|            | RMSE | <b>Observed Mean</b> | Observed Stdev | RMSE:Stdev  | Calculated R^2 |
|------------|------|----------------------|----------------|-------------|----------------|
| DPPA5      | 0.32 | -0.148555245         | 0              | -1          | 0              |
| AL138751.1 | 0.31 | -0.151227806         | 0              | -1          | 0              |
| FABP1      | 0.71 | -0.0128907           | 0.921062673    | 0.776073822 | 0.397709423    |
| DEFB1      | 0.47 | -0.064867958         | 0.559258784    | 0.845892107 | 0.284466544    |
| NDUFA4L2   | 0.5  | 0.014066066          | 0.573088735    | 0.873539907 | 0.236928032    |
| MT1H       | 0.92 | 0.164222139          | 1.046537619    | 0.876667977 | 0.231453257    |
| HR         | 0.92 | 0.037968556          | 1.006560219    | 0.914741995 | 0.163247083    |
| KLK6       | 0.59 | -0.040740456         | 0.642830235    | 0.920204763 | 0.153223193    |
| TFR2       | 0.81 | 0.011964794          | 0.876952353    | 0.924869833 | 0.144615792    |
| KRT6A      | 0.94 | 0.061239021          | 1.010979852    | 0.927933569 | 0.138939291    |
| CCL13      | 1.02 | 0.241619858          | 1.094166122    | 0.932437295 | 0.130560692    |
| CILP       | 0.64 | -0.211536917         | 0.686737713    | 0.93382586  | 0.127969263    |
| FOLH1      | 1    | -0.012795325         | 1.067017738    | 0.935096388 | 0.125594746    |
| CA9        | 0.97 | 0.13339176           | 1.041000629    | 0.936524387 | 0.122922073    |
| TRPS1      | 0.87 | -0.075314573         | 0.928744261    | 0.936744647 | 0.122509466    |
| EPHX3      | 1.37 | 0.213218844          | 1.456836019    | 0.938376401 | 0.11944973     |
| FOXJ1      | 1.22 | 0.062265419          | 1.295844763    | 0.939976101 | 0.11644493     |
| STC2       | 1.37 | 0.202389668          | 1.451550386    | 0.941060431 | 0.114405265    |
| TGM1       | 1.27 | 0.093764486          | 1.35252617     | 0.941141577 | 0.114252531    |
| TNFRSF17   | 0.97 | 0.016189988          | 1.032483231    | 0.942281984 | 0.112104662    |
| TMEM238    | 0.76 | 0.011454749          | 0.808374295    | 0.943487722 | 0.109830918    |
| HAND2      | 0.73 | 0.081077869          | 0.772439267    | 0.943865741 | 0.109117463    |
| KRT6B      | 0.47 | -0.054587375         | 0.497838374    | 0.945241464 | 0.106518574    |
| FAM166B    | 1.04 | -0.048606086         | 1.102710164    | 0.945849283 | 0.105369134    |
| ANXA10     | 0.81 | 0.071744352          | 0.853944389    | 0.947611931 | 0.102031629    |
| KRT16      | 0.81 | 0.03411317           | 0.858937664    | 0.948279491 | 0.100766006    |
| PNCK       | 0.71 | -0.126127344         | 0.747495961    | 0.949132702 | 0.099147113    |
| CTSE       | 1.24 | 0.145087595          | 1.308907558    | 0.949739102 | 0.097995639    |
| HEPACAM2   | 0.76 | -0.167089508         | 0.800804496    | 0.949813973 | 0.097853418    |
| FAT2       | 0.82 | -0.070527846         | 0.862163622    | 0.949827815 | 0.097827122    |
| MEF2B      | 1.25 | 0.203970751          | 1.314931636    | 0.951542266 | 0.094567316    |
| LYG1       | 0.81 | 0.151286384          | 0.848516044    | 0.952178995 | 0.093355162    |
| MIXL1      | 1.41 | 0.022340762          | 1.476445825    | 0.952738956 | 0.092288481    |
| TRPV6      | 0.98 | 0.157073593          | 1.031697135    | 0.95322987  | 0.091352814    |
| KCNJ16     | 1.14 | 0.002663115          | 1.195144227    | 0.953605701 | 0.090636167    |
| PRDM14     | 0.9  | 0.14824413           | 0.945782906    | 0.954923079 | 0.088121913    |
| TTR        | 1.07 | 0.053947436          | 1.125508314    | 0.95498028  | 0.088012665    |
| CLCNKB     | 1.04 | 0.147519174          | 1.084000156    | 0.955148635 | 0.087691084    |
| FABP7      | 0.99 | 0.126435592          | 1.040152557    | 0.955757707 | 0.086527205    |
| GATA3      | 1.34 | -0.033669688         | 1.401811279    | 0.957076837 | 0.084003928    |
| HOXB13     | 1    | 0.089438025          | 1.045548533    | 0.957173536 | 0.083818823    |
| KRT5       | 1.11 | 0.040839794          | 1.160056661    | 0.95856948  | 0.081144552    |

| CRYAB         1.18         0.171812205         1.224498172         0.96031948         0.077           KLK7         1.36         0.138057381         1.415449743         0.961966662         0.074           DCX         1.32         0.11157671         1.367147559         0.96413403         0.070           MECOM         1.2         -0.036281166         1.247144806         0.965075288         0.068           PNOC         0.91         0.046985293         0.944351804         0.966025181         0.06           FCRL5         0.99         -0.019312619         1.02013273         0.966123731         0.066           IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           CD70         0.98         0.22828151432         1.00810354         0.96885834 | 099752<br>786496<br>620141<br>445573<br>629689<br>679535<br>604935<br>135142<br>025543<br>638927<br>337479<br>898943<br>454735<br>313509 |
|--|--|
| KLK7         1.36         0.138057381         1.415449743         0.961966662         0.074           DCX         1.32         0.11157671         1.367147559         0.96413403         0.070           MECOM         1.2         -0.036281166         1.247144806         0.965075288         0.068           PNOC         0.91         0.046985293         0.944351804         0.966025181         0.06           FCRL5         0.99         -0.019312619         1.02013273         0.966123731         0.066           IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997 | 620141<br>445573<br>629689<br>679535<br>604935<br>135142<br>025543<br>638927<br>337479<br>898943<br>454735                               |
| DCX         1.32         0.11157671         1.367147559         0.96413403         0.070           MECOM         1.2         -0.036281166         1.247144806         0.965075288         0.068           PNOC         0.91         0.046985293         0.944351804         0.966025181         0.06           FCRL5         0.99         -0.019312619         1.02013273         0.966123731         0.066           IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.22828285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.96991 | 445573<br>629689<br>679535<br>604935<br>135142<br>025543<br>638927<br>337479<br>898943<br>454735   |
| MECOM         1.2         -0.036281166         1.247144806         0.965075288         0.068           PNOC         0.91         0.046985293         0.944351804         0.966025181         0.06           FCRL5         0.99         -0.019312619         1.02013273         0.966123731         0.066           IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.2282825432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969 | 629689<br>679535<br>604935<br>135142<br>025543<br>638927<br>337479<br>898943<br>454735   |
| PNOC         0.91         0.046985293         0.944351804         0.966025181         0.06           FCRL5         0.99         -0.019312619         1.02013273         0.966123731         0.066           IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.22828285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.97 | 679535<br>604935<br>135142<br>025543<br>638927<br>337479<br>898943<br>454735   |
| FCRL5         0.99         -0.019312619         1.02013273         0.966123731         0.066           IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.22828285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0 | 604935<br>135142<br>025543<br>638927<br>337479<br>898943<br>454735   |
| IFITM5         1.28         -0.067138274         1.329423884         0.966366834         0.066           ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056  | 135142<br>025543<br>638927<br>337479<br>898943<br>454735   |
