**Tables**

**Table 1** The statistical metrics for key differentially expressed genes (DEGs)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **GeneSymbol** | **logFC** | **pValue** | **adj.P.Val** | **tvalue** | **Regulation** | **Gene Name** |
| CFHR1 | 3.375351879 | 6.45E-06 | 0.000286 | 5.276223 | Up | complement factor H related 1 |
| GREM1 | 3.283471762 | 1.74E-05 | 0.000511 | 4.951466 | Up | gremlin 1, DAN family BMP antagonist |
| DCANP1 | 3.226514295 | 3.24E-05 | 0.000732 | 4.748378 | Up | dendritic cell associated nuclear protein |
| CCL19 | 3.183655087 | 0.000478 | 0.003789 | 3.840947 | Up | C-C motif chemokine ligand 19 |
| COL6A5 | 3.16784535 | 0.000285 | 0.002741 | 4.0192 | Up | collagen type VI alpha 5 chain |
| LINC01426 | 3.062123463 | 4.5E-06 | 0.00023 | 5.393562 | Up | long intergenic non-protein coding RNA 1426 |
| PAX5 | 2.995750749 | 0.001584 | 0.008304 | 3.417456 | Up | paired box 5 |
| IGLL5 | 2.912935307 | 0.002413 | 0.011125 | 3.263816 | Up | immunoglobulin lambda like polypeptide 5 |
| MROH2B | 2.910264537 | 5.23E-07 | 6.86E-05 | 6.093034 | Up | maestro heat like repeat family member 2B |
| CIDEC | 2.753545271 | 0.012816 | 0.036576 | 2.619345 | Up | cell death inducing DFFA like effector c |
| FCRL2 | 2.743514071 | 8.69E-05 | 0.001309 | 4.420696 | Up | Fc receptor like 2 |
| TIFAB | 2.626352493 | 0.00019 | 0.002141 | 4.15824 | Up | TIFA inhibitor |
| CADM3-AS1 | 2.618687617 | 1.05E-05 | 0.00038 | 5.118451 | Up | CADM3 antisense RNA 1 |
| IRF4 | 2.612976293 | 0.000493 | 0.003855 | 3.830636 | Up | interferon regulatory factor 4 |
| SFRP2 | 2.607968652 | 2.15E-05 | 0.000577 | 4.882333 | Up | secreted frizzled related protein 2 |
| CCL21 | 2.586085816 | 0.000153 | 0.001871 | 4.230566 | Up | C-C motif chemokine ligand 21 |
| ABCA13 | 2.562866175 | 0.000111 | 0.001536 | 4.337509 | Up | ATP binding cassette subfamily A member 13 |
| SCARA5 | 2.529702127 | 9.29E-06 | 0.000353 | 5.157339 | Up | scavenger receptor class A member 5 |
| SERPINA3 | 2.502144721 | 0.000464 | 0.00371 | 3.851597 | Up | serpin family A member 3 |
| REG1A | 2.481881104 | 0.004645 | 0.017444 | 3.018637 | Up | regenerating family member 1 alpha |
| LTF | 2.421786484 | 0.005473 | 0.019684 | 2.955879 | Up | lactotransferrin |
| LILRA4 | 2.418292874 | 0.001784 | 0.009035 | 3.37445 | Up | leukocyte immunoglobulin like receptor A4 |
| CLEC4C | 2.416946253 | 0.005918 | 0.020848 | 2.925733 | Up | C-type lectin domain family 4 member C |
| CNR2 | 2.379118466 | 0.000715 | 0.004846 | 3.700816 | Up | cannabinoid receptor 2 |
| MZB1 | 2.375027208 | 0.000853 | 0.005455 | 3.638582 | Up | marginal zone B and B1 cell specific protein |
| ACKR1 | 2.37312685 | 0.000468 | 0.003733 | 3.848851 | Up | atypical chemokine receptor 1 (Duffy blood group) |
| SIRPG-AS1 | 2.369303021 | 0.000435 | 0.003558 | 3.873601 | Up | SIRPG antisense RNA 1 |
| LINC00402 | 2.316005734 | 0.003461 | 0.014274 | 3.129905 | Up | long intergenic non-protein coding RNA 402 |
| TUBB3 | 2.312688215 | 0.002778 | 0.01222 | 3.211856 | Up | tubulin beta 3 class III |
| SLPI | 2.308032387 | 0.001018 | 0.006133 | 3.576066 | Up | secretory leukocyte peptidase inhibitor |
| FAM30A | 2.28349722 | 0.003088 | 0.013132 | 3.172436 | Up | family with sequence similarity 30 member A |
| FCRL5 | 2.268813115 | 0.002892 | 0.01254 | 3.196939 | Up | Fc receptor like 5 |
| MYBPC2 | 2.26175633 | 0.000555 | 0.004157 | 3.789632 | Up | myosin binding protein C, fast type |
| CADM3 | 2.239083735 | 8.09E-05 | 0.001262 | 4.444443 | Up | cell adhesion molecule 3 |
| DHRS9 | 2.236482299 | 0.000479 | 0.00379 | 3.840715 | Up | dehydrogenase/reductase 9 |
| TMEM132D | 2.208380654 | 0.002807 | 0.012294 | 3.207921 | Up | transmembrane protein 132D |
| SAA1 | 2.204503934 | 0.014613 | 0.040281 | 2.565561 | Up | serum amyloid A1 |
| SPIB | 2.196829332 | 0.002074 | 0.010018 | 3.319507 | Up | Spi-B transcription factor |
| VCAN | 2.179158452 | 0.001073 | 0.006349 | 3.557221 | Up | versican |
| CD79A | 2.177923434 | 0.002178 | 0.010386 | 3.301492 | Up | CD79a molecule |
| CD5L | 2.173006586 | 0.005788 | 0.020538 | 2.934297 | Up | CD5 molecule like |
| CCR2 | 2.157792286 | 6.19E-05 | 0.001079 | 4.533759 | Up | C-C motif chemokine receptor 2 |
| CTSG | 2.145714072 | 0.000928 | 0.005752 | 3.608651 | Up | cathepsin G |
| REG3G | 2.125802371 | 0.009803 | 0.030045 | 2.727497 | Up | regenerating family member 3 gamma |
| CD1C | 2.087388332 | 0.000239 | 0.002468 | 4.079532 | Up | CD1c molecule |
| MEOX1 | 2.079477205 | 0.000274 | 0.002661 | 4.033198 | Up | mesenchyme homeobox 1 |
| SIGLEC6 | 2.076554595 | 0.000292 | 0.002776 | 4.011408 | Up | sialic acid binding Ig like lectin 6 |
| CD3D | 2.071816063 | 0.000358 | 0.003134 | 3.941582 | Up | CD3d molecule |
| CFD | 2.062354119 | 1.08E-06 | 0.000104 | 5.856553 | Up | complement factor D |
| IRX6 | 2.061231203 | 9.92E-06 | 0.000367 | 5.135892 | Up | iroquoishomeobox 6 |
| FCRLA | 2.027204494 | 0.012459 | 0.0359 | 2.630844 | Up | Fc receptor like A |
| MIR4539 | 2.026464338 | 0.012999 | 0.036982 | 2.613561 | Up | microRNA 4539 |
| FCRL1 | 2.024534059 | 0.007425 | 0.024534 | 2.83743 | Up | Fc receptor like 1 |
| TPSD1 | 2.022989682 | 0.003821 | 0.015262 | 3.092631 | Up | tryptase delta 1 |
| FCER2 | 2.022109034 | 0.003407 | 0.014124 | 3.135759 | Up | Fc fragment of IgE receptor II |
| CHI3L2 | 2.003241518 | 0.000685 | 0.004733 | 3.716022 | Up | chitinase 3 like 2 |
| CPA4 | 1.99451183 | 0.004093 | 0.01598 | 3.066725 | Up | carboxypeptidase A4 |
| LAX1 | 1.993175742 | 0.001055 | 0.006279 | 3.56317 | Up | lymphocyte transmembrane adaptor 1 |
| BATF | 1.973765528 | 0.000777 | 0.005137 | 3.671578 | Up | basic leucine zipper ATF-like transcription factor |
| CPA3 | 1.969913281 | 0.000963 | 0.00591 | 3.595684 | Up | carboxypeptidase A3 |
| MS4A1 | 1.96899968 | 0.003971 | 0.015647 | 3.078143 | Up | membrane spanning 4-domains A1 |
| IKZF3 | 1.966638055 | 0.000876 | 0.005547 | 3.629001 | Up | IKAROS family zinc finger 3 |
| MMRN1 | 1.96266155 | 0.000323 | 0.002939 | 3.976043 | Up | multimerin 1 |
| PRRX1 | 1.961218687 | 0.000133 | 0.001725 | 4.278157 | Up | paired related homeobox 1 |
| STMN2 | 1.959795393 | 0.005006 | 0.018384 | 2.990093 | Up | stathmin 2 |
| P2RX5 | 1.956461404 | 0.000661 | 0.004645 | 3.728171 | Up | purinergic receptor P2X 5 |
| ALX1 | 1.956345412 | 9.05E-07 | 9.54E-05 | 5.914595 | Up | ALX homeobox 1 |
| ADCYAP1R1 | 1.95209166 | 0.000175 | 0.002033 | 4.185887 | Up | ADCYAP receptor type I |
| CLEC10A | 1.951812324 | 0.000427 | 0.003526 | 3.88015 | Up | C-type lectin domain containing 10A |
| ANKRD36BP2 | 1.950150891 | 0.006523 | 0.022381 | 2.887996 | Up | ankyrin repeat domain 36B pseudogene 2 |
| HAS2 | 1.943166549 | 0.000107 | 0.001495 | 4.350053 | Up | hyaluronan synthase 2 |
| XCL2 | 1.943153725 | 0.000436 | 0.003558 | 3.873298 | Up | X-C motif chemokine ligand 2 |
| COL6A3 | 1.936091001 | 2.02E-05 | 0.00055 | 4.902623 | Up | collagen type VI alpha 3 chain |
| COL1A1 | 1.935231067 | 0.000407 | 0.003416 | 3.896682 | Up | collagen type I alpha 1 chain |
| PNOC | 1.925353932 | 1.41E-05 | 0.000461 | 5.020732 | Up | prepronociceptin |
| ELK2AP | 1.920474519 | 0.014111 | 0.039255 | 2.579944 | Up | ETS transcription factor ELK2A, pseudogene |
| TPSAB1 | 1.91754716 | 0.001694 | 0.008704 | 3.393181 | Up | tryptase alpha/beta 1 |
| FAP | 1.911924967 | 0.001987 | 0.009744 | 3.335114 | Up | fibroblast activation protein alpha |
| FCRL3 | 1.903477996 | 0.003122 | 0.013244 | 3.168381 | Up | Fc receptor like 3 |
| FABP4 | 1.899953641 | 0.001241 | 0.007 | 3.505186 | Up | fatty acid binding protein 4 |
| CD48 | 1.899406447 | 0.001164 | 0.006714 | 3.528088 | Up | CD48 molecule |
| TPSB2 | 1.897530274 | 0.00124 | 0.006998 | 3.505525 | Up | tryptase beta 2 (gene/pseudogene) |
| LCK | 1.89611849 | 0.000535 | 0.004065 | 3.802341 | Up | LCK proto-oncogene, Src family tyrosine kinase |
| SCEL | 1.894854196 | 0.006236 | 0.021667 | 2.905458 | Up | sciellin |
| ERFE | 1.878168839 | 3.96E-05 | 0.000829 | 4.681716 | Up | erythroferrone |
| CD52 | 1.878049795 | 0.000603 | 0.004403 | 3.760149 | Up | CD52 molecule |
| POU2AF1 | 1.871505525 | 0.00895 | 0.0281 | 2.76376 | Up | POU class 2 homeobox associating factor 1 |
| SIRPG | 1.870479999 | 0.00077 | 0.0051 | 3.674724 | Up | signal regulatory protein gamma |
| COL3A1 | 1.865958016 | 2.87E-05 | 0.000683 | 4.788045 | Up | collagen type III alpha 1 chain |
| LCN2 | 1.862781786 | 0.010555 | 0.031821 | 2.697877 | Up | lipocalin 2 |
| CD2 | 1.856073182 | 0.000754 | 0.005021 | 3.681897 | Up | CD2 molecule |
| NTM | 1.840924852 | 0.000389 | 0.003312 | 3.91259 | Up | neurotrimin |
| FUT7 | 1.840017016 | 3.41E-05 | 0.000755 | 4.731488 | Up | fucosyltransferase 7 |
| SLAMF7 | 1.834242248 | 0.003213 | 0.013549 | 3.157672 | Up | SLAM family member 7 |
| CD1E | 1.830807447 | 0.006558 | 0.022459 | 2.88592 | Up | CD1e molecule |
| GZMK | 1.829645137 | 0.000346 | 0.003078 | 3.952776 | Up | granzyme K |
| RHOH | 1.828685222 | 0.002566 | 0.011598 | 3.24117 | Up | ras homolog family member H |
| DRP2 | 1.821851174 | 0.00618 | 0.021509 | 2.909002 | Up | dystrophin related protein 2 |
| MIR142 | 1.814768065 | 0.000493 | 0.003856 | 3.830368 | Up | microRNA 142 |
| MMP7 | 1.809748337 | 0.004486 | 0.01705 | 3.031935 | Up | matrix metallopeptidase 7 |
| CAPN6 | 1.80825955 | 1.13E-05 | 0.000401 | 5.092733 | Up | calpain 6 |
| SYT16 | 1.807911555 | 0.000777 | 0.005137 | 3.671545 | Up | synaptotagmin 16 |
| MOXD1 | 1.804864977 | 6.79E-05 | 0.001133 | 4.502783 | Up | monooxygenase DBH like 1 |
| BLK | 1.803306234 | 0.004077 | 0.015934 | 3.068156 | Up | BLK proto-oncogene, Src family tyrosine kinase |
| SIT1 | 1.803155699 | 0.000496 | 0.003869 | 3.828585 | Up | signaling threshold regulating transmembrane adaptor 1 |
| HOPX | 1.796171888 | 0.000256 | 0.002565 | 4.056314 | Up | HOP homeobox |
| NNMT | 1.784342787 | 0.006993 | 0.023535 | 2.86089 | Up | nicotinamide N-methyltransferase |
| TRAT1 | 1.775053381 | 0.003649 | 0.014789 | 3.10998 | Up | T cell receptor associated transmembrane adaptor 1 |
