

Repeat peptide stimulated cells versus single peptide stimulated cells

| GeneName | baseMean | log2FoldChange | padj |
|---------------|------------|----------------|------------|
| 0610009L18Rik | 201.755764 | -1.277960455 | 5.78E-10 |
| 0610040F04Rik | 157.463514 | 1.005966933 | 1.97E-05 |
| 0610043K17Rik | 246.423422 | -1.890880273 | 1.78E-09 |
| 1110004E09Rik | 713.97038 | 1.132302939 | 9.18E-08 |
| 1110032F04Rik | 497.463112 | 1.334317684 | 1.71E-09 |
| 1110034G24Rik | 1260.61844 | -1.212866741 | 5.04E-06 |
| 1110038B12Rik | 1041.92657 | 1.140144129 | 3.50E-25 |
| 1500015A07Rik | 173.053305 | -1.025085142 | 2.97E-08 |
| 1600014C10Rik | 141.232962 | -1.266496621 | 1.97E-17 |
| 1700012B07Rik | 148.845126 | 1.273366292 | 0.00048402 |
| 1700016L21Rik | 688.01262 | -2.909133086 | 1.79E-13 |
| 1700019D03Rik | 127.658139 | 1.207694085 | 2.28E-11 |
| 1700025G04Rik | 5549.57115 | -1.992945691 | 1.19E-16 |
| 1700029H14Rik | 213.319125 | -2.077799804 | 1.09E-12 |
| 1700061G19Rik | 298.832636 | -1.338453548 | 4.87E-15 |
| 1700093J21Rik | 144.711729 | -1.394182318 | 3.47E-10 |
| 1700097N02Rik | 260.085145 | -1.185653388 | 6.79E-07 |
| 1700113A16Rik | 336.907184 | -1.107496337 | 4.11E-09 |
| 1810006J02Rik | 107.815508 | -1.024822621 | 0.0017972 |
| 1810055G02Rik | 362.254473 | 1.051476986 | 2.80E-06 |
| 1810062O18Rik | 144.742803 | -1.222906118 | 5.40E-07 |
| 2010016I18Rik | 246.576404 | -1.416294018 | 0.00014416 |
| 2310002F09Rik | 281.517829 | -1.696794234 | 1.43E-06 |
| 2310015A10Rik | 790.314245 | -1.494037491 | 4.21E-05 |
| 2410004P03Rik | 102.689452 | 1.046458183 | 3.26E-05 |
| 2500002B13Rik | 215.217327 | 1.043199156 | 1.19E-05 |
| 2610027K06Rik | 106.043246 | -1.09139961 | 1.93E-09 |
| 2610035D17Rik | 5450.18857 | -1.553342416 | 2.02E-18 |
| 2610037D02Rik | 1134.25854 | -1.084916316 | 0.02077512 |
| 2810001G20Rik | 474.674802 | -2.164396653 | 2.49E-23 |
| 2810025M15Rik | 113.95226 | 1.505864525 | 1.22E-07 |
| 2810429I04Rik | 142.110463 | 1.661204133 | 2.27E-10 |
| 2810474O19Rik | 7936.50803 | -1.887798969 | 2.60E-31 |
| 2900026A02Rik | 458.233558 | 2.443320541 | 2.38E-26 |
| 3110009E18Rik | 843.4786 | -1.392313753 | 0.00014612 |
| 3110056K07Rik | 1235.08351 | -1.038234307 | 1.19E-06 |
| 3632454L22Rik | 261.47648 | -1.763420197 | 1.79E-10 |
| 4632404H12Rik | 456.360162 | -1.356728656 | 0.00039228 |
| 4632427E13Rik | 647.671545 | -1.087590612 | 0.00690033 |
| 4732487G21Rik | 448.448723 | -1.194466783 | 1.22E-14 |
| 4831440E17Rik | 104.813391 | -1.056140851 | 1.29E-06 |
| 4833422C13Rik | 495.782719 | -2.243542281 | 1.06E-13 |
| 4930417H01Rik | 140.901783 | -1.535943467 | 4.21E-10 |
| 4930431P19Rik | 108.956427 | -1.044264457 | 4.31E-06 |
| 4930452B06Rik | 180.134784 | 2.03889756 | 9.40E-21 |
| 4930481A15Rik | 563.544076 | -1.76909401 | 1.50E-07 |
| 4930503L19Rik | 1140.69694 | 1.017402433 | 9.21E-07 |
| 4930519F09Rik | 571.567524 | -1.079212494 | 0.01873979 |

S1 Table

Differentially expressed genes in repeat peptide stimulated T cells determined by RNAseq. Log2 fold change is show for repeat peptide OT-I versus single peptide stimulated OT-I. After 5 day cultures, cells were sorted and RNAseq was performed. Genes with >2 fold change and padj value < 0.05 shown.

