Differential levels of mRNAs in normal B lymphocytes, monoclonal B lymphocytosis and chronic lymphocytic leukemia cells from the same family identify susceptibility genes

Abdullah Alshahrani¹,², Kristen K Skarratt¹, Kristy P Robledo³, Maryam Hassanvand¹, Benjamin Tang¹, Stephen J Fuller¹*

1. Department of Medicine, Sydney Medical School Nepean, University of Sydney, Nepean Hospital, Penrith, NSW, 2750, Australia

2. College of Applied Medical Sciences, King Khalid University, Guraiger, Abha, 62529, Kingdom of Saudi Arabia

3. NHMRC Clinical Trials Centre, University of Sydney, Camperdown, NSW, 2006, Australia

Corresponding author:

*Associate Professor Stephen J. Fuller

Tel: +61 (02) 4734 3732

Fax: +61 (02) 4734 1819

E-mail: stephen.fuller@sydney.edu.au
Supplementary Material
Figure S1. Comparison of 7 mRNAs between NK-Controls, F-MBL, F-CLL and S-CLL cases.

Bi-weight average signal (log2) intensity for each of the 7 mRNAs between NK-Controls, F-MBL, F-CLL and S-CLL. Significances were determined using one-way ANOVA with Tukey’s post hoc test. P ≤ 0.05 are summarized with 1 asterisk, P ≤ 0.001 3 asterisks, and P ≤ 0.0001 4 asterisks. ns: P > 0.05.
Table S1. Primers used for qRT-PCR validation of gene expression microarray.

| Gene        | Primers                                      |
|-------------|----------------------------------------------|
| GRASP¹      | F: GCTCAGGATTCCGCTGGAAAGAA
             | R: AGGTCACCATTCCACACGCTG                    |
| GADPH²      | F: CGAGATCCCTCCAAAATCAAA                    |
|             | R: TTCACACCATGACGAACAT                      |

¹GRASP, general receptor for phosphoinositides 1-associated scaffold protein gene; ²GADPH, glyceraldehyde 3-phosphate dehydrogenase gene.
Table S2. mRNAs differentially abundant between F-Controls, F-MBL and F-CLL.

