0.005116383 | 0.038797271 |

|              |                     |                                                                |              |             |             |             |             |
|--------------|---------------------|----------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| RCAN1        | ENSGALG00000016014  | regulator of calcineurin 1                                     | -0.278546165 | 4.366423023 | 7.684446099 | 0.005569877 | 0.041136594 |
| C10H15orf40  | -----               | C15ORF40 homolog                                               | -0.278296642 | 4.380548787 | 8.176557788 | 0.004243521 | 0.033880222 |
| TIAM1        | ENSGALG00000015842  | T-cell lymphoma invasion and metastasis 1                      | -0.277897522 | 6.409521474 | 9.703551921 | 0.001839122 | 0.018937498 |
| BLOC1S3      | -----               | iogenesis of lysosomal organelles complex-1, subunit 3         | -0.277535643 | 5.928257965 | 8.592033708 | 0.003376367 | 0.028756793 |
| HIST1H2B5L   | ENSGALG000000054287 | histone cluster 1, H2B-V-like                                  | -0.275735307 | 6.329305018 | 17.46245301 | 2.93E-05    | 0.000767826 |
| DFNA5        | ENSGALG00000010997  | DFNA5, deafness associated tumor suppressor                    | -0.275591854 | 5.790204817 | 8.603293224 | 0.003355557 | 0.028660467 |
| ZBTB38       | ENSGALG00000036543  | zinc finger and BTB domain containing 38                       | -0.27502446  | 4.536278475 | 7.762041181 | 0.005335563 | 0.039925733 |
| VPS37A       | ENSGALG00000013646  | VPS37A, ESCRT-I subunit                                        | -0.274334427 | 4.144392797 | 9.375261064 | 2.20E-03    | 2.15E-02    |
| NAT9         | ENSGALG00000007723  | N-acetyltransferase 9 (putative)                               | -0.274103922 | 4.871439536 | 14.05899688 | 0.000177164 | 0.003239391 |
| AVL9         | ENSGALG000000041568 | AVL9 cell migration associated                                 | -0.273707478 | 4.818454765 | 8.872280897 | 0.002895332 | 0.025801375 |
| SCARF2       | ENSGALG00000034560  | scavenger receptor class F, member 2                           | -0.273698359 | 7.053882003 | 15.06180282 | 0.000104048 | 0.002132133 |
| YAE1D1       | ENSGALG000000043636 | Yae1 domain containing 1                                       | -0.272647936 | 3.922619546 | 9.346686682 | 0.00223389  | 0.021699324 |
| TCEA2        | ENSGALG00000005976  | transcription elongation factor A2                             | -0.272641003 | 6.033968384 | 18.12061525 | 0.0000207   | 0.00057828  |
| BAZ2B        | ENSGALG000000012579 | bromodomain adjacent to zinc finger domain 2B                  | -0.272342314 | 7.14717014  | 12.31548004 | 0.000449217 | 0.006689474 |
| LOC107049545 | -----               | cytochrome c oxidase subunit 5B                                | -0.271164874 | 6.033753234 | 10.48966341 | 0.001200442 | 0.013660636 |
| INTS7        | ENSGALG000000009843 | integrator complex subunit 7                                   | -0.270562698 | 6.037483667 | 11.89781759 | 0.000561998 | 0.007890503 |
| PRKAB1       | ENSGALG000000007373 | protein kinase AMP-activated non-catalytic subunit beta 1      | -0.27054103  | 6.208975934 | 18.21375985 | 0.0000197   | 0.000558246 |
| ALAS1        | ENSGALG000000003948 | 5'-aminolevulinate synthase 1                                  | -0.270413338 | 5.672298439 | 7.443275969 | 0.006367388 | 0.045416287 |
| SPOCK3       | ENSGALG000000009568 | SPARC/osteonectin, cwcv and kazal like domains proteoglycan 3  | -0.270343124 | 6.427845739 | 12.81233267 | 0.000344342 | 0.00545803  |
| KRIT1        | ENSGALG000000042651 | KRIT1, ankyrin repeat containing                               | -0.269944512 | 5.779662701 | 22.76329265 | 0.00000183  | 0.0000783   |
| MERTK        | ENSGALG000000008257 | MER proto-oncogene, tyrosine kinase                            | -0.269425759 | 5.176121506 | 13.24590127 | 0.000273177 | 0.004586857 |
| ROBO1        | ENSGALG000000015511 | roundabout guidance receptor 1                                 | -0.268840618 | 6.87906166  | 14.06323549 | 0.000176765 | 0.003239391 |
| TK2          | ENSGALG000000034216 | thymidine kinase 2, mitochondrial                              | -0.26864988  | 7.055880422 | 10.3189062  | 0.001316743 | 0.014639869 |
| PRR5L        | ENSGALG000000007920 | proline rich 5 like                                            | -0.267906447 | 5.26109711  | 10.58253031 | 0.001141613 | 0.013229044 |
| USP30        | ENSGALG000000040265 | ubiquitin specific peptidase 30                                | -0.267831913 | 5.363612556 | 14.444155   | 0.000144377 | 0.002756064 |
| MIEN1        | ENSGALG000000026328 | migration and invasion enhancer 1                              | -0.26726542  | 5.139859056 | 14.45510745 | 0.00014354  | 0.002746456 |
| HARS2        | ENSGALG000000029346 | histidyl-tRNA synthetase 2, mitochondrial                      | -0.267252639 | 4.276824162 | 7.637745408 | 0.005715932 | 0.041883576 |
| ABCG2        | ENSGALG000000030677 | ATP binding cassette subfamily G member 2 (Junior blood group) | -0.266791419 | 3.548213819 | 7.287414121 | 0.006943935 | 0.048015912 |
| CCDC173      | ENSGALG000000031069 | coiled-coil domain containing 173                              | -0.26656659  | 6.406334051 | 12.48680816 | 0.000409836 | 0.006238528 |
| GLUD1        | -----               | ----                                                           | -0.265671706 | 5.791469807 | 21.71231217 | 0.00000317  | 0.000124992 |
| LOC112530288 | -----               | proline-rich receptor-like protein kinase PERK2                | -0.26520518  | 4.449511136 | 7.285425411 | 0.006951627 | 0.048015912 |
| FRMPD4       | ENSGALG000000033541 | FERM and PDZ domain containing 4                               | -0.264642058 | 3.661069056 | 7.723249133 | 0.00545142  | 0.040498021 |
| SPPL2B       | -----               | ----                                                           | -0.264547617 | 6.674902952 | 8.086764937 | 0.004458969 | 0.035221456 |
| GPATCH1      | ENSGALG000000004839 | G-patch domain containing 1                                    | -0.264451493 | 5.599870116 | 13.97989283 | 0.000184776 | 0.003352251 |
| RHPN2        | ENSGALG000000004814 | rhophilin Rho GTPase binding protein 2                         | -0.263877658 | 4.52314484  | 8.86529409  | 0.002906434 | 0.02584274  |
| RFTN2        | ENSGALG000000036471 | raftlin family member 2                                        | -0.263509761 | 6.20424161  | 9.411778862 | 0.00215596  | 0.02117989  |
| MFN1         | ENSGALG000000041873 | mitofusin 1                                                    | -0.262332154 | 7.083636721 | 18.16370961 | 0.0000203   | 0.000569199 |
| CELSR3       | ENSGALG000000036763 | cadherin EGF LAG seven-pass G-type receptor 3                  | -0.26186777  | 6.557421028 | 12.29270967 | 0.000454731 | 0.006739878 |
| TRAF3IP2     | ENSGALG000000015026 | TRAF3 interacting protein 2                                    | -0.261806268 | 4.982375558 | 9.230957697 | 0.002379572 | 0.022564277 |
| RNF217       | ENSGALG000000013651 | ring finger protein 217                                        | -0.261697005 | 6.3670958   | 12.05748521 | 0.000515848 | 0.007413349 |
| NANP         | ENSGALG000000047977 | N-acetylneuraminic acid phosphatase                            | -0.261691594 | 5.258096651 | 12.6147958  | 0.000382705 | 0.005913067 |
| SELENOS      | ENSGALG000000007162 | selenoprotein S                                                | -0.261633841 | 5.817738214 | 10.85876591 | 0.000983292 | 0.011888369 |
| PLA2G10      | ENSGALG000000021314 | phospholipase A2 group X                                       | -0.261022909 | 4.834707786 | 9.691285238 | 0.00185144  | 0.018993419 |
| SYNE1        | ENSGALG000000013505 | spectrin repeat containing, nuclear envelope 1                 | -0.259540426 | 5.777181779 | 9.540435199 | 2.01E-03    | 2.02E-02    |

|              |                    |                                                               |              |             |             |             |             |
|--------------|--------------------|---------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| XPO1p        | ENSGALG00000038549 | exportin 1, transcribed pseudogene                            | -0.259258002 | 3.729811793 | 7.395193575 | 0.006539839 | 0.046185856 |
| RREB1        | ENSGALG00000012799 | ras responsive element binding protein 1                      | -0.258919135 | 5.345215378 | 7.721310369 | 0.005457277 | 0.040523239 |
| KIAA0930     | ENSGALG00000014226 | KIAA0930                                                      | -0.257889041 | 5.324144615 | 11.7578724  | 0.000605864 | 0.008338694 |
| RNF149       | ENSGALG00000016779 | ring finger protein 149                                       | -0.257138632 | 5.840370473 | 15.77692043 | 0.0000713   | 0.001597672 |
| TBL3         | ENSGALG00000005558 | transducin beta like 3                                        | -0.256689053 | 7.234911021 | 18.54386032 | 0.0000166   | 0.000487865 |
| FAM83H       | ENSGALG00000033118 | family with sequence similarity 83 member H                   | -0.256323764 | 4.184956458 | 7.759852533 | 0.005342032 | 0.039955973 |
| CDIP1        | ENSGALG00000036502 | cell death-inducing p53 target 1                              | -0.255933385 | 5.058316404 | 10.3051167  | 0.001326619 | 0.014739709 |
| MSRB1        | ENSGALG00000005414 | methionine sulfoxide reductase B1                             | -0.255618466 | 4.693689065 | 7.429240274 | 0.006417243 | 0.045692658 |
| ZNF512B      | ENSGALG00000006013 | zinc finger protein 512B                                      | -0.254887263 | 6.525673471 | 25.41570942 | 4.62E-07    | 2.51E-05    |
| VPS37B       | ENSGALG00000003743 | VPS37B, ESCRT-I subunit                                       | -0.254036627 | 6.365085288 | 18.21781621 | 0.0000197   | 0.000558017 |
| NOCT         | ENSGALG00000032957 | nocturnin                                                     | -0.253710831 | 4.377654332 | 9.450902629 | 0.002110452 | 0.020869886 |
| ICK          | ENSGALG00000016321 | intestinal cell kinase                                        | -0.253483792 | 6.02807126  | 15.15448664 | 0.0000991   | 0.002045264 |
| MAML1        | -----              | mastermind like transcriptional coactivator 1                 | -0.25337388  | 5.822077795 | 10.09528965 | 0.001486488 | 0.01608163  |
| LOC101748694 | -----              | dentin sialophosphoprotein-like                               | -0.251923715 | 5.69153723  | 11.70025296 | 0.000624916 | 0.008540692 |
| SEMA5B       | ENSGALG00000011686 | semaphorin 5B                                                 | -0.251792859 | 8.042946139 | 14.9919669  | 0.00010797  | 0.002174594 |
| AGA          | ENSGALG00000010716 | aspartylglucosaminidase                                       | -0.251639194 | 5.721396381 | 12.87591798 | 0.000332837 | 0.00531732  |
| L2HGDH       | ENSGALG00000012282 | L-2-hydroxyglutarate dehydrogenase                            | -0.251362327 | 4.837805328 | 9.460571224 | 0.002099357 | 0.020835945 |
| MCF2L        | ENSGALG00000016834 | MCF.2 cell line derived transforming sequence like            | -0.250842429 | 5.137051915 | 8.79984314  | 0.003012564 | 0.02652314  |
| ISCU         | ENSGALG00000004869 | iron-sulfur cluster assembly enzyme                           | -0.249782351 | 6.806547031 | 15.74878965 | 0.0000723   | 0.0016172   |
| TMEM38A      | ENSGALG00000003778 | transmembrane protein 38A                                     | -0.249452704 | 5.310086895 | 12.36115572 | 0.000438359 | 0.006563423 |
| LETM2        | ENSGALG00000036049 | leucine zipper and EF-hand containing transmembrane protein 2 | -0.249214996 | 4.560079245 | 11.05028206 | 0.000886737 | 0.010979126 |
| VCPKMT       | ENSGALG00000012269 | valosin containing protein lysine methyltransferase           | -0.248961335 | 4.376145728 | 7.880123704 | 0.004998106 | 0.038252947 |
| ALMS1        | ENSGALG00000044620 | ALMS1, centrosome and basal body associated protein           | -0.247416229 | 6.87355991  | 12.12667114 | 0.000497058 | 0.007234003 |
| TMEM150C     | ENSGALG00000011175 | transmembrane protein 150C                                    | -0.247089424 | 4.960311931 | 8.161403612 | 0.004279124 | 0.034048834 |
| PRMT8        | ENSGALG00000013272 | protein arginine methyltransferase 1                          | -0.246223126 | 4.815752613 | 7.773688078 | 0.00530127  | 0.039832147 |
| NCKIPSD      | ENSGALG00000005713 | NCK interacting protein with SH3 domain                       | -0.245979716 | 5.563109212 | 8.30252099  | 0.003959008 | 0.032220766 |
| AXIN2        | ENSGALG00000039200 | axin 2                                                        | -0.24553646  | 5.373723466 | 7.271639613 | 0.007005183 | 0.048286186 |
| FAAH2        | ENSGALG00000028084 | fatty acid amide hydrolase 2                                  | -0.244912147 | 5.550332083 | 14.7205395  | 0.000124681 | 0.002451158 |
| C4HXorf56    | -----              | -----                                                         | -0.244009709 | 6.144525711 | 12.97821831 | 0.000315136 | 0.005113963 |
| LDLRAD3      | ENSGALG00000038913 | low density lipoprotein receptor class A domain containing 3  | -0.24388306  | 7.157467601 | 7.209843647 | 0.007250481 | 0.049443293 |
| SDC2         | ENSGALG00000031424 | syndecan 2                                                    | -0.243743434 | 6.445696405 | 10.71096848 | 0.001065023 | 0.012562687 |
| INTS6L       | ENSGALG00000006157 | integrator complex subunit 6 like                             | -0.243459229 | 6.182326332 | 13.49555487 | 0.000239129 | 0.00414197  |
| PTDSS1       | ENSGALG00000030185 | phosphatidylserine synthase 1                                 | -0.243104057 | 6.171873362 | 16.03569076 | 0.0000622   | 0.001432544 |
| ZDHHC20      | ENSGALG00000017126 | zinc finger DHHC-type containing 20                           | -0.242705096 | 6.653505185 | 19.09778381 | 0.0000124   | 0.000384122 |
| CCBL1        | -----              | -----                                                         | -0.242498096 | 4.454441046 | 9.367689736 | 0.002208437 | 0.021548861 |
| SLC39A11     | ENSGALG00000004413 | solute carrier family 39 member 11                            | -0.242016012 | 5.017221054 | 11.17258776 | 0.000830148 | 0.01050352  |
| PLEKHG3      | -----              | pleckstrin homology and RhoGEF domain containing G3           | -0.241970697 | 5.474683487 | 7.235668482 | 0.007146919 | 0.048939892 |
| SIN3A        | ENSGALG00000001644 | SIN3 transcription regulator family member A                  | -0.241777655 | 7.24550974  | 16.32722589 | 0.0000533   | 0.001258152 |
| TMEM181      | ENSGALG00000013737 | transmembrane protein 181                                     | -0.241735005 | 5.159197851 | 7.660381889 | 0.005644656 | 0.041576906 |
| NCLN         | ENSGALG00000013369 | nicalin                                                       | -0.24091476  | 6.779027969 | 16.75016114 | 0.0000426   | 0.001051902 |
| RLIM         | ENSGALG00000007750 | ring finger protein, LIM domain interacting                   | -0.239754996 | 6.917207708 | 16.95349581 | 0.0000383   | 0.00096088  |
| MAN1B1       | ENSGALG00000037375 | mannosidase alpha class 1B member 1                           | -0.237909827 | 5.803316246 | 8.684784019 | 0.003208776 | 0.027687682 |
| MVK          | ENSGALG00000013848 | mevalonate kinase                                             | -0.237874985 | 5.818107457 | 12.42975615 | 0.000422547 | 0.00637891  |
| ATF7IP       | ENSGALG00000011814 | activating transcription factor 7 interacting protein         | -0.237011668 | 6.685722952 | 11.95907906 | 0.000543817 | 0.00773424  |

|              |                    |                                                                  |              |             |             |             |             |
|--------------|--------------------|------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| KIF13B       | ENSGALG00000016639 | kinesin family member 13B                                        | -0.236901172 | 5.438402119 | 9.107764088 | 0.002545268 | 0.023560072 |
| FAM20B       | ENSGALG00000004227 | FAM20B, glycosaminoglycan xylosylkinase                          | -0.236710512 | 5.517212112 | 13.90240957 | 0.000192551 | 0.003466558 |
| GTF2F2       | ENSGALG00000016974 | general transcription factor IIF subunit 2                       | -0.236616222 | 7.203492323 | 15.2815122  | 0.0000926   | 0.001951394 |
| MPHOSPH9     | -----              | M-phase phosphoprotein 9                                         | -0.236280872 | 5.212962902 | 9.917524371 | 0.001637124 | 0.017257451 |
| CNOT6L       | ENSGALG00000010333 | CCR4-NOT transcription complex subunit 6 like                    | -0.236225535 | 5.324197328 | 9.702256462 | 0.001840419 | 0.018937498 |
| PIKFYVE      | ENSGALG00000008842 | phosphoinositide kinase, FYVE-type zinc finger containing        | -0.235986448 | 6.371906078 | 9.893314375 | 0.001658803 | 0.017446238 |
| TTC17        | ENSGALG00000039558 | tetratricopeptide repeat domain 17                               | -0.234314795 | 5.889022576 | 12.0218087  | 0.000525817 | 0.007530297 |
| RAB11FIP5    | ENSGALG00000047393 | RAB11 family interacting protein 5                               | -0.234295228 | 4.982847896 | 8.053880819 | 0.004540628 | 0.035612984 |
| TNFRSF1A     | ENSGALG00000039461 | TNF receptor superfamily member 1A                               | -0.23391366  | 4.535534357 | 7.550931645 | 0.005997906 | 0.043344549 |
| PARP12       | ENSGALG00000046187 | poly(ADP-ribose) polymerase family member 12                     | -0.232709349 | 4.708409046 | 8.675157062 | 0.003225771 | 0.027819735 |
| C1GALT1C1    | ENSGALG00000008513 | C1GALT1 specific chaperone 1                                     | -0.232521741 | 4.307788442 | 7.21741068  | 0.007219978 | 0.049286202 |
| PROS1        | ENSGALG00000015409 | protein S (alpha)                                                | -0.231492315 | 6.879239671 | 16.15890109 | 0.0000582   | 0.001351775 |
| CBL          | ENSGALG00000029077 | Cbl proto-oncogene                                               | -0.231281161 | 6.446545071 | 14.98449678 | 0.000108398 | 0.002177888 |
| RBM15        | ENSGALG00000000401 | RNA binding motif protein 15                                     | -0.230889495 | 6.698250164 | 8.864930141 | 0.002907014 | 0.02584274  |
| B4GALT4      | ENSGALG00000015069 | beta-1,4-galactosyltransferase 4                                 | -0.230866849 | 5.158608516 | 10.45906525 | 1.22E-03    | 1.38E-02    |
| GPATCH2      | ENSGALG00000009627 | G-patch domain containing 2                                      | -0.230533764 | 5.515411187 | 11.50965613 | 0.000692356 | 0.009195089 |
| SPINT1       | ENSGALG00000008469 | serine peptidase inhibitor, Kunitz type 1                        | -0.229502813 | 5.862553441 | 9.362229966 | 0.002215025 | 0.021579772 |
| LNPK         | ENSGALG00000037944 | lunapark, ER junction formation factor                           | -0.228656156 | 5.583904    | 13.24380463 | 0.000273482 | 0.004587309 |
| DHX35        | ENSGALG00000003658 | DEAH-box helicase 35                                             | -0.228457056 | 4.67993579  | 9.860548185 | 1.69E-03    | 1.77E-02    |
| GCLC         | ENSGALG00000016313 | glutamate-cysteine ligase catalytic subunit                      | -0.227956294 | 5.339909196 | 7.314147863 | 6.84E-03    | 4.75E-02    |
| NBEAL2       | ENSGALG00000039120 | neurobeachin like 2                                              | -0.227733605 | 5.732246287 | 11.61805797 | 0.000653146 | 0.008831043 |
| LOC101749469 | -----              | uncharacterized LOC101749469                                     | -0.227429762 | 7.532940767 | 9.243987596 | 0.002362699 | 0.022498964 |
| TRMT61A      | ENSGALG00000011522 | tRNA methyltransferase 61A                                       | -0.226891051 | 5.768441999 | 9.519564756 | 0.002032928 | 0.020370105 |
| BMP7         | ENSGALG00000007668 | bone morphogenetic protein 7                                     | -0.225764395 | 5.896210149 | 10.04605902 | 0.001526742 | 0.016366476 |
| IDI1         | -----              | ----                                                             | -0.225615066 | 6.116485816 | 7.4677145   | 0.006281524 | 0.044959759 |
| MDM2         | ENSGALG00000009942 | MDM2 proto-oncogene                                              | -0.225099572 | 6.470314317 | 8.871803607 | 0.002896089 | 0.025801375 |
| USP20        | ENSGALG00000041104 | ubiquitin specific peptidase 20                                  | -0.223936655 | 6.037477697 | 11.48651316 | 0.00070103  | 0.009265425 |
| DOCK9        | ENSGALG00000016883 | dedicator of cytokinesis 9                                       | -0.22301621  | 5.086893271 | 8.049961788 | 0.004550461 | 0.035673103 |
| MGARP        | ENSGALG00000046580 | mitochondria localized glutamic acid rich protein                | -0.222870026 | 5.587838924 | 8.18715315  | 0.004218808 | 0.033764824 |
| ZBTB26       | ENSGALG00000042762 | zinc finger and BTB domain containing 26                         | -0.22243601  | 5.741014634 | 8.788402649 | 0.003031516 | 0.026604583 |
| CDC42EP1     | ENSGALG00000038556 | CDC42 effector protein 1                                         | -0.222423976 | 7.020390147 | 13.1934315  | 0.000280932 | 0.004693134 |
| CAMSAP1      | ENSGALG00000001692 | calmodulin regulated spectrin associated protein 1               | -0.221982482 | 6.463143831 | 10.36789509 | 0.001282257 | 0.014363194 |
| RD3          | ENSGALG00000009861 | retinal degeneration 3                                           | -0.221749853 | 4.847122198 | 9.169331796 | 0.002461044 | 0.022983247 |
| GCC1         | ENSGALG00000033149 | GRIP and coiled-coil domain containing 1                         | -0.221452347 | 4.920280564 | 9.796028713 | 1.75E-03    | 0.018179412 |
| PSKH1        | ENSGALG00000001647 | protein serine kinase H1                                         | -0.22127749  | 5.642877537 | 9.65969263  | 0.001883551 | 0.019262795 |
| FOXN2        | ENSGALG00000008942 | forkhead box N2                                                  | -0.221108599 | 5.774916802 | 7.985398331 | 0.004715612 | 0.036705484 |
| N6AMT1       | ENSGALG00000015802 | N-6 adenine-specific DNA methyltransferase 1 (putative)          | -0.220155915 | 4.981165353 | 7.861512226 | 0.005049814 | 0.038439969 |
| ZBTB47       | ENSGALG00000005287 | zinc finger and BTB domain containing 47                         | -0.219502825 | 5.699544616 | 8.820324789 | 0.002978936 | 0.026297424 |
| BCS1L        | ENSGALG00000011386 | BCS1 homolog, ubiquinol-cytochrome c reductase complex chaperone | -0.219343387 | 4.841993619 | 7.432901551 | 0.0064042   | 0.045619527 |
| ANO5         | ENSGALG00000003748 | anoctamin 5                                                      | -0.219067982 | 6.550051773 | 14.17071897 | 0.000166948 | 0.003093622 |
| YOD1         | ENSGALG00000037597 | YOD1 deubiquitinase                                              | -0.218609052 | 6.180180179 | 10.74391044 | 0.00104623  | 0.012430121 |
| MAPKAPK5     | ENSGALG00000004743 | mitogen-activated protein kinase-activated protein kinase 5      | -0.218559781 | 6.277297746 | 12.98816591 | 0.000313466 | 0.005106216 |
| LOC420992    | -----              | uncharacterized LOC420992                                        | -0.21848353  | 5.967424871 | 11.25036968 | 7.96E-04    | 1.02E-02    |
| ZC2HC1A      | ENSGALG00000035932 | zinc finger, C2HC-type containing 1A                             | -0.21808042  | 5.762781742 | 12.3527223  | 0.000440344 | 0.006587144 |

|           |                     |                                                                        |              |             |             |             |             |
|-----------|---------------------|------------------------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| WDR6      | ENSGALG00000006936  | WD repeat domain 6                                                     | -0.21708452  | 5.030946039 | 8.171319065 | 0.004255795 | 0.033945274 |
| TANC1     | ENSGALG00000012570  | tetratricopeptide repeat, ankyrin repeat and coiled-coil containing 1  | -0.216761233 | 6.259638326 | 9.670619258 | 0.001872382 | 0.019184336 |
| CTTNBP2   | ENSGALG00000009134  | cortactin binding protein 2                                            | -0.216507726 | 5.099649306 | 7.333360071 | 6.77E-03    | 0.047177115 |
| INO80C    | ENSGALG000000051335 | INO80 complex subunit C                                                | -0.216461548 | 6.00603215  | 10.2132944  | 1.39E-03    | 1.53E-02    |
| RAB11FIP1 | ENSGALG00000003129  | RAB11 family interacting protein 1                                     | -0.216382407 | 5.513650869 | 9.927682682 | 0.001628114 | 0.017184485 |
| PDIA5     | ENSGALG00000011689  | protein disulfide isomerase family A member 5                          | -0.215841388 | 6.350045035 | 12.68816748 | 0.000367977 | 0.005744836 |
| PGM3      | ENSGALG00000015854  | phosphoglucomutase 3                                                   | -0.215085751 | 5.326372355 | 8.508741896 | 3.53E-03    | 0.029733777 |
| UBE3B     | ENSGALG00000013851  | ubiquitin protein ligase E3B                                           | -0.214559151 | 6.002365433 | 10.16428244 | 0.001431876 | 0.015645103 |
| UGGT1     | ENSGALG00000002141  | UDP-glucose glycoprotein glucosyltransferase 1                         | -0.214386381 | 6.930877961 | 8.26799995  | 0.004034993 | 0.032673977 |
| SYNE3     | ENSGALG00000011076  | spectrin repeat containing nuclear envelope family member 3            | -0.213975139 | 6.286260999 | 9.344331445 | 0.002236762 | 0.02171441  |
| GNS       | ENSGALG00000009856  | glucosamine (N-acetyl)-6-sulfatase                                     | -0.213887798 | 6.669625592 | 15.42421039 | 8.59E-05    | 0.001840134 |
| NPLOC4    | ENSGALG00000004583  | NPL4 homolog, ubiquitin recognition factor                             | -0.213506713 | 6.792416953 | 9.04854404  | 0.002629041 | 0.02407394  |
| GOLGA3    | ENSGALG00000002158  | golgin A3                                                              | -0.213481339 | 5.692784072 | 9.212689435 | 0.002403434 | 0.022697352 |
| CAMK1     | ENSGALG00000029912  | calcium/calmodulin dependent protein kinase I                          | -0.21346273  | 5.256105955 | 9.042161154 | 0.002638236 | 0.024104481 |
| RFC2      | ENSGALG00000029449  | replication factor C subunit 2                                         | -0.213317949 | 6.261370481 | 9.474865974 | 0.002083061 | 0.02074865  |
| CCDC92    | ENSGALG00000003146  | coiled-coil domain containing 92                                       | -0.213108037 | 5.554177663 | 7.593446735 | 0.005858084 | 0.042652557 |
| PANX2     | ENSGALG00000000003  | pannexin 2                                                             | -0.213104719 | 5.636774189 | 7.726813107 | 0.00544067  | 0.040476061 |
| MDM4      | ENSGALG00000000636  | MDM4, p53 regulator                                                    | -0.212921937 | 7.422609479 | 10.78879584 | 0.001021163 | 0.012229429 |
| LGALS1    | ENSGALG000000027096 | galectin like                                                          | -0.212513734 | 4.663887819 | 8.414859805 | 0.003721665 | 0.030976225 |
| TTYH3     | ENSGALG00000004310  | tweety family member 3                                                 | -0.212331227 | 8.482378616 | 11.83352718 | 0.000581737 | 0.008105403 |
| TMEM248   | ENSGALG000000033954 | transmembrane protein 248                                              | -0.211754403 | 6.587867296 | 11.99610561 | 0.000533118 | 0.007608381 |
| OSBP2     | ENSGALG00000007758  | oxysterol binding protein 2                                            | -0.209964223 | 5.112679421 | 8.300588814 | 0.003963223 | 0.032220766 |
| CLIP2     | ENSGALG000000030450 | CAP-GLY domain containing linker protein 2                             | -0.209657333 | 7.287106337 | 9.369401399 | 0.002206376 | 0.021546535 |
| LOC776273 | ENSGALG000000036085 | 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase gamma-1-like | -0.209138973 | 7.300009954 | 15.30732441 | 0.0000914   | 0.001931576 |
| AFG3L2    | ENSGALG00000013853  | AFG3 like matrix AAA peptidase subunit 2                               | -0.208575116 | 6.83749343  | 17.64227527 | 0.0000267   | 0.000715351 |
| SMYD5     | ENSGALG000000022920 | SMYD family member 5                                                   | -0.208166459 | 5.002580197 | 7.767416266 | 0.005319709 | 0.039858242 |
| CORO7     | ENSGALG000000038325 | coronin 7                                                              | -0.207976693 | 5.116347169 | 7.349672977 | 0.006707496 | 0.04696674  |
| ARL6IP4   | ENSGALG00000003682  | ADP ribosylation factor like GTPase 6 interacting protein 4            | -0.207742567 | 5.840679447 | 13.85734783 | 0.000197224 | 0.003535209 |
| COG2      | ENSGALG00000011114  | component of oligomeric golgi complex 2                                | -0.206714962 | 5.285911249 | 11.53973399 | 0.000681244 | 0.009098919 |
| P3H3      | ENSGALG00000014490  | prolyl 3-hydroxylase 3                                                 | -0.206297669 | 5.466588677 | 7.414475384 | 0.006470118 | 0.045954099 |
| TUBGCP6   | ENSGALG000000032156 | tubulin gamma complex associated protein 6                             | -0.205858357 | 5.053638685 | 7.827856219 | 0.005144708 | 0.038922379 |
| GZF1      | ENSGALG000000053640 | GNDF inducible zinc finger protein 1                                   | -0.204992006 | 5.673348356 | 7.876588139 | 0.005007887 | 0.038274401 |
| SIN3B     | ENSGALG00000003771  | SIN3 transcription regulator family member B                           | -0.204225162 | 6.106991003 | 8.855578466 | 0.002921945 | 0.02594744  |
| SUCLG2    | ENSGALG00000007652  | succinate-CoA ligase GDP-forming beta subunit                          | -0.203878559 | 6.941057546 | 8.399419644 | 0.003753408 | 0.031051952 |
| YIPF3     | ENSGALG000000041037 | Yip1 domain family member 3                                            | -0.203521672 | 5.961393788 | 13.16007252 | 0.000285978 | 0.004757961 |
| CHCHD5    | ENSGALG000000030457 | coiled-coil-helix-coiled-coil-helix domain containing 5                | -0.203315471 | 6.415197216 | 10.49299254 | 0.001198281 | 0.013652459 |
| ASB6      | ENSGALG00000004378  | ankyrin repeat and SOCS box containing 6                               | -0.202809357 | 5.58971019  | 7.680416052 | 0.00558233  | 0.041210065 |
| SLC25A24  | ENSGALG00000001938  | solute carrier family 25 member 24                                     | -0.202459893 | 5.313870707 | 8.749272893 | 0.003097255 | 0.027022977 |
| FKBP15    | ENSGALG000000008838 | FK506 binding protein 15                                               | -0.202267268 | 6.29283167  | 13.06320125 | 0.000301154 | 0.004940672 |
| PISD      | ENSGALG000000006872 | phosphatidylserine decarboxylase                                       | -0.201927427 | 5.924153322 | 7.835552684 | 0.005122849 | 0.038828409 |
| POLH      | ENSGALG00000010317  | DNA polymerase eta                                                     | -0.201907992 | 5.30143117  | 8.870663705 | 0.002897898 | 0.02580352  |
| WDR26     | ENSGALG000000043081 | WD repeat domain 26                                                    | -0.201644906 | 6.794345627 | 15.25565242 | 0.0000939   | 0.001968214 |
| HEY1      | ENSGALG000000035031 | hes related family bHLH transcription factor with YRPW motif 1         | -0.201509493 | 6.176740817 | 7.779485467 | 0.005284285 | 0.039740815 |
| CENPI     | ENSGALG000000005038 | centromere protein I                                                   | -0.201390149 | 5.927945245 | 10.91425008 | 0.000954273 | 0.011605742 |