| | | | |
|---------------|------------|--------------|------------|
| 4930523C07Rik | 7111.78017 | -1.266950845 | 1.75E-16 |
| 4930539E08Rik | 181.975224 | 1.013466282 | 0.000217 |
| 4930562C15Rik | 289.857266 | -1.210972181 | 1.64E-16 |
| 4930581F22Rik | 546.072963 | -1.00856743 | 0.00013811 |
| 4930595D18Rik | 185.268467 | -1.227033709 | 8.17E-07 |
| 4930599N23Rik | 242.191857 | -1.242924152 | 4.56E-10 |
| 4931403E22Rik | 210.427455 | -1.362198561 | 1.96E-08 |
| 4931406G06Rik | 120.565936 | 1.491473677 | 1.04E-06 |
| 4933406I18Rik | 4224.68286 | -1.4319444 | 1.68E-05 |
| 4933440M02Rik | 1121.16328 | -5.019846897 | 2.65E-180 |
| 5031434O11Rik | 249.00109 | -1.309540211 | 1.95E-17 |
| 5430427O19Rik | 415.306351 | -1.132245741 | 0.0037465 |
| 5430431A17Rik | 96.1828446 | -1.280930112 | 4.45E-07 |
| 5730508B09Rik | 3328.92212 | -2.549236371 | 1.89E-26 |
| 5830411N06Rik | 1390.92189 | -3.530640426 | 8.52E-21 |
| 5930435M05Rik | 78.1306874 | -1.088296906 | 9.07E-05 |
| 6430571L13Rik | 144.319576 | 1.401224378 | 3.00E-08 |
| 9330104G04Rik | 155.48361 | -1.247822332 | 1.95E-09 |
| 9330136K24Rik | 301.267476 | 1.073266597 | 1.60E-11 |
| 9330175E14Rik | 728.519759 | -2.01437599 | 8.93E-12 |
| 9330198N18Rik | 239.59375 | -1.079897164 | 0.00018411 |
| 9430015G10Rik | 1007.01695 | 1.082508547 | 7.32E-11 |
| A230072E10Rik | 304.54998 | -1.366868633 | 2.97E-05 |
| A330040F15Rik | 359.522083 | -1.263278846 | 0.00026245 |
| A430046D13Rik | 371.471542 | -1.26546001 | 2.49E-09 |
| A430078G23Rik | 5454.74589 | -2.438013784 | 8.90E-15 |
| A530021J07Rik | 105.601109 | -1.552433655 | 3.43E-08 |
| A530072M11Rik | 744.690283 | -1.344114564 | 1.17E-05 |
| A630014C17Rik | 300.15033 | -1.825075226 | 8.68E-13 |
| A630023P12Rik | 123.070368 | -1.227348929 | 0.00020506 |
| A730081D07Rik | 526.670774 | -1.762478289 | 3.66E-06 |
| A930002I21Rik | 381.601297 | -3.390673598 | 2.34E-41 |
| A930005H10Rik | 463.216403 | -2.213257447 | 6.26E-17 |
| A930007I19Rik | 283.115374 | -1.026655303 | 0.0001179 |
| AA467197 | 1635.75245 | -3.826983179 | 4.10E-28 |
| Aaas | 2122.58274 | 1.141188114 | 1.77E-13 |
| Aaed1 | 1176.27732 | -1.078815803 | 7.34E-12 |
| Aars | 4166.52487 | 1.781077376 | 3.42E-20 |
| AB124611 | 1936.77005 | -1.793949354 | 1.31E-36 |
| Abca1 | 637.596717 | -1.350922444 | 4.33E-05 |
| Abcb11 | 81.0543881 | -1.05737461 | 0.00023583 |
| Abcb1a | 819.99539 | -1.66475352 | 7.77E-08 |
| Abcb4 | 173.239607 | 1.227029937 | 1.01E-09 |
| Abcc10 | 582.293293 | -1.044699494 | 5.49E-06 |
| Abcd3 | 2096.09023 | 1.978137615 | 5.48E-26 |
| Abcf2 | 3080.86598 | 1.20306454 | 3.09E-10 |
| Abcg1 | 3555.09412 | -2.364192707 | 1.69E-98 |
| Abcg3 | 729.600987 | -1.017699875 | 6.14E-05 |
| Abhd15 | 585.059232 | -1.693971821 | 3.13E-23 |
| Abhd4 | 531.931195 | 2.059130891 | 3.04E-14 |

| | | | |
|------------|------------|--------------|------------|