| Gene Symbol | F-Control mean log2 expression value | F-MBL mean log2 expression value | F-CLL mean log2 expression value | ANOVA p-value | FDR p-value |
|-------------|-------------------------------------|----------------------------------|---------------------------------|---------------|-------------|
| GRASP       | 11.13                               | 9.72                             | 6.72                            | 4.09E-07      | 0.027626    |
| LEF1        | 5.01                                | 10.35                            | 11.21                           | 0.000001      | 0.028039    |
| CI1orf80    | 9.94                                | 11.41                            | 11.83                           | 0.000002      | 0.028039    |
| ROR1        | 5.78                                | 10.38                            | 10.55                           | 0.000002      | 0.031811    |
| AC016745.3  | 7.05                                | 5.98                             | 5.68                            | 0.000004      | 0.036447    |
| METTL8      | 8.04                                | 10.51                            | 11.15                           | 0.000004      | 0.036447    |
| PARP3       | 6.67                                | 7.14                             | 6.94                            | 0.000004      | 0.036447    |
| RPL41       | 11.33                               | 11.32                            | 11.2                            | 0.000008      | 0.051492    |
| PTPRQ       | 4.16                                | 4.52                             | 4.81                            | 0.00001       | 0.051492    |
| FILIP1      | 4.22                                | 4.63                             | 5.18                            | 0.00001       | 0.051492    |
| ALG1P13P    | 5.44                                | 5.74                             | 6.47                            | 0.00001       | 0.051492    |
| ADTRP       | 5.4                                 | 6.26                             | 5.9                             | 0.000011      | 0.051492    |
| GALNT1      | 8.82                                | 8.41                             | 7.82                            | 0.000013      | 0.051492    |
| CD79A       | 14.97                               | 14.37                            | 13.87                           | 0.000013      | 0.051492    |
| PTPN22      | 13.34                               | 14.78                            | 15.78                           | 0.000013      | 0.051492    |
| RAB3GAP2    | 9.78                                | 10.17                            | 11.12                           | 0.000014      | 0.051492    |
| SLC25A6     | 9.99                                | 8.97                             | 8.43                            | 0.000014      | 0.051492    |
| SERINC5     | 6.49                                | 8.48                             | 9                               | 0.000016      | 0.052919    |
| IRAK1       | 7.6                                 | 6.94                             | 6.93                            | 0.000018      | 0.056781    |
| ENTPD6      | 6.47                                | 6.53                             | 6.83                            | 0.00002       | 0.061371    |
| CRTC3       | 9.55                                | 8.42                             | 8.25                            | 0.000027      | 0.070906    |
| INPP5F      | 7.39                                | 9.66                             | 10.89                           | 0.000027      | 0.070906    |
| PRAMEF20    | 3.48                                | 3.49                             | 3.76                            | 0.000037      | 0.079143    |
| Gene      | Rank1 | Rank2 | Rank3 | P   | FDR  |
|-----------|-------|-------|-------|-----|------|
| ROR1      | 5.69  | 9.82  | 9.54  | 0.000037 | 0.079143 |
| TBX2      | 3.12  | 3.13  | 3.48  | 0.000038 | 0.079143 |
| PPM1M     | 7.24  | 7.63  | 7.99  | 0.000049 | 0.097227 |
| ABCA6     | 6.44  | 12.41 | 12.48 | 0.000053 | 0.097227 |
| SUB1      | 8.42  | 8.08  | 7.75  | 0.000053 | 0.097227 |
| PPP3CA    | 13.18 | 11.8  | 11.68 | 0.000055 | 0.097227 |
| RP11-200A1.1 | 3.87 | 3.91  | 4.42  | 0.000056 | 0.097227 |
| TESC      | 6.03  | 9.23  | 8.91  | 0.000058 | 0.097227 |
| POU5F1    | 4.95  | 5.26  | 5.25  | 0.000061 | 0.098224 |
| UBE2G2    | 7.46  | 7.35  | 7.06  | 0.000067 | 0.098224 |
| ZYG11A    | 3.79  | 3.6   | 4.46  | 0.000068 | 0.098224 |
| NIFK      | 10.66 | 10.03 | 9.36  | 0.000068 | 0.098224 |
| SMPD2     | 9.5   | 8.5   | 8.6   | 0.000069 | 0.098224 |
| XKRX      | 4.57  | 6.44  | 6.74  | 0.000069 | 0.098224 |
| CD5       | 4.88  | 8.66  | 9.48  | 0.000074 | 0.098224 |
| ALOX15P1  | 6.69  | 7.59  | 7.95  | 0.000076 | 0.098224 |
| LINC01057 | 3.89  | 3.97  | 4.2   | 0.000076 | 0.098224 |
| SMAD3     | 8.11  | 6.26  | 5.1   | 0.000079 | 0.099282 |
| CLNK      | 4.64  | 9.48  | 10.37 | 0.000083 | 0.099917 |
| BEX1      | 4.81  | 4.95  | 4.51  | 0.000084 | 0.099917 |
| FBXO18    | 8.77  | 9.25  | 9.85  | 0.000086 | 0.099917 |
| SLC7A10   | 3.69  | 3.83  | 3.91  | 0.000089 | 0.099917 |
| LOC440300 | 4.36  | 4.41  | 4.82  | 0.000089 | 0.099917 |
| SNORD115-23 | 3.59 | 3.68  | 3.81  | 0.000094 | 0.099917 |
| MIR1295A  | 2.6   | 3.25  | 3.86  | 0.000095 | 0.099917 |
| LALBA     | 3.41  | 3.72  | 3.84  | 0.000096 | 0.099917 |
| LOC285812 | 9.15  | 8.78  | 10.72 | 0.000096 | 0.099917 |
| PTPN22    | 11.52 | 12.75 | 13.4  | 0.000099 | 0.099917 |
| CARS2     | 7.81  | 7.97  | 8.37  | 0.0001   | 0.099917 |
| Gene      | Log2FoldChange | p-value | z-score | FDR         | q-value     |
|-----------|----------------|---------|---------|--------------|-------------|
| ARRDC2    | 7.75           | 0.000101| 0.099917|              |             |
| TSPYL5    | 7.67           | 0.000101| 0.099917|              |             |
| DIP2C     | 5.18           | 0.000105| 0.099917|              |             |
| ATP5L     | 10.19          | 0.000112| 0.099917|              |             |
| ZNF341    | 5.33           | 0.000117| 0.099917|              |             |
| MST1P2    | 4.95           | 0.000119| 0.099917|              |             |
| COL3A1    | 4.66           | 0.000119| 0.099917|              |             |
| PITPNM2   | 5.79           | 0.000119| 0.099917|              |             |
| TMEM156   | 9.58           | 0.000121| 0.099917|              |             |
| NSMAF     | 8.34           | 0.000123| 0.099917|              |             |
| LAG3      | 3.94           | 0.000126| 0.099917|              |             |
| LINC00505 | 3.65           | 0.00013  | 0.099917|              |             |
| BHLHE41   | 7.77           | 0.00013  | 0.099917|              |             |
| TFDP1     | 7.87           | 0.00013  | 0.099917|              |             |
| LRRC16B   | 4.67           | 0.000137 | 0.099917|              |             |
| DDR1      | 5.52           | 0.000137 | 0.099917|              |             |
| EHM2T2    | 6.93           | 0.000138 | 0.099917|              |             |
| TUBG2     | 6.06           | 0.000138 | 0.099917|              |             |
| EHM2T2    | 6.98           | 0.000138 | 0.099917|              |             |
| EHM2T2    | 6.98           | 0.000138 | 0.099917|              |             |
| DDR1      | 5.28           | 0.00014  | 0.099917|              |             |
| CATSPER2  | 5.26           | 0.000141 | 0.099917|              |             |
| RNA5SP332 | 3.89           | 0.000144 | 0.10041 |              |             |
| DDX59     | 7.84           | 0.000144 | 0.10041 |              |             |
| ABCA5     | 6.86           | 0.000149 | 0.102043|              |             |
| STKLD1    | 3.96           | 0.00015  | 0.102043|              |             |
| LYPD4     | 3.93           | 0.000151 | 0.102263|              |             |
| DDR1      | 5.52           | 0.000154 | 0.102478|              |             |
| ZNF589    | 7.21           | 0.000157 | 0.102478|              |             |
| Gene          | TPM3P9 | RP1-293L8.2 | HISD17B7P2 | CLDN19 | EHMT2 | NCBP2 | RPS2P32 | TESC | ABCB10 | LOC440300 | IGFLR1 | CHDH | CCDC88A | UCKL1 | RPS15A | KSR2 | AP006285.7 | DPF2 | ZNF577 | LMTK3 | RPS2P32 | EHMT2 | SOCS3 | C9orf91 | RPL37 | IMMP2L | METTL8 | FTH1P3 | CREM |
|--------------|-------|------------|------------|--------|-------|-------|---------|------|--------|-----------|--------|------|---------|-------|--------|------|-----------|------|-------|-------|--------|-------|------|---------|-------|--------|-------|-------|-------|
| Gene        | 7.62  | 7.95  | 9.01  | 0.00022 | 0.104914 |
|------------|-------|-------|-------|----------|----------|
| KDHRBS2    | 6.98  | 6.92  | 7.43  | 0.000223 | 0.104914 |
| EHMT2      | 8.09  | 7.91  | 7.53  | 0.000223 | 0.104914 |
| AFG3L2     | 6.08  | 4.96  | 4.75  | 0.000226 | 0.104914 |
| ADD2       | 8     | 7.55  | 7.55  | 0.000227 | 0.104914 |
| SH3GL1     | 3.83  | 4.13  | 4.57  | 0.000228 | 0.104914 |
| PHGR1      | 5.55  | 6.42  | 7.74  | 0.000228 | 0.104914 |
| RAPGEF3    | 9.29  | 9.73  | 9.86  | 0.00023  | 0.105062 |
| MAN2A1     | 4.33  | 3.65  | 3.5   | 0.000235 | 0.106353 |
| RP11-353N4.1| 6.66  | 6.01  | 5.98  | 0.000236 | 0.106353 |
| CEP83      | 8.33  | 7.73  | 6.94  | 0.000239 | 0.106798 |
| FTH1P3     | 9.07  | 8.02  | 7.55  | 0.000241 | 0.106798 |
| CMTM6      | 4.8   | 5.16  | 7.36  | 0.000245 | 0.106798 |
| LOC100507006| 7.06  | 9.98  | 9.74  | 0.000246 | 0.106798 |
| SIPA1      | 9.25  | 7.65  | 7.36  | 0.000247 | 0.106798 |
| LINC00485  | 3.09  | 3.33  | 3.08  | 0.000248 | 0.106798 |
| COX6C      | 17.81 | 17.4  | 16.59 | 0.00025  | 0.106798 |
| UNQ6494    | 4     | 4.03  | 4.44  | 0.000252 | 0.106798 |
| MPRIP      | 8.4   | 7.18  | 7.6   | 0.000253 | 0.106798 |
| MOV10      | 6.54  | 6.83  | 7.91  | 0.000258 | 0.106798 |
| CHL1-AS2   | 3.42  | 3.49  | 3.59  | 0.000259 | 0.106798 |
| MST1L      | 5.13  | 5.19  | 5.57  | 0.000262 | 0.106798 |
| HLA-DRB1   | 15.09 | 14.6  | 14.53 | 0.000268 | 0.106798 |
| TOM1L2     | 6.99  | 7.09  | 7.52  | 0.000268 | 0.106798 |
| LCE2D      | 3.45  | 3.66  | 3.86  | 0.00027  | 0.106798 |
| TRMT2B     | 10.57 | 10.77 | 11.47 | 0.00027  | 0.106798 |
| KCNN4      | 9.28  | 10.92 | 12.32 | 0.000272 | 0.106798 |
| SH3RF1     | 4.58  | 4.14  | 4.08  | 0.000272 | 0.106798 |
| CTC-236F12.4| 4.84  | 5.44  | 6.48  | 0.000273 | 0.106798 |
| Gene               | Log2FC | Log2FoldChange | pValue | FDR   |
|--------------------|--------|----------------|--------|-------|
| DNASE1             | 5.88   | 6.65           | 0.000275 | 0.106798 |
| MIR4524A           | 5.8    | 12.63          | 0.000277 | 0.106798 |
| RP1-150K3          | 6.23   | 7.7            | 0.000277 | 0.106798 |
| LBR                | 8.36   | 7.02           | 0.000281 | 0.107035 |
| PTPN13             | 3.58   | 3.76           | 0.000288 | 0.107035 |
| PDZK11P1           | 4.25   | 4.59           | 0.00029  | 0.107035 |
| RARG               | 4.44   | 5.15           | 0.00029  | 0.107035 |
| SPPL2B             | 8.83   | 7.69           | 0.000293 | 0.107035 |
| LINC01077          | 3.54   | 4.08           | 0.000295 | 0.107035 |
| RASGEF1B           | 13.06  | 8.92           | 0.000295 | 0.107035 |
| GNA13              | 12.47  | 11.12          | 0.000306 | 0.10753  |
| VSIG10             | 3.7    | 4.28           | 0.000307 | 0.10753  |
| HMGAI1P1           | 6.65   | 5.72           | 0.000307 | 0.10753  |
| SH3BGR13           | 7.19   | 6.68           | 0.000311 | 0.10753  |
| SLC25A6            | 14.42  | 13.7           | 0.000315 | 0.10753  |
| LOC100506499       | 8.44   | 6.96           | 0.000315 | 0.10753  |
| CATSPER2           | 6.87   | 7.76           | 0.000323 | 0.10753  |
| HSF2BP             | 4.37   | 4.26           | 0.000324 | 0.10753  |
| MAP2               | 5.06   | 7.21           | 0.000324 | 0.10753  |
| KSR2               | 4.48   | 8.47           | 0.000325 | 0.10753  |
| RASGRF1            | 6.19   | 8.04           | 0.000332 | 0.108654 |
| NMD3               | 8.86   | 8.32           | 0.000333 | 0.108654 |
| C2orf24            | 11.27  | 10.29          | 0.000335 | 0.108654 |
| C2orf88            | 4.75   | 5.62           | 0.000337 | 0.108951 |
| IGLV2-33           | 9.81   | 5.35           | 0.000342 | 0.109258 |
| TBC1D10C           | 10.08  | 10.17          | 0.000345 | 0.109258 |
| DIMT1              | 8.61   | 7.57           | 0.00035  | 0.10945  |
| F8A2               | 9.18   | 8.49           | 0.000351 | 0.10945  |
| TRNAI2             | 7.64   | 8.53           | 0.000352 | 0.10945  |
| Gene       | Value1 | Value2 | Value3 | p-value | q-value |
|------------|--------|--------|--------|---------|---------|
| WDR11      | 10.88  | 12.04  | 12.47  | 0.000353 | 0.10945 |
| SLC48A1    | 5.84   | 5.96   | 6.4    | 0.000353 | 0.10945 |
| RP1-240B8.3| 6.85   | 8.38   | 8.46   | 0.000355 | 0.109583|
| AC006369.2 | 4.61   | 5.31   | 5.87   | 0.000361 | 0.110447|
| F8A2       | 9.17   | 9.68   | 8.56   | 0.000369 | 0.110832|
| SPATS2L    | 5.57   | 7.23   | 6.26   | 0.000371 | 0.110832|
| HES1       | 6.7    | 4.75   | 4.41   | 0.000371 | 0.110832|
| LINC00618  | 4.84   | 4.49   | 4.44   | 0.000371 | 0.110832|
| WSB2       | 7.19   | 8.08   | 8.54   | 0.000374 | 0.111315|
| LNPI       | 4.55   | 4.79   | 5.06   | 0.000378 | 0.111938|
| DFN3B31    | 5.36   | 6.6    | 8.07   | 0.000388 | 0.113846|
| GORASP1    | 6.33   | 6.32   | 6.78   | 0.000393 | 0.113846|
| LOC100507006| 6.96  | 9.81   | 9.55   | 0.000393 | 0.113846|
| SLC9A7     | 11.13  | 12.55  | 12.65  | 0.000394 | 0.113846|
| RNU6-1271P | 4.54   | 4.38   | 5.51   | 0.000397 | 0.113846|
| LOC441204  | 4.35   | 4.51   | 4.77   | 0.000399 | 0.113846|
| NOP16      | 7.86   | 7.04   | 6.73   | 0.000401 | 0.113846|
| FAM135A    | 6.81   | 5.68   | 5.88   | 0.000403 | 0.113846|
| SNX22      | 7.4    | 6.27   | 6.07   | 0.000405 | 0.113846|
| LOC101927599| 5.01  | 6.15   | 6.32   | 0.000409 | 0.113846|
| STAMBPL1   | 7.41   | 8      | 8.82   | 0.000412 | 0.113846|
| LEFI-AS1   | 3.97   | 4.46   | 4.96   | 0.000412 | 0.113846|
| RPA1       | 8.41   | 9.44   | 9.59   | 0.000417 | 0.113846|
| PROX1      | 3.67   | 3.71   | 4.78   | 0.000417 | 0.113846|
| RNU1-57P   | 4.62   | 4.55   | 5.09   | 0.000421 | 0.113846|
| LOC440300  | 4.3    | 4.37   | 4.84   | 0.000429 | 0.113846|
| NRAS       | 14.51  | 14.46  | 13.37  | 0.000435 | 0.113846|
| ITGA3      | 5.6    | 5.93   | 6.05   | 0.000436 | 0.113846|
| TCF4       | 11.79  | 13.25  | 13.62  | 0.000437 | 0.113846|
| Gene    | MIR4294 | MIRPS30 | TRDV3 | UNC119 | FAM131A | EHMT2 | MAP3K8 | OPNILW | GALNT10 | POLA2 | PARVB | ERLEC1 | SLC25A6 | NACA2 | NEK6 | LOC101929859 | PLD4 | LOC101927931 | LSM7 | MEG8 | NOD2 | RNU4-72P | GPT2 | PLCL2 | KCNK16 | SPOCK2 | CIQTNF5 | CCNYL3 | CCDC14 |
|---------|---------|---------|-------|--------|---------|-------|--------|--------|---------|-------|-------|--------|---------|--------|-------|-----------------|------|--------------|------|------|------|---------|------|-------|--------|--------|--------|--------|--------|
|         | 4.01    | 12.47   | 4.17  | 7.35   | 4.17   | 7.35  | 10.72  | 3.77   | 8.24    | 7.82  | 7.46  | 9.25   | 14.55   | 13.22  | 9.05  | 4.46            | 6.76 | 6.27         | 10.05| 4.07| 4.91| 6.61    | 5.87 | 9      | 4.31   | 7.86   | 4.16   | 3.47   | 7.1    |
|         | 4.61    | 12.42   | 6.17  | 6.63   | 4.27   | 7.34  | 10.48  | 3.89   | 7.06    | 7.58  | 6.73  | 9.06   | 13.68   | 13.21  | 7.73  | 4.15            | 5.65 | 6.86         | 9.36 | 4.23| 5.04| 6.75    | 7.17 | 9.77   | 4.44   | 9.36   | 5.04   | 3.56   | 8.06   |
|         | 5.02    | 11.9    | 7.08  | 6.75   | 4.47   | 7.93  | 6.9    | 3.97   | 6.78    | 8.44  | 6.37  | 8.55   | 13.75   | 13.16  | 7.56  | 3.9             | 5.59 | 9.19         | 8.84 | 4.35| 6.37| 7.54    | 7.29 | 9.43   | 4.66   | 9.14   | 6.37   | 3.81   | 7.9    |
|         | 0.000445| 0.000449| 0.00045 | 0.00045 | 0.000454| 0.000455| 0.000456| 0.000457| 0.00046  | 0.000462| 0.000466| 0.000466| 0.000473| 0.000475| 0.000477| 0.000478| 0.000479| 0.00048  | 0.000481| 0.000483| 0.000484| 0.000488| 0.00049  | 0.000505| 0.000509| 0.000513| 0.113846| 0.114039| 0.114039| 0.115486| 0.116778| 0.117212| 0.117499| 0.117499
| Gene         | 5.78  | 6.46  | 6.74  | 0.000521 | 0.118272 |
|--------------|-------|-------|-------|----------|----------|
| ZNF610       | 6.21  | 6.71  | 6.81  | 0.000523 | 0.118272 |
| CEP70        | 6.14  | 6.58  | 7.03  | 0.000524 | 0.118272 |
| LINC00665    | 8.51  | 8.54  | 8.2   | 0.000527 | 0.118272 |
| RPS24        | 10.84 | 10.36 | 10.03 | 0.000529 | 0.118272 |
| WDR43        | 11.58 | 10.81 | 9.88  | 0.000532 | 0.118272 |
| CELSR1       | 6.05  | 7.8   | 7.53  | 0.000534 | 0.118272 |
| XXYLT1-AS2   | 4.77  | 6.21  | 6.51  | 0.000536 | 0.118272 |
| MYRF         | 4.01  | 4.15  | 4.27  | 0.00054  | 0.118815 |
| C4orf32      | 4.38  | 4.47  | 4.87  | 0.000544 | 0.118887 |
| MTHFR        | 6.04  | 6.03  | 6.39  | 0.000548 | 0.11907  |
| SNTA1        | 4.63  | 4.07  | 4.06  | 0.000548 | 0.11907  |
| FAM154B      | 6.28  | 5.84  | 6.53  | 0.000555 | 0.12022  |
| ARHGEF28     | 3.82  | 3.88  | 3.99  | 0.000559 | 0.120396 |
| SH3GLB2      | 5.96  | 6.15  | 7.08  | 0.000562 | 0.120396 |
| CORO1B       | 5.51  | 6.01  | 6.33  | 0.000567 | 0.120869 |
| SNORD115-7   | 3.77  | 3.84  | 3.93  | 0.000569 | 0.120869 |
| SLC37A1      | 7.28  | 6.37  | 6.05  | 0.000571 | 0.120869 |
| HINFP        | 6.79  | 6.76  | 7.22  | 0.000575 | 0.121363 |
| IMPAD1       | 7.37  | 6.79  | 6.18  | 0.000585 | 0.122665 |
| CDIP1        | 4.26  | 4.4   | 4.67  | 0.000597 | 0.123265 |
| SHOC2        | 13.41 | 12.55 | 12.09 | 0.0006   | 0.123265 |
| MUSK         | 3.42  | 3.6   | 3.54  | 0.000603 | 0.123265 |
| LINC01012    | 5.08  | 5.29  | 5.71  | 0.000605 | 0.123265 |
| PPIP5K1      | 7.18  | 7.06  | 7.75  | 0.000605 | 0.123265 |
| AC008746.12  | 6.51  | 6.63  | 8.26  | 0.000615 | 0.123768 |
| WWTR1        | 3.93  | 4     | 4.02  | 0.000616 | 0.123768 |
| ABCA9        | 5.08  | 8.34  | 8.38  | 0.000616 | 0.123768 |
| GALNS        | 6.65  | 7.14  | 7.38  | 0.000618 | 0.123768 |
| Gene      | 5.98 | 5.84 | 6.53 | 0.000623 | 0.123768 |
|-----------|------|------|------|-----------|----------|
| CDK14     | 8.25 | 9.53 | 10.16| 0.000626 | 0.123768 |
| PLAG1     | 6.47 | 4.72 | 4.44 | 0.000626 | 0.123768 |
| TTLI12    | 6.4  | 5.91 | 6.58 | 0.000627 | 0.123768 |
| C14orf182 | 7.9  | 6.9  | 6.65 | 0.000629 | 0.123768 |
| LENE     | 3.65 | 3.5  | 4.03 | 0.00064  | 0.125582 |
| BPVM      | 6.05 | 6.29 | 6.42 | 0.000642 | 0.125587 |
| C1orf56   | 6.31 | 6.52 | 7.11 | 0.000648 | 0.125784 |
| CCDC112   | 6.21 | 5.72 | 5.17 | 0.000648 | 0.125784 |
| LONRF3    | 4.59 | 5.53 | 6.41 | 0.000652 | 0.126001 |
| NRROS     | 7.49 | 7.75 | 6.41 | 0.000654 | 0.126001 |
| EPN2      | 6.9  | 6.1  | 5.95 | 0.000659 | 0.126001 |
| LOC100128239 | 4.05 | 4.04 | 4.3  | 0.000659 | 0.126001 |
| TSPAN33   | 9.25 | 8.65 | 7.69 | 0.000661 | 0.126001 |
| RN7SKP252 | 3.3  | 3.46 | 3.76 | 0.000663 | 0.126044 |
| SNX29P1   | 11.61| 9.84 | 9.05 | 0.00067  | 0.126564 |
| LOC100268168 | 4.2  | 4.32 | 4.57 | 0.00067  | 0.126564 |
| SFMBT1    | 7.59 | 9.82 | 9.63 | 0.000673 | 0.126564 |
| NEK3      | 8.15 | 9.39 | 9.39 | 0.000676 | 0.126783 |
| TNKS2     | 10.27| 10.22| 9.66 | 0.000678 | 0.126822 |
| IGLV3-16  | 8.1  | 5.68 | 5.04 | 0.000683 | 0.127018 |
| NCR2      | 3.97 | 4.14 | 4.19 | 0.000686 | 0.127018 |
| ABI2      | 6.69 | 7.09 | 7.47 | 0.000688 | 0.127018 |
| GAB1      | 7.4  | 9.5  | 9.9  | 0.000691 | 0.127018 |
| OMA1      | 8.47 | 8.83 | 8.95 | 0.000692 | 0.127018 |
| ECM2      | 3.55 | 3.78 | 3.78 | 0.000692 | 0.127018 |
| ARHGAP12  | 8.38 | 8.88 | 9.12 | 0.000698 | 0.127454 |
| SMAD3     | 8.83 | 5.89 | 4.48 | 0.000701 | 0.127534 |
| ARHGEF10L | 4.87 | 5.5  | 5.52 | 0.000707 | 0.127562 |
| Gene          | LogFC | LogFC | LogFC | Adjusted p-value | FDR-corrected p-value |
|--------------|-------|-------|-------|------------------|----------------------|
| MIR582       | 6.11  | 3.99  | 3.82  | 0.000707         | 0.127562             |
| RP11-445F6.2 | 9.82  | 11.39 | 11.59 | 0.000708         | 0.127562             |
| PRAMEF20     | 3.52  | 3.5   | 3.75  | 0.000715         | 0.127678             |
| LOC101929422 | 5     | 4.47  | 4.61  | 0.000716         | 0.127678             |
| FGA          | 3.35  | 3.6   | 3.55  | 0.000717         | 0.127678             |
| SERPINH1     | 4.28  | 4.31  | 4.7   | 0.000720         | 0.127678             |
| C10orf128    | 6.7   | 4.68  | 4.36  | 0.000724         | 0.128017             |
| LLPH         | 10.34 | 9.9   | 9.31  | 0.000728         | 0.12827              |
| CYPA22P       | 3.47  | 3.36  | 3.69  | 0.000732         | 0.12827              |
| MAN2A2       | 7.38  | 6.47  | 7.53  | 0.000736         | 0.12827              |
| C14orf64     | 3.28  | 3.51  | 3.84  | 0.000738         | 0.12827              |
| TUBB3        | 5.02  | 5.13  | 5.27  | 0.000739         | 0.12827              |
| NRADDP       | 4.51  | 4.66  | 5.25  | 0.000739         | 0.12827              |
| PIP5K1       | 7.15  | 6.98  | 7.95  | 0.000747         | 0.128935             |
| TEX9         | 5.34  | 4.2   | 3.99  | 0.000747         | 0.128935             |
| ARL10        | 6.46  | 6.52  | 6.94  | 0.000749         | 0.128935             |
| EMP3         | 14.77 | 13.31 | 12.77 | 0.000754         | 0.128935             |
| SLC23A2      | 8.7   | 9.91  | 10.3  | 0.000754         | 0.128935             |
| WBP1         | 9.63  | 10.18 | 10.61 | 0.000754         | 0.128935             |
| HLA-DPB1     | 8.59  | 8.33  | 8.14  | 0.000767         | 0.130576             |
| RP11-135A1.2 | 6.76  | 6.09  | 6    | 0.000777         | 0.130576             |
| RP11-779O18.3| 4     | 4.4   | 4.24  | 0.000772         | 0.130576             |
| GYPE         | 5.94  | 4.53  | 4.47  | 0.000773         | 0.130576             |
| PXDC1        | 4.83  | 4.07  | 3.89  | 0.000774         | 0.130576             |
| TEAD2        | 6.86  | 8.65  | 9.56  | 0.000775         | 0.130576             |
| ERGIC1       | 5.15  | 4.35  | 3.88  | 0.000779         | 0.130693             |
| PDE4B        | 9.07  | 9.12  | 7.57  | 0.000780         | 0.130693             |
| MED22        | 6.03  | 5.76  | 5.85  | 0.000782         | 0.130693             |
| POLR1C       | 9.21  | 8.73  | 8.56  | 0.000793         | 0.131004             |
| Gene      | Mean1 | Mean2 | Mean3 | p-value 1 | p-value 2 |
|-----------|-------|-------|-------|-----------|-----------|
| SGOL1     | 6.82  | 5.91  | 5.56  | 0.000805  | 0.131004  |
| WDR43     | 10.7  | 10.19 | 9.36  | 0.000809  | 0.131004  |
| DIRC3     | 5.42  | 4.43  | 4.37  | 0.000812  | 0.131004  |
| LOC100653515 | 5.97  | 6.33  | 6.92  | 0.000813  | 0.131004  |
| LOC101928402 | 6.2   | 6.33  | 5.85  | 0.000815  | 0.131004  |
| MST1      | 5.13  | 5.3   | 5.42  | 0.000818  | 0.131004  |
| TSPAN3    | 11.58 | 9.59  | 9.56  | 0.000821  | 0.131004  |
| DSC2      | 3.67  | 3.79  | 3.89  | 0.000825  | 0.131004  |
| FLJ41278  | 3.42  | 3.58  | 3.43  | 0.000825  | 0.131004  |
| MIR1244-1 | 19.2  | 19.03 | 18.66 | 0.000827  | 0.131004  |
| IGHV5-78  | 6.45  | 5.16  | 4.22  | 0.000827  | 0.131004  |
| PRDM4     | 13.23 | 13.06 | 11    | 0.000828  | 0.131004  |
| TBC1D14   | 7.75  | 8.17  | 7.95  | 0.00083   | 0.131004  |
| BIK       | 4.81  | 4.54  | 4.58  | 0.000831  | 0.131004  |
| KIF1C     | 6.81  | 7.33  | 8.4   | 0.000832  | 0.131004  |
| GPATCH4   | 7.41  | 7.07  | 6.97  | 0.000839  | 0.131004  |
| KCTD21    | 4.86  | 4.53  | 4.55  | 0.000839  | 0.131004  |
| RP11-863K10.7 | 6.27 | 6.33  | 7.1   | 0.00084   | 0.131004  |
| LOC101927557 | 4.44 | 4.49  | 5.18  | 0.000843  | 0.131004  |