| WFDC2 | 1.771619001 | 0.000284 | 0.002735 | 4.020844 | Up | WAP four-disulfide core domain 2 |
| ITGBL1 | 1.769703731 | 0.000175 | 0.002037 | 4.184947 | Up | integrin subunit beta like 1 |
| CD79B | 1.759817442 | 0.000232 | 0.002421 | 4.08941 | Up | CD79b molecule |
| GPR55 | 1.749097368 | 0.003456 | 0.014268 | 3.13039 | Up | G protein-coupled receptor 55 |
| TREML2 | 1.742142244 | 0.010133 | 0.030791 | 2.714259 | Up | triggering receptor expressed on myeloid cells like 2 |
| SYT12 | 1.74106022 | 0.000336 | 0.003025 | 3.962701 | Up | synaptotagmin 12 |
| C3 | 1.717612063 | 0.004069 | 0.015917 | 3.068897 | Up | complement C3 |
| CD180 | 1.714738347 | 0.00027 | 0.002637 | 4.037439 | Up | CD180 molecule |
| JCHAIN | 1.714017091 | 0.018656 | 0.048332 | 2.463887 | Up | joining chain of multimeric IgA and IgM |
| CORO1A | 1.708038536 | 0.000546 | 0.004119 | 3.794852 | Up | coronin 1A |
| C16orf54 | 1.707976962 | 0.000496 | 0.003871 | 3.828267 | Up | chromosome 16 open reading frame 54 |
| SP140 | 1.705740685 | 0.000959 | 0.005892 | 3.597091 | Up | SP140 nuclear body protein |
| EOMES | 1.69791506 | 0.002023 | 0.009872 | 3.32859 | Up | eomesodermin |
| TIMP1 | 1.692895338 | 0.000254 | 0.002559 | 4.058215 | Up | TIMP metallopeptidase inhibitor 1 |
| PIK3CD-AS1 | 1.6891943 | 0.000268 | 0.00262 | 4.041048 | Up | PIK3CD antisense RNA 1 |
| CACNA1I | 1.687578495 | 0.017402 | 0.04588 | 2.493055 | Up | calcium voltage-gated channel subunit alpha1 I |
| SNX20 | 1.683121317 | 0.000882 | 0.005571 | 3.626733 | Up | sorting nexin 20 |
| JAML | 1.675564661 | 0.001344 | 0.007377 | 3.476748 | Up | junction adhesion molecule like |
| LOC100129697 | 1.668768968 | 0.000148 | 0.001832 | 4.242293 | Up | uncharacterized LOC100129697 |
| ITPRIPL1 | 1.665793436 | 1.81E-08 | 7.77E-06 | 7.198464 | Up | ITPRIP like 1 |
| UBASH3A | 1.664469563 | 0.001801 | 0.009087 | 3.370952 | Up | ubiquitin associated and SH3 domain containing A |
| TNC | 1.64799782 | 0.001647 | 0.008518 | 3.403242 | Up | tenascin C |
| FCER1A | 1.638585806 | 0.001944 | 0.009618 | 3.342989 | Up | Fc fragment of IgE receptor Ia |
| SLA2 | 1.636314115 | 2.55E-06 | 0.000174 | 5.577593 | Up | Src like adaptor 2 |
| ISLR2 | 1.635028281 | 0.000107 | 0.001495 | 4.349937 | Up | immunoglobulin superfamily containing leucine rich repeat 2 |
| CD244 | 1.632336588 | 0.000155 | 0.001889 | 4.226308 | Up | CD244 molecule |
| WNT10A | 1.632155168 | 0.000873 | 0.005536 | 3.630254 | Up | Wnt family member 10A |
| MSC | 1.628689376 | 0.000137 | 0.001757 | 4.268118 | Up | musculin |
| C1S | 1.627314952 | 8.01E-05 | 0.001259 | 4.448022 | Up | complement C1s |
| APCDD1 | 1.62142107 | 5.46E-06 | 0.000259 | 5.330595 | Up | APC down-regulated 1 |
| TNNI2 | 1.620143883 | 0.004636 | 0.017426 | 3.019392 | Up | troponin I2, fast skeletal type |
| JSRP1 | 1.619782863 | 0.018994 | 0.049019 | 2.456317 | Up | junctional sarcoplasmic reticulum protein 1 |
| SLAMF1 | 1.615745199 | 0.001321 | 0.007296 | 3.482873 | Up | signaling lymphocytic activation molecule family member 1 |
| ACTG2 | 1.609285963 | 0.013207 | 0.037402 | 2.607053 | Up | actin gamma 2, smooth muscle |
| MS4A6A | 1.608244409 | 6.66E-05 | 0.00112 | 4.509422 | Up | membrane spanning 4-domains A6A |
| KCNA3 | 1.603063508 | 0.003907 | 0.015491 | 3.084266 | Up | potassium voltage-gated channel subfamily A member 3 |
| MS4A2 | 1.596663199 | 0.004256 | 0.01643 | 3.051939 | Up | membrane spanning 4-domains A2 |
| ITGAD | 1.591699285 | 0.007977 | 0.025862 | 2.809286 | Up | integrin subunit alpha D |
| TIGIT | 1.590987752 | 0.000204 | 0.002231 | 4.133843 | Up | T cell immunoreceptor with Ig and ITIM domains |
| IKZF1 | 1.589791641 | 0.001455 | 0.00782 | 3.448127 | Up | IKAROS family zinc finger 1 |
| TNFSF14 | 1.58848891 | 0.001084 | 0.006389 | 3.553428 | Up | TNF superfamily member 14 |
| LYZ | 1.580296335 | 0.014447 | 0.039938 | 2.570264 | Up | lysozyme |
| GRAP2 | 1.576445065 | 0.001252 | 0.007046 | 3.502051 | Up | GRB2 related adaptor protein 2 |
| AHNAK2 | 1.571109664 | 0.000167 | 0.001967 | 4.202083 | Up | AHNAK nucleoprotein 2 |
| ZNF831 | 1.568415767 | 0.003062 | 0.013049 | 3.17558 | Up | zinc finger protein 831 |
| IL2RB | 1.566445984 | 0.003199 | 0.013512 | 3.159266 | Up | interleukin 2 receptor subunit beta |
| FCMR | 1.561885784 | 0.006687 | 0.022766 | 2.878376 | Up | Fc fragment of IgM receptor |
| MAP1LC3C | 1.560730571 | 0.000833 | 0.005372 | 3.646757 | Up | microtubule associated protein 1 light chain 3 gamma |
| MIR646HG | 1.558223684 | 0.00152 | 0.008057 | 3.432328 | Up | MIR646 host gene |
| C11orf21 | 1.55710188 | 0.002707 | 0.012016 | 3.221354 | Up | chromosome 11 open reading frame 21 |
| GALNT5 | 1.555304171 | 0.00249 | 0.011382 | 3.252332 | Up | polypeptide N-acetylgalactosaminyltransferase 5 |
| CRLF1 | 1.554989867 | 0.000395 | 0.003352 | 3.906861 | Up | cytokine receptor like factor 1 |
| TNFRSF18 | 1.553278623 | 0.014986 | 0.041064 | 2.55517 | Up | TNF receptor superfamily member 18 |
| LY9 | 1.552465907 | 0.003752 | 0.015073 | 3.099483 | Up | lymphocyte antigen 9 |
| FAIM2 | 1.550957345 | 5.48E-05 | 0.001005 | 4.574005 | Up | Fas apoptotic inhibitory molecule 2 |
| B3GALT5 | 1.54952358 | 1.49E-05 | 0.000475 | 5.002404 | Up | beta-1,3-galactosyltransferase 5 |
| LSP1 | 1.549271938 | 0.002195 | 0.010433 | 3.298699 | Up | lymphocyte specific protein 1 |
| CXCR3 | 1.543901965 | 3.29E-05 | 0.000736 | 4.743203 | Up | C-X-C motif chemokine receptor 3 |
| TMC8 | 1.541786417 | 0.002731 | 0.012084 | 3.218097 | Up | transmembrane channel like 8 |
| PLAC8 | 1.539006889 | 0.004196 | 0.016274 | 3.057255 | Up | placenta associated 8 |
| CCR5 | 1.534551438 | 0.000717 | 0.004852 | 3.69994 | Up | C-C motif chemokine receptor 5 (gene/pseudogene) |
| CPZ | 1.534329146 | 0.00115 | 0.006665 | 3.532378 | Up | carboxypeptidase Z |
| FGD2 | 1.534216818 | 0.00016 | 0.001923 | 4.216101 | Up | FYVE, RhoGEF and PH domain containing 2 |
| GZMM | 1.534073723 | 6.3E-05 | 0.001085 | 4.527725 | Up | granzyme M |
| PTCRA | 1.533003325 | 0.01774 | 0.04652 | 2.485021 | Up | pre T cell antigen receptor alpha |
| WNT7B | 1.532317096 | 0.012504 | 0.035984 | 2.629356 | Up | Wnt family member 7B |
| C1QA | 1.529386516 | 0.000118 | 0.001603 | 4.317647 | Up | complement C1q A chain |
| NCMAP | 1.52802892 | 0.000232 | 0.002421 | 4.089193 | Up | non-compact myelin associated protein |
| CD3E | 1.52793567 | 0.004051 | 0.015866 | 3.070568 | Up | CD3e molecule |
| AGAP2 | 1.524193817 | 0.000524 | 0.004013 | 3.809608 | Up | ArfGAP with GTPase domain, ankyrin repeat and PH domain 2 |
| LIMD2 | 1.522353012 | 0.000109 | 0.001513 | 4.343398 | Up | LIM domain containing 2 |
| CARD11 | 1.522194992 | 0.002737 | 0.012099 | 3.217345 | Up | caspase recruitment domain family member 11 |
| FNDC4 | 1.520969705 | 1.9E-05 | 0.000533 | 4.924067 | Up | fibronectin type III domain containing 4 |
| TLR10 | 1.514001337 | 0.009109 | 0.02846 | 2.756752 | Up | toll like receptor 10 |
| TDO2 | 1.512540028 | 0.017137 | 0.045409 | 2.499489 | Up | tryptophan 2,3-dioxygenase |
| THEMIS | 1.509953324 | 0.001722 | 0.008804 | 3.387101 | Up | thymocyte selection associated |
| IL2RG | 1.50827007 | 0.004489 | 0.017054 | 3.031697 | Up | interleukin 2 receptor subunit gamma |
| CD7 | 1.506857976 | 0.003941 | 0.01557 | 3.080958 | Up | CD7 molecule |
| LIX1 | 1.50655171 | 0.000452 | 0.003651 | 3.860275 | Up | limb and CNS expressed 1 |
| COL1A2 | 1.506450605 | 2.73E-05 | 0.000662 | 4.803964 | Up | collagen type I alpha 2 chain |
| COL14A1 | 1.498208524 | 1.53E-05 | 0.000483 | 4.994513 | Up | collagen type XIV alpha 1 chain |
| MDK | 1.495905721 | 1.9E-05 | 0.000533 | 4.923384 | Up | midkine |
| S1PR4 | 1.495557063 | 0.000803 | 0.005258 | 3.659975 | Up | sphingosine-1-phosphate receptor 4 |
| THBS2 | 1.492020577 | 0.002719 | 0.012052 | 3.219753 | Up | thrombospondin 2 |
| LINC00639 | 1.490721153 | 6.3E-05 | 0.001085 | 4.528027 | Up | long intergenic non-protein coding RNA 639 |
| SVEP1 | 1.489214912 | 5.76E-07 | 7.18E-05 | 6.061539 | Up | sushi, von Willebrand factor type A, EGF and pentraxin domain containing 1 |
| ITGB6 | 1.484476182 | 0.00567 | 0.020218 | 2.94228 | Up | integrin subunit beta 6 |
| NLRP2 | 1.483481562 | 0.013616 | 0.038264 | 2.594575 | Up | NLR family pyrin domain containing 2 |
| RAC2 | 1.482940025 | 0.00253 | 0.011507 | 3.246417 | Up | Rac family small GTPase 2 |
| GDF5 | 1.481858146 | 0.009126 | 0.028491 | 2.756031 | Up | growth differentiation factor 5 |
| WNT7A | 1.480151354 | 0.009367 | 0.028996 | 2.745656 | Up | Wnt family member 7A |
| ARL11 | 1.478000843 | 0.000105 | 0.001482 | 4.355871 | Up | ADP ribosylation factor like GTPase 11 |
| SASH3 | 1.475744373 | 0.000486 | 0.003823 | 3.835226 | Up | SAM and SH3 domain containing 3 |
| MYO1G | 1.46925159 | 0.00231 | 0.010802 | 3.279892 | Up | myosin IG |
| POM121L9P | 1.466153993 | 0.002436 | 0.011191 | 3.260415 | Up | POM121 transmembranenucleoporin like 9, pseudogene |
| ADH1B | 1.461601913 | 6.74E-07 | 7.94E-05 | 6.010212 | Up | alcohol dehydrogenase 1B (class I), beta polypeptide |
| LAMC2 | 1.461355175 | 0.002178 | 0.010386 | 3.301482 | Up | laminin subunit gamma 2 |
| KCNV1 | 1.46127346 | 0.013117 | 0.037231 | 2.609875 | Up | potassium voltage-gated channel modifier subfamily V member 1 |
| PYCARD | 1.46067637 | 1.81E-05 | 0.000523 | 4.939807 | Up | PYD and CARD domain containing |
| PPP1R1B | 1.456662604 | 1.38E-05 | 0.000453 | 5.027427 | Up | protein phosphatase 1 regulatory inhibitor subunit 1B |
| COL5A1 | 1.455985156 | 0.000318 | 0.002912 | 3.981436 | Up | collagen type V alpha 1 chain |
| PVT1 | 1.455742066 | 7.94E-05 | 0.001253 | 4.450892 | Up | Pvt1 oncogene |
| DOCK2 | 1.454042717 | 0.001397 | 0.007597 | 3.462764 | Up | dedicator of cytokinesis 2 |
| TESPA1 | 1.453268833 | 0.004016 | 0.015779 | 3.073909 | Up | thymocyte expressed, positive selection associated 1 |
| BTK | 1.45253006 | 0.00131 | 0.007264 | 3.485986 | Up | Bruton tyrosine kinase |
| C1R | 1.449568949 | 5.04E-05 | 0.00096 | 4.602107 | Up | complement C1r |
| TMSB10 | 1.447879296 | 9.09E-05 | 0.00135 | 4.40552 | Up | thymosin beta 10 |