|            |                     |                                                         |              |             |             |             |             |
|------------|---------------------|---------------------------------------------------------|--------------|-------------|-------------|-------------|-------------|
| ZBTB17     | ENSGALG00000035352  | zinc finger and BTB domain containing 17                | -0.201336547 | 5.523795621 | 9.942919594 | 0.001614692 | 0.017119694 |
| SYT11      | ENSGALG00000014646  | synaptotagmin 11                                        | -0.201012293 | 7.736699066 | 11.14440697 | 0.000842854 | 0.010619575 |
| E2F4       | ENSGALG00000001722  | E2F transcription factor 4                              | -0.199682099 | 6.407790675 | 11.49866574 | 0.000696462 | 0.009234711 |
| ACSL1      | ENSGALG00000010628  | acyl-CoA synthetase long-chain family member 1          | -0.198668509 | 5.920311894 | 7.669613013 | 0.00561585  | 0.041420355 |
| DENND4A    | ENSGALG000000041403 | DENN domain containing 4A                               | -0.198626575 | 6.510670562 | 8.138553842 | 0.004333383 | 0.034360863 |
| PLOD2      | ENSGALG00000006783  | procollagen-lysine,2-oxoglutarate 5-dioxygenase 2       | -0.197693129 | 7.592243311 | 11.08461977 | 0.000870467 | 0.01083699  |
| BOD1L1     | ENSGALG00000026470  | biorientation of chromosomes in cell division 1 like 1  | -0.196937622 | 6.83866126  | 7.809779043 | 0.005196426 | 0.03922348  |
| PLEKHO1    | ENSGALG00000037540  | pleckstrin homology domain containing O1                | -0.196850848 | 6.188578721 | 8.570461608 | 0.003416605 | 0.02899445  |
| DIS3L      | ENSGALG00000007643  | DIS3 like exosome 3'-5' exoribonuclease                 | -0.196836969 | 4.94488976  | 7.222491484 | 0.007199571 | 0.049198065 |
| FAM160B1   | ENSGALG00000031404  | family with sequence similarity 160 member B1           | -0.196792729 | 6.089020204 | 11.90709917 | 0.000559204 | 0.007882433 |
| EMC3       | ENSGALG00000003738  | ER membrane protein complex subunit 3                   | -0.196753187 | 5.454729048 | 10.58538921 | 0.001139849 | 0.013218938 |
| CTSD       | ENSGALG00000006613  | cathepsin D                                             | -0.196331591 | 6.351618631 | 8.978251143 | 0.00273212  | 0.024701669 |
| C3H1ORF198 | -----               | -----                                                   | -0.195390286 | 7.021382966 | 13.92373933 | 0.000190379 | 0.003438729 |
| IQCE       | -----               | IQ motif containing E                                   | -0.194783346 | 6.789975031 | 10.27035365 | 0.001351849 | 0.01487938  |
| VPS4B      | ENSGALG00000012879  | vacuolar protein sorting 4 homolog B                    | -0.194361369 | 5.925370084 | 8.623318313 | 0.003318867 | 0.028443727 |
| ZBED1      | ENSGALG00000016681  | dehydrogenase/reductase X-linked                        | -0.194074268 | 4.762551737 | 7.223489491 | 0.007195569 | 0.049191149 |
| SNAPC4     | ENSGALG000000044726 | small nuclear RNA activating complex polypeptide 4      | -0.193941367 | 5.541221376 | 7.392661342 | 0.006549052 | 0.04623108  |
| PNN        | ENSGALG00000010167  | pinin, desmosome associated protein                     | -0.193847821 | 8.008049201 | 10.18188444 | 0.001418272 | 0.015527385 |
| PHACTR2    | ENSGALG00000013768  | phosphatase and actin regulator 2                       | -0.193575422 | 6.355340236 | 8.943128584 | 0.002785153 | 0.025070946 |
| RIT1       | ENSGALG00000014647  | Ras like without CAAX 1                                 | -0.193463295 | 7.733305359 | 8.788822139 | 0.003030819 | 0.026604583 |
| SCFD2      | ENSGALG000000039168 | sec1 family domain containing 2                         | -0.19316095  | 5.945947786 | 7.924565001 | 0.004876807 | 0.037575148 |
| GPATCH4    | ENSGALG000000048365 | G-patch domain containing 4                             | -0.192099091 | 5.961521849 | 7.202851294 | 0.007278784 | 0.049595195 |
| RNF25      | ENSGALG00000011375  | ring finger protein 25                                  | -0.189521708 | 5.681855102 | 9.463748394 | 0.002095724 | 0.020835945 |
| CASD1      | ENSGALG00000009653  | CAS1 domain containing 1                                | -0.188032763 | 5.679870929 | 11.05711803 | 0.000883474 | 0.010946957 |
| WASHC4     | ENSGALG000000028254 | WASH complex subunit 4                                  | -0.187817011 | 6.040339812 | 11.68344708 | 0.000630586 | 0.008582541 |
| SSH1       | -----               | -----                                                   | -0.186846903 | 5.436823548 | 7.409990309 | 0.006486267 | 0.045954099 |
| HGSNAT     | ENSGALG00000010136  | heparan-alpha-glucosaminide N-acetyltransferase         | -0.186434759 | 5.563146698 | 10.82592046 | 0.001000889 | 0.012043138 |
| SGF29      | ENSGALG000000020590 | SAGA complex associated factor 29                       | -0.186157863 | 6.544281188 | 10.44529942 | 0.00122962  | 0.013915676 |
| RB1CC1     | ENSGALG00000015259  | RB1 inducible coiled-coil 1                             | -0.185573371 | 5.734435996 | 8.415261771 | 0.003720842 | 0.030976225 |
| TELO2      | ENSGALG00000009297  | telomere maintenance 2                                  | -0.184107675 | 5.325245609 | 9.624332444 | 0.001920162 | 0.019564254 |
| CLCN7      | ENSGALG000000030826 | chloride voltage-gated channel 7                        | -0.183286068 | 5.577056949 | 8.814252882 | 0.002988866 | 0.026356798 |
| IGDCC4     | ENSGALG00000007410  | immunoglobulin superfamily DCC subclass member 4        | -0.183060744 | 7.003507271 | 7.260228428 | 0.007049832 | 0.048456554 |
| ARFIP2     | ENSGALG00000037839  | ADP ribosylation factor interacting protein 2           | -0.180927353 | 6.098074055 | 10.37290992 | 0.001278778 | 0.01433399  |
| SLC22A5    | ENSGALG00000036920  | solute carrier family 22 member 5                       | -0.180767746 | 6.72464141  | 11.42293792 | 0.000725429 | 0.009518145 |
| PCF11      | ENSGALG00000017249  | PCF11 cleavage and polyadenylation factor subunit       | -0.180747798 | 7.287432702 | 8.317785058 | 0.003925876 | 0.032075618 |
| SMIM14     | ENSGALG00000014321  | small integral membrane protein 14                      | -0.180667999 | 5.640980607 | 7.579925238 | 0.005902189 | 0.042878815 |
| ATPAF1     | ENSGALG00000010444  | ATP synthase mitochondrial F1 complex assembly factor 1 | -0.180566001 | 5.228284188 | 7.590566126 | 0.005867452 | 0.042701868 |
| IREB2      | ENSGALG00000035462  | iron responsive element binding protein 2               | -0.180293008 | 7.663165233 | 11.41493407 | 0.000728561 | 0.009529784 |
| SEC61A1    | ENSGALG00000005966  | Sec61 translocon alpha 1 subunit                        | -0.180063247 | 8.10822866  | 9.617202429 | 0.001927631 | 0.019598353 |
| LIPA       | ENSGALG00000006378  | lipase A, lysosomal acid type                           | -0.179946207 | 5.771904934 | 8.815134585 | 0.002987422 | 0.026356798 |
| TMEM209    | ENSGALG00000008036  | transmembrane protein 209                               | -0.1799056   | 5.894848308 | 8.433413293 | 0.003683882 | 0.030739491 |
| BTG1       | ENSGALG00000011276  | BTG anti-proliferation factor 1                         | -0.179347416 | 7.291273812 | 11.25147238 | 0.000795599 | 0.010162419 |
| MIA3       | ENSGALG000000041034 | MIA family member 3, ER export factor                   | -0.176304074 | 6.762275777 | 11.92984792 | 0.000552417 | 0.007836224 |
| SLC25A20   | ENSGALG000000028227 | solute carrier family 25 member 20                      | -0.175995703 | 7.136285851 | 10.64433585 | 0.001104085 | 0.012894054 |

|              |                     |                                                                         |              |              |             |             |             |
|--------------|---------------------|-------------------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|
| LOC107050717 | -----               | calumenin-like                                                          | -0.175128261 | 6.05463828   | 7.725042078 | 0.005446009 | 0.040481464 |
| USP44        | ENSGALG000000011400 | ubiquitin specific peptidase 44                                         | -0.174027569 | 6.712421789  | 7.263395459 | 0.007037411 | 0.048411624 |
| LIMK2        | ENSGALG000000006950 | LIM domain kinase 2                                                     | -0.174001769 | 5.7644446767 | 7.333244046 | 0.006769077 | 0.047177115 |
| STRADA       | ENSGALG000000000550 | STE20-related kinase adaptor alpha                                      | -0.172600565 | 6.791453109  | 8.621089877 | 0.00332293  | 0.028463721 |
| FAM98B       | ENSGALG000000009744 | family with sequence similarity 98 member B                             | -0.170191937 | 7.027682435  | 7.902067705 | 0.004937832 | 0.037954122 |
| ATP6V1E1     | ENSGALG000000013036 | ATPase H+ transporting V1 subunit E1                                    | -0.168969638 | 5.872992735  | 7.509461875 | 0.006137571 | 0.044214145 |
| FMNL2        | ENSGALG000000012525 | formin like 2                                                           | -0.168901032 | 6.997770209  | 8.699514174 | 0.003182949 | 0.027522555 |
| EPB41L1      | ENSGALG000000034171 | erythrocyte membrane protein band 4.1 like 1                            | -0.168597384 | 6.635318011  | 9.519056808 | 0.002033491 | 0.020370105 |
| GATAD2A      | ENSGALG000000042900 | GATA zinc finger domain containing 2A                                   | -0.168511109 | 7.687427858  | 10.94024956 | 0.000940975 | 0.011486456 |
| CLCN3        | ENSGALG000000009674 | chloride voltage-gated channel 3                                        | -0.167281676 | 6.559078614  | 10.22951218 | 0.001382112 | 0.015182013 |
| TWF2         | ENSGALG000000003977 | twinfilin actin binding protein 2                                       | -0.166663274 | 7.206317027  | 7.666872703 | 0.005624385 | 0.041464723 |
| PRPF4        | ENSGALG000000008857 | pre-mRNA processing factor 4                                            | -0.166606593 | 6.169336806  | 9.131309892 | 0.002512718 | 0.023320229 |
| NRAS         | ENSGALG000000026692 | neuroblastoma RAS viral oncogene homolog                                | -0.165955693 | 6.336245399  | 9.453471288 | 0.002107499 | 0.020869886 |
| TCEB3        | ENSGALG000000034625 | transcription elongation factor B subunit 3                             | -0.164924791 | 5.761733218  | 8.375095065 | 0.003803977 | 0.031328546 |
| FZD1         | ENSGALG000000009064 | frizzled class receptor 1                                               | -0.164294516 | 7.4481171    | 7.768103322 | 0.005317686 | 0.039858242 |
| GMPPA        | ENSGALG000000002417 | GDP-mannose pyrophosphorylase A                                         | -0.164166845 | 6.127661312  | 8.772988926 | 0.003057241 | 0.026758985 |
| MIER2        | ENSGALG000000001108 | MIER family member 2                                                    | -0.163398382 | 5.777736302  | 8.951170359 | 0.002772919 | 0.024974482 |
| ST7L         | ENSGALG000000001538 | suppression of tumorigenicity 7 like                                    | -0.162885191 | 5.587718227  | 7.777234871 | 0.005290872 | 0.039772178 |
| PDSS1        | ENSGALG000000007559 | prenyl (decaprenyl) diphosphate synthase, subunit 1                     | -0.162791352 | 5.31480762   | 7.547425203 | 0.006009588 | 0.043390863 |
| MVB12B       | ENSGALG000000000950 | multivesicular body subunit 12B                                         | -0.162227383 | 7.026356216  | 11.90029597 | 0.00056125  | 0.00788956  |
| SLC39A9      | ENSGALG000000009438 | solute carrier family 39 member 9                                       | -0.157126691 | 6.845743972  | 8.436056268 | 0.003678531 | 0.030726008 |
| GTF2H5       | ENSGALG000000013733 | general transcription factor IIH subunit 5                              | -0.156863224 | 6.905864106  | 7.740825513 | 0.005398612 | 0.040251089 |
| NUP133       | ENSGALG000000011091 | nucleoporin 133                                                         | -0.155631064 | 6.906777934  | 7.412347961 | 0.006477773 | 0.045954099 |
| BAZ1A        | -----               | bromodomain adjacent to zinc finger domain 1A                           | -0.152328003 | 6.495700648  | 9.248810841 | 0.002356484 | 0.022473132 |
| SCAP         | ENSGALG000000035768 | SREBF chaperone                                                         | -0.151523453 | 7.168647186  | 7.646026675 | 0.00568975  | 0.041755635 |
| PRCC         | ENSGALG000000040696 | papillary renal cell carcinoma (translocation-associated)               | -0.150704103 | 6.822315699  | 7.401239384 | 0.006517896 | 0.046066172 |
| TMEM57       | ENSGALG000000001067 | transmembrane protein 57                                                | -0.150272542 | 6.387444216  | 10.30071197 | 0.001329789 | 0.014764964 |
| GNA11        | ENSGALG000000003238 | G protein subunit alpha 11                                              | -0.148642269 | 6.348294738  | 7.447901073 | 0.006351047 | 0.045374963 |
| RGL1         | ENSGALG000000004728 | ral guanine nucleotide dissociation stimulator like 1                   | -0.147995993 | 7.206610949  | 8.878148718 | 0.00288604  | 0.025771652 |
| SGPL1        | ENSGALG000000004553 | sphingosine-1-phosphate lyase 1                                         | -0.143032944 | 6.667846793  | 7.373037628 | 0.0066209   | 0.04653862  |
| LOC428335    | -----               | hyperpolarization activated cyclic nucleotide-gated potassium channel 2 | -0.141592373 | 7.10724813   | 8.730890203 | 0.003128637 | 0.027195839 |
| TSN          | ENSGALG000000011652 | translin                                                                | -0.139231233 | 7.290154733  | 7.341433199 | 0.00673831  | 0.047102329 |
| NDST1        | ENSGALG000000004581 | N-deacetylase and N-sulfotransferase 1                                  | -0.138186317 | 6.881198864  | 7.261433335 | 7.05E-03    | 0.048444291 |
| SMAP2        | ENSGALG000000029244 | small ArfGAP2                                                           | -0.135494303 | 6.550154305  | 7.251596132 | 7.08E-03    | 0.048629103 |
| KCTD10       | ENSGALG000000005138 | potassium channel tetramerization domain containing 10                  | -0.132794868 | 6.897355833  | 8.058323692 | 0.004529507 | 0.035576631 |

| Gene name    | Gene stable ID     | Gene description                                             | log2FC      | logCPM       | LR          | PValue    | FDR       |
|--------------|--------------------|--------------------------------------------------------------|-------------|--------------|-------------|-----------|-----------|
| LOC107049387 | -----              | coiled-coil domain-containing protein 81-like                | 5.459299889 | 1.970624347  | 40.28883605 | 2.19E-10  | 3.03E-08  |
| LOC107049379 | -----              | coiled-coil domain-containing protein 81-like                | 4.842649835 | 3.652007919  | 52.31399626 | 4.73E-13  | 1.28E-10  |
| BTN3A2       | ENSGALG00010006046 | butyrophilin, subfamily 3, member A2                         | 4.588603341 | -0.541043496 | 96.64485822 | 8.29E-23  | 8.53E-20  |
| LOC107052718 | -----              | endogenous retrovirus group K member 11 Pol protein          | 4.016667525 | 4.493620662  | 478.1218094 | 5.48E-106 | 9.01E-102 |
| LOC107052719 | -----              | uncharacterized LOC107052719                                 | 3.307530347 | 3.316053529  | 205.0658036 | 1.64E-46  | 1.35E-42  |
| GBP          | ENSGALG00010028163 | guanylate binding protein                                    | 2.354246735 | 1.720854443  | 22.23494862 | 2.41E-06  | 9.92E-05  |
| HEATR7B2L2   | -----              | maestro heat-like repeat-containing protein family member 2B | 2.333836781 | 0.284247697  | 42.36640381 | 7.57E-11  | 1.17E-08  |
| MOGL4        | -----              | myelin oligodendrocyte glycoprotein like                     | 2.330178329 | 1.484221138  | 59.72453356 | 1.09E-14  | 4.08E-12  |
| LOC112531062 | -----              | zinc finger protein 519-like                                 | 2.300177128 | -0.21369327  | 24.70611303 | 6.68E-07  | 3.47E-05  |
| LOC428505    | ENSGALG00000046353 | SUN domain-containing protein 3-like                         | 2.202832121 | -0.645183771 | 28.24581338 | 1.07E-07  | 7.17E-06  |
| OR11A1       | ENSGALG00000041229 | olfactory receptor 1020-like                                 | 2.186214838 | 0.504489358  | 12.06926843 | 5.13E-04  | 7.39E-03  |
| BTN3A3L1     | -----              | butyrophilin subfamily 3 member A3-like 1                    | 2.170678336 | 1.814176101  | 32.06362111 | 1.49E-08  | 1.25E-06  |
| LOC107056757 | -----              | uncharacterized LOC107056757                                 | 2.158445978 | 0.650339846  | 53.72986177 | 2.30E-13  | 7.42E-11  |
| LOC112532660 | -----              | monocarboxylate transporter 9-like                           | 2.152897213 | 1.380819394  | 89.29725706 | 3.40E-21  | 3.29E-18  |
| LOC101749199 | -----              | uncharacterized LOC101749199                                 | 2.068844159 | 0.004554406  | 40.87005982 | 1.63E-10  | 2.36E-08  |
| LOC101751234 | -----              | uncharacterized LOC101751234                                 | 2.058561001 | -0.257509692 | 21.52970841 | 3.48E-06  | 1.36E-04  |
| LOC101747302 | -----              | uncharacterized LOC101747302                                 | 2.024867193 | 5.837883537  | 119.0718108 | 1.01E-27  | 1.66E-24  |
| C4           | ENSGALG00000032231 | complement 4                                                 | 2.021927842 | 2.7348473    | 62.11647953 | 3.24E-15  | 1.30E-12  |
| LOC107054918 | -----              | uncharacterized LOC107054918                                 | 1.946514876 | -0.347574685 | 29.00461195 | 7.22E-08  | 5.10E-06  |
| LOC107050939 | -----              | zinc finger protein 135-like                                 | 1.938150273 | 1.470574434  | 11.92164327 | 5.55E-04  | 7.86E-03  |
| MHCIA9       | -----              | major histocompatibility complex Y, class I heavy chain 6    | 1.878619716 | 3.283594078  | 28.77668929 | 8.12E-08  | 5.59E-06  |
| LOC107051303 | -----              | zinc finger protein 160-like                                 | 1.838642391 | 1.78808641   | 55.81256568 | 7.97E-14  | 2.68E-11  |
| ACKR1        | -----              | atypical chemokine receptor 1 (Duffy blood group)            | 1.838413526 | 0.666741698  | 63.104635   | 1.96E-15  | 8.72E-13  |
| ADCY8        | ENSGALG00000030251 | adenylate cyclase 8                                          | 1.819165174 | 1.249477981  | 43.00156143 | 5.47E-11  | 8.65E-09  |
| LOC101750974 | -----              | uncharacterized LOC101750974                                 | 1.769949685 | -0.681639431 | 21.9225482  | 2.84E-06  | 1.14E-04  |
| COLEC10      | ENSGALG00000033144 | collectin subfamily member 10                                | 1.768137553 | 3.529395791  | 10.6955049  | 1.07E-03  | 1.26E-02  |
| C2orf50      | -----              | chromosome 2 open reading frame 50                           | 1.76237836  | -0.632899381 | 22.80234937 | 1.80E-06  | 7.73E-05  |
| LOC112531790 | -----              | uncharacterized LOC112531790                                 | 1.754867581 | -0.395839607 | 15.17031187 | 9.82E-05  | 2.04E-03  |
| LOC112533394 | -----              | protocadherin beta-15-like                                   | 1.701754778 | -0.51149049  | 14.10427608 | 1.73E-04  | 3.19E-03  |
| OR52R1L2     | ENSGALG00000053623 | olfactory receptor 52R1-like                                 | 1.665849143 | 0.064384655  | 30.25804088 | 3.78E-08  | 2.87E-06  |
| GM2A         | ENSGALG00000027534 | GM2 ganglioside activator                                    | 1.645493093 | 4.447943451  | 135.2748635 | 2.87E-31  | 6.76E-28  |
| ADGRG5       | ENSGALG00000001149 | adhesion G protein-coupled receptor G5                       | 1.639816871 | -0.583246273 | 25.77582172 | 3.83E-07  | 2.16E-05  |
| LOC107051154 | -----              | protocadherin beta-8-like                                    | 1.59625051  | 0.729213509  | 18.54055231 | 1.66E-05  | 4.88E-04  |
| LYG2         | ENSGALG00000016761 | lysozyme g2                                                  | 1.595660189 | -0.217609284 | 15.95552246 | 6.48E-05  | 1.48E-03  |
| AKR1B1L      | ENSGALG00000053854 | aldo-keto reductase family 1 member E2                       | 1.591811814 | 3.23801571   | 12.89178005 | 3.30E-04  | 5.28E-03  |
| MROH2B1      | -----              | maestro heat-like repeat family member 2B 1                  | 1.586959819 | -0.745654855 | 19.18099925 | 1.19E-05  | 3.74E-04  |
| VSIG1        | ENSGALG00000008290 | V-set and immunoglobulin domain containing 1                 | 1.575920969 | -0.642504952 | 14.28824294 | 1.57E-04  | 2.93E-03  |
| LOC100859910 | -----              | uncharacterized LOC100859910                                 | 1.507393393 | 2.191695235  | 49.91624549 | 1.60E-12  | 3.83E-10  |
| BF2          | ENSGALG00000041380 | Major histocompatibility complex class I antigen BF2         | 1.483451841 | 2.531355833  | 62.62506223 | 2.50E-15  | 1.03E-12  |
| DHRS13       | ENSGALG00000004009 | dehydrogenase/reductase 13                                   | 1.480428889 | 1.977041229  | 68.54611492 | 1.24E-16  | 6.37E-14  |
| LOC107053759 | -----              | uncharacterized LOC107053759                                 | 1.473785156 | 1.176864334  | 28.35526101 | 1.01E-07  | 6.84E-06  |
| LOC100858315 | -----              | Rho GTPase-activating protein 33 like 1                      | 1.4703784   | 0.090495892  | 16.14343063 | 5.87E-05  | 1.36E-03  |

|              |                    |                                                                         |             |              |             |             |             |
|--------------|--------------------|-------------------------------------------------------------------------|-------------|--------------|-------------|-------------|-------------|
| LOC112533400 | -----              | uncharacterized LOC112533400                                            | 1.449733114 | -0.991126145 | 12.94308588 | 3.21E-04    | 5.19E-03    |
| BTN3A3L2     | -----              | butyrophilin subfamily 3 member A3-like 2                               | 1.427246674 | 4.683559164  | 29.09217205 | 6.90E-08    | 4.92E-06    |
| SAMD7        | ENSGALG00000009383 | sterile alpha motif domain containing 7                                 | 1.404474998 | 1.896067229  | 13.13568297 | 2.90E-04    | 4.80E-03    |
| LOC107052398 | -----              | uncharacterized LOC107052398                                            | 1.391184387 | 0.777011291  | 37.73894331 | 8.09E-10    | 9.31E-08    |
| OR5AS1       | ENSGALG00000043910 | olfactory receptor family 5 subfamily AS member 1                       | 1.374292098 | 0.106852858  | 15.3448186  | 8.96E-05    | 1.90E-03    |
| BF1          | ENSGALG00000033932 | MHC BF1 class I                                                         | 1.369173417 | 2.630238515  | 36.19168617 | 1.79E-09    | 0.000000189 |
| LOC107053999 | -----              | uncharacterized LOC107053999                                            | 1.362000892 | 1.03995578   | 32.2565656  | 1.35E-08    | 0.00000115  |
| LOC112531075 | -----              | zinc finger protein 501-like                                            | 1.3562788   | 0.450891387  | 17.1771999  | 3.40E-05    | 0.000867323 |
| LOC112533561 | -----              | uncharacterized LOC112533561                                            | 1.331999776 | 1.109520579  | 18.17182897 | 2.02E-05    | 0.000567747 |
| LOC101748371 | -----              | uncharacterized LOC101748371                                            | 1.329282306 | 2.621716181  | 21.03708402 | 4.50E-06    | 0.000169238 |
| LOC107053444 | -----              | uncharacterized LOC107053444                                            | 1.328883632 | 0.897360049  | 30.94815597 | 2.65E-08    | 0.00000209  |
| LOC112530181 | -----              | uncharacterized LOC112530181                                            | 1.328159327 | 1.790821439  | 10.78327998 | 1.02E-03    | 0.012248096 |
| LOC107053612 | -----              | translation initiation factor IF-2-like                                 | 1.320002965 | -0.819586206 | 12.30254263 | 4.52E-04    | 0.006717763 |
| LOC107054467 | -----              | protocadherin beta-15-like                                              | 1.311624404 | 0.211271217  | 9.741611007 | 1.80E-03    | 0.018607986 |
| LOC112532499 | -----              | uncharacterized LOC112532499                                            | 1.304469958 | 0.327580988  | 20.44867345 | 6.13E-06    | 0.000219524 |
| SLC2A2       | ENSGALG00000009306 | solute carrier family 2 member 2                                        | 1.301679598 | 1.343072876  | 8.41144525  | 3.73E-03    | 0.030987435 |
| LOC112529957 | -----              | sperm acrosome membrane-associated protein 6                            | 1.29716984  | 3.176078927  | 77.79166125 | 1.15E-18    | 7.85E-16    |
| TTR          | ENSGALG00000015143 | transthyretin                                                           | 1.293147192 | 3.123465205  | 7.227482392 | 7.18E-03    | 0.049122672 |
| LOC107054533 | -----              | uncharacterized LOC107054533                                            | 1.287800529 | -0.158580395 | 10.7819213  | 0.001024962 | 0.012248189 |
| LOC101749307 | -----              | uncharacterized LOC101749307                                            | 1.278340328 | -0.352282847 | 8.519750792 | 3.51E-03    | 0.029615004 |
| CDHR1        | ENSGALG00000002314 | cadherin related family member 1                                        | 1.275414095 | -0.665778985 | 10.56603041 | 1.15E-03    | 0.013292521 |
| LOC107054129 | -----              | uncharacterized LOC107054129                                            | 1.272069197 | -0.320161213 | 14.9764533  | 1.09E-04    | 0.002181863 |
| LOC101750503 | -----              | uncharacterized LOC101750503                                            | 1.267594147 | 1.530477236  | 40.86040137 | 1.64E-10    | 2.36E-08    |
| TAP2         | -----              | transporter 2, ATP binding cassette subfamily B                         | 1.256901897 | 2.052039141  | 53.40004095 | 2.72E-13    | 8.45E-11    |
| PECAM1       | ENSGALG00000046125 | platelet and endothelial cell adhesion molecule 1                       | 1.251728147 | 5.778343923  | 75.13973057 | 4.39E-18    | 2.58E-15    |
| SYPL1        | ENSGALG00000029006 | synaptophysin like 1                                                    | 1.244216024 | -0.02826351  | 19.70023364 | 9.06E-06    | 0.00029933  |
| SH2D1B       | ENSGALG00000028448 | SH2 domain containing 1B                                                | 1.239164517 | 0.74777469   | 10.95612196 | 9.33E-04    | 0.011430879 |
| LOC431499    | -----              | Rho GTPase activating protein 33 like 2                                 | 1.236355742 | 2.787303447  | 37.71847371 | 8.17E-10    | 9.34E-08    |
| CRP          | ENSGALG00000022137 | C-reactive protein, pentraxin-related                                   | 1.219971351 | -0.385625799 | 16.73408144 | 4.30E-05    | 0.001059267 |
| LOC107050915 | -----              | uncharacterized LOC107050915                                            | 1.215501058 | 1.38717443   | 10.98934431 | 9.16E-04    | 0.011278164 |
| MUC4         | ENSGALG00000048048 | mucin 4, cell surface associated                                        | 1.213671846 | -0.363908227 | 7.962807922 | 4.77E-03    | 0.037061226 |
| LOC112533543 | -----              | zinc finger protein 135-like                                            | 1.203438933 | 3.977047001  | 46.62441186 | 8.60E-12    | 1.68E-09    |
| LOC776376    | -----              | C-reactive protein like 2                                               | 1.200907527 | 0.911633722  | 31.38050225 | 2.12E-08    | 0.00000173  |
| WNT11B       | ENSGALG00000004401 | wingless-type MMTV integration site family, member 11b                  | 1.196540169 | -0.494018467 | 10.28950173 | 0.001337892 | 0.014804986 |
| VWA5A        | ENSGALG00000028815 | von Willebrand factor A domain containing 5A                            | 1.192283277 | 0.212245302  | 23.45322564 | 1.28E-06    | 0.0000584   |
| LOC101749621 | -----              | uncharacterized LOC101749621                                            | 1.163147255 | -0.651835985 | 10.34655493 | 1.30E-03    | 0.014472241 |
| NKX2-1       | ENSGALG00000037632 | NK2 homeobox 1                                                          | 1.156265752 | -0.237954028 | 11.92039373 | 5.55E-04    | 0.007855776 |
| LOC107050034 | -----              | uncharacterized LOC107050034                                            | 1.155587883 | 1.656062032  | 38.42395184 | 5.69E-10    | 6.69E-08    |
| CNGA2        | ENSGALG00000007282 | cyclic nucleotide gated channel alpha 2                                 | 1.15507276  | 0.065042155  | 14.29413075 | 0.000156352 | 0.002926924 |
| LOC101747293 | -----              | PHD finger protein 7-like                                               | 1.150674235 | -0.3690309   | 9.571522174 | 1.98E-03    | 0.019986591 |
| LOC107051395 | -----              | uncharacterized threonine-rich GPI-anchored glycoprotein PJ4664.02-like | 1.144740374 | 0.341034158  | 14.16702419 | 1.67E-04    | 0.003096217 |
| DPF1         | ENSGALG00000052924 | D4, zinc and double PHD fingers family 1                                | 1.133008973 | 0.682930185  | 15.74443361 | 7.25E-05    | 0.001618729 |
| MC3R         | ENSGALG00000027260 | melanocortin 3 receptor                                                 | 1.117686439 | -0.952748111 | 9.209619449 | 0.002407467 | 0.022701934 |
| HS3ST4       | ENSGALG00000006290 | heparan sulfate-glucosamine 3-sulfotransferase 4                        | 1.102625394 | 0.713005076  | 9.285011445 | 2.31E-03    | 0.022102937 |