| PLOD1     | 5.58  | 5.33  | 5.53  | 0.000844  | 0.131004  |
| SLC4A7    | 7.57  | 6.05  | 5.71  | 0.000847  | 0.131153  |
| SNRPN     | 5.06  | 5.43  | 5.4   | 0.000854  | 0.131351  |
| HES1      | 6.11  | 4.94  | 4.58  | 0.000857  | 0.131351  |
| HERPUD1   | 15.73 | 14.38 | 12.63 | 0.000862  | 0.131351  |
| AKA1      | 7.19  | 6.35  | 6.19  | 0.000872  | 0.131638  |
| MICAL3    | 8.43  | 7.73  | 7.87  | 0.000876  | 0.131638  |
| LOC100506585 | 3.43 | 3.45  | 3.65  | 0.000877  | 0.131638  |
| AGK       | 5.95  | 5.73  | 5.6   | 0.000878  | 0.131638  |
| PPP1R14BP3 | 8.08 | 6.94  | 6.21  | 0.000881  | 0.131638  |
| Gene          | MPP6 | CCNI2 | PRR14 | DKFZP434I0714 | CHL1 | HIP1R | LIMS3L | BCL2A1 | MRTO4 | MTMR9LP | CREBZF | NEK3 | SPIN4 | MTA2 | PERP | SLBP | JGKV@ | RRP1B | SKAP2 | POC1B | CREB3L2 | IGLV10-54 | RNF214 | DDB2 | MIR3148 | SH3D21 | LOC100507140 | BICD2 | LOC728073 |
|--------------|------|-------|-------|--------------|------|-------|--------|-------|-------|---------|--------|------|-------|------|------|------|-------|-------|-------|-------|--------|---------|-------|------|--------|-------|---------------|-------|-----------|
|              | 9.17 | 8.21  | 7.71  | 5.39         | 5.7  | 8.38  | 4.78   | 9.23  | 6.89  | 5.53    | 9.45   | 7.61 | 6.19  | 9.67 | 4.53 | 8.66 | 13.51 | 7.79  | 7.76  | 9.78  | 8.19   | 6.39   | 7.13  | 8.52  | 3.83  | 5.34  | 4.08    | 7.75   | 4.55  |
|              |      |       |       | 8.21         | 4.37 | 7.22  | 5.62   | 7.43  | 6.65  | 5.9     | 9.06   | 8.62 | 7     | 9.14 | 3.97 | 8.58 | 10.54 | 7.36  | 6.98  | 9.44  | 10.3   | 4.84   | 6.9    | 9.49  | 3.94  | 5.8    | 4.16   | 8.59  | 4.8   |
| Gene   | 17   | 4.75  | 4.92  | 5.14  | 0.000978 | 0.134301 |
|--------|------|-------|-------|-------|----------|----------|
| DTX4   | 10.01| 7.84  | 7.48  | 4.72  | 0.000979 | 0.134301 |
| AC017002.1 | 3.9  | 4.02  | 4.27  | 0.000982 | 0.134301 |
| TMEM79 | 4.37  | 4.17  | 4.97  | 0.000982 | 0.134301 |
| CPED1  | 4.51  | 4.07  | 4.13  | 0.000984 | 0.134301 |
| THUMP1 | 9.04  | 8.67  | 8.31  | 0.000985 | 0.134301 |
| DENND3 | 7.05  | 4.81  | 4.59  | 0.000987 | 0.134301 |
| DUX4L2 | 4.08  | 4.11  | 4.33  | 0.000989 | 0.134301 |
| CACNA1G | 3.78 | 3.91  | 3.97  | 0.000993 | 0.134328 |
| RP11-80H8.4 | 5.7 | 6.65  | 7.43  | 0.000996 | 0.13.4469 |
| EBF1   | 11.79 | 8.44  | 5.33  | 0.001001 | 0.134703 |
| DROSHA | 7.93  | 8.03  | 8.32  | 0.001008 | 0.135361 |
| MACC1  | 8.22  | 5.53  | 4.43  | 0.001008 | 0.135361 |
| BCL2L11 | 9.39 | 10.1  | 6.26  | 0.001019 | 0.136437 |
| DHX16  | 6.37  | 6.34  | 6.86  | 0.001021 | 0.136437 |
| LOC101929771 | 3.84 | 4.24  | 3.97  | 0.001022 | 0.136437 |
| PTGER1 | 8.33  | 8.43  | 8.92  | 0.001028 | 0.136612 |
| MROH6  | 5.19  | 5.32  | 5.56  | 0.001035 | 0.136612 |
| PLAC9  | 4.06  | 4.16  | 4.29  | 0.001036 | 0.136612 |
| ANK3   | 5.68  | 4.34  | 4.21  | 0.001037 | 0.136612 |
| STK11  | 7.03  | 6.53  | 6.42  | 0.001038 | 0.136612 |
| ACSL6  | 3.73  | 3.8   | 3.87  | 0.001047 | 0.136979 |
| RASSF2 | 12.27 | 10.65 | 10.27 | 0.001054 | 0.13772  |
| CYP46A1 | 3.9  | 3.95  | 4.02  | 0.001061 | 0.13836  |
| CYP21A2 | 4.47 | 4.55  | 4.55  | 0.001067 | 0.138708 |
| PLXNC1 | 9.92  | 6.58  | 5.65  | 0.001068 | 0.138708 |
| TGFB3  | 4.57  | 4.83  | 5.07  | 0.001071 | 0.138748 |
| RP11-733D4.1 | 3.75 | 4    | 3.68  | 0.001081 | 0.138911 |
| LYLPL1 | 8.31  | 7.1   | 6.9   | 0.001082 | 0.138911 |
| Gene     | CD83  | SNORD116-19 | ADD2  | SCARB1 | ZNF559 | CLK2  | PLXNA3 | CTPS2 | ABCC13 | NUS1  | EGR3  | STRN3 | RPI1-703C10.1 | PTP4A3 | PARM1 | DUX4L2 | LOC653160 | INTS4L1 | HLA-G  | LINC00708 | RPS2P7 | MUC5AC | EPHA4 | GPR75 | SMIM1 | TBC1D10C | KIF5C | NEDD4L | ZFP64 |
|----------|-------|-------------|-------|--------|--------|-------|--------|-------|--------|-------|-------|-------|----------------|--------|--------|--------|-----------|---------|--------|-----------|-------|--------|-------|--------|-------|---------|-------|--------|-------|
|          | 12.35 | 6.76        | 5.43  | 4.72   | 6.06   | 9.01  | 7.63   | 6.39  | 3.65   | 9.62  | 4.67  | 7.85  | 3.52            | 7.09   | 7.14   | 4.07    | 5.93       | 7.51    | 9.69   | 4.25      | 15.38  | 3.68   | 6.3    | 5.82   | 4.99  | 9.92    | 4.93   | 7.2    | 5.02   |
|          | 11.44 | 7.72        | 4.26  | 4.26   | 6.05   | 9.08  | 6.88   | 7.64  | 3.99   | 8.67  | 4.02  | 7.53  | 3.89            | 6.15   | 4.01   | 4.09     | 6.15       | 7.86    | 9.26   | 4.43      | 14.89  | 3.76   | 4.73   | 5.71   | 5.15  | 9.23    | 4.73   | 6.07   | 5.3    |
|          | 9.76  | 7.4         | 4.12  | 4.22   | 6.7    | 9.71  | 7.5    | 7.41  | 3.91   | 7.87  | 3.81  | 7.82  | 4.31            | 5.54   | 3.81   | 4.4      | 6.65       | 7.92    | 8.13   | 4.6       | 14.15  | 3.94   | 4.63   | 5.99   | 5.43  | 9.91    | 4.63   | 5.2    | 5.67   |
|          |       |             |       |        |        |       |        |       |        |       |       |      |                 |        |        |         |           |        |        |          |        |        |       |        |       |         |        |        |        |
|          | 0.001089 | 0.001096 | 0.001099 | 0.001102 | 0.001106 | 0.001114 | 0.001119 | 0.001124 | 0.001138 | 0.001139 | 0.001143 | 0.001145 | 0.001149                 | 0.001152   | 0.001154 | 0.001157 | 0.001157 | 0.001162 | 0.001165 | 0.001169 | 0.001169 | 0.001175 | 0.001177 | 0.001177 | 0.001182 | 0.001184 | 0.001194 | 0.001202 | 0.139524 | 0.140105 | 0.140105 | 0.140145 | 0.140145 | 0.140672 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.140907 | 0.141468 | 0.141950 |
| Gene          | Fold Change | p-Value | q-Value |
|--------------|-------------|---------|---------|
| IGHV1-58     | 5.17        | 4.4     | 4.4     |
| DNAJC8       | 9.96        | 9.7     | 9.3     |
| RP11-706O15.7| 7.61        | 6.31    | 6.12    |
| EGR3         | 9.28        | 6.08    | 5.42    |
| DDR1         | 5.41        | 5.45    | 5.75    |
| PCCB         | 6.78        | 6.7     | 6.42    |
| TERF2        | 10.69       | 10.21   | 10.29   |
| HLA-F-AS1    | 5.18        | 5.49    | 5.65    |
| LOC101927204 | 5.58        | 5.48    | 5.72    |
| ATOX1        | 6.1         | 6.46    | 7.17    |
| LINC00106    | 7.9         | 8.56    | 8.55    |
| IL17REL      | 3.88        | 4.01    | 4.02    |
| BPIFA4P      | 3.32        | 3.41    | 3.56    |
| TFDP1        | 7.14        | 6.73    | 6.27    |
| ATP2B4       | 7.64        | 8.52    | 10.82   |
| RERG         | 4.09        | 4.08    | 4.64    |
| EIF3M        | 12.06       | 11.4    | 10.59   |
| HIF1A        | 13.32       | 11.57   | 9.43    |
| ERCC6L2      | 6.93        | 6.63    | 6.64    |
| RGPD3        | 10.66       | 10.24   | 9.91    |
| SNAPC1       | 7.85        | 7.33    | 6.98    |
| ADAMTSL5     | 4.06        | 4.18    | 4.23    |
| ABCE1        | 9.96        | 9.8     | 9.47    |
| AKR7A2P1     | 3.65        | 3.64    | 3.97    |
| CSGALNACT1   | 8.17        | 5.54    | 5.2     |
| SIAH1        | 6.44        | 6.79    | 6.9     |
| NET1         | 6.4         | 5.18    | 4.77    |
| SLC2A6       | 6.41        | 5.83    | 5.81    |
| NUSIP3       | 6.46        | 6.36    | 5.61    |
| Gene      | Value1 | Value2 | Value3 | p-value1 | p-value2 |
|-----------|--------|--------|--------|----------|----------|
| PPHLN1    | 9.15   | 8.96   | 8.78   | 0.001349 | 0.14734  |
| TFB1M     | 4.82   | 4.64   | 5.09   | 0.001354 | 0.14734  |
| SART1     | 6.81   | 6.65   | 6.75   | 0.001354 | 0.14734  |
| AC073133.2| 3.87   | 3.88   | 3.63   | 0.001355 | 0.14734  |
| GNAI3     | 10.74  | 10.28  | 10.01  | 0.001359 | 0.147443 |
| RP11-242J7.1 | 4.7    | 6.68   | 8.82   | 0.00136  | 0.147443 |
| RN7SKP98  | 10.02  | 10.1   | 9.51   | 0.001365 | 0.147771 |
| RAB1B     | 9.38   | 8.74   | 9.14   | 0.001377 | 0.14825  |
| TTL1      | 5.4    | 5.51   | 5.97   | 0.001382 | 0.14825  |
| DAPPI     | 10.28  | 8.72   | 9.1    | 0.001384 | 0.14825  |
| PLAG1     | 6.42   | 5.1    | 4.65   | 0.001385 | 0.14825  |
| RP11-349E4.1 | 3.24   | 3.27   | 3.61   | 0.001387 | 0.14825  |
| RAB24     | 9.3    | 8.66   | 9.43   | 0.001388 | 0.14825  |
| LOC100132356 | 3.83   | 3.94   | 4.08   | 0.00139  | 0.14825  |
| SPOCK2    | 7.86   | 9.35   | 9.6    | 0.001391 | 0.14825  |
| CLCN7     | 8.74   | 8.01   | 8.07   | 0.001392 | 0.14825  |
| LY86      | 11.92  | 9.7    | 8.65   | 0.0014   | 0.148456 |
| PRSS42    | 5.33   | 5.54   | 5.58   | 0.0014   | 0.148456 |
| ZNF577    | 7.59   | 8.39   | 9.75   | 0.0014   | 0.148456 |
| CTB-131B5.2 | 6.57   | 5.97   | 4.22   | 0.001403 | 0.148456 |
| ARIH1     | 10.73  | 10.44  | 10.11  | 0.001411 | 0.148676 |
| UBE2E2    | 8.34   | 7.95   | 6.13   | 0.001415 | 0.148791 |
| SH3BP5    | 9.42   | 10.39  | 10.31  | 0.001419 | 0.148992 |
| PPP1R12C  | 6.4    | 6.16   | 6.3    | 0.001422 | 0.14901  |
| DNASE1    | 5.87   | 5.51   | 6.45   | 0.001423 | 0.14901  |
| SNRPB2    | 11.44  | 11.25  | 10.26  | 0.001437 | 0.150237 |
| KRTAP16-1 | 3.33   | 3.39   | 4.15   | 0.00144  | 0.150296 |
| PTPN12    | 9.66   | 10.91  | 11.61  | 0.001454 | 0.151297 |
| RHBD2     | 8.21   | 6.56   | 6.25   | 0.001457 | 0.151297 |
| Gene       | Base | Difference Base | p-value 1 | p-value 2 |
|------------|------|-----------------|-----------|-----------|
| ANTXRL     | 4.19 | 4.42            | 0.001458  | 0.151297  |
| KIAA1033   | 13.77| 12.26           | 0.001459  | 0.151297  |
| PARM1      | 11.12| 6.38            | 0.001465  | 0.151601  |
| RNU7-129P  | 3.34 | 3.68            | 0.001471  | 0.151601  |
| SNX29P2    | 9.39 | 8.59            | 0.001474  | 0.151601  |
| RP11-189B4.6 | 3.76    | 3.75          | 0.001481  | 0.151601  |
| PCYOX1     | 5.91 | 6.02            | 0.001488  | 0.151601  |
| PLSCR1     | 7.08 | 5.56            | 0.001489  | 0.151601  |
| AC097499.1 | 3.43 | 3.54            | 0.001494  | 0.151601  |
| CLCF1      | 5.43 | 5.06            | 0.001504  | 0.151601  |
| GNBI       | 6.36 | 4.69            | 0.001506  | 0.151601  |
| NUPR1L     | 2.76 | 3.19            | 0.001508  | 0.151601  |
| SNX29P1    | 10.73| 9.73            | 0.001511  | 0.151601  |
| IGKV2D-29  | 5.88 | 4.91            | 0.001511  | 0.151601  |
| LOC101927526| 4.18  | 4.06          | 0.001512  | 0.151601  |
| BICD1      | 6.76 | 7.38            | 0.001513  | 0.151601  |
| AC013436.6 | 4.08 | 4.18            | 0.001518  | 0.151601  |
| MSTIL      | 5.05 | 5.18            | 0.001521  | 0.151601  |
| CTC-45812.2| 3.52 | 3.91            | 0.001534  | 0.151601  |
| SMARCB1    | 7.96 | 7.94            | 0.001552  | 0.151601  |
| NOL11      | 11.43| 11.17           | 0.001553  | 0.151601  |
| TMEM170A   | 9.49 | 9.32            | 0.001557  | 0.151601  |
| RCOR1      | 8.1  | 7.34            | 0.00156   | 0.151601  |
| SCML2      | 4.12 | 4.11            | 0.001563  | 0.151601  |
| SLC26A11   | 4.72 | 4.71            | 0.001563  | 0.151601  |
| CNOT11     | 9.17 | 8.75            | 0.001565  | 0.151601  |
| FURIN      | 6.54 | 5.07            | 0.001568  | 0.151601  |
| SPTY2D1    | 7.83 | 7.7             | 0.001569  | 0.151601  |
| ZNF227     | 8.36 | 8.44            | 0.001573  | 0.151601  |
| Gene   | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 | Sep-09 | UGC | RP11-561111.2 | ZSWIM5 |
|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|--------|-----|---------------|--------|
| CLCN6  | 8.69   | 8.66| 9.43          | 0.001573| 0.151601|
| IRG1   | 3.6    | 3.64| 3.89          | 0.001578| 0.151601|
| RP11-561111.2 | 6.21 | 6.7 | 6.58          | 0.001579| 0.151601|
| ZSWIM5 | 5.11   | 5.99| 5.57          | 0.001580| 0.151601|
| Sep-09 | 7.35   | 7.74| 7.83          | 0.001581| 0.151601|
| UGC    | 8.17   | 10.06| 9.68         | 0.001582| 0.151601|
| RASSF4 | 4.03   | 4.15| 4.48          | 0.001583| 0.151601|
| LOC389906 | 6.95 | 5.87| 5.67          | 0.001585| 0.151601|
| FAM32A | 8.06   | 7.61| 6.83          | 0.001589| 0.151814|
| FAM50B | 4.76   | 4.16| 4.25          | 0.001595| 0.152  |
| DNMI1P35 | 4.79 | 4.93| 5.17          | 0.001596| 0.152  |
| ARHGIDIB | 14.68| 14.04| 13.71       | 0.0016  | 0.15216|
| GPR20  | 4.33   | 4.47| 4.72          | 0.001606| 0.152317|
| TRAM2  | 9.86   | 11.12| 11.27        | 0.001608| 0.152317|
| TGFBR1 | 9.08   | 7.84| 6.93          | 0.001611| 0.152317|
| VIMP   | 6.95   | 6.59| 6.22          | 0.001613| 0.152317|
| LAX1   | 8.41   | 10.53| 10.56        | 0.001625| 0.152317|
| HDAC5  | 8.87   | 8.44| 9.23          | 0.001625| 0.152317|
| TMBIM1 | 8.77   | 7.26| 7.43          | 0.001627| 0.152317|
| CALCOCO2 | 5.66 | 5.5 | 6.21          | 0.001628| 0.152317|
| GPR132 | 8.35   | 7.7 | 6.72          | 0.001628| 0.152317|
| SYNE2  | 7.14   | 9.91| 9.86          | 0.001632| 0.152317|
| HEXDC  | 5.67   | 5.25| 5.37          | 0.001634| 0.152317|
| OR10A4 | 2.85   | 2.82| 3.07          | 0.001641| 0.152317|
| LINCO0452 | 4.09 | 4.13| 4.38          | 0.001647| 0.152317|
| PKM   | 9.39   | 8.83| 8.74          | 0.001647| 0.152317|
| LOC100996457 | 6.31 | 6.93| 7.46          | 0.001651| 0.152317|
| AL022341.3 | 5.48 | 5.17| 5.74          | 0.001651| 0.152317|
| OSEI1 | 11.19  | 10.94| 10.42        | 0.001651| 0.152317|
| Gene       | Value1 | Value2 | Value3 | p-value | FDR     |
|------------|--------|--------|--------|---------|---------|
| CDK6       | 6.24   | 5.91   | 4.84   | 0.001662| 0.152317|
| AC1006053.1| 5.81   | 6.14   | 6.41   | 0.001665| 0.152317|
| TRNAU1AP   | 7.67   | 7.69   | 7.88   | 0.001666| 0.152317|
| OSTN-AS1   | 8.5    | 7.73   | 6.89   | 0.001668| 0.152317|
| ZNF416     | 7.84   | 7.76   | 6.94   | 0.001669| 0.152317|
| HNRNPA1P8 | 8.55   | 8.2    | 7.57   | 0.001669| 0.152317|
| RPI1-79M19.2| 4.29  | 4.26   | 4.7    | 0.001670| 0.152317|
| AREG       | 9.87   | 9.78   | 5.57   | 0.001670| 0.152317|
| RASGRF1    | 4.7    | 6.6    | 6.23   | 0.001670| 0.152317|
| RPI1-45C12.1| 4.37 | 7.45   | 7.61   | 0.001670| 0.152317|
| SRP14-AS1  | 5.8    | 5.94   | 6.76   | 0.001685| 0.152317|
| SLC25A32   | 7.98   | 7.87   | 7.47   | 0.001688| 0.152317|
| HSD17B7P2  | 7.61   | 8.07   | 8.77   | 0.001689| 0.152317|
| NOTCH2     | 10.88  | 10.19  | 9.62   | 0.001695| 0.152317|
| RN7SKP183  | 4.3    | 4.59   | 4.74   | 0.001701| 0.152317|
| RPP25L     | 5.79   | 5.72   | 6.19   | 0.001703| 0.152317|
| JGLV6-57   | 7.07   | 5.06   | 4.26   | 0.001704| 0.152317|
| GDPD2      | 4.14   | 4.22   | 4.39   | 0.001708| 0.152317|
| ZNF805     | 8.28   | 8.48   | 7.68   | 0.001709| 0.152317|
| CDC42BPB   | 7.14   | 5.96   | 6.41   | 0.001710| 0.152317|
| AC012065.7 | 7.09   | 11.03  | 11.7   | 0.001735| 0.153714|
| TMEM114    | 4.11   | 4.25   | 4.41   | 0.001737| 0.153714|
| OCA2       | 3.55   | 3.67   | 3.81   | 0.001745| 0.15403 |
| MIR3677    | 7.6    | 7.56   | 8.74   | 0.001745| 0.15403 |
| AASS       | 5.04   | 4.44   | 4.43   | 0.001762| 0.154867|
| KNTC1      | 7.66   | 8.6    | 9.16   | 0.001764| 0.154867|
| RPI1-498M5.2| 4.54 | 4.17   | 3.77   | 0.001771| 0.154867|
| IGKV3D-15  | 7.4    | 6.13   | 5.16   | 0.001773| 0.154867|
| LOC284023  | 3.97   | 3.92   | 4.34   | 0.001775| 0.154867|
| Gene       | Value1 | Value2 | Value3 | p-value | t-value |
|------------|--------|--------|--------|---------|---------|
| CTLA4      | 4.21   | 11.69  | 10.37  | 0.001778| 0.154867|
| NPR2       | 4.35   | 4.5    | 4.92   | 0.001787| 0.154867|
| CUL2       | 9.17   | 8.87   | 8.28   | 0.001788| 0.154867|
| KLF3       | 9.96   | 7.83   | 7.27   | 0.00179  | 0.154867|
| MAGT1      | 10.5   | 10.14  | 9.62   | 0.001793| 0.154867|
| NFRKB      | 7.23   | 7.36   | 7.59   | 0.001806| 0.154867|
| C4A-AS1    | 3.19   | 3.12   | 3.37   | 0.001808| 0.154867|
| LOC102060414 | 3.19 | 3.12   | 3.37   | 0.001808| 0.154867|
| XXbac-BPG116M5.15 | 3.19 | 3.12   | 3.37   | 0.001808| 0.154867|
| Dux4ADORA1 | 4.16   | 4.25   | 4.43   | 0.001811| 0.154867|
| STK38L     | 9.08   | 8.07   | 7.71   | 0.001816| 0.154903|
| LOC101930595 | 6.86 | 9.02   | 9.03   | 0.001817| 0.154903|
| VASP       | 8.22   | 7.41   | 7.18   | 0.001824| 0.154968|
| CAMK1D     | 10.06  | 8.8    | 8.23   | 0.001826| 0.154968|
| C11orf68   | 5.79   | 5.7    | 6.09   | 0.001827| 0.154968|
| RNA5SP163  | 4.34   | 4.88   | 4.74   | 0.001841| 0.155592|
| TRAPPC2L   | 6.88   | 8.71   | 8.77   | 0.001848| 0.155592|
| FUNDC2     | 7.75   | 7.51   | 7.26   | 0.001848| 0.155592|
| EEF1A1     | 18.96  | 18.95  | 18.91  | 0.001848| 0.155592|
| MIR4642    | 5.87   | 6.14   | 6.77   | 0.001849| 0.155592|
| DGCR6      | 5      | 5.19   | 5.18   | 0.00185  | 0.155592|
| VDAC1      | 6.89   | 6.31   | 5.87   | 0.001853| 0.15563 |
| NEDD4      | 4.23   | 4.1    | 4.08   | 0.001857| 0.155798|
| KRTAP6-3   | 7.35   | 7.83   | 8.23   | 0.001881| 0.157418|
| BPIFB2     | 3.62   | 3.73   | 3.83   | 0.001881| 0.157418|
| PRSS36     | 4.09   | 4.2    | 4.21   | 0.001888| 0.157813|
| HTR3A      | 4.84   | 4.24   | 4.19   | 0.001907| 0.158958|
| CYTH3      | 5.19   | 4.64   | 4.69   | 0.00191  | 0.158958|
| Gene         | L1  | L2  | L3  | P     | FDR   |
|--------------|-----|-----|-----|-------|-------|
| SLC51A       | 4.53| 4.56| 4.66| 0.00191 1| 0.158958 |
| DENND1B      | 8.35| 7.35| 6.56| 0.00191 9| 0.159245 |
| D2HGDH       | 6.08| 6.13| 6.61| 0.00193 1| 0.159919 |
| TRPC7-AS1    | 4.65| 4.6  |5.06| 0.00193 7| 0.159919 |
| PAICS        | 7.59| 7.21| 6.95| 0.00194 3| 0.159919 |
| SLC7A4       | 3.51| 3.58| 3.8 | 0.00194 8| 0.159919 |
| CCNK         | 4.91| 5.36| 4.98| 0.00195 5| 0.159919 |
| TMEM57       | 9.34| 8.81| 8.53| 0.00195 2| 0.159919 |
| LOC283070    | 11.86|10.07| 9.6 | 0.00195 6| 0.159919 |
| AGFG2        | 5.96| 6.48| 7.59| 0.00195 9| 0.159919 |
| PRAMEF19     | 3.17| 3.28| 3.49| 0.00196 6| 0.159919 |
| UMPs         | 7.06| 6.58| 6.41| 0.00196 1| 0.159919 |
| NR4A3        | 8.77| 7.55| 5.63| 0.00196 1| 0.159919 |
| RRP15        | 10.88|10.42|10.06| 0.00196 3| 0.159919 |
| MTMR12       | 9.62| 8.93| 8.71| 0.00196 6| 0.159936 |
| ASIC3        | 4.09| 4.24| 4.59| 0.00196 8| 0.159936 |
| LOC101927740 | 5.02| 4.48| 4.54| 0.00197 3| 0.160165 |
| CR1          | 13.59|10.94| 6.3 | 0.00198 4| 0.160459 |
| BASP1        | 9.08| 8.69| 7.99| 0.00199 2| 0.160459 |
| CLP1         | 7.09| 7.42| 6.31| 0.00199 4| 0.160459 |
| INTS4L2      | 8.93| 9.29| 9.49| 0.00199 5| 0.160459 |
| MAP1LC3A     | 4.07| 4.46| 4.41| 0.00199 8| 0.160459 |
| IL15         | 5.86| 4.51| 4.47| 0.00199 8| 0.160459 |
| RNU1-52P     | 4.81| 5.31| 5.59| 0.00200 1| 0.160484 |
| ACOT9        | 7.37| 6.85| 6.48| 0.00200 6| 0.160555 |
| MYT1L-AS1    | 3.22| 3.43| 3.22| 0.00201 2| 0.160591 |
| HIVEP2       | 10.58|11.77|12.53| 0.00201 2| 0.160591 |
| ATP6V0D1     | 8.93| 8.22| 8.05| 0.00201 7| 0.160626 |
| MS4AI        | 17.48|16.34|15.25| 0.00202 3| 0.16073  |
| Gene       | Val1  | Val2  | Val3  | Val4  | Val5  |
|------------|-------|-------|-------|-------|-------|
| ARHGEF7-IT1| 4     | 4.38  | 4.39  | 0.002033 | 0.16073 |
| TRMT10C    | 9.12  | 8.58  | 6.77  | 0.002036 | 0.16073 |
| AREG       | 9.78  | 9.72  | 5.62  | 0.002038 | 0.16073 |
| ING3       | 10.99 | 10.82 | 9.62  | 0.002038 | 0.16073 |
| AHSIA2     | 9.84  | 10.8  | 11.96 | 0.002042 | 0.16073 |
| IFNA6      | 3.07  | 3.25  | 3.54  | 0.002046 | 0.160854|
| RP3-470B24.5| 3.4   | 3.31  | 3.63  | 0.002052 | 0.160909|
| DKFZP434L187| 4.57  | 4.82  | 4.49  | 0.002055 | 0.160909|
| FAM107B    | 8.05  | 7.3   | 7.4   | 0.002056 | 0.160909|
| MIR431     | 3.47  | 3.55  | 4.08  | 0.002061 | 0.161087|
| DCHS1      | 3.71  | 3.72  | 3.85  | 0.002068 | 0.161281|
| IGKV3-11   | 7.84  | 5.32  | 4.82  | 0.002068 | 0.161281|
| HOXB-AS4   | 5.25  | 5.53  | 5.45  | 0.002068 | 0.161281|
| CMTM1      | 5.05  | 5.33  | 5.73  | 0.002077 | 0.161593|
| RPLP0P2    | 4.12  | 3.92  | 3.54  | 0.002079 | 0.161593|
| FURIN      | 8.24  | 6.84  | 6.63  | 0.002082 | 0.161638|
| IQSEC1     | 10.24 | 8.6   | 7.5   | 0.002087 | 0.161788|
| CD58       | 9.08  | 8.4   | 9.42  | 0.002096 | 0.161939|
| LINC00665  | 7     | 7.18  | 7.48  | 0.002096 | 0.161939|
| ACP1       | 8.42  | 8.15  | 7.75  | 0.002106 | 0.162419|
| HSD17B7    | 7.16  | 7.44  | 8.19  | 0.002114 | 0.162419|
| MIR192     | 3.12  | 3.19  | 3.6   | 0.002116 | 0.162419|
| RP11-227D2.3| 3.3   | 3.51  | 3.66  | 0.00212   | 0.162419|
| NR4A1      | 9.64  | 7.05  | 7.18  | 0.00212   | 0.162419|
| RNU6-945P  | 6.03  | 6.03  | 7.57  | 0.00212   | 0.162419|
| SNX15      | 7.65  | 7.35  | 7.06  | 0.00212   | 0.162419|
| SPATA6     | 4.43  | 3.54  | 3.65  | 0.002126  | 0.162419|
| RFX5       | 10.54 | 9.85  | 10.05 | 0.002129  | 0.162419|
| FBXO15     | 4.61  | 4.81  | 4.94  | 0.002133  | 0.162419|
| Gene       | 5.98  | 4.8  | 4.67   | 0.002135 | 0.162419 |
|------------|-------|------|--------|----------|----------|
| SH3KBP1    | 8.99  | 8.34 | 8.34   | 0.002136 | 0.162419 |
| JGKV2-29   | 6.53  | 4.97 | 4.67   | 0.002138 | 0.162419 |
| UBR7       | 7.92  | 6.65 | 6.26   | 0.00214  | 0.162419 |
| AC020743.3 | 3.2   | 3.26 | 2.87   | 0.002143 | 0.162419 |
| SLC5A10    | 4.72  | 4.81 | 4.96   | 0.002147 | 0.162534 |
| MIR4489    | 11.45 | 9.23 | 8.39   | 0.002149 | 0.162534 |
| LOC101927560 | 4.22 | 4.51 | 5.22   | 0.002165 | 0.162959 |
| DUX4L2     | 4.06  | 4.12 | 4.48   | 0.002169 | 0.162959 |
| PTMAP5     | 9.41  | 8.72 | 8.17   | 0.002178 | 0.163261 |
| ARHGEF3    | 7.2   | 7.68 | 7.81   | 0.002178 | 0.163261 |
| HLA-DBP2   | 6.85  | 7.22 | 6.03   | 0.002187 | 0.163576 |
| ACD        | 6.62  | 6.5  | 7.19   | 0.00219  | 0.163576 |
| AL928768.3 | 12.86 | 10.64| 7.95   | 0.00219  | 0.163576 |
| CSH2       | 3.88  | 4.06 | 4.25   | 0.002212 | 0.164534 |
| CHST15     | 8.65  | 9.71 | 10.53  | 0.002216 | 0.164534 |
| LINC-ROR   | 4.26  | 4.4  | 4.81   | 0.002219 | 0.164534 |
| CABLES1    | 4.73  | 6.21 | 5.16   | 0.00223  | 0.164534 |
| PUS7       | 6.47  | 5.81 | 5.43   | 0.002233 | 0.164534 |
| STK11      | 5.94  | 5.82 | 5.65   | 0.002233 | 0.164534 |
| YARS2      | 8.26  | 8.04 | 7.52   | 0.002234 | 0.164534 |
| EBF1       | 13.55 | 8.44 | 5.21   | 0.002237 | 0.164534 |
| DPY19L4    | 5.49  | 5.42 | 5.64   | 0.002238 | 0.164534 |
| LOC401312  | 7.43  | 5.61 | 4.95   | 0.002239 | 0.164534 |
| CTLA4      | 4.03  | 11.92| 10.39  | 0.002242 | 0.164534 |
| LOC148413  | 5.91  | 5.76 | 6.22   | 0.002243 | 0.164534 |
| RP11-523L1.2 | 4.92 | 5.17 | 5.02   | 0.002245 | 0.164534 |
| LINC00840  | 3.26  | 3.49 | 3.59   | 0.002246 | 0.164534 |
| FCRLB      | 4.02  | 4.07 | 4.27   | 0.002249 | 0.164534 |
| Gene         | PLXNC1 | Clorf174 | CXCL5 | IL17RB | SBSN | CD58 | UNC5B | RAB43 | PPAN-P2RY11 | TGIF1 | ARPC5 | SH3RF1 | CNR2 | UBE3C | CD5L | GFRA4 | TRMT61A | ARMCX5 | P2RY4 | PRSS8 | DLGAP1-AS2 | CACNG5 | TAS2R13 | NOSIP | SERIN5 | TRBV7-6 | CAMTA1-IT1 | YPELI | APOCI |
|--------------|--------|----------|-------|--------|------|------|-------|-------|------------|-------|-------|--------|------|-------|------|-------|--------|--------|-------|-------|---------|-------|---------|-------|--------|--------|----------|-------|-------|
| Value        | 9.52   | 5.72     | 4.55  | 4.52   | 3.74 | 10.31 | 4.93  | 8.83  | 6.21       | 6.98  | 6.21  | 5.1    | 7.63 | 7.82  | 4.3  | 4.13  | 6.27   | 6.9    | 3.65  | 4.81  | 6.55    | 4.44  | 4.        | 7.91  | 4.09   | 3.35   | 6.11    | 9.37  | 4.37  |
| p-value      | 0.002249 | 0.002257 | 0.002259 | 0.002263 | 0.002286 | 0.002295 | 0.002296 | 0.002301 | 0.00231 | 0.002322 | 0.002337 | 0.00234 | 0.002339 | 0.00234 | 0.002343 | 0.002352 | 0.002352 | 0.002365 | 0.002375 | 0.002384 | 0.002393 | 0.002393 | 0.002401 | 0.002401 | 0.002411 | 0.002418 | 0.002433 | 0.164534 | 0.164928 | 0.164928 | 0.165014 | 0.165972 | 0.166241 | 0.166375 | 0.16662 | 0.167146 | 0.167255 | 0.167579 | 0.167579 | 0.167579 | 0.167579 | 0.16773 | 0.16773 | 0.16773 | 0.168316 | 0.168724 | 0.169132 | 0.1694 | 0.1694 | 0.1694 | 0.169745 | 0.170118 | 0.170158 |
| Gene     | Avg1 | Avg2 | Avg3 | P-Value 1  | P-Value 2 |
|----------|------|------|------|-----------|-----------|
| TMEM249  | 3.53 | 3.7  | 3.76 | 0.002435  | 0.170158  |