| SH2D1A | 1.44733591 | 0.001042 | 0.00624 | 3.567539 | Up | SH2 domain containing 1A |
| BEND4 | 1.443375214 | 0.003126 | 0.01325 | 3.167932 | Up | BEN domain containing 4 |
| PRKCB | 1.44042359 | 0.002978 | 0.012764 | 3.18604 | Up | protein kinase C beta |
| ARHGAP9 | 1.439086199 | 0.001262 | 0.00708 | 3.499239 | Up | Rho GTPase activating protein 9 |
| CCND2 | 1.437614117 | 5.74E-05 | 0.001039 | 4.55889 | Up | cyclin D2 |
| TBX18 | 1.437086398 | 0.000143 | 0.001798 | 4.252942 | Up | T-box transcription factor 18 |
| COMP | 1.435675266 | 0.00041 | 0.003424 | 3.89446 | Up | cartilage oligomeric matrix protein |
| CP | 1.435662948 | 0.00123 | 0.006951 | 3.508397 | Up | ceruloplasmin |
| ALOX5 | 1.433608913 | 0.001118 | 0.006542 | 3.542647 | Up | arachidonate 5-lipoxygenase |
| CD8A | 1.425850241 | 0.001209 | 0.006866 | 3.514582 | Up | CD8a molecule |
| CD19 | 1.422740485 | 0.012688 | 0.036351 | 2.623421 | Up | CD19 molecule |
| CARMIL2 | 1.421192212 | 0.003508 | 0.014403 | 3.124753 | Up | capping protein regulator and myosin 1 linker 2 |
| CD247 | 1.420138262 | 0.001154 | 0.006678 | 3.531292 | Up | CD247 molecule |
| KCNS1 | 1.418903267 | 0.000132 | 0.001717 | 4.280475 | Up | potassium voltage-gated channel modifier subfamily S member 1 |
| ITGAL | 1.418756962 | 0.001832 | 0.009195 | 3.364758 | Up | integrin subunit alpha L |
| MIR27B | 1.41850226 | 1.48E-10 | 3.63E-07 | 8.847112 | Up | microRNA 27b |
| CD3G | 1.412247206 | 0.004048 | 0.015859 | 3.070908 | Up | CD3g molecule |
| TMSB4X | 1.410654763 | 3.64E-05 | 0.000789 | 4.709219 | Up | thymosin beta 4 X-linked |
| PLCB2 | 1.410297586 | 0.000636 | 0.00453 | 3.741726 | Up | phospholipase C beta 2 |
| ADRA2A | 1.408389124 | 0.000621 | 0.004452 | 3.750233 | Up | adrenoceptor alpha 2A |
| PIK3R6 | 1.406728067 | 0.003049 | 0.013008 | 3.177219 | Up | phosphoinositide-3-kinase regulatory subunit 6 |
| ARHGAP40 | 1.404436104 | 0.004347 | 0.016679 | 3.043845 | Up | Rho GTPase activating protein 40 |
| GZMA | 1.403790925 | 0.000877 | 0.005549 | 3.628612 | Up | granzyme A |
| JAKMIP1 | 1.402135988 | 0.001308 | 0.007258 | 3.486483 | Up | janus kinase and microtubule interacting protein 1 |
| CD200R1 | 1.400155752 | 0.000876 | 0.005545 | 3.629259 | Up | CD200 receptor 1 |
| CD84 | 1.400119591 | 0.001584 | 0.008304 | 3.417471 | Up | CD84 molecule |
| MDFI | 1.397479754 | 1.17E-05 | 0.000406 | 5.08128 | Up | MyoD family inhibitor |
| RARRES1 | 1.396688013 | 0.000584 | 0.004307 | 3.771864 | Up | retinoic acid receptor responder 1 |
| IFNG-AS1 | 1.394713347 | 0.018488 | 0.048011 | 2.4677 | Up | IFNG antisense RNA 1 |
| NCKAP1L | 1.393598999 | 0.001091 | 0.00641 | 3.551142 | Up | NCK associated protein 1 like |
| LAIR1 | 1.393475593 | 0.00041 | 0.003424 | 3.894699 | Up | leukocyte associated immunoglobulin like receptor 1 |
| CD33 | 1.392716892 | 0.00015 | 0.001844 | 4.238448 | Up | CD33 molecule |
| CCDC141 | 1.390630771 | 3.81E-05 | 0.00081 | 4.694698 | Up | coiled-coil domain containing 141 |
| TYROBP | 1.389702872 | 0.000536 | 0.004069 | 3.801307 | Up | TYRO protein tyrosine kinase binding protein |
| LINC01279 | 1.389411419 | 0.000163 | 0.001942 | 4.209992 | Up | long intergenic non-protein coding RNA 1279 |
| C1QC | 1.389318872 | 0.000497 | 0.003876 | 3.827673 | Up | complement C1q C chain |
| FCGR2B | 1.385440012 | 0.007353 | 0.024346 | 2.841262 | Up | Fc fragment of IgG receptor IIb |
| CD6 | 1.384622356 | 0.007049 | 0.023671 | 2.8578 | Up | CD6 molecule |
| RET | 1.383263102 | 1.16E-06 | 0.000107 | 5.835073 | Up | ret proto-oncogene |
| CD1D | 1.379768072 | 0.001868 | 0.009323 | 3.357612 | Up | CD1d molecule |
| TMC3 | 1.379570249 | 6.3E-05 | 0.001085 | 4.52761 | Up | transmembrane channel like 3 |
| OSR2 | 1.378917202 | 0.000766 | 0.005079 | 3.676356 | Up | odd-skipped related transciption factor 2 |
| CD53 | 1.37630359 | 0.002489 | 0.01138 | 3.252497 | Up | CD53 molecule |
| CCL13 | 1.37319011 | 0.007401 | 0.024471 | 2.838721 | Up | C-C motif chemokine ligand 13 |
| PLXNA4 | 1.372503449 | 1E-05 | 0.000368 | 5.132134 | Up | plexin A4 |
| CUX2 | 1.371842845 | 0.004435 | 0.016911 | 3.036314 | Up | cut like homeobox 2 |
| DEF6 | 1.371372718 | 0.001168 | 0.00672 | 3.527002 | Up | DEF6 guanine nucleotide exchange factor |
| ZBP1 | 1.370641955 | 0.008335 | 0.026701 | 2.791957 | Up | Z-DNA binding protein 1 |
| CD209 | 1.366297575 | 0.000818 | 0.00532 | 3.653375 | Up | CD209 molecule |
| LCP1 | 1.365542557 | 0.00474 | 0.017702 | 3.010988 | Up | lymphocyte cytosolic protein 1 |
| DAPP1 | 1.364139106 | 0.009696 | 0.029786 | 2.731881 | Up | dual adaptor of phosphotyrosine and 3-phosphoinositides 1 |
| LOC101927751 | 1.362667744 | 1.13E-05 | 0.000401 | 5.093561 | Up | uncharacterized LOC101927751 |
| FAM78A | 1.361085133 | 0.000202 | 0.002219 | 4.137502 | Up | family with sequence similarity 78 member A |
| TMEM119 | 1.359810238 | 1.01E-06 | 0.000101 | 5.879055 | Up | transmembrane protein 119 |
| CNNM1 | 1.357575788 | 7.28E-08 | 2E-05 | 6.737948 | Up | cyclin and CBS domain divalent metal cation transport mediator 1 |
| SOWAHD | 1.356025266 | 6.45E-06 | 0.000286 | 5.27639 | Up | sosondowahankyrin repeat domain family member D |
| GLIPR2 | 1.353584347 | 0.000118 | 0.001603 | 4.318582 | Up | GLI pathogenesis related 2 |
| MYBL2 | 1.352484041 | 0.012449 | 0.035893 | 2.631173 | Up | MYB proto-oncogene like 2 |
| SPOCD1 | 1.351281328 | 0.003548 | 0.01453 | 3.120546 | Up | SPOC domain containing 1 |
| FOXJ1 | 1.350490301 | 3.81E-05 | 0.00081 | 4.694772 | Up | forkhead box J1 |
| FOSB | -5.955510598 | 2.65E-10 | 4.55E-07 | -8.64163 | Down | FosB proto-oncogene, AP-1 transcription factor subunit |
| NR4A1 | -4.611444611 | 2.58E-13 | 4.44E-09 | -11.229 | Down | nuclear receptor subfamily 4 group A member 1 |
| FOS | -4.5121246 | 1.47E-09 | 1.6E-06 | -8.04524 | Down | Fos proto-oncogene, AP-1 transcription factor subunit |
| NR4A2 | -4.07128855 | 2.95E-12 | 2.54E-08 | -10.2819 | Down | nuclear receptor subfamily 4 group A member 2 |
| EGR1 | -4.024708778 | 4.56E-10 | 6.54E-07 | -8.45074 | Down | early growth response 1 |
| ATF3 | -3.460513164 | 6.03E-11 | 2.07E-07 | -9.16773 | Down | activating transcription factor 3 |
| NR4A3 | -3.232228822 | 2.2E-11 | 1.26E-07 | -9.53288 | Down | nuclear receptor subfamily 4 group A member 3 |
| KLK1 | -3.193634749 | 0.001507 | 0.008004 | -3.43551 | Down | kallikrein 1 |
| MIR3189 | -3.171704968 | 1.97E-07 | 3.63E-05 | -6.41123 | Down | microRNA 3189 |
| RGS1 | -3.105798597 | 1.43E-05 | 0.000463 | -5.01731 | Down | regulator of G protein signaling 1 |
| SRRM4 | -3.096268137 | 0.001001 | 0.006068 | -3.582 | Down | serine/arginine repetitive matrix 4 |
| DUSP1 | -3.029067693 | 2.94E-11 | 1.26E-07 | -9.42777 | Down | dual specificity phosphatase 1 |
| SPDYE7P | -2.73813522 | 0.002285 | 0.010712 | -3.28396 | Down | speedy/RINGO cell cycle regulator family member E7, pseudogene |
| RNR1 | -2.707745724 | 4.93E-07 | 6.57E-05 | -6.1119 | Down | s-rRNA |
| FER1L6-AS2 | -2.616619977 | 0.000245 | 0.002508 | -4.07122 | Down | FER1L6 antisense RNA 2 |
| HSPA1B | -2.535704377 | 6.65E-05 | 0.00112 | -4.50986 | Down | heat shock protein family A (Hsp70) member 1B |
| MIR6883 | -2.518589531 | 6.05E-06 | 0.000275 | -5.29707 | Down | microRNA 6883 |
| GUCY2EP | -2.500664089 | 6.49E-06 | 0.000287 | -5.27433 | Down | guanylatecyclase 2E, pseudogene |
| RNR2 | -2.494806379 | 3.34E-07 | 5.13E-05 | -6.23865 | Down | l-rRNA |
| TRIM50 | -2.485748172 | 0.000418 | 0.00348 | -3.88753 | Down | tripartite motif containing 50 |
| EGR3 | -2.427252952 | 9.27E-07 | 9.57E-05 | -5.90664 | Down | early growth response 3 |
| ZFP36 | -2.35906331 | 4.05E-10 | 6.32E-07 | -8.49276 | Down | ZFP36 ring finger protein |
| FER1L6-AS1 | -2.328852892 | 0.000345 | 0.003071 | -3.95409 | Down | FER1L6 antisense RNA 1 |
| TRPM6 | -2.278882664 | 0.000406 | 0.003405 | -3.8979 | Down | transient receptor potential cation channel subfamily M member 6 |
| GC | -2.250800387 | 0.004612 | 0.017369 | -3.02138 | Down | GC vitamin D binding protein |
| LOC101927136 | -2.248315905 | 0.003123 | 0.013244 | -3.16829 | Down | uncharacterized LOC101927136 |
| MIR6863 | -2.197414848 | 0.001621 | 0.008432 | -3.40906 | Down | microRNA 6863 |
| HMGN5 | -2.189083582 | 2.7E-05 | 0.000658 | -4.80822 | Down | high mobility group nucleosome binding domain 5 |
| IGFBP1 | -2.15887204 | 0.000581 | 0.004293 | -3.77361 | Down | insulin like growth factor binding protein 1 |
| CR2 | -2.129234349 | 0.001065 | 0.006322 | -3.55983 | Down | complement C3d receptor 2 |
| G6PC | -2.118802858 | 9.29E-05 | 0.001369 | -4.39837 | Down | glucose-6-phosphatase catalytic subunit |
| ADAMTS4 | -2.110266039 | 0.000362 | 0.00316 | -3.93773 | Down | ADAM metallopeptidase with thrombospondin type 1 motif 4 |
| PDK4 | -2.080535916 | 1.16E-07 | 2.73E-05 | -6.58537 | Down | pyruvate dehydrogenase kinase 4 |
| ANKRD20A8P | -2.075914128 | 0.011979 | 0.034855 | -2.64681 | Down | ankyrin repeat domain 20 family member A8, pseudogene |
| ASB15 | -2.074273921 | 0.002705 | 0.012016 | -3.22167 | Down | ankyrin repeat and SOCS box containing 15 |
| FMN2 | -2.07242757 | 0.000186 | 0.002119 | -4.16515 | Down | formin 2 |
| NDNF | -2.064839947 | 0.001193 | 0.006826 | -3.51938 | Down | neuron derived neurotrophic factor |
| C11orf87 | -2.041720603 | 0.015216 | 0.04155 | -2.54887 | Down | chromosome 11 open reading frame 87 |
| ALB | -2.030814176 | 0.013963 | 0.038958 | -2.58426 | Down | albumin |
| TNS4 | -2.020912368 | 0.00012 | 0.001625 | -4.31117 | Down | tensin 4 |
| SLCO4A1-AS1 | -2.019564941 | 2.06E-05 | 0.000555 | -4.89754 | Down | SLCO4A1 antisense RNA 1 |
| LINC00473 | -2.010041324 | 3.61E-06 | 0.000202 | -5.4648 | Down | long intergenic non-protein coding RNA 473 |
| PCAT29 | -2.003351434 | 0.000531 | 0.004056 | -3.80455 | Down | prostate cancer associated transcript 29 |
| MUC13 | -1.995102383 | 0.008157 | 0.026293 | -2.80048 | Down | mucin 13, cell surface associated |
| JUNB | -1.991633705 | 5.39E-07 | 7.02E-05 | -6.08312 | Down | JunB proto-oncogene, AP-1 transcription factor subunit |