| ENPEP         0.96         -0.250708842         0.996214354         0.966423539         0.066           MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   | 025543<br>638927<br>337479<br>898943<br>454735   |
| MMP1         1.05         0.071296576         1.090738317         0.967140669         0.064           STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   | 638927<br>337479<br>898943<br>454735   |
| STEAP2         0.67         -0.227858037         0.697607618         0.967296501         0.064           G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   | 337479<br>898943<br>454735   |
| G6PC         0.57         -0.240649776         0.586547024         0.968039801         0.062           POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056  | 898943<br>454735   |
| POSTN         1.06         -0.098315198         1.092196266         0.968269211         0.062           CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   | 454735   |
| CD70         0.98         0.228285432         1.00810354         0.968858344         0.061           REG4         0.64         -0.051911469         0.657997878         0.969017997         0.061           COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   |  |
| REG4       0.64       -0.051911469       0.657997878       0.969017997       0.061         COMP       1.13       0.162569872       1.165697582       0.969751315       0.059         SLC24A2       0.9       -0.135016192       0.9233407       0.970965332       0.057         PTCRA       0.41       -0.086696706       0.418206072       0.971543502       0.056  | 313509   |
| COMP         1.13         0.162569872         1.165697582         0.969751315         0.059           SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   | 004400   |
| SLC24A2         0.9         -0.135016192         0.9233407         0.970965332         0.057           PTCRA         0.41         -0.086696706         0.418206072         0.971543502         0.056   | 004122   |
| PTCRA 0.41 -0.086696706 0.418206072 0.971543502 0.056  | 582388   |
|  | 226324   |
|  | 103224   |
|  | 140036   |
| P2RX5 0.62 -0.046258727 0.640882064 0.972088351 0.055  | 044238   |
| KLK8 1.69 0.209658074 1.736557012 0.975015189 0.049  | 345381   |
| C8orf46 1.32 0.00654071 1.356283174 0.975122224 0.049  | <u>136649</u>  |
| CPNE5         1.38         0.157213917         1.41557532         0.975617606         0.048  | <u>170287</u>  |
| CLRN3         0.91         0.041021984         0.937421714         0.975936053         0.04  | 754882   |
| CA14 1.59 0.109132621 1.629591857 0.976272758 0.046  | 891502   |
| RNASE3 1.18 -0.003037737 1.207937703 0.976520057 0.046   | 408579   |
| C1orf61 1.68 0.185060158 1.719870633 0.977150271 0.045   | 177348   |
| CDHR5 0.58 -0.131525489 0.593142505 0.977355455 0.044  | 776315   |
| PRAC2 0.66 -0.104489563 0.674800298 0.97849495 0.042   | <del>547633</del>  |
| CALML5 1.29 0.067640608 1.317873945 0.98188645 0.035   | 898999   |
| CCR9 0.82 -0.055850157 0.829439112 0.982619685 0.034   | <mark>458554</mark>  |
| HIST1H2BH 0.55 0.024336128 0.560216127 0.983033686 0.033   | 644773   |
| PTPRN2 1.14 0.033477847 1.162995483 0.983094209 0.033  | 525775   |
| IRF4 1.04 0.033438869 1.056298118 0.983453184 0.032  | 819835   |
| GFRA1 1.05 -0.024430941 1.070970772 0.983780025 0.032  | 176863   |
| DSC3 1.33 0.17358609 1.350816955 0.984449217 0.030   | 859739   |
| SLC28A1 1.67 0.211738268 1.690637039 0.985497321 0.028   | 795031   |
| GPA33 0.75 -0.040850959 0.756840178 0.985674249 0.028  | 446276   |
| PCDH18 1.03 -0.199380817 1.040791017 0.98606044 0.027  | 684808   |
| P2RX3 1.35 0.271483067 1.371557793 0.986350474 0.027   | 112743   |
|  | 427011   |
|  |  |
| ESR1 1.17 -0.100253461 1.187129514 0.987926119 0.024   | 368765   |

| CLDN10   | 0.7  | -0.140719092 | 0.707517428 | 0.988051197 | 0.023754832  |
|----------|------|--------------|-------------|-------------|--------------|
| HRG      | 0.7  | 0.05109101   | 0.892286199 | 0.989498487 | 0.023734832  |
|          | 1.47 | 0.000000     | 1.481871994 | 0.989498487 | 0.020892743  |
| GJB1     |      | 0.252605896  |             |             |              |
| TRABD2B  | 1.02 | -0.195785922 | 1.023973767 | 0.992186999 | 0.015564959  |
| FAM3D    | 1.24 | 0.073365089  | 1.245459784 | 0.992398487 | 0.015145242  |
| AGT      | 0.58 | -0.14648998  | 0.585657648 | 0.992817451 | 0.014313508  |
| MAB21L2  | 1.5  | 0.136104532  | 1.510627618 | 0.993198522 | 0.013556696  |
| SCARF2   | 1.27 | 0.107234778  | 1.278398517 | 0.994093422 | 0.011778267  |
| CHST4    | 1.68 | 0.228872993  | 1.692794578 | 0.994156414 | 0.011653024  |
| FOXA1    | 1.28 | -0.135827486 | 1.284282052 | 0.994263172 | 0.011440744  |
| PNMAL2   | 1.08 | -0.059418496 | 1.085496609 | 0.995343099 | 0.009292115  |
| UPK2     | 1.88 | 0.310746948  | 1.885407172 | 0.995737377 | 0.008507075  |
| AR       | 1.03 | -0.02538741  | 1.032882856 | 0.995892448 | 0.008198233  |
| S100P    | 0.79 | -0.190807733 | 0.794993198 | 0.996068869 | 0.007846809  |
| KCNK15   | 1    | -0.12151749  | 1.000583668 | 0.996499351 | 0.006989044  |
| HOXD11   | 1.5  | 0.263433275  | 1.509071697 | 0.996611638 | 0.006765242  |
| NAPSA    | 0.82 | -0.055236885 | 0.827163345 | 0.997025178 | 0.005940794  |
| HIST1H3F | 0.52 | -0.05677406  | 0.519699686 | 0.998518939 | 0.002959929  |
| FAM43B   | 0.84 | -0.157139952 | 0.844856425 | 0.999637546 | 0.000724778  |
| NLRP7    | 1.37 | 0.11461663   | 1.367510329 | 0.999887349 | 0.000225289  |
| DERL3    | 1.3  | 0.188427906  | 1.302750444 | 1.00059345  | -0.001187251 |
| SDR16C5  | 1.13 | 0.159712993  | 1.126210026 | 1.000668267 | -0.001336981 |
| TMEM179  | 1.61 | 0.244450571  | 1.603139536 | 1.001256821 | -0.002515221 |
| SHISA3   | 1.34 | 0.102135625  | 1.340956384 | 1.001768659 | -0.003540447 |
| DES      | 0.51 | -0.06605269  | 0.511184468 | 1.002039464 | -0.004083087 |
| CD177    | 0.66 | -0.083124302 | 0.654448011 | 1.002232989 | -0.004470965 |
| MEP1A    | 1.66 | 0.218101505  | 1.651997536 | 1.002506546 | -0.005019375 |
| SLC6A17  | 0.77 | -0.022969106 | 0.771682063 | 1.00261873  | -0.005244317 |
| PKP1     | 1.96 | 0.341343967  | 1.95229012  | 1.003308591 | -0.006628128 |
| TLX2     | 1.73 | 0.135198128  | 1.727829783 | 1.003323288 | -0.006657619 |
| DSG1     | 1.97 | 0.311245597  | 1.960429967 | 1.003585482 | -0.00718382  |
| SFRP2    | 1.06 | 0.021272269  | 1.055354646 | 1.004795377 | -0.00961375  |
| CRP      | 0.98 | 0.041680246  | 0.975695511 | 1.004810302 | -0.009643743 |
| PLA2G2D  | 1.04 | 0.167881729  | 1.035860712 | 1.00497728  | -0.009979333 |
| ALPPL2   | 2.01 | 0.384229743  | 1.998897477 | 1.005843668 | -0.011721485 |
| BSND     | 0.64 | -0.108735502 | 0.633256798 | 1.005988095 | -0.012012047 |
| LIN28A   | 1.98 | 0.306982537  | 1.965768916 | 1.006031836 | -0.012100055 |
| DKK1     | 1.7  | 0.281269953  | 1.687261047 | 1.007264243 | -0.014581256 |
| HIST1H3J | 1.63 | 0.348388231  | 1.620162263 | 1.007335915 | -0.014725647 |
| TXNDC5   | 1.12 | 0.076982223  | 1.110484295 | 1.007455789 | -0.014967167 |
| FAM19A4  | 1.74 | 0.325037401  | 1.725814962 | 1.007516764 | -0.01509003  |
| HIST1H4D | 1.02 | 0.166675783  | 1.013860355 | 1.007690198 | -0.015439534 |
| LZTS1    | 0.88 | -0.342973139 | 0.869406704 | 1.007873662 | -0.015809318 |
| LZIJI    | 0.00 | -0.342373133 | 0.003400704 | 1.00/0/3002 | -0.013003310 |

| RNASE2    | 1.08 | 0.153158194  | 1.06678709  | 1.008315003 | -0.016699145 |
|-----------|------|--------------|-------------|-------------|--------------|
| SNCA      | 1.4  | 0.182382926  | 1.389168245 | 1.008313003 | -0.010039143 |
| VSTM1     | 1.01 | 0.194284656  | 0.998188859 | 1.008819043 | -0.017713881 |
|           |      |              |             |             |              |
| S100A1    | 0.96 | 0.025855566  | 0.948728231 | 1.009989391 | -0.02007857  |