| OSBPL9   | 9.18 | 8.81 | 8.66 | 0.002441  | 0.170158  |
| DIO3OS   | 4.36 | 4.48 | 4.59 | 0.002443  | 0.170158  |
| LOC100507053 | 4.17 | 4.37 | 4.34 | 0.002444  | 0.170158  |
| SEMA4G   | 3.78 | 3.84 | 3.9  | 0.002455  | 0.170158  |
| MEN1     | 6.53 | 6.66 | 7.34 | 0.002455  | 0.170158  |
| IVD      | 6.71 | 7.15 | 7.8  | 0.002457  | 0.170158  |
| FADS3    | 8.76 | 7.31 | 7.52 | 0.002459  | 0.170158  |
| SLC17A9  | 6.11 | 5.46 | 5.58 | 0.002466  | 0.170274  |
| TMEM45B  | 4.14 | 4.14 | 4.21 | 0.002467  | 0.170274  |
| GTPBP2   | 8.39 | 8.03 | 8.41 | 0.002471  | 0.170293  |
| UBR7     | 8.27 | 7.17 | 6.72 | 0.002475  | 0.170357  |
| FAM69A   | 9.3  | 10.46| 10.09| 0.002477  | 0.170366  |
| LOC101927740 | 5.02 | 4.48 | 4.34 | 0.002482  | 0.170381  |
| CD200    | 8.32 | 10.6 | 11.39| 0.002496  | 0.171039  |
| SEMA4F   | 5.43 | 5.43 | 5.85 | 0.002497  | 0.17102   |
| JGKV2D-26| 4.94 | 4   | 3.78 | 0.002518  | 0.171762  |
| SNORA76A | 13.27| 14.14| 15.6 | 0.002519  | 0.171762  |
| HP08942  | 4.67 | 5.04 | 5.17 | 0.002522  | 0.171762  |
| MRPS30   | 10.31| 10.31| 9.85 | 0.002533  | 0.171762  |
| LINC00407| 3.68 | 3.92 | 3.97 | 0.002542  | 0.171762  |
| RASGRP2  | 9.78 | 9.2  | 9.11 | 0.002544  | 0.171762  |
| CCBL1    | 5.84 | 6.02 | 6.54 | 0.002544  | 0.171762  |
| HCG4B    | 4.41 | 4.37 | 5.61 | 0.002547  | 0.171762  |
| PLCG1-AS1| 4.14 | 4.39 | 4.6  | 0.002554  | 0.171762  |
| C11orf48 | 8.01 | 7.79 | 8.2  | 0.002554  | 0.171762  |
| IL15     | 6.87 | 6.51 | 4.35 | 0.002554  | 0.171762  |
| MIR4304  | 4.67 | 5.91 | 7.45 | 0.002559  | 0.171762  |
| PPP2R5C  | 11.35| 11.58| 11.94| 0.002559  | 0.171762  |
| Gene   | Value1 | Value2 | Value3 | P-value | q-value |
|--------|--------|--------|--------|---------|---------|
| MPRIP  | 6.26   | 4.88   | 5.18   | 0.002559| 0.171762|
| GTDC1  | 7.56   | 6.58   | 6.23   | 0.002561| 0.171762|
| SGPP2  | 6.1    | 7.59   | 7.77   | 0.002561| 0.171762|
| TRIM66 | 5.38   | 5.5    | 6.01   | 0.002563| 0.171762|
| ASPH   | 5.07   | 4.45   | 4.34   | 0.002563| 0.171762|
| EXPH5  | 4.86   | 5.23   | 5.27   | 0.002564| 0.171762|
| NOS3   | 4.38   | 4.48   | 4.61   | 0.002575| 0.172346|
| SREBF2 | 9.51   | 7.94   | 7.92   | 0.002578| 0.172346|
| CCNY   | 8.23   | 8.23   | 7.96   | 0.002582| 0.172411|
| FGD6   | 6      | 4.04   | 4.35   | 0.002584| 0.172411|
| CTB-12904.1 | 6.17 | 6.38 | 6.83 | 0.002589| 0.172601|
| C7orf50 | 4.54 | 4.3   | 4.28   | 0.002601| 0.173069|
| GALNT15 | 3.98 | 4.04 | 4.13   | 0.002617| 0.173764|
| ABR    | 8.7    | 10.06  | 10.87  | 0.002626| 0.173764|
| SLC29A3 | 5.43 | 5.64 | 6.59   | 0.002636| 0.173764|
| ECM1   | 4.06   | 4.15   | 4.3    | 0.002644| 0.173764|
| UBQLNL | 4.35   | 4.06   | 4.11   | 0.002646| 0.173764|
| SC5D   | 10.04  | 9.27   | 8.09   | 0.002646| 0.173764|
| GUCD1  | 11.41  | 10.17  | 9.54   | 0.002647| 0.173764|
| RNF165 | 3.19   | 3.3    | 3.45   | 0.002648| 0.173764|
| PLCB3  | 5.04   | 5.05   | 5.31   | 0.00265  | 0.173764|
| ZNF544 | 7.01   | 6.94   | 7.35   | 0.00267  | 0.174847|
| KLHL17 | 4.34   | 4.28   | 4.45   | 0.002683| 0.175157|
| ZDBF2  | 8.37   | 7.98   | 6.58   | 0.002689| 0.175174|
| ABCA10 | 4.68   | 5.08   | 5.01   | 0.00269  | 0.175174|
| LOC100133445 | 5.99 | 6.11 | 6.24 | 0.002694| 0.175174|
| EPHB6  | 7      | 6.26   | 6.22   | 0.002696| 0.175174|
| WFDC13 | 3.77   | 3.95   | 4.32   | 0.002709| 0.175444|
| LINC00310 | 4.13 | 4.24 | 4.53 | 0.002712| 0.175444|
| Gene    | PHF23 | MIR2053 | OPN1MW | COPS7B | LINC00260 | FLJ23867 | CSHL1 | AZU1 | HMGN3 | LAMTOR1 | PES1 | MIR518C | CTA-280A3_B.2 | PTGS1 | AXIN2 | CMTM7 | GALNT16 | MED13L | HLA-DPB2 | TFB2M | LAT2 | PORCN | TMEM56 | SYNPO | UBA52 | SLC47A2 | LRRC23 | LOC101928483 |
|---------|-------|---------|--------|--------|-----------|----------|--------|------|-------|---------|------|---------|-------------|-------|-------|-------|---------|--------|---------|-------|------|-------|--------|-------|-------|---------|--------|--------------|
| Value   | 8.31  | 3.9     | 4.31   | 6.98   | 4.96      | 3.95     | 3.78   | 3.54 | 8.95  | 6.64    | 7.57 | 4.31    | 5.05        | 5.63  | 5.36  | 6.85  | 3.69    | 12.16  | 7.32    | 9.87  | 7.9   | 5.85  | 5.6    | 5.6    | 14.51  | 4.26  | 5.56  | 4.88  |
| P-value | 0.002712 | 0.002731 | 0.002738 | 0.002741 | 0.002749  | 0.00275  | 0.002751 | 0.002755 | 0.002762 | 0.002768 | 0.002768 | 0.002775 | 0.002787 | 0.002788 | 0.002794 | 0.002804 | 0.002816 | 0.002817 | 0.002821 | 0.00283 | 0.002834 | 0.002843 | 0.002843 | 0.002844 | 0.002849 | 0.002859 | 0.002877 | 0.177444 | 0.176451 | 0.176731 | 0.176731 | 0.176862 | 0.177027 | 0.177283 | 0.177792 | 0.17792 | 0.178002 | 0.178474 | 0.178816 | 0.178816 | 0.178882 | 0.179184 | 0.179338 | 0.179338 | 0.179492 | 0.179937 | 0.179941 |
| Gene       | IPMK  | GDF1  | LOC101927702 | KIFC2  | GPC2  | NUP88  | ZNF784  | ATP5L  | IFNLR1  | EFCAB14-AS1 | WDR76  | LOC100506551 | LOC101927599 | RNU6-490P | BCL10  | MICU2  | ZSWIM3 | UCHL3  | GTF3A  | AVIL  | GPLD1  | CDC5L  | RN7SKP255 | ALDH5A1  | DSE  | LOC399491 | ZNF587 | RNU6-1276P | GIGYF1  |
|------------|-------|-------|--------------|--------|-------|--------|---------|--------|---------|------------|--------|--------------|--------------|-----------|--------|--------|--------|--------|--------|-------|--------|--------|----------|----------|------|-----------|--------|-----------|--------|
|            | 9.33  | 4.39  | 4.87         | 5.15   | 4.25  | 12.47  | 6.95    | 10.92  | 7.66    | 3.83       | 6.78   | 4.69          | 5.64          | 3.31      | 9.56   | 9.19   | 5.77   | 9.22   | 10.68  | 4.69  | 5.19   | 9.06   | 18       | 6.07    | 5.4    | 9.61     | 7.5    | 4.6      | 6.49   |
|            | 7.86  | 4.47  | 5.17         | 5.24   | 4.35  | 12.06  | 6.49    | 10.92  | 8.21    | 4.03       | 7.48   | 5.16          | 6.02          | 3.46      | 9.23   | 8.47   | 5.5    | 8.67   | 10.89  | 4.73  | 6.03   | 8.71   | 18       | 6.98    | 4.69  | 8.66     | 7.6    | 4.82     | 6.46   |
|            | 7.31  | 4.52  | 5.15         | 5.21   | 4.48  | 12.64  | 5.99    | 10.43  | 8.61    | 3.9        | 7.72   | 5.53          | 6.08          | 3.63      | 8.73   | 8.34   | 5.9    | 8.53   | 10.33  | 4.9   | 6.29   | 8.3    | 17.93    | 7.19    | 4.83  | 9.34     | 8.66   | 5.18     | 6.71   |
|            |       |       |              |        |       |        |         |        |         |            |        |              |              |           |        |        |        |        |        |       |        |        |          |         |      |          |        |          |        |
| Gene       | Value1 | Value2 | Value3 | P-Value  | Adjusted P-Value |
|------------|--------|--------|--------|----------|-----------------|
| DNAJB13    | 3.79   | 3.86   | 3.9    | 0.003011 | 0.181439        |
| INTS7      | 8.35   | 7.42   | 7.65   | 0.003014 | 0.181439        |
| KHNYN      | 7.97   | 7.37   | 7.35   | 0.003016 | 0.181439        |
| KDM3B      | 10.41  | 9.96   | 10.55  | 0.003022 | 0.181439        |
| RN3P6      | 4.54   | 4.61   | 4.85   | 0.003025 | 0.181439        |
| RPI1-329N22.1 | 4.59 | 5.28   | 5.78   | 0.003026 | 0.181439        |
| HLA-DPA1   | 14.55  | 13.76  | 13.62  | 0.003026 | 0.181439        |
| NRADDP     | 4.08   | 4.16   | 4.72   | 0.003026 | 0.181439        |
| NUDT4      | 10.03  | 9.59   | 9.81   | 0.00303   | 0.181439        |
| AFTPH      | 11.52  | 11.34  | 11.98  | 0.003031 | 0.181439        |
| HLA-DPA1   | 14.46  | 13.66  | 13.51  | 0.003031 | 0.181439        |
| FBLIM1     | 4.13   | 4.14   | 4.22   | 0.00304   | 0.181804        |
| CLDN18     | 3.78   | 3.83   | 3.99   | 0.003048 | 0.182165        |
| AP000473.6 | 5.04   | 4.97   | 4.75   | 0.003055 | 0.1824          |
| KDM4B      | 6.74   | 6.34   | 5.96   | 0.003061 | 0.182578        |
| ARL4A      | 8.32   | 7.64   | 7.49   | 0.003072 | 0.18277         |
| HLA-DPA1   | 14.64  | 13.82  | 13.67  | 0.003079 | 0.18277         |
| GCH1       | 6.8    | 6.72   | 5.92   | 0.003087 | 0.18277         |
| LST1       | 4.24   | 4.44   | 5.8    | 0.003092 | 0.18277         |
| HSD17B3    | 3.78   | 4.12   | 4.47   | 0.003102 | 0.18277         |
| DNAH12     | 4.44   | 4.65   | 4.58   | 0.003105 | 0.18277         |
| SIRT3      | 6.89   | 7.07   | 7.49   | 0.003107 | 0.18277         |
| LOC100996478 | 3.17 | 3.28   | 3.17   | 0.003108 | 0.18277         |
| STPG2      | 4.1    | 4.5    | 4.25   | 0.003112 | 0.18277         |
| GREB1      | 3.74   | 3.86   | 3.88   | 0.003118 | 0.18277         |
| DIRAS1     | 4.76   | 4.15   | 4.17   | 0.003118 | 0.18277         |
| RECQL4     | 4.77   | 4.92   | 5.13   | 0.00312   | 0.18277         |
| VEGFB      | 6.6    | 6.29   | 6.27   | 0.003124 | 0.18277         |
| SERINC5    | 7.3    | 10.36  | 10.28  | 0.003126 | 0.18277         |
| Gene   | log2FoldChange | Mean1 | Mean2 | padj  |
|--------|---------------|-------|-------|-------|
| CYB5R4 | 11.16         | 10.58 | 9.88  | 0.003136 |
| CYB561A3| 9.39          | 9.68  | 10.39 | 0.003139 |
| TCEB3  | 7.5           | 7.24  | 6.73  | 0.00314  |
| LTBP3  | 4.81          | 4.89  | 5.04  | 0.003144 |
| STK33  | 4.71          | 4.21  | 3.9   | 0.003154 |
| HMGCS1 | 7.61          | 7.13  | 6.75  | 0.003157 |
| MIR1205| 3.28          | 3.48  | 3.86  | 0.003158 |
| TBC1D1 | 8.28          | 9.6   | 9.93  | 0.00316  |
| PKD1   | 6.91          | 6.6   | 6.88  | 0.00316 |
| SNORD119| 5.16          | 6.33  | 7.32  | 0.003164 |
| ARHGEF2| 7.4           | 6.95  | 7.9   | 0.003164 |
| GATSL1 | 4.9           | 5.14  | 5.73  | 0.003164 |
| FAM66A | 6.38          | 6.39  | 6.1   | 0.003167 |
| LINC00324| 6.29          | 6.38  | 7.21  | 0.003172 |
| SH2B1  | 7.12          | 7.14  | 7.4   | 0.003174 |
| RN11-77P| 6.73          | 6.53  | 7.43  | 0.003177 |
| LOC100506948| 6.12    | 6.52  | 6.46  | 0.003184 |
| HCN3   | 4.7           | 4.87  | 5.03  | 0.003191 |
| CNT1A  | 13.84         | 12.46 | 13.54 | 0.003192 |
| GLL5   | 9.02          | 8.67  | 7.37  | 0.003197 |
| FAM156B| 7.39          | 7.71  | 8.15  | 0.003207 |
| RNU6-243P| 3.7           | 3.83  | 4.3   | 0.003214 |
| S1PR1  | 12.16         | 10.82 | 9.12  | 0.003214 |
| ZFAND2B| 7.57          | 7.21  | 7.39  | 0.003219 |
| NINJ2  | 5.43          | 5.21  | 5.25  | 0.003222 |
| CTPS1  | 6.72          | 6.16  | 5.79  | 0.003224 |
| POGZ   | 10.82         | 10.53 | 10.85 | 0.003241 |
| NUDT4P1| 12.3          | 11.86 | 12.05 | 0.003241 |
| PIP4K2C| 6.28          | 6.74  | 6.75  | 0.003241 |
| Gene         | Value1 | Value2 | Value3 | p-value | q-value |
|--------------|--------|--------|--------|---------|---------|
| IGLV4-3      | 4.03   | 3.56   | 3.33   | 0.003246| 0.183859|
| CD6          | 5.68   | 7.18   | 8.26   | 0.003248| 0.183859|
| LYRM4        | 5.92   | 5.48   | 5.34   | 0.003251| 0.183859|
| LPGAT1       | 8.06   | 7.65   | 7.64   | 0.003252| 0.183859|
| AC109826.1   | 3.67   | 3.9    | 3.59   | 0.003254| 0.183859|
| BBX          | 10.21  | 9.86   | 9.67   | 0.00326  | 0.183859 |
| SS18L2       | 8.61   | 8.15   | 7.77   | 0.003262| 0.183859|
| SNBNO2       | 5.4    | 5.3    | 5.31   | 0.003263| 0.183859|
| LOC101927667 | 5.58   | 6.01   | 6.98   | 0.003274| 0.183859|
| SPATA6       | 4.85   | 4.23   | 4.12   | 0.003275| 0.183859|
| NFE2L2       | 10.01  | 9.4    | 8.49   | 0.003277| 0.183859|
| ACYPI        | 6.23   | 6.64   | 7.58   | 0.003278| 0.183859|
| SNX18        | 5.9    | 7.24   | 6.89   | 0.003292| 0.184255|
| AMPD2        | 7.36   | 6.65   | 6.82   | 0.003294| 0.184255|
| PRR21        | 3.76   | 3.93   | 4.29   | 0.003296| 0.184255|
| LSM6         | 8.91   | 8.39   | 8.41   | 0.0033  | 0.184304|
| RABL6        | 6.57   | 6.47   | 6.62   | 0.003309| 0.18457 |
| ZNF699       | 8.47   | 8.87   | 9.2    | 0.003323| 0.18457 |
| USP30-AS1    | 7.63   | 8.15   | 8.91   | 0.003328| 0.18457 |
| C19orf18     | 5.56   | 5.99   | 6.46   | 0.0033  | 0.18457 |
| ZBTB18       | 9.28   | 7.96   | 7.91   | 0.003331| 0.18457 |
| AGPAT3       | 6.83   | 7.39   | 7.04   | 0.003333| 0.18457 |
| HLA-DPA1     | 14.14  | 13.35  | 13.23  | 0.003342| 0.18457 |
| BSPRY        | 4.97   | 5.53   | 5.61   | 0.003343| 0.18457 |
| HIST1H2BE    | 5.12   | 5.3    | 5     | 0.003357| 0.184669|
| RP11-496N12.6| 4.78   | 4.86   | 5.43   | 0.003358| 0.184669|
| HLA-DPA1     | 14.34  | 13.57  | 13.42  | 0.003359| 0.184669|
| RP11-413G15.1| 3.76   | 4.41   | 4.67   | 0.003367| 0.184669|
| EIF3M        | 12.71  | 12.16  | 11.65  | 0.003371| 0.184669|
| Gene       | Value1 | Value2 | Value3 | p-value  | FDR       |
|------------|--------|--------|--------|----------|-----------|
| DPF3       | 5.68   | 5.23   | 4.94   | 0.003372 | 0.184669 |
| RHOC       | 5.56   | 5.63   | 5.97   | 0.003377 | 0.184669 |
| C10orf2    | 5.35   | 5.08   | 5      | 0.003377 | 0.184669 |
| ZBED3-AS1  | 4.18   | 4.36   | 4.49   | 0.003395 | 0.185077 |
| SNRPA      | 9.88   | 10.38  | 10.99  | 0.003399 | 0.185077 |
| LENG8      | 11.23  | 11.34  | 11.96  | 0.0034   | 0.185077 |
| CCL21      | 4.28   | 4.52   | 4.6    | 0.0034   | 0.185077 |
| ARMCX5     | 6.83   | 7.23   | 7.68   | 0.003402 | 0.185077 |
| RNF8       | 6.37   | 5.85   | 5.99   | 0.003407 | 0.185077 |
| ARPC5L     | 7.62   | 7.23   | 7.34   | 0.003407 | 0.185077 |
| MED25      | 4.32   | 4.12   | 4.59   | 0.003409 | 0.185077 |
| RP11-397O4.1 | 3.79 | 4.1    | 4.26   | 0.003415 | 0.185211 |
| SKAP1      | 8.71   | 10.07  | 10.88  | 0.003427 | 0.185379 |
| DPEP2      | 8.44   | 9.35   | 10.29  | 0.003428 | 0.185379 |
| N4BP3      | 4.93   | 4.36   | 4.16   | 0.00343  | 0.185379 |
| AP000233.4 | 4.35   | 4.61   | 4.89   | 0.00344  | 0.185379 |
| MFAP2      | 5.03   | 5.17   | 5.24   | 0.00344  | 0.185379 |
| MARS       | 9.44   | 10.37  | 10.73  | 0.003441 | 0.185379 |
| BIN1       | 7.64   | 7.05   | 6.95   | 0.003441 | 0.185379 |
| SH3GLB2    | 7.29   | 7.62   | 8      | 0.003443 | 0.185379 |
| LOC440416  | 4.49   | 4.66   | 4.8    | 0.003452 | 0.185389 |
| SRP68      | 9.87   | 9.42   | 10.01  | 0.003457 | 0.185389 |
| OGFOD2     | 5.02   | 5.06   | 5.58   | 0.003457 | 0.185389 |
| ALPK2      | 3.56   | 3.65   | 3.69   | 0.00346  | 0.185389 |
| GPR152     | 4.74   | 4.93   | 5.33   | 0.003462 | 0.185389 |
| PWP1       | 10.28  | 10     | 8.92   | 0.003474 | 0.185528 |
| COMMD7     | 9.42   | 9.08   | 8.65   | 0.003478 | 0.185528 |
| CBR3       | 4.06   | 3.53   | 3.39   | 0.00348  | 0.185528 |
| BDNF-AS    | 4.33   | 4.7    | 4.63   | 0.003484 | 0.185528 |
| Gene       | Value1 | Value2 | Value3 | p-value1 | p-value2 |
|------------|--------|--------|--------|----------|----------|
| PUSL1      | 4.21   | 4.2    | 4.37   | 0.003484 | 0.185528 |
| PAPLN      | 4.15   | 4.2    | 4.33   | 0.00349  | 0.185528 |
| GGT7       | 5.98   | 6.38   | 6.77   | 0.003493 | 0.185528 |
| TAF13      | 7.86   | 7.61   | 6.85   | 0.003495 | 0.185528 |
| IQCH-AS1   | 5.31   | 5.57   | 5.53   | 0.003496 | 0.185528 |
| CSGALNACT1 | 6.21   | 4.4    | 4.25   | 0.003497 | 0.185528 |
| LINC00886  | 4.37   | 4.36   | 4.1    | 0.003511 | 0.185809 |
| GRPEL1     | 8      | 7.68   | 7.21   | 0.003517 | 0.185809 |
| THRA       | 7.27   | 7.31   | 8.2    | 0.00352  | 0.185809 |
| FAM167A    | 5.92   | 5.67   | 5.11   | 0.003523 | 0.185809 |
| PHF19      | 5.85   | 6.24   | 6.88   | 0.003525 | 0.185809 |
| SIRT1      | 12.11  | 11.94  | 11.68  | 0.003528 | 0.185809 |
| SAMD4A     | 4.54   | 4.09   | 3.99   | 0.003531 | 0.185841 |
| NDUFA6-AS1 | 5.78   | 6.17   | 6.07   | 0.003539 | 0.186064 |
| DHRS4L1    | 5.69   | 5.78   | 5.88   | 0.003545 | 0.186064 |
| ABHD4      | 6.05   | 6.41   | 7.29   | 0.003546 | 0.186064 |
| SNORD115-26| 4.9    | 5.31   | 5.17   | 0.003561 | 0.186315 |
| MYBL2      | 7.62   | 7.18   | 6.79   | 0.003566 | 0.186315 |
| LOC100128398| 5.62   | 5.99   | 6.47   | 0.003567 | 0.186315 |
| ZNF195     | 8.57   | 8.39   | 7.93   | 0.003571 | 0.186315 |
| RNU6-1281P | 3.74   | 3.41   | 3.66   | 0.003574 | 0.186315 |
| PHC3       | 12.33  | 12.88  | 13.44  | 0.003579 | 0.186315 |
| PRAMEF19   | 3.17   | 3.3    | 3.48   | 0.003581 | 0.186315 |
| NIP7       | 8.59   | 8.12   | 7.63   | 0.003581 | 0.186315 |
| RP5-1112D6.4| 4.93   | 4.27   | 4.81   | 0.003587 | 0.186466 |
| OSBPL9     | 10.01  | 9.45   | 9.28   | 0.00359  | 0.186466 |
| SGSM3      | 8.07   | 7.32   | 7.74   | 0.003595 | 0.186487 |
| PSG8       | 3.65   | 3.82   | 3.78   | 0.003606 | 0.186744 |
| FKBPIA     | 8.66   | 8.06   | 7.61   | 0.003608 | 0.186744 |
| Gene      | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 |
|-----------|--------|--------|--------|--------|--------|--------|
| GCLC      | 6.5    | 7.58   | 7.72   | 0.003612 | 0.186744 |
| RP1-300I2.2 | 3.88  | 4.11   | 3.76   | 0.003612 | 0.186744 |
| INTS7     | 8.15   | 7.41   | 7.7    | 0.003619 | 0.186967 |
| RAETIL    | 3.89   | 3.98   | 4.46   | 0.00363  | 0.187177 |
| FTH1P3    | 9.56   | 8.73   | 7.99   | 0.003631 | 0.187177 |
| U73166.2  | 4.35   | 4.46   | 4.85   | 0.003631 | 0.187177 |
| KIAA0895L | 4.76   | 4.83   | 4.69   | 0.003647 | 0.187311 |
| TOR1AIP2  | 7.07   | 7.34   | 7.88   | 0.003652 | 0.187311 |
| SLC01C1   | 3.31   | 3.48   | 3.6    | 0.003655 | 0.187311 |
| BAG3      | 4.46   | 4.64   | 5.34   | 0.003657 | 0.187311 |
| MPRII     | 8.81   | 7.36   | 7.92   | 0.003657 | 0.187311 |
| LINC01312 | 3.64   | 3.75   | 3.4    | 0.003659 | 0.187311 |
| STARD10   | 5.96   | 5.67   | 5.65   | 0.003676 | 0.187613 |
| FAM132A   | 5.1    | 5.24   | 5.39   | 0.003682 | 0.187613 |
| SGK223    | 6.21   | 6.61   | 7      | 0.003684 | 0.187613 |
| EEF1E1    | 8.56   | 8.16   | 7.93   | 0.003684 | 0.187613 |
| RP11-655H13.2 | 4.18 | 4.46 | 4.86 | 0.003687 | 0.187613 |
| AC073236.3 | 3.22  | 3.26   | 3.42   | 0.003697 | 0.187833 |
| HIS1BP3-IT1 | 4.41  | 4.37   | 4.97   | 0.003701 | 0.187833 |
| NPLOC4    | 8.84   | 9.75   | 10.99  | 0.003706 | 0.187833 |
| TAAR2     | 3.98   | 4.42   | 3.81   | 0.003709 | 0.187833 |
| KIF21A    | 4.7    | 4.83   | 5.27   | 0.00371  | 0.187833 |
| PXK       | 11.37  | 10.6   | 10.4   | 0.003715 | 0.187872 |
| TRIB2     | 8.25   | 5.7    | 5.06   | 0.003729 | 0.187872 |
| DCAF13    | 8.77   | 8.45   | 8.37   | 0.003738 | 0.187872 |
| STEAP1B   | 6.15   | 5.23   | 4.94   | 0.00374  | 0.187872 |
| RAD51-AS1 | 7.7    | 8.19   | 8.75   | 0.003741 | 0.187872 |
| TNFRSF10B | 6.22   | 6.84   | 6.47   | 0.003746 | 0.187872 |
| CDK2      | 7.22   | 7.33   | 8.03   | 0.00375  | 0.187872 |
| Gene          | Fold Change | Fold Change | Fold Change | p-Value | p-Value |
|--------------|-------------|-------------|-------------|---------|---------|
| NRN1L        | 5.27        | 5.48        | 5.77        | 0.003752 | 0.187872 |
| RNU6-1177P   | 2.86        | 2.8         | 3.23        | 0.003752 | 0.187872 |
| KIAA0087     | 3.35        | 3.52        | 3.07        | 0.003753 | 0.187872 |
| LOC440028    | 3.94        | 4.11        | 4.09        | 0.003755 | 0.187872 |
| AP002856.6   | 3.96        | 4.41        | 4.47        | 0.003757 | 0.187872 |
| SKIL         | 9.87        | 8.96        | 8.06        | 0.003758 | 0.187872 |
| SOX5         | 6.17        | 4.91        | 4.47        | 0.003759 | 0.187872 |
| FAM71E2      | 3.85        | 3.93        | 3.98        | 0.003761 | 0.187872 |
| PTCRA        | 4.78        | 4.84        | 5.13        | 0.003768 | 0.188047 |
| FHITP4       | 11.49       | 10.82       | 10.16       | 0.003779 | 0.188283 |
| HSPB1        | 4.85        | 4.87        | 5.46        | 0.003785 | 0.188283 |
| OR51I2       | 2.99        | 3.11        | 3.34        | 0.003789 | 0.188283 |
| OSBP         | 8.54        | 8.65        | 8.02        | 0.003789 | 0.188283 |
| ASUN         | 8.21        | 7.54        | 7.95        | 0.003797 | 0.188529 |
| CCL8R1       | 4.92        | 4.12        | 3.85        | 0.003802 | 0.188543 |
| PLCG1        | 6.84        | 8.18        | 8.5         | 0.003803 | 0.188543 |
| TMEM57       | 9.22        | 8.73        | 8.61        | 0.003812 | 0.18885 |
| LINC00408    | 4.36        | 4.66        | 4.47        | 0.003816 | 0.188898 |
| VAMP1        | 9.01        | 9.66        | 11.42       | 0.003827 | 0.188898 |
| LOC101060595 | 4.94        | 5.36        | 5.82        | 0.003829 | 0.188898 |
| ADAMTS7P4    | 6.31        | 5.65        | 5.49        | 0.003837 | 0.188898 |
| LTV1         | 10.89       | 10.57       | 10.06       | 0.003842 | 0.188898 |
| RP11-231G15.2| 3.38        | 3.76        | 3.55        | 0.003843 | 0.188898 |
| HMP19        | 3.98        | 4.08        | 4.15        | 0.003844 | 0.188898 |
| ABO          | 6.28        | 6.38        | 6.9         | 0.003845 | 0.188898 |
| CER53        | 3.57        | 3.65        | 3.72        | 0.003846 | 0.188898 |
| PIK3C2B      | 8.73        | 6.8         | 6.02        | 0.003851 | 0.188898 |
| WFDC3        | 3.85        | 3.95        | 4.12        | 0.003852 | 0.188898 |
| MYCBP2       | 11.83       | 11.2        | 10.91       | 0.003855 | 0.188898 |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
| **NPHP3** | 6.78 | 7.26 | 7.81 | 0.00386 | 0.188898 |
| **FBLN1** | 3.92 | 3.94 | 4 | 0.003864 | 0.188898 |
| **MBD6** | 6.64 | 6.3 | 6.85 | 0.003866 | 0.188898 |
| **SLK** | 9.45 | 9.27 | 9.12 | 0.003872 | 0.189049 |
| **ZNF415** | 6.77 | 7.54 | 7.61 | 0.00389 | 0.189049 |
| **DIXE4** | 7.76 | 6.89 | 7.06 | 0.003893 | 0.189049 |
| **RP5-1028L10.1** | 2.89 | 2.99 | 3.23 | 0.003897 | 0.189049 |
| **LINC00622** | 3.58 | 3.79 | 3.79 | 0.003902 | 0.189049 |
| **LOC4441454** | 3.71 | 3.65 | 3.44 | 0.003903 | 0.189049 |
| **APOBEC3G** | 7.13 | 8.05 | 9.16 | 0.003906 | 0.189049 |
| **CYDG** | 8.14 | 7.88 | 8.49 | 0.003915 | 0.189121 |
| **CDK13** | 10.03 | 9.34 | 10.41 | 0.003919 | 0.189186 |
| **MOG** | 3.99 | 4.15 | 4.28 | 0.003925 | 0.189305 |
| **GSTZ1** | 5.4 | 5.77 | 5.66 | 0.003935 | 0.189451 |
| **MIR3178** | 3.77 | 4.18 | 4.52 | 0.003939 | 0.189451 |
| **ABHD6** | 6.28 | 5.22 | 5.42 | 0.003945 | 0.189451 |
| **DHX16** | 7 | 6.97 | 7.81 | 0.00395 | 0.18946 |
| **TTTY2** | 3.46 | 3.79 | 3.69 | 0.003953 | 0.18946 |
| **RNU6-625P** | 5.78 | 4.24 | 4.6 | 0.003953 | 0.18946 |
| **AC002480.5** | 4.99 | 4.03 | 3.9 | 0.00398 | 0.19035 |
| **KRTAP4-16P** | 4.76 | 4.99 | 5.48 | 0.00398 | 0.19035 |
| **LOC100507054** | 5.44 | 5.02 | 5.05 | 0.003991 | 0.190608 |
| **RP11-475124.3** | 5.86 | 6.29 | 6.63 | 0.003995 | 0.190659 |
| **CCBL2** | 8.62 | 8.16 | 8.22 | 0.004026 | 0.191831 |
| **ZMIZ1** | 5.68 | 4.93 | 4.96 | 0.004027 | 0.191831 |
| **LYG1** | 4.83 | 4.88 | 5.73 | 0.004031 | 0.191831 |
| **H3F3AP5** | 12.09 | 11.73 | 10.97 | 0.00404 | 0.191831 |
| **MBNL2** | 9.54 | 8.97 | 8.57 | 0.00404 | 0.191831 |
| **ZFP91-CNTF** | 10.36 | 9.81 | 9.6 | 0.004041 | 0.191831 |
| Gene   | FGFRL1 | LOC101929237 | CHRNA2 | URGCP | TERF1 | GLDN | SLC26A6 | ADCK2 | NTMT1 | JMJD7 | SPIDR | RP11-184A2.2 | RAD52 | UBE2MP1 | GRAMD1B | RPL21P44 | CLEC18A | LOC642852 | PIE | UBE2W | PHF20 | CRI1 | ASAP1 | TOPBP1 | CLTA | FKBP1C | RPS18 | SMYD4 | HYAL2 |
|--------|--------|--------------|--------|-------|-------|------|---------|-------|-------|-------|------|---------------|-------|---------|----------|----------|---------|----------|----|-------|-------|------|-------|--------|-----|-------|-------|------|-------|
|        | 5.53   | 3.98         | 3.93   | 6.18  | 9.32  | 3.84 | 5.01    | 6.01  | 7.17  | 6.13  | 7.77 | 4.8             | 4.51  | 5.84    | 4.74     | 4.9      | 4.23    | 5.21     | 7.97| 10.22 | 8.16 | 6.98 | 7.84  | 9.15    | 9.71| 4.85  | 17.93 | 7.4   | 4.65  |
|        | 5.38   | 4.11         | 4.07   | 6.39  | 8.86  | 3.9   | 5.1     | 5.73  | 7.17  | 6.13  | 7.55 | 5.01           | 4.63   | 5.72    | 6.97     | 4.54     | 4.34    | 5.32     | 8.28| 9.81  | 7.64 | 6.17 | 6.87  | 9.03    | 9.61| 4.51  | 17.61 | 7.6   | 5.06  |
|        | 5.22   | 4.22         | 4.13   | 6.61  | 8.74  | 4.23  | 5.56    | 5.83  | 6.68  | 6.38  | 7.51 | 5.22           | 4.86   | 5.35    | 7.99     | 4.88     | 4.51    | 5.49     | 7.98| 9.4   | 7.59 | 4.99 | 6.8    | 8.67    | 9.19| 4.27  | 17.2  | 8.35  | 5.68  |