| JUN | -1.986246749 | 1.34E-07 | 2.92E-05 | -6.53681 | Down | Jun proto-oncogene, AP-1 transcription factor subunit |
| OR2T3 | -1.98213864 | 0.001662 | 0.008571 | -3.39995 | Down | olfactory receptor family 2 subfamily T member 3 |
| GDF15 | -1.981447549 | 1.02E-07 | 2.58E-05 | -6.62662 | Down | growth differentiation factor 15 |
| LOC221946 | -1.970485542 | 2.39E-05 | 0.000609 | -4.84741 | Down | uncharacterized LOC221946 |
| CYP26B1 | -1.970209556 | 2.75E-06 | 0.000178 | -5.55309 | Down | cytochrome P450 family 26 subfamily B member 1 |
| USP32P1 | -1.950033841 | 0.009155 | 0.028541 | -2.75476 | Down | ubiquitin specific peptidase 32 pseudogene 1 |
| HELT | -1.943146021 | 0.001919 | 0.009527 | -3.34782 | Down | heltbHLH transcription factor |
| DUSP2 | -1.940947917 | 4.5E-06 | 0.00023 | -5.39361 | Down | dual specificity phosphatase 2 |
| LOC101928596 | -1.922413251 | 0.002039 | 0.00991 | -3.32563 | Down | uncharacterized LOC101928596 |
| SLC2A3 | -1.921295543 | 6.97E-07 | 8.04E-05 | -5.99957 | Down | solute carrier family 2 member 3 |
| HRG | -1.916581752 | 2.88E-05 | 0.000684 | -4.78697 | Down | histidine rich glycoprotein |
| CCL3 | -1.908749902 | 0.000502 | 0.003895 | -3.82424 | Down | C-C motif chemokine ligand 3 |
| GPRC6A | -1.892233354 | 0.007065 | 0.023712 | -2.85689 | Down | G protein-coupled receptor class C group 6 member A |
| PTHLH | -1.892185067 | 4.03E-05 | 0.000839 | -4.67555 | Down | parathyroid hormone like hormone |
| APOH | -1.882195391 | 0.003778 | 0.015145 | -3.0969 | Down | apolipoprotein H |
| HCRTR2 | -1.872393755 | 0.016192 | 0.043468 | -2.52311 | Down | hypocretin receptor 2 |
| OR2T34 | -1.871067826 | 0.016529 | 0.044172 | -2.51455 | Down | olfactory receptor family 2 subfamily T member 34 |
| CALB1 | -1.870574756 | 0.001601 | 0.008364 | -3.41362 | Down | calbindin 1 |
| AKR1B10 | -1.868181241 | 0.001527 | 0.008088 | -3.4306 | Down | aldo-ketoreductase family 1 member B10 |
| EGF | -1.867644284 | 0.00043 | 0.00354 | -3.8782 | Down | epidermal growth factor |
| TCF24 | -1.863801103 | 0.000503 | 0.003901 | -3.82323 | Down | transcription factor 24 |
| CRABP1 | -1.860745898 | 0.003988 | 0.015702 | -3.07657 | Down | cellular retinoic acid binding protein 1 |
| FLJ31356 | -1.857719719 | 2.29E-09 | 2.07E-06 | -7.89515 | Down | uncharacterized protein FLJ31356 |
| LINC00417 | -1.854558477 | 0.018016 | 0.047092 | -2.47855 | Down | long intergenic non-protein coding RNA 417 |
| GRIA2 | -1.852599065 | 0.000777 | 0.005137 | -3.67139 | Down | glutamate ionotropic receptor AMPA type subunit 2 |
| CYP27B1 | -1.850938356 | 5.07E-05 | 0.00096 | -4.60016 | Down | cytochrome P450 family 27 subfamily B member 1 |
| LINC01230 | -1.845553648 | 0.000183 | 0.002096 | -4.16956 | Down | long intergenic non-protein coding RNA 1230 |
| PDZK1P1 | -1.844160787 | 0.017724 | 0.046497 | -2.48539 | Down | PDZ domain containing 1 pseudogene 1 |
| NR0B2 | -1.838257029 | 8.06E-08 | 2.13E-05 | -6.70418 | Down | nuclear receptor subfamily 0 group B member 2 |
| GAD1 | -1.833958519 | 0.000135 | 0.001736 | -4.27343 | Down | glutamate decarboxylase 1 |
| LINC01847 | -1.823778057 | 0.00251 | 0.011445 | -3.24929 | Down | long intergenic non-protein coding RNA 1847 |
| OR2T35 | -1.817496772 | 0.017342 | 0.045801 | -2.49452 | Down | olfactory receptor family 2 subfamily T member 35 |
| DDN | -1.816515681 | 0.003369 | 0.014028 | -3.13991 | Down | dendrin |
| OSM | -1.809974482 | 4.5E-06 | 0.00023 | -5.39347 | Down | oncostatin M |
| SLC12A3 | -1.806889876 | 0.012697 | 0.036365 | -2.62312 | Down | solute carrier family 12 member 3 |
| CXXC4-AS1 | -1.802551841 | 0.00107 | 0.00634 | -3.55823 | Down | CXXC4 antisense RNA 1 |
| LINC01485 | -1.801532434 | 6.62E-05 | 0.001118 | -4.51152 | Down | long intergenic non-protein coding RNA 1485 |
| CEL | -1.791647114 | 0.000873 | 0.005536 | -3.63032 | Down | carboxyl ester lipase |
| ESM1 | -1.788028034 | 7.6E-05 | 0.001229 | -4.46553 | Down | endothelial cell specific molecule 1 |
| FOXF1 | -1.778554943 | 5.07E-08 | 1.56E-05 | -6.85704 | Down | forkhead box F1 |
| CHI3L1 | -1.760426944 | 3.27E-05 | 0.000735 | -4.74521 | Down | chitinase 3 like 1 |
| NPHS1 | -1.759539731 | 0.008924 | 0.028045 | -2.76491 | Down | NPHS1 adhesion molecule, nephrin |
| EGR2 | -1.752584545 | 0.000609 | 0.004415 | -3.75721 | Down | early growth response 2 |
| NPTX1 | -1.748040947 | 1.22E-05 | 0.000417 | -5.06751 | Down | neuronal pentraxin 1 |
| LINC00323 | -1.744409028 | 0.001604 | 0.008375 | -3.41293 | Down | long intergenic non-protein coding RNA 323 |
| GADD45B | -1.740349827 | 1.42E-09 | 1.6E-06 | -8.05874 | Down | growth arrest and DNA damage inducible beta |
| CXCL2 | -1.739324966 | 0.000318 | 0.002912 | -3.98137 | Down | C-X-C motif chemokine ligand 2 |
| ZNF804B | -1.733201555 | 9.34E-05 | 0.001373 | -4.39665 | Down | zinc finger protein 804B |
| DLGAP2 | -1.730447868 | 0.0016 | 0.008363 | -3.41377 | Down | DLG associated protein 2 |
| MRO | -1.729448908 | 0.000333 | 0.003003 | -3.96617 | Down | maestro |
| CHP2 | -1.728672056 | 0.016389 | 0.043895 | -2.51807 | Down | calcineurin like EF-hand protein 2 |
| SNTG1 | -1.725236976 | 0.003801 | 0.015206 | -3.09469 | Down | syntrophin gamma 1 |
| TMIGD1 | -1.723453536 | 0.008318 | 0.026653 | -2.79275 | Down | transmembrane and immunoglobulin domain containing 1 |
| ERRFI1 | -1.719155426 | 1.68E-05 | 0.000503 | -4.96349 | Down | ERBB receptor feedback inhibitor 1 |
| MIR23A | -1.698259296 | 8.39E-06 | 0.000334 | -5.19076 | Down | microRNA 23a |
| AFM | -1.697646678 | 0.006984 | 0.023513 | -2.86141 | Down | afamin |
| GSTA2 | -1.695005472 | 0.007146 | 0.023905 | -2.85243 | Down | glutathione S-transferase alpha 2 |
| ARC | -1.691564852 | 4.64E-05 | 0.000911 | -4.62913 | Down | activity regulated cytoskeleton associated protein |
| PCK1 | -1.687669067 | 9.55E-05 | 0.001392 | -4.38911 | Down | phosphoenolpyruvatecarboxykinase 1 |
| MRLN | -1.684067815 | 0.012325 | 0.035628 | -2.63525 | Down | myoregulin |
| OR2G6 | -1.682846251 | 0.014103 | 0.039247 | -2.58017 | Down | olfactory receptor family 2 subfamily G member 6 |
| MIR554 | -1.682490199 | 1.71E-07 | 3.31E-05 | -6.45693 | Down | microRNA 554 |
| GJA3 | -1.680981251 | 0.000638 | 0.00454 | -3.74053 | Down | gap junction protein alpha 3 |
| OR2T2 | -1.680340426 | 0.005838 | 0.020664 | -2.93098 | Down | olfactory receptor family 2 subfamily T member 2 |
| GADL1 | -1.679083154 | 0.017945 | 0.046941 | -2.48021 | Down | glutamate decarboxylase like 1 |
| LINC00964 | -1.673915031 | 0.000814 | 0.005305 | -3.65509 | Down | long intergenic non-protein coding RNA 964 |
| GSTA7P | -1.670788343 | 0.013855 | 0.038725 | -2.58746 | Down | glutathione S-transferase alpha 7, pseudogene |
| CCDC144A | -1.663249282 | 0.001157 | 0.00669 | -3.5302 | Down | coiled-coil domain containing 144A |
| SLC28A2 | -1.658633673 | 0.00269 | 0.011965 | -3.22376 | Down | solute carrier family 28 member 2 |
| SCN1A | -1.657619336 | 0.013168 | 0.037321 | -2.60828 | Down | sodium voltage-gated channel alpha subunit 1 |
| CTSV | -1.652642893 | 0.000297 | 0.002803 | -4.00501 | Down | cathepsin V |
| KRTAP5-8 | -1.652501654 | 2.46E-05 | 0.000618 | -4.83842 | Down | keratin associated protein 5-8 |
| CYP4Z1 | -1.650835392 | 0.000435 | 0.003558 | -3.8736 | Down | cytochrome P450 family 4 subfamily Z member 1 |
| IP6K3 | -1.648838717 | 0.000132 | 0.001717 | -4.28066 | Down | inositol hexakisphosphate kinase 3 |
| DRAIC | -1.636089665 | 0.000709 | 0.00483 | -3.70347 | Down | downregulated RNA in cancer, inhibitor of cell invasion and migration |
| GPAT3 | -1.631414454 | 4.15E-06 | 0.000221 | -5.41942 | Down | glycerol-3-phosphate acyltransferase 3 |
| CYP3A7 | -1.62542705 | 0.000397 | 0.003363 | -3.90515 | Down | cytochrome P450 family 3 subfamily A member 7 |
| IL6 | -1.625295765 | 0.01589 | 0.042893 | -2.53091 | Down | interleukin 6 |
| MAFF | -1.613761879 | 2.32E-05 | 0.000598 | -4.85721 | Down | MAF bZIP transcription factor F |
| SALL3 | -1.605351285 | 0.007947 | 0.02578 | -2.81075 | Down | spalt like transcription factor 3 |
| APOC3 | -1.59993261 | 0.011819 | 0.034571 | -2.65224 | Down | apolipoprotein C3 |
| IGF2 | -1.59274691 | 0.002899 | 0.012559 | -3.19605 | Down | insulin like growth factor 2 |
| ETNPPL | -1.591241057 | 0.011421 | 0.033757 | -2.6661 | Down | ethanolamine-phosphate phospho-lyase |
| SYCP2 | -1.58976625 | 2.36E-05 | 0.000603 | -4.85205 | Down | synaptonemal complex protein 2 |
| HPGD | -1.586552352 | 5.24E-05 | 0.000978 | -4.5893 | Down | 15-hydroxyprostaglandin dehydrogenase |
| ZNF99 | -1.580422848 | 0.00306 | 0.013042 | -3.17586 | Down | zinc finger protein 99 |
| SLC6A17 | -1.577887812 | 2.66E-05 | 0.000652 | -4.81243 | Down | solute carrier family 6 member 17 |
| POM121L1P | -1.55230685 | 0.003831 | 0.015294 | -3.09164 | Down | POM121 transmembranenucleoporin like 1, pseudogene |
| MYCNOS | -1.548456266 | 0.017829 | 0.046709 | -2.48293 | Down | MYCN opposite strand |
| DPP6 | -1.546923933 | 9.24E-05 | 0.001364 | -4.40008 | Down | dipeptidyl peptidase like 6 |
| TRIM72 | -1.545789372 | 0.002475 | 0.011332 | -3.25453 | Down | tripartite motif containing 72 |
| ADAMTS19 | -1.540077561 | 0.001649 | 0.008522 | -3.4029 | Down | ADAM metallopeptidase with thrombospondin type 1 motif 19 |
| OLIG2 | -1.539877622 | 0.000751 | 0.005004 | -3.6836 | Down | oligodendrocyte transcription factor 2 |
| GPR3 | -1.535389568 | 5.22E-05 | 0.000977 | -4.59009 | Down | G protein-coupled receptor 3 |
| KCNG3 | -1.533543431 | 5.61E-06 | 0.000262 | -5.32192 | Down | potassium voltage-gated channel modifier subfamily G member 3 |
| PCDH15 | -1.528198692 | 0.003807 | 0.015226 | -3.09408 | Down | protocadherin related 15 |
| MIR324 | -1.527392763 | 1.45E-05 | 0.000467 | -5.01124 | Down | microRNA 324 |
| PYY | -1.525114023 | 6.1E-05 | 0.001072 | -4.53874 | Down | peptide YY |
| MIR27A | -1.524858329 | 0.00249 | 0.011382 | -3.25223 | Down | microRNA 27a |
| LOC200772 | -1.518032268 | 0.008823 | 0.027862 | -2.76944 | Down | uncharacterized LOC200772 |
| SLC36A2 | -1.51053746 | 0.00138 | 0.00752 | -3.4672 | Down | solute carrier family 36 member 2 |