|              |                      |                                                             |             |              |             |             |             |
|--------------|----------------------|-------------------------------------------------------------|-------------|--------------|-------------|-------------|-------------|
| LOC101750341 | -----                | uncharacterized LOC101750341                                | 1.096568147 | 2.664436486  | 47.13346363 | 6.63E-12    | 1.36E-09    |
| ALPI         | ENSGALG00000007814   | alkaline phosphatase, placental                             | 1.091190042 | 1.406490645  | 22.69774516 | 1.90E-06    | 0.0000804   |
| TRNP1        | -----                | TMF1-regulated nuclear protein                              | 1.084493552 | -0.483609302 | 12.13907673 | 4.94E-04    | 0.007202887 |
| ACSBG1       | ENSGALG00000003286   | acyl-CoA synthetase bubblegum family member 1               | 1.078654684 | 2.08165193   | 36.96109991 | 1.21E-09    | 0.000000135 |
| GIMAP8L1     | -----                | GTPase IMAP family member 7-like 5                          | 1.078532086 | -0.394833829 | 8.957741693 | 2.76E-03    | 0.024912079 |
| CFAP161      | ENSGALG000000021183  | cilia and flagella associated protein 161                   | 1.076484608 | -0.71654484  | 9.036249739 | 2.65E-03    | 0.02416913  |
| MIR1748      | ENSGALG000000025323  | gga-mir-1748                                                | 1.073801483 | -0.894826003 | 8.378007123 | 0.003797886 | 0.031320685 |
| LOC112531929 | -----                | uncharacterized LOC112531929                                | 1.057070948 | 1.016690379  | 15.56254389 | 0.0000798   | 0.001748925 |
| MCCC2L       | ENSGALG000000011255  | methylcrotonoyl-Coenzyme A carboxylase 2-like               | 1.050269198 | 3.817760228  | 40.13540327 | 2.37E-10    | 3.21E-08    |
| OTX5         | ENSGALG000000039336  | orthodenticle-related homeobox 5                            | 1.049356891 | 2.139159076  | 7.55699027  | 0.005977774 | 0.043260805 |
| LOC107055278 | -----                | uncharacterized LOC107055278                                | 1.04724097  | 1.423808338  | 24.98954994 | 0.000000576 | 0.0000303   |
| RBM11        | ENSGALG000000044391  | RNA binding motif protein 11                                | 1.043545712 | 1.150186482  | 21.15159226 | 0.00000424  | 0.000160891 |
| COMTD1       | ENSGALG000000005000  | catechol-O-methyltransferase domain containing 1            | 1.040376197 | 4.208734812  | 36.10496689 | 1.87E-09    | 0.000000193 |
| TDRD6        | ENSGALG000000044279  | tudor domain containing 6                                   | 1.023513317 | 0.521217155  | 11.85546526 | 0.000574924 | 0.008051378 |
| LOC107053729 | -----                | uncharacterized LOC107053729                                | 1.022546944 | -0.009027272 | 7.406155512 | 0.006500108 | 0.046018535 |
| LOC107050073 | -----                | uncharacterized LOC107050073                                | 1.020336402 | 2.858588949  | 34.60587574 | 4.04E-09    | 0.000000393 |
| NKX2-8       | ENSGALG000000028483  | NK2 homeobox 8                                              | 1.018560428 | 2.238158362  | 31.14888925 | 2.39E-08    | 0.0000019   |
| LCAT         | ENSGALG000000028928  | lecithin-cholesterol acyltransferase                        | 1.007329115 | 1.510014516  | 21.26947277 | 0.00000399  | 0.000152701 |
| LOC107049645 | -----                | uncharacterized LOC107049645                                | 1.005645418 | 1.520531704  | 18.61440756 | 0.000016    | 0.000474398 |
| GALNT15      | ENSGALG000000011235  | polypeptide N-acetylgalactosaminyltransferase 15            | 1.004045785 | 2.119823043  | 23.66560711 | 0.00000115  | 0.0000531   |
| SP7          | ENSGALG0000000050811 | Sp7 transcription factor                                    | 1.003755696 | 1.146871243  | 11.27481757 | 0.000785656 | 0.01005285  |
| LOC419830    | -----                | uncharacterized LOC419830                                   | 0.990124063 | 1.731682386  | 24.87850207 | 0.000000611 | 0.0000319   |
| LOC101747645 | -----                | translation initiation factor IF-2-like                     | 0.987728981 | -0.435793326 | 9.011446052 | 0.002682941 | 0.024391043 |
| SPATA17      | ENSGALG000000009616  | spermatogenesis associated 17                               | 0.986801922 | 2.342824668  | 39.69025155 | 2.98E-10    | 3.83E-08    |
| APOA5        | ENSGALG00010024749   | apolipoprotein A5                                           | 0.981170014 | 1.487801046  | 28.78211825 | 0.000000081 | 0.00000559  |
| RASGRF1      | ENSGALG000000008262  | Ras protein specific guanine nucleotide releasing factor 1  | 0.98044442  | 0.009221214  | 12.29136211 | 0.00045506  | 0.006739878 |
| APOA1        | ENSGALG000000007114  | apolipoprotein A1                                           | 0.977913393 | 6.154987285  | 22.21712023 | 0.00000243  | 0.0000999   |
| CKMT2        | ENSGALG000000015602  | creatine kinase, mitochondrial 2                            | 0.975828719 | -0.128096222 | 12.23836407 | 0.000468169 | 0.006890621 |
| LOC112531211 | -----                | rho GTPase-activating protein 33-like                       | 0.973821506 | 1.495395002  | 15.03944022 | 0.000105288 | 0.002147351 |
| TGM6         | ENSGALG000000021232  | transglutaminase 6                                          | 0.970328991 | 0.840851884  | 16.18186611 | 0.0000575   | 0.001339263 |
| TAP1         | ENSGALG000000035075  | transporter 1, ATP-binding cassette, sub-family B (MDR/TAP) | 0.962892734 | 1.770468437  | 16.58600388 | 0.0000465   | 0.001123407 |
| LOC107054756 | -----                | uncharacterized LOC107054756                                | 0.9626281   | 0.448520376  | 16.49028052 | 0.0000489   | 0.001172325 |
| LOC112530484 | -----                | uncharacterized LOC112530484                                | 0.9618093   | -0.322304438 | 9.51867332  | 0.002033916 | 0.020370105 |
| CENPQ        | ENSGALG000000016692  | centromere protein Q                                        | 0.961491513 | 5.895739526  | 180.1378513 | 4.52E-41    | 2.48E-37    |
| LOC100859067 | -----                | uncharacterized LOC100859067                                | 0.960724615 | 2.180506734  | 16.04494308 | 0.0000619   | 0.00142756  |
| LOC112529979 | -----                | uncharacterized LOC112529979                                | 0.95620318  | 1.106230863  | 12.31105541 | 0.000450283 | 0.006699287 |
| LOC112532478 | -----                | uncharacterized LOC112532478                                | 0.955222887 | 2.106448503  | 21.99276581 | 0.00000274  | 0.000110108 |
| ACOT12       | ENSGALG000000015616  | acyl-CoA thioesterase 12                                    | 0.955139751 | -0.184149587 | 9.932470033 | 0.001623885 | 0.017161865 |
| UCP3         | ENSGALG000000017316  | uncoupling protein 3                                        | 0.9540753   | 1.244088628  | 15.72881051 | 0.0000731   | 0.001629942 |
| AGBL2        | ENSGALG00010021737   | ATP/GTP binding protein like 2                              | 0.953337686 | 1.619164605  | 13.31953613 | 0.000262655 | 0.004469483 |
| LOC107050476 | -----                | uncharacterized LOC107050476                                | 0.948056346 | -0.271918859 | 8.04157349  | 0.004571581 | 0.035821602 |
| F8           | ENSGALG000000005077  | coagulation factor VIII                                     | 0.94754142  | 1.649978994  | 15.47932052 | 0.0000834   | 0.001803625 |
| HAO1         | ENSGALG000000008845  | hydroxyacid oxidase 1                                       | 0.941673838 | 0.083146839  | 13.23276183 | 0.000275098 | 0.004605938 |
| AKR1B10L4    | -----                | discontued                                                  | 0.940559371 | 2.613493547  | 12.50506987 | 0.000405849 | 0.006189294 |

|              |                     |                                                                         |             |              |             |             |             |
|--------------|---------------------|-------------------------------------------------------------------------|-------------|--------------|-------------|-------------|-------------|
| SPAG16       | ENSGALG00000003148  | sperm associated antigen 16                                             | 0.938230912 | 2.903663581  | 38.94855303 | 4.35E-10    | 0.000000053 |
| GEM          | ENSGALG000000032506 | GTP binding protein overexpressed in skeletal muscle                    | 0.936029205 | 1.032919981  | 14.42112843 | 0.000146153 | 0.002784082 |
| LOC112533263 | -----               | uncharacterized LOC112533263                                            | 0.933750237 | 1.627252902  | 7.250735329 | 0.007087198 | 0.048632131 |
| LOC101747452 | -----               | serine/arginine repetitive matrix protein 2-like                        | 0.933654674 | -0.03893254  | 11.08423522 | 0.000870647 | 0.01083699  |
| AvBD14       | ENSGALG000000052020 | avian beta-defensin 14                                                  | 0.92954457  | -0.190830596 | 11.80476075 | 0.000590795 | 0.008183101 |
| NT5DC4       | ENSGALG000000041161 | 5'-nucleotidase domain containing 4                                     | 0.928025272 | 2.55384096   | 17.8943484  | 0.0000234   | 0.00064148  |
| LOC107049688 | -----               | uncharacterized LOC107049688                                            | 0.915482679 | 2.797425188  | 27.47352169 | 0.000000159 | 0.0000102   |
| LOC101750700 | -----               | uncharacterized LOC101750700                                            | 0.915011505 | 5.039107825  | 51.73216228 | 6.36E-13    | 1.59E-10    |
| KCNK4        | ENSGALG000000012021 | potassium channel, subfamily K, member 4                                | 0.908473519 | -0.294287396 | 7.637460555 | 0.005716835 | 0.041883576 |
| LOC101748003 | -----               | uncharacterized LOC101748003                                            | 0.907535889 | 0.398609403  | 12.78459413 | 0.000349486 | 0.005513696 |
| FBXL13       | -----               | F-box and leucine rich repeat protein 13                                | 0.904757024 | 1.161754417  | 14.71797824 | 0.00012485  | 0.002451562 |
| NTRK1        | ENSGALG000000019019 | neurotrophic receptor tyrosine kinase 1                                 | 0.902860648 | 0.336924744  | 11.6962762  | 0.000626253 | 0.008542773 |
| LOC107054526 | -----               | uncharacterized LOC107054526                                            | 0.902628954 | -0.560380512 | 9.034371582 | 0.002649501 | 0.024180556 |
| CPLX1        | ENSGALG000000015332 | complexin 1                                                             | 0.901834637 | 4.096252374  | 23.05198668 | 0.00000158  | 0.0000692   |
| LOC101748847 | -----               | uncharacterized LOC101748847                                            | 0.900450591 | -0.063855956 | 7.764035504 | 0.005329675 | 0.039899818 |
| DNAJC28      | ENSGALG000000037414 | DnaJ heat shock protein family (Hsp40) member C28                       | 0.900263155 | 2.222702053  | 34.77439024 | 3.70E-09    | 0.000000365 |
| LOC101751275 | -----               | uncharacterized LOC101751275                                            | 0.899982015 | 0.194751839  | 8.760047397 | 0.00307901  | 0.026920891 |
| LOC112530112 | -----               | uncharacterized LOC112530112                                            | 0.895322469 | 1.016344685  | 10.71462617 | 0.001062919 | 0.012555877 |
| LOC107049643 | -----               | uncharacterized LOC107049643                                            | 0.89470009  | 0.572533667  | 11.70872694 | 0.000622077 | 0.008508953 |
| AASDHPPT     | ENSGALG000000027981 | aminoadipate-semialdehyde dehydrogenase-phosphopantetheinyl transferase | 0.891333096 | 2.048720863  | 31.66932361 | 1.83E-08    | 0.00000152  |
| LOC107055878 | -----               | acid-sensing ion channel 1-like                                         | 0.890551704 | 1.373858908  | 12.61669847 | 0.000382316 | 0.005912603 |
| CD79B        | ENSGALG000000000251 | CD79b molecule                                                          | 0.890390881 | -0.186864164 | 8.872503005 | 0.002894979 | 0.025801375 |
| LOC112530977 | -----               | fibrinogen alpha-1 chain-like                                           | 0.887627381 | 1.32634243   | 15.07318434 | 0.000103422 | 0.002124607 |
| LOC112532935 | -----               | uncharacterized LOC112532935                                            | 0.886078798 | 1.497436659  | 22.53652347 | 0.00000206  | 0.000087    |
| LOC107050328 | -----               | uncharacterized LOC107050328                                            | 0.883514872 | 2.307087161  | 8.337678659 | 0.003883118 | 0.031789408 |
| LY9          | -----               | -----                                                                   | 0.880577765 | 0.559410542  | 9.032107132 | 0.002652785 | 0.024183701 |
| LOC112532241 | -----               | small nucleolar RNA SNORA33                                             | 0.875467645 | 0.205261135  | 15.65746764 | 0.0000759   | 0.001678946 |
| LOC107053429 | -----               | uncharacterized LOC107053429                                            | 0.87088054  | 1.114739337  | 22.44909503 | 0.00000216  | 0.0000901   |
| LOXHD1       | ENSGALG000000037829 | lipoxygenase homology domains 1                                         | 0.866163011 | -0.127730202 | 7.473848231 | 0.00626016  | 0.044865389 |
| EPB42        | ENSGALG000000021230 | erythrocyte membrane protein band 4.2                                   | 0.866093722 | 1.927958876  | 7.69826308  | 0.005527399 | 0.040878491 |
| LOC107055363 | -----               | uncharacterized LOC107055363                                            | 0.85955312  | -0.473078096 | 8.008817629 | 0.004655012 | 0.036336919 |
| LOC107051705 | -----               | uncharacterized LOC107051705                                            | 0.853944447 | 4.467378861  | 37.43035238 | 9.47E-10    | 0.000000107 |
| KCTD16       | ENSGALG000000012322 | potassium channel tetramerization domain containing 16                  | 0.853268573 | 0.780427425  | 15.92212314 | 0.000066    | 0.001502178 |
| PIH1D3       | ENSGALG000000004870 | PIH1 domain containing 3                                                | 0.851405022 | 4.657720923  | 115.293415  | 6.79E-27    | 9.31E-24    |
| LOC107051973 | -----               | uncharacterized LOC107051973                                            | 0.8467823   | -0.108311808 | 8.960945935 | 0.00275812  | 0.024882057 |
| IFT81        | ENSGALG000000003854 | intraflagellar transport 81                                             | 0.84391235  | 4.818193612  | 104.6086151 | 1.49E-24    | 1.63E-21    |
| KCNE4        | ENSGALG000000031350 | potassium voltage-gated channel subfamily E regulatory subunit 4        | 0.843049347 | 1.295696399  | 12.82155676 | 0.000342649 | 0.005442356 |
| ULK4         | -----               | unc-51 like kinase 4                                                    | 0.841114933 | 3.658948471  | 43.54491258 | 4.14E-11    | 6.82E-09    |
| LOC107050901 | -----               | keratin-associated protein 10-7-like                                    | 0.84012243  | 3.454490678  | 23.59476501 | 0.00000119  | 0.0000548   |
| LOC107053559 | -----               | uncharacterized LOC107053559                                            | 0.834991593 | 0.296740135  | 11.71814757 | 0.000618935 | 0.008487151 |
| HSP90AA1     | ENSGALG000000033212 | heat shock protein 90 alpha family class A member 1                     | 0.834944785 | 10.68308876  | 19.27042331 | 0.0000113   | 0.000361211 |
| TDRKH        | ENSGALG000000031812 | tudor and KH domain containing                                          | 0.826554291 | 3.395391374  | 26.74730114 | 0.000000232 | 0.0000137   |
| BBOX1        | ENSGALG000000013297 | gamma-butyrobetaine hydroxylase 1                                       | 0.826111276 | 4.924300687  | 20.58287756 | 0.00000571  | 0.00020743  |
| IMPG2        | ENSGALG000000015322 | interphotoreceptor matrix proteoglycan 2                                | 0.825572049 | 1.250762382  | 10.81652516 | 0.001005981 | 0.012065175 |

|              |                     |                                                             |             |              |             |             |             |
|--------------|---------------------|-------------------------------------------------------------|-------------|--------------|-------------|-------------|-------------|
| SLC27A6      | ENSGALG00000000184  | solute carrier family 27 (fatty acid transporter), member 6 | 0.824598293 | 1.093559079  | 18.24622982 | 0.0000194   | 0.000551654 |
| RMI2         | ENSGALG000000007155 | RecQ mediated genome instability 2                          | 0.821789899 | 4.318981775  | 53.04168912 | 3.27E-13    | 9.60E-11    |
| RXFP2        | ENSGALG000000029764 | relaxin/insulin-like family peptide receptor 2              | 0.820150683 | 2.586744851  | 12.9866045  | 0.000313727 | 0.005106216 |
| AOX2         | ENSGALG000000020876 | aldehyde oxidase 2                                          | 0.819672966 | 1.917062681  | 24.18120913 | 0.000000877 | 0.0000432   |
| HIST1H4B     | -----               | histone cluster 1, H4b                                      | 0.8187036   | 0.274283348  | 9.784270552 | 0.00176011  | 0.018272944 |
| SPHKAP       | ENSGALG000000002974 | SPHK1 interactor, AKAP domain containing                    | 0.81381156  | 2.182678719  | 14.90971107 | 0.000112781 | 0.002249467 |
| LOC101751352 | -----               | translation initiation factor IF-2-like                     | 0.812209437 | 2.354211429  | 23.76012223 | 0.00000109  | 0.0000509   |
| LOC101750502 | -----               | uncharacterized LOC101750502                                | 0.806038908 | 4.062179064  | 21.55026497 | 0.00000345  | 0.000134718 |
| LOC107054466 | -----               | protocadherin beta-15-like                                  | 0.80460582  | 0.152847224  | 7.378221959 | 0.006601841 | 0.046503977 |
| LOC107054904 | -----               | uncharacterized LOC107054904                                | 0.80411364  | 0.265991955  | 10.4216317  | 0.001245478 | 0.014031704 |
| LOC112530086 | -----               | fibrinogen-like protein 1-like protein                      | 0.80388053  | 2.219987535  | 11.75935521 | 0.000605382 | 0.008338694 |
| LOC112533519 | -----               | uncharacterized LOC112533519                                | 0.801881648 | 0.731625339  | 12.33209545 | 0.000445236 | 0.006642659 |
| GP1BA        | -----               | -----                                                       | 0.800146607 | 1.581806853  | 14.60382447 | 0.000132645 | 0.002569216 |
| LOC112530939 | -----               | uncharacterized LOC112530939                                | 0.795120273 | 0.911433319  | 9.624805238 | 0.001919668 | 0.019564254 |
| LYGL         | ENSGALG000000043257 | lysozyme g-like                                             | 0.791004862 | 3.029163778  | 13.24719814 | 0.000272988 | 0.004586857 |
| TKFC         | ENSGALG000000037854 | triokinase and FMN cyclase                                  | 0.790008524 | 4.905127422  | 23.80200257 | 0.00000107  | 0.0000501   |
| DAW1         | ENSGALG000000002992 | dynein assembly factor with WD repeats 1                    | 0.787514538 | 0.54091575   | 14.5547568  | 0.000136145 | 0.002623253 |
| LOC101749472 | -----               | uncharacterized LOC101749472                                | 0.77596016  | -0.043645858 | 7.453403741 | 0.00633166  | 0.045279214 |
| LOC107052084 | -----               | uncharacterized LOC107052084                                | 0.775665443 | 0.147929649  | 11.72186248 | 0.000617701 | 0.00847729  |
| LOC112530017 | -----               | uncharacterized LOC112530017                                | 0.774351904 | 1.524501468  | 7.609830881 | 0.005805093 | 0.042341668 |
| LOC112533567 | -----               | myelin-oligodendrocyte glycoprotein-like                    | 0.773421395 | 0.34966502   | 8.056507446 | 0.00453405  | 0.035595323 |
| CCNO         | ENSGALG000000028595 | cyclin O                                                    | 0.77125352  | -0.233393934 | 8.670875657 | 0.003233358 | 0.027870563 |
| TMEM178B     | ENSGALG000000028444 | transmembrane protein 178B                                  | 0.770846317 | 1.838842814  | 21.99521075 | 0.00000273  | 0.000110108 |
| OTOP1        | ENSGALG000000030356 | otopetirin 1                                                | 0.769995959 | 0.544052852  | 7.724802682 | 0.005446731 | 0.040481464 |
| WNT2B        | ENSGALG000000034196 | Wnt family member 2B                                        | 0.762899616 | 2.193303061  | 9.949649219 | 0.0016088   | 0.01709026  |
| LOC418114    | -----               | pseudouridine-5'-phosphate glycosidase-like                 | 0.762307604 | 3.246800088  | 38.09977337 | 6.72E-10    | 7.79E-08    |
| CYR61        | ENSGALG000000008661 | cysteine rich angiogenic inducer 61                         | 0.760901367 | 4.716682485  | 23.34345448 | 0.00000136  | 0.0000611   |
| LOC107049250 | -----               | inhibin beta C chain-like                                   | 0.757884929 | 0.377793442  | 9.059211175 | 0.002613747 | 0.023987289 |
| LOC112532772 | -----               | uncharacterized LOC112532772                                | 0.757094739 | 0.126900412  | 9.285078369 | 0.00231028  | 0.022102937 |
| INSC         | ENSGALG000000032558 | inscuteable homolog (Drosophila)                            | 0.756413319 | 0.231724822  | 9.293223974 | 0.00230003  | 0.022081095 |
| GBP4L        | ENSGALG000000026152 | guanylate-binding protein 4-like                            | 0.751445914 | 1.963650717  | 10.87514679 | 0.000974633 | 0.011818413 |
| NTHL1        | ENSGALG000000005617 | nth like DNA glycosylase 1                                  | 0.750967145 | 4.073365112  | 41.82734152 | 9.97E-11    | 1.51E-08    |
| LOC107054327 | -----               | uncharacterized LOC107054327                                | 0.749134604 | -0.159746308 | 7.497599848 | 0.006178128 | 0.044432294 |
| LOC107050538 | -----               | major histocompatibility complex Y, class I heavy chain 11  | 0.747474358 | 0.235621473  | 7.275115295 | 0.006991641 | 0.048237922 |
| FAM161A      | ENSGALG000000008810 | family with sequence similarity 161 member A                | 0.746085422 | 2.14562841   | 17.10500706 | 0.0000354   | 0.000898142 |
| LOC101752186 | -----               | uncharacterized LOC101752186                                | 0.745929624 | 0.92035933   | 9.245682837 | 0.002360513 | 0.022491161 |
| LOC112532059 | -----               | uncharacterized LOC112532059                                | 0.745531002 | 2.226826188  | 11.19058661 | 0.000822133 | 0.010438431 |
| LOC107050418 | -----               | uncharacterized LOC107050418                                | 0.744466512 | 0.884041312  | 8.656875885 | 0.003258295 | 0.028056116 |
| FAM132A      | ENSGALG000000001857 | family with sequence similarity 132 member A                | 0.744245223 | 2.853850451  | 9.169525447 | 0.002460784 | 0.022983247 |
| ASTL         | ENSGALG000000037220 | astacin like metalloendopeptidase                           | 0.739439817 | 4.001948823  | 11.99072247 | 0.000534661 | 0.007623778 |
| LOC101751045 | -----               | uncharacterized LOC101751045                                | 0.737824641 | 0.227106707  | 7.186018217 | 0.007347385 | 0.049965525 |
| LMOD2        | ENSGALG000000008805 | leiomodoin 2                                                | 0.731079404 | 1.271387854  | 7.645370719 | 0.00569182  | 0.041755635 |
| STC2         | ENSGALG000000002893 | stanniocalcin 2                                             | 0.72988952  | 4.9237167    | 13.77930617 | 0.000205588 | 0.003653108 |
| LOC107054649 | -----               | uncharacterized LOC107054649                                | 0.72843448  | 1.578974659  | 9.77789522  | 0.001766224 | 0.018315727 |

|              |                    |                                                                      |             |             |             |             |             |
|--------------|--------------------|----------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| LOC112533499 | -----              | 2-acylglycerol O-acyltransferase 2-like                              | 0.726970033 | 0.839552236 | 9.692414166 | 0.001850303 | 0.018993419 |
| OXNAD1       | ENSGALG00000011239 | oxidoreductase NAD binding domain containing 1                       | 0.725607676 | 4.287020078 | 50.1071513  | 1.46E-12    | 3.52E-10    |
| NHEJ1        | ENSGALG00000011335 | non-homologous end joining factor 1                                  | 0.724398159 | 2.194531255 | 20.72698855 | 0.0000053   | 0.000194537 |
| HLX          | ENSGALG00000037257 | H2.0 like homeobox                                                   | 0.722272035 | 3.18948739  | 12.81209593 | 0.000344386 | 0.00545803  |
| CFAP70       | ENSGALG00000002551 | cilia and flagella associated protein 70                             | 0.721440378 | 2.103340714 | 20.27949179 | 0.00000669  | 0.00023427  |
| MFSD2B       | ENSGALG00000016498 | major facilitator superfamily domain containing 2B                   | 0.71994921  | 1.958863765 | 8.319224738 | 0.003922766 | 0.032066126 |
| SAMD15       | -----              | sterile alpha motif domain containing 15                             | 0.71754241  | 0.703124426 | 9.223640169 | 0.002389101 | 0.02260647  |
| GTSF1        | ENSGALG00000001109 | gametocyte specific factor 1                                         | 0.717247255 | 3.88662594  | 13.3408699  | 0.000259684 | 0.004432674 |
| LOC107052732 | -----              | uncharacterized LOC107052732                                         | 0.714469019 | 0.468549445 | 9.183618277 | 0.002441908 | 0.022880678 |
| LOC771917    | -----              | uncharacterized LOC771917                                            | 0.712345807 | 0.648275314 | 10.53515853 | 0.001171248 | 0.013430587 |
| LOC107052318 | -----              | uncharacterized LOC107052318                                         | 0.709946606 | 1.52420242  | 8.002971525 | 0.004670065 | 0.036385377 |
| LOC107055288 | -----              | uncharacterized LOC107055288                                         | 0.708668984 | 3.457044081 | 23.30044699 | 0.00000139  | 0.0000621   |
| SLC17A9      | ENSGALG00000028225 | solute carrier family 17 member 9                                    | 0.707660104 | 2.576716275 | 23.9238939  | 0.000001    | 0.0000479   |
| NOXA1        | ENSGALG00000008952 | NADPH oxidase activator 1                                            | 0.703118838 | 1.979917024 | 12.20245731 | 0.000477266 | 0.00699454  |
| VWA5B1       | -----              | von Willebrand factor A domain containing 5B1                        | 0.701469609 | 4.430464661 | 38.65579687 | 5.06E-10    | 6.07E-08    |
| LOC100857609 | -----              | phosphatidylinositol-4,5-bisphosphate phosphodiesterase gamma-1-like | 0.700838704 | 2.751828715 | 18.13278163 | 0.0000206   | 0.000577534 |
| LOC101747364 | -----              | uncharacterized LOC101747364                                         | 0.69924078  | 1.842395563 | 14.02124674 | 0.000180757 | 0.003286574 |
| SLC6A4       | ENSGALG00000004246 | solute carrier family 6 member 4                                     | 0.696489271 | 3.762339608 | 13.26269664 | 0.00027074  | 0.004583313 |
| IL18         | ENSGALG00000007874 | interleukin 18                                                       | 0.695904321 | 3.630244621 | 44.26564909 | 2.87E-11    | 4.97E-09    |
| MAK          | -----              | male germ cell associated kinase                                     | 0.695606793 | 2.032410654 | 16.9141797  | 0.0000391   | 0.000976522 |
| ADORA2B      | ENSGALG00000014182 | adenosine A2b receptor                                               | 0.694105644 | 1.621559906 | 10.14596564 | 0.001446174 | 0.015738619 |
| LOC101748818 | -----              | uncharacterized LOC101748818                                         | 0.688539914 | 0.950485844 | 10.41982946 | 0.001246694 | 0.014031704 |
| SCO2         | ENSGALG00000046885 | SCO2, cytochrome c oxidase assembly protein                          | 0.688119367 | 3.599857718 | 31.09834624 | 2.45E-08    | 0.00000194  |
| SULT1E1      | ENSGALG00000011812 | sulfotransferase family 1E member 1                                  | 0.687566959 | 1.503629006 | 12.06868688 | 0.000512758 | 0.007388296 |
| DNAJC24      | ENSGALG00000012130 | DnaJ heat shock protein family (Hsp40) member C24                    | 0.687055352 | 3.102723594 | 29.108871   | 6.84E-08    | 0.0000049   |
| LOC107052946 | -----              | uncharacterized LOC107052946                                         | 0.682340335 | 0.635726572 | 10.65933093 | 0.00109517  | 0.012821423 |
| DNAJA1       | ENSGALG00000023066 | DnaJ heat shock protein family (Hsp40) member A1                     | 0.681954638 | 7.386494757 | 21.42788535 | 0.00000367  | 0.000141578 |
| MANBAL7      | -----              | -----                                                                | 0.67895466  | 5.18503385  | 11.29647887 | 0.000776542 | 0.009975021 |
| SLC39A8      | ENSGALG00000012298 | solute carrier family 39 member 8                                    | 0.678603092 | 3.974780612 | 13.63475615 | 0.000222037 | 0.003895111 |
| LOC107057116 | -----              | MHCY region zinc finger protein 4                                    | 0.676058049 | 3.041905626 | 11.4290303  | 0.000723054 | 0.00950308  |
| LOC418108    | -----              | poly                                                                 | 0.674886032 | 1.909632824 | 10.67550936 | 0.001085633 | 0.012741861 |
| DNAJA4       | ENSGALG00000036850 | DnaJ heat shock protein family (Hsp40) member A4                     | 0.674464827 | 6.165635044 | 29.47626824 | 5.66E-08    | 0.00000414  |
| TMEM109      | -----              | transmembrane protein 109                                            | 0.671236992 | 2.675332124 | 16.42898471 | 0.0000505   | 0.001204482 |
| LOC112531022 | -----              | uncharacterized LOC112531022                                         | 0.669589358 | 0.219592629 | 8.802026191 | 0.003008962 | 0.026505604 |
| VWC2L        | ENSGALG00000003472 | von Willebrand factor C domain containing protein 2 like             | 0.669203419 | 3.562226686 | 25.86107341 | 0.000000367 | 0.0000209   |
| LYPD6        | ENSGALG00000012470 | LY6/PLAUR domain containing 6                                        | 0.669101735 | 1.321561428 | 8.876875569 | 0.002888054 | 0.025771652 |
| CALCB        | -----              | -----                                                                | 0.668808185 | 4.579193736 | 24.49674864 | 0.000000744 | 0.0000375   |
| ENKUR        | ENSGALG00000007680 | enkurin, TRPC channel interacting protein                            | 0.668573768 | 1.933636052 | 10.15901689 | 0.001435972 | 0.01566242  |
| TMEM59L      | ENSGALG00000021620 | transmembrane protein 59 like                                        | 0.666143093 | 1.981472003 | 12.78525356 | 0.000349362 | 0.005513696 |
| LOC100857706 | -----              | uncharacterized LOC100857706                                         | 0.665664294 | 2.615687977 | 13.39397743 | 0.000252434 | 0.00433138  |
| SLC18A2      | ENSGALG00000009289 | solute carrier family 18 member A2                                   | 0.665268347 | 1.511137667 | 10.47368208 | 0.001210871 | 0.013760282 |
| KIFC1L       | -----              | -----                                                                | 0.665161277 | 7.455760892 | 43.02051769 | 5.42E-11    | 8.65E-09    |
| CFAP58       | ENSGALG00000008417 | cilia and flagella associated protein 58                             | 0.665043105 | 0.938280088 | 11.75720428 | 0.000606082 | 0.008338694 |
| STN1         | ENSGALG00000008304 | STN1, CST complex subunit                                            | 0.661765495 | 5.295759082 | 52.66868933 | 3.95E-13    | 1.08E-10    |