|        | 0.004045 | 0.004047    | 0.004054 | 0.004054 | 0.004058 | 0.004062 | 0.004064 | 0.004066 | 0.004075 | 0.004079 | 0.004084 | 0.004087 |                | 0.004088 | 0.004089 | 0.004090 | 0.004091 | 0.004093 | 0.004099 | 0.004132 | 0.004137 | 0.004139 | 0.004143 | 0.004146 | 0.004151 | 0.004152 | 0.004159 | 0.004179 | 0.004202 | 0.004202 |
| Gene          | Log2FC1 | Log2FC2 | Log2FC3 | p-value   | FDR         |
|--------------|---------|---------|---------|-----------|-------------|
| MIR662       | 3.49    | 3.56    | 3.75    | 0.004214  | 0.194763    |
| SBK1         | 4.83    | 5.35    | 6.32    | 0.004221  | 0.194763    |
| CLEC18C      | 4.66    | 4.82    | 4.92    | 0.004225  | 0.194763    |
| SNX17        | 7.71    | 7.18    | 7.4     | 0.004225  | 0.194763    |
| PCDH9-AS4    | 3.05    | 3.39    | 3.7     | 0.004227  | 0.194763    |
| SLC6A16      | 8.46    | 9.27    | 9.58    | 0.004239  | 0.194911    |
| RQCD1        | 10.29   | 9.94    | 9.73    | 0.004247  | 0.194911    |
| XRN2         | 10.63   | 10.54   | 10.24   | 0.004252  | 0.194911    |
| RN7SKP144    | 10.95   | 10.97   | 10.77   | 0.004252  | 0.194911    |
| METTL1       | 5.07    | 4.66    | 4.53    | 0.004254  | 0.194911    |
| DHX16        | 7.02    | 6.99    | 7.83    | 0.004257  | 0.194911    |
| GABARAP      | 10.7    | 10.56   | 10.21   | 0.00426   | 0.194911    |
| RPL34        | 8.73    | 8.71    | 8.55    | 0.00426   | 0.194911    |
| VPS37B       | 8.01    | 7       | 6.26    | 0.004263  | 0.194911    |
| TYW3         | 9.74    | 9.64    | 8.97    | 0.004263  | 0.194911    |
| TIMM22       | 8.42    | 7.89    | 7.75    | 0.004274  | 0.194999    |
| NDUFC1       | 5.52    | 6.01    | 6.48    | 0.004275  | 0.194999    |
| DTX4         | 7.5     | 6.51    | 6.04    | 0.004277  | 0.194999    |
| KB-1930G5.3  | 3.2     | 3.39    | 3.58    | 0.004285  | 0.195012    |
| RAPGEF6      | 8.34    | 7.6     | 7.78    | 0.004287  | 0.195012    |
| AC016644.1   | 3.67    | 3.78    | 4.24    | 0.004292  | 0.195012    |
| PIEZO2       | 3.74    | 3.86    | 3.83    | 0.004298  | 0.195012    |
| RABGGTA      | 8.39    | 7.67    | 7.77    | 0.004301  | 0.195012    |
| RNU6-883P    | 4.74    | 4.92    | 5.64    | 0.004303  | 0.195012    |
| PLXNB1       | 4.22    | 4.4     | 4.41    | 0.004307  | 0.195075    |
| GATSL3       | 5.88    | 5.55    | 5.75    | 0.004317  | 0.195391    |
| GBGT1        | 5.34    | 4.83    | 5.13    | 0.004322  | 0.195471    |
| PTPRCAP      | 10.63   | 9.95    | 9.9     | 0.004326  | 0.195485    |
| DHX16        | 7.02    | 6.99    | 7.83    | 0.004331  | 0.195485    |
| Gene       | Mean | SD  | Min | Max     | FDR   | qval  |
|------------|------|-----|-----|---------|-------|-------|
| SUN2       | 8.16 | 7.35| 7.74| 0.004338| 0.195511|
| HY1        | 6.85 | 7.1 | 7.36| 0.00434 | 0.195511|
| SPRR1B     | 5.28 | 5.6 | 5.81| 0.004354| 0.195998|
| IGHV5-51   | 5.56 | 5.18| 4.6 | 0.004365| 0.196006|
| CXorf57    | 5.18 | 3.91| 3.87| 0.004366| 0.196006|
| NOL8       | 9.44 | 9.09| 9.12| 0.004367| 0.196006|
| SCLT1      | 7.41 | 7.05| 6.99| 0.004375| 0.196126|
| MOB3B      | 6.56 | 4.59| 3.83| 0.004378| 0.196126|
| DES11      | 7.08 | 6.6 | 6.52| 0.004384| 0.196199|
| CSF1R      | 4.92 | 5.06| 5.4 | 0.004384| 0.196199|
| BTF3P10    | 7.42 | 7.04| 6.63| 0.004397| 0.196328|
| GNB2       | 7.76 | 7.49| 7.66| 0.004397| 0.196379|
| JUP        | 6.44 | 4.93| 4.66| 0.004398| 0.196379|
| SPICE1     | 6.76 | 6.74| 7.13| 0.004408| 0.196557|
| OSBPL8     | 10.44| 9.65| 9.31| 0.00441 | 0.196557|
| LOC101060602| 5.5  | 5.58| 5.93| 0.004422| 0.196794|
| RP11-265P11.1 | 4     | 5.16| 5.9 | 0.004429| 0.196794|
| RP11-521J24.1 | 4.62  | 7   | 8.5 | 0.004443| 0.196794|
| TET1L1     | 5.44 | 5.6 | 6.37| 0.004432| 0.196794|
| CCDC144CP  | 4.95 | 4.32| 5.17| 0.004433| 0.196794|
| NCKAP5L    | 5.04 | 5.13| 5.21| 0.004444| 0.196922|
| AMOT       | 4.55 | 4.54| 4.85| 0.004451| 0.196955|
| PPP1R3E    | 9    | 9.28| 10.55| 0.004453| 0.196955|
| PTPRVP     | 4.41 | 4.69| 4.78| 0.004455| 0.196955|
| SLC2A3     | 16.36| 14.27| 10.9| 0.004456| 0.196955|
| UBE4B      | 8.27 | 8.26| 8.48| 0.004457| 0.196955|
| AC012485.2 | 3.44 | 3.64| 4.04| 0.00446 | 0.196995|
| HNRNPUL2   | 9.74 | 9.36| 9.22| 0.00447 | 0.197143|
| TMEM44     | 4.62 | 4.88| 5.07| 0.004476| 0.197272|
| Gene       | FC1  | FC2  | FC3  | p-value  | q-value   |
|------------|------|------|------|----------|-----------|
| ZFYVE1     | 7.18 | 7.4  | 7.83 | 0.004478 | 0.197272  |
| SLC22A1    | 4.34 | 4.51 | 4.64 | 0.004484 | 0.197332  |
| EIF3J-AS1  | 6.1  | 6.19 | 6.77 | 0.00449  | 0.197332  |
| PDE7A      | 7.35 | 6.94 | 6.06 | 0.00449  | 0.197332  |
| ANKRD16    | 5.71 | 5.59 | 6.61 | 0.004499 | 0.197332  |
| DHX16      | 7.02 | 6.99 | 7.83 | 0.0045   | 0.197332  |
| LOC100505622 | 6.75 | 6.22 | 7.62 | 0.00452  | 0.197796  |
| SPPN       | 5.24 | 4.47 | 4.31 | 0.004523 | 0.197797  |
| DHRS4L2    | 7.21 | 7.17 | 7.54 | 0.004539 | 0.198393  |
| TRIM13     | 7.17 | 6.87 | 6.85 | 0.004548 | 0.198531  |
| MGC45922   | 3.98 | 3.92 | 4.35 | 0.00456  | 0.198832  |
| BMPR2      | 10.16| 12.63| 12.24| 0.004561 | 0.198832  |
| SCGB1B2P   | 3.59 | 3.59 | 3.82 | 0.004564 | 0.198832  |
| LINC00667  | 7.1  | 8.11 | 8.48 | 0.004592 | 0.199909  |
| LIN37      | 5.8  | 5.81 | 6.11 | 0.004599 | 0.199909  |
| ARSI       | 3.9  | 4.09 | 4.12 | 0.0046   | 0.199909  |
| Cxorf57    | 7.23 | 4.74 | 4.58 | 0.004604 | 0.199946  |
| ABCC6      | 4.28 | 4.37 | 4.48 | 0.004611 | 0.200117  |
| TM4SF5     | 3.06 | 3.14 | 3.2  | 0.004618 | 0.200168  |
| RN7SKP203  | 11.21| 11.22| 10.85| 0.004621 | 0.200168  |
| POM121C    | 7.42 | 7.12 | 6.82 | 0.004621 | 0.200168  |
| HERC2P4    | 7.7  | 6.96 | 8.1  | 0.004626 | 0.20018   |
| HAVCR1P1   | 3.02 | 2.95 | 3.47 | 0.004628 | 0.20018   |
| FAM27C     | 3.7  | 3.52 | 3.57 | 0.00463  | 0.20018   |
| PTPN13     | 3.61 | 3.63 | 3.75 | 0.004642 | 0.200405  |
| LOC100507053 | 4.26 | 4.47 | 4.48 | 0.004642 | 0.200405  |
| LOC100506469 | 5.38 | 5.58 | 5.73 | 0.004649 | 0.200466  |
| MEGF6      | 5.84 | 6.09 | 6.29 | 0.004652 | 0.200467  |
| ROBO1      | 4.54 | 4.22 | 4.16 | 0.004667 | 0.200978  |
|      |    |    |    |          |          |
|------|----|----|----|----------|----------|
| HNRNPA3P1 | 8.31 | 8.1  | 7.57 | 0.004686  | 0.201518 |
| EIF2AK3      | 9.91  | 8.86 | 7.98 | 0.004692  | 0.201534 |
| LRP8         | 5.86  | 5.28 | 5.32 | 0.00472   | 0.202503 |
| RNU6-806P    | 6.25  | 4.16 | 4.2  | 0.004743  | 0.202744 |
| FAM207A      | 5.44  | 5.47 | 5.63 | 0.004747  | 0.202744 |
| PLA2G7       | 4.1   | 4.22 | 4.39 | 0.004765  | 0.202744 |
| SLC25A13     | 7.02  | 6.47 | 6.2  | 0.004768  | 0.202744 |
| NACA         | 9.25  | 9.08 | 8.94 | 0.004768  | 0.202744 |
| MARCKS       | 11.19 | 10.88| 7.65 | 0.004773  | 0.202744 |
| TCEB2P2      | 5.96  | 5.65 | 5.31 | 0.004776  | 0.202744 |
| MIR4659A     | 9.61  | 12.92| 11.66| 0.00478   | 0.202744 |
| ATXN1        | 7.1   | 8.52 | 9.2  | 0.004797  | 0.202744 |
| PANX1        | 6.51  | 6.12 | 5.74 | 0.004801  | 0.202744 |
| ARL14EP      | 10.95 | 10.06| 9.65 | 0.004802  | 0.202744 |
| MIR877       | 6.98  | 6.94 | 6.2  | 0.004803  | 0.202744 |
| IGLL3P       | 8.01  | 7.84 | 7.58 | 0.004803  | 0.202744 |
| GNG7         | 12.27 | 10.91| 9.68 | 0.004804  | 0.202744 |
| TLR2         | 3.48  | 3.57 | 3.99 | 0.004804  | 0.202744 |
| MRPS18A      | 10.18 | 9.3  | 9.07 | 0.004807  | 0.202744 |
| ABCC1        | 9.36  | 9.05 | 9.47 | 0.004816  | 0.202744 |
| SPPR3        | 3.48  | 3.77 | 3.93 | 0.004817  | 0.202744 |
| PHLPP1       | 5.2   | 4.18 | 4.01 | 0.004819  | 0.202744 |
| CDH26        | 4.21  | 4.36 | 4.47 | 0.004829  | 0.203027 |
| U82670.4     | 4.13  | 4.48 | 4.32 | 0.004836  | 0.203027 |
| MUC1         | 3.91  | 4.14 | 4.28 | 0.004837  | 0.203027 |
| NUP153       | 12.79 | 12.3 | 12.02| 0.004839  | 0.203027 |
| RNU7-23P     | 6.84  | 6.83 | 7.48 | 0.004841  | 0.203027 |
| JAM2         | 4.77  | 4.73 | 5.59 | 0.004848  | 0.203166 |
| EMILIN2      | 4.56  | 3.93 | 3.76 | 0.004853  | 0.203166 |
| Gene       | Log2 FC | Log10 P | Adjusted Log10 P |
|------------|---------|---------|-----------------|
| CD276      | 4.4     | 0.004854| 0.203166        |
| DHX16      | 6.96    | 0.004858| 0.203166        |
| RP11-279O9.4 | 6.97    | 0.004865| 0.203166        |
| TBC1D10B   | 5.06    | 0.004865| 0.203166        |
| YBX1       | 13.38   | 0.00487 | 0.203245        |
| GLYCTK     | 6.82    | 0.004875| 0.203334        |
| IGHV7-81   | 6.44    | 0.004883| 0.203542        |
| TPI1P3     | 4.91    | 0.004888| 0.203619        |
| NDUFB9     | 7.83    | 0.004895| 0.203776        |
| PNLDCl     | 3.42    | 0.0049  | 0.203834        |
| PDLIM1     | 10.1    | 0.004906| 0.203863        |
| GOLGA6L6   | 4.87    | 0.004936| 0.204703        |
| SNORD116-20| 5.48    | 0.004936| 0.204703        |
| FANCF      | 7.25    | 0.004938| 0.204703        |
| NEIL1      | 5.27    | 0.004954| 0.205068        |
| TGFB2      | 4.41    | 0.004957| 0.205068        |
| PLK4       | 5.66    | 0.004965| 0.205068        |
| LOC100505782| 3.68    | 0.004965| 0.205068        |
| FAM154A    | 3.45    | 0.004974| 0.205328        |
| NET1       | 5.43    | 0.004993| 0.20598         |
| LOC100129034| 11.9    | 0.004997| 0.20601         |
| ZCCCHC10   | 8.31    | 0.005004| 0.20601         |
| PURA       | 10.19   | 0.00502 | 0.20601         |
| CBX7       | 6.99    | 0.005024| 0.20601         |
| TRAF1      | 6.58    | 0.005028| 0.20601         |
| RP5-836J3.1| 5.36    | 0.005028| 0.20601         |
| RPS18      | 8.63    | 0.005032| 0.206049        |
| TRIM16     | 5.35    | 0.005036| 0.206098        |
| EPB41L2    | 6.82    | 0.00504 | 0.206128        |
| Gene            | 2001 | 2002 | 2003 | p-value  | q-value  |
|-----------------|------|------|------|----------|----------|
| JAM3            | 6.29 | 5.2  | 4.35 | 0.005043 | 0.206161 |
| HLA-DPB2        | 6.77 | 6.54 | 5.84 | 0.005054 | 0.206391 |
| LOC100507577    | 9.33 | 9.33 | 10.47| 0.005064 | 0.206499 |
| RRP15           | 9    | 8.78 | 8.26 | 0.005085 | 0.206738 |
| COX7C           | 8.56 | 8.55 | 8.19 | 0.005086 | 0.206738 |
| JOSD1           | 10.16| 9.98 | 9.23 | 0.005089 | 0.206738 |
| SLC39A5         | 3.89 | 4.04 | 4.06 | 0.005091 | 0.206738 |
| IGSF3           | 5.48 | 6.14 | 7.44 | 0.005096 | 0.206738 |
| FAM210A         | 6.97 | 6.81 | 6.4  | 0.005099 | 0.206738 |
| CEP135          | 8.52 | 7.47 | 7.35 | 0.005101 | 0.206738 |
| ITFG2           | 10.14| 9.78 | 10.42| 0.005103 | 0.206738 |
| TRANK1          | 10.24| 8.89 | 9.33 | 0.005103 | 0.206738 |
| PDE4D           | 5.27 | 4.34 | 4.18 | 0.005104 | 0.206738 |
| BID             | 6.9  | 5.59 | 5.27 | 0.005121 | 0.207092 |
| MIR142          | 10.86| 9.42 | 8.71 | 0.005131 | 0.207133 |
| BANK1           | 14.19| 12.62| 11.51| 0.005132 | 0.207133 |
| LPP             | 6.75 | 7.49 | 7.83 | 0.005138 | 0.207146 |
| TTC28-AS1       | 5.24 | 5.47 | 5.53 | 0.005161 | 0.207819 |
| CTC1            | 10.07| 9.84 | 10.73| 0.005167 | 0.207832 |
| MEMO1P1         | 6.81 | 6.18 | 6.35 | 0.00517  | 0.207832 |
| MS4A7           | 7.02 | 5.32 | 5.55 | 0.005176 | 0.207832 |
| LINC00649       | 3.21 | 3.09 | 3.32 | 0.005182 | 0.207832 |
| UCA1            | 3.85 | 4.13 | 4.24 | 0.005197 | 0.207832 |
| MIR4729         | 4.89 | 5.3  | 6.48 | 0.005202 | 0.207832 |
| RP5-905G11.3    | 3.14 | 3.42 | 3.64 | 0.005204 | 0.207832 |
| HIST1H2AA       | 3.66 | 3.76 | 4.06 | 0.005206 | 0.207832 |
| CDC42BPG        | 5.13 | 5.26 | 5.45 | 0.005207 | 0.207832 |
| UBE2E1-AS1      | 3.57 | 3.73 | 4.03 | 0.005207 | 0.207832 |
| MEMO1           | 7.66 | 7.21 | 7.3  | 0.005216 | 0.207832 |
| Gene          | Value1 | Value2 | Value3 | p-value1 | p-value2 |
|--------------|--------|--------|--------|----------|----------|
| GOLGA6L5P    | 4.81   | 4.89   | 5.14   | 0.005217 | 0.207832 |
| WDR82        | 9.65   | 9.92   | 9.83   | 0.005222 | 0.207832 |
| MSGN1        | 5.54   | 5.73   | 5.62   | 0.005226 | 0.207832 |
| LSM14A       | 11.29  | 10.86  | 10.73  | 0.005233 | 0.207832 |
| RP11-314M24.1| 3.59   | 3.96   | 4.04   | 0.005234 | 0.207832 |
| HLA-DPB2     | 4.81   | 4.89   | 5.14   | 0.005217 | 0.207832 |
| TNK2         | 6.87   | 6.69   | 7.09   | 0.005241 | 0.207832 |
| GARNL3       | 5.05   | 5.41   | 5.17   | 0.005242 | 0.207832 |
| TRGV2        | 4.25   | 4.47   | 5.34   | 0.005257 | 0.207862 |
| KIAA2018     | 9.65   | 9.42   | 8.81   | 0.005258 | 0.207862 |
| ZNF177       | 6.01   | 6.54   | 6.7    | 0.00526  | 0.207862 |
| WEE1         | 7.28   | 7.88   | 8.26   | 0.005262 | 0.207862 |
| RN7SKP231    | 10.74  | 10.6   | 10.21  | 0.005265 | 0.207862 |
| GCC1         | 6.99   | 6.67   | 6.63   | 0.00527  | 0.207862 |
| CUL4B        | 7.75   | 8.16   | 8.15   | 0.005271 | 0.207862 |
| CASKIN1      | 4.2    | 4.32   | 4.18   | 0.005279 | 0.207862 |
| ZEB1         | 9.21   | 9.73   | 9.37   | 0.005286 | 0.207862 |
| OMG          | 4      | 4.71   | 5.46   | 0.00529  | 0.207862 |
| RP11-272D20.2| 4.73   | 4.99   | 5.07   | 0.005298 | 0.207862 |
| LOC100268168 | 4.18   | 4.22   | 4.51   | 0.005303 | 0.207862 |
| ITM2C        | 8.54   | 6.83   | 6.09   | 0.005304 | 0.207862 |
| IQCB1        | 8.63   | 8.21   | 8.99   | 0.005304 | 0.207862 |
| CD164        | 11.71  | 11.43  | 11.17  | 0.00531  | 0.207862 |
| APOE         | 4.35   | 4.34   | 4.72   | 0.005318 | 0.208024 |
| LARGE        | 5.86   | 4.44   | 4.09   | 0.00532  | 0.208024 |
| RP11-155G15.2| 10.04  | 7.2    | 5.81   | 0.005334 | 0.208439 |
| KIAA1524     | 6.48   | 6.03   | 5.53   | 0.00535  | 0.208749 |
| RNF32        | 5.14   | 5.49   | 5.55   | 0.005351 | 0.208749 |
| ATP6V0E2-AS1 | 4.29   | 4.36   | 4.71   | 0.005355 | 0.208749 |
| Gene      | MIR3682 | RNF165 | CLIP2 | CEP120 | C2CD2 | SPIN3 | RAB9B | PRAP1 | CSNK1E | HLA-DPB2 | PWNP2A | CTSL | TRIB2 | SLC34A1 | P2RX5 | MCTP2 | LIN7B | ANKRD50 | ZNF512B | ALDH5A1 | PKD1P1 | S1PR4 | CYBB | EIF2S2 | ZAK | CTNND1 | IGH | EIF3E | PRKCZ |
|-----------|---------|--------|-------|--------|-------|-------|-------|-------|--------|---------|--------|------|------|-------|--------|-------|-------|-------|--------|--------|--------|-------|-------|------|-------|-----|-------|-----|-------|-----|
|           | 8.88    | 3.72   | 5.66  | 10.03  | 5.21  | 5.85  | 4.4   | 4.34  | 7.69   | 7.07   | 7.54  | 3.79 | 7.9  | 3.98   | 10.81 | 8.97  | 4.17  | 3.82   | 5.69   | 5.81   | 8.78  | 6.2   | 14.79 | 11.44 | 4.99  | 7.81  | 17.22 | 10.78 | 5.89 |
|           | 7.52    | 3.73   | 5.31  | 9.56   | 5.39  | 5.81  | 4.57  | 4.53  | 8.71   | 6.66   | 7.29  | 3.86 | 5.4  | 4.12   | 8.85  | 10.56 | 4.37  | 3.49   | 5.58   | 6.37   | 8.24  | 5.53  | 12.37 | 10.91 | 4.53  | 7.29  | 14.76 | 10.63 | 6.03 |
|           | 8.45    | 4.05   | 4.99  | 9.29   | 5.59  | 6.68  | 4.52  | 4.62  | 8.66   | 6     | 7.74  | 3.75 | 4.71 | 4.31   | 8.76  | 10.89 | 4.72  | 3.5    | 5.23   | 6.79   | 8.69  | 5.92  | 9.48  | 10.86 | 4.32  | 6.94  | 10.3  | 10.19 | 6.18 |
|           |         |        |       |        |       |       |       |       |        |        |       |      |     |        |        |       |       |       |        |        |       |      |     |        |     |       |      |        |     |
| Gene         | Score 1 | Score 2 | Score 3 | Score 4 | Score 5 | Score 6 |
|--------------|---------|---------|---------|---------|---------|---------|
| WDFY3        | 3.57    | 3.61    | 3.7     | 0.005483| 0.209309|
| FPR3         | 3.78    | 3.98    | 4.09    | 0.005496| 0.209461|
| MORN4        | 4.28    | 4.46    | 4.58    | 0.005503| 0.209466|
| EIF2AK4      | 7.76    | 7.44    | 6.99    | 0.005523| 0.20981 |
| RP5-1066H13.4| 4.54    | 4.73    | 5.19    | 0.005526| 0.20981 |
| IFITM5       | 4.95    | 5.02    | 5.39    | 0.005526| 0.20981 |
| RP11-322N21.2| 5.58    | 5.78    | 6.21    | 0.005527| 0.20981 |
| NCKAP5       | 3.6     | 3.73    | 4.01    | 0.005527| 0.20981 |
| ACAP2-IT1    | 8.99    | 8.97    | 9.97    | 0.005531| 0.209813|
| MMD2         | 4.26    | 4.38    | 4.38    | 0.005541| 0.21008 |
| ZNF574       | 7.8     | 7.76    | 7.56    | 0.005545| 0.210129|
| VPS45        | 7.86    | 8.05    | 8.42    | 0.005549| 0.210129|
| TLK1         | 11.04   | 11.59   | 11.68   | 0.005556| 0.210129|
| TAF1A        | 5.94    | 6       | 6.69    | 0.00556 | 0.210129|
| AMDHD1       | 5.23    | 5.27    | 5.79    | 0.005563| 0.210129|
| SPRR2G       | 5.59    | 5.37    | 6.18    | 0.005564| 0.210129|
| DDX60L       | 7.84    | 6.97    | 7.18    | 0.00557 | 0.210181|
| DAAM1        | 7.75    | 6.72    | 6.52    | 0.005583| 0.210503|
| LEN8-AS1     | 6.24    | 6.72    | 7.14    | 0.005606| 0.210696|
| GPR183       | 14.95   | 13.32   | 11.29   | 0.005611| 0.210696|
| NOTCH4       | 5       | 5.03    | 5.19    | 0.005615| 0.210696|
| RBM47        | 6.24    | 6.49    | 6.4     | 0.005615| 0.210696|
| FLJ42200     | 6.02    | 4.48    | 4.13    | 0.005616| 0.210696|
| INO80        | 9.21    | 8.66    | 8.51    | 0.00562 | 0.210696|
| RNU6-1292P   | 6.33    | 6.46    | 6.91    | 0.005624| 0.210696|
| KIAA11107    | 4.02    | 4.33    | 4.64    | 0.005624| 0.210696|
| HIPK2        | 9.15    | 8.09    | 7.84    | 0.005626| 0.210696|
| LOC100147773 | 4.51    | 4.29    | 4.75    | 0.005634| 0.210898|
| DENND1B      | 6.74    | 6.2     | 5.62    | 0.005638| 0.21092 |
| Gene          | Value1 | Value2 | Value3 | Value4  | Value5  |
|--------------|--------|--------|--------|---------|---------|
| BAZ1B        | 8.65   | 8.54   | 9.21   | 0.005642| 0.210949|
| HSD17B1P1    | 5.11   | 5.22   | 5.36   | 0.005669| 0.211618|
| LSPI1        | 8.13   | 7.67   | 7.72   | 0.005673| 0.211668|
| RNUI-108P    | 4.46   | 4.67   | 4.61   | 0.005689| 0.211944|
| OC90         | 3.8    | 3.96   | 4.04   | 0.005693| 0.211944|
| AP3S2        | 7.5    | 8.16   | 8.43   | 0.005696| 0.211944|
| FLCN         | 6.03   | 5.76   | 6.34   | 0.005696| 0.211944|
| IGKV2D-24    | 5.9    | 4.73   | 4.31   | 0.005699| 0.211944|
| CASS4        | 4.17   | 5.03   | 6.54   | 0.005701| 0.211944|
| SLC1A4       | 7.41   | 7.21   | 5.76   | 0.005705| 0.211944|
| LOC100128233 | 5.21  | 3.89   | 3.75   | 0.005707| 0.211944|
| CXCL16       | 8.58   | 9.87   | 8.51   | 0.005722| 0.212129|
| TTTY2        | 3.44   | 3.72   | 3.71   | 0.005727| 0.212129|
| AGPAT5       | 8.74   | 10.87  | 9.79   | 0.00573 | 0.212129|
| TNFRSF9      | 3.31   | 3.45   | 3.68   | 0.005737| 0.212265|
| ZNF83        | 10.2   | 10.87  | 11.07  | 0.005749| 0.212594|
| CDC27        | 9.75   | 9.16   | 9.28   | 0.005754| 0.212659|
| RP13-467H17.1 | 3.44 | 3.67   | 3.75   | 0.005767| 0.212805|
| NUB1         | 8.74   | 8.26   | 8.34   | 0.005782| 0.212829|
| ZC4H2        | 6.9    | 7.26   | 8.05   | 0.005784| 0.212829|
| RP11-148B6.2 | 3.31   | 3.71   | 3.32   | 0.005785| 0.212829|
| PRKDC        | 8.76   | 8.48   | 8.31   | 0.005788| 0.212829|
| LCK          | 5.92   | 6.58   | 7.28   | 0.005793| 0.212829|
| ZNF594       | 6.61   | 6.54   | 7.61   | 0.0058  | 0.212829|
| IGKV1D-33    | 7.99   | 6.16   | 5.54   | 0.005803| 0.212829|
| LOC284788    | 3.15   | 3.4    | 3.5    | 0.005808| 0.212829|
| PPP1R2       | 9.17   | 9.78   | 9.67   | 0.005808| 0.212829|
| U2SURP       | 10.5   | 10.71  | 10.47  | 0.005809| 0.212829|
| SLC22A11     | 4.18   | 4.32   | 4.48   | 0.005818| 0.21295 |
| Gene          | Expression1 | Expression2 | Expression3 | p-value    | FDR         |
|--------------|-------------|-------------|-------------|------------|-------------|
| LDB3         | 3.69        | 3.73        | 3.84        | 0.005832   | 0.213252    |
| BTF3         | 9.56        | 9.37        | 9.06        | 0.005834   | 0.213252    |
| RNU6-745P    | 5.69        | 5.85        | 6.58        | 0.005839   | 0.213252    |
| POU6F1       | 6.39        | 6.05        | 6.37        | 0.005839   | 0.213252    |
| FLJ38379     | 7.31        | 6.96        | 5.34        | 0.00585    | 0.213321    |
| POLB         | 7.94        | 7.61        | 7.69        | 0.005856   | 0.213321    |
| LPP          | 8.48        | 9.67        | 10.53       | 0.005859   | 0.213321    |
| DDX11        | 7.16        | 7.44        | 8.14        | 0.005865   | 0.213321    |
| NOP10        | 10.75       | 9.88        | 10.04       | 0.005875   | 0.213321    |
| RNU4-80P     | 5.65        | 6.74        | 8.12        | 0.005877   | 0.213321    |
| TMEM82       | 3.99        | 4.03        | 4.25        | 0.005878   | 0.213321    |
| TCTN3        | 7.5         | 7.14        | 7.12        | 0.005879   | 0.213321    |
| TMEM107      | 6.34        | 6.53        | 7.09        | 0.005879   | 0.213321    |
| GUF1         | 8.25        | 7.84        | 7.34        | 0.005886   | 0.213321    |
| FARSB        | 8.09        | 7.56        | 7.78        | 0.005887   | 0.213321    |
| RP1-125N5.2  | 3.4         | 3.69        | 3.82        | 0.005888   | 0.213321    |
| TMEM158      | 4.35        | 4.41        | 4.66        | 0.005888   | 0.213321    |
| NCDN         | 5.68        | 5.57        | 6.08        | 0.005902   | 0.213477    |
| RP5-963E22.4 | 5.2         | 5.45        | 5.83        | 0.005907   | 0.213515    |
| SPI          | 9.4         | 8.72        | 9.31        | 0.00591    | 0.213515    |
| PHTF1        | 6.33        | 7           | 7.99        | 0.005915   | 0.213571    |
| SPCS3        | 9.72        | 9.62        | 9.06        | 0.00592    | 0.213571    |
| SNORA23      | 14.47       | 14.89       | 16.83       | 0.005923   | 0.213571    |
| GPRIN2       | 3.75        | 3.83        | 4.31        | 0.005927   | 0.213571    |
| FGFR4        | 4.7         | 4.78        | 4.9         | 0.005948   | 0.214095    |
| FLJ42200     | 5.61        | 4.36        | 3.82        | 0.00597    | 0.214095    |
| LOC100129936 | 3.6         | 3.88        | 3.56        | 0.00597    | 0.214095    |
| RP11-328K15.1| 3.7         | 3.89        | 4.36        | 0.005971   | 0.214095    |
| MNT          | 7.41        | 7.11        | 6.99        | 0.005972   | 0.214095    |
| Gene        | Mean1 | Mean2 | Mean3 | p-Val1  | p-Val2  |
|-------------|-------|-------|-------|---------|---------|
| EIF3L       | 11.51 | 11.21 | 11.02 | 0.005973| 0.214095|
| HLA-DPB2    | 6.83  | 6.53  | 5.85  | 0.005977| 0.214095|
| C16orf13    | 6.08  | 5.79  | 6     | 0.005987| 0.214095|
| PAGR1       | 7.21  | 6.62  | 6.72  | 0.005991| 0.214095|
| CDK2AP1     | 6.79  | 7.01  | 6.57  | 0.005993| 0.214095|
| LOC100128398| 6.79  | 7.18  | 7.89  | 0.005994| 0.214095|
| RNU2-63P    | 8.54  | 9.54  | 11.43 | 0.005994| 0.214095|
| ARHGAP10    | 3.8   | 3.9   | 4.05  | 0.005995| 0.214095|
| BACH1       | 9.49  | 9.65  | 8.02  | 0.005997| 0.214095|
| EIF4G3      | 8.74  | 8.02  | 8.06  | 0.005998| 0.214095|
| RAB5A       | 10.51 | 10.25 | 9.59  | 0.005999| 0.214095|
| RNU6-373P   | 5.89  | 6.29  | 6.99  | 0.006006| 0.214231|
| PLA2G2F     | 3.63  | 3.68  | 3.87  | 0.006019| 0.214501|
| HLA-H       | 3.33  | 3.55  | 3.62  | 0.006029| 0.214568|
| LOC101927777| 6.79  | 4.43  | 4.62  | 0.006039| 0.214568|
| SLC52A3     | 3.92  | 3.96  | 4.16  | 0.006041| 0.214568|
| UTP14A      | 6.76  | 6.51  | 6.24  | 0.006048| 0.214568|
| PANK1       | 4.92  | 5.16  | 5.24  | 0.006054| 0.214568|
| SUN1        | 7.97  | 8.11  | 8.72  | 0.006072| 0.214568|
| CELP        | 3.51  | 3.51  | 3.72  | 0.006074| 0.214568|
| CDK13       | 11.59 | 10.8  | 11.39 | 0.006079| 0.214568|
| SLC17A3     | 3.42  | 3.66  | 3.57  | 0.006081| 0.214568|
| MIR4288     | 5.81  | 6.09  | 6.44  | 0.006083| 0.214568|
| RNU6-571P   | 5.97  | 6.31  | 5.96  | 0.006084| 0.214568|
| NMBR        | 4.19  | 4.28  | 3.77  | 0.006088| 0.214568|
| TES         | 9.29  | 7.32  | 7.59  | 0.006097| 0.214568|
| FAM46C      | 10.49 | 10.89 | 8.47  | 0.006101| 0.214568|
| SNORD115-28 | 3.49  | 4.09  | 3.15  | 0.006106| 0.214593|
| TPDS2L2     | 6.95  | 6.7   | 6.72  | 0.006108| 0.214593|
| Genistein | 6.31 | 6.2 | 0.006118 | 0.214593 |
|-----------|------|-----|-----------|-----------|