| Abi2 | 1781.5438 | 2.01123681 | 2.29E-31 |
| Abi3 | 147.445927 | -1.49264521 | 1.18E-15 |
| Ablim2 | 254.587863 | -1.509432353 | 1.77E-09 |
| Abr | 4267.51624 | -1.064799925 | 6.39E-21 |
| AC108401.3 | 251.298497 | -1.341232258 | 2.95E-11 |
| AC124680.1 | 668.634527 | -2.496536894 | 0.00206902 |
| AC133498.1 | 567.020266 | 3.818688979 | 3.93E-29 |
| AC133650.3 | 104.906227 | -1.201123133 | 2.79E-06 |
| AC153495.1 | 1124.18256 | -4.619726223 | 1.66E-35 |
| AC153862.2 | 1819.05338 | -1.788457653 | 2.21E-16 |
| AC153899.1 | 191.511171 | -1.092005578 | 4.12E-11 |
| AC154682.1 | 316.141552 | -1.134812766 | 2.50E-06 |
| AC156795.1 | 340.470128 | 1.125941811 | 0.0001512 |
| AC157822.3 | 682.505874 | -1.791452905 | 2.87E-06 |
| AC158388.3 | 355.992927 | -2.32517399 | 0.00040448 |
| AC160405.2 | 220.769412 | -1.0626912 | 1.89E-11 |
| AC163032.1 | 448.311304 | -1.421147506 | 6.07E-16 |
| AC163354.1 | 218.521833 | 1.620938898 | 3.79E-05 |
| AC163623.3 | 85.9125347 | -1.00797423 | 5.56E-05 |
| AC164426.2 | 727.476841 | -1.112476949 | 4.13E-07 |
| AC167978.1 | 118.390689 | -1.192513239 | 2.31E-05 |
| Acad10 | 504.000352 | -1.298254147 | 2.92E-05 |
| Acot2 | 429.671182 | -1.061043245 | 3.36E-09 |
| Acot7 | 3380.92754 | 1.721215533 | 2.33E-20 |
| Acpp | 564.886907 | -3.199041339 | 2.60E-20 |
| Acsbg1 | 1031.01781 | -1.259837369 | 6.72E-08 |
| Acsf2 | 1804.82861 | -1.356456467 | 4.63E-17 |
| Acl3 | 620.226146 | 1.695092751 | 7.55E-22 |
| Acl6 | 296.549161 | 3.032225858 | 1.81E-29 |
| Acss2 | 938.536656 | -1.725505634 | 2.16E-24 |
| Actg1 | 29511.8181 | 1.016647686 | 0.00249174 |
| Actn1 | 6808.44206 | -2.330475557 | 1.81E-36 |
| Actn2 | 383.023003 | -1.1475751 | 7.35E-05 |
| Acvr1 | 359.871775 | 2.481499639 | 5.21E-33 |
| Acvr1b | 1183.42091 | -1.037791711 | 1.19E-07 |
| Acvr1l | 311.684069 | -2.731477346 | 3.10E-18 |
| Adam19 | 5915.68221 | -1.166504949 | 1.75E-12 |
| Adam8 | 247.379592 | 1.055781326 | 5.90E-05 |
| Adamts14 | 732.355192 | 3.559494119 | 4.37E-44 |
| Adamts6 | 7759.45561 | 2.007284444 | 2.28E-08 |
| Adamtsl4 | 263.12519 | -1.243968481 | 0.00025845 |
| Adap1 | 1447.48992 | 1.443769302 | 7.29E-08 |
| Adarb1 | 678.758628 | 2.768935442 | 4.08E-51 |
| Adarb2 | 168.397407 | 1.532075752 | 2.98E-06 |
| Add3 | 12553.5344 | -1.275378179 | 5.33E-12 |
| Adgrb2 | 142.785251 | -1.352388997 | 1.08E-05 |
| Adgrd1 | 137.77894 | -1.936858969 | 7.25E-22 |
| Adgrg3 | 110.873364 | -1.396308382 | 1.45E-05 |
| Adgrg5 | 2222.61055 | -2.055069518 | 2.45E-31 |
| Adh4 | 129.541352 | 1.407011257 | 1.07E-08 |

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|------------|------------|--------------|------------|
| Adora2b | 232.032376 | 2.186515051 | 9.46E-31 |
| Adrb2 | 362.215285 | -2.261390764 | 5.35E-20 |
| Adssl1 | 305.77701 | 1.261829392 | 1.25E-05 |
| Aebp1 | 215.592036 | 1.34984828 | 1.01E-09 |
| Afp | 106.567809 | -1.152709793 | 6.42E-09 |