|              |                     |                                                                |             |             |             |             |             |
|--------------|---------------------|----------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| ST6GALNAC2L  | -----               | ST6 N-acetylgalactosaminide alpha-2,6-sialyltransferase 2 like | 0.660856927 | 2.38842277  | 14.82561495 | 0.000117923 | 0.002335044 |
| VWA3A        | ENSGALG00000049654  | von Willebrand factor A domain containing 3A                   | 0.652993589 | 1.092758282 | 12.83955512 | 0.000339368 | 0.00540591  |
| LOC112529982 | -----               | syntaxin-4-like                                                | 0.65172507  | 2.714426578 | 17.91028337 | 0.0000232   | 0.000637195 |
| RAB19        | ENSGALG00000012850  | RAB19, member RAS oncogene family                              | 0.649630173 | 1.276400035 | 11.17244123 | 0.000830213 | 0.01050352  |
| CRYGN        | ENSGALG00000006189  | crystallin gamma N                                             | 0.648840024 | 1.129236443 | 10.27382938 | 0.001349305 | 0.014877209 |
| GIMAP5L      | -----               | -----                                                          | 0.647306529 | 2.571175224 | 9.825750992 | 0.001720854 | 0.017899277 |
| NUP210L      | -----               | nucleoporin 210 like                                           | 0.647248668 | 2.441874401 | 15.2720295  | 0.0000931   | 0.001956206 |
| LAMC3        | -----               | laminin subunit gamma 3                                        | 0.647137363 | 4.047050928 | 19.8771523  | 0.00000826  | 0.000281593 |
| LOC100857928 | -----               | uncharacterized LOC100857928                                   | 0.646862025 | 1.516830482 | 11.92288273 | 0.000554486 | 0.007855776 |
| LDHA         | ENSGALG00000006300  | lactate dehydrogenase A                                        | 0.644036417 | 6.349989602 | 9.526519719 | 0.002025238 | 0.020320301 |
| ALG14        | ENSGALG00000005583  | ALG14, UDP-N-acetylglucosaminyltransferase subunit             | 0.63998537  | 2.893103406 | 25.75054019 | 0.000000389 | 0.0000218   |
| LOC107050412 | -----               | uncharacterized LOC107050412                                   | 0.63904006  | 1.622948603 | 13.72154155 | 0.000212009 | 0.003751188 |
| MPL          | ENSGALG00000009965  | MPL proto-oncogene, thrombopoietin receptor                    | 0.638205156 | 2.762894349 | 13.81856776 | 0.000201337 | 0.003597171 |
| LYPD1        | ENSGALG000000050403 | LY6/PLAUR domain containing 1                                  | 0.636591899 | 0.967119513 | 7.25766502  | 0.007059902 | 0.048485265 |
| POLG2        | ENSGALG00000003520  | DNA polymerase gamma 2, accessory subunit                      | 0.63423494  | 3.480364711 | 24.57093978 | 0.000000716 | 0.0000365   |
| CCDC27       | ENSGALG000000043926 | coiled-coil domain containing 27                               | 0.632621289 | 2.301303507 | 16.30739871 | 0.0000539   | 0.001269564 |
| SLC13A3      | ENSGALG000000054473 | solute carrier family 13 member 3                              | 0.632059785 | 3.212379517 | 26.06316755 | 0.00000033  | 0.000019    |
| TLR4         | ENSGALG00000007001  | toll like receptor 4                                           | 0.630752479 | 1.28218721  | 7.288278515 | 0.006940595 | 0.048015912 |
| FOXF1        | ENSGALG000000034111 | forkhead box F1                                                | 0.629548252 | 4.400959828 | 18.56196187 | 0.0000164   | 0.000484278 |
| CASP7        | ENSGALG00000008933  | caspase 7                                                      | 0.628254282 | 1.860488391 | 12.53488205 | 0.000399425 | 0.006125383 |
| NR2C1        | ENSGALG000000011327 | nuclear receptor subfamily 2, group C, member 1                | 0.628075974 | 4.906446465 | 36.29897982 | 1.69E-09    | 0.00000018  |
| FAIM         | ENSGALG000000012082 | Fas apoptotic inhibitory molecule                              | 0.627732771 | 4.639981372 | 34.91467251 | 3.44E-09    | 0.000000344 |
| VSNL1        | ENSGALG000000016464 | visinin like 1                                                 | 0.627705921 | 2.287561601 | 10.46172963 | 0.001218731 | 0.013840042 |
| LOC112530784 | -----               | small nucleolar RNA SNORD58                                    | 0.622141529 | 0.796902824 | 7.499548756 | 0.006171445 | 0.044403644 |
| LOC107052236 | -----               | uncharacterized LOC107052236                                   | 0.621348352 | 1.287243759 | 10.0602683  | 0.001515012 | 0.016282355 |
| MATK         | ENSGALG000000000736 | megakaryocyte-associated tyrosine kinase                       | 0.618675167 | 1.564240616 | 10.95736732 | 0.000932322 | 0.011430879 |
| BMP3         | ENSGALG000000035052 | bone morphogenetic protein 3                                   | 0.610415309 | 2.291644778 | 7.21704371  | 0.007221454 | 0.049286202 |
| LOC101750197 | -----               | uncharacterized LOC101750197                                   | 0.610051033 | 0.595030643 | 8.113753712 | 0.004393066 | 0.034753802 |
| LOC112532382 | -----               | uncharacterized LOC112532382                                   | 0.609534259 | 1.051635134 | 9.00756221  | 0.002688648 | 0.024429433 |
| LOC112532614 | -----               | uncharacterized LOC112532614                                   | 0.608545915 | 4.131999626 | 15.04094061 | 0.000105204 | 0.002147351 |
| FIBCD1       | ENSGALG000000003866 | ficolin 3                                                      | 0.603273964 | 1.467005042 | 8.225061522 | 0.00413158  | 0.03326084  |
| COL2A1L      | -----               | -----                                                          | 0.603103801 | 5.539568419 | 12.4530939  | 0.0004173   | 0.006311279 |
| HTR2B        | ENSGALG000000007681 | 5-hydroxytryptamine receptor 2B                                | 0.602610974 | 1.072538921 | 8.488644223 | 0.0035737   | 0.030033318 |
| EGLN3        | ENSGALG000000010001 | egl-9 family hypoxia inducible factor 3                        | 0.602070949 | 2.970522731 | 12.12139996 | 0.000498465 | 0.007235982 |
| LOC107056270 | -----               | BCL2/adenovirus E1B 19 kDa protein-interacting protein 3-like  | 0.599691058 | 3.117928977 | 10.35408416 | 0.001291885 | 0.014431755 |
| LOC107054458 | -----               | PHD finger protein 7-like                                      | 0.596849772 | 2.034438249 | 13.91955487 | 0.000190803 | 0.003442614 |
| MDH1B        | ENSGALG000000008548 | malate dehydrogenase 1B                                        | 0.595971157 | 1.851844396 | 13.02038042 | 0.000308119 | 0.005039863 |
| CYP26B1      | ENSGALG000000016102 | cytochrome P450 family 26 subfamily B member 1                 | 0.595341482 | 4.991412701 | 26.98387649 | 0.000000205 | 0.0000125   |
| HSPA8        | ENSGALG000000006512 | heat shock 70kDa protein 8                                     | 0.594582483 | 10.88731401 | 18.49837079 | 0.000017    | 0.000492635 |
| FSIP1        | ENSGALG000000009624 | fibrous sheath interacting protein 1                           | 0.592317967 | 1.824418204 | 12.33437284 | 0.000444693 | 0.006642659 |
| LOC112532778 | -----               | uncharacterized LOC112532778                                   | 0.591914374 | 1.000395412 | 9.19168626  | 0.002431168 | 0.022833831 |
| PLPP4        | ENSGALG000000029020 | phospholipid phosphatase 4                                     | 0.59078607  | 5.040207512 | 27.09565012 | 0.000000194 | 0.0000119   |
| PBLD         | ENSGALG000000003935 | phenazine biosynthesis like protein domain containing          | 0.5896538   | 3.275210529 | 27.57730408 | 0.000000151 | 0.00000974  |
| ZFPM2        | ENSGALG000000040079 | zinc finger protein, FOG family member 2                       | 0.5895098   | 3.077360414 | 8.856050191 | 0.00292119  | 0.02594744  |

|              |                    |                                                                |             |             |             |             |             |
|--------------|--------------------|----------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| PEX6         | ENSGALG00000045514 | peroxisomal biogenesis factor 6                                | 0.584424836 | 5.75744209  | 40.03471309 | 2.49E-10    | 3.34E-08    |
| VPS41        | ENSGALG00000031635 | VPS41, HOPS complex subunit                                    | 0.583702741 | 5.633698349 | 52.79102093 | 3.71E-13    | 1.03E-10    |
| LOC107050006 | -----              | uncharacterized LOC107050006                                   | 0.581927867 | 2.022324242 | 12.14186142 | 0.000493025 | 0.007198521 |
| LOC421506    | -----              | uncharacterized LOC421506                                      | 0.580479275 | 2.971247108 | 11.0437634  | 0.00088986  | 0.011009513 |
| SHC4         | -----              | SHC adaptor protein 4                                          | 0.577834928 | 3.53230742  | 27.34972639 | 0.00000017  | 0.0000107   |
| PYCR1        | ENSGALG00000007300 | pyrroline-5-carboxylate reductase 1                            | 0.573424755 | 6.862957997 | 45.37151988 | 1.63E-11    | 3.01E-09    |
| RRP8         | -----              | ribosomal RNA processing 8, methyltransferase, homolog (yeast) | 0.572476207 | 4.54959079  | 27.95925743 | 0.000000124 | 0.00000819  |
| PMFBP1       | -----              | polyamine modulated factor 1 binding protein 1                 | 0.572318407 | 3.080594923 | 19.25710496 | 0.0000114   | 0.000362914 |
| RBFA         | ENSGALG00000036067 | ribosome binding factor A (putative)                           | 0.569757633 | 4.606906989 | 48.83635288 | 2.78E-12    | 6.27E-10    |
| SERPINH1     | ENSGALG00000011214 | serpin family H member 1                                       | 0.569174925 | 8.199463183 | 10.06362476 | 0.001512254 | 0.016278211 |
| LOC101749936 | -----              | uncharacterized LOC101749936                                   | 0.568002544 | 1.361359311 | 8.999863384 | 0.002699998 | 0.024478493 |
| RCAN2        | ENSGALG00000016709 | regulator of calcineurin 2                                     | 0.567362732 | 6.336032825 | 36.37278808 | 1.63E-09    | 0.000000175 |
| CARD8        | ENSGALG00000007698 | caspase recruitment domain family, member 8                    | 0.567291047 | 1.014718389 | 10.13265849 | 0.001456652 | 0.015800397 |
| LOC107054051 | -----              | uncharacterized LOC107054051                                   | 0.564478515 | 2.241727131 | 12.86855578 | 0.000334149 | 0.005333102 |
| RNF207       | ENSGALG00000050086 | ring finger protein 207                                        | 0.563961692 | 4.719112308 | 27.59625526 | 0.000000149 | 0.00000968  |
| TRIM63       | ENSGALG00000034107 | tripartite motif containing 63                                 | 0.5609763   | 3.527463753 | 10.83190958 | 0.000997657 | 0.012017895 |
| LOC770653    | -----              | uncharacterized LOC770653                                      | 0.559763212 | 3.41824897  | 10.78699703 | 0.001022156 | 0.012232416 |
| UCKL1        | ENSGALG00000006040 | uridine-cytidine kinase 1 like 1                               | 0.559609197 | 3.217784551 | 12.12063452 | 0.000498669 | 0.007235982 |
| SPTBN4L      | -----              | -----                                                          | 0.553616939 | 3.070862521 | 8.557227158 | 0.003441532 | 0.029115892 |
| RSPH14       | ENSGALG00000006712 | radial spoke head 14 homolog                                   | 0.552155433 | 2.795611005 | 12.22336191 | 0.000471948 | 0.006933845 |
| KLHL6        | ENSGALG00000002263 | kelch like family member 6                                     | 0.551398022 | 1.697010324 | 8.78372634  | 0.003039297 | 0.026646546 |
| OTOG         | -----              | otogelin                                                       | 0.547938045 | 3.190156998 | 7.901050542 | 0.004940609 | 0.037954122 |
| IKBKAP       | ENSGALG00000001947 | inhibitor of kappa light polypeptide gene enhancer in B-cells  | 0.547766081 | 7.014228978 | 28.80137897 | 8.02E-08    | 0.00000557  |
| MYH7         | ENSGALG00000035594 | myosin, heavy chain 7, cardiac muscle, beta                    | 0.546588803 | 2.728664853 | 7.493013431 | 0.006193882 | 0.044492889 |
| UGT8         | ENSGALG00000012018 | UDP glycosyltransferase 8                                      | 0.545842262 | 2.16468075  | 7.634320553 | 0.005726795 | 0.041919225 |
| MILR1        | ENSGALG00000046212 | mast cell immunoglobulin like receptor 1                       | 0.545524851 | 1.366249212 | 7.940208923 | 0.004834825 | 0.037385831 |
| LOC107052132 | -----              | uncharacterized LOC107052132                                   | 0.539665334 | 2.077254398 | 10.56459081 | 0.001152745 | 0.013292521 |
| CBLN1        | ENSGALG00000042664 | cerebellin 1 precursor                                         | 0.539377921 | 3.472986001 | 7.285044303 | 0.006953102 | 0.048015912 |
| NOM1         | ENSGALG00000006437 | nucleolar protein with MIF4G domain 1                          | 0.53872899  | 4.688940945 | 40.50797546 | 1.96E-10    | 2.77E-08    |
| SIM1         | ENSGALG00000015466 | SIM bHLH transcription factor 1                                | 0.536986292 | 4.928444108 | 24.05841647 | 0.000000935 | 0.0000455   |
| DAO          | ENSGALG00000043053 | D-amino acid oxidase                                           | 0.536600191 | 3.359766547 | 23.41804716 | 0.0000013   | 0.0000593   |
| ASCC1        | ENSGALG00000026019 | activating signal cointegrator 1 complex subunit 1             | 0.535770835 | 5.381959506 | 27.25840218 | 0.000000178 | 0.0000111   |
| LOC112533544 | -----              | E3 ubiquitin-protein ligase TRIM7-like                         | 0.532925187 | 5.220618271 | 48.46844189 | 3.36E-12    | 7.46E-10    |
| MISP         | ENSGALG00000044985 | mitotic spindle positioning                                    | 0.532234302 | 2.47866755  | 13.13856576 | 0.000289279 | 0.004798477 |
| VRTN         | ENSGALG00000010232 | vertebrae development associated                               | 0.531423611 | 2.962438642 | 18.12468559 | 0.0000207   | 0.00057828  |
| SLC3A1       | ENSGALG00000009973 | solute carrier family 3 member 1                               | 0.530767331 | 1.382652974 | 7.825839657 | 0.005150451 | 0.038947922 |
| ACOX3        | ENSGALG00000015591 | acyl-CoA oxidase 3, pristanoyl                                 | 0.530360836 | 3.396887657 | 14.90141221 | 0.000113278 | 0.002255722 |
| DNAH12       | ENSGALG00000005601 | dynein, axonemal, heavy chain 12                               | 0.528208542 | 1.939927324 | 9.08794027  | 0.002573005 | 0.023695391 |
| PROCA1       | ENSGALG00000030512 | protein interacting with cyclin A1                             | 0.527671954 | 4.178089212 | 31.39498362 | 2.11E-08    | 0.00000172  |
| LOC107056831 | -----              | uncharacterized LOC107056831                                   | 0.5271591   | 1.309123318 | 7.318896213 | 0.006823331 | 0.047434688 |
| C26H1orf74   | -----              | -----                                                          | 0.525625279 | 2.50790578  | 10.71669778 | 0.00106173  | 0.012550988 |
| GAA          | ENSGALG00000038853 | alpha glucosidase                                              | 0.525566592 | 4.101081783 | 12.99323605 | 0.000312618 | 0.005098248 |
| LOC112533501 | -----              | protein NDRG2-like                                             | 0.524651687 | 1.249036944 | 7.748321803 | 0.005376248 | 0.040175366 |
| LOC426385    | ENSGALG00000026301 | serine/threonine kinase 35-like                                | 0.524112678 | 4.781956848 | 34.63906744 | 3.97E-09    | 0.000000389 |

|              |                    |                                                                  |             |             |             |             |             |
|--------------|--------------------|------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| HOXB1        | ENSGALG00000013454 | homeobox B1                                                      | 0.523164752 | 6.675868797 | 28.50349421 | 9.35E-08    | 0.00000636  |
| AAREL        | ENSGALG00000033303 | acylamino-acid-releasing enzyme-like                             | 0.522354764 | 2.653707764 | 8.016655513 | 0.004634908 | 0.036199874 |
| TRPV1        | ENSGALG00000004649 | transient receptor potential cation channel subfamily V member 1 | 0.520804641 | 2.745275559 | 7.513316869 | 0.006124449 | 0.044142708 |
| ST8SIA1      | ENSGALG00000013211 | ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1     | 0.519066927 | 3.860057739 | 16.72554873 | 0.0000432   | 0.001060865 |
| COLEC11      | ENSGALG00000050002 | collectin subfamily member 11                                    | 0.51871066  | 3.580071147 | 12.68367632 | 0.000368862 | 0.005753192 |
| LOC100858737 | -----              | uncharacterized LOC100858737                                     | 0.518426356 | 1.887228737 | 10.52929701 | 0.001174969 | 0.013454499 |
| SEMA3BL      | -----              | -----                                                            | 0.518140544 | 4.905298191 | 13.88518165 | 0.000194325 | 0.003487035 |
| LIN28A       | ENSGALG00000036022 | lin-28 homolog A                                                 | 0.518135316 | 6.701209822 | 8.265780609 | 0.004039929 | 0.032673977 |
| GSTK1        | ENSGALG00000014708 | glutathione S-transferase kappa 1                                | 0.517671286 | 5.311559871 | 53.21372047 | 2.99E-13    | 9.12E-11    |
| IKBKE        | ENSGALG00000013356 | inhibitor of kappa light polypeptide gene enhancer in B-cells    | 0.516173456 | 2.453549627 | 9.944827318 | 0.00161302  | 0.017119694 |
| TRIM45       | ENSGALG00000014818 | tripartite motif containing 45                                   | 0.513701555 | 3.526530478 | 19.71437051 | 0.00000899  | 0.000299042 |
| BCO2         | ENSGALG00000007868 | beta-carotene oxygenase 2                                        | 0.513681925 | 2.47314031  | 11.03559121 | 0.000893792 | 0.011049335 |
| LOC107053557 | -----              | uncharacterized LOC107053557                                     | 0.51266207  | 2.596173943 | 10.56924053 | 0.00114985  | 0.013292521 |
| LSM10        | ENSGALG00000002127 | LSM10, U7 small nuclear RNA associated                           | 0.510813338 | 2.098507438 | 10.27309274 | 0.001349843 | 0.014877209 |
| LOC112532559 | -----              | translation initiation factor IF-2-like                          | 0.508266005 | 3.189997393 | 21.61043011 | 0.00000334  | 0.000130868 |
| HSPA5        | ENSGALG00000001000 | heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa)    | 0.506183164 | 9.208575069 | 25.37408825 | 0.000000472 | 0.0000256   |
| LOC101750998 | -----              | uncharacterized LOC101750998                                     | 0.506155318 | 6.412386774 | 9.455982551 | 0.002104615 | 0.020862316 |
| GCNT7        | ENSGALG00000007717 | glucosaminyl (N-acetyl) transferase family member 7              | 0.504184189 | 2.263024779 | 9.44582664  | 0.002116301 | 0.020892566 |
| LOC101749541 | -----              | translation initiation factor IF-2-like                          | 0.503433848 | 2.167957743 | 7.221479843 | 0.00720363  | 0.049205365 |
| RSPH10B      | -----              | radial spoke head 10 homolog B                                   | 0.503356373 | 3.663844481 | 17.03584146 | 0.0000367   | 0.000930021 |
| 2KTGRL       | ENSGALG00000046360 | probable 2-ketogluconate reductase-like                          | 0.501532348 | 3.396091566 | 16.99251931 | 0.0000375   | 0.00094421  |
| HLCS         | ENSGALG00000016047 | holocarboxylase synthetase                                       | 0.501115256 | 6.001528092 | 43.10291851 | 5.19E-11    | 8.38E-09    |
| CYP46A1      | ENSGALG00000011162 | cytochrome P450 family 46 subfamily A member 1                   | 0.500518601 | 4.249698068 | 23.11713368 | 0.00000152  | 0.0000674   |
| FRMD5        | ENSGALG00000030858 | FERM domain containing 5                                         | 0.500516715 | 4.169716538 | 15.79369342 | 0.0000706   | 0.001587898 |
| SNAP47       | ENSGALG00000005412 | synaptosome associated protein 47                                | 0.500230956 | 4.652145282 | 30.27262675 | 3.75E-08    | 0.00000286  |
| SPTBN2       | -----              | spectrin beta, non-erythrocytic 2                                | 0.499298306 | 5.647612119 | 17.87282768 | 0.0000236   | 0.000647694 |
| FUT10        | ENSGALG00000015399 | fucosyltransferase 10                                            | 0.494085791 | 2.722755336 | 9.275112734 | 0.002322884 | 0.022196896 |
| ADCY5        | ENSGALG00000031244 | adenylate cyclase 6                                              | 0.493785766 | 4.995311908 | 27.0372889  | 0.0000002   | 0.0000122   |
| NABP1        | ENSGALG00000025884 | nucleic acid binding protein 1                                   | 0.493672021 | 6.641569373 | 45.11201977 | 1.86E-11    | 3.40E-09    |
| C20H20orf96  | -----              | -----                                                            | 0.493669185 | 1.887884671 | 7.896048192 | 0.004954292 | 0.038023728 |
| MUT          | ENSGALG00000016697 | methylmalonyl-CoA mutase                                         | 0.49210209  | 4.875456054 | 20.99622297 | 0.0000046   | 0.0001721   |
| LOC768735    | -----              | uncharacterized protein LOC768735                                | 0.489240975 | 2.709498722 | 9.123136641 | 0.002523968 | 0.023411442 |
| SIK1         | ENSGALG00000041988 | salt inducible kinase 1                                          | 0.487147635 | 6.178992851 | 27.44545954 | 0.000000162 | 0.0000103   |
| LOC101747556 | -----              | uncharacterized LOC101747556                                     | 0.486372559 | 4.538769091 | 19.41025259 | 0.0000105   | 0.000339532 |
| LOC101747742 | -----              | uncharacterized LOC101747742                                     | 0.48402105  | 2.90483313  | 17.56203716 | 0.0000278   | 0.000734492 |
| SMC2         | ENSGALG00000015691 | structural maintenance of chromosomes 2                          | 0.48326434  | 8.876831585 | 28.52460171 | 9.25E-08    | 0.00000632  |
| N4BP2L1      | ENSGALG00000017072 | NEDD4 binding protein 2 like 1                                   | 0.483157323 | 3.989427632 | 12.4273328  | 0.000423096 | 0.006381338 |
| LOC424430    | -----              | quinone oxidoreductase-like 2                                    | 0.481901417 | 2.65388055  | 12.63341971 | 0.000378911 | 0.005876519 |
| PDE1C        | ENSGALG00000039935 | phosphodiesterase 1C                                             | 0.479025709 | 4.065998576 | 19.89311818 | 0.00000819  | 0.000280161 |
| LOC101747934 | -----              | uncharacterized LOC101747934                                     | 0.478798221 | 3.281910502 | 14.60282414 | 0.000132716 | 0.002569216 |
| MAOB         | ENSGALG00000032836 | monoamine oxidase B                                              | 0.477433783 | 3.43523259  | 8.940083506 | 0.0027898   | 0.025099045 |
| PLCD3        | ENSGALG00000045212 | phospholipase C delta 3                                          | 0.475880014 | 3.175716143 | 13.62375411 | 0.000223342 | 0.003909667 |
| ATP2A3       | ENSGALG00000001564 | ATPase sarcoplasmic/endoplasmic reticulum Ca2+ transporting 3    | 0.47361384  | 4.715831927 | 14.63372481 | 0.000130557 | 0.002545401 |
| GRHPR        | ENSGALG00000005423 | glyoxylate and hydroxypyruvate reductase                         | 0.473054304 | 3.383546804 | 14.02218114 | 0.000180667 | 0.003286574 |

|              |                    |                                                           |             |             |             |             |             |
|--------------|--------------------|-----------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| SOCS2        | ENSGALG00000050619 | suppressor of cytokine signaling 2                        | 0.472234337 | 4.14593812  | 10.65962173 | 0.001094998 | 0.012821423 |
| LOC101747310 | -----              | uncharacterized LOC101747310                              | 0.471224607 | 1.31047405  | 7.391352253 | 0.00655382  | 0.046244899 |
| KLF4         | -----              | Kruppel like factor 4                                     | 0.471027752 | 2.344322435 | 9.942981231 | 0.001614638 | 0.017119694 |
| CTNNAL1      | ENSGALG00000013207 | catenin alpha like 1                                      | 0.468123204 | 6.176448566 | 47.3322605  | 5.99E-12    | 1.28E-09    |
| TRAPPC12     | ENSGALG00000016387 | trafficking protein particle complex 12                   | 0.465441095 | 4.886111273 | 18.38055261 | 0.0000181   | 0.000519481 |
| CERS4        | ENSGALG00000043352 | ceramide synthase 4                                       | 0.464642207 | 5.512606471 | 29.00829466 | 7.21E-08    | 0.0000051   |
| LOC107051305 | -----              | sodium channel subunit beta-1-like                        | 0.463824525 | 3.598594556 | 11.83074037 | 0.000582608 | 0.008108258 |
| EDEM2        | ENSGALG00000003128 | ER degradation enhancing alpha-mannosidase like protein 2 | 0.461466476 | 5.276781268 | 43.29733302 | 4.70E-11    | 7.66E-09    |
| LOC112533506 | -----              | uncharacterized LOC112533506                              | 0.460221137 | 5.044947472 | 25.49524554 | 0.000000443 | 0.0000243   |
| LOC112533366 | -----              | uncharacterized LOC112533366                              | 0.458380668 | 2.869097348 | 15.16406189 | 0.0000986   | 0.00204028  |
| TTC32        | ENSGALG00000016476 | tetratricopeptide repeat domain 32                        | 0.458099336 | 3.013625864 | 8.547518005 | 0.003459937 | 0.029241529 |
| LRRC75A      | ENSGALG00000002631 | leucine rich repeat containing 75A                        | 0.454733833 | 3.852407998 | 12.3809464  | 0.000433737 | 0.006511995 |
| STRADB       | ENSGALG00000008373 | STE20-related kinase adaptor beta                         | 0.453146544 | 5.510914063 | 28.88957871 | 7.66E-08    | 0.00000539  |
| GLB1L2       | ENSGALG00000001604 | galactosidase beta 1 like 2                               | 0.45268071  | 5.754617907 | 46.32639914 | 1.00E-11    | 1.94E-09    |
| DTD2         | ENSGALG00000009978 | D-tyrosyl-tRNA deacylase 2 (putative)                     | 0.452415592 | 3.069301664 | 12.50637948 | 0.000405565 | 0.006189294 |
| ASL2         | ENSGALG00000002576 | argininosuccinate lyase 2                                 | 0.451354601 | 2.039549087 | 10.62731551 | 0.001114294 | 0.012985624 |
| BTD          | ENSGALG00000011216 | biotinidase                                               | 0.450164089 | 3.025486379 | 8.797926597 | 0.003015731 | 0.026536434 |
| PARP14       | ENSGALG00000026422 | poly(ADP-ribose) polymerase family member 14              | 0.449984265 | 2.614846492 | 9.16801262  | 0.002462819 | 0.022986774 |
| VDAC1        | ENSGALG00000006503 | voltage dependent anion channel 1                         | 0.448866674 | 3.786109216 | 10.81799117 | 0.001005185 | 0.01206472  |
| SLC16A3      | ENSGALG00000002728 | solute carrier family 16 member 3                         | 0.446867022 | 5.247047944 | 10.6567209  | 0.001096717 | 0.012826205 |
| PTGR2        | ENSGALG00000009269 | prostaglandin reductase 2                                 | 0.44663886  | 5.36726794  | 24.48681098 | 0.000000748 | 0.0000375   |
| ACYP2        | ENSGALG00000027632 | acylphosphatase 2                                         | 0.442931667 | 3.460130465 | 14.23316898 | 0.000161499 | 0.002999964 |
| GDF10        | ENSGALG00000005985 | growth differentiation factor 10                          | 0.441713619 | 4.456454693 | 8.306987625 | 0.003949284 | 0.032202907 |
| PAX2         | ENSGALG00000005689 | paired box 2                                              | 0.441296102 | 5.66638433  | 11.17293051 | 0.000829994 | 0.01050352  |
| LOC107053581 | -----              | uncharacterized LOC107053581                              | 0.440781104 | 2.827822625 | 11.40726435 | 0.000731575 | 0.009554018 |
| METTL25      | ENSGALG00000042269 | methyltransferase like 25                                 | 0.439834826 | 3.071847912 | 9.531497779 | 0.002019752 | 0.020290002 |
| HSD11B1L     | ENSGALG00000012860 | hydroxysteroid 11-beta dehydrogenase 1 like               | 0.439285084 | 4.779150502 | 29.69964806 | 5.04E-08    | 0.00000374  |
| FAM13AL      | -----              | -----                                                     | 0.438941601 | 3.074429029 | 8.71579401  | 0.00315465  | 0.027364135 |
| TMEM116      | ENSGALG00000004760 | transmembrane protein 116                                 | 0.438896694 | 1.519567164 | 7.271061114 | 0.007007439 | 0.048286186 |
| TMEM35B      | ENSGALG00000002517 | transmembrane protein 35B                                 | 0.437882538 | 3.446761717 | 8.032197219 | 0.004595306 | 0.035964506 |
| ALDH1A2      | ENSGALG00000004270 | aldehyde dehydrogenase 1 family member A2                 | 0.437858558 | 8.41806284  | 31.17864834 | 2.35E-08    | 0.00000189  |
| OLIG3        | -----              | oligodendrocyte transcription factor 3                    | 0.437609576 | 2.831266968 | 7.781088772 | 0.005279597 | 0.039723716 |
| PCCA         | ENSGALG00000016872 | propionyl-CoA carboxylase alpha subunit                   | 0.435653044 | 5.546618623 | 46.88071512 | 7.54E-12    | 1.50E-09    |
| LOC107049075 | -----              | DnaJ heat shock protein family (Hsp40) member B1          | 0.435632844 | 5.958553132 | 17.52910254 | 0.0000283   | 0.000744933 |
| ACOT9        | ENSGALG00000016351 | acyl-CoA thioesterase 9                                   | 0.434181318 | 5.906913897 | 39.31191809 | 3.61E-10    | 4.54E-08    |
| GREM2        | ENSGALG00000055021 | gremlin 2, DAN family BMP antagonist                      | 0.433903729 | 3.80494641  | 11.41088736 | 0.000730149 | 0.009542978 |
| DMGDH        | ENSGALG00000004491 | dimethylglycine dehydrogenase                             | 0.432491853 | 3.58405558  | 8.7835828   | 0.003039536 | 0.026646546 |
| PIGC         | ENSGALG00000027608 | phosphatidylinositol glycan anchor biosynthesis class C   | 0.431900976 | 3.842108614 | 14.98598298 | 0.000108313 | 0.002177888 |
| C4H4orf33    | -----              | -----                                                     | 0.431867148 | 3.441089574 | 9.940420462 | 0.001616886 | 0.017131913 |
| PHKB         | ENSGALG00000004004 | phosphorylase kinase regulatory subunit beta              | 0.431073929 | 6.350848764 | 19.73414752 | 0.0000089   | 0.000297719 |
| NANS         | ENSGALG00000015320 | N-acetylneuraminate synthase                              | 0.431042357 | 6.134239019 | 35.32013755 | 2.80E-09    | 0.000000282 |
| MUS81        | -----              | -----                                                     | 0.429814723 | 3.766909318 | 18.90876973 | 0.0000137   | 0.000418172 |
| WDR90        | ENSGALG00000028172 | WD repeat domain 90                                       | 0.429071625 | 6.466283023 | 39.52832892 | 3.23E-10    | 4.12E-08    |
| RACGAP1L     | -----              | -----                                                     | 0.428448674 | 5.406645864 | 21.24319393 | 0.00000405  | 0.000154092 |