| 9.85      | 9.32 |     | 0.006124  | 0.214593 |
| 4.24      | 4.14 | 5.62 | 0.006124  | 0.214593 |
| 4.43      | 4.56 | 4.85 | 0.006125  | 0.214593 |
| 4.61      | 4.7  | 4.8  | 0.006128  | 0.214593 |
| 3.27      | 3.43 | 3.44 | 0.006133  | 0.214593 |
| 5.61      | 5.75 | 8.1  | 0.006139  | 0.214593 |
| 8.83      | 10.37| 10.35| 0.00614   | 0.214593 |
| 8.02      | 4.77 | 3.77 | 0.006141  | 0.214593 |
| 4.74      | 4.2  | 3.77 | 0.006145  | 0.214593 |
| 6.31      | 4.75 | 4.76 | 0.006146  | 0.214593 |
| 8.56      | 8.29 | 7.23 | 0.006173  | 0.215036 |
| 7.57      | 8.16 | 8.93 | 0.006175  | 0.215036 |
| 3.18      | 3.07 | 3.52 | 0.006182  | 0.215077 |
| 4.53      | 4.06 | 4.16 | 0.006193  | 0.215083 |
| 6.17      | 6.97 | 6.15 | 0.006207  | 0.215083 |
| 3.61      | 3.67 | 3.81 | 0.006208  | 0.215083 |
| 8.55      | 8.66 | 9.29 | 0.006211  | 0.215083 |
| 11.42     | 10.02| 10.15| 0.006217  | 0.215083 |
| 7.17      | 6.73 | 6.4  | 0.006222  | 0.215083 |
| 7.7       | 7.35 | 6.42 | 0.006233  | 0.215363 |
| 9.12      | 9.04 | 8.4  | 0.006235  | 0.215363 |
| 8.47      | 8.41 | 8.01 | 0.006242  | 0.215411 |
| 4.61      | 4.73 | 4.68 | 0.006243  | 0.215411 |
| 8.58      | 8.5  | 7.98 | 0.006253  | 0.21566  |
| 15.12     | 14.67| 14.44| 0.006261  | 0.215804 |
| 7.2       | 6.99 | 6.59 | 0.006268  | 0.215839 |
| 8.37      | 7.41 | 10.82| 0.006287  | 0.216139 |
| Gene      | Fold Change 1 | Fold Change 2 | Fold Change 3 | p-value   | q-value   |
|-----------|---------------|---------------|---------------|-----------|-----------|
| STRA6     | 4.67          | 4.84          | 4.94          | 0.006291  | 0.216139  |
| EZH1      | 11.21         | 11.65         | 12.58         | 0.006292  | 0.216139  |
| C8G       | 4.26          | 4.36          | 4.52          | 0.006293  | 0.216139  |
| RPL29     | 8.9           | 8.62          | 8.42          | 0.006301  | 0.216139  |
| MFSD7     | 5.14          | 5.35          | 5.98          | 0.006304  | 0.216139  |
| USP10     | 11.33         | 11.26         | 11.86         | 0.006305  | 0.216139  |
| LINC01232 | 5.69          | 5.98          | 6.34          | 0.006314  | 0.216335  |
| FOXRED2   | 4.5           | 4.51          | 4.65          | 0.00632   | 0.216388  |
| AC016994.2| 3.5           | 3.57          | 4.25          | 0.006322  | 0.216388  |
| HLA-DPB2  | 6.41          | 6.05          | 5.55          | 0.006331  | 0.216578  |
| FMO6P     | 3.36          | 3.54          | 3.7           | 0.006339  | 0.21675   |
| KLHDC7B   | 3.99          | 3.7           | 3.67          | 0.006345  | 0.216839  |
| ISG20     | 8.79          | 8.89          | 8.07          | 0.006351  | 0.216942  |
| CD1D      | 5.8           | 5.57          | 5.34          | 0.006358  | 0.216957  |
| RNU6-330P | 4.82          | 5.06          | 5.58          | 0.006358  | 0.216957  |
| TMEM163   | 4.6           | 4.42          | 4.32          | 0.006369  | 0.217008  |
| CSNK1G2   | 8.04          | 7.59          | 7.82          | 0.006379  | 0.21713   |
| LARP7     | 9.49          | 9.41          | 9.07          | 0.006385  | 0.217137  |
| RNU6-981P | 4.92          | 5.21          | 5.06          | 0.006393  | 0.217137  |
| RPL11     | 11.05         | 11.03         | 10.88         | 0.006395  | 0.217137  |
| SLC30A3   | 4.36          | 4.45          | 4.43          | 0.0064    | 0.217137  |
| S100A6    | 6.09          | 6.39          | 6.13          | 0.006401  | 0.217137  |
| NEIL3     | 4.15          | 4.26          | 4.13          | 0.006402  | 0.217137  |
| CCDC43    | 6.14          | 6.22          | 5.81          | 0.006409  | 0.217226  |
| MN1       | 3.84          | 3.79          | 3.66          | 0.006413  | 0.217226  |
| FCGR1B    | 3.55          | 3.68          | 3.87          | 0.006414  | 0.217226  |
| GPR137B   | 5.92          | 6.11          | 5.78          | 0.006429  | 0.217346  |
| SDF4      | 7.27          | 6.86          | 6.78          | 0.006433  | 0.217346  |
| MACC1     | 5.1           | 4.49          | 3.85          | 0.006435  | 0.217346  |
| Gene       | RGPD1 | ANKRD53 | VIPR2 | MIR4734 | TRPV1 | UNC93B1 | ADAT2 | NRDE2 | HMOX1 | XXbac-BPG13B8.10 | IGLC7 | DLGAP1-AS2 | CTD-2333M24.1 | TPD52 | RP5-865N13.2 | SH2B3 | LINC01036 | CHUK | MUC2 | ABCG5 | SNORD61 | ZNF341-AS1 | RNU6-1304P | NPAT | INO80B-WBP1 | CSGALNACT1 | PDCD5 | SPSB1  |
|------------|-------|---------|-------|---------|-------|---------|-------|-------|-------|----------------|-------|-------------|--------------|-------|--------------|-------|----------|------|-------|--------|---------|----------|----------|-------|----------|----------|-------|--------|
| Value      | 11.04 | 4.22    | 3.73  | 3.22    | 4.4   | 8.67    | 7.02  | 5.76  | 5.22  | 5.54             | 16.66 | 6.39        | 4.52         | 7.48  | 6.28         | 10.29 | 3.93     | 6.98 | 4.01  | 3.61   | 9.22    | 4.27     | 8.84     | 10.13 | 7.82     | 6.21     | 10.27 | 4.38   |
| P-value    | 0.006435 | 0.006436 | 0.006437 | 0.006444 | 0.006461 | 0.006476 | 0.006481 | 0.006483 | 0.006484 | 0.006485 | 0.006486 | 0.006492 | 0.006496 | 0.006497 | 0.006504 | 0.006518 | 0.006521 | 0.006524 | 0.006529 | 0.006539 | 0.006544 | 0.006544 | 0.006547 | 0.006553 | 0.006562 | 0.006565 | 0.006572 |
| Gene          | Fold Change | Fold Change | Fold Change | p-value 1 | p-value 2 |
|--------------|-------------|-------------|-------------|-----------|-----------|
| C5orf45      | 8.11        | 9.21        | 10.13       | 0.00658   | 0.217731  |
| KRTAP6-1     | 5.29        | 5.87        | 6.16        | 0.006588  | 0.217731  |
| PRKAG3       | 4.12        | 4.29        | 4.25        | 0.006589  | 0.217731  |
| LY9          | 12.6        | 12.05       | 9.44        | 0.006589  | 0.217731  |
| BX322559.3   | 4.56        | 4.84        | 5.2         | 0.00659   | 0.217731  |
| DGCR5        | 3.99        | 4.2         | 4.19        | 0.00659   | 0.217731  |
| C9orf43      | 4.64        | 4.86        | 5           | 0.006592  | 0.217731  |
| CNKSR2       | 8.94        | 8.75        | 8.28        | 0.006593  | 0.217731  |
| RNA5SP99     | 8.05        | 8.25        | 7.59        | 0.006594  | 0.217731  |
| LOC645177    | 4.25        | 4.58        | 5.13        | 0.0066    | 0.217731  |
| DQX1         | 4.44        | 4.58        | 4.78        | 0.006601  | 0.217731  |
| PKD1P5       | 10.05       | 9.22        | 9.93        | 0.006602  | 0.217731  |
| PQLC1        | 7.07        | 6.88        | 6.79        | 0.006606  | 0.217731  |
| SLC16A5      | 5.25        | 5.88        | 6.25        | 0.006608  | 0.217731  |
| MIOX         | 3.64        | 3.69        | 3.82        | 0.00661   | 0.217731  |
| PCAT19       | 4.89        | 5.23        | 5.39        | 0.006619  | 0.217922  |
| PANK3        | 8.78        | 8.47        | 8.25        | 0.006627  | 0.218077  |
| PTP4A1       | 12.98       | 13.83       | 11.65       | 0.006642  | 0.218353  |
| LELP1        | 4.17        | 4.32        | 4.69        | 0.006642  | 0.218353  |
| LIN01116     | 3.37        | 3.43        | 3.67        | 0.006645  | 0.218353  |
| AC020743.2   | 4.28        | 4.73        | 4.66        | 0.006651  | 0.218353  |
| HLA-DMB      | 13.02       | 11.96       | 12.76       | 0.006666  | 0.218725  |
| RN7SKP52     | 3.19        | 3.25        | 3.92        | 0.006669  | 0.218725  |
| IRF3         | 7.7         | 7.87        | 8.38        | 0.006674  | 0.218772  |
| NOTCH4       | 5.01        | 5.02        | 5.17        | 0.006685  | 0.21891   |
| CD22         | 13.61       | 12.13       | 11.43       | 0.006689  | 0.21891   |
| RP11-760H22.2| 3.28        | 3.57        | 3.97        | 0.006693  | 0.21891   |
| FBXL20       | 8.69        | 9.05        | 9.73        | 0.006695  | 0.21891   |
| NAPIL1       | 13.23       | 12.96       | 12.52       | 0.006697  | 0.21891   |
| Gene Symbol | FPKM   | Fold Change | q-value  |
|-------------|--------|-------------|----------|
| LOC100505622| 6.98   | 6.82        | 7.58     | 0.006716 | 0.219211 |
| PHF2        | 7.88   | 7.52        | 7.38     | 0.006726 | 0.219211 |
| OR2A14      | 3.16   | 3.17        | 3.52     | 0.006724 | 0.219211 |
| ATXN2       | 7.71   | 7.67        | 8.48     | 0.006729 | 0.219211 |
| F13B        | 3.73   | 3.98        | 3.76     | 0.006731 | 0.219211 |
| CEACAM21    | 6.71   | 6.58        | 7.53     | 0.006733 | 0.219211 |
| GSS         | 5.71   | 5.55        | 6.07     | 0.006737 | 0.219211 |
| RP3-523C21.2| 4.29   | 4.66        | 4.83     | 0.006738 | 0.219211 |
| LRRC42      | 5.52   | 5.35        | 5.3      | 0.006754 | 0.219211 |
| SLC22A6     | 4.35   | 4.42        | 4.59     | 0.006759 | 0.219211 |
| RABL2A      | 7.93   | 8.29        | 8.38     | 0.006771 | 0.219211 |
| IL17B       | 4      | 4.02        | 4.19     | 0.006775 | 0.219211 |
| PRMT7       | 5.94   | 5.81        | 6.51     | 0.006782 | 0.219211 |
| AC010891.2  | 3.72   | 3.83        | 4.15     | 0.006786 | 0.219211 |
| BBS4        | 6.93   | 7.12        | 7.32     | 0.006793 | 0.219211 |
| MAP3K5      | 10.95  | 11.44       | 12.11    | 0.006793 | 0.219211 |
| ABI1        | 12.65  | 13.06       | 13.31    | 0.006806 | 0.219211 |
| NUSAP1      | 6.45   | 6.09        | 5.61     | 0.006818 | 0.219211 |
| CASP8AP2    | 9.85   | 9.76        | 10.78    | 0.006824 | 0.219211 |
| LOC101929241| 3.61   | 3.63        | 3.87     | 0.006827 | 0.219211 |
| RNA5SP168   | 3.44   | 3.57        | 3.81     | 0.006849 | 0.219651 |
| CFB         | 4.12   | 4.3         | 4.35     | 0.006857 | 0.219651 |
| EBI3        | 3.18   | 3.14        | 3.33     | 0.006862 | 0.219651 |
| RGS10       | 6.05   | 7.03        | 6.89     | 0.006865 | 0.219651 |
| APOBEC3F    | 9.59   | 10.17       | 10.93    | 0.006868 | 0.219651 |
| CYP21A2     | 4.45   | 4.52        | 4.53     | 0.00687 | 0.219651 |
| GDF7        | 5.09   | 5.77        | 5.5      | 0.006877 | 0.219793 |
| IFT80       | 6.91   | 7.11        | 7.17     | 0.006883 | 0.219872 |
| LOC100240734| 4.32   | 4.39        | 5.27     | 0.006897 | 0.219928 |
| Gene       | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 |
|------------|--------|--------|--------|--------|--------|--------|
| OSGIN1     | 4.23   | 4.36   | 4.48   | 0.006897 | 0.219928 |
| PHC1       | 7.84   | 7.49   | 7.53   | 0.006899 | 0.219928 |
| HLA-DPB1   | 11.28  | 10.84  | 10.82  | 0.006903 | 0.219928 |
| DNMBP      | 7.25   | 10.2   | 10.63  | 0.006908 | 0.219928 |
| TMEM72-AS1 | 4.04   | 4.31   | 4.42   | 0.006908 | 0.219928 |
| BOP1       | 6.97   | 6.72   | 6.81   | 0.006911 | 0.219928 |
| PCID2      | 7.93   | 8.16   | 8.67   | 0.00692  | 0.220114 |
| RN7SKP173  | 8.45   | 8.35   | 8.05   | 0.006929 | 0.22029  |
| CABLES1    | 4.76   | 6.33   | 5.43   | 0.006934 | 0.220335 |
| TRBV5-5    | 4.77   | 4.79   | 5.3    | 0.006948 | 0.220426 |
| LOC101928521 | 3.83   | 4.01   | 4.13   | 0.006961 | 0.220426 |
| CECR7      | 7.14   | 7.47   | 9.25   | 0.006962 | 0.220426 |
| OR1L3      | 4.49   | 4.63   | 4.99   | 0.006964 | 0.220426 |
| SH3BP2     | 6.17   | 6.33   | 6.89   | 0.006966 | 0.220426 |
| AC083843.1 | 7.15   | 6.7    | 5.13   | 0.007004 | 0.221218 |
| CTB-113P19.3 | 3.53  | 3.73   | 4.01   | 0.007014 | 0.221324 |
| NRF1       | 6.78   | 6.52   | 6.62   | 0.007027 | 0.221556 |
| F2RL2      | 4.41   | 4.42   | 4.83   | 0.007037 | 0.221656 |
| LINC00415  | 6.5    | 6.99   | 7.16   | 0.007038 | 0.221656 |
| PANX3      | 3.72   | 3.85   | 4.28   | 0.007046 | 0.22181  |
| BMPER      | 3.98   | 4.12   | 4.04   | 0.007049 | 0.22181  |
| C1orf112   | 5.57   | 5.56   | 6.03   | 0.007054 | 0.221859 |
| NOD2       | 4.93   | 5.15   | 6.81   | 0.007057 | 0.221859 |
| RP4-613A2.1 | 3.32   | 3.29   | 3.81   | 0.007073 | 0.221859 |
| BACH1      | 9.51   | 10.01  | 8.29   | 0.007077 | 0.221859 |
| AC068580.5 | 4.26   | 4.3    | 4.51   | 0.007081 | 0.221859 |
| POLR1E     | 6.16   | 6.65   | 6.23   | 0.007084 | 0.221859 |
| LINC00412  | 5.05   | 5.76   | 5.88   | 0.007084 | 0.221859 |
| VWC2       | 3.17   | 3.29   | 3.1    | 0.007088 | 0.221859 |
| Gene     | CDS1 | CDS2 | CDS3 | p-Value  | q-Value  |
|----------|------|------|------|----------|----------|
| FBXL3    | 8.21 | 8.19 | 7.58 | 0.00709  | 0.221859 |
| UBE2T    | 6.4  | 6.82 | 7.43 | 0.007094 | 0.221859 |
| HLA-DRB1 | 16.18| 15.87| 15.54| 0.007095 | 0.221859 |
| HLA-DRB1 | 15.15| 14.66| 14.5 | 0.007106 | 0.221944 |
| FCHO1    | 7.24 | 6.74 | 7.63 | 0.007113 | 0.222004 |
| PIM3     | 5.99 | 5.83 | 5.54 | 0.007114 | 0.222004 |
| CTD-2363C16.1 | 5.06 | 5.18 | 5.46 | 0.007131 | 0.222318 |
| TMEM130  | 4.37 | 4.5  | 4.52 | 0.007134 | 0.222318 |
| VAV1     | 7.56 | 6.86 | 7.33 | 0.007145 | 0.222357 |
| PRDX4    | 7.5  | 6.9  | 6.42 | 0.007149 | 0.222357 |
| SNORA38  | 10.27| 10.29| 11.69| 0.007156 | 0.222388 |
| KIFC3    | 4.47 | 4.58 | 4.49 | 0.007165 | 0.222389 |
| KLHL5    | 8.98 | 8.26 | 7.97 | 0.007166 | 0.222389 |
| P2RX5-TAX1BP3 | 11.25| 9.06 | 8.86 | 0.007184 | 0.22239  |
| NUP62    | 9.4  | 9.38 | 10.37| 0.00719  | 0.22239  |
| EFHC1    | 7.46 | 8.6  | 8.08 | 0.00719  | 0.22239  |
| BSCD1    | 7    | 6.94 | 6.11 | 0.00719  | 0.22239  |
| HLA-A    | 12.08| 11.95| 11.8 | 0.0072   | 0.22239  |
| MAPRE2   | 10.45| 9.8  | 9.87 | 0.007208 | 0.22239  |
| CCNJ     | 8.35 | 7.87 | 7.42 | 0.00721  | 0.22239  |
| IGLV5-48 | 4.81 | 4.22 | 3.97 | 0.007215 | 0.22239  |
| PPIA14E  | 7.69 | 7.43 | 7.35 | 0.007219 | 0.22239  |
| LOC440416| 4.2  | 4.45 | 4.68 | 0.00722  | 0.22239  |
| PPP1R3E  | 7.96 | 8.33 | 9.28 | 0.007227 | 0.22239  |
| L3MBTL2  | 7.2  | 7.26 | 7.57 | 0.00723  | 0.22239  |
| INTS10   | 7.83 | 7.3  | 7.34 | 0.007234 | 0.22239  |
| LINC00954| 5.17 | 5.82 | 6.28 | 0.007235 | 0.22239  |
| HINT1    | 10.79| 10.76| 10.48| 0.007253 | 0.22239  |
| Gene      | Mean 1 | Mean 2 | Mean 3 | p-value | Adjusted p-value |
|-----------|--------|--------|--------|---------|------------------|
| RNA5SP55  | 5.87   | 6.07   | 6.15   | 0.007253| 0.22239          |
| NR1I3     | 3.72   | 3.81   | 3.85   | 0.007263| 0.22239          |
| RHBDD3    | 3.91   | 4.08   | 4.19   | 0.007263| 0.22239          |
| HECTD2    | 5.94   | 6.63   | 6.82   | 0.007264| 0.22239          |
| LAMB2     | 4.37   | 4.43   | 4.51   | 0.007269| 0.22239          |
| KSRI      | 6.81   | 6.3    | 6.37   | 0.007277| 0.22239          |
| BTBD8     | 3.89   | 4.18   | 4.21   | 0.007278| 0.22239          |
| SLC36A3   | 3.52   | 3.58   | 3.63   | 0.007278| 0.22239          |
| RAD9B     | 4.48   | 4.61   | 4.63   | 0.00728  | 0.22239         |
| FAM212A   | 3.97   | 3.4    | 3.37   | 0.007281| 0.22239          |
| SYDE1     | 4.35   | 4.51   | 4.45   | 0.007281| 0.22239          |
| PLEKHG7   | 7.23   | 6.19   | 5.37   | 0.007288| 0.22239          |
| KCNIP1    | 3.58   | 3.7    | 3.75   | 0.007295| 0.22239          |
| VMAC      | 6.15   | 6.11   | 6.48   | 0.007303| 0.22239          |
| MYL7      | 3.97   | 4.1    | 4.28   | 0.007307| 0.22239          |
| SLC28A1   | 4.02   | 4.03   | 4.23   | 0.007314| 0.22239          |
| FEN1      | 6.89   | 6.65   | 5.87   | 0.007316| 0.22239          |
| MUC22     | 3.7    | 3.94   | 4.33   | 0.007322| 0.22239          |
| ZFP62     | 7.35   | 7.37   | 7.73   | 0.00733  | 0.22239        |
| MRPL21    | 7.31   | 7.2    | 6.76   | 0.007331| 0.22239          |
| IGHV4-31  | 8.65   | 7.1    | 5.97   | 0.007331| 0.22239          |
| RP6-102.1 | 4.92   | 5      | 5.24   | 0.007341| 0.22239          |
| RPL4      | 17.65  | 17.58  | 17.1   | 0.007342| 0.22239          |
| TAS2R20   | 4.97   | 5.73   | 5.33   | 0.007353| 0.222518         |
| PIP5K1B   | 8.6    | 6.9    | 7.53   | 0.007355| 0.222518         |
| ADSS      | 9.35   | 8.93   | 8.58   | 0.007362| 0.222579         |
| POMP      | 10.21  | 10.1   | 9.37   | 0.007377| 0.222643         |
| RP11-5P4.1| 3.09   | 3.32   | 3.15   | 0.007378| 0.222643         |
| TTYH2     | 3.9    | 3.97   | 4.13   | 0.007381| 0.222643         |
| Gene   | MARCKS | SSPO  | LCE3D | PAXIP1OS | ADCY10P1 | JGLV3-25 | TMX2  | DHRS2 | CARKD | C16orf87 | ADIPOR1 | TUBG1 | HIST1H3E | CENPT | ARFGAP3 | PELP1 | AP003774.6 | GATSL2 | ADAP2 | SLC9A5 | HLA-DQB1 | MOG | SLC36A4 | RNU6-916P | LINC00354 | MIF4GD | ZNF605 | LINC01097 |
|--------|--------|-------|-------|----------|----------|----------|-------|-------|-------|----------|---------|-------|----------|-------|----------|-------|----------|-------|--------|-------|----------|-------|--------|----------|----------|--------|--------|----------|
|        | 11.25  | 4.68  | 5.16  | 6.81     | 5.44     | 12.58    | 11.39 | 4.06  | 6.46  | 7.08     | 9.94    | 7.03  | 4.19     | 6.58  | 8.63     | 7.47  | 4.08    | 5.02  | 4.96    | 4.56  | 3.3     | 4.13  | 7.3     | 5.6    | 3.6     | 3.36  |
|        | 10.92  | 4.74  | 5.47  | 6.54     | 5.65     | 7.41     | 11.17 | 4.14  | 6.19  | 7.85     | 9.94    | 7.04  | 3.92     | 6.69  | 8.26     | 7.35  | 4.08    | 5.19  | 4.59    | 4.65  | 3.54    | 4.28  | 5.96    | 5.6    | 3.54    | 3.52  |
|        | 8.09   | 4.84  | 5.73  | 7.32     | 6.21     | 4.11     | 10.8  | 4.15  | 6.34  | 8.59     | 9.26    | 7.77  | 3.6      | 6.88  | 8.21     | 7.73  | 4.58    | 5.7   | 4.59    | 4.8   | 3.05    | 4.36  | 4.9     | 5.26  | 3.82    | 3.6   |
|        | 0.007388 | 0.007394 | 0.007396 | 0.007396 | 0.007397 | 0.007404 | 0.00741 | 0.007419 | 0.007422 | 0.007446 | 0.007448 | 0.007459 | 0.007462 | 0.007468 | 0.007476 | 0.007481 | 0.007499 | 0.007501 | 0.007502 | 0.007505 | 0.007507 | 0.007517 | 0.007525 | 0.007527 | 0.007527 | 0.007527 | 0.007557 | 0.007557 | 0.00756 |
|        | 0.222643 | 0.222643 | 0.222643 | 0.222643 | 0.222643 | 0.222717 | 0.222781 | 0.222827 | 0.222827 | 0.223127 | 0.223127 | 0.223127 | 0.223127 | 0.223127 | 0.223127 | 0.223127 | 0.223327 | 0.223514 | 0.223514 | 0.223514 | 0.223514 | 0.223514 | 0.22352 | 0.22352 | 0.22352 | 0.22352 | 0.224085 | 0.224085 | 0.224085 |
| Gene            | Avg   | Sep   | Avg   | Sep   | Sep-06 | C19orf60 | Sep       | CTBS       | BCO     | RP5-821D11.7 | CAPN7 | MIR449C | RPL26 | FAM118A | RNA5SP235 | HLA-G |
|-----------------|-------|-------|-------|-------|--------|----------|-----------|------------|---------|-------------|--------|----------|-------|---------|-----------|-------|
| LOC728613       | 7.21  | 7.18  | 7.64  |       | 0.007583 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| MUC5B           | 4.37  | 4.45  | 4.59  |       | 0.007587 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| CYBRD1          | 5.33  | 5.69  | 5.42  |       | 0.00759  | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| TMEM159         | 6.54  | 6.59  | 6.06  |       | 0.007593 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| KLHDC8B         | 4.17  | 4.38  | 4.45  |       | 0.007596 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| PMEP41          | 5.15  | 3.61  | 3.27  |       | 0.00761  | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| DKFZP434L187    | 5.95  | 6.23  | 5.9   |       | 0.007612 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| GRIKI-AS2       | 6.33  | 8.81  | 8.13  |       | 0.00762  | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| TM4C            | 4.45  | 4.58  | 4.69  |       | 0.007623 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| RNA5SP359       | 4.81  | 5.12  | 4.87  |       | 0.007627 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| IL2             | 3.99  | 4.26  | 4.22  |       | 0.007629 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| CCDC141         | 7.16  | 9.38  | 9.54  |       | 0.00763  | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| KPNA2           | 12.25 | 11.22 | 10.24 |       | 0.007637 | 0.224222 |           |            |         |             |        |          |       |         |           |       |
| Sep-06          | 3.96  | 4     | 4.21  |       | 0.007643 | 0.224248 |           |            |         |             |        |          |       |         |           |       |
| C19orf60        | 6.92  | 6.74  | 6.96  |       | 0.007645 | 0.224248 |           |            |         |             |        |          |       |         |           |       |
| DEGS2           | 3.43  | 3.68  | 4.01  |       | 0.00765  | 0.224302 |           |            |         |             |        |          |       |         |           |       |
| FBXO5           | 5.89  | 5.3   | 5.08  |       | 0.007653 | 0.224302 |           |            |         |             |        |          |       |         |           |       |
| RNU2-16P        | 5.27  | 5.14  | 5.69  |       | 0.007675 | 0.224837 |           |            |         |             |        |          |       |         |           |       |
| SLC39A2         | 3.94  | 4.17  | 4.43  |       | 0.00768  | 0.224837 |           |            |         |             |        |          |       |         |           |       |
| PPP1R18         | 6.7   | 5.81  | 6.03  |       | 0.007681 | 0.224837 |           |            |         |             |        |          |       |         |           |       |
| CTBS            | 8.96  | 8.37  | 8.33  |       | 0.007711 | 0.225364 |           |            |         |             |        |          |       |         |           |       |
| BCO             | 8.66  | 8.56  | 9.16  |       | 0.007749 | 0.226023 |           |            |         |             |        |          |       |         |           |       |
| RP5-821D11.7    | 3.52  | 3.41  | 3.81  |       | 0.007755 | 0.226125 |           |            |         |             |        |          |       |         |           |       |
| CAPN7           | 9.28  | 8.76  | 8.85  |       | 0.007768 | 0.226197 |           |            |         |             |        |          |       |         |           |       |
| MIR449C         | 3.57  | 3.44  | 4.04  |       | 0.00777  | 0.226197 |           |            |         |             |        |          |       |         |           |       |
| RPL26           | 14.04 | 13.78 | 13.35 |       | 0.007771 | 0.226197 |           |            |         |             |        |          |       |         |           |       |
| FAM118A         | 6.13  | 6.43  | 6.24  |       | 0.007771 | 0.226197 |           |            |         |             |        |          |       |         |           |       |
| RNA5SP235       | 4.16  | 4.25  | 4.76  |       | 0.007786 | 0.226522 |           |            |         |             |        |          |       |         |           |       |
| HLA-G           | 3.95  | 4.16  | 4.25  |       | 0.007797 | 0.226677 |           |            |         |             |        |          |       |         |           |       |
| Gene     | Sep-01  | 10.11  | 9.46  | 9.24  | 0.007849 | 0.226908 |
|----------|----------|--------|-------|-------|----------|----------|
| MIR297   | 6.78     | 6.96   | 7.51  | 0.007803 | 0.226744 |
| PPP1R18  | 11.24    | 9.42   | 10.18 | 0.007814 | 0.226908 |
| KLHL21   | 4.94     | 4.98   | 5.1   | 0.007819 | 0.226908 |
| SRP72    | 12.43    | 12.1   | 11.65 | 0.007829 | 0.226908 |
| HIST1H1A | 3.41     | 3.82   | 4.08  | 0.00783  | 0.226908 |
| ATG9B    | 4.32     | 4.39   | 4.42  | 0.007837 | 0.226908 |
| RNU7-75P | 5.85     | 6.72   | 7.1   | 0.007838 | 0.226908 |
| Sep-01   | 10.11    | 9.46   | 9.24  | 0.007849 | 0.226908 |
| AKAP14   | 3.47     | 3.59   | 3.79  | 0.007849 | 0.226908 |
| ACAD8    | 5.75     | 6.04   | 6     | 0.007864 | 0.226908 |
| LOC101929099 | 3.33 | 3.45 | 3.52 | 0.007866 | 0.226908 |
| RNU1-22P | 5.74     | 5.87   | 6.74  | 0.007876 | 0.226989 |
| MIR4296  | 8.49     | 8.86   | 9.42  | 0.007876 | 0.226989 |
| P2RX7    | 6.29     | 7.09   | 7.63  | 0.007888 | 0.227015 |
| NCOA4    | 9.34     | 8.61   | 7.85  | 0.0079   | 0.227434 |
| RP11-675F6.3 | 3.43 | 3.53 | 3.8  | 0.007904 | 0.227434 |
| POU2F2   | 8.83     | 8.23   | 8.94  | 0.007905 | 0.227434 |
| ACPI     | 11.63    | 11.2   | 10.75 | 0.007929 | 0.227902 |
| TRPM5    | 4.58     | 4.64   | 4.68  | 0.007935 | 0.227902 |
