**Table 1(a)** Differentially Expressed Genes (DEGs) of hcq vs con.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Log2FoldChange | Average Expression | *P.Value* |
| Down-regulated | Krt15 | -4.061 | 3.000 | 0.027 |
|  | Ly6g2 | -4.036 | 26.782 | 0.008 |
|  | Gm26581 | -3.896 | 2.741 | 0.049 |
|  | Gabrp | -3.768 | 14.082 | 0.002 |
|  | Chad | -3.753 | 2.474 | 0.049 |
|  | Aim2 | -3.690 | 11.689 | 0.010 |
|  | Pglyrp1 | -3.674 | 8.890 | 0.008 |
|  | Cyp21a1 | -3.620 | 2.259 | 0.042 |
|  | Cd300lb | -3.517 | 5.612 | 0.042 |
|  | 2610528J11Rik | -3.508 | 3.886 | 0.020 |
|  | Mybph | -3.505 | 2.131 | 0.049 |
|  | Add2 | -3.488 | 11.888 | 0.006 |
|  | Kcnh1 | -3.472 | 13.168 | 0.002 |
|  | Ngfr | -3.379 | 18.042 | 0.002 |
|  | Clca3a2 | -3.333 | 1.904 | 0.048 |
|  | Gm20522 | -3.159 | 3.051 | 0.042 |
|  | Tchh | -3.156 | 3.045 | 0.039 |
|  | Tnip3 | -3.078 | 25.010 | 0.003 |
|  | Fetub | -3.047 | 11.645 | 0.001 |
|  | Cxcr3 | -3.030 | 11.595 | 0.006 |
|  | Trp63 | -2.890 | 2.717 | 0.044 |
|  | Scara5 | -2.812 | 9.137 | 0.011 |
|  | Gm37581 | -2.810 | 3.703 | 0.042 |
|  | Scn2a | -2.767 | 5.116 | 0.042 |
|  | Sema6d | -2.708 | 43.993 | 0.000 |
|  | Dcst1 | -2.644 | 4.486 | 0.013 |
|  | Col23a1 | -2.550 | 6.374 | 0.025 |
|  | 4833427F10Rik | -2.487 | 5.114 | 0.041 |
|  | Parm1 | -2.474 | 17.268 | 0.030 |
|  | Nos1ap | -2.434 | 29.263 | 0.005 |
|  | Bcl2l14 | -2.388 | 3.911 | 0.037 |
|  | Ednra | -2.382 | 5.782 | 0.032 |
|  | Ceacam16 | -2.381 | 7.969 | 0.045 |
|  | Gm12359 | -2.338 | 4.756 | 0.031 |
|  | Tmem179 | -2.333 | 4.841 | 0.049 |
|  | Dmp1 | -2.320 | 19.151 | 0.008 |
|  | Tspan1 | -2.303 | 71.383 | 0.000 |
|  | Pigr | -2.204 | 10.345 | 0.024 |
|  | F13a1 | -2.198 | 7.980 | 0.045 |
|  | Gm13204 | -2.188 | 4.273 | 0.047 |
|  | Foxq1 | -2.137 | 16.683 | 0.018 |
|  | Krt13 | -2.121 | 26.972 | 0.005 |
|  | 0610010K14Rik | -2.081 | 5.112 | 0.042 |
|  | Chdh | -2.058 | 8.244 | 0.027 |
|  | Trib2 | -2.039 | 217.162 | 0.011 |
|  | Eya2 | -2.009 | 454.508 | 0.019 |
|  | Ptger1 | -1.969 | 4.639 | 0.041 |
|  | Lrrc46 | -1.968 | 4.633 | 0.039 |
|  | Dll4 | -1.953 | 92.736 | 0.032 |
|  | S100a14 | -1.916 | 11.113 | 0.021 |
|  | Gm26549 | -1.890 | 5.210 | 0.036 |
|  | C130074G19Rik | -1.882 | 23.285 | 0.009 |
|  | Sod3 | -1.876 | 18.197 | 0.032 |
|  | Reps2 | -1.872 | 23.984 | 0.016 |
|  | Notum | -1.860 | 39.601 | 0.018 |
|  | Fut1 | -1.802 | 23.016 | 0.005 |
|  | Slc4a11 | -1.778 | 263.963 | 0.049 |
|  | Notch3 | -1.709 | 49.618 | 0.003 |
|  | Nlrp3 | -1.651 | 9.811 | 0.013 |
|  | Csn3 | -1.642 | 45.916 | 0.021 |
|  | Siglec15 | -1.642 | 14.524 | 0.049 |
|  | Cyp26b1 | -1.611 | 11.634 | 0.010 |
|  | Tfap2c | -1.494 | 28.796 | 0.015 |
|  | Plxna4 | -1.491 | 21.017 | 0.047 |
|  | Adgrg3 | -1.477 | 89.332 | 0.007 |
|  | Gm48768 | -1.476 | 8.345 | 0.036 |
|  | Peli2 | -1.467 | 34.181 | 0.032 |
|  | Shpk | -1.464 | 50.513 | 0.021 |
|  | Gm2895 | -1.442 | 9.973 | 0.023 |
|  | Abcg1 | -1.430 | 35.418 | 0.029 |
|  | Hlf | -1.407 | 20.407 | 0.041 |
|  | Mmp3 | -1.406 | 566.164 | 0.039 |
|  | Areg | -1.393 | 104.212 | 0.006 |
|  | Ace | -1.365 | 77.335 | 0.029 |
|  | Tnfrsf19 | -1.339 | 52.676 | 0.026 |
|  | Gm43980 | -1.254 | 28.923 | 0.013 |