| Agtrap | 1014.54963 | -1.009373808 | 8.54E-08 |
| Ahr | 179.129958 | -1.200676269 | 4.79E-07 |
| Ahrr | 191.506962 | -1.747912969 | 1.14E-09 |
| Al506816 | 8027.93668 | 1.164599428 | 1.20E-10 |
| Al847159 | 220.874664 | -1.279893861 | 1.18E-12 |
| Aim2 | 5118.79966 | -1.272376878 | 0.00229188 |
| Ajuba | 119.071312 | 1.414915672 | 5.22E-08 |
| Ak2 | 3128.62175 | 1.235400374 | 3.90E-08 |
| Ak4 | 971.069788 | 2.358254125 | 1.73E-07 |
| Ak6 | 588.881724 | 1.24779094 | 6.87E-17 |
| Ak8 | 115.293273 | -1.254521341 | 9.14E-12 |
| Akap1 | 895.467557 | 1.042747944 | 2.59E-10 |
| Akap5 | 258.280046 | -1.023142266 | 1.70E-05 |
| Akr1c13 | 282.879243 | -1.933070654 | 3.99E-09 |
| Akr1e1 | 476.230487 | 1.403923218 | 2.87E-15 |
| AL513022.1 | 97.3965376 | 1.388232502 | 2.59E-13 |
| AL589871.2 | 111.280631 | 1.649725259 | 7.73E-06 |
| Alad | 616.026169 | 1.411769877 | 1.40E-13 |
| Alcam | 2863.85921 | 2.599058319 | 7.73E-18 |
| Aldh18a1 | 4157.63953 | 1.236105524 | 4.80E-13 |
| Aldh1l2 | 120.992697 | 1.622363172 | 2.26E-08 |
| Aldh3b1 | 232.075721 | -1.607973083 | 3.07E-09 |
| Aldh7a1 | 612.063412 | 1.211050698 | 7.14E-07 |
| Aldoc | 733.676852 | -1.731442684 | 7.12E-05 |
| Alg8 | 1365.12731 | 1.025526479 | 1.72E-08 |
| Alpk2 | 736.810713 | 1.154178953 | 0.00022896 |
| Alyref | 4726.83089 | 1.309919911 | 2.77E-06 |
| Amdhd1 | 129.084992 | -1.385708246 | 9.57E-11 |
| Amigo2 | 303.299136 | -1.716326988 | 4.56E-08 |
| Ampd1 | 289.101641 | -1.495624795 | 1.82E-10 |
| Ampd3 | 157.083628 | -1.091569779 | 1.62E-06 |
| Amy1 | 567.596112 | -1.446080145 | 1.06E-05 |
| Angptl4 | 421.472225 | 1.163019912 | 3.07E-06 |
| Ank | 3136.59586 | -1.503704558 | 9.50E-17 |
| Ank3 | 96.4389354 | 1.274556721 | 5.57E-08 |
| Ankmy1 | 110.197651 | -1.216209193 | 3.76E-12 |
| Ankrd13b | 889.439776 | 2.038893709 | 5.67E-21 |
| Ankrd33b | 235.150847 | 3.063050352 | 1.17E-26 |
| Ankrd52 | 3196.00001 | 1.267459379 | 4.11E-11 |
| Anxa2 | 6945.13191 | 1.351010286 | 0.0006341 |
| Ap3m2 | 1006.21162 | -1.70288873 | 9.72E-19 |
| Apbb1ip | 9806.51678 | -1.332385047 | 4.53E-08 |
| Apc2 | 193.479228 | -1.086750585 | 4.59E-09 |
| Apol7e | 2005.24972 | -2.894183834 | 6.41E-51 |
| Aqp10-ps | 97.6838487 | -1.037218389 | 0.00067728 |

| | | | |
|----------|------------|--------------|------------|
| Aqp3 | 381.626413 | -2.08721889 | 2.50E-13 |
| Aqp9 | 639.351341 | -3.831214902 | 3.84E-30 |
| Arc | 221.26135 | 1.004772252 | 0.00080866 |
| Arfgef3 | 408.468939 | 2.705074724 | 7.21E-13 |
| Arhgap15 | 73352.4505 | -1.335057376 | 0.00013741 |
| Arhgap21 | 2252.51046 | 1.61277153 | 1.76E-13 |
| Arhgap23 | 146.302521 | 1.241457553 | 5.09E-12 |
| Arhgap24 | 267.017843 | 2.515266873 | 4.86E-17 |
| Arhgap25 | 5362.15474 | -1.238642922 | 5.48E-09 |
| Arhgap4 | 4050.23913 | -1.115585119 | 1.83E-14 |
| Arhgap45 | 17994.4464 | -1.242426697 | 9.29E-11 |