| LMX1B | -1.507775955 | 0.000483 | 0.003807 | -3.83796 | Down | LIM homeobox transcription factor 1 beta |
| PROZ | -1.49926114 | 0.001739 | 0.008872 | -3.38355 | Down | protein Z, vitamin K dependent plasma glycoprotein |
| PM20D1 | -1.499147315 | 0.003745 | 0.015053 | -3.10025 | Down | peptidase M20 domain containing 1 |
| SLC10A5 | -1.498680927 | 0.000145 | 0.001808 | -4.24972 | Down | solute carrier family 10 member 5 |
| FAM3D | -1.498398868 | 0.001402 | 0.007614 | -3.46151 | Down | family with sequence similarity 3 member D |
| CTD-3080P12.3 | -1.496303721 | 0.002033 | 0.009904 | -3.32665 | Down | uncharacterized LOC101928857 |
| CNTNAP5 | -1.494811619 | 0.000399 | 0.003368 | -3.90354 | Down | contactin associated protein like 5 |
| LRRC9 | -1.494187097 | 0.001203 | 0.006851 | -3.51629 | Down | leucine rich repeat containing 9 |
| RHCG | -1.491537913 | 0.003448 | 0.014249 | -3.13125 | Down | Rh family C glycoprotein |
| TEX41 | -1.485020132 | 2.23E-07 | 3.79E-05 | -6.37087 | Down | testis expressed 41 |
| PADI4 | -1.480083711 | 0.014223 | 0.039483 | -2.5767 | Down | peptidyl arginine deiminase 4 |
| DEPDC7 | -1.476291247 | 4.17E-06 | 0.000221 | -5.41811 | Down | DEP domain containing 7 |
| PCOLCE2 | -1.474650367 | 0.00486 | 0.01802 | -3.00145 | Down | procollagen C-endopeptidase enhancer 2 |
| TINCR | -1.47186623 | 0.000968 | 0.005929 | -3.59385 | Down | TINCR ubiquitin domain containing |
| MRPL23-AS1 | -1.471655339 | 0.000456 | 0.003664 | -3.85753 | Down | MRPL23 antisense RNA 1 |
| SYT10 | -1.470400281 | 6.59E-05 | 0.001114 | -4.513 | Down | synaptotagmin 10 |
| CREB3L3 | -1.467664347 | 0.012078 | 0.035068 | -2.64347 | Down | cAMP responsive element binding protein 3 like 3 |
| KIRREL2 | -1.461511269 | 0.002708 | 0.012016 | -3.22124 | Down | kirre like nephrin family adhesion molecule 2 |
| TMEM200C | -1.45510721 | 0.000122 | 0.001641 | -4.30616 | Down | transmembrane protein 200C |
| LOC101929420 | -1.452843085 | 0.006518 | 0.02238 | -2.8883 | Down | uncharacterized LOC101929420 |
| NXPH2 | -1.451460309 | 0.000823 | 0.005333 | -3.65128 | Down | neurexophilin 2 |
| FER1L6 | -1.450756096 | 0.006851 | 0.023185 | -2.8689 | Down | fer-1 like family member 6 |
| CBARP | -1.449743026 | 2.35E-05 | 0.000601 | -4.85428 | Down | CACN subunit beta associated regulatory protein |
| LINC01108 | -1.448256508 | 0.000325 | 0.002945 | -3.97448 | Down | long intergenic non-protein coding RNA 1108 |
| LINC00113 | -1.437692624 | 0.001796 | 0.009076 | -3.37195 | Down | long intergenic non-protein coding RNA 113 |
| DEPDC1B | -1.43627513 | 5.2E-06 | 0.000251 | -5.34633 | Down | DEP domain containing 1B |
| BTG2 | -1.434897848 | 1E-06 | 0.000101 | -5.8821 | Down | BTG anti-proliferation factor 2 |
| IHH | -1.434489782 | 1.07E-06 | 0.000104 | -5.85878 | Down | Indian hedgehog signaling molecule |
| SNORD97 | -1.429953225 | 3.04E-07 | 4.75E-05 | -6.26958 | Down | small nucleolar RNA, C/D box 97 |
| NPIPB5 | -1.429567404 | 9.75E-05 | 0.001414 | -4.38215 | Down | nuclear pore complex interacting protein family member B5 |
| MIR1914 | -1.429519419 | 0.001069 | 0.006336 | -3.55857 | Down | microRNA 1914 |
| LINC00871 | -1.428825981 | 0.002081 | 0.010038 | -3.31816 | Down | long intergenic non-protein coding RNA 871 |
| LOC105375787 | -1.422740636 | 1.2E-06 | 0.00011 | -5.82292 | Down | uncharacterized LOC105375787 |
| RGPD3 | -1.421537521 | 0.013983 | 0.038995 | -2.58368 | Down | RANBP2 like and GRIP domain containing 3 |
| MEAT6 | -1.418362976 | 0.01364 | 0.038298 | -2.59385 | Down | melanoma-associated transcript 6 |
| LPA | -1.411967686 | 0.00184 | 0.009223 | -3.36313 | Down | lipoprotein(a) |
| CA8 | -1.40998739 | 6.44E-09 | 4.26E-06 | -7.54447 | Down | carbonic anhydrase 8 |
| TMEM207 | -1.409127764 | 0.003564 | 0.014563 | -3.11884 | Down | transmembrane protein 207 |
| CYP4F2 | -1.408088156 | 0.005401 | 0.019466 | -2.96097 | Down | cytochrome P450 family 4 subfamily F member 2 |
| PLCE1-AS1 | -1.406613355 | 2.74E-05 | 0.000663 | -4.8028 | Down | PLCE1 antisense RNA 1 |
| PTGER3 | -1.40433875 | 2.43E-06 | 0.000168 | -5.5942 | Down | prostaglandin E receptor 3 |
| SERPINA4 | -1.403113302 | 0.000123 | 0.001651 | -4.30327 | Down | serpin family A member 4 |
| LOC100129316 | -1.39444782 | 0.000316 | 0.002903 | -3.98426 | Down | uncharacterized LOC100129316 |
| FOLH1B | -1.390460703 | 0.003747 | 0.015059 | -3.1 | Down | folate hydrolase 1B |
| LINC01055 | -1.38058556 | 0.012987 | 0.036968 | -2.61392 | Down | long intergenic non-protein coding RNA 1055 |
| L3MBTL4-AS1 | -1.37580076 | 1.5E-06 | 0.000125 | -5.75109 | Down | L3MBTL4 antisense RNA 1 |
| SLC26A4 | -1.372335672 | 0.011834 | 0.034591 | -2.65173 | Down | solute carrier family 26 member 4 |
| CTSLP8 | -1.370209572 | 0.008179 | 0.026331 | -2.79939 | Down | cathepsin L pseudogene 8 |
| PER1 | -1.362768075 | 3.16E-05 | 0.000724 | -4.75616 | Down | period circadian regulator 1 |
| WT1 | -1.362438811 | 0.001653 | 0.008535 | -3.40193 | Down | WT1 transcription factor |
| GPR26 | -1.361155893 | 0.000652 | 0.004606 | -3.73289 | Down | G protein-coupled receptor 26 |
| HCN2 | -1.358872972 | 1.82E-05 | 0.000524 | -4.93725 | Down | hyperpolarization activated cyclic nucleotide gated potassium and sodium channel 2 |
| LGSN | -1.35743098 | 0.002526 | 0.011496 | -3.24697 | Down | lengsin, lens protein with glutamine synthetase domain |
| ABCC11 | -1.35662988 | 0.017397 | 0.045878 | -2.4932 | Down | ATP binding cassette subfamily C member 11 |
| LINC01060 | -1.354954664 | 0.004572 | 0.017281 | -3.02468 | Down | long intergenic non-protein coding RNA 1060 |
| CDH20 | -1.354557464 | 0.011483 | 0.03388 | -2.66394 | Down | cadherin 20 |
| PLCZ1 | -1.354493222 | 0.000204 | 0.002231 | -4.13326 | Down | phospholipase C zeta 1 |
| PLEKHD1 | -1.353951429 | 0.013036 | 0.03706 | -2.61238 | Down | pleckstrin homology and coiled-coil domain containing D1 |
| FBN3 | -1.353146437 | 0.000356 | 0.003126 | -3.94334 | Down | fibrillin 3 |
| LINC00484 | -1.347121178 | 9.63E-05 | 0.001402 | -4.3864 | Down | long intergenic non-protein coding RNA 484 |
| APOB | -1.346767222 | 0.000868 | 0.005514 | -3.63257 | Down | apolipoprotein B |
| APOLD1 | -1.337981834 | 6.75E-05 | 0.001131 | -4.50472 | Down | apolipoprotein L domain containing 1 |
| PLPPR4 | -1.335848132 | 0.001491 | 0.007939 | -3.43935 | Down | phospholipid phosphatase related 4 |
| FCN2 | -1.334678426 | 0.000506 | 0.003913 | -3.82162 | Down | ficolin 2 |
| RASD1 | -1.33165582 | 0.00329 | 0.013774 | -3.14879 | Down | ras related dexamethasone induced 1 |
| ATOH7 | -1.330889316 | 0.017065 | 0.045275 | -2.50123 | Down | atonal bHLH transcription factor 7 |
| CXCL3 | -1.330777415 | 0.001736 | 0.008867 | -3.38419 | Down | C-X-C motif chemokine ligand 3 |
| TCEAL2 | -1.329162032 | 2.26E-05 | 0.000588 | -4.8665 | Down | transcription elongation factor A like 2 |
| ALDH1L1-AS1 | -1.32788233 | 0.000679 | 0.004714 | -3.7189 | Down | ALDH1L1 antisense RNA 1 |
| SLC26A7 | -1.32309366 | 9.51E-05 | 0.00139 | -4.39044 | Down | solute carrier family 26 member 7 |
| CYP2C8 | -1.317744251 | 0.000385 | 0.003288 | -3.91645 | Down | cytochrome P450 family 2 subfamily C member 8 |
| LINC00645 | -1.317115448 | 4.76E-05 | 0.000926 | -4.62111 | Down | long intergenic non-protein coding RNA 645 |
| OLR1 | -1.315145688 | 4.1E-06 | 0.00022 | -5.4239 | Down | oxidized low density lipoprotein receptor 1 |
| NTNG1 | -1.313556498 | 0.0038 | 0.015206 | -3.09475 | Down | netrin G1 |
| MROH5 | -1.311546405 | 0.001098 | 0.006437 | -3.549 | Down | maestro heat like repeat family member 5 (gene/pseudogene) |
| SNORA63 | -1.309234838 | 5.18E-05 | 0.000974 | -4.59258 | Down | small nucleolar RNA, H/ACA box 63 |
| C1QL1 | -1.308178806 | 0.010298 | 0.031187 | -2.70779 | Down | complement C1q like 1 |
| SLC8A1-AS1 | -1.305938873 | 2.03E-05 | 0.000552 | -4.90087 | Down | SLC8A1 antisense RNA 1 |
| TREM1 | -1.304718012 | 0.016142 | 0.043381 | -2.52439 | Down | triggering receptor expressed on myeloid cells 1 |
| FOXI2 | -1.304685736 | 0.003445 | 0.014249 | -3.13157 | Down | forkhead box I2 |
| PVALB | -1.304363429 | 0.002758 | 0.012155 | -3.21449 | Down | parvalbumin |
| LOC101927318 | -1.303237273 | 0.00023 | 0.00241 | -4.09201 | Down | uncharacterized LOC101927318 |
| GABRA2 | -1.295486714 | 0.000679 | 0.004714 | -3.71874 | Down | gamma-aminobutyric acid type A receptor alpha2 subunit |
| TMEM52B | -1.29520852 | 0.000201 | 0.002215 | -4.13894 | Down | transmembrane protein 52B |
| ATP6V0D2 | -1.292251566 | 0.000684 | 0.004733 | -3.71608 | Down | ATPase H+ transporting V0 subunit d2 |
| ATP6V1G3 | -1.291903527 | 0.000874 | 0.005538 | -3.62997 | Down | ATPase H+ transporting V1 subunit G3 |
| CSRNP1 | -1.290344053 | 1.7E-08 | 7.67E-06 | -7.21996 | Down | cysteine and serine rich nuclear protein 1 |
| LINC01450 | -1.289799129 | 0.000668 | 0.004664 | -3.72476 | Down | long intergenic non-protein coding RNA 1450 |
| SLC4A1 | -1.289449946 | 0.004603 | 0.01736 | -3.02212 | Down | solute carrier family 4 member 1 (Diego blood group) |
| LOC101060553 | -1.28899537 | 0.000157 | 0.001908 | -4.22131 | Down | uncharacterized LOC101060553 |
| MIR3183 | -1.288700614 | 0.005356 | 0.01932 | -2.96417 | Down | microRNA 3183 |
| GPC5 | -1.288623288 | 0.014826 | 0.040723 | -2.5596 | Down | glypican 5 |
| MME | -1.288378854 | 0.000993 | 0.006035 | -3.58459 | Down | membrane metalloendopeptidase |
| ACOT12 | -1.286412523 | 0.000889 | 0.005604 | -3.62385 | Down | acyl-CoA thioesterase 12 |
| MGAM2 | -1.285372755 | 2.29E-05 | 0.000592 | -4.86206 | Down | maltase-glucoamylase 2 (putative) |
| BPI | -1.283621874 | 0.016984 | 0.045107 | -2.50323 | Down | bactericidal permeability increasing protein |
| PTPRO | -1.283576103 | 0.001941 | 0.009605 | -3.3436 | Down | protein tyrosine phosphatase receptor type O |
| RGS7 | -1.280998045 | 0.002118 | 0.01016 | -3.31169 | Down | regulator of G protein signaling 7 |
| COL6A4P2 | -1.280622568 | 0.00095 | 0.005853 | -3.60062 | Down | collagen type VI alpha 4 pseudogene 2 |
| F2RL3 | -1.279685417 | 0.00089 | 0.005607 | -3.62345 | Down | F2R like thrombin or trypsin receptor 3 |