|  | Chd5 | -1.250 | 29.037 | 0.016 |
|  | Spry4 | -1.247 | 48.132 | 0.024 |
|  | Gli1 | -1.233 | 16.807 | 0.032 |
|  | Rbp2 | -1.224 | 18.407 | 0.033 |
|  | N4bp2os | -1.224 | 9.530 | 0.047 |
|  | Arhgef37 | -1.215 | 23.437 | 0.048 |
|  | Stc1 | -1.204 | 197.981 | 0.001 |
|  | Gm5963 | -1.199 | 16.293 | 0.019 |
|  | Zfp213 | -1.182 | 27.863 | 0.024 |
|  | Mmp13 | -1.176 | 158.356 | 0.010 |
|  | Ptges | -1.173 | 390.668 | 0.048 |
|  | Gm49774 | -1.161 | 35.756 | 0.023 |
|  | Pgap1 | -1.158 | 408.140 | 0.047 |
|  | Adgre5 | -1.136 | 67.657 | 0.011 |
|  | Asb2 | -1.129 | 193.018 | 0.000 |
|  | Hs3st1 | -1.097 | 109.485 | 0.011 |
|  | Ramp1 | -1.087 | 65.081 | 0.007 |
|  | Amz1 | -1.073 | 19.258 | 0.030 |
|  | S100a16 | -1.042 | 28.117 | 0.020 |
|  | Sulf2 | -1.034 | 142.788 | 0.019 |
|  | Adhfe1 | -1.027 | 49.928 | 0.030 |
|  | Cep83os | -1.020 | 70.456 | 0.022 |
|  | Tbc1d30 | -1.019 | 62.570 | 0.019 |
|  | Trp53inp1 | -1.008 | 229.079 | 0.016 |
|  | Acot2 | -1.005 | 103.369 | 0.034 |
|  | Gprc5b | -1.001 | 113.791 | 0.006 |
|  | Cplane2 | -1.001 | 19.986 | 0.025 |
|  | Ifi44 | 1.001 | 283.227 | 0.003 |
|  |  |  |  |  |
| Up-regulated | 9930111J21Rik2 | 1.008 | 289.948 | 0.000 |
|  | Oas3 | 1.013 | 1184.966 | 0.000 |
|  | Cxcl10 | 1.036 | 219.997 | 0.000 |
|  | 9930111J21Rik1 | 1.046 | 56.659 | 0.001 |
|  | Ifit3 | 1.051 | 129.065 | 0.000 |
|  | Phf11d | 1.058 | 228.378 | 0.000 |
|  | Plekhs1 | 1.059 | 64.029 | 0.026 |
|  | Myh6 | 1.060 | 179.366 | 0.005 |
|  | Slamf9 | 1.067 | 27.535 | 0.027 |
|  | Ccl2 | 1.077 | 494.857 | 0.000 |
|  | Gbp5 | 1.079 | 115.804 | 0.000 |
|  | Tgtp2 | 1.129 | 65.103 | 0.000 |
|  | Hsd11b1 | 1.136 | 22.128 | 0.015 |
|  | Wnt5a | 1.166 | 14.635 | 0.027 |
|  | Ifit1bl2 | 1.180 | 12.444 | 0.045 |
|  | Mb | 1.203 | 42.716 | 0.025 |
|  | Apol10b | 1.214 | 34.589 | 0.001 |
|  | Tgtp1 | 1.247 | 81.669 | 0.000 |
|  | Oas2 | 1.251 | 61.380 | 0.000 |
|  | Ttn | 1.258 | 32.554 | 0.016 |
|  | Trim54 | 1.269 | 29.482 | 0.002 |
|  | Serpinb9b | 1.286 | 32.243 | 0.001 |
|  | Myl2 | 1.300 | 44.721 | 0.005 |
|  | Rnf223 | 1.374 | 18.011 | 0.005 |
|  | Cd36 | 1.391 | 11.579 | 0.048 |
|  | Ptgds | 1.452 | 14.694 | 0.005 |
|  | Mybpc3 | 1.534 | 23.874 | 0.005 |
|  | Actn2 | 1.568 | 14.161 | 0.030 |
|  | Csrp3 | 1.594 | 9.393 | 0.046 |
|  | Mxra7 | 1.617 | 7.718 | 0.032 |
|  | Gm49450 | 1.657 | 7.287 | 0.035 |
|  | Rps11-ps1 | 1.694 | 5.812 | 0.049 |
|  | Atp1a2 | 1.990 | 5.910 | 0.031 |
|  | Atp2a1 | 2.101 | 5.437 | 0.037 |
|  | Gm30873 | 2.111 | 4.715 | 0.045 |
|  | Trav13-2 | 2.202 | 12.545 | 0.001 |
|  | Gm49503 | 2.227 | 4.852 | 0.040 |
|  | Gm5853 | 2.830 | 2.805 | 0.049 |
|  | Ptn | 3.183 | 3.487 | 0.017 |
|  | Ppp1r2-ps1 | 3.346 | 2.043 | 0.042 |
|  | Gm38973 | 3.412 | 2.134 | 0.036 |
|  | Renbp | 3.593 | 2.395 | 0.024 |
|  | Acot11 | 3.773 | 2.691 | 0.015 |
|  | Apol6 | 5.256 | 3.600 | 0.000 |

**Table 1(b)** Differentially Expressed Genes (DEGs) of pcq vs con.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Log2FoldChange | Average Expression | *P.Value* |
| Down-regulated | Add2 | -6.065 | 11.377 | 0.001 |
|  | Ly6g2 | -5.796 | 26.448 | 0.008 |
|  | Snora57 | -5.440 | 3.758 | 0.000 |
|  | Sox7 | -5.101 | 2.941 | 0.010 |