| Arhgap6 | 97.7425403 | -1.192436002 | 0.00163306 |
| Arhgdig | 284.425104 | 1.753135435 | 5.36E-11 |
| Arhgef11 | 791.715658 | -1.297403251 | 5.17E-12 |
| Arhgef18 | 9968.83645 | -2.428792683 | 1.13E-26 |
| Arhgef25 | 198.702717 | 2.281147809 | 5.08E-20 |
| Arhgef3 | 15125.2807 | -1.003921233 | 1.35E-06 |
| Arhgef40 | 184.677077 | 1.307778182 | 8.91E-13 |
| Arhgef5 | 141.839634 | 1.292784616 | 4.93E-07 |
| Arhgef9 | 993.153353 | 3.096787204 | 4.36E-18 |
| Arl14ep | 2200.91236 | 1.820945471 | 1.73E-44 |
| Arl4c | 11138.3176 | -3.886515032 | 2.20E-64 |
| Arl5c | 2434.19655 | -2.697440738 | 1.90E-56 |
| Arl6 | 254.319739 | 1.667495508 | 4.06E-21 |
| Armc3 | 176.105426 | -1.728074272 | 3.24E-20 |
| Armc7 | 1931.61985 | -1.271729993 | 3.84E-24 |
| Arntl2 | 125.887408 | 1.667172867 | 8.88E-10 |
| Arrdc4 | 109.749829 | -1.131815026 | 0.0001307 |
| Art2a-ps | 117.701603 | -1.172761186 | 2.29E-05 |
| Art2b | 1166.79715 | -4.503040704 | 3.99E-42 |
| Art4 | 257.960029 | -1.443499872 | 1.09E-14 |
| Arv1 | 892.065727 | -1.056161551 | 2.69E-05 |
| As3mt | 170.67135 | 1.534162857 | 1.61E-10 |
| Asap1 | 16716.1526 | -1.987900636 | 6.89E-15 |
| Asb13 | 1022.11699 | -1.06667682 | 1.25E-05 |
| Asns | 1434.50271 | 3.601494006 | 2.71E-42 |
| Asph | 701.185047 | 2.876210713 | 1.45E-28 |
| Atad5 | 3514.40908 | 1.037123864 | 1.73E-07 |
| Atcay | 218.148339 | 1.333421675 | 2.24E-10 |
| Atf3 | 929.957202 | 1.627412573 | 0.00760761 |
| Atf4 | 4560.49137 | 1.583283697 | 7.01E-10 |
| Atg10 | 3212.4646 | -1.133941615 | 0.00102798 |
| Atg9b | 392.646276 | 1.091021091 | 0.00012626 |
| Atp10d | 3009.8506 | -1.943097269 | 3.91E-12 |
| Atp13a2 | 674.610172 | 1.192487489 | 5.41E-07 |
| Atp1b1 | 1154.38132 | -2.171769141 | 1.31E-32 |
| Atp1b3 | 17285.7267 | -1.334821874 | 6.36E-29 |
| Atp2a2 | 7754.79201 | 1.115960945 | 4.70E-15 |
| Atp5b | 23324.9475 | 1.314193225 | 5.64E-07 |
| Atp5g3 | 4003.56624 | 1.033097994 | 8.65E-06 |

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|---------------|------------|--------------|------------|
| Atp6v0a1 | 156.075065 | 1.857207298 | 3.83E-23 |
| Atp7b | 200.021286 | 1.344524537 | 0.00082071 |
| Atp8a1 | 6816.93803 | -1.429048558 | 2.51E-07 |
| Atp8a2 | 261.087595 | -1.128504967 | 8.56E-06 |
| AU019990 | 179.704721 | -2.009098471 | 1.70E-13 |
| AU021092 | 79.5445862 | -1.151257389 | 1.35E-05 |
| Aunip | 628.662196 | 1.60740893 | 1.73E-16 |
| Aurka | 1444.67827 | 1.30193908 | 1.16E-06 |
| Aurkb | 2359.47941 | 1.451135213 | 7.17E-07 |
| Auts2 | 1876.92857 | -2.621848058 | 1.85E-13 |
| Axdnd1 | 164.28224 | -1.306540453 | 8.81E-11 |
| Axin2 | 1061.43613 | -1.886131764 | 1.38E-24 |
| Axl | 613.113821 | 2.335407608 | 2.60E-16 |
| B230217O12Rik | 590.579298 | -1.099140499 | 0.00026772 |
| B3galt4 | 285.045327 | -1.354911152 | 4.36E-09 |
| B430306N03Rik | 189.713821 | -1.325933916 | 1.21E-13 |