| CYP3A4 | -1.279617141 | 0.000116 | 0.00159 | -4.3231 | Down | cytochrome P450 family 3 subfamily A member 4 |
| LINC00970 | -1.275581109 | 0.001008 | 0.006094 | -3.57936 | Down | long intergenic non-protein coding RNA 970 |
| CACNB4 | -1.275043635 | 2.68E-05 | 0.000654 | -4.81055 | Down | calcium voltage-gated channel auxiliary subunit beta 4 |
| CALCR | -1.275036739 | 4.23E-05 | 0.000865 | -4.65987 | Down | calcitonin receptor |
| LSMEM1 | -1.274783777 | 2.29E-07 | 3.81E-05 | -6.3619 | Down | leucine rich single-pass membrane protein 1 |
| UGT2B7 | -1.273593035 | 0.001156 | 0.006683 | -3.53073 | Down | UDP glucuronosyltransferase family 2 member B7 |
| MTTP | -1.271212874 | 0.00091 | 0.005672 | -3.61577 | Down | microsomal triglyceride transfer protein |
| CYP4A11 | -1.269785869 | 0.000883 | 0.005577 | -3.62621 | Down | cytochrome P450 family 4 subfamily A member 11 |
| CHRM3-AS2 | -1.269628975 | 9.73E-05 | 0.001413 | -4.38283 | Down | CHRM3 antisense RNA 2 |
| DMRT2 | -1.266816699 | 4.09E-05 | 0.000847 | -4.67098 | Down | doublesex and mab-3 related transcription factor 2 |
| RGS16 | -1.26587407 | 4.23E-06 | 0.000223 | -5.41333 | Down | regulator of G protein signaling 16 |
| STPG3-AS1 | -1.264596788 | 0.000381 | 0.00326 | -3.92013 | Down | STPG3 antisense RNA 1 |
| ADAMTS17 | -1.264266059 | 7.2E-05 | 0.001176 | -4.48351 | Down | ADAM metallopeptidase with thrombospondin type 1 motif 17 |
| STRA6 | -1.262382386 | 0.010303 | 0.031193 | -2.70757 | Down | stimulated by retinoic acid 6 |
| IFIT1B | -1.261998139 | 0.000918 | 0.005705 | -3.61259 | Down | interferon induced protein with tetratricopeptide repeats 1B |
| LINC00482 | -1.261995523 | 0.006582 | 0.022517 | -2.88453 | Down | long intergenic non-protein coding RNA 482 |
| PPP2R2C | -1.261940465 | 0.003244 | 0.013629 | -3.15411 | Down | protein phosphatase 2 regulatory subunit Bgamma |
| STPG3 | -1.261181245 | 0.000552 | 0.00415 | -3.79133 | Down | sperm-tail PG-rich repeat containing 3 |
| ZYG11A | -1.260941533 | 0.00695 | 0.023444 | -2.86332 | Down | zyg-11 family member A, cell cycle regulator |
| CDC20B | -1.259551185 | 0.009685 | 0.029778 | -2.73233 | Down | cell division cycle 20B |
| ZNF732 | -1.258545333 | 0.002227 | 0.010535 | -3.29339 | Down | zinc finger protein 732 |
| XPNPEP2 | -1.251978507 | 0.000984 | 0.006001 | -3.58806 | Down | X-prolylaminopeptidase 2 |
| NUGGC | -1.251480291 | 0.000372 | 0.003217 | -3.92756 | Down | nuclear GTPase, germinal center associated |
| UCN3 | -1.250096089 | 0.004835 | 0.017961 | -3.00339 | Down | urocortin 3 |
| MUC5B | -1.248150313 | 0.001809 | 0.009105 | -3.36931 | Down | mucin 5B, oligomeric mucus/gel-forming |
| FAM151A | -1.247526187 | 0.011061 | 0.032948 | -2.67903 | Down | family with sequence similarity 151 member A |
| LOC101928911 | -1.247448929 | 0.003556 | 0.014541 | -3.11966 | Down | uncharacterized LOC101928911 |
| F3 | -1.245936124 | 0.000125 | 0.001663 | -4.29908 | Down | coagulation factor III, tissue factor |

**Table 2** The enriched GO terms of the up and down regulated differentially expressed genes

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GO ID** | **CATEGORY** | **GO Name** | **p Value** | **FDR B&H** | **FDR B&Y** | **Bonferroni** | **Gene Count** | **Gene** |
| **Up regulated genes** | | | | | | | | |
| GO:0001775 | BP | cell activation | 9.81E-44 | 3.95E-40 | 3.51E-39 | 3.95E-40 | 98 | SERPINA3,CD244,TNFSF14,MZB1,ABCA13,IRF4,IKZF1,TNFRSF18,MDK,ITGAD,UBASH3A,ITGAL,SIT1,JAML,IGLL5,TESPA1,CD209,LAX1,PLAC8,SIRPG,EOMES,CD84,CCR2,TYROBP,CFD,SAA1,ADRA2A,FCRL1,FCRL3,FCER1A,MS4A2,FCGR2B,SASH3,BTK,GRAP2,C1QA,C3,SLA2,CCL19,CCL21,ALOX5,CNR2,RAC2,COL1A1,COL1A2,FOXJ1,COL3A1,DOCK2,IKZF3,THEMIS,CARMIL2,COMP,BATF,WNT7A,LAIR1,ARHGAP9,LCK,LCN2,LCP1,SLAMF1,CD1C,RHOH,CORO1A,MIR142,CD1D,CD2,CD3D,CD3E,CD3G,CD6,CD7,CD8A,PIK3R6,TIGIT,CD19,MS4A1,TIMP1,CD33,PYCARD,SLPI,CD48,CD53,PRKCB,CD79A,CD79B,CARD11,LTF,SLAMF7,LY9,CD180,FUT7,LYZ,CTSG,IL2RB,IL2RG,CLEC4C,TREML2,NCKAP1L |
| GO:0002682 | BP | regulation of immune system process | 2.49E-36 | 3.34E-33 | 2.96E-32 | 1.00E-32 | 95 | MYO1G,CFHR1,CD244,TNFSF14,MZB1,REG3G,GPR55,IRF4,IKZF1,TNFRSF18,MDK,UBASH3A,ITGAL,SIT1,JAML,IGLL5,TESPA1,CD209,LAX1,SIRPG,BLK,CD84,CCR2,ZBP1,TYROBP,CFD,FCRL3,FCER1A,MS4A2,FCER2,TRAT1,FCGR2B,SASH3,BTK,GRAP2,XCL2,C1QA,C1QC,C1R,C1S,C3,SLA2,CCL19,CCL21,CLEC10A,CNR2,RAC2,COL1A1,COL1A2,FOXJ1,COL3A1,CXCR3,IKZF3,THEMIS,CARMIL2,LAIR1,LCK,SLAMF1,CD200R1,TLR10,CD1C,CORO1A,MIR142,CD1D,CD1E,CD2,CD3D,CD3E,CD3G,CD247,CD5L,CD6,CD8A,PIK3R6,TIGIT,CD19,MS4A1,CD33,PYCARD,CD48,PRKCB,CD79A,CD79B,CARD11,PAX5,GREM1,LTF,SLAMF7,SH2D1A,CTSG,IL2RG,CLEC4C,TREML2,LILRA4,NCKAP1L |
| GO:0009986 | CC | cell surface | 4.78E-24 | 1.92E-21 | 1.26E-20 | 1.92E-21 | 60 | FCRL2,CRLF1,CD244,TNFRSF18,ITGAD,ITGAL,IGLL5,ITGB6,CD209,ADCYAP1R1,CCR2,TYROBP,ITGBL1,FAP,FCRL1,FCRL3,FCER1A,MS4A2,FCER2,FCGR2B,NTM,C3,CCR5,MMP7,ISLR2,CXCR3,WNT7A,WNT7B,SLAMF1,CD200R1,CD1C,CD1D,CD1E,CD2,CD3D,CD3E,CD3G,CD5L,CD6,CD8A,TIGIT,CD19,MS4A1,SCARA5,CD33,VCAN,CD48,CD53,CD79A,CD79B,GREM1,LTF,FCRL5,SLAMF7,LY9,CTSG,IL2RB,IL2RG,TREML2,FCMR |
| GO:0031226 | CC | intrinsic component of plasma membrane | 9.46E-11 | 6.34E-09 | 4.17E-08 | 3.80E-08 | 56 | CADM3,CD52,APCDD1,GPR55,TNFRSF18,ITGAD,ITGAL,SIT1,TMC3,ITGB6,ADCYAP1R1,CD84,CCR2,TYROBP,ITGBL1,ADRA2A,KCNA3,FCER1A,MS4A2,FCER2,TRAT1,FCGR2B,TMC8,KCNS1,CCR5,CNR2,CXCR3,CP,RET,NCMAP,TLR10,KCNV1,CD1C,CD1D,CD1E,CD2,CD3E,CD3G,CD6,CD8A,P2RX5,CD19,MS4A1,SCARA5,CD33,SIGLEC6,PLXNA4,CD48,CD53,CD79B,HAS2,IL2RB,IL2RG,S1PR4,LILRA4,NCKAP1L |
| GO:0005102 | MF | signaling receptor binding | 2.49E-09 | 1.46E-06 | 1.01E-05 | 1.46E-06 | 55 | GDF5,CRLF1,CD244,TNFSF14,MDK,JAML,IGLL5,ITGB6,TESPA1,FABP4,BLK,CCR2,TYROBP,ERFE,TUBB3,ITGBL1,FAP,SAA1,ADRA2A,FCER2,TRAT1,PPP1R1B,XCL2,TMC8,C3,CCL13,JAKMIP1,CCL19,CCL21,PNOC,COL3A1,DOCK2,COL5A1,SFRP2,COMP,WNT7A,WNT7B,REG1A,LCK,LCP1,CD1D,CD2,CD3E,CD3G,CD8A,TIGIT,MS4A1,TIMP1,PYCARD,JCHAIN,WNT10A,PRKCB,GREM1,MIR27B,LILRA4 |
| GO:0042802 | MF | identical protein binding | 1.11E-05 | 5.00E-04 | 3.48E-03 | 6.50E-03 | 49 | CFHR1,CADM3,GDF5,TPSAB1,TNFSF14,APCDD1,MDFI,JAML,CD84,CCR2,ZBP1,TYROBP,ERFE,FAP,ADRA2A,BTK,C1S,COL1A1,COL1A2,IKZF3,REG1A,TDO2,LCK,LCN2,LCP1,SLAMF1,TLR10,TBX18,SYT16,CORO1A,CD2,CD3D,CD3E,CD3G,CD247,CD6,ALX1,CD8A,TIGIT,PYCARD,JCHAIN,GZMA,GLIPR2,CD79A,CD79B,GREM1,HAS2,SLAMF7,LYZ |
| **Down regulated genes** | | | | | | | | |
| GO:0009725 | BP | response to hormone | 1.08E-08 | 1.59E-05 | 1.41E-04 | 4.43E-05 | 33 | PDK4,CYP27B1,PER1,NR4A1,JUN,JUNB,ATP6V1G3,BTG2,HPGD,ATP6V0D2,NR0B2,TRIM72,CALCR,GDF15,FOS,FOSB,DUSP1,NR4A2,WT1,NR4A3,APOB,APOC3,ZFP36,IGF2,IGFBP1,EGR1,EGR2,ERRFI1,UCN3,IHH,CTSV,PCK1,IL6 |
| GO:0006811 | BP | ion transport | 2.72E-06 | 6.96E-04 | 6.19E-03 | 1.11E-02 | 42 | TRPM6,CYP4A11,SLC6A17,SLC26A4,CYP27B1,PER1,CBARP,HCN2,PTGER3,MRLN,SLC36A2,ATP6V1G3,SCN1A,ARC,HRG,CCL3,ATP6V0D2,STRA6,RHCG,DPP6,PLCZ1,CACNB4,CALCR,F2RL3,PM20D1,ABCC11,GRIA2,CYP4F2,APOC3,KCNG3,SYT10,RGS7,SLC4A1,EGF,SLC12A3,SLC26A7,SLC10A5,CHP2,SLC28A2,MTTP,G6PC,GABRA2 |
| GO:0005887 | CC | integral component of plasma membrane | 2.15E-04 | 2.45E-02 | 1.59E-01 | 7.91E-02 | 33 | CEL,SLC6A17,SLC26A4,HCN2,PTGER3,GJA3,PLPPR4,PTPRO,SCN1A,PCDH15,GPC5,MME,STRA6,RHCG,NPHS1,GPR3,DPP6,CALCR,F2RL3,ABCC11,GRIA2,GPRC6A,KCNG3,OLR1,SLC2A3,SLC4A1,SLC12A3,SLC26A7,SLC28A2,FOLH1B,IL6,HCRTR2,GABRA2 |
| GO:0000790 | CC | nuclear chromatin | 2.99E-02 | 1.71E-01 | 1.00E+00 | 1.00E+00 | 28 | SALL3,ATOH7,HELT,DDN,NR4A1,CSRNP1,JUN,JUNB,BTG2,MAFF,CREB3L3,NR0B2,FOXF1,FOS,FOSB,NR4A2,WT1,NR4A3,DMRT2,EGR1,EGR2,ZNF732,EGR3,LMX1B,FOXI2,ATF3,ZNF99,OLIG2 |
| GO:0008289 | MF | lipid binding | 4.64E-05 | 6.47E-03 | 4.61E-02 | 3.24E-02 | 22 | CEL,CYP3A4,GC,F3,BPI,APOLD1,UGT2B7,ALB,MME,STRA6,TRIM72,PLCZ1,CALB1,CYP26B1,APOB,APOC3,APOH,CRABP1,SYT10,ACOT12,MTTP,MIR27A |
| GO:0005215 | MF | transporter activity | 5.91E-04 | 2.01E-02 | 1.43E-01 | 4.13E-01 | 30 | TRPM6,SLC6A17,SLC26A4,GC,CBARP,HCN2,MRLN,SLC36A2,GJA3,ATP6V1G3,SCN1A,ARC,ATP6V0D2,STRA6,RHCG,DPP6,CACNB4,PM20D1,ABCC11,GRIA2,APOB,KCNG3,SLC2A3,SLC4A1,SLC12A3,SLC26A7,SLC10A5,SLC28A2,MTTP,GABRA2 |

Biological Process(BP), Cellular Component(CC) and Molecular Functions (MF)

**Table 3** The enriched pathway terms of the up and down regulated differentially expressed genes

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pathway ID** | **Pathway Name** | **p-value** | **FDR B&H** | **FDR B&Y** | **Bonferroni** | | **Gene Count** | **Gene** |
| **Up regulated genes** | | | | | | | | |
| 1269201 | Immunoregulatory interactions between a Lymphoid and a non-Lymphoid cell | 2.98E-16 | 1.12E-13 | 7.31E-13 | 1.12E-13 | | 21 | ITGAL,JAML,TYROBP,FCGR2B,C3,LAIR1,CD200R1,CD1C,CD1D,CD3D,CD3E,CD3G,CD247,CD8A,CD19,CD33,SIGLEC6,SLAMF7,SH2D1A,TREML2,LILRA4 |
| 1269203 | Innate Immune System | 1.37E-09 | 2.59E-07 | 1.68E-06 | 5.17E-07 | | 47 | SERPINA3,ABCA13,REG3G,ITGAL,CD209,PLAC8,CCR2,ZBP1,TYROBP,CFD,SAA1,FCER1A,MS4A2,TRAT1,BTK,GRAP2,C1QA,C1QC,C1R,C1S,C3,CLEC10A,ALOX5,DOCK2,LAIR1,ARHGAP9,RET,LCK,LCN2,TLR10,CD3G,CD247,CD19,CD33,PYCARD,GZMM,SLPI,CD53,CARD11,LTF,CD180,LYZ,CTSG,IL2RB,IL2RG,CLEC4C,NCKAP1L |
| 1270244 | Extracellular matrix organization | 8.51E-09 | 1.07E-06 | 6.97E-06 | 3.21E-06 | | 20 | GDF5,TPSAB1,COL6A5,ITGAD,ITGAL,ITGB6,COL14A1,MMP7,COL1A1,COL1A2,COL3A1,COL5A1,COL6A3,COMP,TNC,CAPN6,LAMC2,TIMP1,VCAN,CTSG |
| 1269171 | Adaptive Immune System | 1.77E-07 | 1.56E-05 | 1.02E-04 | 6.69E-05 | | 32 | ITGAL,JAML,CD209,BLK,TYROBP,TRAT1,FCGR2B,BTK,GRAP2,C3,LAIR1,LCK,CD200R1,CD1C,CD1D,CD3D,CD3E,CD3G,CD247,CD8A,CD19,CD33,SIGLEC6,DAPP1,PRKCB,CD79A,CD79B,CARD11,SLAMF7,SH2D1A,TREML2,LILRA4 |
| 1269340 | Hemostasis | 1.10E-04 | 1.66E-03 | 1.08E-02 | 4.15E-02 | | 22 | SERPINA3,CD244,ITGAL,JAML,SIRPG,CD84,CFD,ADRA2A,RAC2,DOCK2,LCK,MMRN1,CD2,PIK3R6,P2RX5,TIMP1,JCHAIN,CD48,TMSB4X,PRKCB,IL2RB,IL2RG |
| 1269543 | Signaling by GPCR | 2.62E-02 | 1.67E-01 | 1.00E+00 | 1.00E+00 | | 28 | GPR55,ADCYAP1R1,CCR2,SAA1,ADRA2A,PPP1R1B,XCL2,C3,CCR5,PLCB2,CCL13,CCL19,CCL21,CNR2,PNOC,RAC2,CXCR3,FGD2,WNT7A,WNT7B,RET,PIK3R6,WNT10A,PRKCB,ACKR1,IL2RB,IL2RG,S1PR4 |
| **Down regulated genes** | | | | | | | | |