|  | Gm26581 | -4.935 | 2.626 | 0.026 |
|  | Scn2a | -4.774 | 4.724 | 0.007 |
|  | 4930578I06Rik | -4.669 | 2.178 | 0.012 |
|  | Mybph | -4.545 | 1.997 | 0.018 |
|  | Dmp1 | -4.399 | 17.178 | 0.000 |
|  | Gm10385 | -4.334 | 1.737 | 0.021 |
|  | Ptprv | -4.331 | 1.730 | 0.016 |
|  | Gm44251 | -4.326 | 1.723 | 0.016 |
|  | Aim2 | -4.165 | 11.758 | 0.008 |
|  | Krt15 | -4.141 | 3.095 | 0.025 |
|  | Fetub | -4.102 | 11.315 | 0.000 |
|  | Gm11766 | -4.016 | 2.866 | 0.035 |
|  | Faim2 | -3.900 | 2.641 | 0.028 |
|  | Ceacam16 | -3.884 | 7.333 | 0.006 |
|  | Gm42793 | -3.862 | 4.840 | 0.038 |
|  | F13a1 | -3.857 | 7.198 | 0.005 |
|  | Stra6 | -3.852 | 12.053 | 0.014 |
|  | Megf10 | -3.833 | 7.099 | 0.004 |
|  | Gm16046 | -3.786 | 2.483 | 0.016 |
|  | Gimap5 | -3.716 | 2.346 | 0.032 |
|  | Cyp21a1 | -3.701 | 2.319 | 0.038 |
|  | Ngfr | -3.598 | 18.332 | 0.002 |
|  | Parm1 | -3.590 | 16.318 | 0.005 |
|  | Cidea | -3.516 | 5.829 | 0.038 |
|  | Pappa2 | -3.428 | 3.678 | 0.009 |
|  | Lbp | -3.404 | 9.009 | 0.003 |
|  | Gm28231 | -3.387 | 1.913 | 0.042 |
|  | Gm35065 | -3.383 | 1.906 | 0.040 |
|  | Siglec15 | -3.373 | 12.387 | 0.001 |
|  | Krt20 | -3.370 | 1.886 | 0.044 |
|  | Col24a1 | -3.333 | 3.435 | 0.037 |
|  | Trpv3 | -3.326 | 12.042 | 0.005 |
|  | Bmper | -3.309 | 8.498 | 0.002 |
|  | C5ar2 | -3.255 | 3.289 | 0.015 |
|  | Ptpn5 | -3.245 | 4.920 | 0.010 |
|  | Sod3 | -3.240 | 16.239 | 0.001 |
|  | Mcpt8 | -3.187 | 9.409 | 0.004 |
|  | Gm38293 | -3.176 | 3.144 | 0.018 |
|  | Lrg1 | -3.173 | 3.137 | 0.021 |
|  | Kcnh1 | -3.151 | 13.844 | 0.005 |
|  | Gm14275 | -3.109 | 3.031 | 0.031 |
|  | Abca8a | -3.103 | 2.974 | 0.045 |
|  | Ankrd22 | -3.090 | 4.428 | 0.026 |
|  | Gemin4 | -3.076 | 2.950 | 0.026 |
|  | Gabrp | -2.976 | 15.210 | 0.010 |
|  | Mmp3 | -2.970 | 476.818 | 0.000 |
|  | Tnip3 | -2.954 | 25.946 | 0.005 |
|  | Gm19385 | -2.854 | 3.841 | 0.040 |
|  | Aspa | -2.835 | 5.036 | 0.050 |
|  | Selp | -2.805 | 124.980 | 0.005 |
|  | Calr4 | -2.782 | 15.925 | 0.000 |
|  | Cxcr3 | -2.775 | 12.181 | 0.018 |
|  | Gimap8 | -2.768 | 3.649 | 0.042 |
|  | Tmem179 | -2.741 | 4.765 | 0.028 |
|  | Il13ra2 | -2.710 | 4.678 | 0.027 |
|  | 4930461G14Rik | -2.694 | 4.639 | 0.032 |
|  | Prelp | -2.690 | 8.093 | 0.003 |
|  | Ednra | -2.681 | 5.785 | 0.029 |
|  | 4930471E19Rik | -2.669 | 13.796 | 0.007 |
|  | Myo15 | -2.649 | 3.391 | 0.032 |
|  | Eya2 | -2.646 | 434.347 | 0.002 |
|  | A530053M12Rik | -2.644 | 9.067 | 0.001 |
|  | Trib2 | -2.644 | 208.442 | 0.001 |
|  | Ace | -2.638 | 66.527 | 0.000 |
|  | Lrrc46 | -2.612 | 4.425 | 0.018 |
|  | Slc4a11 | -2.599 | 244.938 | 0.004 |
|  | Klhdc7a | -2.586 | 3.286 | 0.027 |
|  | Cfap52 | -2.564 | 3.215 | 0.046 |
|  | Golga7b | -2.563 | 6.433 | 0.015 |
|  | Csn3 | -2.556 | 41.826 | 0.001 |
|  | Gm11696 | -2.552 | 3.207 | 0.044 |
|  | Sema6d | -2.547 | 45.984 | 0.001 |
|  | Gdpd2 | -2.535 | 5.286 | 0.007 |
|  | Gcnt3 | -2.526 | 3.176 | 0.050 |
|  | P2ry12 | -2.508 | 5.193 | 0.013 |
|  | Lca5l | -2.496 | 3.120 | 0.042 |
|  | Sh2d1b1 | -2.487 | 12.349 | 0.018 |
|  | Slco1a5 | -2.479 | 8.170 | 0.022 |
|  | Gm20471 | -2.471 | 8.141 | 0.008 |
|  | Unc13c | -2.467 | 8.112 | 0.003 |
|  | Cd33 | -2.451 | 10.084 | 0.003 |
|  | Pglyrp1 | -2.450 | 10.031 | 0.038 |