| B4galt1 | 10341.9175 | -1.184531084 | 1.73E-20 |
| B4galt7 | 1156.40456 | -1.174383353 | 4.65E-14 |
| Bace2 | 95.7993722 | 1.371784829 | 4.61E-08 |
| Bach1 | 1339.38644 | -1.758775373 | 2.80E-64 |
| Bag2 | 408.700788 | 1.039447625 | 3.99E-10 |
| Bag3 | 357.378599 | 1.013259914 | 0.00020074 |
| Baiap3 | 952.176222 | -3.480545176 | 2.51E-62 |
| Bambi-ps1 | 344.760748 | -1.812004273 | 1.94E-08 |
| Bard1 | 4458.78859 | 1.18425848 | 1.19E-05 |
| Basp1 | 542.020168 | 2.644653739 | 5.15E-13 |
| Batf3 | 738.668081 | 4.309664604 | 3.78E-65 |
| BB557941 | 118.667207 | 1.191233509 | 9.39E-06 |
| Bbof1 | 270.456017 | -1.712033047 | 8.99E-12 |
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| Bcl6 | 423.377001 | -1.32897167 | 1.82E-14 |
| Bcl7c | 772.401971 | 1.092998337 | 2.44E-05 |
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| Bcr | 2673.42525 | 1.024794154 | 1.56E-08 |
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| Bin1 | 2925.75155 | -1.047781539 | 4.66E-10 |

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| Bin2 | 8902.6004 | -1.320582726 | 8.42E-14 |
| Blm | 3607.45364 | 1.390531446 | 1.18E-12 |
| Blvrb | 207.556854 | -1.023451317 | 6.54E-07 |
| Bmpr2 | 894.154906 | 1.183168629 | 1.24E-16 |
| Bnip3 | 733.304101 | 1.33339368 | 3.52E-05 |
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| Boc | 93.884334 | 1.432634229 | 6.73E-08 |
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| Card14 | 335.71114 | -2.581319985 | 7.37E-30 |
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| Carns1 | 625.01004 | -1.942216837 | 5.95E-08 |

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| Cd24a | 196.112541 | 1.244301826 | 7.98E-06 |
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| Cd44 | 7824.54986 | 2.493437571 | 1.85E-16 |
| Cd46 | 595.192621 | -1.183043221 | 0.00064529 |
| Cd48 | 7318.06628 | -1.345135974 | 1.32E-36 |
| Cd52 | 7316.65663 | -1.112779647 | 0.00016174 |
| Cd55 | 1591.1387 | -3.161958067 | 1.95E-34 |
| Cd72 | 345.693651 | -1.290447215 | 5.36E-16 |
| Cd79a | 145.856436 | -1.29241578 | 3.14E-07 |
| Cd79b | 163.715979 | -1.440614408 | 3.98E-06 |
| Cd80 | 2590.50394 | 3.691775214 | 1.58E-65 |
| Cd81 | 499.49844 | 3.689005351 | 4.73E-85 |
| Cd83 | 344.333933 | 2.81546128 | 8.42E-26 |
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| Cdc20 | 2397.71782 | 1.319469753 | 0.00014941 |
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| Cdc25c | 679.309868 | 1.247071131 | 3.07E-06 |
| Cdc34 | 2344.07825 | 1.116301987 | 4.04E-05 |
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| Cdc6 | 2332.06412 | 1.774669736 | 2.48E-10 |
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| Chchd4 | 639.732462 | 1.083027807 | 1.13E-21 |
| Chd3 | 10093.6848 | -2.122720424 | 2.99E-23 |
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| Chek1 | 1204.49902 | 1.460965 | 3.71E-08 |