| 1270189 | Biological oxidations | 3.08E-03 | 8.30E-02 | 5.43E-01 | | 1.00E+00 | 9 | CYP3A7,CYP2C8,CYP3A4,CYP4A11,CYP27B1,UGT2B7,CYP26B1,CYP4F2,GSTA2 |
| 1269544 | GPCR ligand binding | 1.59E-02 | 1.78E-01 | 1.00E+00 | | 1.00E+00 | 12 | PYY,PTGER3,PTHLH,PLPPR4,CALCR,F2RL3,GPRC6A,CXCL2,CXCL3,UCN3,IHH,HCRTR2 |
| 1269903 | Transmembrane transport of small molecules | 3.20E-02 | 2.60E-01 | 1.00E+00 | | 1.00E+00 | 15 | TRPM6,SLC26A4,SLC36A2,ATP6V1G3,ALB,ATP6V0D2,RHCG,ABCC11,SLC2A3,SLC4A1,SLC12A3,SLC26A7,SLC28A2,G6PC,GABRA2 |
| 1269203 | Innate Immune System | 2.61E-01 | 5.48E-01 | 1.00E+00 | | 1.00E+00 | 20 | NR4A1,CHI3L1,JUN,ATP6V1G3,BPI,FCN2,ATP6V0D2,MME,HSPA1B,FOS,DUSP1,DUSP2,APOB,MUC5B,MUC13,OLR1,SLC2A3,EGF,TREM1,CTSV |
| 1269310 | Cytokine Signaling in Immune system | 5.39E-01 | 7.33E-01 | 1.00E+00 | | 1.00E+00 | 10 | JUNB,CCL3,FOS,DUSP1,DUSP2,CXCL2,OSM,EGF,EGR1,IL6 |
| 1268677 | Metabolism of proteins | 9.49E-01 | 9.74E-01 | 1.00E+00 | | 1.00E+00 | 15 | ADAMTS19,PROZ,ADAMTS17,MME,KLK1,CALB1,ADAMTS4,NTNG1,MUC5B,XPNPEP2,MUC13,RGS7,IGF2,IGFBP1,ATF3 |

**Table 4** Topology table for up and down regulated genes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Regulation** | **Node** | **Degree** | **Betweenness** | **Stress** | **Closeness** |
| Up | MDFI | 126 | 0.081127 | 4626488 | 0.320501 |
| Up | LCK | 98 | 0.049067 | 3562586 | 0.338404 |
| Up | BTK | 76 | 0.0377 | 3870178 | 0.332639 |
| Up | IRF4 | 60 | 0.027138 | 2609572 | 0.323596 |
| Up | PRKCB | 53 | 0.026509 | 1721842 | 0.327185 |
| Up | MAP1LC3C | 53 | 0.031813 | 3672518 | 0.253337 |
| Up | IKZF1 | 40 | 0.013119 | 1148684 | 0.316945 |
| Up | COL1A1 | 36 | 0.015 | 1185640 | 0.317687 |
| Up | MYBL2 | 36 | 0.015958 | 3954828 | 0.26938 |
| Up | IL2RB | 33 | 0.012158 | 1042652 | 0.355189 |
| Up | RET | 33 | 0.015085 | 724266 | 0.347592 |
| Up | MYBPC2 | 33 | 0.017333 | 1527886 | 0.265558 |
| Up | CD247 | 32 | 0.008437 | 463450 | 0.324758 |
| Up | CCR5 | 31 | 0.014884 | 473626 | 0.318919 |
| Up | GRAP2 | 30 | 0.013154 | 639080 | 0.322022 |
| Up | C3 | 28 | 0.013842 | 992764 | 0.301087 |
| Up | CD3E | 28 | 0.010192 | 547816 | 0.321298 |
| Up | PYCARD | 28 | 0.01139 | 1029436 | 0.314084 |
| Up | SH2D1A | 27 | 0.011524 | 522998 | 0.323018 |
| Up | COL1A2 | 26 | 0.009445 | 611534 | 0.347414 |
| Up | RAC2 | 24 | 0.009511 | 633510 | 0.295675 |
| Up | STMN2 | 24 | 0.014359 | 649404 | 0.307814 |
| Up | CARD11 | 23 | 0.006165 | 483588 | 0.313902 |
| Up | CCND2 | 23 | 0.008353 | 708408 | 0.312241 |
| Up | LYZ | 23 | 0.007853 | 530116 | 0.313467 |
| Up | TMSB4X | 23 | 0.008343 | 714442 | 0.311489 |
| Up | C1QA | 23 | 0.007755 | 632982 | 0.265896 |
| Up | GZMA | 21 | 0.007666 | 963298 | 0.270211 |
| Up | IL2RG | 20 | 0.006062 | 572776 | 0.316797 |
| Up | BATF | 20 | 0.003837 | 254330 | 0.296159 |
| Up | IKZF3 | 19 | 0.005698 | 330676 | 0.316538 |
| Up | LTF | 18 | 0.005184 | 456248 | 0.314157 |
| Up | VCAN | 18 | 0.010548 | 416498 | 0.310101 |
| Up | NLRP2 | 18 | 0.006264 | 463220 | 0.314229 |
| Up | CD8A | 18 | 0.006354 | 251874 | 0.312098 |
| Up | CD2 | 18 | 0.007228 | 336022 | 0.319783 |
| Up | CCL19 | 18 | 0.008406 | 553768 | 0.308024 |
| Up | SERPINA3 | 18 | 0.005921 | 300382 | 0.28937 |
| Up | CD19 | 17 | 0.003157 | 178500 | 0.277903 |
| Up | CORO1A | 16 | 0.007864 | 466092 | 0.307745 |
| Up | PAX5 | 15 | 0.001643 | 214276 | 0.280981 |
| Up | ALOX5 | 15 | 0.006677 | 252578 | 0.291389 |
| Up | ITGAL | 13 | 0.004138 | 316950 | 0.296224 |
| Up | CD33 | 13 | 0.002699 | 232514 | 0.308339 |
| Up | LCP1 | 13 | 0.003931 | 209294 | 0.312133 |
| Up | CD3D | 13 | 0.003786 | 223312 | 0.303071 |
| Up | FCER2 | 13 | 0.001408 | 68750 | 0.287378 |
| Up | ADH1B | 13 | 0.001997 | 278048 | 0.267917 |
| Up | FCGR2B | 13 | 0.001497 | 99768 | 0.275477 |
| Up | ZBP1 | 13 | 0.006263 | 336046 | 0.236205 |
| Up | POU2AF1 | 13 | 0.00466 | 544860 | 0.257666 |
| Up | MDK | 13 | 0.001715 | 115114 | 0.241868 |
| Up | TIMP1 | 12 | 0.004283 | 282722 | 0.309288 |
| Up | CD79A | 12 | 0.003386 | 194644 | 0.312889 |
| Up | DOCK2 | 12 | 0.002561 | 173086 | 0.309711 |
| Up | TYROBP | 12 | 0.005247 | 100756 | 0.263905 |
| Up | BLK | 12 | 0.002074 | 70518 | 0.308444 |
| Up | GZMM | 12 | 0.002889 | 174370 | 0.255219 |
| Up | LCN2 | 12 | 0.002886 | 523816 | 0.277193 |
| Up | UBASH3A | 11 | 0.003708 | 227440 | 0.307153 |
| Up | KCNA3 | 11 | 0.004371 | 194618 | 0.308199 |
| Up | ACTG2 | 11 | 0.004953 | 290190 | 0.310065 |
| Up | CCR2 | 11 | 0.001733 | 114362 | 0.265194 |
| Up | CCL13 | 11 | 0.002461 | 173840 | 0.273203 |
| Up | CXCR3 | 11 | 0.002188 | 53478 | 0.267626 |
| Up | TLR10 | 11 | 0.004464 | 602972 | 0.258279 |
| Up | C1S | 11 | 0.002249 | 144728 | 0.275281 |
| Up | RHOH | 10 | 0.004278 | 206936 | 0.305562 |
| Up | FABP4 | 10 | 0.00375 | 501850 | 0.235223 |
| Up | MS4A1 | 10 | 0.002928 | 164812 | 0.273534 |
| Up | CTSG | 10 | 0.002772 | 309422 | 0.244725 |
| Up | CD1D | 10 | 0.001849 | 221730 | 0.271835 |
| Up | GZMK | 10 | 0.003194 | 227820 | 0.246817 |
| Up | MMP7 | 10 | 0.003289 | 319038 | 0.250785 |
| Up | LAMC2 | 9 | 0.002248 | 178286 | 0.294232 |
| Up | GDF5 | 9 | 0.004743 | 147730 | 0.297751 |
| Up | MS4A2 | 9 | 0.001598 | 98712 | 0.295482 |
| Up | TRAT1 | 9 | 0.001536 | 65702 | 0.283358 |
| Up | TNFSF14 | 9 | 0.003776 | 324884 | 0.250485 |
| Up | COL3A1 | 9 | 0.001928 | 209930 | 0.266758 |
| Up | CP | 8 | 0.00161 | 154734 | 0.309853 |
| Up | CD79B | 8 | 0.001281 | 129350 | 0.312637 |
| Up | SLA2 | 8 | 0.001527 | 63452 | 0.319031 |
| Up | PLCB2 | 8 | 0.002326 | 133780 | 0.291671 |
| Up | CCL21 | 8 | 0.001558 | 34922 | 0.25067 |
| Up | HOPX | 8 | 0.003087 | 329986 | 0.266131 |
| Up | FCER1A | 8 | 9.12E-04 | 166442 | 0.262832 |
| Up | FOXJ1 | 8 | 0.004461 | 382962 | 0.240198 |
| Up | MYO1G | 7 | 0.002723 | 207766 | 0.293437 |
| Up | NNMT | 7 | 0.001827 | 170236 | 0.311775 |
| Up | ARHGAP9 | 7 | 0.001543 | 144222 | 0.308865 |
| Up | TMSB10 | 7 | 0.002711 | 168816 | 0.307849 |
| Up | COL5A1 | 7 | 0.002057 | 126230 | 0.291702 |
| Up | SLPI | 7 | 0.001938 | 74680 | 0.313504 |
| Up | DEF6 | 7 | 0.001495 | 60774 | 0.272135 |
| Up | SLAMF1 | 7 | 0.001544 | 46456 | 0.253337 |
| Up | ITGAD | 7 | 0.001325 | 131106 | 0.256207 |
| Up | ITGB6 | 7 | 0.001305 | 148410 | 0.262806 |
| Up | CD6 | 7 | 0.001789 | 182212 | 0.235529 |
| Up | CD3G | 6 | 3.34E-04 | 82462 | 0.297882 |
| Up | COL14A1 | 6 | 0.001683 | 151804 | 0.311274 |
| Up | SIT1 | 6 | 3.89E-04 | 61954 | 0.302328 |
| Up | AGAP2 | 6 | 0.00305 | 177840 | 0.294584 |
| Up | TNC | 6 | 9.89E-04 | 103716 | 0.307884 |
| Up | C1R | 6 | 8.97E-04 | 61888 | 0.286287 |
| Up | CD48 | 6 | 0.001493 | 95870 | 0.254573 |
| Up | ADRA2A | 6 | 0.002307 | 272808 | 0.221587 |
| Up | SFRP2 | 6 | 0.001594 | 133652 | 0.242278 |
| Up | LSP1 | 6 | 0.001784 | 49576 | 0.262857 |
| Up | CD244 | 6 | 1.15E-04 | 8570 | 0.258525 |
| Up | C1QC | 6 | 3.27E-04 | 30566 | 0.242192 |
| Up | CD53 | 6 | 0.001414 | 42284 | 0.277704 |
| Up | CD7 | 6 | 0.002235 | 142468 | 0.229262 |
| Up | TNNI2 | 6 | 0.002231 | 446596 | 0.20216 |
| Up | HAS2 | 5 | 8.86E-04 | 97846 | 0.308129 |
| Up | LAIR1 | 5 | 5.65E-04 | 89664 | 0.309535 |
| Up | PTCRA | 5 | 0.001647 | 74304 | 0.305081 |
| Up | PLAC8 | 5 | 0.001118 | 152116 | 0.309676 |
| Up | CACNA1I | 5 | 0.001737 | 61034 | 0.260936 |
| Up | DAPP1 | 5 | 0.00157 | 90974 | 0.245589 |
| Up | SLAMF7 | 2 | 4.70E-04 | 26196 | 0.297751 |
| Up | CFD | 1 | 0 | 0 | 0.250762 |
| Up | CD1E | 1 | 0 | 0 | 0.290019 |
| Up | SPOCD1 | 1 | 0 | 0 | 0.290019 |
| Up | LAX1 | 1 | 0 | 0 | 0.243605 |
| Up | FUT7 | 1 | 0 | 0 | 0.205279 |
| Up | SIGLEC6 | 1 | 0 | 0 | 0.244175 |
| Up | LY9 | 1 | 0 | 0 | 0.244175 |
| Up | CD84 | 1 | 0 | 0 | 0.244175 |
| Down | EGR1 | 518 | 0.346078 | 18809168 | 0.408427 |
| Down | JUN | 279 | 0.159961 | 12725726 | 0.39231 |
| Down | FOS | 214 | 0.100405 | 11419052 | 0.358995 |
| Down | ALB | 153 | 0.093571 | 6530500 | 0.334649 |
| Down | NR4A1 | 107 | 0.060208 | 3796036 | 0.360234 |
| Down | MME | 78 | 0.048214 | 3408346 | 0.318171 |
| Down | PCK1 | 74 | 0.042709 | 3281894 | 0.327067 |
| Down | JUNB | 62 | 0.016234 | 1363814 | 0.345205 |
| Down | NR0B2 | 60 | 0.025162 | 3689286 | 0.320804 |
| Down | ATF3 | 54 | 0.015604 | 1820748 | 0.339802 |
| Down | APOB | 43 | 0.021016 | 1931192 | 0.319219 |
| Down | ZFP36 | 31 | 0.014411 | 625526 | 0.345732 |
| Down | DUSP1 | 30 | 0.009029 | 1225232 | 0.319069 |
| Down | NR4A2 | 30 | 0.009805 | 2286296 | 0.267891 |
| Down | PTPRO | 29 | 0.014397 | 497482 | 0.326045 |
| Down | IL6 | 24 | 0.005225 | 1052826 | 0.278645 |
| Down | EGR2 | 23 | 0.012011 | 387098 | 0.34311 |
| Down | WT1 | 21 | 0.011575 | 393586 | 0.31106 |
| Down | PPP2R2C | 20 | 0.009443 | 506060 | 0.30757 |
| Down | BTG2 | 20 | 0.008629 | 576654 | 0.307675 |
| Down | CYP3A4 | 20 | 0.004079 | 665634 | 0.284665 |
| Down | IGFBP1 | 18 | 0.005608 | 765806 | 0.272874 |
| Down | IGF2 | 17 | 0.007236 | 235938 | 0.265117 |
| Down | FOSB | 17 | 3.07E-04 | 41372 | 0.292048 |
| Down | EGF | 17 | 0.004174 | 437554 | 0.26858 |
| Down | GRIA2 | 17 | 0.008456 | 649690 | 0.233925 |
| Down | CREB3L3 | 15 | 0.005393 | 659206 | 0.251996 |
| Down | APOH | 15 | 0.004807 | 545564 | 0.285955 |
| Down | NPHS1 | 14 | 0.004565 | 192324 | 0.31713 |
| Down | APOC3 | 14 | 0.00416 | 339034 | 0.306355 |
| Down | PER1 | 14 | 0.005761 | 426854 | 0.307745 |
| Down | GADD45B | 13 | 0.005219 | 293026 | 0.34285 |
| Down | FBN3 | 13 | 0.003392 | 454688 | 0.249037 |
| Down | CYP2C8 | 13 | 0.006838 | 502454 | 0.266706 |
| Down | RGS7 | 13 | 0.004132 | 270892 | 0.279132 |
| Down | RGS16 | 13 | 0.003611 | 353032 | 0.265584 |
| Down | TCEAL2 | 12 | 0.005928 | 617496 | 0.300387 |
| Down | SERPINA4 | 12 | 0.004309 | 117754 | 0.288693 |
| Down | SLC4A1 | 12 | 0.004598 | 370504 | 0.260386 |
| Down | MUC5B | 11 | 0.003438 | 288486 | 0.31131 |
| Down | SLC12A3 | 11 | 0.003718 | 422430 | 0.2988 |
| Down | TRIM50 | 11 | 0.00539 | 372840 | 0.296191 |
| Down | MAFF | 11 | 0.003754 | 525420 | 0.259341 |
| Down | CR2 | 11 | 0.003169 | 123996 | 0.284159 |
| Down | CCL3 | 11 | 0.003547 | 299950 | 0.262476 |
| Down | ERRFI1 | 11 | 0.001688 | 168840 | 0.258206 |