|  | Nlrp3 | -2.448 | 9.075 | 0.001 |
|  | Sptbn5 | -2.435 | 6.010 | 0.009 |
|  | Mmp13 | -2.432 | 133.788 | 0.000 |
|  | Rpl7a-ps5 | -2.431 | 3.996 | 0.027 |
|  | Hecw2 | -2.408 | 20.580 | 0.001 |
|  | Gm49937 | -2.401 | 7.837 | 0.003 |
|  | Veph1 | -2.394 | 3.898 | 0.034 |
|  | Gm9869 | -2.386 | 7.808 | 0.002 |
|  | Mgp | -2.385 | 21.308 | 0.002 |
|  | G730003C15Rik | -2.382 | 3.865 | 0.041 |
|  | Gm53031 | -2.375 | 5.769 | 0.008 |
|  | Col23a1 | -2.371 | 6.700 | 0.031 |
|  | Krt13 | -2.368 | 26.897 | 0.003 |
|  | E230001N04Rik | -2.355 | 4.774 | 0.022 |
|  | Sec16b | -2.327 | 4.718 | 0.019 |
|  | Adgra1 | -2.317 | 3.722 | 0.043 |
|  | H2bc9 | -2.297 | 5.559 | 0.011 |
|  | Arnt2 | -2.283 | 3.674 | 0.046 |
|  | Gm22748 | -2.269 | 4.532 | 0.038 |
|  | Nos1ap | -2.263 | 30.707 | 0.011 |
|  | Gm14207 | -2.235 | 21.312 | 0.006 |
|  | Ramp1 | -2.234 | 55.158 | 0.000 |
|  | Csf2 | -2.228 | 14.182 | 0.021 |
|  | C130074G19Rik | -2.213 | 22.886 | 0.004 |
|  | Sorbs3 | -2.181 | 34.695 | 0.000 |
|  | Mmp9 | -2.178 | 2867.793 | 0.000 |
|  | Gm15787 | -2.148 | 4.209 | 0.049 |
|  | Ucn2 | -2.125 | 6.651 | 0.018 |
|  | Syn3 | -2.080 | 8.127 | 0.017 |
|  | Irag1 | -2.077 | 4.059 | 0.050 |
|  | Gm28119 | -2.073 | 21.058 | 0.007 |
|  | Stc1 | -2.067 | 175.837 | 0.000 |
|  | Usp17la | -2.062 | 8.044 | 0.033 |
|  | Egr2 | -2.061 | 7.230 | 0.037 |
|  | Adgrg3 | -2.045 | 84.008 | 0.000 |
|  | Gm10425 | -2.024 | 12.654 | 0.001 |
|  | Lcn2 | -2.014 | 2750.759 | 0.002 |
|  | Serpine2 | -2.009 | 509.816 | 0.026 |
|  | Reps2 | -2.004 | 24.190 | 0.015 |
|  | Lifr | -2.003 | 64.821 | 0.006 |
|  | Mmp10 | -1.995 | 56.755 | 0.000 |
|  | Kcnk2 | -1.980 | 135.077 | 0.000 |
|  | Klra2 | -1.973 | 24.564 | 0.001 |
|  | Dll4 | -1.935 | 95.637 | 0.033 |
|  | Gm19589 | -1.924 | 50.840 | 0.000 |
|  | Spry4 | -1.896 | 44.194 | 0.001 |
|  | Havcr2 | -1.887 | 35.891 | 0.004 |
|  | Ngef | -1.886 | 103.961 | 0.000 |
|  | Klhl30 | -1.883 | 11.037 | 0.011 |
|  | Xlr | -1.871 | 13.806 | 0.003 |
|  | Cth | -1.850 | 109.353 | 0.001 |
|  | Gm38563 | -1.840 | 7.858 | 0.011 |
|  | 1110002E22Rik | -1.806 | 16.066 | 0.004 |
|  | Gm11714 | -1.804 | 9.769 | 0.023 |
|  | S100a14 | -1.780 | 11.696 | 0.031 |
|  | S100a4 | -1.774 | 18.060 | 0.005 |
|  | Olfm1 | -1.774 | 392.257 | 0.037 |
|  | Ptgs1 | -1.769 | 696.097 | 0.019 |
|  | Padi3 | -1.757 | 302.107 | 0.000 |
|  | Rab7b | -1.756 | 57.324 | 0.000 |
|  | Slpi | -1.751 | 612.421 | 0.006 |
|  | Areg | -1.739 | 100.890 | 0.001 |
|  | Peli2 | -1.728 | 33.607 | 0.014 |
|  | Gm42428 | -1.724 | 6.075 | 0.039 |
|  | Mir100hg | -1.719 | 538.801 | 0.006 |
|  | Ptx3 | -1.718 | 30.283 | 0.004 |
|  | Foxl1 | -1.701 | 29.770 | 0.006 |
|  | Samd5 | -1.693 | 12.556 | 0.011 |
|  | Arg2 | -1.689 | 56.757 | 0.009 |
|  | Papln | -1.686 | 73.681 | 0.000 |
|  | Mmp19 | -1.681 | 14.441 | 0.021 |
|  | Gm2895 | -1.680 | 9.865 | 0.010 |
|  | Plxna4 | -1.677 | 20.939 | 0.029 |
|  | Gm3716 | -1.673 | 21.576 | 0.000 |
|  | Gm38037 | -1.665 | 6.544 | 0.027 |
|  | Gm4813 | -1.664 | 17.527 | 0.014 |
|  | Dusp6 | -1.660 | 923.211 | 0.001 |
|  | Gm15610 | -1.659 | 10.386 | 0.011 |
|  | Ccn3 | -1.655 | 83.510 | 0.002 |
|  | Psg17 | -1.651 | 30.930 | 0.005 |
|  | Ccn5 | -1.642 | 10.256 | 0.010 |