| F7        | 1.52 | 0.013674826  | 1.506712217 | 1.010579307 | -0.021270535 |
| CYP17A1   | 1.43 | 0.079862475  | 1.419380398 | 1.010812007 | -0.021740913 |
| NTS       | 1.31 | 0.169629094  | 1.297248669 | 1.01213757  | -0.02442246  |
| AZGP1     | 1.38 | 0.031513443  | 1.364155754 | 1.012146992 | -0.024441534 |
| UTF1      | 0.83 | -0.216692771 | 0.82380298  | 1.012216216 | -0.024581669 |
| SHISA8    | 1.25 | 0.135485052  | 1.238820961 | 1.012230515 | -0.024610616 |
| DACH1     | 1.1  | 0.051021129  | 1.085854047 | 1.012263549 | -0.024677492 |
| OR51E1    | 1.1  | 0.04226649   | 1.085909964 | 1.013148287 | -0.026469452 |
| GPRC5B    | 1.01 | -0.01301801  | 0.995359877 | 1.01337564  | -0.026930188 |
| DNER      | 0.86 | 0.118827649  | 0.845600077 | 1.014754866 | -0.029727438 |
| BMPER     | 2.06 | 0.398952224  | 2.029651051 | 1.015159831 | -0.030549482 |
| TMEM151A  | 1.76 | 0.286910287  | 1.734958428 | 1.015928319 | -0.03211035  |
| SPOCK3    | 0.75 | -0.056347343 | 0.738838979 | 1.016121781 | -0.032503474 |
| RHCG      | 2.17 | 0.388646175  | 2.137807836 | 1.016279255 | -0.032823524 |
| BNC1      | 1.88 | 0.375685227  | 1.846126267 | 1.016340837 | -0.032948698 |
| FLT3      | 1.15 | 0.114481016  | 1.127903907 | 1.01696635  | -0.034220557 |
| LMX1B     | 1.14 | -0.060446934 | 1.118221641 | 1.017189153 | -0.034673774 |
| SLC22A2   | 1.96 | 0.483841523  | 1.931031401 | 1.017285167 | -0.034869111 |
| KLK1      | 1.98 | 0.278443827  | 1.949808876 | 1.01731595  | -0.034931742 |
| NDP       | 1.72 | 0.332488931  | 1.687076273 | 1.017564354 | -0.035437214 |
| SLC7A8    | 1.1  | -0.056630503 | 1.078899755 | 1.017845128 | -0.036008705 |
| HIST1H2AH | 1.61 | 0.215909874  | 1.577487756 | 1.019271019 | -0.038913411 |
| HIST1H2BG | 1.41 | 0.290702668  | 1.385827431 | 1.019355999 | -0.039086652 |
| TMEM213   | 2.12 | 0.345348174  | 2.077944108 | 1.020159131 | -0.040724653 |
| PGLYRP1   | 1.03 | 0.05801327   | 1.013646747 | 1.020185879 | -0.040779228 |
| NEFM      | 1.08 | 0.030650825  | 1.056822194 | 1.020246527 | -0.040902977 |
| AIM2      | 0.66 | -0.026740502 | 0.644947806 | 1.020792403 | -0.04201713  |
| RAB3B     | 0.59 | -0.119227189 | 0.575372918 | 1.021208716 | -0.042867242 |
| PHOX2B    | 2.1  | 0.42871015   | 2.051092712 | 1.022070398 | -0.044627898 |
| DSG3      | 2.05 | 0.422070546  | 2.009208146 | 1.022306661 | -0.045110909 |
| HABP2     | 0.83 | -0.185480999 | 0.815227247 | 1.023047656 | -0.046626506 |
| ICAM3     | 0.93 | 0.056873194  | 0.910382181 | 1.023458268 | -0.047466826 |
| GPR64     | 1.51 | 0.175526758  | 1.473389374 | 1.023738841 | -0.048041214 |
| P2RX1     | 1.62 | 0.321201907  | 1.584030304 | 1.024257145 | -0.049102699 |
| CORO2B    | 1.12 | -0.14403163  | 1.095972158 | 1.024448919 | -0.049495588 |
| ZBED2     | 1.11 | 0.246607727  | 1.083044088 | 1.024917167 | -0.050455199 |
| RTN1      | 1.33 | -0.081755075 | 1.299117878 | 1.025173906 | -0.050981538 |
| RSPO1     | 2.17 | 0.419068432  | 2.111120533 | 1.025872133 | -0.052413633 |
| AOC1      | 2.22 | 0.394587922  | 2.166501822 | 1.025876492 | -0.052422578 |
| AOC1      | ۷.۷۷ | 0.33+301322  | 2.100301022 | 1.023070432 | 0.032422376  |

| PLG     | 0.58 | -0.220412929 | 0.563058983 | 1.025902352 | -0.052475636 |
|---------|------|--------------|-------------|-------------|--------------|
| BHMT    | 2.21 | 0.363348648  | 2.154872294 | 1.026522423 | -0.053748285 |
| CDO1    | 1.16 | -0.106480066 | 1.126131404 | 1.026634784 | -0.053978981 |
| SLAMF7  | 1.32 | 0.251031408  | 1.280992511 | 1.026727873 | -0.054170124 |
| CPB2    | 2.23 | 0.40445609   | 2.170327466 | 1.027021906 | -0.054773996 |
| HSPB2   | 1.52 | 0.248402176  | 1.480010137 | 1.027830773 | -0.056436098 |
| LRRC14B | 1.33 | 0.147230004  | 1.292233417 | 1.028032316 | -0.056850442 |
| SP7     | 2.07 | 0.450516149  | 2.010869914 | 1.02810037  | -0.056990371 |
| MAL     | 2.21 | 0.387029421  | 2.145533701 | 1.028114315 | -0.057019045 |
| UGT2B4  | 2.24 | 0.41655985   | 2.173073364 | 1.028597969 | -0.058013782 |
| HNF4A   | 2.09 | 0.40544182   | 2.033442678 | 1.028668995 | -0.058159901 |
| ВМР6    | 2.19 | 0.420263055  | 2.131719631 | 1.028850241 | -0.058532818 |
| ITLN2   | 2.18 | 0.42522026   | 2.119227701 | 1.028876852 | -0.058587577 |
| NDNF    | 0.69 | -0.304335377 | 0.671227359 | 1.029158031 | -0.059166253 |
| NR1H4   | 2.23 | 0.421263225  | 2.171164575 | 1.029314911 | -0.059489185 |
| SOX1    | 1.55 | 0.200608817  | 1.506168493 | 1.03108415  | -0.063134524 |
| REG1A   | 2.23 | 0.437948949  | 2.166276585 | 1.031117724 | -0.063203761 |
| RBP4    | 1.77 | 0.246160338  | 1.717812532 | 1.03124848  | -0.063473428 |
| ATCAY   | 0.92 | -0.023514262 | 0.891520386 | 1.031264095 | -0.063505633 |
| GCGR    | 2.19 | 0.382583217  | 2.124816587 | 1.031598986 | -0.064196467 |
| HOXC10  | 0.88 | -0.152159241 | 0.850410486 | 1.032305756 | -0.065655174 |
| LRRC26  | 0.73 | -0.032554777 | 0.710962676 | 1.033189628 | -0.067480807 |
| VENTX   | 1.22 | 0.184607467  | 1.17687135  | 1.033299132 | -0.067707095 |
| IGLL1   | 1.95 | 0.448637745  | 1.886482511 | 1.033385273 | -0.067885121 |
| ORM1    | 1.47 | 0.091027951  | 1.420864611 | 1.03365775  | -0.068448343 |
| MRGPRF  | 1.22 | -0.155623865 | 1.180805971 | 1.033870947 | -0.068889135 |
| LGR5    | 2.24 | 0.454849277  | 2.162612651 | 1.034206723 | -0.069583546 |
| CDK5R2  | 1.62 | 0.292199027  | 1.567628212 | 1.034224333 | -0.06961997  |
| BCHE    | 2.24 | 0.44461449   | 2.162350638 | 1.034272678 | -0.069719973 |
| GBP6    | 0.63 | -0.113140002 | 0.611323747 | 1.035113409 | -0.071459769 |
| IL21R   | 1.19 | 0.241010337  | 1.14449195  | 1.035981593 | -0.07325786  |
| ISL1    | 2.24 | 0.453045632  | 2.162071005 | 1.03613107  | -0.073567594 |
| HLA-DOB | 1.02 | 0.204102321  | 0.982313791 | 1.03687333  | -0.075106303 |
| ANXA8   | 1.83 | 0.35850996   | 1.766978266 | 1.036992823 | -0.075354115 |
| TUBB2B  | 2.01 | 0.472704517  | 1.935235453 | 1.037154006 | -0.075688433 |
| SNAP91  | 2.16 | 0.469143355  | 2.077448901 | 1.038053518 | -0.077555107 |
| STAR    | 2.18 | 0.409017382  | 2.098306458 | 1.038676362 | -0.078848584 |
| ARPP21  | 1.15 | 0.060868016  | 1.10243582  | 1.038686084 | -0.07886878  |
| BRINP2  | 0.82 | -0.026714401 | 0.788132582 | 1.038894948 | -0.079302712 |
| BHLHA15 | 1.68 | 0.354374284  | 1.613694501 | 1.039481142 | -0.080521044 |
| TSPAN8  | 0.41 | -0.06626596  | 0.390670626 | 1.04095349  | -0.083584168 |
| TMEM119 | 1.26 | -0.026810598 | 1.208830279 | 1.041580535 | -0.084890011 |
| KHDC3L  | 1.18 | 0.082010884  | 1.136284489 | 1.041675818 | -0.085088511 |
|         |      |              |             |             |              |

| CLDN6  | 1.48<br>1.97<br>0.8<br>2.03<br>1.46<br>1.8<br>0.51<br>1.74<br>1.33<br>0.82<br>0.72<br>2.25 | 0.30061759<br>0.452737812<br>-0.033912927<br>0.439501831<br>0.324059689<br>0.441927445<br>-0.191893803<br>0.268972514<br>0.089381493<br>-0.07549293<br>-0.086873045 | 1.422466854<br>1.889610205<br>0.767154935<br>1.947823676<br>1.401120487<br>1.73030238<br>0.492716988<br>1.669230301<br>1.277269665 | 1.041790159<br>1.042202137<br>1.042503672<br>1.042664359<br>1.043000875<br>1.043027662<br>1.043179705<br>1.043387393 | -0.085326736<br>-0.086185294<br>-0.086813906<br>-0.087148966<br>-0.087850825<br>-0.087906703<br>-0.088223898 |
|--|--|---|--|--|--|
| SLC26A7 SLC3A1   | 0.8<br>2.03<br>1.46<br>1.8<br>0.51<br>1.74<br>1.33<br>0.82<br>0.72                         | -0.033912927<br>0.439501831<br>0.324059689<br>0.441927445<br>-0.191893803<br>0.268972514<br>0.089381493<br>-0.07549293  | 0.767154935<br>1.947823676<br>1.401120487<br>1.73030238<br>0.492716988<br>1.669230301<br>1.277269665                               | 1.042503672<br>1.042664359<br>1.043000875<br>1.043027662<br>1.043179705  | -0.086813906<br>-0.087148966<br>-0.087850825<br>-0.087906703   |