| MDS2     | 5.41     | 6.15   | 5.94  | 0.007939 | 0.227902 |
| LNX1     | 3.77     | 3.88   | 3.86  | 0.007944 | 0.227902 |
| EIF3J-AS1 | 6.09  | 6.23   | 6.87  | 0.007945 | 0.227902 |
| LINC01231| 3.33     | 3.46   | 3.44  | 0.007955 | 0.228112 |
| FAM189A1 | 3.53     | 3.53   | 3.67  | 0.007959 | 0.228115 |
| LOC283194| 7.79     | 8.39   | 9.78  | 0.007966 | 0.228183 |
| USP25    | 10       | 9.16   | 9.21  | 0.00797  | 0.228183 |
| ALAD     | 5.75     | 5.82   | 5.97  | 0.007978 | 0.228183 |
| TMEFF1   | 4.67     | 4.99   | 4.73  | 0.007983 | 0.228236 |
| CD47     | 14.18    | 13.69  | 13.58 | 0.008011 | 0.228899 |
| Gene     | 3.61  | 3.95  | 3.52  | 0.008025  | 0.228899 |
|----------|-------|-------|-------|-----------|----------|
| OXCT2    | 7.2   | 7.4   | 7.63  | 0.008003  | 0.228899 |
| SNRPN    | 3.41  | 3.35  | 3.83  | 0.008037  | 0.228922 |
| FAM167B  | 3.87  | 8.36  | 8.01  | 0.008048  | 0.229111 |
| TMX2     | 6.77  | 5.83  | 5.41  | 0.008066  | 0.229267 |
| MTFP1    | 8.85  | 8.57  | 10.17 | 0.008074  | 0.229267 |
| DCLRE1C  | 3.82  | 4.03  | 3.89  | 0.008077  | 0.229267 |
| CYSR1    | 6.79  | 6.36  | 6.99  | 0.008089  | 0.229342 |
| RP4-665N4.4 | 3.36 | 3.67  | 3.62  | 0.008082  | 0.229308 |
| TLL12    | 4.3   | 4.42  | 4.47  | 0.008092  | 0.229342 |
| ZNF462   | 3.72  | 3.86  | 3.78  | 0.008102  | 0.229474 |
| CD7      | 3.44  | 3.64  | 3.51  | 0.008108  | 0.229474 |
| RAB11B   | 10    | 9.99  | 10.85 | 0.008109  | 0.229474 |
| NOTCH4   | 5     | 5.01  | 5.15  | 0.008112  | 0.229474 |
| PMAIP1   | 13.59 | 16.99 | 15.58 | 0.008117  | 0.229474 |
| PCDFH12  | 3.73  | 3.83  | 3.93  | 0.008125  | 0.229474 |
| PSA1     | 10.29 | 9.95  | 9.72  | 0.008125  | 0.229474 |
| HNRNPCL2 | 3.3   | 3.71  | 3.93  | 0.008138  | 0.229658 |
| LINC01208| 3.59  | 3.77  | 3.97  | 0.00815   | 0.229881 |
| RP11-181K12.2 | 5.63 | 6.3   | 7     | 0.008167  | 0.230012 |
| ZNF528   | 6.54  | 7.24  | 7.63  | 0.008178  | 0.230012 |
| RASSF8   | 3.18  | 3.34  | 3.64  | 0.008185  | 0.230068 |
| RP5-850O15.3 | 3.5  | 3.68  | 3.59  | 0.008192  | 0.230068 |
| UBA2P2L  | 6.11  | 5.64  | 5.2   | 0.00821   | 0.230068 |
| YEATS4   | 8.9   | 9.47  | 8.77  | 0.008223  | 0.230068 |
| PSMB8-AS1| 10.73 | 9.37  | 9.5   | 0.008225  | 0.230068 |
| CDH24    | 4.35  | 4.66  | 5.08  | 0.008231  | 0.230068 |
| EPHB6    | 7.17  | 6.5   | 6.43  | 0.008263  | 0.230356 |
| NOTCH4   | 5.01  | 5.02  | 5.16  | 0.008266  | 0.230356 |
| Gene          | Allele 1 | Allele 2 | Allele 3 | p-value  | q-value   |
|---------------|----------|----------|----------|----------|-----------|
| SYT1          | 4.5      | 4.31     | 4.05     | 0.008271 | 0.230356  |
| C12orf73      | 6.15     | 5.88     | 6.25     | 0.008287 | 0.230667  |
| FIG4          | 8.77     | 9.6      | 10.02    | 0.008319 | 0.231222  |
| TTN           | 9.05     | 11.62    | 11.76    | 0.008327 | 0.231222  |
| WDR89         | 7.03     | 6.78     | 6.79     | 0.008331 | 0.231222  |
| CTD-2534J5.1  | 3.78     | 3.96     | 3.72     | 0.008336 | 0.231222  |
| MFAP3         | 6.34     | 6.26     | 6.05     | 0.008337 | 0.231222  |
| AC002472.11   | 3.21     | 3.28     | 3.44     | 0.008342 | 0.231222  |
| RPL7          | 11.62    | 11.16    | 10.55    | 0.008362 | 0.231222  |
| ISCA1         | 7.94     | 8.33     | 7.65     | 0.008371 | 0.231334  |
| C17orf70      | 7.42     | 7.18     | 6.82     | 0.008388 | 0.231442  |
| NPHP4         | 4.58     | 4.74     | 4.86     | 0.008391 | 0.231548  |
| CASP12        | 3.84     | 4.09     | 4.16     | 0.008398 | 0.231595  |
| NUDT15        | 7.23     | 7.22     | 6.96     | 0.008402 | 0.231595  |
| LGALSL        | 4.46     | 4.8      | 4.65     | 0.008404 | 0.231595  |
| FBXO42        | 8.45     | 8.55     | 8.69     | 0.008406 | 0.231595  |
| RLTPR         | 6.84     | 6.6      | 6.95     | 0.008412 | 0.231656  |
| MIRLET7BHG    | 5.25     | 5        | 5.42     | 0.008421 | 0.231677  |
| AC011625.1    | 4.97     | 4.96     | 5.45     | 0.008428 | 0.231677  |
| ABCA7         | 8.34     | 8.07     | 8.9      | 0.008436 | 0.231677  |
| INF2          | 6.89     | 6.42     | 6.3      | 0.008437 | 0.231677  |
| LOC101929027  | 3.4      | 3.57     | 3.35     | 0.008452 | 0.231677  |
| SOX9-AS1      | 4.24     | 4.41     | 4.28     | 0.008467 | 0.231677  |
| C19orf70      | 8.91     | 8.56     | 8.15     | 0.008475 | 0.231677  |
| SNX2          | 12.91    | 11.49    | 11.65    | 0.008476 | 0.231677  |
| CACNB1        | 5.1      | 5.05     | 5.48     | 0.008477 | 0.231677  |
| LOC100506679  | 3.37     | 3.59     | 3.81     | 0.008478 | 0.231677  |
| MIR1231       | 5.68     | 5.8      | 6.33     | 0.00848  | 0.231677  |
| GSPT1         | 8.23     | 8.22     | 7.39     | 0.00848  | 0.231677  |
| Gene      | Value1 | Value2 | Value3 | Value4 | Value5 |
|-----------|--------|--------|--------|--------|--------|
| HIPK2     | 9.13   | 8.29   | 7.84   | 0.008481 | 0.231677 |
| SPINT1    | 5.33   | 5.74   | 5.98   | 0.008483 | 0.231677 |
| DMD-AS3   | 3.45   | 3.42   | 3.83   | 0.008484 | 0.231677 |
| TRPV5     | 4.08   | 4.08   | 4.22   | 0.008489 | 0.231677 |
| CD55      | 13.07  | 12.41  | 11.51  | 0.00849  | 0.231677 |
| TRIM59    | 8.33   | 7.96   | 7.65   | 0.008491 | 0.231677 |
| MIR942    | 3.64   | 3.72   | 4.2    | 0.008491 | 0.231677 |
| RP11-I35D11.2 | 4.47 | 4.7    | 4.63   | 0.008509 | 0.231721 |
| PPP1R16B  | 9.18   | 8.62   | 8.19   | 0.00851  | 0.231721 |
| LOC399491 | 8.64   | 7.77   | 8.25   | 0.008511 | 0.231721 |
| TMEM8B    | 5.73   | 5.92   | 6.1    | 0.008514 | 0.231721 |
| PPT2      | 4.38   | 4.5    | 4.71   | 0.008523 | 0.231721 |
| PPT2      | 4.38   | 4.5    | 4.71   | 0.008523 | 0.231721 |
| ST6GALNAC3| 5.13   | 3.89   | 3.75   | 0.00853  | 0.231721 |
| LARP1     | 8.93   | 8.45   | 8.46   | 0.008531 | 0.231721 |
| QSOX1     | 6.73   | 7.25   | 7.79   | 0.008536 | 0.231721 |
| ZFAND6    | 10.63  | 9.9    | 9.63   | 0.008539 | 0.231721 |
| ZNF793    | 5.9    | 6.59   | 6.74   | 0.008548 | 0.231721 |
| CDC25B    | 8.14   | 8.74   | 9.73   | 0.008548 | 0.231721 |
| ZNF862    | 6.26   | 6.43   | 6.77   | 0.00856  | 0.231965 |
| PANK2     | 8.34   | 8.37   | 8.56   | 0.008565 | 0.232009 |
| NEURL3    | 3.51   | 3.62   | 3.74   | 0.008589 | 0.232368 |
| MEF2A     | 11.18  | 10.11  | 10.09  | 0.008592 | 0.232368 |
| MYC       | 9.02   | 7.05   | 6.03   | 0.008606 | 0.232508 |
| EEA1      | 8.07   | 7.61   | 7.99   | 0.008617 | 0.232508 |
| MMP28     | 3.55   | 3.67   | 3.81   | 0.008619 | 0.232508 |
| LOC100506974 | 4.7 | 4.07   | 4.25   | 0.008619 | 0.232508 |
| AP000892.4| 3.7    | 3.82   | 3.8    | 0.008622 | 0.232508 |
| AGFG1     | 10.29  | 10.1   | 9.81   | 0.008636 | 0.2327  |
| Gene          | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 |
|--------------|--------|--------|--------|--------|--------|--------|
| FANCC        | 4.24   | 4.39   | 4.8    | 0.008641 | 0.232763 |
| LOC286190    | 6.15   | 6.29   | 6.21   | 0.008662 | 0.233036 |
| ATP5S        | 8.49   | 8.35   | 8.19   | 0.008674 | 0.233088 |
| INMT         | 3.32   | 3.42   | 3.42   | 0.008698 | 0.233482 |
| UBOX5-AS1    | 3.79   | 3.99   | 4.09   | 0.008699 | 0.233482 |
| ACCSL        | 3.48   | 3.6    | 3.71   | 0.008704 | 0.233512 |
| ERVK-7       | 7.12   | 7.31   | 6.66   | 0.008708 | 0.233545 |
| LOC100129697 | 4.76   | 4.96   | 5.21   | 0.008714 | 0.233598 |
| ZNF137P      | 4.74   | 4.61   | 5.62   | 0.008723 | 0.233757 |
| ZNF271       | 5.9    | 5.53   | 5.72   | 0.008739 | 0.233996 |
| CDC7         | 5.11   | 4.83   | 5.45   | 0.008739 | 0.233996 |
| NOL3         | 4.35   | 4.44   | 4.29   | 0.008754 | 0.234228 |
| PPT2         | 4.36   | 4.51   | 4.71   | 0.008755 | 0.234228 |
| CATSPER2     | 4.92   | 4.77   | 5.43   | 0.008777 | 0.234303 |
| HCG4B        | 3.89   | 3.57   | 4.96   | 0.008779 | 0.234303 |
| TRIM38       | 11.99  | 11.01  | 11.22  | 0.00878  | 0.234303 |
| ST5          | 4.24   | 4.35   | 4.4    | 0.008782 | 0.234303 |
| ADAMTS7      | 4.23   | 4.28   | 4.37   | 0.008786 | 0.23433 |
| ZSCAN2       | 5.95   | 6      | 6.26   | 0.008805 | 0.234507 |
| C7orf13      | 3.7    | 3.92   | 4.23   | 0.008805 | 0.234507 |
| LOC100506747 | 3.46   | 3.67   | 3.78   | 0.008806 | 0.234507 |
| MPHOSPH8     | 9.93   | 10.19  | 10.75  | 0.008807 | 0.234507 |
| C6orf123     | 3.86   | 3.99   | 3.93   | 0.00882  | 0.234647 |
| C19orf45     | 3.62   | 3.69   | 3.77   | 0.008858 | 0.235312 |
| FMNL1        | 10.31  | 9.3    | 9.28   | 0.008868 | 0.235337 |
| PKD1         | 7.46   | 6.87   | 6.6    | 0.008896 | 0.235761 |
| EGLN2        | 7.92   | 7.65   | 7.73   | 0.008908 | 0.235963 |
| IGHV3-23     | 16.06  | 14.5   | 8.16   | 0.008914 | 0.235963 |
| DPEP3        | 5.15   | 5.56   | 5.84   | 0.008922 | 0.235963 |
| Gene          | Fold Change 1 | Fold Change 2 | Fold Change 3 | Fold Change 4 | Fold Change 5 |
|--------------|--------------|--------------|--------------|--------------|--------------|
| PSMB8-AS1    | 10.68        | 9.33         | 9.41         | 0.008922     | 0.235963     |
| C11orf95     | 3.91         | 3.48         | 3.26         | 0.008934     | 0.235963     |
| KCTD3        | 5.06         | 4.36         | 4.3          | 0.008955     | 0.23597      |
| CEACAM1      | 7.4          | 8.17         | 9.45         | 0.008964     | 0.23597      |
| RN7SKP107    | 7.49         | 7.63         | 7.31         | 0.008969     | 0.23597      |
| SMAD6        | 3.02         | 3.09         | 2.92         | 0.00897      | 0.23597      |
| DMPK         | 6.07         | 6.03         | 6.34         | 0.008976     | 0.235975     |
| MZFI         | 5.5          | 5.14         | 5.35         | 0.008983     | 0.236021     |
| OR52M1       | 3.84         | 3.92         | 4.24         | 0.008988     | 0.236067     |
| UBE2NL       | 5.89         | 5.58         | 5.45         | 0.009002     | 0.236356     |
| LOC728485    | 4.15         | 4.94         | 4.56         | 0.009016     | 0.236381     |
| SSR4         | 10.97        | 10.3         | 9.46         | 0.009021     | 0.236381     |
| MIR9-1       | 5.02         | 5.54         | 6.03         | 0.00903      | 0.236392     |
| RP4-568F9.6  | 3.41         | 3.57         | 3.58         | 0.009035     | 0.236392     |
| LOC101927049 | 4.05         | 4.27         | 4.33         | 0.009045     | 0.236392     |
| FSDIL        | 5.51         | 5.09         | 5.18         | 0.009048     | 0.236392     |
| PTOV1        | 6.59         | 6.28         | 6.66         | 0.009049     | 0.236392     |
| UPEL1        | 6.5          | 6.65         | 6.96         | 0.009054     | 0.236434     |
| ATP6V0E2-AS1 | 3.99         | 4.19         | 4.57         | 0.009066     | 0.236487     |
| UNO6494      | 4.01         | 3.99         | 4.25         | 0.00907      | 0.236487     |
| B3GNT2       | 8.21         | 8.17         | 7.51         | 0.009076     | 0.236487     |
| RPII-23B15.1 | 4.7          | 5.07         | 5.7          | 0.009083     | 0.236487     |
| CNOT4        | 8.64         | 9            | 9.3          | 0.009083     | 0.236487     |
| ZN3F337      | 6.13         | 6.32         | 6.79         | 0.009084     | 0.236487     |
| FAM174A      | 6.92         | 7.31         | 6.83         | 0.009093     | 0.236624     |
| ICE1         | 6.67         | 6.49         | 6.25         | 0.009109     | 0.236826     |
| ICOSLG       | 8.96         | 8.81         | 7.99         | 0.009111     | 0.236826     |
| H2BFXP       | 5.73         | 6.18         | 6.84         | 0.009116     | 0.236826     |
| MUC6         | 4.05         | 4.14         | 4.28         | 0.009117     | 0.236826     |
| Gene     | TUBB6 | HHATL-AS1 | FCER2 | CTAGE4 | SLC35D2 | COTL1 | TPCN2 | FMOD | RP1-86D1.3 | SSTR1 | ITGA4 | OPN1M | SLC6A9 | LEPF1-AS1 | RNA5SP453 | TNRC6C | RNA5SP465 | ZBED3-AS1 | AMHR2 | HLA-DMB | GAPT | GLIPR1 | SOX11 | PMEPA1 | SH3BGRL | HLA-DMB | ISMI | HHAT | ATP5E |
|----------|-------|-----------|-------|--------|--------|-------|-------|------|-----------|-------|-------|-------|--------|-----------|-----------|-------|----------|---------|-------|--------|-------|-------|-------|--------|-------|-------|-------|-------|
|          | 7.03  | 4.28      | 10.46 | 6.27   | 6.22   | 8.17  | 7.95  | 4.78 | 4.17      | 3.4   | 4.86  | 4.28  | 4.6    | 4.23      | 4.36      | 8.83  | 3.09     | 4.51    | 4.29  | 12.86  | 9.95  | 11.65 | 4.97  | 5.35   | 8.81   | 12.93  | 4.18  | 5.07  | 9.6   |
|          | 6.29  | 4.48      | 12.03 | 5.49   | 6.98   | 7.36  | 6.8   | 11.03| 4.27      | 3.37  | 4.37  | 4.4   | 4.45   | 4.45      | 4.98      | 7.86  | 3.05     | 4.65    | 4.5   | 11.81  | 7.73  | 10.66 | 5.24  | 4.82   | 8.44   | 11.85  | 4.29  | 4.54  | 9.31  |
| Gene   | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 |
|--------|--------|--------|--------|--------|--------|--------|
| PAD16  | 3.78   | 3.94   | 3.99   | 0.009318 | 0.23774 |
| PTPN6  | 12.38  | 11.18  | 12.71  | 0.00932 | 0.23774 |
| HLA-DMB | 12.86  | 11.79  | 12.58  | 0.009321 | 0.23774 |
| IP6K1  | 6.5    | 6.11   | 5.75   | 0.009322 | 0.23774 |
| CBFA2T2 | 7.46   | 7.29   | 7.61   | 0.009324 | 0.23774 |
| RP11-404I7.2 | 4.14 | 4.35   | 4.64   | 0.009326 | 0.23774 |
| LINC00494 | 6.41   | 6.79   | 7.59   | 0.009339 | 0.23797 |
| ARAPI  | 8.06   | 7.72   | 8.15   | 0.009345 | 0.23798 |
| AOC3   | 3.76   | 3.97   | 4.29   | 0.009346 | 0.23798 |
| FAM114A1 | 4.43   | 4.56   | 5.18   | 0.009354 | 0.238097 |
| AC007319.1 | 3.86   | 3.98   | 4.1    | 0.009364 | 0.23811 |
| ODF3L1 | 3.15   | 3.25   | 3.55   | 0.009369 | 0.23811 |
| SEC23A | 7.3    | 7.37   | 7.7    | 0.00937 | 0.23811 |
| TAB2   | 11.15  | 11.45  | 11.6   | 0.009372 | 0.23811 |
| MRPL54 | 9.48   | 9.19   | 7.93   | 0.009382 | 0.238275 |
| SQLE   | 7.95   | 7.33   | 6.9    | 0.0094  | 0.238514 |
| KIAA1751 | 3.65   | 3.68   | 3.81   | 0.009407 | 0.238514 |
| CALCA  | 5.06   | 5.19   | 5.33   | 0.009415 | 0.238514 |
| CORO1A | 11.97  | 10.79  | 11.13  | 0.00944 | 0.238623 |
| RP11-258F22.1 | 5.46 | 5.34   | 5.9    | 0.009449 | 0.238623 |
| MIR720 | 5.09   | 5.43   | 5.92   | 0.009452 | 0.238623 |
| ACP6   | 4.85   | 4.93   | 5.24   | 0.009454 | 0.238623 |
| TMEM50B | 10.99  | 10.42  | 11.49  | 0.009461 | 0.238623 |
| SIK1   | 11.99  | 10.74  | 8.34   | 0.009466 | 0.238623 |
| RHOG   | 11.13  | 10.04  | 9.87   | 0.00947 | 0.238623 |
| SGPP1  | 9.45   | 10.66  | 11.45  | 0.00947 | 0.238623 |
| RN7SKP73 | 6.03   | 6.34   | 5.61   | 0.009508 | 0.238668 |
| KRTAP10-2 | 4.76   | 4.84   | 5.13   | 0.009515 | 0.238668 |
| MRPL13 | 6.49   | 6.19   | 5.73   | 0.009522 | 0.238668 |
| Gene          | Val 1 | Val 2 | Val 3 | P        | q        |
|--------------|-------|-------|-------|----------|----------|
| PLGLB1       | 6.93  | 6.36  | 6.44  | 0.009526 | 0.238668 |
| CYB5A        | 9.69  | 8.06  | 9.79  | 0.009529 | 0.238668 |
| C16orf46     | 3.96  | 4.06  | 3.92  | 0.009531 | 0.238668 |
| LRRC58       | 10.3  | 9.77  | 9.77  | 0.009555 | 0.238668 |
| MIR3189      | 4.3   | 4.63  | 4.27  | 0.009559 | 0.238668 |
| MIR4686      | 5.06  | 5.38  | 5.86  | 0.009561 | 0.238668 |
| LINC01061    | 6.28  | 5.16  | 6.65  | 0.009565 | 0.238668 |
| RP1-241P17.4 | 9.29  | 9.26  | 8.41  | 0.009565 | 0.238668 |
| DPH3P1       | 4.22  | 4.65  | 4.63  | 0.009567 | 0.238668 |
| MIR375       | 3.07  | 3.39  | 3.91  | 0.00957  | 0.238668 |
| ALDH16A1     | 7.31  | 6.76  | 6.87  | 0.009573 | 0.238668 |
| LINC00867    | 3.26  | 3.46  | 3.54  | 0.009577 | 0.238668 |
| CELF1        | 11.39 | 11.25 | 11.97 | 0.009579 | 0.238668 |
| RP4-676J13.2 | 3.7   | 3.99  | 4.17  | 0.009582 | 0.238668 |
| COL27A1      | 3.53  | 3.44  | 3.94  | 0.009588 | 0.238668 |
| RP11-631F7.1 | 4.47  | 4.49  | 4.8   | 0.00959  | 0.238668 |
| RP3-518E13.2 | 4.06  | 4.44  | 4.91  | 0.00959  | 0.238668 |
| KRT6A        | 4.54  | 4.65  | 4.83  | 0.0096   | 0.238668 |
| C22orf42     | 4.28  | 4.56  | 4.43  | 0.0096   | 0.238668 |
| HDAC11-AS1   | 3.69  | 3.94  | 3.9   | 0.009605 | 0.238668 |
| ITGA4        | 11.9  | 8.53  | 6.56  | 0.009609 | 0.238668 |
| MYOD1        | 3.07  | 2.98  | 2.89  | 0.009615 | 0.238668 |
| PTMA         | 17.35 | 16.89 | 16.58 | 0.009616 | 0.238668 |
| PHF13        | 5     | 5.29  | 5.46  | 0.009617 | 0.238668 |
| MAP3K10      | 6.2   | 5.96  | 6.22  | 0.00962  | 0.238668 |
| BCL7A        | 9.25  | 6.92  | 8.04  | 0.009626 | 0.238668 |
| SNX29P2      | 8.92  | 8.44  | 7.88  | 0.009628 | 0.238668 |
| RP11-321E2.4 | 3.28  | 3.61  | 3.43  | 0.009633 | 0.238668 |
| RP3-508I15.18| 8.82  | 8.6   | 7.81  | 0.009639 | 0.238668 |
| Gene              | Log2FoldChange | pValue       | FDR           |
|------------------|--------------|--------------|---------------|
| NSUN5P1          | 10.1         | 0.00964      | 0.238668      |
| GMEB1            | 8.72         | 0.009649     | 0.238668      |
| ZFPM1            | 5.85         | 0.009649     | 0.238668      |
| PPT2             | 4.37         | 0.009659     | 0.238668      |
| HEPACAM          | 4.24         | 0.009659     | 0.238668      |
| KIRREL3-AS2      | 3.49         | 0.009669     | 0.238822      |
| TRIP11           | 7.45         | 0.009679     | 0.238837      |
| SEMA5B           | 4.23         | 0.009681     | 0.238837      |
| DEPDC7           | 3.39         | 0.009682     | 0.238837      |
| HEXB             | 6.92         | 0.009686     | 0.238837      |
| ACTRT2           | 3.98         | 0.009689     | 0.238837      |
| SPP1             | 3.73         | 0.009698     | 0.238837      |
| EMB              | 14.37        | 0.009698     | 0.238837      |
| UCKL1-AS1        | 4.2          | 0.009702     | 0.238837      |
| RABIF            | 7.68         | 0.009715     | 0.238985      |
| IL12A-AS1        | 3.74         | 0.00972     | 0.238985      |
| NPAT             | 9.75         | 0.009721     | 0.238985      |
| PIK3R6           | 5.96         | 0.009728     | 0.238985      |
| GRAP             | 7.22         | 0.009731     | 0.238985      |
| CD81             | 8.25         | 0.009731     | 0.238985      |
| C16orf92         | 4.5          | 0.009732     | 0.238985      |
| DNM1L            | 8.45         | 0.009749     | 0.239121      |
| RPL36A           | 6.67         | 0.009752     | 0.239121      |
| BEX2             | 7.52         | 0.009752     | 0.239121      |
| ADPRHL2          | 7.49         | 0.009766     | 0.23913       |
| CTD-2377D24.4    | 4.44         | 0.009767     | 0.23913       |
| XX-FW83128A1.2   | 8.36         | 0.009777     | 0.23913       |
| CYP2A7P1         | 3.77         | 0.009772     | 0.23913       |
| Gene      | Sep-08 | TMEM116 | LOC729879 | AC002480.2 | NIT1 | Sep-08 | SMC4 | FAM108A2 | STK40 | TMHSL2 | COL942 | LINC00547 | RP11-112J3.15 | ARHGAP27 | ABAT | COX6C | LOC101928847 | LOC389906 | APIP | GSDMD | LOC101927016 | ZPB2 | CECR7 | LOC100506551 | LOC100288846 | LY75-CD302 |
|-----------|--------|---------|-----------|------------|------|--------|------|----------|-------|---------|--------|------------|-----------------|-----------|------|-------|----------------|----------|------|-------|----------------|------|-------|----------------|----------------|------------|
| CCDC170   | 3.44   | 3.56    | 3.64      | 0.009777   | 0.23913    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| RP11-576D8.4 | 4.74   | 4.91    | 6.17      | 0.009787   | 0.239187    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| PPT2      | 4.37   | 4.48    | 4.69      | 0.009801   | 0.239396    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| GTSF1     | 6.89   | 4.7     | 4.33      | 0.009806   | 0.239396    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| TMEM116   | 6.67   | 7.11    | 7.4       | 0.009827   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| AC002480.2 | 5.3    | 4.07    | 3.87      | 0.009831   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LOC729879 | 3.21   | 3.4     | 3.26      | 0.009834   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| NIT1      | 6.58   | 6.68    | 6.99      | 0.009838   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| Sep-08    | 4.55   | 4.63    | 4.65      | 0.009841   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| SMC4      | 8.99   | 8.11    | 8         | 0.009849   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| FAM108A2  | 5.32   | 5.02    | 4.92      | 0.009858   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| STK40     | 8.27   | 7.54    | 7.79      | 0.009859   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| THNSL2    | 4.6    | 5.37    | 5.86      | 0.009859   | 0.239565    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| COL942    | 5.46   | 5.77    | 5.74      | 0.009871   | 0.239732    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LINC00547 | 3.3    | 3.82    | 3.57      | 0.009879   | 0.239732    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| RP11-112J3.15 | 4.6   | 4.75    | 5.45      | 0.009882   | 0.239732    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| ARHGAP27  | 7.09   | 6.39    | 6.57      | 0.009885   | 0.239732    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| ABAT      | 5.7    | 5.86    | 6.08      | 0.009886   | 0.239732    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| COX6C     | 7.17   | 7.19    | 6.7       | 0.009891   | 0.239732    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LOC101928847 | 3.47   | 3.54    | 3.38      | 0.009901   | 0.239751    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LOC389906 | 6.51   | 5.78    | 5.62      | 0.009902   | 0.239751    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| APIP      | 6.88   | 6.5     | 6.98      | 0.009902   | 0.239751    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| GSDMD     | 6.52   | 6.39    | 6.64      | 0.009916   | 0.239812    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LOC101927016 | 3.54   | 3.55    | 4.26      | 0.009921   | 0.239812    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| ZPB2      | 3.94   | 4.18    | 4.85      | 0.009929   | 0.239812    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| CECR7     | 6.61   | 7.07    | 8.86      | 0.009937   | 0.23987    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LOC100506551 | 4.07   | 4.53    | 4.67      | 0.009945   | 0.23987    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LOC100288846 | 3.8    | 3.79    | 4.02      | 0.009951   | 0.23987    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| LY75-CD302 | 8.33   | 8.05    | 7.71      | 0.009956   | 0.23987    |        |      |          |       |         |        |            |                 |           |      |       |                |          |      |       |                |      |       |                |              |           |
| Gene       | Bi-weight log2 (log2) | Bi-weight p-value | FDR p-value |
|------------|-----------------------|-------------------|-------------|
| DAAM1      | 8.01                  | 6.94              | 0.009963    | 0.23987    |
| RP11-36B15.1 | 4.26                 | 4.79              | 0.009963    | 0.23987    |
| CIB1       | 10.92                 | 9.93              | 0.009965    | 0.23987    |
| VPS4B      | 10.77                 | 10.28             | 0.009968    | 0.23987    |
| MIR4718    | 3.82                  | 4.8               | 0.009968    | 0.23987    |
| SNORD107   | 6.82                  | 7.3               | 0.009969    | 0.23987    |
| SLC29A2    | 4.97                  | 5.25              | 0.009998    | 0.239948   |
| NF2        | 7.97                  | 7.65              | 0.009982    | 0.239948   |
| POU5F1P4   | 3.86                  | 4.14              | 0.009992    | 0.239948   |
| TMEM200A   | 3.96                  | 3.82              | 0.009992    | 0.239948   |
| OR1D2      | 3.41                  | 3.81              | 0.009997    | 0.239971   |
| DCD2C      | 3.72                  | 3.71              | 0.01        | 0.239971   |