|  | Evi2a | -1.642 | 14.122 | 0.004 |
|  | Platr27 | -1.641 | 5.795 | 0.049 |
|  | Angpt2 | -1.641 | 25.092 | 0.001 |
|  | Septin4 | -1.625 | 9.582 | 0.012 |
|  | Abcc3 | -1.617 | 549.277 | 0.007 |
|  | Il18rap | -1.615 | 136.393 | 0.000 |
|  | Ly6c1 | -1.607 | 16.989 | 0.021 |
|  | Sim2 | -1.592 | 6.257 | 0.037 |
|  | Ttll11 | -1.589 | 18.688 | 0.015 |
|  | Rnf165 | -1.586 | 10.649 | 0.010 |
|  | Cdh17 | -1.583 | 39.916 | 0.004 |
|  | Gm2788 | -1.582 | 16.215 | 0.001 |
|  | Rab26os | -1.579 | 11.230 | 0.018 |
|  | Tnxb | -1.576 | 92.592 | 0.009 |
|  | Hs3st1 | -1.575 | 102.509 | 0.001 |
|  | Hhip | -1.574 | 339.306 | 0.012 |
|  | Hlf | -1.570 | 20.417 | 0.022 |
|  | Aqp5 | -1.570 | 125.189 | 0.005 |
|  | Nmnat2 | -1.565 | 190.505 | 0.000 |
|  | Emilin2 | -1.556 | 27.075 | 0.001 |
|  | Baalc | -1.555 | 35.731 | 0.001 |
|  | B130034C11Rik | -1.544 | 10.430 | 0.013 |
|  | Egr1 | -1.540 | 408.373 | 0.000 |
|  | Tenm4 | -1.536 | 118.293 | 0.001 |
|  | Ankrd37 | -1.535 | 56.030 | 0.000 |
|  | Platr22 | -1.533 | 19.551 | 0.005 |
|  | Prss22 | -1.512 | 695.809 | 0.000 |
|  | Pisd-ps1 | -1.507 | 11.385 | 0.033 |
|  | Zbtb11os1 | -1.506 | 10.183 | 0.018 |
|  | Asb2 | -1.499 | 184.503 | 0.000 |
|  | 9530018F02Rik | -1.495 | 11.284 | 0.031 |
|  | Fbxo47 | -1.486 | 14.850 | 0.009 |
|  | Lst1 | -1.466 | 11.765 | 0.007 |
|  | Serpina3g | -1.465 | 9.966 | 0.017 |
|  | Chrna1os | -1.456 | 13.997 | 0.005 |
|  | Sugct | -1.445 | 13.319 | 0.018 |
|  | Izumo4 | -1.443 | 12.729 | 0.049 |
|  | Insig1 | -1.439 | 1217.510 | 0.000 |
|  | Camk2b | -1.438 | 57.966 | 0.000 |
|  | Prdm1 | -1.430 | 9.828 | 0.032 |
|  | Acsbg1 | -1.411 | 546.058 | 0.015 |
|  | 1110008P14Rik | -1.408 | 522.316 | 0.000 |
|  | Adamtsl3 | -1.403 | 92.154 | 0.000 |
|  | Csf3 | -1.401 | 923.051 | 0.000 |
|  | Slc12a5 | -1.394 | 67.953 | 0.000 |
|  | Lman1l | -1.390 | 10.729 | 0.029 |
|  | Tfrc | -1.390 | 3466.144 | 0.000 |
|  | Etv5 | -1.388 | 434.200 | 0.000 |
|  | Acox2 | -1.381 | 74.179 | 0.000 |
|  | Cd38 | -1.369 | 55.288 | 0.002 |
|  | Il1r1 | -1.364 | 207.088 | 0.000 |
|  | Selenbp1 | -1.362 | 15.038 | 0.046 |
|  | Pcx | -1.361 | 69.059 | 0.000 |
|  | Irf8 | -1.356 | 199.950 | 0.000 |
|  | Gm5963 | -1.354 | 16.129 | 0.006 |
|  | Rps6ka2 | -1.354 | 361.289 | 0.044 |
|  | Abcb1a | -1.353 | 29.963 | 0.006 |
|  | Itga1 | -1.350 | 136.219 | 0.001 |
|  | Muc1 | -1.342 | 25.840 | 0.040 |
|  | Rerg | -1.336 | 31.305 | 0.021 |
|  | Gm19196 | -1.333 | 17.104 | 0.007 |
|  | Adhfe1 | -1.329 | 48.172 | 0.006 |
|  | Fah | -1.327 | 478.268 | 0.000 |
|  | Atp7b | -1.313 | 15.194 | 0.018 |
|  | Steap4 | -1.310 | 104.766 | 0.000 |
|  | P2ry6 | -1.305 | 33.002 | 0.000 |
|  | Arrdc3 | -1.295 | 360.765 | 0.000 |
|  | Plac1 | -1.294 | 30.634 | 0.001 |
|  | Cp | -1.293 | 2218.722 | 0.000 |
|  | Shank2 | -1.292 | 45.676 | 0.003 |
|  | N4bp2os | -1.286 | 9.698 | 0.040 |
|  | Crispld2 | -1.279 | 11.740 | 0.024 |
|  | Prss12 | -1.278 | 517.819 | 0.000 |
|  | Acap1 | -1.273 | 491.240 | 0.046 |
|  | Tspan1 | -1.272 | 86.380 | 0.038 |
|  | Slc16a2 | -1.271 | 133.209 | 0.012 |
|  | Morrbid | -1.257 | 116.286 | 0.000 |
|  | Pou2f2 | -1.251 | 73.318 | 0.000 |
|  | Elapor2 | -1.250 | 18.420 | 0.031 |