| SLC3A1   | 2.03   1.46   1.8   0.51   1.74   1.33   0.82   0.72                                       | 0.439501831<br>0.324059689<br>0.441927445<br>-0.191893803<br>0.268972514<br>0.089381493<br>-0.07549293  | 1.947823676<br>1.401120487<br>1.73030238<br>0.492716988<br>1.669230301<br>1.277269665  | 1.042664359<br>1.043000875<br>1.043027662<br>1.043179705   | -0.087148966<br>-0.087850825<br>-0.087906703   |
| RUNDC3A 2 ATP1A3 ZCCHC12 0 HIST1H1D 2 LYPD6B 2 TRIM31 0 SLC45A3 0  | 1.46<br>1.8<br>0.51<br>1.74<br>1.33<br>0.82<br>0.72  | 0.324059689<br>0.441927445<br>-0.191893803<br>0.268972514<br>0.089381493<br>-0.07549293   | 1.401120487<br>1.73030238<br>0.492716988<br>1.669230301<br>1.277269665   | 1.043000875<br>1.043027662<br>1.043179705  | -0.087850825<br>-0.087906703   |
| ATP1A3  ZCCHC12 (CHIST1H1D (CHIST1H1D (CHIST1H1D (CHIST1H1D (CHISTING)))  LYPD6B (CHISTING)  TRIM31 (CHISTING)  SLC45A3 (CHISTING)   | 1.8<br>0.51<br>1.74<br>1.33<br>0.82<br>0.72  | 0.441927445<br>-0.191893803<br>0.268972514<br>0.089381493<br>-0.07549293  | 1.73030238<br>0.492716988<br>1.669230301<br>1.277269665  | 1.043027662<br>1.043179705   | -0.087906703   |
| ZCCHC12 (CHIST1H1D (CHIST1H1D (CHIST1H1D (CHIST)) CHISTON (CHISTON | 0.51<br>1.74<br>1.33<br>0.82<br>0.72   | -0.191893803<br>0.268972514<br>0.089381493<br>-0.07549293   | 0.492716988<br>1.669230301<br>1.277269665  | 1.043179705  |  |
| HIST1H1D   | 1.74<br>1.33<br>0.82<br>0.72   | 0.268972514<br>0.089381493<br>-0.07549293   | 1.669230301<br>1.277269665   |  | 0.000223030  |
| LYPD6B 2<br>TRIM31 0<br>SLC45A3 0  | 1.33<br>0.82<br>0.72   | 0.089381493<br>-0.07549293  | 1.277269665  | 1.0-3307333  | -0.088657253   |
| TRIM31 (SLC45A3 (  | 0.82<br>0.72   | -0.07549293   |  | 1.04348764   | -0.088866455   |
| SLC45A3 (  | 0.72   |   | 0.783937042  | 1.043526898  | -0.088948386   |
|  |  |   | 0.687735244  | 1.044081687  | -0.090106569   |
|  |  | 0.460045918   | 2.157195768  | 1.044090599  | -0.090125179   |
|  | 0.85   | -0.317273581  | 0.810923898  | 1.044326095  | -0.090616992   |
|  | 1.23   | 0.153396576   | 1.17476562   | 1.04469469   | -0.091386994   |
|  | 1.95   | 0.48961996  | 1.870492505  | 1.04478158   | -0.09156855  |
|  | 2.23   | 0.4917974   | 2.131514246  | 1.045016861  | -0.09206024  |
|  | 2.19   | 0.499822186   | 2.092930185  | 1.045177791  | -0.092396615   |
| · · · · · · · · · · · · · · · · · · ·  | 1.17   | 0.083824463   | 1.118750773  | 1.045482256  | -0.093033149   |
|  | 1.36   | 0.20719604  | 1.304211431  | 1.045698249  | -0.093484828   |
| +  | 1.67   | 0.179654228   | 1.593904446  | 1.046312897  | -0.094770679   |
|  | 1.34   | 0.29900226  | 1.277226682  | 1.046418608  | -0.094991903   |
|  | 1.27   | -0.05289519   | 1.21533308   | 1.046584491  | -0.095339096   |
|  | 1.06   | 0.20987942  | 1.007929167  | 1.046728815  | -0.095641211   |
|  | 1.53   | 0.378066548   | 1.463193711  | 1.047536643  | -0.097333019   |
|  | 0.84   | 0.084800793   | 0.806207689  | 1.04791185   | -0.098119244   |
| APOA2  | 1.5  | 0.438556733   | 1.432528083  | 1.048002964  | -0.098310212   |
|  | 2.17   | 0.427741934   | 2.073426438  | 1.048082069  | -0.098476023   |
|  | 2.21   | 0.441018958   | 2.105054604  | 1.048638626  | -0.099642967   |
|  | 0.94   | 0.071537079   | 0.896530868  | 1.049071469  | -0.100550948   |
| AMPD1  | 0.8  | -0.189243338  | 0.763684778  | 1.049349049  | -0.101133427   |
| <b>-</b>   | 0.77   | -0.017828443  | 0.73339284   | 1.050339322  | -0.103212691   |
|  | 0.98   | 0.121748237   | 0.935239425  | 1.051627362  | -0.105920109   |
|  | 0.69   | 0.016852988   | 0.657602518  | 1.051659641  | -0.105988001   |
|  | 0.93   | 0.184895028   | 0.88860876   | 1.051679988  | -0.106030797   |
|  | 1.68   | 0.20835722  | 1.595030924  | 1.051765975  | -0.106211666   |
|  | 1.83   | 0.334748467   | 1.743577038  | 1.051985549  | -0.106673594   |
|  | 0.85   | -0.002252054  | 0.811795825  | 1.052514706  | -0.107787206   |
| +  | 1.16   | 0.133619239   | 1.098555525  | 1.052522398  | -0.107803399   |
| FOXD1  | 0.5  | -0.079243211  | 0.478973087  | 1.052662948  | -0.108099282   |
| +  | 1.15   | 0.160447696   | 1.08963142   | 1.053085081  | -0.108988188   |
| +  | 1.76   | 0.498731777   | 1.672028483  | 1.053506577  | -0.109876107   |
|  | 1.32   | -0.118604062  | 1.253674167  | 1.05370588   | -0.110296082   |
|  | 1.27   | -0.110550533  | 1.201342979  | 1.053844446  | -0.110588116   |

| CCR2      | 0.91 | -0.023982667 | 0.863126935 | 1.053898502  | -0.110702052 |
|-----------|------|--------------|-------------|--------------|--------------|
| CYP11A1   | 0.9  | -0.210337815 | 0.851345006 | 1.054361842  | -0.111678893 |
| C7        | 1.11 | -0.078650777 | 1.054404175 | 1.054560091  | -0.112096986 |
| CNTFR     | 1.38 | 0.05294961   | 1.304582796 | 1.0546935    | -0.112378379 |
| HIST1H2AJ | 2.03 | 0.599057039  | 1.926812638 | 1.055495592  | -0.114070945 |
| RAB44     | 1.62 | 0.308072001  | 1.531224786 | 1.055720308  | -0.114545369 |
| GYG2      | 1.02 | -0.005961128 | 1.139434868 | 1.05604531   | -0.115231697 |
| ITIH1     | 1.06 | 0.191870377  | 1.007115114 | 1.057302971  | -0.117889572 |
| PPP1R1A   | 0.89 | -0.082433691 | 0.840483734 | 1.058045318  | -0.117889372 |
| KLK5      | 0.66 | -0.087020208 | 0.622493586 | 1.058108959  | -0.119459457 |
| NTRK1     | 1.64 | 0.406270425  | 1.552731867 | 1.058108959  | -0.119852133 |
| HIST1H3D  | 1.02 | 0.233037287  | 0.967784717 | 1.058593794  | -0.119832133 |
| GDNF      | 1.71 | 0.503034066  | 1.613087899 | 1.058990867  | -0.120020822 |
| NPW       | 0.84 | -0.065600036 | 0.793423174 | 1.0599116837 | -0.121728473 |
|           |      | -0.147223354 | 0.549606279 | 1.059110837  | -0.121728473 |
| KLHDC8A   | 0.58 |              |             |              |              |
| SLC27A6   | 0.97 | 0.006591784  | 0.914294542 | 1.059452982  | -0.122440622 |
| NEFL      | 1.04 | 0.032565401  | 0.980554407 | 1.059808482  | -0.123194019 |
| SERPINC1  | 1.16 | -0.045046279 | 1.09071684  | 1.061290579  | -0.126337694 |
| GATA4     | 0.69 | -0.084252754 | 0.64730849  | 1.061297342  | -0.126352047 |
| TCF21     | 0.93 | -0.072028446 | 0.872902919 | 1.061439975  | -0.12665482  |
| HMP19     | 2.21 | 0.598993071  | 2.07719592  | 1.061575783  | -0.126943144 |
| EYA1      | 1.19 | 0.24751796   | 1.122236658 | 1.062447203  | -0.128794059 |
| ORM2      | 0.88 | -0.080058596 | 0.828824478 | 1.062452931  | -0.128806231 |
| PMEL      | 1.05 | -0.069222835 | 0.989538457 | 1.063556747  | -0.131152955 |
| GAPDHS    | 0.77 | -0.068647976 | 0.724960031 | 1.064524947  | -0.133213363 |
| UTS2R     | 0.86 | -0.099649363 | 0.807853869 | 1.064697786  | -0.133581376 |
| SOX18     | 1.37 | -0.150593082 | 1.281770385 | 1.065010625  | -0.134247631 |
| GATA6     | 1.69 | 0.337016179  | 1.582531056 | 1.065170403  | -0.134587988 |
| C18orf42  | 0.88 | 0.044107334  | 0.8257521   | 1.065646452  | -0.135602361 |
| MUC3A     | 1    | -0.318270995 | 0.938174503 | 1.067049319  | -0.13859425  |
| RAB37     | 1.07 | 0.249636728  | 1.002683679 | 1.068259303  | -0.141177939 |
| HIST1H3B  | 1.67 | 0.34564139   | 1.558345203 | 1.068447196  | -0.141579411 |
| INSM2     | 2.14 | 0.635090296  | 2.006098685 | 1.069238739  | -0.143271481 |
| FGF18     | 2.02 | 0.459428866  | 1.889573097 | 1.069814146  | -0.144502306 |
| CD3D      | 0.78 | 0.055153858  | 0.727791499 | 1.070008545  | -0.144918286 |
| MLPH      | 1.08 | -0.278733463 | 1.009363514 | 1.070114673  | -0.145145414 |
| SERPINB10 | 1.34 | 0.213410415  | 1.254233004 | 1.07136575   | -0.14782457  |
| ASIC4     | 0.96 | 0.190144469  | 0.890818597 | 1.072847818  | -0.151002441 |
| HIST1H3G  | 1.26 | 0.230143859  | 1.174972086 | 1.073151365  | -0.151653852 |
| ВТК       | 0.97 | 0.062740936  | 0.898691412 | 1.074043077  | -0.15356853  |
| CYP4B1    | 2.18 | 0.523351313  | 2.024316581 | 1.074473333  | -0.154492944 |
| VSTM2A    | 1.85 | 0.405321753  | 1.721188898 | 1.075927961  | -0.157620976 |