Footnote: 1Bi-weight average signal (log2) gene intensity for each sample was calculated using the Tukey's Bi weight average for all eligible exons’ intensities in that gene; 2False discovery rate (FDR) p-values.
Table S3. mRNAs differentially abundant between Combined Controls, F-MBL, F-CLL, and S-CLL.

| Gene Symbol | Combined Controls mean log2 transformed expression value¹ | F-MBL mean log2 transformed expression value* | F-CLL mean log2 transformed expression value | S-CLL mean log2 transformed expression value | F-CLL vs. S-CLL (Adjusted p-value)² |
|-------------|----------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------------|
| GRASP       | 10.94                                                    | 9.66                                        | 6.72                                        | 6.30                                        | ns²                               |
| AC016745.3  | 7.01                                                     | 6.00                                        | 5.68                                        | 5.60                                        | ns                                |
| C11orf80    | 10.03                                                    | 11.40                                       | 11.83                                       | 11.85                                       | ns                                |
| METTL8      | 8.30                                                     | 10.51                                       | 11.20                                       | 11.40                                       | ns                                |
| PARP3       | 6.60                                                     | 7.16                                        | 6.94                                        | 7.33                                        | 0.02                              |
| ROR1        | 5.66                                                     | 10.48                                       | 10.55                                       | 11.44                                       | ns                                |
| LEF1        | 5.13                                                     | 10.33                                       | 11.21                                       | 11.60                                       | ns                                |

Footnote: ¹Bi-weight average signal (log2) gene intensity for each sample was calculated using the Tukey's Bi weight average for all eligible exons’ intensities in that gene; ²False discovery rate p-values.