|  | Ctla2a | -1.248 | 12.672 | 0.035 |
|  | Gm20005 | -1.244 | 46.183 | 0.009 |
|  | Akap6 | -1.237 | 12.047 | 0.040 |
|  | 4930556M19Rik | -1.235 | 79.105 | 0.001 |
|  | Dcxr | -1.234 | 83.697 | 0.001 |
|  | Scn5a | -1.234 | 63.772 | 0.029 |
|  | 1700007L15Rik | -1.227 | 21.357 | 0.004 |
|  | Sgk2 | -1.215 | 31.545 | 0.010 |
|  | Tns1 | -1.215 | 84.970 | 0.000 |
|  | Gm9115 | -1.211 | 23.293 | 0.013 |
|  | Ggn | -1.204 | 18.048 | 0.008 |
|  | Oit3 | -1.203 | 28.990 | 0.004 |
|  | Raet1e | -1.199 | 41.085 | 0.005 |
|  | Arhgap18 | -1.191 | 772.966 | 0.000 |
|  | Slc46a3 | -1.191 | 13.900 | 0.030 |
|  | Ctsw | -1.190 | 93.889 | 0.008 |
|  | Gchfr | -1.188 | 182.693 | 0.000 |
|  | Lama3 | -1.187 | 686.836 | 0.000 |
|  | Map1a | -1.186 | 40.411 | 0.000 |
|  | Nr1h3 | -1.186 | 16.409 | 0.018 |
|  | Alcam | -1.186 | 574.014 | 0.000 |
|  | Slc22a15 | -1.184 | 87.386 | 0.001 |
|  | Etv1 | -1.183 | 653.822 | 0.000 |
|  | Iqgap2 | -1.182 | 76.103 | 0.041 |
|  | Rhox5 | -1.177 | 158.788 | 0.003 |
|  | Gm13387 | -1.176 | 181.136 | 0.000 |
|  | Scd3 | -1.175 | 14.791 | 0.015 |
|  | Col6a2 | -1.170 | 26.298 | 0.016 |
|  | Padi2 | -1.169 | 743.438 | 0.001 |
|  | Sla | -1.168 | 11.139 | 0.038 |
|  | Gm37131 | -1.167 | 38.066 | 0.001 |
|  | Spry1 | -1.167 | 373.031 | 0.002 |
|  | Scd2 | -1.164 | 13502.870 | 0.000 |
|  | Mir703 | -1.160 | 12.121 | 0.040 |
|  | Gm11249 | -1.158 | 17.673 | 0.017 |
|  | Hacl1 | -1.156 | 22.750 | 0.005 |
|  | Itgb2 | -1.154 | 1260.498 | 0.000 |
|  | Enpp1 | -1.150 | 188.426 | 0.000 |
|  | C1s1 | -1.143 | 162.729 | 0.000 |
|  | Gm42141 | -1.128 | 17.913 | 0.011 |
|  | Styk1 | -1.122 | 133.446 | 0.000 |
|  | Kyat3 | -1.121 | 65.440 | 0.000 |
|  | Csgalnact1 | -1.118 | 180.389 | 0.003 |
|  | Apln | -1.115 | 659.323 | 0.000 |
|  | Agbl3 | -1.112 | 30.159 | 0.005 |
|  | Cyth4 | -1.110 | 24.225 | 0.005 |
|  | Mylk | -1.110 | 33.573 | 0.001 |
|  | B230217C12Rik | -1.108 | 11.847 | 0.041 |
|  | mt-Tp | -1.104 | 123.566 | 0.024 |
|  | Mamdc2 | -1.091 | 40.502 | 0.001 |
|  | 5730471H19Rik | -1.089 | 22.077 | 0.016 |
|  | 3930402G23Rik | -1.085 | 24.467 | 0.013 |
|  | 1500002C15Rik | -1.074 | 19.333 | 0.024 |
|  | Naip2 | -1.068 | 23.625 | 0.026 |
|  | Col7a1 | -1.067 | 628.708 | 0.000 |
|  | Odc1 | -1.060 | 5562.850 | 0.000 |
|  | Gm13160 | -1.056 | 12.041 | 0.047 |
|  | mt-Tc | -1.051 | 48.070 | 0.000 |
|  | Afp | -1.042 | 24.439 | 0.008 |
|  | Nid1 | -1.042 | 85.004 | 0.001 |
|  | Gm7993 | -1.037 | 1276.666 | 0.000 |
|  | Gm19605 | -1.035 | 21.988 | 0.014 |
|  | Gprc5b | -1.028 | 116.328 | 0.007 |
|  | Prokr1 | -1.028 | 18.028 | 0.022 |
|  | Adgrg1 | -1.027 | 103.424 | 0.002 |
|  | Gm15910 | -1.025 | 20.382 | 0.017 |
|  | Lgr6 | -1.018 | 476.614 | 0.005 |
|  | Id4 | -1.017 | 14.663 | 0.041 |
|  | Etv4 | -1.012 | 843.976 | 0.000 |
|  | Otop1 | -1.011 | 78.096 | 0.010 |
|  | Prkg2 | -1.008 | 1230.104 | 0.000 |
|  | Spred3 | -1.008 | 221.971 | 0.013 |
|  | Inpp4b | -1.008 | 151.882 | 0.000 |
|  | Mttp | -1.007 | 100.097 | 0.000 |
|  | Egln3 | -1.007 | 1273.049 | 0.000 |
|  | Robo1 | -1.006 | 25.767 | 0.024 |
|  | C3 | -1.002 | 10932.819 | 0.000 |
|  |  |  |  |  |
| Up-regulated | Fam171b | 1.016 | 244.148 | 0.000 |
|  | Mb | 1.024 | 40.510 | 0.002 |