| ASCL2     | 0.98 | -0.048792128 | 0.91471388  | 1.076167866  | -0.158137276 |

| CD1B     | 0.49 | -0.107307494 | 0.458145505 | 1.07635026  | -0.158529883 |
|----------|------|--------------|-------------|-------------|--------------|
| FAM19A3  | 1    | 0.110792086  | 0.924121973 | 1.078771598 | -0.163748161 |
| CHRNA3   | 1.43 | 0.365502997  | 1.324877519 | 1.079773592 | -0.16591101  |
| FOXC1    | 2.07 | 0.570718188  | 1.917682344 | 1.081480459 | -0.169599982 |
| ANXA13   | 0.85 | -0.0689636   | 0.786162647 | 1.08236805  | -0.171520595 |
| MMP12    | 0.77 | -0.127766315 | 0.709210359 | 1.082748871 | -0.172345118 |
| F13B     | 0.66 | 0.084996984  | 0.607500788 | 1.082767478 | -0.17238541  |
| PRPH     | 1.92 | 0.552897267  | 1.774175967 | 1.082879862 | -0.172628796 |
| BHMT2    | 1.12 | -0.076399571 | 1.033165846 | 1.083142369 | -0.173197391 |
| RGS20    | 0.46 | -0.085564745 | 0.427826884 | 1.083269154 | -0.17347206  |
| DMGDH    | 0.99 | -0.180767862 | 0.917663508 | 1.08360135  | -0.174191886 |
| HIST1H1B | 1.28 | 0.338286266  | 1.183346961 | 1.084453001 | -0.176038311 |
| SLC7A4   | 1.09 | -0.117918158 | 1.003337295 | 1.085463274 | -0.17823052  |
| SERPINA5 | 1.14 | -0.094402099 | 1.049243038 | 1.085573596 | -0.178470033 |
| SPINK1   | 0.75 | 0.026457312  | 0.686253499 | 1.086118598 | -0.179653609 |
| FCRL3    | 0.59 | -0.076142246 | 0.542144393 | 1.090399049 | -0.188970085 |
| STMN4    | 0.73 | -0.112948809 | 0.666075006 | 1.090810162 | -0.18986681  |
| BPI      | 0.87 | 0.023016487  | 0.79636984  | 1.090942403 | -0.190155327 |
| CAPS     | 0.92 | -0.034737708 | 0.846029623 | 1.092182312 | -0.192862203 |
| TBX3     | 0.85 | 0.011251702  | 0.773933114 | 1.092186218 | -0.192870736 |
| FAM101A  | 1.17 | 0.158054986  | 1.071824323 | 1.092499924 | -0.193556084 |
| SPDEF    | 1.1  | -0.211608    | 1.00534721  | 1.092680317 | -0.193950275 |
| KNG1     | 0.79 | 0.14554116   | 0.72257511  | 1.093245114 | -0.195184879 |
| BEX1     | 0.57 | 0.057849379  | 0.517503539 | 1.09327693  | -0.195254445 |
| AXIN2    | 0.9  | 0.122507772  | 0.819751753 | 1.09385884  | -0.196527162 |
| CD8B     | 1.05 | 0.152915026  | 0.958324503 | 1.094254047 | -0.197391919 |
| STK32A   | 0.8  | -0.038022133 | 0.734130234 | 1.095064915 | -0.199167168 |
| CPB1     | 2.03 | 0.68863714   | 1.857385367 | 1.095600343 | -0.200340112 |
| CD22     | 0.49 | -0.14082384  | 0.449252667 | 1.095941075 | -0.201086839 |
| C1QTNF4  | 0.72 | -0.146486357 | 0.657705792 | 1.097129791 | -0.203693779 |
| HP       | 0.82 | -0.160971579 | 0.745625397 | 1.097538211 | -0.204590124 |
| MXRA8    | 1.03 | 0.00547957   | 0.93764091  | 1.097610442 | -0.204748682 |
| CCL25    | 1.25 | 0.284111321  | 1.136560692 | 1.098824421 | -0.207415108 |
| C2orf88  | 0.65 | -0.11364798  | 0.594538155 | 1.09953559  | -0.208978515 |
| LTB      | 0.47 | -0.091948256 | 0.42721879  | 1.101967052 | -0.214331383 |
| SAA1     | 1.19 | 0.012745011  | 1.080860466 | 1.10254714  | -0.215610195 |
| MGAM     | 0.65 | 0.005416448  | 0.589020685 | 1.103274395 | -0.217214392 |
| EDNRB    | 0.74 | -0.329724089 | 0.667050411 | 1.104619217 | -0.220183615 |
| GPM6B    | 1.09 | -0.09955937  | 0.988565239 | 1.104751247 | -0.220475318 |
| G0S2     | 1.07 | -0.067426534 | 0.968263839 | 1.108127217 | -0.227945928 |
| SLC18A1  | 1.33 | 0.311826687  | 1.195449715 | 1.109059411 | -0.230012776 |
| KL       | 1.22 | -0.178810094 | 1.093999443 | 1.111722558 | -0.235927046 |
| HSPB6    | 1.08 | -0.148247404 | 0.966622804 | 1.112215795 | -0.237023974 |

| NOX1      | 0.78 | -0.130536157 | 0.696996369 | 1.112469842 | -0.237589149 |
|-----------|------|--------------|-------------|-------------|--------------|
| HIST1H2AM | 1.2  | 0.343355721  | 1.077210524 | 1.113799501 | -0.240549329 |
| HOGA1     | 1.12 | 0.021864103  | 1.002705688 | 1.113998209 | -0.24099201  |
| ATP6V1G3  | 0.61 | -0.177169948 | 0.551374789 | 1.115268344 | -0.24382348  |
| HIST1H2BL | 0.99 | 0.304545925  | 0.88540283  | 1.115324203 | -0.243948078 |
| CCL20     | 0.52 | -0.177493978 | 0.462099049 | 1.120648315 | -0.255852646 |
| DAAM2     | 0.78 | -0.080683305 | 0.700134523 | 1.12096554  | -0.256563742 |
| MS4A3     | 1.27 | 0.386786733  | 1.130932243 | 1.121760763 | -0.258347209 |
| MB        | 1.19 | 0.101059533  | 1.056934336 | 1.122432765 | -0.259855313 |
| CRABP1    | 0.78 | -0.039677954 | 0.691236976 | 1.123208494 | -0.261597322 |
| HNF1B     | 0.54 | -0.021931688 | 0.478517241 | 1.124409877 | -0.264297572 |
| PVALB     | 1.94 | 0.554688449  | 1.723445023 | 1.126465303 | -0.268924079 |
| TP63      | 0.78 | -0.356972778 | 0.693238777 | 1.128141492 | -0.272703226 |
| APOH      | 0.76 | 0.021657597  | 0.671248269 | 1.128201487 | -0.272838596 |
| IL18RAP   | 0.96 | -0.004620183 | 0.846783055 | 1.128874979 | -0.274358718 |
| VGLL1     | 0.95 | 0.034712131  | 0.844292704 | 1.128990204 | -0.27461888  |
| HOXD8     | 0.9  | -0.331021997 | 0.795232349 | 1.129146108 | -0.274970932 |
| FOXE1     | 0.82 | -0.142721564 | 0.723512497 | 1.129799416 | -0.27644672  |
| MMP25     | 1.02 | -0.040849354 | 0.900309283 | 1.130350892 | -0.277693139 |
| FGF8      | 0.73 | -0.206318898 | 0.642574549 | 1.131435415 | -0.280146097 |
| PHGR1     | 0.89 | 0.055171619  | 0.78686979  | 1.132827693 | -0.283298582 |
| GFAP      | 0.74 | -0.226406832 | 0.649458194 | 1.13298455  | -0.283653989 |
| INSC      | 0.87 | 0.032593553  | 0.763991365 | 1.13393459  | -0.285807654 |
| PTGDS     | 0.59 | -0.097113223 | 0.520852324 | 1.134179904 | -0.286364056 |
| IGJ       | 0.81 | -0.05476077  | 0.712142282 | 1.134241397 | -0.286503547 |
| MIA       | 1.03 | 0.071702338  | 0.906382189 | 1.134952246 | -0.2881166   |
| SOX17     | 1.02 | -0.156255357 | 0.900452325 | 1.136765032 | -0.292234739 |
| NANOGP8   | 1.81 | 0.644313924  | 1.590143885 | 1.137622011 | -0.29418384  |
| VTN       | 0.76 | 0.05244251   | 0.669129086 | 1.138477896 | -0.296131919 |
| TMEM100   | 0.69 | -0.254075829 | 0.601795975 | 1.139961426 | -0.299512052 |
| DLX3      | 0.87 | 0.08587347   | 0.7610354   | 1.140807026 | -0.301440671 |
| AMHR2     | 1.08 | 0.144099352  | 0.946697336 | 1.141751838 | -0.30359726  |
| HIST1H2AI | 1.73 | 0.519210113  | 1.511277799 | 1.14182536  | -0.303765152 |
| SLC4A1    | 0.5  | -0.234538238 | 0.43910119  | 1.144584793 | -0.310074348 |
| CXCR2     | 1.21 | -0.410459734 | 1.06074618  | 1.144890317 | -0.310773838 |
| CD19      | 0.47 | -0.131790999 | 0.413307543 | 1.145560579 | -0.31230904  |
| MEOX1     | 1.06 | -0.205357791 | 0.92070127  | 1.146105752 | -0.313558395 |
| LRMP      | 0.72 | -0.131095253 | 0.629141131 | 1.148116952 | -0.318172535 |
| C11orf21  | 0.68 | -0.020864286 | 0.589590387 | 1.148318196 | -0.318634679 |
| MAB21L1   | 0.84 | -0.273008324 | 0.731702945 | 1.148960587 | -0.320110432 |
| BBOX1     | 0.47 | -0.189888514 | 0.410874687 | 1.149598302 | -0.321576255 |
| FOXN1     | 1.05 | -0.038840155 | 0.913271067 | 1.149734524 | -0.321889475 |
| CDX1      | 0.54 | -0.201088903 | 0.473259902 | 1.150215846 | -0.322996493 |

| GLYAT     | 0.96 | -0.151449105 | 0.834983225 | 1.152026024 | -0.327163961 |
|-----------|------|--------------|-------------|-------------|--------------|
| RAB38     | 0.48 | -0.199183754 | 0.414021931 | 1.152968871 | -0.329337218 |
| HIST1H2BO | 1.52 | 0.466804965  | 1.319356279 | 1.153119348 | -0.329684231 |
| SFTPA2    | 0.8  | -0.162472684 | 0.69119636  | 1.154044087 | -0.331817755 |
| DDC       | 0.56 | -0.000907409 | 0.481500268 | 1.156900088 | -0.338417813 |
| CES1      | 0.88 | -0.22021818  | 0.758541556 | 1.156952268 | -0.33853855  |
| HPX       | 0.4  | -0.255983114 | 0.346974779 | 1.157345525 | -0.339448664 |
| STMN2     | 0.87 | -0.083856277 | 0.751309778 | 1.158053787 | -0.341088573 |
| CD79B     | 0.47 | -0.141356957 | 0.410050239 | 1.158332664 | -0.341734561 |