|              |                    |                                                        |             |             |             |             |             |
|--------------|--------------------|--------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| BCAT1        | ENSGALG00000013177 | branched chain amino acid transaminase 1               | 0.428056013 | 6.93915016  | 30.24281827 | 3.81E-08    | 0.00000288  |
| CPPED1       | ENSGALG00000040854 | calcineurin like phosphoesterase domain containing 1   | 0.427530579 | 5.552588802 | 30.38603425 | 3.54E-08    | 0.00000271  |
| DPF2         | -----              | double PHD fingers 2                                   | 0.427263463 | 2.677429891 | 10.15177707 | 0.001441622 | 0.015699465 |
| C20orf196    | -----              | -----                                                  | 0.427184371 | 2.747694957 | 9.577202472 | 0.001970084 | 0.019937102 |
| LOC101750925 | -----              | mucin-5AC-like                                         | 0.426750229 | 3.292814186 | 7.41224557  | 0.006478142 | 0.045954099 |
| NPTX2        | ENSGALG00000003562 | neuronal pentraxin 2                                   | 0.426425319 | 1.958192263 | 8.143130833 | 0.004322459 | 0.034316908 |
| ZBTB46       | ENSGALG00000006062 | zinc finger and BTB domain containing 46               | 0.425276108 | 6.326496008 | 27.37040617 | 0.000000168 | 0.0000106   |
| LRIG1        | ENSGALG00000007483 | leucine rich repeats and immunoglobulin like domains 1 | 0.425214155 | 8.003621658 | 12.33197076 | 0.000445266 | 0.006642659 |
| LOC422171    | -----              | Rho GTPase activating protein 20B                      | 0.423524498 | 4.915410695 | 19.86640719 | 0.0000083   | 0.000282342 |
| SMOC2        | ENSGALG00000011205 | SPARC related modular calcium binding 2                | 0.422002094 | 6.157615144 | 19.87544364 | 0.00000827  | 0.000281593 |
| COX17        | ENSGALG00000014981 | COX17, cytochrome c oxidase copper chaperone           | 0.42146191  | 4.002325217 | 16.70557349 | 0.0000437   | 0.001069521 |
| LMBR1L       | ENSGALG00000037665 | limb development membrane protein 1 like               | 0.42022019  | 4.621119577 | 26.4782385  | 0.000000267 | 0.0000154   |
| GFM2         | ENSGALG00000014939 | G elongation factor mitochondrial 2                    | 0.419978959 | 5.224749672 | 16.42403035 | 0.0000506   | 0.001205887 |
| NME7         | ENSGALG00000015230 | NME/NM23 family member 7                               | 0.419597926 | 4.139358776 | 15.13341608 | 0.000100174 | 0.002065626 |
| LOC107051884 | -----              | uncharacterized LOC107051884                           | 0.419070392 | 1.984707379 | 7.871394924 | 0.00502229  | 0.038292634 |
| ATL1         | ENSGALG00000012339 | atlastin GTPase 1                                      | 0.418833293 | 4.932385297 | 28.12101602 | 0.000000114 | 0.00000759  |
| ADAM22       | ENSGALG00000008976 | ADAM metallopeptidase domain 22                        | 0.418605146 | 4.447943985 | 16.40469557 | 0.0000512   | 0.001214922 |
| NKX3-2       | ENSGALG00000031859 | NK3 homeobox 2                                         | 0.418415415 | 5.877456877 | 13.26350607 | 0.000270623 | 0.004583313 |
| LRRC4C       | ENSGALG00000007948 | leucine rich repeat containing 4C                      | 0.417665665 | 3.708775899 | 8.740552402 | 0.003112102 | 0.027095049 |
| NPR3         | ENSGALG00000017405 | natriuretic peptide receptor 3                         | 0.416848718 | 7.023658972 | 8.640193092 | 0.003288266 | 0.028243841 |
| CTGF         | ENSGALG00010004251 | cellular communication network factor 2                | 0.416836208 | 6.056964209 | 22.04502206 | 0.00000266  | 0.000107677 |
| TLE4Z1       | -----              | -----                                                  | 0.416435106 | 5.356511647 | 17.84291656 | 0.000024    | 0.000654682 |
| CPZ          | ENSGALG00000030209 | carboxypeptidase Z                                     | 0.416130464 | 6.134549644 | 17.29712475 | 0.000032    | 0.000822232 |
| LRRC46       | -----              | leucine rich repeat containing 46                      | 0.415064385 | 1.792930708 | 8.547702253 | 0.003459586 | 0.029241529 |
| CDH7         | ENSGALG00000013782 | cadherin 7                                             | 0.414633643 | 4.397872772 | 14.76363839 | 0.000121863 | 0.002404381 |
| LOC407092    | -----              | ubiquitin associated protein 2                         | 0.412861455 | 7.265305706 | 19.71362009 | 0.000009    | 0.000299042 |
| LOC101752064 | -----              | uncharacterized LOC101752064                           | 0.411152254 | 2.448959944 | 7.874452463 | 0.005013805 | 0.038284066 |
| XPO1         | ENSGALG00000029476 | exportin 1                                             | 0.409538803 | 8.724315935 | 33.67098625 | 6.53E-09    | 0.000000597 |
| ARHGAP39L    | ENSGALG00000001536 | Rho GTPase activating protein 39                       | 0.407704958 | 4.815287323 | 18.39244197 | 0.000018    | 0.000517152 |
| KLF9         | ENSGALG00000027374 | Kruppel like factor 9                                  | 0.407632287 | 2.643607263 | 7.45680637  | 0.006319703 | 0.045213352 |
| THY1         | ENSGALG00000006751 | Thy-1 cell surface antigen                             | 0.407432526 | 2.091427793 | 7.556792475 | 0.00597843  | 0.043260805 |
| LOC107053100 | -----              | basic proline-rich protein-like                        | 0.407353146 | 3.469593739 | 10.94497391 | 0.000938579 | 0.01148276  |
| EPHX2        | ENSGALG00000016567 | epoxide hydrolase 2                                    | 0.406614491 | 4.782127571 | 19.1248361  | 0.0000122   | 0.000379729 |
| TOP3A        | ENSGALG00000005028 | topoisomerase (DNA) III alpha                          | 0.406134307 | 5.88343129  | 12.3234403  | 0.000447306 | 0.00666704  |
| ITGB3BP      | ENSGALG00000010995 | integrin subunit beta 3 binding protein                | 0.405691039 | 5.286172136 | 25.50564846 | 0.000000441 | 0.0000243   |
| ADCY2        | ENSGALG00000013060 | adenylate cyclase 2                                    | 0.404584155 | 2.930276585 | 7.87730303  | 0.005005908 | 0.038274401 |
| LOC107051471 | -----              | fermitin family homolog 3-like                         | 0.404423565 | 5.154651358 | 9.369623828 | 0.002206108 | 0.021546535 |
| TPK1         | ENSGALG00000040298 | thiamin pyrophosphokinase 1                            | 0.404233354 | 4.678776468 | 18.669509   | 0.0000155   | 0.00046423  |
| STK10        | ENSGALG00000002816 | serine/threonine kinase 10                             | 0.403614468 | 4.341855613 | 11.38746567 | 0.000739413 | 0.009648729 |
| RRP36        | ENSGALG00000028056 | ribosomal RNA processing 36                            | 0.403567471 | 6.230165045 | 13.24826713 | 0.000272832 | 0.004586857 |
| DERL3        | ENSGALG00000005994 | derlin 3                                               | 0.403237896 | 3.808141531 | 11.11914115 | 0.000854413 | 0.010699675 |
| LOC428824    | -----              | SITS-binding protein-like                              | 0.402671555 | 2.949774119 | 9.743677328 | 0.001799406 | 0.018598756 |
| RUVBL1       | ENSGALG00000005931 | RuvB like AAA ATPase 1                                 | 0.401612664 | 7.446050925 | 24.43298438 | 0.000000769 | 0.0000384   |
| HSPH1        | ENSGALG00000017077 | heat shock protein family H (Hsp110) member 1          | 0.400154876 | 7.270784931 | 15.3829871  | 0.0000878   | 0.001870904 |

|              |                    |                                                                   |             |             |             |             |             |
|--------------|--------------------|-------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| LOC107054036 | -----              | endogenous retrovirus group K member 9 Pol protein-like           | 0.399524548 | 3.610076122 | 11.32775904 | 0.00076357  | 0.009851805 |
| LOC112532692 | -----              | uncharacterized LOC112532692                                      | 0.399474336 | 2.755636582 | 9.221093853 | 0.002392426 | 0.022624922 |
| HAUS1        | ENSGALG00000040397 | HAUS augmin like complex subunit 1                                | 0.399437856 | 4.886550267 | 10.64963438 | 0.001100927 | 0.012866299 |
| DHTKD1       | ENSGALG00000003674 | dehydrogenase E1 and transketolase domain containing 1            | 0.398700756 | 5.543292121 | 12.44708733 | 0.000418644 | 0.006325794 |
| SYVN1        | -----              | synoviolin 1                                                      | 0.398356131 | 5.573801938 | 13.71345392 | 0.000212924 | 0.003763329 |
| P2RX4        | ENSGALG00000003901 | purinergic receptor P2X 4                                         | 0.398013634 | 3.591489798 | 17.57098986 | 0.0000277   | 0.000733397 |
| GFRA2        | ENSGALG00000032856 | GDNF family receptor alpha 2                                      | 0.397676715 | 4.902987939 | 9.212088421 | 0.002404223 | 0.022697352 |
| RARRES1      | ENSGALG00000009594 | retinoic acid receptor responder 1                                | 0.396515443 | 4.197368822 | 7.269962809 | 0.007011726 | 0.048295072 |
| SOX3         | ENSGALG00000054923 | SRY-box 3                                                         | 0.394807132 | 4.749323516 | 8.505630728 | 0.003540492 | 0.029769438 |
| CIART        | -----              | circadian associated repressor of transcription                   | 0.394249039 | 2.579722976 | 7.939211353 | 0.004837491 | 0.037388877 |
| ZWILCH       | ENSGALG00000007736 | zwilch kinetochore protein                                        | 0.392864138 | 6.299130901 | 32.45825492 | 1.22E-08    | 0.00000104  |
| TRIM47       | ENSGALG00000028301 | tripartite motif containing 47                                    | 0.392339969 | 3.234425085 | 7.409971097 | 0.006486337 | 0.045954099 |
| SDHAF1       | -----              | succinate dehydrogenase complex assembly factor 1                 | 0.392259532 | 5.073310895 | 22.70151097 | 0.00000189  | 0.0000804   |
| LOC112530910 | -----              | REST corepressor 2-like                                           | 0.390103887 | 5.280409495 | 12.71877366 | 0.000362003 | 0.005667708 |
| RPS6KB2      | ENSGALG00000031629 | ribosomal protein S6 kinase B2                                    | 0.38880384  | 5.381086567 | 24.84481833 | 0.000000621 | 0.0000324   |
| CFAP43       | ENSGALG00000036896 | cilia and flagella associated protein 43                          | 0.387673121 | 4.062218809 | 9.457646749 | 0.002102707 | 0.02085596  |
| IRAK2        | ENSGALG00000008407 | interleukin 1 receptor associated kinase 2                        | 0.387516034 | 5.730677265 | 33.83439966 | 0.000000006 | 0.000000558 |
| ENOX1        | ENSGALG00000016967 | ecto-NOX disulfide-thiol exchanger 1                              | 0.386318211 | 4.428726915 | 8.382930333 | 0.003787613 | 0.031272035 |
| PSTK         | ENSGALG00000009610 | phosphoseryl-tRNA kinase                                          | 0.386298436 | 3.953513864 | 10.28025635 | 0.001344613 | 0.014859369 |
| PDE6G        | ENSGALG00000004514 | phosphodiesterase 6G                                              | 0.385606109 | 3.980574735 | 13.8863303  | 0.000194206 | 0.003487035 |
| BCCIP        | ENSGALG00000006617 | BRCA2 and CDKN1A interacting protein                              | 0.385257178 | 5.708404064 | 40.5941439  | 1.87E-10    | 2.68E-08    |
| PUDP         | ENSGALG00000040388 | pseudouridine 5'-phosphatase                                      | 0.384878243 | 3.053197955 | 8.369256249 | 0.003816218 | 0.03138224  |
| LOC426743    | -----              | probable beta-D-xylosidase 5-like                                 | 0.384332074 | 3.571739538 | 12.59570347 | 0.000386635 | 0.005968171 |
| LOC419584    | -----              | discoidin, CUB and LCCL domain-containing protein 1-like          | 0.383753125 | 3.872162718 | 9.063189023 | 0.002608067 | 0.023948518 |
| IFT22        | ENSGALG00000021653 | intraflagellar transport 22                                       | 0.382188333 | 4.024894716 | 16.8764752  | 0.0000399   | 0.000993099 |
| IVD          | ENSGALG00000040267 | isovaleryl-CoA dehydrogenase                                      | 0.380899288 | 5.28536254  | 29.37211993 | 5.97E-08    | 0.00000433  |
| EIF4A2       | ENSGALG00000008684 | eukaryotic translation initiation factor 4A2                      | 0.38024517  | 9.204211653 | 12.92457447 | 0.000324296 | 0.005214537 |
| NDRG1        | ENSGALG00000054783 | N-myc downstream regulated 1                                      | 0.380130409 | 5.286353702 | 19.23987381 | 0.0000115   | 0.000365498 |
| KIF15        | ENSGALG00000036645 | kinesin family member 15                                          | 0.379259973 | 7.702245204 | 29.75510865 | 0.000000049 | 0.00000366  |
| APTX         | ENSGALG00000001954 | aprataxin                                                         | 0.379141815 | 4.717549348 | 9.340856574 | 0.002241008 | 0.021728227 |
| C1H11ORF70   | ENSGALG00000017189 | chromosome 1 open reading frame, human C11orf70                   | 0.378763369 | 2.028836603 | 8.371664072 | 0.003811165 | 0.031356359 |
| ARG2         | ENSGALG00000009519 | arginase 2                                                        | 0.378504357 | 6.385958966 | 33.32829533 | 7.78E-09    | 0.000000695 |
| POLE4        | ENSGALG00000031679 | DNA polymerase epsilon 4, accessory subunit                       | 0.377249332 | 5.251144577 | 24.69622038 | 0.000000671 | 0.0000347   |
| ZNF624       | -----              | zinc finger protein 624                                           | 0.376597043 | 4.202963217 | 10.52694736 | 0.001176464 | 0.013462247 |
| ERN2         | ENSGALG00000027592 | endoplasmic reticulum to nucleus signaling 2                      | 0.376194899 | 3.483098847 | 11.77936125 | 0.00059891  | 0.008267676 |
| SOX1         | ENSGALG00000030353 | SRY-box 1                                                         | 0.37607771  | 4.025372499 | 7.588300894 | 0.005874829 | 0.042736656 |
| ABCB6        | ENSGALG00000029672 | ATP binding cassette subfamily B member 6 (Langereis blood group) | 0.375488877 | 4.229384656 | 12.20211158 | 0.000477355 | 0.00699454  |
| HYLS1        | ENSGALG00000036796 | HYLS1, centriolar and ciliogenesis associated                     | 0.373791796 | 3.801267221 | 12.74268172 | 0.000357405 | 0.005604466 |
| NPC2         | ENSGALG00000010237 | Niemann-Pick disease, type C2                                     | 0.372908818 | 5.521583744 | 9.478692952 | 0.00207872  | 0.020718058 |
| MRPS34       | ENSGALG00000001792 | mitochondrial ribosomal protein S34                               | 0.372437305 | 6.317219646 | 39.0150208  | 4.21E-10    | 5.16E-08    |
| NR2F1        | ENSGALG00000027907 | nuclear receptor subfamily 2 group F member 1                     | 0.371715864 | 7.132556518 | 18.3627529  | 0.0000183   | 0.000522824 |
| FOXO6        | ENSGALG00000026153 | forkhead box O6                                                   | 0.371577054 | 5.09216925  | 17.40342694 | 0.0000302   | 0.000788674 |
| SLC26A8      | ENSGALG00000040498 | solute carrier family 26 member 8                                 | 0.371113636 | 3.193506776 | 10.43475849 | 0.001236657 | 0.013976095 |
| RDH5         | ENSGALG00000034988 | retinol dehydrogenase 5                                           | 0.369847037 | 3.715022326 | 13.67096765 | 0.000217796 | 0.003837075 |

|              |                    |                                                         |             |             |             |             |             |
|--------------|--------------------|---------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| MATN2        | ENSGALG00000044675 | matrilin 2                                              | 0.369707994 | 3.654439913 | 10.27089334 | 0.001351453 | 0.01487938  |
| PIF1         | ENSGALG00000009032 | PIF1 5'-to-3' DNA helicase                              | 0.369474262 | 4.89972757  | 9.285430283 | 0.002309837 | 0.022102937 |
| FAM177A1     | ENSGALG00000010046 | family with sequence similarity 177 member A1           | 0.368483228 | 5.402439251 | 35.62675836 | 2.39E-09    | 0.000000244 |
| RNF32        | ENSGALG00000006387 | ring finger protein 32                                  | 0.368466861 | 5.841182101 | 26.8227966  | 0.000000223 | 0.0000133   |
| KIF26A       | ENSGALG00000011581 | kinesin family member 26A                               | 0.365534544 | 7.5044052   | 11.73044552 | 0.000614859 | 0.008445326 |
| LPAR2        | ENSGALG00000042767 | lysophosphatidic acid receptor 2                        | 0.365236585 | 4.745676244 | 12.69078029 | 0.000367463 | 0.005742262 |
| CLN5         | ENSGALG00000016917 | ceroid-lipofuscinosis, neuronal 5                       | 0.364608356 | 3.527191281 | 10.16592549 | 0.001430601 | 0.015641553 |
| WDR24        | ENSGALG00000002450 | WD repeat domain 24                                     | 0.363403383 | 5.891050633 | 24.10637206 | 0.000000912 | 0.0000445   |
| TDRD7        | ENSGALG00000012350 | tudor domain containing 7                               | 0.361799912 | 4.103489722 | 10.86841373 | 0.000978183 | 0.011852723 |
| WDR70        | ENSGALG00000003708 | WD repeat domain 70                                     | 0.361532767 | 5.958547342 | 13.62900019 | 0.000222718 | 0.00390291  |
| RHBDD1       | ENSGALG00000004957 | rhomboid domain containing 1                            | 0.360936782 | 3.518526547 | 9.107439968 | 0.002545719 | 0.023560072 |
| FOXC1        | ENSGALG00000030442 | forkhead box C1                                         | 0.360915437 | 4.320649839 | 8.344286872 | 0.00386902  | 0.031721337 |
| CDH6         | ENSGALG00000012917 | cadherin 6                                              | 0.3604136   | 5.766722066 | 11.76177205 | 0.000604596 | 0.008338694 |
| ENTPD2       | ENSGALG00000039696 | ectonucleoside triphosphate diphosphohydrolase 2        | 0.359748922 | 3.648733048 | 8.16501027  | 0.004270623 | 0.034026847 |
| SMCO4        | ENSGALG00000026639 | single-pass membrane protein with coiled-coil domains 4 | 0.358783943 | 3.884233984 | 11.82136264 | 0.00058555  | 0.00812094  |
| PRSS35       | ENSGALG00000055053 | serine protease 35                                      | 0.358519292 | 4.770943991 | 8.41002283  | 0.00373158  | 0.030996035 |
| COPS9        | ENSGALG00000052051 | COP9 signalosome subunit 9                              | 0.358318722 | 5.312107289 | 26.86142021 | 0.000000219 | 0.0000132   |
| JUN          | ENSGALG00000010870 | Jun proto-oncogene, AP-1 transcription factor subunit   | 0.357649336 | 6.429529651 | 9.390297052 | 0.002181369 | 0.021373879 |
| LOC107051855 | -----              | uncharacterized LOC107051855                            | 0.357222149 | 4.390494461 | 8.728160294 | 0.003133325 | 0.027222208 |
| SLC22A23     | ENSGALG00000012816 | solute carrier family 22 member 23                      | 0.35712262  | 4.83495072  | 16.40440236 | 0.0000512   | 0.001214922 |
| KANSL2       | ENSGALG00000033877 | KAT8 regulatory NSL complex subunit 2                   | 0.356128393 | 6.605124342 | 26.74517015 | 0.000000232 | 0.0000137   |
| LOC100858388 | -----              | 78 kDa glucose-regulated protein-like                   | 0.355866703 | 5.618140353 | 7.648713109 | 0.005681284 | 0.041753247 |
| TEX2L        | -----              | testis expressed 2                                      | 0.355861283 | 2.284099685 | 7.191541976 | 0.007324801 | 0.049846815 |
| RNF213       | ENSGALG00000039269 | ring finger protein 213                                 | 0.355762623 | 3.217412427 | 8.144272777 | 0.004319738 | 0.034316908 |
| TSEN15       | ENSGALG00000004782 | tRNA splicing endonuclease subunit 15                   | 0.355608897 | 2.644954841 | 7.942366087 | 0.004829065 | 0.037368349 |
| LOC107053815 | -----              | uncharacterized LOC107053815                            | 0.355174818 | 3.530285442 | 8.004431131 | 0.004666302 | 0.036385377 |
| COQ2         | ENSGALG00000041294 | coenzyme Q2, polyprenyltransferase                      | 0.355110648 | 2.954181409 | 8.188512922 | 0.004215647 | 0.033755944 |
| MUTYH        | ENSGALG00000010226 | mutY DNA glycosylase                                    | 0.354790858 | 5.324231857 | 15.208117   | 0.0000963   | 0.002010698 |
| HOXD4        | ENSGALG00000023419 | homeobox D4                                             | 0.354335084 | 6.024529135 | 12.98055668 | 0.000314742 | 0.005112622 |
| LHFPL4       | ENSGALG00000048164 | lipoma HMGIC fusion partner-like 4                      | 0.353932882 | 3.130479068 | 9.463032775 | 0.002096542 | 0.020835945 |
| PKDCCA       | ENSGALG00000042511 | protein kinase domain containing, cytoplasmic A         | 0.353725974 | 6.210572862 | 11.34095529 | 0.000758163 | 0.009807842 |
| CRYL1        | ENSGALG00000017135 | crystallin lambda 1                                     | 0.353543091 | 3.498660147 | 11.11021869 | 0.000858534 | 0.010732799 |
| ACSF2        | ENSGALG00000019768 | acyl-CoA synthetase family member 2                     | 0.35235603  | 5.596602842 | 25.35484306 | 0.000000477 | 0.0000257   |
| MYO19        | ENSGALG00000005374 | myosin XIX                                              | 0.352340269 | 5.369761354 | 16.58872819 | 0.0000464   | 0.001123407 |
| RCCD1        | -----              | RCC1 domain containing 1                                | 0.352091589 | 3.40229315  | 9.451189824 | 0.002110122 | 0.020869886 |
| C1HXORF36    | -----              | -----                                                   | 0.351065365 | 4.415230144 | 13.08024601 | 0.000298426 | 0.004910604 |
| LOC101748153 | -----              | laminin subunit beta-2-like                             | 0.350169201 | 5.421708002 | 9.738612629 | 0.00180437  | 0.018626671 |
| BRIP1        | ENSGALG00000005279 | BRCA1 interacting protein C-terminal helicase 1         | 0.350137157 | 4.575090617 | 16.73027383 | 0.0000431   | 0.001059808 |
| NDUFA5       | ENSGALG00000008821 | NADH:ubiquinone oxidoreductase subunit A5               | 0.350009805 | 5.796273468 | 16.4885473  | 0.0000489   | 0.001172325 |
| LYRM7        | ENSGALG00000037299 | LYR motif containing 7                                  | 0.349695893 | 3.702708206 | 8.356110909 | 0.003843924 | 0.031547016 |
| RASL11AL     | ENSGALG00000007710 | ras-like protein family member 11A-like                 | 0.349108017 | 3.346090485 | 8.402351623 | 0.003747359 | 0.031033114 |
| GALNT2       | ENSGALG00000011106 | polypeptide N-acetylgalactosaminyltransferase 2         | 0.347440215 | 6.098824571 | 30.77469055 | 0.000000029 | 0.00000226  |
| CNP          | ENSGALG00000003457 | 2',3'-cyclic nucleotide 3' phosphodiesterase            | 0.346996522 | 4.706164043 | 15.03147782 | 0.000105733 | 0.002150598 |
| LOC107050163 | -----              | probable very-long-chain enoyl-CoA reductase art-1      | 0.346761762 | 7.235556282 | 20.348979   | 0.00000645  | 0.000228344 |

|              |                    |                                                                            |             |             |             |             |             |
|--------------|--------------------|----------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| LOC107055019 | -----              | uncharacterized LOC107055019                                               | 0.346203479 | 4.642286604 | 9.188847589 | 0.002434941 | 0.022856225 |
| EFHD2        | ENSGALG00000038313 | EF-hand domain family member D2                                            | 0.345287194 | 3.718769257 | 7.654645519 | 0.005662632 | 0.041672005 |
| C14H7orf50   | ENSGALG00000004055 | chromosome 14 C7orf50 homolog                                              | 0.34518421  | 5.619800262 | 22.24157338 | 0.0000024   | 0.0000991   |
| HR           | -----              | -----                                                                      | 0.34478801  | 3.754706621 | 11.21320716 | 0.000812172 | 0.010335882 |
| TUBB6        | ENSGALG00000031275 | tubulin beta 6 class V                                                     | 0.344465728 | 6.553923476 | 10.59775112 | 0.001132253 | 0.013166942 |
| C25H1ORF43   | ENSGALG00000034258 | chromosome 25 open reading frame, human C1orf43                            | 0.342401466 | 5.708245714 | 23.02032432 | 0.0000016   | 0.00007     |
| SLC41A2      | ENSGALG00000012697 | solute carrier family 41 member 2                                          | 0.342251618 | 3.718092403 | 8.183631261 | 0.004227006 | 0.033787267 |
| DYNC2LI1     | ENSGALG00000009954 | dynein cytoplasmic 2 light intermediate chain 1                            | 0.341980837 | 4.505623138 | 13.38529076 | 0.000253605 | 0.004346954 |
| TRAPPC2      | ENSGALG00000016578 | trafficking protein particle complex 2                                     | 0.341863222 | 5.966546845 | 25.15804581 | 0.000000528 | 0.0000282   |
| ORAOV1       | ENSGALG00000007556 | oral cancer overexpressed 1                                                | 0.341386892 | 6.295194854 | 24.10758401 | 0.000000911 | 0.0000445   |
| MRPL49       | -----              | mitochondrial ribosomal protein L49                                        | 0.341173604 | 4.7556867   | 16.33090204 | 0.0000532   | 0.001258152 |
| KIAA1210     | ENSGALG00000013771 | KIAA1210                                                                   | 0.340263464 | 4.677247986 | 12.24602975 | 0.000466249 | 0.006874668 |
| BRK1         | -----              | BRICK1, SCAR/WAVE actin nucleating complex subunit                         | 0.339249966 | 3.939470309 | 11.3077986  | 0.000771822 | 0.009922137 |
| KAT5         | -----              | lysine acetyltransferase 5                                                 | 0.339127345 | 5.579347052 | 34.56112998 | 4.13E-09    | 0.0000004   |
| PNPLA3       | ENSGALG00000029308 | patatin like phospholipase domain containing 3                             | 0.339050322 | 6.027908401 | 12.66205007 | 0.000373153 | 0.00580362  |
| H1FX         | -----              | H1 histone family member X                                                 | 0.33882941  | 8.496962971 | 14.84146716 | 0.000116936 | 0.002321086 |
| PEX11B       | ENSGALG00000052329 | peroxisomal biogenesis factor 11 beta                                      | 0.338221254 | 2.953459038 | 9.000768004 | 0.002698662 | 0.024478493 |
| GLIPR2       | ENSGALG00000028821 | GLI pathogenesis related 2                                                 | 0.337700271 | 5.607621371 | 19.17630671 | 0.0000119   | 0.000373695 |
| GMNN         | ENSGALG00000013626 | geminin, DNA replication inhibitor                                         | 0.337150548 | 5.878679686 | 17.32179107 | 0.0000316   | 0.000816405 |
| MTHFD2       | ENSGALG00000034344 | methylenetetrahydrofolate dehydrogenase 2, cyclohydrolase                  | 0.336411682 | 4.990819585 | 13.17539612 | 0.000283649 | 0.00472413  |
| CENPK        | ENSGALG00000014753 | centromere protein K                                                       | 0.33588711  | 5.786693898 | 11.28427193 | 0.000781665 | 0.010014937 |
| LOC101748987 | -----              | FCH domain only protein 1-like                                             | 0.335872724 | 3.9638946   | 9.272010329 | 0.002326822 | 0.02222162  |
| HOXB4        | ENSGALG00000000284 | homeobox B4                                                                | 0.33578675  | 7.428512664 | 12.70385932 | 0.000364902 | 0.005707659 |
| SCO1         | ENSGALG00000030475 | SCO1, cytochrome c oxidase assembly protein                                | 0.335772481 | 5.685924266 | 16.7927234  | 0.0000417   | 0.001034611 |
| ZNF414       | ENSGALG00000024378 | zinc finger protein 414                                                    | 0.335257601 | 3.995040119 | 8.900648306 | 0.002850694 | 0.025528804 |
| YWHAH        | ENSGALG00000006743 | tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein eta | 0.335146263 | 7.814142165 | 24.55200584 | 0.000000723 | 0.0000367   |
| MRPS24       | ENSGALG00000052064 | mitochondrial ribosomal protein S24                                        | 0.334860624 | 4.333267797 | 11.55701869 | 0.00067494  | 0.009047928 |
| LOC770165    | -----              | BUD13 homolog                                                              | 0.334701457 | 3.982296263 | 12.2135786  | 0.000474429 | 0.006964082 |
| NFKB1        | ENSGALG00000012304 | nuclear factor kappa B subunit 1                                           | 0.334694768 | 4.989832433 | 18.44767521 | 0.0000175   | 0.00050414  |
| ANKLE1       | ENSGALG00000051336 | ankyrin repeat and LEM domain containing 1                                 | 0.334586638 | 5.657947887 | 10.5675442  | 0.001150905 | 0.013292521 |
| HOXB2        | ENSGALG00000025774 | homeobox B2                                                                | 0.334129715 | 5.327566436 | 14.71410319 | 0.000125107 | 0.002453678 |
| TGFBR2       | ENSGALG00000011442 | transforming growth factor beta receptor 2                                 | 0.333416252 | 4.785317399 | 14.42067247 | 0.000146189 | 0.002784082 |
| VEGFC        | ENSGALG00000010847 | vascular endothelial growth factor C                                       | 0.332144103 | 4.229641932 | 11.67180164 | 0.000634545 | 0.008615052 |
| SPATA20      | ENSGALG00000006857 | spermatogenesis associated 20                                              | 0.331922777 | 5.57900768  | 18.23007956 | 0.0000196   | 0.000555392 |
| TMEM132B     | ENSGALG00000002742 | transmembrane protein 132B                                                 | 0.330651884 | 4.36156332  | 8.232073595 | 0.004115648 | 0.033148795 |
| N4BP2        | -----              | NEDD4 binding protein 2                                                    | 0.330172103 | 5.999592023 | 15.93590742 | 0.0000655   | 0.001493344 |
| TBC1D2       | ENSGALG00000001944 | TBC1 domain family member 2                                                | 0.329769225 | 4.128456201 | 7.577279162 | 0.005910859 | 0.042922855 |
| ARL14EP      | ENSGALG00000012139 | ADP ribosylation factor like GTPase 14 effector protein                    | 0.329536284 | 5.181556957 | 15.37501016 | 0.0000881   | 0.001876389 |
| PLA2R1       | ENSGALG00000011149 | phospholipase A2 receptor 1                                                | 0.327574598 | 5.483173373 | 9.278546302 | 0.002318534 | 0.022168199 |
| FRS3         | ENSGALG00000003447 | fibroblast growth factor receptor substrate 3                              | 0.32755642  | 6.197064455 | 19.70764846 | 0.00000902  | 0.00029933  |
| ZNF252L      | -----              | -----                                                                      | 0.327339774 | 4.601486253 | 9.891616183 | 0.001660335 | 0.017446238 |
| RAD50        | ENSGALG00000006794 | RAD50 double strand break repair protein                                   | 0.326469365 | 6.442369286 | 18.51562123 | 0.0000169   | 0.000489921 |
| LOC101752260 | -----              | uncharacterized LOC101752260                                               | 0.326296336 | 5.524989794 | 20.67906377 | 0.00000543  | 0.000198581 |
| TMEM106C     | ENSGALG00000034069 | transmembrane protein 106C                                                 | 0.325729103 | 3.800794083 | 11.51181315 | 0.000691553 | 0.009191844 |