|  | Igtp | 1.033 | 293.991 | 0.000 |
|  | Usp18 | 1.042 | 167.704 | 0.023 |
|  | Nxph3 | 1.045 | 19.221 | 0.017 |
|  | Xaf1 | 1.046 | 322.864 | 0.000 |
|  | Gbp2 | 1.047 | 974.189 | 0.000 |
|  | Mmp15 | 1.048 | 321.145 | 0.000 |
|  | Lrrc73 | 1.049 | 43.922 | 0.008 |
|  | Adam8 | 1.067 | 1145.909 | 0.000 |
|  | Mslnl | 1.070 | 32.332 | 0.025 |
|  | Coq8a | 1.093 | 179.144 | 0.000 |
|  | Tgtp2 | 1.096 | 65.905 | 0.001 |
|  | Grhl1 | 1.102 | 33.748 | 0.005 |
|  | Ddx60 | 1.108 | 408.362 | 0.000 |
|  | Gbp2b | 1.114 | 685.490 | 0.000 |
|  | Oas2 | 1.120 | 59.152 | 0.006 |
|  | Oasl2 | 1.125 | 1457.549 | 0.000 |
|  | Icam1 | 1.137 | 429.342 | 0.002 |
|  | Zbtb7c | 1.151 | 46.346 | 0.005 |
|  | Rtp4 | 1.155 | 537.907 | 0.000 |
|  | Phf11d | 1.158 | 246.480 | 0.000 |
|  | Rhbdl3 | 1.179 | 82.244 | 0.000 |
|  | Klf10 | 1.192 | 3267.977 | 0.000 |
|  | Ogn | 1.205 | 20.867 | 0.032 |
|  | Vash1 | 1.216 | 84.430 | 0.000 |
|  | Tincr | 1.232 | 24.738 | 0.003 |
|  | Cmpk2 | 1.254 | 189.448 | 0.000 |
|  | Cxcl10 | 1.274 | 253.358 | 0.000 |
|  | Pgbd5 | 1.295 | 16.520 | 0.009 |
|  | Gadd45b | 1.298 | 3103.625 | 0.000 |
|  | Irgm2 | 1.302 | 398.632 | 0.000 |
|  | Tgtp1 | 1.307 | 86.496 | 0.000 |
|  | Ifit3 | 1.320 | 150.911 | 0.000 |
|  | Dnah6 | 1.327 | 20.070 | 0.006 |
|  | Gm12250 | 1.351 | 23.303 | 0.002 |
|  | Oasl1 | 1.356 | 932.853 | 0.000 |
|  | Gbp5 | 1.365 | 137.073 | 0.000 |
|  | Gbp7 | 1.370 | 602.801 | 0.000 |
|  | Ifit1bl2 | 1.373 | 14.067 | 0.033 |
|  | Rnf223 | 1.384 | 18.616 | 0.007 |
|  | Actn2 | 1.387 | 13.372 | 0.013 |
|  | Col1a1 | 1.404 | 116.727 | 0.000 |
|  | Gbp3 | 1.406 | 485.016 | 0.000 |
|  | Gm12941 | 1.411 | 8.398 | 0.037 |
|  | Adra1b | 1.431 | 11.174 | 0.015 |
|  | Rsad2 | 1.434 | 527.362 | 0.000 |
|  | Rpl9-ps4 | 1.449 | 7.266 | 0.047 |
|  | Rgcc | 1.450 | 22.700 | 0.002 |
|  | Mybpc3 | 1.453 | 23.686 | 0.000 |
|  | Plekhs1 | 1.461 | 80.115 | 0.003 |
|  | Isg15 | 1.475 | 566.757 | 0.000 |
|  | Dlx2 | 1.510 | 8.908 | 0.023 |
|  | Col11a2 | 1.540 | 8.807 | 0.031 |
|  | Ifit1 | 1.561 | 405.524 | 0.000 |
|  | Apol10b | 1.598 | 43.104 | 0.000 |
|  | Trim30c | 1.667 | 7.402 | 0.033 |
|  | Nr4a3 | 1.667 | 6.565 | 0.029 |
|  | Ryr2 | 1.677 | 8.819 | 0.011 |
|  | Chadl | 1.730 | 5.293 | 0.043 |
|  | Krt17 | 1.908 | 59.913 | 0.000 |
|  | Gm43679 | 1.940 | 5.131 | 0.032 |
|  | 9530034E10Rik | 1.959 | 5.102 | 0.035 |
|  | Mmp23 | 2.099 | 4.630 | 0.028 |
|  | Krt16 | 2.111 | 68.999 | 0.000 |
|  | Nts | 2.215 | 157.556 | 0.033 |
|  | Gm28373 | 2.241 | 8.848 | 0.006 |
|  | Angptl4 | 2.253 | 13.274 | 0.000 |
|  | Prl2c2 | 2.303 | 20.201 | 0.000 |
|  | Col3a1 | 2.391 | 16.523 | 0.000 |
|  | 4930512H18Rik | 2.556 | 3.654 | 0.034 |
|  | Jph2 | 2.627 | 3.812 | 0.029 |
|  | Prl2c3 | 2.684 | 58.947 | 0.000 |
|  | Hba-a1 | 2.722 | 3.954 | 0.023 |
|  | S100a9 | 3.304 | 2.031 | 0.045 |
|  | Dpf3 | 3.306 | 2.033 | 0.041 |
|  | Fmod | 3.524 | 2.358 | 0.041 |
|  | Lum | 3.800 | 2.825 | 0.044 |
|  | Col1a2 | 4.042 | 80.533 | 0.000 |
|  | Bglap2 | 4.145 | 1.721 | 0.018 |
|  | Ngp | 4.490 | 2.185 | 0.008 |

**Table 1(c)** Differentially Expressed Genes (DEGs) of phpma vs con.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Log2FoldChange | Average Expression | *P.Value* |
| Down-regulated | Atp13a4 | -5.101 | 12.712 | 0.037 |