| RXRG      | 0.69 | -0.177944161 | 0.593070032 | 1.159073027 | -0.343450282 |
| PLAC8     | 0.58 | -0.010022784 | 0.499054322 | 1.159620878 | -0.344720581 |
| TSPAN32   | 0.87 | 0.021825295  | 0.746472899 | 1.159811381 | -0.345162439 |
| CEACAM3   | 1.07 | -0.033064315 | 0.92326755  | 1.160459285 | -0.346665752 |
| CTNND2    | 0.96 | -0.040303987 | 0.824779695 | 1.161411814 | -0.348877401 |
| GAPT      | 0.86 | -0.167173194 | 0.736986675 | 1.161574425 | -0.349255144 |
| CFHR1     | 0.96 | -0.025379841 | 0.825100503 | 1.164632793 | -0.356369542 |
| EFHD1     | 1.02 | -0.181844322 | 0.877837796 | 1.167000485 | -0.361890132 |
| CACNG7    | 0.56 | -0.154197302 | 0.481323501 | 1.167621551 | -0.363340087 |
| SFTPB     | 0.8  | -0.148283276 | 0.687236621 | 1.169667153 | -0.368121249 |
| HIST2H2AC | 1.13 | -0.052075699 | 0.966980898 | 1.172514358 | -0.374789919 |
| TNF       | 0.92 | -0.094300406 | 0.782626333 | 1.172688304 | -0.375197857 |
| S100A14   | 0.89 | 0.095108467  | 0.756000352 | 1.175657898 | -0.382171494 |
| CXCL8     | 0.64 | -0.27193113  | 0.545847041 | 1.17731665  | -0.386074494 |
| TMEM252   | 0.51 | -0.358786512 | 0.434395669 | 1.177332783 | -0.386112483 |
| CFTR      | 0.69 | -0.279684049 | 0.588277133 | 1.177959676 | -0.387588998 |
| MGP       | 0.64 | -0.127407827 | 0.538905118 | 1.179651012 | -0.391576511 |
| SCRG1     | 0.96 | 0.008585443  | 0.816359239 | 1.180866667 | -0.394446086 |
| PTGER3    | 0.81 | -0.197733924 | 0.690011644 | 1.181108969 | -0.395018398 |
| C10orf99  | 0.79 | -0.20720967  | 0.663242659 | 1.183797535 | -0.401376605 |
| DPEP1     | 1.12 | 0.026773793  | 0.947915076 | 1.184485051 | -0.403004836 |
| NAT8      | 0.64 | -0.273981463 | 0.536148451 | 1.186235309 | -0.407154208 |
| SHISA2    | 1.21 | -0.032772502 | 1.018168982 | 1.186745286 | -0.408364374 |
| POU2F2    | 0.62 | -0.148022291 | 0.521197146 | 1.187240423 | -0.409539822 |
| PAX2      | 0.98 | 0.034076365  | 0.826172003 | 1.188300494 | -0.412058064 |
| PLP1      | 0.49 | -0.185949941 | 0.408059179 | 1.188573736 | -0.412707526 |
| ARG1      | 0.87 | -0.370625836 | 0.729651919 | 1.188710402 | -0.41303242  |
| TCERG1L   | 1.02 | -0.019061198 | 0.856758486 | 1.189840807 | -0.415721146 |
| AMER2     | 0.88 | 0.016940131  | 0.742720359 | 1.190908578 | -0.418263242 |
| APOB      | 0.83 | -0.24643855  | 0.699382654 | 1.192908146 | -0.423029844 |
| ADRA2C    | 0.85 | -0.095870002 | 0.712808631 | 1.193212402 | -0.423755836 |
| GNG3      | 0.6  | -0.060258111 | 0.504092716 | 1.193522866 | -0.424496831 |
| DUSP5     | 1.05 | -0.181090283 | 0.878932739 | 1.193916637 | -0.425436937 |
| KRT13     | 0.81 | -0.163714931 | 0.678099601 | 1.193951285 | -0.42551967  |

| LGALS4         1.18         -0.032932976         0.980310895         1.199462924         -0.43           GALNT9         0.77         0.100277705         0.640050672         1.202788096         -0.44           CTSV         0.86         0.092072983         0.716674553         1.205649638         -0.4           S100B         0.94         -0.002882439         0.776986416         1.210303983         -0.47           CPA4         0.36         -0.160122054         0.292961455         1.213159193         -0.47           GCG         0.48         -0.164915334         0.394667244         1.21450268         -0.47           KIF26A         1.1         -0.182055729         0.902342117         1.216391259         -0.47           SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.2270  | 047029<br>3711307 |
|---|-------------------|
| GALNT9 0.77 0.100277705 0.640050672 1.202788096 -0.44 CTSV 0.86 0.092072983 0.716674553 1.205649638 -0.4 S100B 0.94 -0.002882439 0.776986416 1.210303983 -0.4 CPA4 0.36 -0.160122054 0.292961455 1.213159193 -0.47 GCG 0.48 -0.164915334 0.394667244 1.21450268 -0.47 KIF26A 1.1 -0.182055729 0.902342117 1.216391259 -0.47 SFTPA1 0.76 -0.178609825 0.622289452 1.218295636 -0.48 APOD 0.58 -0.232402507 0.478479399 1.219186646 -0.48 CLC 0.42 -0.128362361 0.34576951 1.221722404 -0.49 SNCG 1.03 -0.159730574 0.840548006 1.22349274 -0.49 CD1E 0.48 -0.237091573 0.394895884 1.227084496 -0.53 DBH 0.81 -0.097394091 0.656546068 1.239121619 -0.53 SPRR3 0.86 -0.18707625 0.693814965 1.240203251 -0.53 FGF9 0.5 -0.140253693 0.406462827 1.241112801 -0.54 C16orf89 0.69 -0.154457936 0.551152325 1.24390648 -0.54 SPINK2 0.52 -0.14647882 0.417007855 1.246495315 -0.55 KREMEN2 0.58 -0.186355638 0.466604218 1.248250778 -0.55 GPRC5D 0.85 0.015449457 0.679073929 1.252314323 -0.56 LEFTY1 0.78 -0.175204912 0.622324199 1.255913193 -0.57 TMPRSS11D 0.74 -0.243202162 0.581039581 1.269699239 -0.61 ST6GALNAC 0.86 -0.301880264 0.677808112 1.270964173 -0.6 CHGA 0.4 -0.047328589 0.311455678 1.272277429 -0.61 SLC4A4 0.6 -0.099632962 0.46872555 1.272277429 -0.61 VRTN 1.06 0.060351432 0.833957194 1.273941653 -0.62 | 3711307           |
| CTSV         0.86         0.092072983         0.716674553         1.205649638         -0.4           \$100B         0.94         -0.002882439         0.776986416         1.210303983         -0.4           CPA4         0.36         -0.160122054         0.292961455         1.213159193         -0.47           GCG         0.48         -0.164915334         0.394667244         1.21450268         -0.47           KIF26A         1.1         -0.182055729         0.902342117         1.216391259         -0.47           SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.50           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.23912161   |                   |
| \$5100B         0.94         -0.002882439         0.776986416         1.210303983         -0.47           CPA4         0.36         -0.160122054         0.292961455         1.213159193         -0.47           GCG         0.48         -0.164915334         0.394667244         1.21450268         -0.47           KIF26A         1.1         -0.182055729         0.902342117         1.216391259         -0.47           SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.24111   | 699203            |
| CPA4         0.36         -0.160122054         0.292961455         1.213159193         -0.47           GCG         0.48         -0.164915334         0.394667244         1.21450268         -0.47           KIF26A         1.1         -0.182055729         0.902342117         1.216391259         -0.47           SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.243  | 359105            |
| GCG         0.48         -0.164915334         0.394667244         1.21450268         -0.47           KIF26A         1.1         -0.182055729         0.902342117         1.216391259         -0.47           SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246  | 483573            |
| KIF26A         1.1         -0.182055729         0.902342117         1.216391259         -0.47           SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1  | 755226            |
| SFTPA1         0.76         -0.178609825         0.622289452         1.218295636         -0.48           APOD         0.58         -0.232402507         0.478479399         1.219186646         -0.48           CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.  | 016759            |
| APOD 0.58 -0.232402507 0.478479399 1.219186646 -0.48 CLC 0.42 -0.128362361 0.34576951 1.221722404 -0.49 SNCG 1.03 -0.159730574 0.840548006 1.22349274 -0.49 CD1E 0.48 -0.237091573 0.394895884 1.227084496 -0.5 FAIM3 0.57 -0.167695765 0.463131642 1.238292063 -0.53 SPRR3 0.86 -0.18707625 0.693814965 1.240203251 -0.53 SPRR3 0.86 -0.18707625 0.693814965 1.240203251 -0.53 SPRR3 0.69 -0.154457936 0.551152325 1.24390648 -0.54 SPINK2 0.52 -0.14647882 0.417007855 1.246495315 -0.55 KREMEN2 0.58 -0.186355638 0.466604218 1.248250778 -0.55 GPRC5D 0.85 0.015449457 0.679073929 1.252314323 -0.56 LEFTY1 0.78 -0.175204912 0.622324199 1.255931159 -0.57 TMPRSS11D 0.74 -0.243202162 0.581039581 1.269699239 -0.61 ST6GALNAC 0.86 -0.301880264 0.677808112 1.270964173 -0.6 CHGA 0.4 -0.047328589 0.311455678 1.272273742 -0.61 SLC4A4 0.6 -0.099632962 0.46872555 1.272277429 -0.61 SLC4A4 0.6 -0.099632962 0.46872555 1.272277429 -0.61 STCAA  | 607695            |