| Down | PADI4 | 11 | 0.003394 | 454290 | 0.279938 |
| Down | GC | 11 | 0.002789 | 501786 | 0.247763 |
| Down | CXCL2 | 11 | 0.002319 | 457378 | 0.253124 |
| Down | CYP4F2 | 10 | 0.001747 | 352720 | 0.314849 |
| Down | DLGAP2 | 10 | 0.001402 | 167204 | 0.260736 |
| Down | PTHLH | 10 | 0.002321 | 597498 | 0.266392 |
| Down | HRG | 10 | 0.003161 | 259838 | 0.256183 |
| Down | CALCR | 9 | 0.002726 | 106854 | 0.24977 |
| Down | GAD1 | 9 | 0.00311 | 125432 | 0.292268 |
| Down | CYP3A7 | 9 | 7.31E-04 | 191768 | 0.261313 |
| Down | NPTX1 | 8 | 0.003355 | 208936 | 0.306805 |
| Down | HCN2 | 8 | 0.002634 | 200100 | 0.309605 |
| Down | F3 | 8 | 0.003397 | 285948 | 0.344242 |
| Down | G6PC | 8 | 0.001799 | 153308 | 0.259837 |
| Down | CHI3L1 | 8 | 4.74E-04 | 71766 | 0.272517 |
| Down | PDK4 | 7 | 0.002275 | 302962 | 0.299261 |
| Down | ADAMTS4 | 7 | 0.002892 | 176694 | 0.296774 |
| Down | OSM | 7 | 0.002442 | 102416 | 0.307501 |
| Down | EGR3 | 7 | 4.62E-05 | 6350 | 0.304602 |
| Down | CALB1 | 7 | 0.001944 | 134650 | 0.263214 |
| Down | CACNB4 | 6 | 0.002954 | 196342 | 0.241309 |
| Down | RASD1 | 6 | 9.38E-04 | 91222 | 0.240646 |
| Down | LMX1B | 6 | 0.003032 | 239712 | 0.245678 |
| Down | NR4A3 | 6 | 0.001544 | 157300 | 0.240987 |
| Down | RGS1 | 6 | 0.001758 | 120298 | 0.259465 |
| Down | CHP2 | 5 | 0.001549 | 114484 | 0.232105 |
| Down | ATP6V0D2 | 5 | 0.002223 | 127234 | 0.215277 |
| Down | FCN2 | 5 | 1.19E-04 | 18466 | 0.211124 |
| Down | LPA | 5 | 9.29E-04 | 39398 | 0.266157 |
| Down | SNTG1 | 4 | 0.001568 | 56468 | 0.304602 |
| Down | CA8 | 4 | 0.001168 | 70098 | 0.29117 |
| Down | TNS4 | 4 | 7.45E-04 | 60554 | 0.305803 |
| Down | SLC2A3 | 4 | 0.001604 | 126392 | 0.293374 |
| Down | GDF15 | 4 | 2.27E-04 | 48866 | 0.300022 |
| Down | SALL3 | 4 | 0.001568 | 56468 | 0.304602 |
| Down | MTTP | 4 | 6.37E-05 | 5962 | 0.284308 |
| Down | GPR3 | 4 | 0.00221 | 202422 | 0.22101 |
| Down | CXCL3 | 4 | 3.79E-04 | 68926 | 0.267442 |
| Down | OLR1 | 3 | 3.32E-04 | 58030 | 0.292867 |
| Down | DEPDC7 | 3 | 2.15E-04 | 16336 | 0.291108 |
| Down | GJA3 | 3 | 8.04E-04 | 39932 | 0.291108 |
| Down | MUC13 | 3 | 0.001474 | 66414 | 0.291108 |
| Down | DEPDC1B | 3 | 0.001474 | 66414 | 0.291108 |
| Down | HMGN5 | 3 | 8.11E-04 | 78088 | 0.292804 |
| Down | TREM1 | 3 | 0.002489 | 38934 | 0.292205 |
| Down | AKR1B10 | 3 | 7.58E-04 | 52706 | 0.224372 |
| Down | CSRNP1 | 3 | 1.53E-04 | 18490 | 0.224743 |
| Down | CYP4A11 | 3 | 7.98E-05 | 17838 | 0.208273 |
| Down | TRIM72 | 3 | 8.13E-04 | 66648 | 0.23153 |
| Down | GABRA2 | 3 | 2.46E-04 | 30422 | 0.239077 |
| Down | DDN | 3 | 7.42E-04 | 53814 | 0.219526 |
| Down | SCN1A | 3 | 7.81E-04 | 41474 | 0.19877 |
| Down | TRPM6 | 3 | 0.001474 | 38398 | 0.209107 |
| Down | IHH | 3 | 0.001474 | 99214 | 0.194608 |
| Down | CRABP1 | 3 | 0.001474 | 73906 | 0.229883 |
| Down | DUSP2 | 2 | 5.42E-05 | 35462 | 0.307048 |
| Down | ARC | 2 | 7.37E-04 | 33208 | 0.291046 |
| Down | CYP26B1 | 2 | 4.18E-05 | 3986 | 0.222404 |
| Down | KLK1 | 2 | 3.02E-05 | 1398 | 0.231887 |
| Down | MRO | 2 | 1.35E-05 | 4114 | 0.251227 |
| Down | UGT2B7 | 2 | 7.37E-04 | 49588 | 0.234147 |
| Down | CYP27B1 | 2 | 9.02E-06 | 544 | 0.249059 |
| Down | DPP6 | 2 | 1.75E-05 | 246 | 0.191181 |
| Down | IFIT1B | 2 | 7.37E-04 | 52672 | 0.174019 |
| Down | OLIG2 | 2 | 1 | 2 | 1 |
| Down | DMRT2 | 1 | 0 | 0 | 0.290983 |
| Down | CCDC144A | 1 | 0 | 0 | 0.290983 |
| Down | PLEKHD1 | 1 | 0 | 0 | 0.290983 |
| Down | RGPD3 | 1 | 0 | 0 | 0.290983 |
| Down | ZNF732 | 1 | 0 | 0 | 0.290983 |
| Down | FER1L6 | 1 | 0 | 0 | 0.290983 |
| Down | ZYG11A | 1 | 0 | 0 | 0.290983 |
| Down | STRA6 | 1 | 0 | 0 | 0.290983 |
| Down | SLC6A17 | 1 | 0 | 0 | 0.290983 |
| Down | ESM1 | 1 | 0 | 0 | 0.228547 |

**Table 5** miRNA - target gene and TF - target gene interaction

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regulation** | **Target Genes** | **Degree** | **MicroRNA** | **Regulation** | **Target Genes** | **Degree** | **TF** |
| Up | COL1A1 | 178 | hsa-mir-4492 | Up | IRF4 | 10 | NFATC2 |
| Up | IRF4 | 140 | hsa-mir-4319 | Up | LCK | 10 | YY1 |
| Up | MYBL2 | 83 | hsa-mir-637 | Up | RET | 10 | NR2C2 |
| Up | PRKCB | 81 | hsa-mir-1261 | Up | MAP1LC3C | 10 | MAX |
| Up | IL2RB | 54 | hsa-mir-4300 | Up | IL2RB | 8 | PDX1 |
| Up | CCR5 | 50 | hsa-mir-5193 | Up | GRAP2 | 8 | ELK1 |
| Up | GRAP2 | 41 | hsa-mir-3681-5p | Up | MYBPC2 | 7 | RELA |
| Up | MDFI | 41 | hsa-mir-4441 | Up | MDFI | 6 | TFAP2A |
| Up | RET | 17 | hsa-mir-129-2-3p | Up | MYBL2 | 6 | GATA2 |
| Up | IKZF1 | 16 | hsa-mir-3607-3p | Up | CD247 | 5 | SREBF1 |
| Up | BTK | 13 | hsa-mir-4667-3p | Up | COL1A1 | 5 | NFYA |
| Up | LCK | 6 | hsa-mir-210-3p | Up | PRKCB | 4 | IRF2 |
| Up | MYBPC2 | 6 | hsa-mir-214-3p | Up | IKZF1 | 4 | E2F6 |
| Up | CD247 | 4 | hsa-mir-346 | Up | BTK | 2 | SOX5 |
| Up | MAP1LC3C | 2 | hsa-mir-27a-3p | Up | CCR5 | 1 | EGR1 |
| Down | JUN | 144 | hsa-mir-3943 | Down | ATF3 | 19 | TP53 |
| Down | EGR1 | 132 | hsa-mir-548e-3p | Down | EGR1 | 16 | ARID3A |
| Down | ZFP36 | 130 | hsa-mir-6077 | Down | JUNB | 15 | SRF |
| Down | FOS | 105 | hsa-mir-5586-5p | Down | FOS | 13 | CREB1 |
| Down | DUSP1 | 97 | hsa-mir-4458 | Down | PTPRO | 12 | NR3C1 |
| Down | JUNB | 85 | hsa-mir-3065-5p | Down | NR0B2 | 11 | USF1 |
| Down | MME | 54 | hsa-mir-922 | Down | MME | 9 | BRCA1 |
| Down | NR4A2 | 50 | hsa-mir-29b-2-5p | Down | JUN | 9 | SP1 |
| Down | ATF3 | 48 | hsa-mir-5000-5p | Down | DUSP1 | 9 | STAT3 |
| Down | NR4A1 | 43 | hsa-mir-107 | Down | NR4A1 | 9 | HINFP |
| Down | PCK1 | 38 | hsa-mir-1185-1-3p | Down | NR4A2 | 7 | NR2E3 |
| Down | PTPRO | 18 | hsa-mir-203a-3p | Down | PCK1 | 6 | NR2F1 |
| Down | APOB | 17 | hsa-mir-548p | Down | ZFP36 | 5 | TFAP2C |
| Down | ALB | 10 | hsa-mir-492 | Down | APOB | 4 | FOXA1 |
| Down | NR0B2 | 5 | hsa-mir-141-3p | Down | ALB | 4 | STAT1 |

**Table 6** Docking results of Designed Molecules on PRKCB and IRF4

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sl. No/**  **Code** | **PRKCB** | | | **IRF4** | | |
| **PDB: 5T5T** | | | **PDB: 5UTZ** | | |
| **Total Score** | **Crash**  **(-Ve)** | **Polar** | **Total Score** | **Crash**  **(-Ve)** | **Polar** |
| SALISO 1 | 5.5445 | -1.1794 | 3.9363 | 4.794 | -0.6573 | 3.4413 |
| SALISO 2 | 5.8863 | -0.7798 | 3.5481 | 5.8485 | -0.7312 | 3.5735 |
| SALISO 3 | 5.9567 | -1.0918 | 4.2161 | 3.6433 | -1.0841 | 3.7939 |
| SALISO 4 | 7.1532 | -0.9317 | 3.3122 | 4.7708 | -0.6858 | 3.3551 |
| SALISO 5 | 5.6906 | -0.7047 | 3.2867 | 4.4588 | -1.0726 | 3.4431 |
| SALISO 6 | 7.0688 | -2.6743 | 1.2228 | 4.3935 | -1.0939 | 3.4747 |
| SALISO 7 | 7.051 | -3.6548 | 3.7226 | 4.3141 | -0.658 | 2.256 |
| SALISO 8 | 7.2553 | -1.5489 | 4.3825 | 5.5892 | -1.0797 | 4.5277 |
| SALISO 9 | 7.3826 | -1.8917 | 4.341 | 5.3944 | -0.8156 | 3.4332 |
| SALISO 10 | 6.1765 | -0.6977 | 3.3355 | 3.9139 | -0.8105 | 3.997 |
| SALISO 11 | 8.4376 | -2.3561 | 1.4867 | 4.5374 | -0.3426 | 4.1376 |
| SALISO 12 | 7.1617 | -0.7522 | 5.8871 | 4.5298 | -0.7002 | 4.2926 |
| SALISO 13 | 7.318 | -1.6711 | 4.0614 | 5.429 | -1.0383 | 3.4766 |
| SALISO 14 | 4.435 | -0.8234 | 4.8141 | 5.8412 | -0.6285 | 5.6131 |
| SALPYR 1 | 7.8092 | -2.196 | 5.023 | 5.0803 | -0.7158 | 2.6524 |
| SALPYR2 | 5.4244 | -0.7202 | 3.4914 | 5.4746 | -0.8053 | 3.4504 |
| SALPYR 3 | 6.7989 | -1.5612 | 3.9346 | 4.7668 | -0.9101 | 3.7189 |
| SALPYR4 | 7.1636 | -1.2217 | 3.1711 | 5.522 | -1.0182 | 3.4173 |
| SALPYR 5 | 5.0975 | -0.8822 | 3.5865 | 4.615 | -0.7074 | 3.8903 |
| SALPYR 6 | 6.8764 | -0.6679 | 3.9927 | 5.2014 | -0.6543 | 4.9789 |
| SALPYR7 | 4.3984 | -1.3786 | 1.1651 | 4.5637 | -0.814 | 3.0693 |
| SALPYR 8 | 5.6462 | -1.2585 | 2.0526 | 5.3895 | -1.0886 | 3.2605 |
| SALPYR 9 | 6.154 | -1.2203 | 3.5457 | 3.8517 | -1.318 | 2.814 |
| SALPYR 10 | 5.9006 | -0.6925 | 2.1022 | 5.0297 | -0.8125 | 4.0603 |
| SALPYR 11 | 7.9556 | -4.5678 | 3.7023 | 3.6004 | -1.1026 | 4.0888 |
| SALPYR 12 | 8.5183 | -1.7151 | 5.9476 | 4.2949 | -0.8607 | 5.3444 |
| SALPYR 13 | 8.0832 | -1.7905 | 5.0896 | 4.5395 | -1.1649 | 2.3493 |
| SALPYR 14 | 6.5767 | -1.7396 | 3.8294 | 4.1671 | -1.1498 | 3.3736 |
| BENZISO 1 | 5.1396 | -0.7199 | 2.8666 | 4.0095 | -1.1853 | 2.6069 |
| BENZISO 2 | 5.5432 | -1.3982 | 1.1569 | 3.6964 | -0.7067 | 1.1885 |
| BENZISO 3 | 5.8736 | -1.2604 | 3.2741 | 3.7138 | -1.017 | 2.9925 |
| BENZISO 4 | 7.2977 | -0.8984 | 2.5707 | 4.2224 | -1.1567 | 2.6208 |
| BENZISO 5 | 5.2565 | -0.8214 | 2.5632 | 3.5198 | -0.5993 | 1.105 |
| BENZISO 6 | 7.0398 | -2.6984 | 1.1772 | 3.669 | -0.7014 | 0.7581 |
| BENZISO 7 | 7.2423 | -2.7752 | 2.6782 | 3.5005 | -0.9622 | 2.5712 |
| BENZISO 8 | 6.2391 | -1.6409 | 2.4997 | 4.7586 | -0.818 | 3.5582 |
| BENZISO 9 | 5.7865 | -0.6423 | 2.5444 | 4.0093 | -0.7721 | 2.5953 |
| BENZO 10 | 5.7466 | -0.6821 | 2.5733 | 4.6671 | -1.4198 | 2.9359 |
| BENZO 11 | 6.936 | -4.186 | 1.1227 | 3.7826 | -1.6598 | 2.0955 |
| BENZISO 12 | 5.424 | -0.9828 | 2.8842 | 3.9289 | -1.131 | 3.7266 |
| BENZISO 13 | 6.2663 | -1.9264 | 3.1443 | 3.4955 | -0.6573 | 1.9391 |
| BENZISO 14 | 7.8092 | -2.196 | 5.023 | 5.0803 | -0.7158 | 2.6524 |
| BENZPYR 1 | 4.5881 | -2.781 | 2.4454 | 4.4135 | -0.9681 | 2.7603 |
| BENZPYR 2 | 4.4092 | -1.9089 | 2.6062 | 3.7914 | -1.0465 | 2.8848 |
| BENZPYR 3 | 6.7222 | -1.3693 | 2.9181 | 4.1328 | -0.6139 | 3.4942 |
| BENZPYR 4 | 6.9141 | -1.0242 | 2.4664 | 4.4869 | -1.011 | 2.7923 |
| BENZPYR 5 | 4.4581 | -2.5819 | 0.777 | 3.7439 | -0.6503 | 1.3743 |
| BENZPYR 6 | 6.9745 | -1.9294 | 1.1429 | 4.2747 | -1.1546 | 2.0198 |
| BENZPYR 7 | 4.5897 | -3.2147 | 1.1228 | 4.2845 | -0.8111 | 3.0895 |
| BENZPYR 8 | 5.064 | -1.6064 | 3.2299 | 4.3573 | -0.7754 | 2.2708 |
| BENZPYR 9 | 7.0058 | -1.8123 | 3.711 | 3.8234 | -0.451 | 2.7741 |
| BENZPYR 10 | 5.4378 | -1.2852 | 1.9408 | 4.5134 | -0.9789 | 2.947 |
| BENZPYR 11 | 7.0196 | -2.001 | 2.2518 | 4.4249 | -0.9679 | 1.3765 |
| BENZPYR 12 | 7.2718 | -1.1462 | 3.5197 | 4.1866 | -0.6746 | 4.1264 |
| BENZPYR 13 | 7.0502 | -1.5664 | 2.6306 | 4.6922 | -0.581 | 1.6714 |
| BENZPYR 14 | 5.7246 | -2.5576 | 2.9752 | 4.3649 | -0.7879 | 2.4391 |
| Standard Pregablin | 6.8321 | -1.3839 | 1.5645 | 4.1075 | -1.4414 | 2.1111 |