|  | Col24a1 | -4.883 | 2.805 | 0.008 |
|  | 6430590A07Rik | -4.021 | 1.550 | 0.034 |
|  | Gm44251 | -4.021 | 1.550 | 0.034 |
|  | Gm49967 | -3.990 | 1.512 | 0.046 |
|  | Gm20522 | -3.782 | 2.736 | 0.029 |
|  | Tchh | -3.780 | 2.698 | 0.027 |
|  | Gpr35 | -3.772 | 2.687 | 0.043 |
|  | Gm43890 | -3.685 | 2.567 | 0.038 |
|  | Gm4890 | -3.572 | 2.376 | 0.028 |
|  | Tnip3 | -3.567 | 22.396 | 0.000 |
|  | Cd300lb | -3.239 | 5.286 | 0.046 |
|  | Parm1 | -3.119 | 15.098 | 0.005 |
|  | Akr1c14 | -3.002 | 3.100 | 0.038 |
|  | Kcnh1 | -2.986 | 12.612 | 0.005 |
|  | Trpv3 | -2.959 | 11.132 | 0.013 |
|  | Aim2 | -2.805 | 11.461 | 0.028 |
|  | Gm43759 | -2.638 | 3.665 | 0.049 |
|  | Ceacam16 | -2.566 | 7.227 | 0.028 |
|  | Add2 | -2.517 | 11.861 | 0.029 |
|  | Ngfr | -2.459 | 17.993 | 0.011 |
|  | Serping1 | -2.458 | 4.465 | 0.045 |
|  | Gm49886 | -2.313 | 4.119 | 0.044 |
|  | Gm5847 | -2.249 | 6.006 | 0.018 |
|  | Scara5 | -2.240 | 8.953 | 0.030 |
|  | Cxcr3 | -2.197 | 11.649 | 0.029 |
|  | Slco1a5 | -2.178 | 7.601 | 0.043 |
|  | F13a1 | -2.114 | 7.473 | 0.049 |
|  | Hrk | -2.007 | 5.140 | 0.048 |
|  | Foxq1 | -1.949 | 15.846 | 0.021 |
|  | Reps2 | -1.904 | 22.055 | 0.011 |
|  | Brd3os | -1.824 | 8.455 | 0.046 |
|  | Plxna4 | -1.756 | 18.554 | 0.020 |
|  | Prune2 | -1.755 | 15.890 | 0.010 |
|  | Angptl6 | -1.718 | 43.894 | 0.003 |
|  | H4c12 | -1.712 | 7.628 | 0.045 |
|  | Nos1ap | -1.620 | 30.279 | 0.037 |
|  | Gm36684 | -1.611 | 11.219 | 0.038 |
|  | Fut1 | -1.549 | 22.222 | 0.017 |
|  | S100a4 | -1.549 | 16.826 | 0.007 |
|  | Sema6d | -1.503 | 47.759 | 0.017 |
|  | Peli2 | -1.500 | 31.386 | 0.022 |
|  | Aldh1l2 | -1.457 | 20.813 | 0.025 |
|  | N4bp2os | -1.444 | 8.474 | 0.044 |
|  | Ttll11 | -1.364 | 17.550 | 0.034 |
|  | Abcg1 | -1.306 | 33.532 | 0.035 |
|  | Aloxe3 | -1.251 | 27.190 | 0.011 |
|  | Tnfrsf19 | -1.248 | 49.593 | 0.026 |
|  | Gm25432 | -1.223 | 48.215 | 0.000 |
|  | Etfb | -1.180 | 41.266 | 0.001 |
|  | Amz1 | -1.171 | 17.428 | 0.041 |
|  | Iqgap2 | -1.146 | 68.926 | 0.035 |
|  | C030006K11Rik | -1.143 | 32.765 | 0.043 |
|  | Gm29216 | -1.127 | 19.600 | 0.031 |
|  | Acot2 | -1.122 | 93.091 | 0.015 |
|  | Notch3 | -1.096 | 51.661 | 0.050 |
|  | Adgrg3 | -1.068 | 89.779 | 0.034 |
|  | Reep6 | -1.061 | 94.922 | 0.025 |
|  | Mdga1 | -1.055 | 27.213 | 0.039 |
|  | Ndufb2 | -1.014 | 23.835 | 0.027 |
|  |  |  |  |  |
| Up-regulated | Tnni2 | 1.031 | 24.423 | 0.028 |
|  | Tnni3 | 1.038 | 17.549 | 0.040 |
|  | Myl2 | 1.049 | 36.881 | 0.006 |
|  | Apol10b | 1.097 | 30.261 | 0.008 |
|  | Tincr | 1.185 | 21.817 | 0.022 |
|  | 4930565N06Rik | 1.231 | 16.464 | 0.017 |
|  | Mb | 1.268 | 41.007 | 0.000 |
|  | Hrc | 1.298 | 9.719 | 0.048 |
|  | Hspb7 | 1.363 | 14.355 | 0.029 |
|  | Ptgds | 1.400 | 13.300 | 0.014 |
|  | Ptgis | 1.417 | 13.462 | 0.021 |
|  | Mybpc3 | 1.444 | 21.242 | 0.002 |
|  | Actn2 | 1.452 | 12.409 | 0.017 |
|  | Rbbp8nl | 1.497 | 8.610 | 0.044 |
|  | Ogn | 1.607 | 23.016 | 0.004 |
|  | Ckm | 1.989 | 6.198 | 0.037 |
|  | Cmya5 | 2.895 | 3.951 | 0.018 |
|  | Gm37738 | 3.854 | 2.618 | 0.017 |
|  | Gm11515 | 4.346 | 1.789 | 0.019 |
|  | Apol6 | 4.395 | 1.855 | 0.039 |