| CLC         0.42         -0.128362361         0.34576951         1.221722404         -0.49           SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.49           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1  | 1244257           |
| SNCG         1.03         -0.159730574         0.840548006         1.22349274         -0.499           CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.5           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581  | 416078            |
| CD1E         0.48         -0.237091573         0.394895884         1.227084496         -0.56           FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255931159         -0.57           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581   | 2605633           |
| FAIM3         0.57         -0.167695765         0.463131642         1.238292063         -0.53           DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678  | 934486            |
| DBH         0.81         -0.097394091         0.656546068         1.239121619         -0.53           SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.53           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255913193         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272277429         -0.61           SLC4A4         0.6         -0.099632962         0.46872555   | 573636            |
| SPRR3         0.86         -0.18707625         0.693814965         1.240203251         -0.536           FGF9         0.5         -0.140253693         0.406462827         1.241112801         -0.54           C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255931193         -0.57           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.61           SLC4A4         0.6         -0.099632962         0.46872555 </td <td>367232</td>  | 367232            |
| FGF9 0.5 -0.140253693 0.406462827 1.241112801 -0.540   C16orf89 0.69 -0.154457936 0.551152325 1.24390648 -0.540   SPINK2 0.52 -0.14647882 0.417007855 1.246495315 -0.550   KREMEN2 0.58 -0.186355638 0.466604218 1.248250778 -0.550   GPRC5D 0.85 0.015449457 0.679073929 1.252314323 -0.560   LEFTY1 0.78 -0.175204912 0.622324199 1.255913193 -0.570   HIST1H4L 0.75 -0.242428514 0.595648893 1.255931159 -0.570   TMPRSS11D 0.74 -0.243202162 0.581039581 1.269699239 -0.610   ST6GALNAC: 0.86 -0.301880264 0.677808112 1.270964173 -0.60   CHGA 0.4 -0.047328589 0.311455678 1.272273742 -0.610   SLC4A4 0.6 -0.099632962 0.46872555 1.272277429 -0.610   VRTN 1.06 0.060351432 0.833957194 1.273941653 -0.62   | 422388            |
| C16orf89         0.69         -0.154457936         0.551152325         1.24390648         -0.54           SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255913193         -0.57           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.612           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 3104104           |
| SPINK2         0.52         -0.14647882         0.417007855         1.246495315         -0.55           KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.55           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.56           LEFTY1         0.78         -0.175204912         0.622324199         1.255913193         -0.57           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.61           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.61           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 360984            |
| KREMEN2         0.58         -0.186355638         0.466604218         1.248250778         -0.556           GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.566           LEFTY1         0.78         -0.175204912         0.622324199         1.255913193         -0.577           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.577           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.612           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.612           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 7303332           |
| GPRC5D         0.85         0.015449457         0.679073929         1.252314323         -0.566           LEFTY1         0.78         -0.175204912         0.622324199         1.255913193         -0.577           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.577           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.612           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.612           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.612           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 3750571           |
| LEFTY1         0.78         -0.175204912         0.622324199         1.255913193         -0.57           HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.61           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.61           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 3130005           |
| HIST1H4L         0.75         -0.242428514         0.595648893         1.255931159         -0.57           TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.61           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.61           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62  | 3291165           |
| TMPRSS11D         0.74         -0.243202162         0.581039581         1.269699239         -0.61           ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.61           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.61           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 317948            |
| ST6GALNAC         0.86         -0.301880264         0.677808112         1.270964173         -0.6           CHGA         0.4         -0.047328589         0.311455678         1.272273742         -0.618           SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.618           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.628  | 363076            |
| CHGA       0.4       -0.047328589       0.311455678       1.272273742       -0.618         SLC4A4       0.6       -0.099632962       0.46872555       1.272277429       -0.618         VRTN       1.06       0.060351432       0.833957194       1.273941653       -0.62  | 2136158           |
| SLC4A4         0.6         -0.099632962         0.46872555         1.272277429         -0.612           VRTN         1.06         0.060351432         0.833957194         1.273941653         -0.62   | 534993            |
| VRTN 1.06 0.060351432 0.833957194 1.273941653 -0.62   | 8680475           |
|   | 8689858           |
|   | 927336            |
| PENK 0.33 -0.201342995 0.25885436 1.275028222 -0.62   | 696967            |
| SERPINE2 0.8 0.071136029 0.628021679 1.27670694 -0.62   | 980612            |
| ELANE 0.71 -0.300439774 0.55275732 1.276887881 -0.6   | 3044266           |
| ADRB1 0.59 -0.127347612 0.457090028 1.281456819 -0.64   | 2131579           |
| CDH15 0.61 -0.097163908 0.476995999 1.284996471 -0.6  | 121593            |
| AC234582.1 0.55 -0.180487091 0.427662999 1.287429499 -0.65  | 7474716           |
| TH 0.72 -0.141561535 0.555139119 1.289197068 -0.6   | 202908            |
| CYSLTR1 0.85 -0.259264938 0.657210122 1.290930391 -0.66   | 5501275           |
| IGFBP1 0.48 -0.208250439 0.368772418 1.298598468 -0.6   | 3635798           |
| AICDA 0.52 -0.172370657 0.401517805 1.303458385 -0.69   | 003761            |
| DPPA4 0.52 -0.135926032 0.397473447 1.307998281 -0.71   | 859504            |
| TNR 0.51 -0.081895399 0.386976895 1.314079928 -0.72   | 806058            |
| TLR10 0.63 -0.173398588 0.475514392 1.318883043 -0.7  | 945248            |