|              |                     |                                                               |             |             |             |             |             |
|--------------|---------------------|---------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| HSP90B1      | ENSGALG00000033789  | heat shock protein 90 beta family member 1                    | 0.32542125  | 9.798872787 | 11.59500351 | 0.000661292 | 0.008919318 |
| GPR155       | ENSGALG00000014209  | G protein-coupled receptor 155                                | 0.325104199 | 5.158705952 | 24.45376085 | 0.000000761 | 0.0000381   |
| LOC101750687 | -----               | uncharacterized LOC101750687                                  | 0.325052885 | 5.868463628 | 17.98885555 | 0.0000222   | 0.00061451  |
| HIBADH       | ENSGALG00000033207  | 3-hydroxyisobutyrate dehydrogenase                            | 0.324989661 | 5.100399469 | 19.67408906 | 0.00000918  | 0.000302845 |
| NDUFAF4      | ENSGALG00000019921  | NADH:ubiquinone oxidoreductase complex assembly factor 4      | 0.324337705 | 4.954046737 | 12.30540678 | 0.000451648 | 0.006713522 |
| LMCD1        | ENSGALG00000008349  | LIM and cysteine rich domains 1                               | 0.324090055 | 5.441001886 | 9.316287788 | 0.002271257 | 0.021881459 |
| VASP         | -----               | vasodilator-stimulated phosphoprotein                         | 0.32404702  | 4.072524679 | 9.086172339 | 0.002575493 | 0.023702317 |
| BUD13        | ENSGALG00000025882  | BUD13 homolog                                                 | 0.323751624 | 5.73985678  | 26.70937569 | 0.000000236 | 0.0000139   |
| SHCBP1       | ENSGALG00000004444  | SHC binding and spindle associated 1                          | 0.32358412  | 5.340293669 | 18.18546342 | 0.00002     | 0.000564662 |
| COA5         | ENSGALG00000036791  | cytochrome c oxidase assembly factor 5                        | 0.323157297 | 5.492478386 | 23.57878233 | 0.0000012   | 0.0000551   |
| EXOG         | ENSGALG00000006153  | exo/endonuclease G                                            | 0.322980246 | 6.738972363 | 26.7736355  | 0.000000229 | 0.0000136   |
| FAM43A       | ENSGALG000000041898 | family with sequence similarity 43 member A                   | 0.322819047 | 5.711845122 | 12.93952987 | 0.000321716 | 0.005185773 |
| PITPNM2      | -----               | phosphatidylinositol transfer protein membrane associated 2   | 0.322744133 | 5.054498992 | 15.27228535 | 0.0000931   | 0.001956206 |
| SHC2         | ENSGALG00000001289  | SHC (Src homology 2 domain containing) transforming protein 2 | 0.322297779 | 4.746045168 | 8.083698767 | 0.004466519 | 0.035221456 |
| TMEM177      | ENSGALG00000011593  | transmembrane protein 177                                     | 0.321246676 | 4.627369087 | 15.6255992  | 0.0000772   | 0.001702901 |
| LOC107052842 | -----               | uncharacterized LOC107052842                                  | 0.31981423  | 4.525450875 | 12.78823236 | 0.000348807 | 0.005513556 |
| CAMK4L       | -----               | calcium/calmodulin-dependent protein kinase IV-like           | 0.319448545 | 4.490343623 | 10.01079136 | 0.001556256 | 0.01661791  |
| NFYA         | ENSGALG00000003247  | nuclear transcription factor Y subunit alpha                  | 0.319100067 | 7.169125587 | 19.23455447 | 0.0000116   | 0.000365813 |
| MRPL55       | ENSGALG00000038820  | mitochondrial ribosomal protein L55                           | 0.318937865 | 4.089814131 | 7.4792564   | 0.006241384 | 0.044750317 |
| TTC30B       | ENSGALG00000009224  | tetratricopeptide repeat domain 30B                           | 0.318259035 | 4.927554425 | 11.67842196 | 0.000632291 | 0.00859154  |
| ZYX          | ENSGALG00000014688  | zyxin                                                         | 0.318093973 | 7.10454972  | 27.2789473  | 0.000000176 | 0.0000111   |
| TBCB         | -----               | tubulin folding cofactor B                                    | 0.316387178 | 6.115122288 | 17.01604647 | 0.0000371   | 0.000935443 |
| PRR7         | ENSGALG000000041981 | proline rich 7, synaptic                                      | 0.316192512 | 5.278579592 | 20.09519081 | 0.00000737  | 0.000254179 |
| JPT2         | -----               | -----                                                         | 0.315663403 | 8.605992452 | 26.8971357  | 0.000000215 | 0.000013    |
| BROX         | ENSGALG000000009413 | BRO1 domain and CAAX motif containing                         | 0.315202028 | 5.201283625 | 14.80665133 | 0.000119115 | 0.002352979 |
| FADS1        | ENSGALG00000007127  | fatty acid desaturase 1                                       | 0.315013632 | 6.419882568 | 36.76941457 | 1.33E-09    | 0.000000148 |
| CDC20        | ENSGALG00000009971  | cell division cycle 20                                        | 0.314848024 | 7.698153698 | 27.13538258 | 0.00000019  | 0.0000117   |
| USP43        | ENSGALG00000037812  | ubiquitin specific peptidase 43                               | 0.314672235 | 5.370320331 | 7.698237466 | 0.005527477 | 0.040878491 |
| TMEM199      | ENSGALG00000023757  | transmembrane protein 199                                     | 0.31413619  | 4.974199219 | 15.85584503 | 0.0000684   | 0.001545031 |
| NMRK2        | ENSGALG00000025751  | nicotinamide riboside kinase 2                                | 0.313767789 | 4.825571663 | 15.36899812 | 0.0000884   | 0.001879937 |
| LOC107053944 | -----               | uncharacterized LOC107053944                                  | 0.313457339 | 5.382883327 | 8.138181506 | 0.004334273 | 0.034360863 |
| SATB1        | ENSGALG00000011254  | SATB homeobox 1                                               | 0.313449955 | 4.210838036 | 8.455657787 | 0.003639096 | 0.030463772 |
| DTNB         | -----               | dystrobrevin beta                                             | 0.313351932 | 5.470325373 | 21.29961768 | 0.00000393  | 0.000150669 |
| IER5L        | ENSGALG00000053552  | immediate early response 5 like                               | 0.312947127 | 6.941784972 | 11.68348916 | 0.000630572 | 0.008582541 |
| SS18L2       | ENSGALG00000004943  | SS18 like 2                                                   | 0.312772104 | 4.483491469 | 15.5099893  | 0.0000821   | 0.001783724 |
| LOC107056278 | -----               | probable N-acetyltransferase camello                          | 0.312437184 | 5.040022991 | 8.610209014 | 0.003342839 | 0.028574765 |
| NSDHL        | ENSGALG00000007493  | NAD(P) dependent steroid dehydrogenase-like                   | 0.312271439 | 4.371548801 | 7.883550596 | 0.004988644 | 0.038241869 |
| ZRANB2       | ENSGALG00000011340  | zinc finger RANBP2-type containing 2                          | 0.311722962 | 7.078135385 | 22.06781314 | 0.00000263  | 0.000106931 |
| IFI35        | ENSGALG00000002832  | interferon-induced protein 35                                 | 0.311311122 | 3.990787753 | 8.745967348 | 0.003102875 | 0.027043327 |
| CTSH         | ENSGALG00000033557  | cathepsin H                                                   | 0.310110616 | 5.522227557 | 16.9010296  | 0.0000394   | 0.00098182  |
| ANXA5        | ENSGALG00000011885  | annexin A5                                                    | 0.308924123 | 6.828473585 | 23.82506729 | 0.00000105  | 0.0000497   |
| CRELD2       | ENSGALG00000008551  | cysteine rich with EGF like domains 2                         | 0.308253083 | 5.765288168 | 14.65524372 | 0.000129075 | 0.002522482 |
| LOC107051531 | -----               | protein phosphatase 1 regulatory subunit 14C like             | 0.308225502 | 5.898694978 | 18.5043184  | 0.000017    | 0.000491966 |
| CREB5        | ENSGALG00000038265  | cAMP responsive element binding protein 5                     | 0.307946374 | 4.293760072 | 9.857337271 | 0.001691558 | 0.017695219 |

|              |                    |                                                           |             |             |             |             |             |
|--------------|--------------------|-----------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| TGFB1        | ENSGALG00000031325 | transforming growth factor beta 1                         | 0.30747196  | 4.836465255 | 15.26530498 | 0.0000934   | 0.001960678 |
| HMG1A1       | ENSGALG00000030396 | high mobility group AT-hook 1                             | 0.307338657 | 6.816317085 | 25.63604002 | 0.000000412 | 0.0000228   |
| DUSP8        | ENSGALG00000006647 | dual specificity phosphatase 8                            | 0.307149318 | 4.983133665 | 11.49977824 | 0.000696045 | 0.009234711 |
| LOC112531536 | -----              | uncharacterized LOC112531536                              | 0.306894247 | 5.133696018 | 12.50949132 | 0.00040489  | 0.006189294 |
| AAAS         | ENSGALG00000032843 | aladin WD repeat nucleoporin                              | 0.306289994 | 7.272044086 | 25.09461354 | 0.000000546 | 0.0000289   |
| RFXANK       | ENSGALG00000037261 | regulatory factor X associated ankyrin containing protein | 0.306048081 | 4.643315153 | 16.62770493 | 0.0000455   | 0.001108745 |
| GAS2L3       | ENSGALG00000028373 | growth arrest specific 2 like 3                           | 0.306014095 | 4.729855827 | 9.612781352 | 0.001932278 | 0.019614823 |
| TGFB2        | ENSGALG00000009612 | transforming growth factor beta 2                         | 0.305744448 | 5.545262071 | 8.615294653 | 0.003333519 | 0.028509901 |
| HSD17B4      | ENSGALG00000002187 | hydroxysteroid 17-beta dehydrogenase 4                    | 0.305731327 | 6.252557575 | 11.86001332 | 0.000573521 | 0.008038581 |
| LMNB1        | ENSGALG00000014692 | lamin B1                                                  | 0.305475877 | 7.321893538 | 12.50829079 | 0.00040515  | 0.006189294 |
| CCDC189      | ENSGALG00000041514 | coiled-coil domain containing 189                         | 0.305395508 | 4.215156376 | 11.13781967 | 0.000845853 | 0.010632929 |
| EXOSC1       | ENSGALG00000039917 | exosome component 1                                       | 0.304454057 | 4.928195465 | 16.44001389 | 0.0000502   | 0.001199233 |
| ORC5         | ENSGALG00000008175 | origin recognition complex subunit 5                      | 0.304360031 | 5.181725325 | 10.84889198 | 0.000988549 | 0.011928003 |
| RAB11FIP3    | ENSGALG00000002666 | RAB11 family interacting protein 3                        | 0.304110062 | 6.638886111 | 21.89652511 | 0.00000288  | 0.000115207 |
| CBS          | -----              | -----                                                     | 0.303669418 | 7.53063655  | 15.0203442  | 0.000106358 | 0.002155577 |
| NKIRAS2      | ENSGALG00000028971 | NFKB inhibitor interacting Ras like 2                     | 0.303241986 | 5.798327075 | 20.58810826 | 0.00000569  | 0.000207321 |
| GTF3C3       | ENSGALG00000007958 | general transcription factor IIIC subunit 3               | 0.302562507 | 4.968350776 | 17.27875015 | 0.0000323   | 0.000827303 |
| APOOL        | ENSGALG00000006978 | apolipoprotein O like                                     | 0.302194991 | 6.469951829 | 20.97974072 | 0.00000464  | 0.000173194 |
| LOC421106    | -----              | KIAA0146                                                  | 0.302125492 | 5.024625145 | 13.44479735 | 0.000245687 | 0.004237707 |
| RARA         | ENSGALG00000037935 | retinoic acid receptor alpha                              | 0.301848589 | 6.307904914 | 9.747026611 | 0.00179613  | 0.018576568 |
| GALNT6       | ENSGALG00000041101 | polypeptide N-acetylgalactosaminyltransferase 6           | 0.301613952 | 4.098248447 | 9.199003213 | 0.002421469 | 0.022786542 |
| NDUFB2       | ENSGALG00000032595 | NADH:ubiquinone oxidoreductase subunit B2                 | 0.301569825 | 5.579530067 | 8.559455358 | 0.003437322 | 0.029110211 |
| CCDC34       | -----              | coiled-coil domain containing 34                          | 0.300881658 | 3.722252047 | 7.869857033 | 0.005026563 | 0.038292634 |
| OSGEPL1      | ENSGALG00000037727 | O-sialoglycoprotein endopeptidase like 1                  | 0.300683115 | 4.831701461 | 14.9703438  | 0.000109214 | 0.002186276 |
| ALPL         | ENSGALG00000023542 | alkaline phosphatase, liver/bone/kidney                   | 0.300445023 | 5.309911443 | 14.06150662 | 0.000176928 | 0.003239391 |
| PMPCB        | ENSGALG00000008280 | peptidase, mitochondrial processing beta subunit          | 0.300037976 | 6.252930563 | 17.32627048 | 0.0000315   | 0.000815765 |
| RASGEF1B     | ENSGALG00000010903 | RasGEF domain family member 1B                            | 0.299944751 | 4.426828409 | 8.58402159  | 0.003391256 | 0.028839264 |
| SDCCAG8      | ENSGALG00000010713 | serologically defined colon cancer antigen 8              | 0.299752738 | 4.794838519 | 14.34327938 | 0.000152322 | 0.002862918 |
| MKNK2        | ENSGALG00000003845 | MAP kinase interacting serine/threonine kinase 2          | 0.299725184 | 5.714575211 | 13.89968676 | 0.000192831 | 0.00346779  |
| UBE4B        | ENSGALG00000002649 | ubiquitination factor E4B                                 | 0.299125798 | 7.329020609 | 34.47324119 | 4.32E-09    | 0.000000413 |
| IL12RB2      | ENSGALG00000011222 | interleukin 12 receptor subunit beta 2                    | 0.298551154 | 5.147647481 | 14.74355449 | 0.000123168 | 0.002427218 |
| TYMS         | -----              | thymidylate synthetase                                    | 0.298518386 | 6.604249162 | 25.20964623 | 0.000000514 | 0.0000276   |
| PQLC2L       | ENSGALG00000020626 | PQ loop repeat containing 2 like                          | 0.298217981 | 5.360296624 | 10.06913475 | 0.001507738 | 0.016258081 |
| GREB1        | ENSGALG00000016455 | growth regulating estrogen receptor binding 1             | 0.297856431 | 6.65964458  | 13.80393939 | 0.00020291  | 0.003619311 |
| POLE3        | ENSGALG00000008873 | DNA polymerase epsilon 3, accessory subunit               | 0.297494245 | 7.360743344 | 32.64131608 | 1.11E-08    | 0.000000955 |
| DAPK3        | ENSGALG00000037733 | death-associated protein kinase 3                         | 0.297490656 | 6.922710506 | 17.97167496 | 0.0000224   | 0.000619041 |
| IFT74        | ENSGALG00000001801 | intraflagellar transport 74                               | 0.29673718  | 5.186722141 | 9.289492296 | 0.00230472  | 0.022102937 |
| JPH1         | ENSGALG00000035845 | junctophilin 1                                            | 0.296721212 | 4.190890187 | 9.891733781 | 0.001660229 | 0.017446238 |
| PDZD2        | ENSGALG00000002854 | PDZ domain containing 2                                   | 0.296711461 | 5.38627667  | 8.207119733 | 0.004172633 | 0.033476685 |
| SALL1        | ENSGALG00000039238 | spalt like transcription factor 1                         | 0.296400783 | 6.84149503  | 9.461802319 | 0.002097948 | 0.020835945 |
| TULP4        | ENSGALG00000037377 | tubby like protein 4                                      | 0.296288499 | 6.688133643 | 16.49445551 | 0.0000488   | 0.00117209  |
| SEC23A       | ENSGALG00000010150 | Sec23 homolog A, coat complex II component                | 0.296276485 | 6.753344723 | 27.45438352 | 0.000000161 | 0.0000103   |
| GALNT11      | ENSGALG00000006233 | polypeptide N-acetylgalactosaminyltransferase 11          | 0.296009903 | 5.665543474 | 25.81164938 | 0.000000376 | 0.0000213   |
| PPM1M        | ENSGALG00000033277 | protein phosphatase, Mg2+/Mn2+ dependent 1M               | 0.295508632 | 4.590233956 | 12.36937921 | 0.000436433 | 0.006540528 |

|              |                    |                                                           |             |             |             |             |             |
|--------------|--------------------|-----------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| URB1         | ENSGALG00000015887 | URB1 ribosome biogenesis 1 homolog (S. cerevisiae)        | 0.29539818  | 6.201222967 | 14.39244583 | 0.000148396 | 0.002809969 |
| CTDP1        | ENSGALG00000031461 | CTD phosphatase subunit 1                                 | 0.294678761 | 5.745943816 | 16.91435875 | 0.0000391   | 0.000976522 |
| IBA57        | ENSGALG00000005328 | IBA57 homolog, iron-sulfur cluster assembly               | 0.294211101 | 5.457236664 | 16.91873767 | 0.000039    | 0.000976522 |
| MCPH1        | ENSGALG00000016332 | microcephalin 1                                           | 0.2941533   | 5.068908856 | 10.39962324 | 0.00126041  | 0.014147375 |
| PCCB         | ENSGALG00000037238 | propionyl-CoA carboxylase beta subunit                    | 0.292847389 | 5.713874587 | 16.01881668 | 0.0000627   | 0.001441331 |
| RBKS         | ENSGALG00000010043 | ribokinase                                                | 0.292697016 | 4.633055324 | 11.8350318  | 0.000581267 | 0.008105403 |
| TUSC5        | ENSGALG00000047441 | tumor suppressor candidate 5                              | 0.292608853 | 5.871508523 | 8.823217753 | 0.002974217 | 0.026269859 |
| IFT140       | ENSGALG00000009318 | intraflagellar transport 140                              | 0.292201036 | 5.585834844 | 18.07422298 | 0.0000212   | 0.000589545 |
| EED          | ENSGALG00000014060 | embryonic ectoderm development                            | 0.292187709 | 5.182244177 | 16.24889414 | 0.0000555   | 0.001307502 |
| PNPLA6       | ENSGALG00000039408 | patatin like phospholipase domain containing 6            | 0.291896272 | 4.893148567 | 7.575411175 | 0.005916988 | 0.042948407 |
| BID          | ENSGALG00000013039 | BH3 interacting domain death agonist                      | 0.290402251 | 7.192565384 | 25.97113046 | 0.000000347 | 0.0000199   |
| HIP1         | ENSGALG00000040908 | huntingtin interacting protein 1                          | 0.290316558 | 7.642228993 | 16.52612773 | 0.000048    | 0.001154359 |
| SRSF4        | ENSGALG00000050314 | serine and arginine rich splicing factor 4                | 0.290178079 | 5.514763674 | 10.05646028 | 0.001518146 | 0.01628494  |
| LOC112532285 | -----              | uncharacterized LOC112532285                              | 0.29004491  | 4.54346437  | 11.28327626 | 0.000782084 | 0.010014937 |
| MRT04        | ENSGALG00000003991 | MRT4 homolog, ribosome maturation factor                  | 0.289656885 | 6.503786673 | 19.66267393 | 0.00000924  | 0.000304051 |
| EPS8         | ENSGALG00000013091 | epidermal growth factor receptor pathway substrate 8      | 0.288618784 | 5.008487703 | 9.078996105 | 0.002585619 | 0.023774878 |
| DDX31        | ENSGALG00000041473 | DEAD-box helicase 31                                      | 0.28790453  | 5.638806691 | 23.06700511 | 0.00000156  | 0.000069    |
| FKBP11       | ENSGALG00000035060 | FK506 binding protein 11                                  | 0.287353086 | 3.804761341 | 9.002583119 | 0.002695983 | 0.024478493 |
| ACAD11       | ENSGALG00000035949 | acyl-CoA dehydrogenase family member 11                   | 0.287351983 | 5.085336214 | 9.44016766  | 0.002122841 | 0.020924549 |
| ATXN10       | ENSGALG00000014234 | ataxin 10                                                 | 0.287241815 | 4.200603881 | 12.62485158 | 0.000380652 | 0.005897957 |
| TMEM135      | ENSGALG00000047269 | transmembrane protein 135                                 | 0.287019455 | 4.867872519 | 10.81794488 | 0.00100521  | 0.01206472  |
| RTEL1        | ENSGALG00000006123 | regulator of telomere elongation helicase 1               | 0.286803988 | 5.975059424 | 15.19490399 | 0.000097    | 0.00201969  |
| SLC25A22     | ENSGALG00000039335 | solute carrier family 25 member 22                        | 0.286730866 | 4.449176116 | 11.54280938 | 0.000680118 | 0.009094651 |
| CARNMT1      | ENSGALG00000015155 | carnosine N-methyltransferase 1                           | 0.286234998 | 5.533285924 | 7.481746105 | 0.00623276  | 0.044717367 |
| XBP1         | ENSGALG00000005796 | X-box binding protein 1                                   | 0.286036803 | 6.474200774 | 21.02511133 | 0.00000453  | 0.000169911 |
| EIF2B4       | ENSGALG00000033575 | eukaryotic translation initiation factor 2B subunit delta | 0.285440649 | 5.862535574 | 12.80308755 | 0.000346048 | 0.005475208 |
| MYCBPAP      | ENSGALG00000007661 | radical S-adenosyl methionine domain containing 1         | 0.284867319 | 4.813732328 | 7.853394523 | 0.005072538 | 0.038571445 |
| GALK2        | ENSGALG00000036201 | galactokinase 2                                           | 0.284789389 | 4.453385218 | 7.54836979  | 0.006006439 | 0.043387161 |
| SLC25A11     | ENSGALG00000029383 | solute carrier family 25 member 11                        | 0.284699507 | 6.491623911 | 15.22738367 | 0.0000953   | 0.001995353 |
| EVC          | ENSGALG00000015037 | EvC ciliary complex subunit 1                             | 0.284475924 | 4.935129544 | 12.08868449 | 0.000507288 | 0.007335164 |
| INTU         | -----              | inturned planar cell polarity protein                     | 0.284223799 | 4.809819109 | 10.56475605 | 0.001152642 | 0.013292521 |
| TMSB15B      | ENSGALG00000031593 | thymosin beta 15B                                         | 0.282731708 | 7.297833306 | 8.931364448 | 0.002803149 | 0.025177844 |
| EPHA7        | ENSGALG00000015593 | EPH receptor A7                                           | 0.282216232 | 4.601487631 | 8.338773871 | 0.003880778 | 0.031786064 |
| EIF4G3       | ENSGALG00000010084 | eukaryotic translation initiation factor 4 gamma 3        | 0.282193523 | 7.848660273 | 15.63461953 | 0.0000768   | 0.001697073 |
| FASTKD1      | ENSGALG00000009841 | FAST kinase domains 1                                     | 0.281676305 | 4.444203713 | 11.35755871 | 0.000751415 | 0.009751213 |
| NRG4         | ENSGALG00000002952 | neuregulin 4                                              | 0.280955416 | 3.727096967 | 8.928993882 | 0.002806789 | 0.025183913 |
| NNF1         | ENSGALG00000046965 | Nnf1 protein                                              | 0.280655376 | 6.115530687 | 9.054402524 | 0.00262063  | 0.024023661 |
| QDPR         | ENSGALG00000030070 | quinoid dihydropteridine reductase                        | 0.280623916 | 6.030600347 | 13.73742008 | 0.000210224 | 0.003723613 |
| KATNAL1      | ENSGALG00000017083 | katanin catalytic subunit A1 like 1                       | 0.280542677 | 4.840506408 | 15.03452624 | 0.000105562 | 0.002149784 |
| JAKMIP2      | ENSGALG00000007593 | janus kinase and microtubule interacting protein 2        | 0.280005291 | 5.660080742 | 14.40239859 | 0.000147614 | 0.002801605 |
| COMMD6       | ENSGALG00000016922 | COMM domain containing 6                                  | 0.279143242 | 6.399387034 | 15.87071646 | 0.0000678   | 0.001535046 |
| FAM114A1     | ENSGALG00000013583 | family with sequence similarity 114 member A1             | 0.278951972 | 3.799037421 | 7.645571052 | 0.005691188 | 0.041755635 |
| C1H12orf29   | -----              | -----                                                     | 0.27881817  | 4.851592037 | 13.45244392 | 0.000244687 | 0.004224899 |
| GRSF1        | ENSGALG00000031160 | G-rich RNA sequence binding factor 1                      | 0.278584833 | 6.992285632 | 17.82826285 | 0.0000242   | 0.000657562 |

|              |                     |                                                                        |             |             |             |             |             |
|--------------|---------------------|------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| APBA3        | ENSGALG00000000740  | amyloid beta (A4) precursor protein-binding, family A, member 3        | 0.278455772 | 5.11250495  | 14.24789489 | 0.00016024  | 0.002986125 |
| TMEFF2       | ENSGALG000000007759 | transmembrane protein with EGF like and two follistatin like domains 2 | 0.277549047 | 3.940166195 | 8.384341985 | 0.003784672 | 0.031263443 |
| USP21        | ENSGALG000000051012 | ubiquitin specific peptidase 21                                        | 0.276634794 | 4.865949991 | 11.29001008 | 0.000779253 | 0.009994233 |
| FIGNL1       | ENSGALG000000026363 | fidgetin like 1                                                        | 0.275111274 | 4.659173439 | 10.08524102 | 0.001494616 | 0.016148331 |
| RFX3         | ENSGALG000000010179 | regulatory factor X3                                                   | 0.275056634 | 5.795805669 | 7.977920168 | 0.004735131 | 0.036822582 |
| SEL1L3       | ENSGALG000000039549 | SEL1L family member 3                                                  | 0.274855535 | 5.26639609  | 15.97726832 | 0.0000641   | 0.001467164 |
| ARL3         | ENSGALG000000008049 | ADP ribosylation factor like GTPase 3                                  | 0.27456273  | 7.03367394  | 19.12332827 | 0.0000123   | 0.000379729 |
| MRPS22       | ENSGALG000000005367 | mitochondrial ribosomal protein S22                                    | 0.273894994 | 5.712886369 | 13.5619623  | 0.000230816 | 0.004023381 |
| MDC1         | -----               | -----                                                                  | 0.273450689 | 6.824733352 | 16.61085458 | 0.0000459   | 0.001115334 |
| NUAK1        | ENSGALG000000012662 | NUAK family kinase 1                                                   | 0.273167431 | 6.082455923 | 11.83838549 | 0.000580221 | 0.008097997 |
| GUF1         | ENSGALG000000014217 | GUF1 homolog, GTPase                                                   | 0.273118062 | 4.50260508  | 7.610610589 | 0.005802583 | 0.042341668 |
| CALML4       | ENSGALG000000007979 | calmodulin like 4                                                      | 0.273010633 | 3.799790836 | 7.295191124 | 0.006913941 | 0.047922876 |
| DYM          | ENSGALG000000037426 | dymeclin                                                               | 0.272584682 | 5.325463712 | 11.1844577  | 0.000824854 | 0.010464893 |
| CAMKK2       | ENSGALG000000040131 | calcium/calmodulin dependent protein kinase kinase 2                   | 0.272338253 | 6.336498729 | 11.1213221  | 0.000853409 | 0.01069524  |
| CISD1        | ENSGALG000000002705 | CDGSH iron sulfur domain 1                                             | 0.272047366 | 6.780144801 | 24.16472347 | 0.000000884 | 0.0000434   |
| B4GALT6      | ENSGALG000000015151 | beta-1,4-galactosyltransferase 6                                       | 0.270380739 | 5.186278814 | 10.08057482 | 0.001498406 | 0.016178653 |
| TARS         | ENSGALG000000003288 | threonyl-tRNA synthetase                                               | 0.27007425  | 7.336797425 | 8.985940566 | 0.002720647 | 0.024611462 |
| PARP9        | ENSGALG000000045511 | poly(ADP-ribose) polymerase family member 9                            | 0.269769227 | 3.941736026 | 8.844223042 | 0.00294018  | 0.026053133 |
| ENO1         | ENSGALG000000002377 | enolase 1, (alpha)                                                     | 0.269756949 | 11.20888214 | 8.742953701 | 0.003108007 | 0.027073717 |
| ABCC6        | ENSGALG000000038152 | ATP binding cassette subfamily C member 6                              | 0.26957359  | 4.218129603 | 7.740996179 | 0.005398101 | 0.040251089 |
| PLEKHB1      | ENSGALG000000017321 | pleckstrin homology domain containing B1                               | 0.269195308 | 4.647947061 | 8.40456208  | 0.003742805 | 0.031033114 |
| CHST13       | ENSGALG000000029632 | carbohydrate sulfotransferase 13                                       | 0.268930706 | 5.521571146 | 10.74482748 | 0.001045712 | 0.012430121 |
| BCAS3        | ENSGALG000000005295 | BCAS3, microtubule associated cell migration factor                    | 0.26878459  | 4.974057115 | 8.928931376 | 0.002806885 | 0.025183913 |
| DACH1        | ENSGALG000000037015 | dachshund family transcription factor 1                                | 0.268555108 | 5.222750571 | 10.34385652 | 0.001299063 | 0.014482442 |
| PSRC1        | -----               | proline and serine rich coiled-coil 1                                  | 0.268326947 | 5.221659308 | 15.16369493 | 0.0000986   | 0.00204028  |
| LZTR1        | ENSGALG000000031175 | leucine zipper like transcription regulator 1                          | 0.268067917 | 5.686140565 | 20.52296813 | 0.00000589  | 0.000212151 |
| FAM53B       | ENSGALG000000009718 | family with sequence similarity 53 member B                            | 0.267858886 | 5.375463041 | 7.972735383 | 0.004748713 | 0.036910754 |
| ELP2         | ENSGALG000000039034 | elongator acetyltransferase complex subunit 2                          | 0.267844528 | 5.188732106 | 15.54207109 | 0.0000807   | 0.001763271 |
| SLC25A4      | ENSGALG000000010614 | solute carrier family 25 member 4                                      | 0.267729301 | 5.917562794 | 10.58524546 | 0.001139938 | 0.013218938 |
| LOC107052085 | -----               | uncharacterized LOC107052085                                           | 0.266985082 | 5.280632013 | 8.219805753 | 0.004143564 | 0.033299601 |
| TRMT10A      | ENSGALG000000012264 | tRNA methyltransferase 10A                                             | 0.266930208 | 4.17802826  | 8.412537116 | 0.003726423 | 0.03098483  |
| CTSZ         | ENSGALG000000007462 | cathepsin Z                                                            | 0.265977647 | 5.290711344 | 13.07761506 | 0.000298846 | 0.004912594 |
| MRPS14       | ENSGALG000000030028 | mitochondrial ribosomal protein S14                                    | 0.265269413 | 5.203929549 | 10.43333227 | 0.001237612 | 0.013977291 |
| CCDC58       | ENSGALG000000014413 | coiled-coil domain containing 58                                       | 0.264678593 | 4.807648658 | 7.635897856 | 0.00572179  | 0.041901223 |
| YY2          | ENSGALG000000017388 | YY2 transcription factor                                               | 0.263960766 | 6.541082171 | 19.79912594 | 0.0000086   | 0.000290655 |
| PC           | ENSGALG000000053095 | pyruvate carboxylase                                                   | 0.263856181 | 5.117746469 | 8.208059251 | 0.004170473 | 0.033475678 |
| PSMA4        | ENSGALG000000003046 | proteasome subunit alpha 4                                             | 0.263647117 | 7.648279198 | 19.30543871 | 0.0000111   | 0.000356595 |
| LMO2         | ENSGALG000000029892 | LIM domain only 2                                                      | 0.262548604 | 6.03393729  | 10.68087474 | 0.001082489 | 0.012714026 |
| FKBP5        | ENSGALG000000042148 | FK506 binding protein 5                                                | 0.262474552 | 5.397400311 | 12.66841428 | 0.000371885 | 0.00578937  |
| MRS2         | ENSGALG000000040084 | MRS2, magnesium transporter                                            | 0.261559909 | 4.243199577 | 8.689707815 | 0.003200119 | 0.027631177 |
| EHBP1L1      | -----               | EH domain binding protein 1 like 1                                     | 0.261484299 | 3.966931598 | 7.363093924 | 0.006657614 | 0.046716858 |
| NKAIN4       | ENSGALG000000005774 | Na+/K+ transporting ATPase interacting 4                               | 0.260969668 | 5.447179658 | 7.572298497 | 0.005927215 | 0.042984717 |
| KEAP1        | -----               | -----                                                                  | 0.260351336 | 5.532648165 | 7.954917794 | 0.004795689 | 0.037188057 |
| TMEM18       | ENSGALG000000028744 | transmembrane protein 18                                               | 0.260149572 | 4.898948858 | 9.339925024 | 0.002242147 | 0.021728227 |

|              |                     |                                                             |             |             |             |             |             |
|--------------|---------------------|-------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| FANCI        | ENSGALG00000006658  | Fanconi anemia complementation group I                      | 0.260104904 | 5.776135004 | 15.72412681 | 0.0000733   | 0.001631771 |
| MYL9         | ENSGALG00000028567  | myosin, light chain 9, regulatory                           | 0.259917179 | 6.793795029 | 13.80296361 | 0.000203016 | 0.003619311 |
| PASK         | ENSGALG00000006016  | PAS domain containing serine/threonine kinase               | 0.259064453 | 5.029590881 | 10.5003948  | 0.00119349  | 0.013619199 |
| TSPAN13      | ENSGALG00000027240  | tetraspanin 13                                              | 0.258972781 | 5.54985     | 13.78103316 | 0.000205399 | 0.003653108 |
| SPDL1        | ENSGALG00000001942  | spindle apparatus coiled-coil protein 1                     | 0.258797941 | 6.013537924 | 22.74504431 | 0.00000185  | 0.0000789   |
| CENPH        | ENSGALG00000014788  | centromere protein H                                        | 0.258186544 | 6.429284411 | 7.870243137 | 0.00502549  | 0.038292634 |
| TTL4         | ENSGALG00000027991  | tubulin tyrosine ligase like 4                              | 0.258164626 | 4.937787926 | 10.01213327 | 0.001555123 | 0.016616589 |
| PRMT7        | ENSGALG00000038865  | protein arginine methyltransferase 7                        | 0.257763935 | 5.248569637 | 9.494632905 | 0.002060738 | 0.020613645 |
| ORC6         | ENSGALG00000004342  | origin recognition complex subunit 6                        | 0.257761179 | 5.786187032 | 10.90512022 | 0.000958988 | 0.011654468 |
| CBY1         | ENSGALG00000012218  | chibby family member 1, beta catenin antagonist             | 0.257328936 | 4.922942024 | 7.325731732 | 0.006797428 | 0.047314588 |
| LOC424740    | -----               | uncharacterized LOC424740                                   | 0.257257228 | 7.514165583 | 12.07008952 | 0.000512372 | 0.007388296 |
| SEM1         | -----               | -----                                                       | 0.257139157 | 6.986869453 | 10.11062854 | 0.001474167 | 0.015958825 |
| AUH          | ENSGALG00000021843  | AU RNA binding methylglutaconyl-CoA hydratase               | 0.257008638 | 5.027782388 | 8.845021635 | 0.002938894 | 0.026053133 |
| PCDH1        | ENSGALG00000002553  | protocadherin 1                                             | 0.256837248 | 6.087769082 | 8.975255284 | 0.002736603 | 0.024728616 |
| HSPA4L       | ENSGALG00000010185  | heat shock protein family A (Hsp70) member 4 like           | 0.256791309 | 7.286810369 | 14.40789248 | 0.000147184 | 0.002796669 |
| HOXB7        | ENSGALG00000032740  | homeobox B7                                                 | 0.256590641 | 6.717750001 | 13.12439151 | 0.000291476 | 0.004825189 |
| MAPKAPK2     | ENSGALG00000000883  | mitogen-activated protein kinase-activated protein kinase 2 | 0.256483621 | 6.941084962 | 23.87963692 | 0.00000103  | 0.0000487   |
| USP16        | ENSGALG00000015813  | ubiquitin specific peptidase 16                             | 0.256138963 | 6.566190406 | 17.82950934 | 0.0000242   | 0.000657562 |
| PPID         | ENSGALG00000009451  | peptidylprolyl isomerase D                                  | 0.255347499 | 6.412487678 | 17.33254372 | 0.0000314   | 0.000814359 |
| BBS9         | ENSGALG00000031650  | Bardet-Biedl syndrome 9                                     | 0.254943839 | 4.993219776 | 10.59282431 | 0.001135274 | 0.013192752 |
| PPOX         | ENSGALG000000054130 | protoporphyrinogen oxidase                                  | 0.254900945 | 5.17290751  | 9.329695892 | 0.002254698 | 0.021798502 |
| RGMA         | ENSGALG00000039173  | repulsive guidance molecule family member a                 | 0.254753446 | 6.579804813 | 8.274245078 | 0.004021138 | 0.032594987 |
| ZNF704       | ENSGALG00000030011  | zinc finger protein 704                                     | 0.253922862 | 5.051628286 | 7.55259627  | 0.005992368 | 0.043342597 |
| DYNLT1       | ENSGALG00000019979  | dynein light chain Tctex-type 1                             | 0.253670921 | 5.477654979 | 15.42414035 | 0.0000859   | 0.001840134 |
| DCK          | ENSGALG00000028501  | deoxycytidine kinase                                        | 0.253521897 | 5.79197046  | 16.842566   | 0.0000406   | 0.001009474 |
| PHB          | ENSGALG00000038604  | prohibitin                                                  | 0.253267373 | 6.392675216 | 17.63992587 | 0.0000267   | 0.000715351 |
| MTERF3       | ENSGALG00000040511  | mitochondrial transcription termination factor 3            | 0.253150362 | 5.495014397 | 8.083141943 | 0.004467892 | 0.035221456 |
| DLL1         | ENSGALG00000011182  | delta like canonical Notch ligand 1                         | 0.252521585 | 5.626697737 | 7.290266383 | 0.00693292  | 0.04799377  |
| CDC34        | ENSGALG00000024332  | cell division cycle 34                                      | 0.25192634  | 5.046755989 | 9.089319672 | 0.002571065 | 0.023695391 |
| CHCHD6       | ENSGALG00000006056  | coiled-coil-helix-coiled-coil-helix domain containing 6     | 0.251816274 | 5.6591547   | 11.24534974 | 0.000798228 | 0.010171186 |
| TRMT5        | ENSGALG00000011904  | tRNA methyltransferase 5                                    | 0.251677961 | 4.905933667 | 10.74592357 | 0.001045093 | 0.012430121 |
| MOB3A        | ENSGALG00000031729  | MOB kinase activator 3A                                     | 0.251631105 | 5.484607886 | 9.666879211 | 0.001876197 | 0.019199521 |
| CNN3         | ENSGALG00000005597  | calponin 3                                                  | 0.251559594 | 8.541933089 | 23.12354906 | 0.00000152  | 0.0000674   |
| LOC107049885 | -----               | M-phase inducer phosphatase 2-like                          | 0.250818193 | 7.434783335 | 13.83339762 | 0.000199754 | 0.003572771 |
| LOC101748569 | -----               | caseinolytic peptidase B protein homolog                    | 0.250332922 | 4.152301978 | 9.152190212 | 0.002484205 | 0.02313662  |
| SMC6         | ENSGALG00000016467  | structural maintenance of chromosomes 6                     | 0.250201977 | 5.951756094 | 14.54530381 | 0.000136829 | 0.002633363 |
| STK38L       | ENSGALG00000014094  | serine/threonine kinase 38 like                             | 0.24961366  | 5.060405997 | 9.182718698 | 0.002443109 | 0.022880678 |
| ALG12        | ENSGALG00000008539  | ALG12, alpha-1,6-mannosyltransferase                        | 0.249097045 | 7.070422055 | 17.79263895 | 0.0000246   | 0.000667781 |
| NSMAF        | ENSGALG00000038838  | neutral sphingomyelinase activation associated factor       | 0.248790122 | 5.607821767 | 13.26078795 | 0.000271016 | 0.004583313 |
| TMEM62       | ENSGALG00000009260  | transmembrane protein 62                                    | 0.248698203 | 4.505052485 | 7.265159154 | 0.007030504 | 0.048384333 |
| CCT4         | ENSGALG00000008812  | chaperonin containing TCP1 subunit 4                        | 0.248663608 | 8.998251516 | 15.70785173 | 0.0000739   | 0.001643648 |
| H2A2BL       | -----               | -----                                                       | 0.248589953 | 6.517453094 | 10.06323653 | 0.001512573 | 0.016278211 |
| NUP188       | ENSGALG00000043394  | nucleoporin 188                                             | 0.248292365 | 7.514890502 | 15.46722161 | 0.0000839   | 0.001812825 |
| PAWR         | ENSGALG00000010320  | pro-apoptotic WT1 regulator                                 | 0.248170227 | 6.398256746 | 8.712002172 | 0.003161218 | 0.027406663 |