| FCN1 0.54 -0.201582659 0.406126667 1.334571494 -0.78  |                   |
| F2 0.62 -0.272820084 0.463653594 1.343998152 -0.80  | 081073            |

| MLANA     | 0.77 | -0.395639577 | 0.571846213 | 1.34538798  | -0.810068816 |
|-----------|------|--------------|-------------|-------------|--------------|
| PAX9      | 0.85 | -0.350668544 | 0.629996221 | 1.349828038 | -0.822035731 |
| GNG7      | 0.83 | -0.397055756 | 0.614273003 | 1.351217632 | -0.825789088 |
| CST1      | 0.7  | -0.078119314 | 0.517853682 | 1.356596501 | -0.840354067 |
| TRABD2A   | 0.6  | -0.174648513 | 0.442952095 | 1.365750034 | -0.865273154 |
| MMP17     | 0.95 | -0.466995136 | 0.689432935 | 1.371607145 | -0.881306159 |
| MMP9      | 0.56 | -0.239444332 | 0.406360758 | 1.388293395 | -0.927358551 |
| CD1C      | 0.55 | -0.308770953 | 0.396509239 | 1.397033155 | -0.951701637 |
| FAM163A   | 0.71 | -0.247637668 | 0.497727576 | 1.417991113 | -1.010698797 |
| LCN12     | 0.61 | -0.239210392 | 0.426653842 | 1.429463409 | -1.043365637 |
| TCL1A     | 0.38 | -0.170094838 | 0.267674696 | 1.432809844 | -1.052944049 |
| ATP6V0D2  | 0.5  | -0.350879909 | 0.345822437 | 1.434355501 | -1.057375704 |
| TCN1      | 0.41 | -0.143915707 | 0.284638642 | 1.442331752 | -1.080320884 |
| UPK3A     | 0.41 | -0.249559932 | 0.281336109 | 1.44421208  | -1.085748532 |
| SCGB1A1   | 0.54 | -0.224488556 | 0.372987675 | 1.449166368 | -1.100083162 |
| FCRLA     | 0.41 | -0.178782873 | 0.285622834 | 1.452506268 | -1.109774459 |
| TM4SF4    | 0.27 | -0.181786692 | 0.179708689 | 1.482588907 | -1.198069867 |
| RBP5      | 0.71 | -0.221248004 | 0.476256833 | 1.489368296 | -1.21821792  |
| AHSP      | 0.74 | -0.212457215 | 0.492773411 | 1.496005192 | -1.238031536 |
| EMR3      | 0.83 | -0.293680594 | 0.55059726  | 1.506400164 | -1.269241455 |
| ADH1A     | 0.6  | -0.309774555 | 0.396461614 | 1.508903396 | -1.27678946  |
| DAPL1     | 0.43 | -0.111289799 | 0.282644563 | 1.515189923 | -1.295800502 |
| SPNS3     | 0.49 | -0.184076679 | 0.321522343 | 1.527742407 | -1.333996861 |
| C1orf228  | 0.69 | -0.225508808 | 0.453475288 | 1.530213313 | -1.341552784 |
| UPK3B     | 0.38 | -0.18167724  | 0.244356589 | 1.556192279 | -1.421734411 |
| RGL4      | 0.65 | -0.095383541 | 0.409258162 | 1.581988468 | -1.502687512 |
| SNX22     | 0.75 | -0.104035008 | 0.468852911 | 1.592677831 | -1.536622674 |
| FCRL2     | 0.46 | -0.178829115 | 0.288249758 | 1.594195036 | -1.541457814 |
| CLEC17A   | 0.56 | -0.226891796 | 0.349537178 | 1.595177421 | -1.544591005 |
| DEFA4     | 0.37 | -0.179956631 | 0.232527231 | 1.608277402 | -1.586556201 |
| HOXA5     | 0.51 | -0.210184847 | 0.31032901  | 1.648781261 | -1.718479647 |
| C4BPA     | 0.61 | -0.18654707  | 0.367086856 | 1.658010529 | -1.748998915 |
| RNF186    | 0.76 | -0.39170293  | 0.451876512 | 1.671933969 | -1.795363196 |
| IL36RN    | 0.31 | -0.16764945  | 0.182685275 | 1.674173233 | -1.802856014 |
| EPS8L3    | 0.54 | -0.236815957 | 0.320536644 | 1.687740818 | -1.848469068 |
| TNFRSF13C | 0.46 | -0.187483549 | 0.259959279 | 1.763554163 | -2.110123286 |
| AGXT      | 0.47 | -0.210696435 | 0.265457357 | 1.768935039 | -2.129131171 |
| APOC3     | 0.34 | -0.276212576 | 0.191326805 | 1.770978098 | -2.136363425 |
| MTRNR2L12 | 0.54 | -0.335723431 | 0.301518546 | 1.78660495  | -2.191957248 |
| PRSS57    | 0.47 | -0.192657747 | 0.262488166 | 1.790957558 | -2.207528973 |
| ACSM2B    | 0.46 | -0.119009171 | 0.254581994 | 1.795534082 | -2.223942639 |
| PRG4      | 0.5  | -0.214676696 | 0.276872494 | 1.796624655 | -2.22786015  |
| MTRNR2L8  | 0.37 | -0.212589285 | 0.201584258 | 1.818636269 | -2.307437879 |
|           |      |              |             |             |              |

|           | 1    |              |             |             |              |
|-----------|------|--------------|-------------|-------------|--------------|
| KRT17     | 0.32 | -0.197680198 | 0.171059161 | 1.859588469 | -2.458069275 |
| CCNA1     | 0.46 | -0.232491049 | 0.244058914 | 1.875216614 | -2.51643735  |
| MAT1A     | 0.45 | -0.182556553 | 0.237183552 | 1.887178698 | -2.561443439 |
| MS4A1     | 0.45 | -0.190872789 | 0.238793497 | 1.899683299 | -2.608796638 |
| SOX8      | 0.55 | -0.090630572 | 0.282774593 | 1.949087777 | -2.798943163 |
| PAX5      | 0.45 | -0.21161914  | 0.227833465 | 1.965523071 | -2.863280944 |
| SLC22A31  | 0.32 | -0.103802792 | 0.162210455 | 1.971196431 | -2.885615368 |
| SLC30A2   | 0.54 | -0.294583481 | 0.273070883 | 1.981022423 | -2.924449841 |
| BLK       | 0.42 | -0.197927406 | 0.205537011 | 2.042826692 | -3.173140894 |
| ELAVL3    | 0.46 | -0.087996678 | 0.214507316 | 2.133062349 | -3.549954984 |
| NNAT      | 0.58 | -0.348737764 | 0.264483954 | 2.209457292 | -3.881701527 |
| SPX       | 0.66 | -0.246235411 | 0.299572987 | 2.212160213 | -3.893652806 |
| CALB2     | 0.48 | -0.190704541 | 0.215007584 | 2.244539935 | -4.037959519 |
| CRISP3    | 0.46 | -0.256345719 | 0.203772491 | 2.258519166 | -4.100908821 |
| DCDC2     | 0.3  | -0.201832542 | 0.129124424 | 2.320628872 | -4.385318363 |
| SLC26A4   | 0.62 | -0.315308977 | 0.258559449 | 2.3816565   | -4.672287685 |
| TNFRSF13B | 0.42 | -0.187175185 | 0.175841359 | 2.405635715 | -4.787083192 |
| KCNQ2     | 0.4  | -0.084859609 | 0.16346461  | 2.447910841 | -4.992267487 |
| C8B       | 0.41 | -0.089355001 | 0.165802639 | 2.473185055 | -5.116644316 |
| CHAD      | 0.46 | -0.295838132 | 0.180165336 | 2.561384811 | -5.560692148 |
| VPREB1    | 0.49 | -0.229066641 | 0.187220781 | 2.611951135 | -5.82228873  |
| NKX3-1    | 0.55 | -0.258684658 | 0.198068966 | 2.758696492 | -6.610406333 |
| PEG10     | 0.39 | -0.315369117 | 0.143027486 | 2.75876513  | -6.610785044 |
| FAM129C   | 0.39 | -0.173991187 | 0.133383492 | 2.899615158 | -7.407768067 |
| PIGR      | 0.44 | -0.316890763 | 0.142239878 | 3.059390424 | -8.359869764 |
| PLA2G2A   | 0.5  | -0.321756102 | 0.157361597 | 3.180723249 | -9.11700039  |
| MLC1      | 0.52 | -0.097001981 | 0.151535217 | 3.452499137 | -10.91975029 |
| PTPRZ1    | 0.5  | -0.26911062  | 0.141808095 | 3.533642194 | -11.48662715 |
| GIP       | 0.6  | -0.183538429 | 0.169090933 | 3.560351502 | -11.67610282 |
| HAS1      | 0.5  | -0.177646384 | 0.128888269 | 3.843362522 | -13.77143547 |
| MSMB      | 0.52 | -0.178444102 | 0.131633394 | 3.94977529  | -14.60072484 |
| PTHLH     | 0.43 | -0.200918014 | 0.108594654 | 3.970093469 | -14.76164215 |
| MUC15     | 0.31 | -0.22234531  | 0.076962427 | 3.978982402 | -14.83230096 |
| TUBB4A    | 0.53 | -0.179056931 | 0.121227641 | 4.356238825 | -17.9768167  |
| PEBP4     | 0.4  | -0.360727647 | 0.089663372 | 4.460168961 | -18.89310716 |
| IGF2      | 0.21 | -0.112294401 | 0.045924998 | 4.494707146 | -19.20239232 |
| ACTG2     | 0.55 | -0.174512926 | 0.109593586 | 4.997354215 | -23.97354915 |
| MUC13     | 0.38 | -0.163015847 | 0.075070351 | 5.002156924 | -24.0215739  |
| KRTDAP    | 0.23 | -0.151190812 | 0.044932733 | 5.145002903 | -25.47105487 |
| NPY       | 0.38 | -0.115893927 | 0.074345133 | 5.162327624 | -25.6496265  |
| PADI4     | 0.5  | -0.166621822 | 0.071184896 | 7.011766778 | -48.16487335 |
| HAND1     | 0.32 | -0.204862338 | 0.041900666 | 7.723363036 | -58.65033658 |
| GFRA3     | 0.53 | -0.097260958 | 0.066821828 | 7.939013765 | -62.02793956 |

| SMTNL2   | 0.59 | -0.232997537 | 0.064514181 | 9.135507184 | -82.457491 |
|----------|------|--------------|-------------|-------------|------------|
| SFTA3    | 0.26 | -0.110959871 | 0.02237636  | 11.80098009 | -138.26313 |
| SERPINA6 | 0.48 | -0.249152831 | 0.040077197 | 12.01079592 | -143.25921 |
| NCAN     | 0.37 | -0.13929034  | 0.011853026 | 31.0200788  | -961.24528 |
| NKX2-1   | 0.27 | -0.109687306 | 0.003020858 | 89.0093803  | -7921.6697 |
| DEFA3    | 0.54 | -0.265493269 | 5.55E-17    | 9.77596E+15 | -9.55693E+ |
| INS      | 0.49 | -0.215801525 | 2.78E-17    | 1.78E+16    | -3.16438E+ |