|              |                     |                                                                                |             |             |             |             |             |
|--------------|---------------------|--------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| SEPSECS      | ENSGALG00000014386  | Sep (O-phosphoserine) tRNA:Sec (selenocysteine) tRNA synthase                  | 0.248107343 | 5.428361589 | 11.08037714 | 0.000872461 | 0.010851352 |
| TAB2         | ENSGALG00000012356  | TGF-beta activated kinase 1/MAP3K7 binding protein 2                           | 0.247664201 | 6.916156496 | 15.18080518 | 0.0000977   | 0.002029687 |
| PIGH         | ENSGALG00000009510  | phosphatidylinositol glycan anchor biosynthesis class H                        | 0.247291347 | 4.980036196 | 9.630570967 | 0.001913651 | 0.019522089 |
| ACTN4        | ENSGALG00000036496  | actinin, alpha 4                                                               | 0.247113347 | 8.209826843 | 13.57041803 | 0.000229778 | 0.004009544 |
| PXN          | -----               | -----                                                                          | 0.246952911 | 6.267026196 | 11.42451889 | 0.000724812 | 0.009518145 |
| MIS12        | -----               | MIS12, kinetochore complex component                                           | 0.24684044  | 4.244112369 | 7.60043831  | 0.005835411 | 0.042525108 |
| ATP5G1       | ENSGALG00000001330  | ATP synthase, H+ transporting, mitochondrial Fo complex subunit C1 (subunit 9) | 0.246200653 | 7.326717524 | 14.29752341 | 0.00015607  | 0.002924981 |
| WDR55        | ENSGALG00000029199  | WD repeat domain 55                                                            | 0.245966117 | 6.170196191 | 10.47576944 | 0.001209504 | 0.013754243 |
| FAM126A      | ENSGALG00000010925  | family with sequence similarity 126 member A                                   | 0.24546087  | 6.857374106 | 19.64712756 | 0.00000931  | 0.000305923 |
| LOXL3        | ENSGALG00000036142  | lysyl oxidase like 3                                                           | 0.245054233 | 5.360648523 | 7.409655847 | 0.006487473 | 0.045954099 |
| RTFDC1       | ENSGALG00000007709  | replication termination factor 2 domain containing 1                           | 0.244911643 | 6.425547291 | 17.37972355 | 0.0000306   | 0.000796906 |
| TLE1         | ENSGALG00000012575  | transducin like enhancer of split 1                                            | 0.244910661 | 5.92588502  | 8.543192302 | 0.003468169 | 0.029296054 |
| GLRX3        | ENSGALG00000010464  | glutaredoxin 3                                                                 | 0.244606995 | 7.12783168  | 15.57941104 | 0.0000791   | 0.001735703 |
| LRRC28       | ENSGALG00000007057  | leucine rich repeat containing 28                                              | 0.244436434 | 5.207781891 | 13.39970152 | 0.000251664 | 0.00432269  |
| LARS         | ENSGALG00000007494  | leucyl-tRNA synthetase                                                         | 0.244248491 | 7.510891732 | 22.93560498 | 0.00000168  | 0.0000727   |
| PLAA         | ENSGALG00000001782  | phospholipase A2 activating protein                                            | 0.244148063 | 6.313914549 | 9.224315045 | 0.00238822  | 0.02260647  |
| MRPS10       | ENSGALG00000009890  | mitochondrial ribosomal protein S10                                            | 0.244023431 | 4.954449718 | 8.412516513 | 0.003726465 | 0.03098483  |
| NTMT1        | ENSGALG00000017611  | N-terminal Xaa-Pro-Lys N-methyltransferase 1                                   | 0.243410126 | 5.961741294 | 9.908442399 | 0.001645223 | 0.017331719 |
| RPA3         | ENSGALG00000010700  | replication protein A3                                                         | 0.243185637 | 5.880402402 | 12.04083083 | 0.000520478 | 0.007473351 |
| PHF14        | ENSGALG00000038041  | PHD finger protein 14                                                          | 0.242231761 | 6.842834341 | 13.25160412 | 0.000272347 | 0.004586857 |
| GREB1L       | ENSGALG00000014935  | GREB1 like retinoic acid receptor coactivator                                  | 0.24219803  | 7.000015201 | 8.01831156  | 0.004630672 | 0.036198437 |
| MRPS17       | ENSGALG00000002379  | mitochondrial ribosomal protein S17                                            | 0.241326869 | 6.234404264 | 11.94654397 | 0.000547488 | 0.007773013 |
| DRAM2        | ENSGALG00000036491  | DNA damage regulated autophagy modulator 2                                     | 0.241223359 | 4.347341283 | 9.149142427 | 0.002488347 | 0.023159357 |
| RECQL5       | ENSGALG00000002424  | RecQ like helicase 5                                                           | 0.241177088 | 5.198224796 | 7.492785869 | 0.006194665 | 0.044492889 |
| GPATCH11     | ENSGALG00000010561  | G-patch domain containing 11                                                   | 0.240815777 | 5.233412022 | 10.159437   | 0.001435645 | 0.01566242  |
| EOGT         | ENSGALG00000013406  | EGF domain specific O-linked N-acetylglucosamine transferase                   | 0.240638155 | 5.03937377  | 8.827840687 | 0.002966692 | 0.026245656 |
| ACO2         | ENSGALG00000011950  | aconitase 2                                                                    | 0.240294482 | 7.986857152 | 15.40479887 | 0.0000868   | 0.001851859 |
| KNTC1        | -----               | kinetochore associated 1                                                       | 0.240210312 | 6.710994149 | 11.4180183  | 0.000727352 | 0.009521546 |
| NFYB         | ENSGALG00000041193  | Nuclear transcription factor Y subunit beta D346                               | 0.240021736 | 5.323160536 | 7.246127142 | 0.00710541  | 0.048716466 |
| FAM120B      | ENSGALG00000011180  | family with sequence similarity 120B                                           | 0.24000868  | 4.690852432 | 7.558591104 | 0.005972467 | 0.043260805 |
| NAT10        | ENSGALG00000014573  | N-acetyltransferase 10                                                         | 0.239639724 | 7.138311972 | 12.75044219 | 0.000355925 | 0.005593836 |
| CSRNP3       | ENSGALG00000010971  | cysteine and serine rich nuclear protein 3                                     | 0.239429732 | 4.107336683 | 7.929625787 | 0.004863185 | 0.037516979 |
| UBB          | ENSGALG000000041277 | ubiquitin B                                                                    | 0.238982093 | 9.350111975 | 7.300220677 | 0.006894614 | 0.047809051 |
| CAPN10       | ENSGALG00000034562  | calpain 10                                                                     | 0.238807682 | 5.86666143  | 11.7324727  | 0.000614189 | 0.008443179 |
| EHD4         | ENSGALG00000008950  | EH domain containing 4                                                         | 0.238547374 | 4.765488937 | 9.241502579 | 0.002365907 | 0.022516487 |
| LARP1B       | ENSGALG00000010207  | La ribonucleoprotein domain family member 1B                                   | 0.238399637 | 4.928399033 | 7.361023385 | 0.006665284 | 0.046730829 |
| FAAH         | ENSGALG00000010433  | fatty acid amide hydrolase                                                     | 0.238360228 | 4.700691009 | 8.189249905 | 0.004213934 | 0.033755944 |
| LOC107050659 | -----               | valine--tRNA ligase-like                                                       | 0.238326428 | 5.385918763 | 8.515122468 | 0.003522072 | 0.02966003  |
| ANKRD46      | ENSGALG00000041445  | ankyrin repeat domain 46                                                       | 0.238041302 | 6.312895098 | 17.56495425 | 0.0000278   | 0.000734492 |
| DIRC2        | -----               | disrupted in renal carcinoma 2                                                 | 0.23784483  | 4.643761747 | 8.853456157 | 0.002925344 | 0.025951735 |
| SDF2L1       | ENSGALG00000031982  | stromal cell derived factor 2 like 1                                           | 0.237434393 | 5.797074511 | 10.11129081 | 0.001473637 | 0.015958825 |
| FAM63A       | ENSGALG00000028499  | family with sequence similarity 63 member A                                    | 0.237139441 | 6.509409632 | 13.60696251 | 0.000225348 | 0.003936417 |
| TMEM14C      | ENSGALG00000034591  | transmembrane protein 14C                                                      | 0.237134784 | 5.472646061 | 7.352029071 | 0.006698711 | 0.046925198 |
| ACTR10       | ENSGALG00000012041  | actin-related protein 10 homolog                                               | 0.236914208 | 6.078686848 | 18.5348129  | 0.0000167   | 0.000488465 |

|             |                     |                                                                 |             |             |             |             |             |
|-------------|---------------------|-----------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| NDE1        | ENSGALG00000032590  | nudE neurodevelopment protein 1                                 | 0.236817491 | 6.06872524  | 11.89478814 | 0.000562912 | 0.007896609 |
| PRKG1       | -----               | protein kinase, cGMP-dependent, type I                          | 0.236768221 | 6.426271079 | 8.400065453 | 0.003752075 | 0.031051952 |
| C2CD2       | ENSGALG00000016148  | C2 calcium dependent domain containing 2                        | 0.236514837 | 6.082927572 | 16.19395734 | 0.0000572   | 0.001334652 |
| SPICE1      | ENSGALG00000045606  | spindle and centriole associated protein 1                      | 0.236121426 | 5.90206576  | 15.46306876 | 0.0000841   | 0.001814074 |
| PACSIN2     | ENSGALG00000014159  | protein kinase C and casein kinase substrate in neurons 2       | 0.236057548 | 5.720708478 | 15.68333595 | 0.0000749   | 0.001658367 |
| SMUG1       | ENSGALG00000053068  | single-strand-selective monofunctional uracil-DNA glycosylase 1 | 0.236014638 | 6.069920579 | 9.186206118 | 0.002438458 | 0.022876183 |
| TRMT6       | ENSGALG00000009169  | tRNA methyltransferase 6                                        | 0.235014419 | 5.539812677 | 11.46227159 | 0.000710234 | 0.009372017 |
| ALDH18A1    | ENSGALG00000034655  | aldehyde dehydrogenase 18 family member A1                      | 0.234901948 | 6.441833064 | 10.80582643 | 0.001011811 | 0.012126262 |
| PPWD1       | ENSGALG00000014756  | peptidylprolyl isomerase domain and WD repeat containing 1      | 0.234255618 | 6.1928946   | 7.411796273 | 0.00647976  | 0.045954099 |
| NEPRO       | ENSGALG00000015182  | nucleolus and neural progenitor protein                         | 0.234003526 | 4.744530473 | 8.448056698 | 0.003654337 | 0.030570471 |
| LAMTOR1     | ENSGALG00000050119  | late endosomal/lysosomal adaptor, MAPK and MTOR activator 1     | 0.233863184 | 5.603300214 | 9.319642852 | 0.002267102 | 0.021854224 |
| ADAR        | ENSGALG00000021475  | adenosine deaminase, RNA specific                               | 0.233717817 | 6.680162134 | 21.26386372 | 0.000004    | 0.000152793 |
| CENPE       | ENSGALG00000013208  | centromere protein E                                            | 0.233124731 | 7.40759755  | 17.81938372 | 0.0000243   | 0.000659547 |
| DTD1        | ENSGALG00000008808  | D-tyrosyl-tRNA deacylase 1                                      | 0.23277218  | 5.64117937  | 12.40036698 | 0.000429249 | 0.006456399 |
| HEXIM1      | ENSGALG00000041926  | HEXIM P-TEFb complex subunit 1                                  | 0.232579265 | 6.853359982 | 11.14049221 | 0.000844635 | 0.010627705 |
| TIPIN       | ENSGALG00000007649  | TIMELESS interacting protein                                    | 0.232565108 | 5.85431212  | 10.20105141 | 0.001403606 | 0.0153873   |
| C18H17orf62 | ENSGALG00000001607  | chromosome 18 C17orf62 homolog                                  | 0.232365976 | 6.15960079  | 11.5189089  | 0.000688918 | 0.009171641 |
| CDKL5       | ENSGALG00000016529  | cyclin dependent kinase like 5                                  | 0.231849868 | 4.610790678 | 7.964542709 | 0.004770254 | 0.037043196 |
| POT1        | ENSGALG00000008740  | protection of telomeres 1                                       | 0.231773675 | 5.163954956 | 9.287833994 | 0.002306808 | 0.022102937 |
| FBXO39      | ENSGALG00000029322  | F-box protein 39                                                | 0.231625321 | 5.001934934 | 9.937937117 | 0.001619069 | 0.017136587 |
| CLCC1       | ENSGALG00000002106  | chloride channel CLIC like 1                                    | 0.231230075 | 5.749855327 | 9.616591232 | 0.001928273 | 0.019598353 |
| CDK1        | ENSGALG00000003085  | cyclin dependent kinase 1                                       | 0.230747802 | 7.949593252 | 10.8526026  | 0.00098657  | 0.011919244 |
| ECHDC3      | ENSGALG00000006690  | enoyl-CoA hydratase domain containing 3                         | 0.23068655  | 5.03754685  | 9.858253247 | 0.001690716 | 0.017695219 |
| BIN3        | ENSGALG000000052825 | bridging integrator 3                                           | 0.23027673  | 6.365695636 | 11.69516903 | 0.000626626 | 0.008542773 |
| RAD18       | ENSGALG00000008368  | RAD18, E3 ubiquitin protein ligase                              | 0.230036966 | 5.739371745 | 10.82531562 | 0.001001216 | 0.012043138 |
| CCND1       | ENSGALG00000007555  | cyclin D1                                                       | 0.229851559 | 6.051945608 | 7.55116795  | 0.005997119 | 0.043344549 |
| NAPA        | ENSGALG00000034747  | NSF attachment protein alpha                                    | 0.228929547 | 6.758836863 | 12.01170757 | 0.000528674 | 0.007558063 |
| RTN4IP1     | ENSGALG00000015343  | reticulon 4 interacting protein 1                               | 0.228826951 | 4.70929513  | 7.90831972  | 0.004920795 | 0.037854927 |
| TYRO3       | -----               | -----                                                           | 0.228813353 | 6.285251465 | 8.617904684 | 0.003328745 | 0.028483882 |
| C14H16orf91 | -----               | chromosome 14 C16orf91 homolog                                  | 0.228589363 | 4.406105503 | 8.110827666 | 0.004400163 | 0.034793217 |
| FAM149B1    | ENSGALG00000002693  | family with sequence similarity 149 member B1                   | 0.228573881 | 6.322582117 | 13.66306338 | 0.000218714 | 0.003849022 |
| STRA6       | ENSGALG00000001449  | stimulated by retinoic acid 6                                   | 0.228492529 | 7.353107866 | 7.851966511 | 0.005076546 | 0.038573365 |
| COPB2       | ENSGALG00000005357  | coatomer protein complex subunit beta 2                         | 0.228094832 | 7.987434573 | 20.01227148 | 0.00000769  | 0.000264334 |
| ATM         | ENSGALG00000017159  | ATM serine/threonine kinase                                     | 0.227936408 | 6.055216249 | 11.37771699 | 0.000743304 | 0.00967648  |
| HYPK        | ENSGALG00000013916  | huntingtin interacting protein K                                | 0.226898884 | 5.761162034 | 11.80249495 | 0.000591514 | 0.008186175 |
| CTNND2      | -----               | catenin delta 2                                                 | 0.226723718 | 6.08532437  | 11.06677285 | 0.000878885 | 0.010906527 |
| CEP83       | ENSGALG00000019336  | centrosomal protein 83                                          | 0.226543319 | 4.822232471 | 8.40399268  | 0.003743978 | 0.031033114 |
| C2H18ORF8   | -----               | -----                                                           | 0.226326916 | 4.82235162  | 8.185095695 | 0.004223595 | 0.033786707 |
| IPO13       | ENSGALG00000010087  | importin 13                                                     | 0.226234667 | 6.296620075 | 9.736640273 | 0.001806308 | 0.018634978 |
| BUB1B       | ENSGALG00000036892  | BUB1 mitotic checkpoint serine/threonine kinase B               | 0.226195887 | 7.795710398 | 9.999852536 | 0.001565528 | 0.016695241 |
| FUNDC2      | ENSGALG00000029585  | FUN14 domain containing 2                                       | 0.225840024 | 6.487856068 | 21.21341461 | 0.00000411  | 0.000156143 |
| FKBP4       | ENSGALG00000014331  | FK506 binding protein 4                                         | 0.225615282 | 8.641145726 | 13.92515092 | 0.000190236 | 0.003438729 |
| BAG3        | ENSGALG00000009433  | BCL2 associated athanogene 3                                    | 0.225455645 | 6.138648096 | 11.17045111 | 0.000831104 | 0.010503701 |
| TSFM        | -----               | -----                                                           | 0.225368645 | 4.534712833 | 8.77978678  | 0.003045868 | 0.026687837 |

|            |                    |                                                                   |             |             |             |             |             |
|------------|--------------------|-------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| WWC1       | ENSGALG00000001826 | WW and C2 domain containing 1                                     | 0.225352163 | 6.274755741 | 14.34219041 | 0.000152411 | 0.002862918 |
| VAPA       | ENSGALG00000039455 | VAMP associated protein A                                         | 0.224833652 | 7.270480774 | 18.00003669 | 0.0000221   | 0.00061194  |
| ESD        | ENSGALG00000016991 | esterase D                                                        | 0.224693874 | 6.360575053 | 12.13661341 | 0.000494415 | 0.007206019 |
| CPSF3      | ENSGALG00000016424 | cleavage and polyadenylation specific factor 3                    | 0.224637225 | 6.569826098 | 14.39729589 | 0.000148015 | 0.00280597  |
| ALG8       | ENSGALG00000019042 | ALG8, alpha-1,3-glucosyltransferase                               | 0.224204113 | 5.559236348 | 10.06045838 | 0.001514855 | 0.016282355 |
| PAPSS1     | ENSGALG00000010542 | 3'-phosphoadenosine 5'-phosphosulfate synthase 1                  | 0.22414051  | 6.985284185 | 11.0342843  | 0.000894422 | 0.011049335 |
| INTS11     | ENSGALG00000001691 | integrator complex subunit 11                                     | 0.223966824 | 6.116855212 | 12.77871089 | 0.000350586 | 0.005525766 |
| MBD4       | ENSGALG00000020747 | methyl-CpG binding domain 4, DNA glycosylase                      | 0.223943708 | 4.651717319 | 7.87089492  | 0.005023678 | 0.038292634 |
| NRP2       | ENSGALG00000008621 | neuropilin 2                                                      | 0.222232254 | 8.711593136 | 8.38615469  | 0.003780899 | 0.031247966 |
| TMEM43     | ENSGALG00000006345 | transmembrane protein 43                                          | 0.222190275 | 5.709040332 | 10.41066159 | 0.001252898 | 0.014072659 |
| GUCY1B3    | ENSGALG00000009361 | guanylate cyclase 1 soluble subunit beta                          | 0.221887842 | 5.06100257  | 9.032991847 | 0.002651502 | 0.024183701 |
| DIAPH3     | ENSGALG00000016937 | diaphanous related formin 3                                       | 0.220442031 | 4.928965409 | 7.736387884 | 0.005411895 | 0.040331854 |
| TRIP13     | ENSGALG00000033834 | thyroid hormone receptor interactor 13                            | 0.220292308 | 5.708139871 | 8.6998875   | 0.003182297 | 0.027522555 |
| CRCP       | ENSGALG00000002587 | CGRP receptor component                                           | 0.220274851 | 5.698916352 | 9.655001338 | 0.001888368 | 0.019300055 |
| MPV17L2    | ENSGALG00000041429 | MPV17 mitochondrial inner membrane protein like 2                 | 0.219296453 | 4.894246599 | 7.706184898 | 0.005503194 | 0.040753849 |
| CDYL       | - - - - -          | chromodomain Y-like                                               | 0.219140534 | 5.311840774 | 7.644586031 | 0.005694296 | 0.041755635 |
| UACA       | ENSGALG00000034100 | uveal autoantigen with coiled-coil domains and ankyrin repeats    | 0.218566036 | 6.854440578 | 13.84665484 | 0.00019835  | 0.003551514 |
| DACH2      | ENSGALG00000006886 | dachshund family transcription factor 2                           | 0.218127235 | 6.119264508 | 7.385228952 | 0.00657617  | 0.046362842 |
| SNN        | ENSGALG00000028876 | stannin                                                           | 0.217205412 | 4.777338537 | 9.230222044 | 0.002380528 | 0.022564277 |
| SIVA1      | ENSGALG00000011619 | SIVA1 apoptosis inducing factor                                   | 0.217186404 | 4.793005247 | 8.558400211 | 0.003439315 | 0.029112105 |
| TTC37      | ENSGALG00000014670 | tetratricopeptide repeat domain 37                                | 0.217150517 | 6.657545492 | 7.33943382  | 0.006745808 | 0.047114718 |
| KNSTRN     | ENSGALG00000039576 | kinetochore-localized astrin/SPAG5 binding protein                | 0.216299499 | 6.340510741 | 12.05802694 | 0.000515698 | 0.007413349 |
| WDHD1      | ENSGALG00000012199 | WD repeat and HMG-box DNA binding protein 1                       | 0.21617604  | 6.423266647 | 12.15839828 | 0.000488673 | 0.007147661 |
| POLR1E     | ENSGALG00000005395 | RNA polymerase I subunit E                                        | 0.216025962 | 6.237000648 | 9.321578969 | 0.002264708 | 0.021845683 |
| C3H6ORF203 | ENSGALG00000015316 | chromosome 3 open reading frame, human C6orf203                   | 0.215537412 | 4.831581073 | 7.401919907 | 0.00651543  | 0.046066172 |
| COMMD10    | ENSGALG00000002308 | COMM domain containing 10                                         | 0.215130351 | 5.809686136 | 7.617722574 | 0.005779743 | 0.042212905 |
| RNGTT      | ENSGALG00000015787 | RNA guanylyltransferase and 5'-phosphatase                        | 0.214893277 | 5.993272423 | 8.7467254   | 0.003101585 | 0.027043327 |
| HMCES      | ENSGALG00000005897 | 5-hydroxymethylcytosine (hmC) binding, ES cell-specific           | 0.21487818  | 5.654248783 | 8.142802197 | 0.004323242 | 0.034316908 |
| ECE1       | ENSGALG00000031343 | endothelin converting enzyme 1                                    | 0.214252747 | 6.797564779 | 11.90609187 | 0.000559507 | 0.007882433 |
| STT3A      | ENSGALG00000042730 | STT3A, catalytic subunit of the oligosaccharyltransferase complex | 0.214197263 | 7.614851121 | 19.15268458 | 0.0000121   | 0.000376058 |
| FIP1L1     | ENSGALG00000013943 | factor interacting with PAPOLA and CPSF1                          | 0.213992292 | 6.20385021  | 11.32777656 | 0.000763563 | 0.009851805 |
| GPHN       | ENSGALG00000009587 | gephyrin                                                          | 0.213740629 | 5.891267024 | 10.43515054 | 0.001236395 | 0.013976095 |
| RBM12B     | ENSGALG00000035129 | RNA binding motif protein 12B                                     | 0.21355367  | 6.579513184 | 15.60807757 | 0.0000779   | 0.001716453 |
| CCT3       | ENSGALG00000048034 | chaperonin containing TCP1 subunit 3                              | 0.213305346 | 7.469629555 | 8.26706313  | 0.004037076 | 0.032673977 |
| STK16      | ENSGALG00000011326 | serine/threonine kinase 16                                        | 0.212895198 | 4.991765303 | 7.33772531  | 0.006752223 | 0.047133796 |
| GNL3       | ENSGALG00000001613 | G protein nucleolar 3                                             | 0.212678572 | 7.790887113 | 11.2451911  | 0.000798296 | 0.010171186 |
| PSIP1      | ENSGALG00000015105 | PC4 and SFRS1 interacting protein 1                               | 0.212636299 | 7.468815085 | 8.795223164 | 0.003020203 | 0.026547778 |
| MAP9       | ENSGALG00000020253 | microtubule associated protein 9                                  | 0.21262091  | 5.371321474 | 8.826852398 | 0.002968299 | 0.026245763 |
| SLITRK2    | ENSGALG00000009192 | SLIT and NTRK like family member 2                                | 0.212431748 | 5.532521437 | 12.57824101 | 0.000390264 | 0.006006004 |
| STIP1      | ENSGALG00000046811 | stress induced phosphoprotein 1                                   | 0.21242723  | 7.997068464 | 9.248212036 | 0.002357255 | 0.022473132 |
| MYEF2      | ENSGALG00000032546 | myelin expression factor 2                                        | 0.212326483 | 7.464481827 | 17.50185785 | 0.0000287   | 0.000753274 |
| KIRREL     | ENSGALG00000029528 | kin of IRRE like (Drosophila)                                     | 0.212236217 | 8.453646502 | 13.00735742 | 0.000310269 | 0.005064965 |
| RRN3       | ENSGALG00000041989 | RRN3 homolog, RNA polymerase I transcription factor               | 0.211906999 | 5.829225654 | 10.63808065 | 0.001107826 | 0.012919401 |
| GARS       | ENSGALG00000005694 | glycyl-tRNA synthetase                                            | 0.211602929 | 7.862671794 | 15.21601065 | 0.0000959   | 0.002004855 |

|         |                     |                                                         |             |             |             |             |             |
|---------|---------------------|---------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| PPP4R2  | ENSGALG00000007810  | protein phosphatase 4 regulatory subunit 2              | 0.21084077  | 7.49860363  | 17.85313526 | 0.0000239   | 0.000652257 |
| WDCP    | ENSGALG00000019867  | WD repeat and coiled coil containing                    | 0.210777065 | 5.368497184 | 10.38836288 | 0.00126812  | 0.01422421  |
| ZNF706  | ENSGALG000000041200 | zinc finger protein 706                                 | 0.210299098 | 7.413457332 | 11.10054265 | 0.000863025 | 0.010774712 |
| COG6    | ENSGALG00000017035  | component of oligomeric golgi complex 6                 | 0.210257361 | 5.847307429 | 10.82088459 | 0.001003615 | 0.012063177 |
| HPF1    | ENSGALG00000009668  | histone PARylation factor 1                             | 0.209571086 | 6.447031304 | 14.37191197 | 0.000150024 | 0.002834257 |
| HNRNPLL | ENSGALG00000008504  | heterogeneous nuclear ribonucleoprotein L like          | 0.209400541 | 7.124236684 | 15.59176848 | 0.0000786   | 0.001726699 |
| AHSA1   | ENSGALG00000010463  | activator of Hsp90 ATPase activity 1                    | 0.208248206 | 6.931208849 | 8.592316885 | 0.003375842 | 0.028756793 |
| KPNA2   | ENSGALG00000003584  | karyopherin subunit alpha 2                             | 0.208193038 | 8.968335109 | 11.52232556 | 0.000687653 | 0.009162212 |
| REV1    | ENSGALG00000016766  | REV1, DNA directed polymerase                           | 0.207902881 | 5.546808851 | 7.290823098 | 0.006930772 | 0.04799377  |
| SRM     | ENSGALG00000003039  | spermidine synthase                                     | 0.207679705 | 6.491335569 | 14.51409115 | 0.000139115 | 0.002667993 |
| RCN1L   | -----               | -----                                                   | 0.207377604 | 7.098291537 | 18.1993441  | 0.0000199   | 0.000561523 |
| ATP2C1  | ENSGALG00000034340  | ATPase secretory pathway Ca2+ transporting 1            | 0.207312569 | 6.85174043  | 16.53784426 | 0.0000477   | 0.001148967 |
| TWSG1   | ENSGALG00000052629  | twisted gastrulation BMP signaling modulator 1          | 0.207037988 | 6.601124241 | 10.92533808 | 0.000948579 | 0.011562123 |
| MKL1    | ENSGALG00000012024  | megakaryoblastic leukemia (translocation) 1             | 0.206682554 | 6.701392737 | 10.72175014 | 0.001058835 | 0.012534623 |
| FCHSD2  | ENSGALG00000017329  | FCH and double SH3 domains 2                            | 0.206437962 | 5.35021714  | 8.232569043 | 0.004114525 | 0.033148795 |
| EVI5    | ENSGALG00000029582  | ecotropic viral integration site 5                      | 0.206195695 | 6.231574796 | 14.61247407 | 0.000132038 | 0.002562122 |
| DDX17   | ENSGALG000000037360 | DEAD-box helicase 17                                    | 0.205958895 | 8.998922164 | 8.60174302  | 0.003358414 | 0.02866323  |
| G6PD    | -----               | -----                                                   | 0.205758808 | 4.773905006 | 8.164330023 | 0.004272225 | 0.034026847 |
| CKAP2   | ENSGALG00000017025  | cytoskeleton associated protein 2                       | 0.205631225 | 8.485118471 | 10.27348066 | 0.00134956  | 0.014877209 |
| IGSF9   | ENSGALG00000031193  | immunoglobulin superfamily member 9                     | 0.205533886 | 7.381024842 | 12.24809553 | 0.000465733 | 0.00687322  |
| KIF1BP  | ENSGALG00000004156  | KIF1 binding protein                                    | 0.205033181 | 5.693175965 | 12.0310376  | 0.000523219 | 0.00749963  |
| GEMIN5  | ENSGALG00000003937  | gem nuclear organelle associated protein 5              | 0.204872995 | 7.168993392 | 11.89963003 | 0.000561451 | 0.00788956  |
| PSMB1   | ENSGALG00000011174  | proteasome subunit beta 1                               | 0.204636258 | 7.49921903  | 12.27477511 | 0.000459122 | 0.006793932 |
| CD2AP   | ENSGALG00000016720  | CD2 associated protein                                  | 0.204593174 | 6.031946762 | 7.744402478 | 0.005387929 | 0.040207875 |
| SNU13   | ENSGALG00000011931  | small nuclear ribonucleoprotein 13                      | 0.20435389  | 6.763296831 | 11.54211586 | 0.000680372 | 0.009094651 |
| CIR1    | ENSGALG00000014276  | corepressor interacting with RBPJ, 1                    | 0.204196681 | 6.170220705 | 10.96727362 | 0.000927351 | 0.011379239 |
| POLR2E  | ENSGALG00000002591  | RNA polymerase II subunit E                             | 0.204104854 | 6.716102767 | 12.38725333 | 0.000432275 | 0.006495963 |
| VASH2   | ENSGALG00000020067  | vasohibin 2                                             | 0.203980974 | 6.777927926 | 8.64240954  | 0.003284268 | 0.028235437 |
| PRR11   | ENSGALG000000054015 | proline rich 11                                         | 0.203409105 | 5.096058318 | 7.699855915 | 0.005522523 | 0.040878491 |
| PKM     | -----               | -----                                                   | 0.203257496 | 10.80797199 | 8.174378605 | 0.004248622 | 0.033904499 |
| NUP205  | ENSGALG00000011662  | nucleoporin 205                                         | 0.203159022 | 7.98813415  | 12.22983675 | 0.000470313 | 0.006915999 |
| GNG5    | ENSGALG00000027561  | G protein subunit gamma 5                               | 0.202983601 | 6.025370103 | 9.285271009 | 0.002310037 | 0.022102937 |
| KIF18B  | ENSGALG000000031553 | kinesin family member 18B                               | 0.202595933 | 5.911592596 | 11.84269789 | 0.000578879 | 0.008086123 |
| NUP160  | ENSGALG000000043074 | nucleoporin 160                                         | 0.202183332 | 8.089755165 | 12.12431071 | 0.000497687 | 0.007234491 |
| DCPS    | ENSGALG000000031143 | decapping enzyme, scavenger                             | 0.201712697 | 5.990749644 | 10.32511839 | 0.001312318 | 0.014600541 |
| GTF3C2  | -----               | general transcription factor IIIC subunit 2             | 0.201592679 | 5.892329965 | 10.72955255 | 0.001054379 | 0.012501579 |
| TARSL2  | ENSGALG00000003985  | threonyl-tRNA synthetase like 2                         | 0.201551134 | 6.023958465 | 12.42363527 | 0.000423934 | 0.00638813  |
| TMTC2   | ENSGALG00000010975  | transmembrane and tetratricopeptide repeat containing 2 | 0.20149342  | 5.863053931 | 9.232149128 | 0.002378024 | 0.022564277 |
| MTMR14  | ENSGALG00000006601  | myotubularin related protein 14                         | 0.201446784 | 5.605249709 | 8.659138532 | 0.003254251 | 0.02803597  |
| IARS    | ENSGALG000000004813 | isoleucyl-tRNA synthetase                               | 0.201329305 | 7.660788743 | 10.50863992 | 0.001188177 | 0.013567973 |
| CBFB    | ENSGALG00000003169  | core-binding factor beta subunit                        | 0.201265494 | 7.053926308 | 11.53065138 | 0.00068458  | 0.009136065 |
| SRGAP2  | ENSGALG00000000816  | SLIT-ROBO Rho GTPase activating protein 2               | 0.201026358 | 7.209174438 | 9.642688914 | 0.001901067 | 0.019414044 |
| CDC16   | ENSGALG00000016816  | cell division cycle 16                                  | 0.20054975  | 5.765695665 | 10.29548352 | 0.001333562 | 0.014776945 |
| DTNBP1  | ENSGALG00000012703  | dystrobrevin binding protein 1                          | 0.20047159  | 5.392487852 | 12.14618215 | 0.000491885 | 0.007188242 |

|              |                     |                                                            |             |             |             |             |             |
|--------------|---------------------|------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| PWP1         | ENSGALG00000012631  | PWP1 homolog, endonuclein                                  | 0.200463283 | 6.651379931 | 11.06321951 | 0.000880571 | 0.010919214 |
| SCHIP1       | ENSGALG00000039468  | schwannomin interacting protein 1                          | 0.20019119  | 5.957428177 | 8.750457135 | 0.003095245 | 0.027019761 |
| LOC107057078 | -----               | acyl-CoA dehydrogenase family member 10-like               | 0.199992754 | 7.075442536 | 9.568727606 | 0.001979199 | 0.020004743 |
| FAM110B      | ENSGALG00000035065  | family with sequence similarity 110 member B               | 0.199841581 | 6.16830558  | 7.41274731  | 0.006476335 | 0.045954099 |
| CHM          | ENSGALG00000006906  | CHM, Rab escort protein 1                                  | 0.199295751 | 6.221839721 | 9.198618179 | 0.002421979 | 0.022786542 |
| CEP295       | ENSGALG00000040433  | centrosomal protein 295                                    | 0.199001616 | 6.504384298 | 9.367029115 | 0.002209233 | 0.021548861 |
| MUM1         | ENSGALG00010028034  | -----                                                      | 0.198976362 | 5.799298938 | 9.250570843 | 0.00235422  | 0.022470241 |
| UQCC1        | ENSGALG00000040254  | ubiquinol-cytochrome c reductase complex assembly factor 1 | 0.198821068 | 5.778376467 | 9.762630389 | 0.001780949 | 0.018442743 |
| TPM1         | ENSGALG00000003521  | tropomyosin 1 (alpha)                                      | 0.198717452 | 9.010332051 | 12.66974229 | 0.000371621 | 0.00578937  |
| MXI1         | ENSGALG00000008555  | MAX interactor 1, dimerization protein                     | 0.198565423 | 5.295091307 | 8.434981805 | 0.003680706 | 0.03072857  |
| OAZ2         | ENSGALG00000036288  | ornithine decarboxylase antizyme 2                         | 0.198158998 | 6.459858374 | 13.09922386 | 0.000295418 | 0.004870847 |
| SELENOT      | ENSGALG00000010399  | selenoprotein T                                            | 0.198142964 | 6.182474259 | 9.937549304 | 0.00161941  | 0.017136587 |
| LOC426821    | -----               | zinc finger protein 624-like                               | 0.197961443 | 5.368569888 | 7.310654399 | 0.006854696 | 0.047592415 |
| POLR1A       | ENSGALG00000038160  | RNA polymerase I subunit A                                 | 0.19743563  | 6.59942627  | 9.843658314 | 0.001704182 | 0.017793351 |
| XPNPEP1      | ENSGALG00000008523  | X-prolyl aminopeptidase (aminopeptidase P) 1, soluble      | 0.196732594 | 6.969131084 | 13.55910076 | 0.000231168 | 0.004023954 |
| RCOR3        | ENSGALG00000009871  | REST corepressor 3                                         | 0.196464475 | 6.980258917 | 17.70702589 | 0.0000258   | 0.000695084 |
| PCBP4        | ENSGALG000000027695 | poly(rC)-binding protein 4-like                            | 0.196148931 | 6.817287391 | 11.48998365 | 0.000699723 | 0.009255574 |
| SMC4         | ENSGALG00000009553  | structural maintenance of chromosomes 4                    | 0.195613654 | 7.769062042 | 18.71706589 | 0.0000152   | 0.000454444 |
| UBE2S        | ENSGALG000000052573 | ubiquitin conjugating enzyme E2 S                          | 0.194573246 | 7.069692074 | 10.15179426 | 0.001441609 | 0.015699465 |
| LOC422214    | -----               | nuclear cap binding protein subunit 2, 20kDa               | 0.194349621 | 6.163535617 | 8.038114882 | 0.004580318 | 0.03587298  |
| TTL12        | ENSGALG00000014167  | tubulin tyrosine ligase like 12                            | 0.194233368 | 7.150425489 | 11.57741486 | 0.000667577 | 0.008995963 |
| ECT2         | ENSGALG00000009157  | epithelial cell transforming 2                             | 0.193666673 | 6.756098383 | 11.03108923 | 0.000895965 | 0.011056423 |
| HMBS         | ENSGALG000000042939 | hydroxymethylbilane synthase                               | 0.192793875 | 6.104097094 | 9.10009628  | 0.00255596  | 0.023641556 |
| HOXA6        | ENSGALG000000028908 | homeobox A6                                                | 0.192758128 | 5.68487745  | 7.726675411 | 0.005441085 | 0.040476061 |
| ACTN1        | ENSGALG000000042458 | actinin, alpha 1                                           | 0.192651207 | 7.487973404 | 14.05934811 | 0.000177131 | 0.003239391 |
| FUS          | ENSGALG000000032219 | FUS RNA binding protein                                    | 0.192303132 | 9.399092816 | 9.701291569 | 0.001841385 | 0.018937498 |
| KCTD3        | ENSGALG00000009678  | SH3KBP1 binding protein 1                                  | 0.192133497 | 6.893289472 | 10.42640159 | 0.001242265 | 0.014020218 |
| RPF1         | ENSGALG00000008796  | ribosome production factor 1 homolog                       | 0.19206104  | 5.909037042 | 7.446310572 | 0.006356662 | 0.045379117 |
| ACTR6        | ENSGALG000000040976 | ARP6 actin-related protein 6 homolog                       | 0.191836447 | 7.029799438 | 7.882330606 | 0.004992011 | 0.038241869 |
| RAD54L       | ENSGALG00000010356  | RAD54-like (S. cerevisiae)                                 | 0.191776807 | 5.688090133 | 8.126671745 | 0.004361875 | 0.034540253 |
| SLC39A14     | ENSGALG000000033989 | solute carrier family 39 member 14                         | 0.191725436 | 6.170394966 | 8.053924222 | 0.00454052  | 0.035612984 |
| DPP7         | ENSGALG000000038145 | dipeptidyl peptidase 7                                     | 0.191712548 | 5.582891394 | 7.74625791  | 0.005382396 | 0.040190968 |
| KAT2A        | ENSGALG000000003369 | lysine acetyltransferase 2A                                | 0.191628584 | 6.876697009 | 11.844113   | 0.000578439 | 0.008086123 |
| SLC25A15     | ENSGALG00000017032  | solute carrier family 25 member 15                         | 0.191517781 | 5.65290325  | 8.137858911 | 0.004335044 | 0.034360863 |
| NSF          | ENSGALG000000001055 | N-ethylmaleimide sensitive factor, vesicle fusing ATPase   | 0.191062912 | 6.390855341 | 7.848500021 | 0.005086289 | 0.038622467 |
| LOC107057310 | -----               | uncharacterized LOC107057310                               | 0.190686127 | 5.281970838 | 8.560781539 | 0.003434819 | 0.029103992 |
| SELENON      | -----               | selenoprotein N                                            | 0.189015285 | 6.921796892 | 11.84912886 | 0.000576883 | 0.008071951 |
| HJURP        | ENSGALG00000015363  | Holliday junction recognition protein                      | 0.188604404 | 5.67882614  | 7.631358051 | 0.005736209 | 0.041969465 |
| AKR1A1       | ENSGALG00000010244  | aldo-keto reductase family 1 member A1                     | 0.188501022 | 6.530817644 | 10.51714317 | 0.001182722 | 0.013524453 |
| PTP4A2       | ENSGALG000000003265 | protein tyrosine phosphatase type IVA, member 2            | 0.188401803 | 6.78515582  | 9.693975412 | 0.001848731 | 0.01898931  |
| MSH6         | ENSGALG000000008957 | mutS homolog 6                                             | 0.188301866 | 7.591654066 | 10.53939355 | 0.001168568 | 0.013409191 |
| NVL          | ENSGALG000000009322 | nuclear VCP-like                                           | 0.188096286 | 6.019914738 | 11.11297494 | 0.000857259 | 0.010727143 |
| EIF3D        | ENSGALG00000012529  | eukaryotic translation initiation factor 3 subunit D       | 0.188085955 | 8.679966559 | 9.621185728 | 0.001923455 | 0.019585677 |
| EPB41L2      | -----               | erythrocyte membrane protein band 4.1 like 2               | 0.187777115 | 6.532535161 | 8.455340463 | 0.003639731 | 0.030463772 |

|         |                    |                                                                                  |             |             |             |             |             |
|---------|--------------------|----------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| TUBB4B  | ENSGALG00000008586 | tubulin beta 4B class IVb                                                        | 0.187301874 | 7.532319103 | 12.90643262 | 0.000327455 | 0.005251724 |
| RASAL3  | ENSGALG00000039156 | RAS protein activator like 3                                                     | 0.18725901  | 7.663230617 | 9.444506803 | 0.002117824 | 0.020892566 |
| RARS    | ENSGALG00000001850 | arginyl-tRNA synthetase                                                          | 0.18709819  | 7.331142895 | 8.362142741 | 0.003831185 | 0.031458162 |
| TIMMDC1 | ENSGALG00000024480 | translocase of inner mitochondrial membrane domain containing 1                  | 0.186686828 | 6.156404091 | 9.195032173 | 0.002426728 | 0.022805148 |
| SCOC    | ENSGALG00000009813 | short coiled-coil protein                                                        | 0.186295384 | 6.420497801 | 8.483650479 | 0.003583523 | 0.030100496 |
| PKNOX1  | ENSGALG00000016191 | PBX/knotted 1 homeobox 1                                                         | 0.186252651 | 6.301353431 | 7.729059617 | 0.005433904 | 0.040459229 |
| TBC1D13 | ENSGALG00000004645 | TBC1 domain family member 13                                                     | 0.185072232 | 6.866904731 | 10.27745582 | 0.001346655 | 0.014871953 |
| TSPAN4  | ENSGALG00000006837 | tetraspanin 4                                                                    | 0.184832099 | 6.375623786 | 10.69401552 | 0.001074827 | 0.012633051 |
| RIMKLB  | ENSGALG00000040184 | ribosomal modification protein rimK like family member B                         | 0.184764065 | 6.279897832 | 8.243936682 | 0.004088835 | 0.032981268 |
| CASP3   | ENSGALG00000010638 | caspase 3                                                                        | 0.184735069 | 6.979796611 | 12.41386961 | 0.000426157 | 0.006415747 |
| FARSA   | ENSGALG00000040258 | phenylalanyl-tRNA synthetase alpha subunit                                       | 0.184650899 | 6.573596162 | 8.351676605 | 0.003853316 | 0.031608333 |
| RNF14   | ENSGALG00000043085 | ring finger protein 14                                                           | 0.183959804 | 6.458197516 | 8.093310925 | 0.004442892 | 0.035114215 |
| HSPA4   | ENSGALG00000040882 | heat shock protein family A (Hsp70) member 4                                     | 0.183817735 | 7.413200922 | 8.07521387  | 0.004487481 | 0.035330862 |
| LRWD1   | ENSGALG00000001852 | leucine rich repeats and WD repeat domain containing 1                           | 0.183436858 | 6.719195952 | 8.708038951 | 0.003168098 | 0.027437399 |
| CAD     | ENSGALG00000016524 | carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase | 0.183090152 | 8.805482264 | 8.152861775 | 0.004299326 | 0.034176527 |
| MRE11   | ENSGALG00000017211 | MRE11 homolog, double strand break repair nuclease                               | 0.182577857 | 6.6601599   | 9.89293786  | 0.001659143 | 0.017446238 |
| LUC7L2  | ENSGALG00000036238 | LUC7 like 2, pre-mRNA splicing factor                                            | 0.182004692 | 7.784786788 | 11.19820507 | 0.000818765 | 0.010411729 |
| RAB8B   | ENSGALG00000003487 | RAB8B, member RAS oncogene family                                                | 0.181906452 | 6.95609446  | 14.89990448 | 0.000113369 | 0.002255722 |
| LTBP1   | ENSGALG00000010448 | latent transforming growth factor beta binding protein 1                         | 0.18158541  | 8.50873067  | 7.886655887 | 0.004980086 | 0.038203877 |
| KLHL2   | ENSGALG00000009554 | kelch like family member 2                                                       | 0.181039791 | 6.293483659 | 9.04412572  | 0.002635402 | 0.024091969 |
| PI4KB   | ENSGALG00000024034 | phosphatidylinositol 4-kinase beta                                               | 0.181033595 | 6.579728485 | 8.965952349 | 0.002750573 | 0.024827579 |
| KANSL1L | ENSGALG00000002866 | KAT8 regulatory NSL complex subunit 1-like                                       | 0.180562188 | 5.515017036 | 8.072938522 | 0.004493119 | 0.035358335 |
| CCT6A   | ENSGALG00000002448 | chaperonin containing TCP1 subunit 6A                                            | 0.180468604 | 8.880164317 | 8.078695479 | 0.004478868 | 0.035279926 |
| CCT8    | ENSGALG00000015821 | chaperonin containing TCP1 subunit 8                                             | 0.180207001 | 8.809778309 | 7.649275617 | 0.005679512 | 0.041753247 |
| GTF2E2  | ENSGALG00000010283 | general transcription factor IIE subunit 2                                       | 0.179732713 | 5.631248792 | 8.823478921 | 0.002973792 | 0.026269859 |
| NDC1    | ENSGALG00000031606 | NDC1 transmembrane nucleoporin                                                   | 0.179384081 | 6.991525376 | 8.016519808 | 0.004635256 | 0.036199874 |
| C1QBP   | ENSGALG00000001654 | complement C1q binding protein                                                   | 0.178914871 | 8.468529527 | 7.965791046 | 0.004766965 | 0.037035135 |
| LAS1L   | ENSGALG00000043447 | LAS1 like, ribosome biogenesis factor                                            | 0.17882903  | 6.806557447 | 13.69746659 | 0.000214744 | 0.003791429 |
| SUGT1   | ENSGALG00000016946 | SGT1 homolog, MIS12 kinetochore complex assembly co-chaperone                    | 0.178161098 | 6.594087626 | 11.15275151 | 0.000839071 | 0.010580014 |
| AIFM1   | ENSGALG00000004003 | apoptosis inducing factor, mitochondria associated 1                             | 0.178119671 | 7.114762988 | 11.31442746 | 0.000769072 | 0.009898861 |
| SEC31A  | ENSGALG00000040484 | SEC31 homolog A, COPII coat complex component                                    | 0.178107653 | 8.946552088 | 7.531392015 | 0.006063304 | 0.043721152 |
| USPL1   | ENSGALG00000017079 | ubiquitin specific peptidase like 1                                              | 0.178059477 | 7.181068201 | 8.085686331 | 0.004461623 | 0.035221456 |
| EXOSC9  | ENSGALG00000011884 | exosome component 9                                                              | 0.177780264 | 6.169763512 | 8.368053458 | 0.003818744 | 0.031387332 |
| RHOT1   | ENSGALG00000003397 | ras homolog family member T1                                                     | 0.177727608 | 5.929997147 | 10.34640814 | 0.001297269 | 0.014472241 |
| ZCCHC24 | ENSGALG00000026864 | zinc finger CCHC-type containing 24                                              | 0.176722092 | 6.799749578 | 8.630394014 | 0.003306001 | 0.028363003 |
| CBR1    | -----              | -----                                                                            | 0.176647034 | 5.877044848 | 7.416160702 | 0.00646406  | 0.045954099 |
| ALDH9A1 | ENSGALG00000003495 | aldehyde dehydrogenase 9 family member A1                                        | 0.176365942 | 7.736557354 | 12.89523842 | 0.000329419 | 0.005272949 |
| NID2    | ENSGALG00000012394 | nidogen 2                                                                        | 0.176312721 | 7.779136232 | 8.710292413 | 0.003164184 | 0.027417934 |
| ANGEL2  | ENSGALG00000009802 | angel homolog 2                                                                  | 0.176281285 | 5.171482403 | 7.185049045 | 0.007351354 | 0.049965525 |
| USP51   | -----              | -----                                                                            | 0.174997606 | 6.979916869 | 10.76146257 | 0.001036355 | 0.012348453 |
| WDR76   | ENSGALG00000035465 | WD repeat domain 76                                                              | 0.174923777 | 6.256391543 | 7.79504269  | 0.005238977 | 0.039472239 |
| THOC5   | ENSGALG00000029223 | THO complex 5                                                                    | 0.174314197 | 7.597158772 | 10.11834037 | 0.001468011 | 0.015913126 |
| NCBP2   | ENSGALG00000006843 | nuclear cap binding protein subunit 2, 20kDa                                     | 0.173904325 | 7.753056883 | 12.93923261 | 0.000321767 | 0.005185773 |
| ITSN1   | ENSGALG00000036677 | intersectin 1                                                                    | 0.173063335 | 7.302736089 | 10.49524339 | 0.001196822 | 0.013647757 |

|              |                    |                                                                   |             |             |             |             |             |
|--------------|--------------------|-------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| DDR1         | ENSGALG00000008616 | discoidin domain receptor tyrosine kinase 1                       | 0.172466757 | 7.361266387 | 8.156901349 | 0.00428976  | 0.034116967 |
| SUFU         | ENSGALG00000008096 | SUFU negative regulator of hedgehog signaling                     | 0.171713777 | 5.92753777  | 7.374871847 | 0.00661415  | 0.04653862  |
| FAR1         | ENSGALG00000005353 | fatty acyl-CoA reductase 1                                        | 0.171251369 | 6.659597982 | 10.92831888 | 0.000947054 | 0.011552092 |
| SKA2         | ENSGALG00000005090 | spindle and kinetochore associated complex subunit 2 pseudogene 1 | 0.169863749 | 6.617834986 | 8.003054724 | 0.00466985  | 0.036385377 |
| CCDC30       | -----              | coiled-coil domain containing 30                                  | 0.168971171 | 5.714021247 | 7.84731601  | 0.005089621 | 0.038629944 |
| NT5C2        | ENSGALG00000008179 | 5'-nucleotidase, cytosolic II                                     | 0.168907861 | 6.597956495 | 9.965178093 | 0.001595287 | 0.01696862  |
| LOC112530429 | -----              | uncharacterized LOC112530429                                      | 0.167933589 | 7.871955585 | 7.311369823 | 0.006851968 | 0.047592415 |
| NDUFB4       | ENSGALG00000027688 | NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 4, 15kDa       | 0.167527431 | 6.473586593 | 7.400633242 | 0.006520092 | 0.046066172 |
| PITPNB       | ENSGALG00000005654 | phosphatidylinositol transfer protein beta                        | 0.167288189 | 7.098193061 | 13.01103938 | 0.00030966  | 0.005060035 |
| TIAL1        | ENSGALG00000009427 | TIA1 cytotoxic granule associated RNA binding protein like 1      | 0.165240805 | 5.748648554 | 8.260840205 | 0.004050938 | 0.032707643 |
| PTK2         | ENSGALG00000031741 | protein tyrosine kinase 2                                         | 0.164930315 | 7.562959994 | 8.718200861 | 0.003150488 | 0.027356875 |
| CSE1L        | ENSGALG00000004707 | chromosome segregation 1 like                                     | 0.16462394  | 8.316027787 | 8.836467266 | 0.002952702 | 0.026150002 |
| ZBTB33       | ENSGALG00000008611 | zinc finger and BTB domain containing 33                          | 0.164614811 | 6.108038503 | 10.13543116 | 0.001454462 | 0.015797475 |
| ELMO2        | ENSGALG00000007246 | engulfment and cell motility 2                                    | 0.164571697 | 7.129605033 | 9.183841415 | 0.00244161  | 0.022880678 |
| NAP1L1       | ENSGALG00000010238 | nucleosome assembly protein 1 like 1                              | 0.16415621  | 9.378036755 | 7.257871801 | 0.00705909  | 0.048485265 |
| IGSF3        | ENSGALG00000036738 | immunoglobulin superfamily member 3                               | 0.163751889 | 7.333998842 | 7.625341737 | 0.005755376 | 0.042072287 |
| NF2          | ENSGALG00000008073 | neurofibromin 2                                                   | 0.163485175 | 7.646399972 | 9.389928699 | 0.002181807 | 0.021373879 |
| UBA3         | ENSGALG00000013410 | ubiquitin like modifier activating enzyme 3                       | 0.163043712 | 6.403878025 | 7.531571264 | 0.006062701 | 0.043721152 |
| MCMBP        | ENSGALG00000009455 | minichromosome maintenance complex binding protein                | 0.16254277  | 6.844609421 | 9.416767866 | 0.002150102 | 0.02113496  |
| UBL3         | ENSGALG00000017084 | ubiquitin like 3                                                  | 0.162389387 | 5.712650038 | 8.309216731 | 0.00394444  | 0.032188403 |
| GALNT1       | ENSGALG00000013135 | polypeptide N-acetylgalactosaminyltransferase 1                   | 0.161499544 | 7.23503615  | 9.641903662 | 0.00190188  | 0.019414044 |
| RBM4B        | -----              | -----                                                             | 0.161374645 | 6.436098192 | 7.936158907 | 0.004845658 | 0.03741685  |
| GLT8D1       | ENSGALG00000001642 | glycosyltransferase 8 domain containing 1                         | 0.160640868 | 5.877796873 | 8.062346248 | 0.004519462 | 0.035514684 |
| ESPL1        | ENSGALG00000041923 | extra spindle pole bodies like 1, separase                        | 0.159884289 | 7.480659571 | 7.291874065 | 0.006926718 | 0.047991221 |
| SAE1         | ENSGALG00000048152 | SUMO1 activating enzyme subunit 1                                 | 0.159720456 | 7.12681002  | 8.40558748  | 0.003740695 | 0.031033114 |
| TOP1         | ENSGALG00000003681 | DNA topoisomerase I                                               | 0.159718506 | 8.396882317 | 8.884579393 | 0.002875893 | 0.025718923 |
| RALGAPB      | ENSGALG00000001420 | Ral GTPase activating protein non-catalytic beta subunit          | 0.159634751 | 7.004725835 | 8.402598958 | 0.003746849 | 0.031033114 |
| UBE2N        | ENSGALG00000030515 | ubiquitin conjugating enzyme E2 N                                 | 0.159551281 | 7.457310295 | 9.132284006 | 0.00251138  | 0.023320229 |
| ACTR1A       | ENSGALG00000008086 | ARP1 actin-related protein 1 homolog A, centractin alpha          | 0.159482344 | 7.432693068 | 9.994636979 | 0.001569968 | 0.016731748 |
| FAM171A1     | ENSGALG00000008764 | family with sequence similarity 171, member A1                    | 0.158537613 | 6.737475931 | 9.157336622 | 0.002477229 | 0.023095068 |
| USP48        | ENSGALG00000030857 | ubiquitin specific peptidase 48                                   | 0.157775794 | 6.341038445 | 7.813763259 | 0.005184982 | 0.03915506  |
| BCL7A        | ENSGALG00000004379 | BAF chromatin remodeling complex subunit BCL7A                    | 0.157745953 | 6.566477151 | 8.701531825 | 0.003179428 | 0.027521031 |
| PSMC3        | ENSGALG00000008108 | proteasome 26S subunit, ATPase 3                                  | 0.155192145 | 7.905108064 | 9.452545323 | 0.002108563 | 0.020869886 |
| PSME4        | ENSGALG00000008163 | proteasome activator subunit 4                                    | 0.155119831 | 6.949388005 | 8.03177583  | 0.004596375 | 0.035964506 |
| PTGES3       | ENSGALG00000036837 | prostaglandin E synthase 3                                        | 0.15489355  | 8.549749403 | 7.385601101 | 0.006574809 | 0.046362842 |
| COPS4        | ENSGALG00000011130 | COP9 signalosome subunit 4                                        | 0.154580594 | 6.852425668 | 9.098103581 | 0.002558747 | 0.023654031 |
| MAP2K1       | ENSGALG00000007687 | mitogen-activated protein kinase kinase 1                         | 0.154319257 | 6.500211473 | 7.447256356 | 0.006353322 | 0.045374963 |
| DCTN1        | ENSGALG00000035156 | dynactin subunit 1                                                | 0.15409651  | 8.062303598 | 7.581116315 | 0.00589829  | 0.042878815 |
| FAM98A       | ENSGALG00000010428 | family with sequence similarity 98 member A                       | 0.153954746 | 6.504191099 | 8.564454773 | 0.003427896 | 0.029070953 |
| TMEM184C     | ENSGALG00000010019 | transmembrane protein 184C                                        | 0.15349793  | 6.35125634  | 8.37204689  | 0.003810362 | 0.031356359 |
| FAM168A      | ENSGALG00000017323 | family with sequence similarity 168 member A                      | 0.153417038 | 6.127911553 | 8.131099347 | 0.004351236 | 0.034472596 |
| PLK1         | ENSGALG00000006110 | polo like kinase 1                                                | 0.153347944 | 8.600629741 | 7.373734384 | 0.006618335 | 0.04653862  |
| TXNRD3       | ENSGALG00000039363 | thioredoxin reductase 3                                           | 0.152894247 | 7.192617732 | 8.163353798 | 0.004274525 | 0.034028696 |
| CTNNBL1      | ENSGALG00000006817 | catenin beta like 1                                               | 0.152762336 | 6.480734655 | 7.625653932 | 0.00575438  | 0.042072287 |

|         |                     |                                                              |             |             |             |             |             |
|---------|---------------------|--------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| TRAF7   | ENSGALG00000005767  | TNF receptor associated factor 7                             | 0.152141894 | 6.129174876 | 7.986100139 | 0.004713784 | 0.036705484 |
| BUB1    | ENSGALG00000008233  | BUB1 mitotic checkpoint serine/threonine kinase              | 0.151880857 | 7.503343358 | 8.198798064 | 0.004191815 | 0.033597816 |
| NOMO3   | -----               | -----                                                        | 0.149183538 | 7.313476711 | 7.443935293 | 0.006365056 | 0.045416287 |
| SMAD5   | ENSGALG00000006309  | SMAD family member 5                                         | 0.147829086 | 7.438348081 | 7.470201089 | 0.006272854 | 0.044936796 |
| DERL1   | ENSGALG000000033950 | derlin 1                                                     | 0.14720004  | 6.870546462 | 10.15857404 | 0.001436317 | 0.01566242  |
| MRPL20  | ENSGALG00000001542  | mitochondrial ribosomal protein L20                          | 0.146229532 | 6.410452821 | 8.275220499 | 0.004018978 | 0.032593537 |
| AKIRIN2 | ENSGALG000000015791 | akirin 2                                                     | 0.144862292 | 7.357053959 | 8.305052378 | 0.003953494 | 0.032205321 |
| CYFIP1  | ENSGALG000000016736 | cytoplasmic FMR1 interacting protein 1                       | 0.144855596 | 7.491804025 | 10.56257246 | 0.001154005 | 0.013297724 |
| DNAJC10 | ENSGALG000000008862 | DnaJ heat shock protein family (Hsp40) member C10            | 0.143933294 | 6.952160179 | 8.125501239 | 0.004364692 | 0.034545935 |
| TARDBP  | ENSGALG000000002906 | TAR DNA binding protein                                      | 0.14337667  | 6.958873007 | 7.269226985 | 0.007014599 | 0.048295072 |
| EZH2    | ENSGALG000000043399 | enhancer of zeste 2 polycomb repressive complex 2 subunit    | 0.143113626 | 7.233313573 | 7.404995055 | 0.006504302 | 0.046018535 |
| RYK     | ENSGALG000000006488 | receptor-like tyrosine kinase                                | 0.142870053 | 6.418224066 | 9.000654384 | 0.00269883  | 0.024478493 |
| FAM109B | -----               | family with sequence similarity 109, member B                | 0.142741287 | 6.981268317 | 8.287738625 | 0.003991366 | 0.032401545 |
| GNB4    | ENSGALG000000008983 | G protein subunit beta 4                                     | 0.139540731 | 8.411667376 | 7.644910104 | 0.005693273 | 0.041755635 |
| MEMO1   | ENSGALG000000010624 | mediator of cell motility 1                                  | 0.138121652 | 6.620886079 | 7.410021668 | 0.006486154 | 0.045954099 |
| DARS    | ENSGALG000000012355 | aspartyl-tRNA synthetase                                     | 0.137643777 | 7.517655564 | 7.833548014 | 0.005128533 | 0.038853598 |
| COPG2   | ENSGALG000000008144 | coatomer protein complex subunit gamma 2                     | 0.135961214 | 7.028045092 | 7.232203799 | 0.007160725 | 0.049014032 |
| UBE2G1  | ENSGALG000000001441 | ubiquitin conjugating enzyme E2 G1                           | 0.134655546 | 7.356387275 | 7.211689649 | 0.007243028 | 0.049412944 |
| TAX1BP3 | ENSGALG000000004618 | Tax1 binding protein 3                                       | 0.130961138 | 7.701034402 | 7.735359924 | 0.005414977 | 0.040336552 |
| SEC13   | ENSGALG000000008419 | SEC13 homolog, nuclear pore and COPII coat complex component | 0.125165815 | 7.524254406 | 7.240271718 | 0.007128619 | 0.048855238 |
| MSI2    | ENSGALG000000005567 | musashi RNA binding protein 2                                | 0.122965767 | 7.307330664 | 7.694256523 | 0.005539682 | 0.040950348 |