| Chil5 | 490.988668 | -1.527768136 | 0.00020977 |
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| Chn2 | 476.29021 | 2.268935081 | 6.19E-07 |
| Chrm4 | 128.865615 | 1.088760354 | 0.00011869 |
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| Chrna9 | 228.850664 | -1.154028377 | 7.15E-06 |
| Chrnbl | 335.039232 | -1.562414732 | 1.09E-10 |
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| Coq7 | 336.709325 | 1.05602284 | 5.54E-08 |
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| Creb3l2 | 1446.9975 | 1.450582307 | 1.31E-20 |
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| Cth | 292.028216 | 3.416416877 | 2.63E-27 |
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| Ctss | 2281.21398 | -1.099103924 | 2.14E-11 |
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| Cycs | 2072.59972 | 1.465535404 | 5.89E-07 |
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| Cyp3a13 | 96.5114614 | -1.356646224 | 1.31E-05 |
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| Dapk1 | 286.418946 | -1.366185355 | 1.51E-11 |
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| Dctpp1 | 898.036787 | 1.316348017 | 0.00016258 |
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| Ddit4 | 2051.66343 | 1.051823284 | 0.00214191 |
| Ddn | 127.629423 | 1.457463715 | 2.02E-11 |
| Ddx1 | 4459.86773 | 1.35605616 | 6.88E-24 |
| Ddx20 | 1257.69457 | 1.070000283 | 1.17E-10 |
| Ddx39 | 3827.36667 | 1.206061685 | 1.80E-10 |
| Ddx58 | 2927.0352 | -1.621891176 | 2.05E-31 |
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| Degs2 | 229.142104 | -1.148292407 | 4.58E-10 |
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| Gas2l1 | 105.469564 | 1.141947837 | 0.00028216 |
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| Gpr137b-ps | 453.709864 | -1.694735083 | 5.81E-37 |
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| Gucy1a3 | 4725.14567 | 2.430746415 | 1.18E-13 |
| Gucy1b3 | 597.389086 | 1.441772767 | 7.53E-06 |
| Gusb | 2248.51038 | 1.113464216 | 1.67E-13 |
| Gvin1 | 1944.72432 | -1.141789362 | 4.23E-05 |
| Gzma | 169.313963 | -1.639794613 | 5.86E-05 |
| Gzmb | 34911.9027 | 3.636288092 | 4.47E-16 |
| Gzmc | 896.817857 | 3.596046039 | 2.80E-08 |
| H1f0 | 1079.49748 | 1.67237144 | 9.21E-05 |
| H2-Ab1 | 471.349084 | 2.132532841 | 0.00012517 |
| H2-DMA | 1112.61805 | -1.655698994 | 1.90E-15 |
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| Haus4 | 1259.65221 | 1.026568147 | 7.38E-06 |
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| Hcst | 1245.99053 | -2.602168897 | 1.74E-37 |
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| Higd1a | 2028.39223 | 1.020986917 | 0.00020713 |
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| Hipk2 | 5183.61908 | -1.762270703 | 1.32E-12 |
| Hirip3 | 1038.36921 | 1.595215189 | 1.29E-11 |
| Hist1h1a | 7387.31266 | 1.262615029 | 0.00760273 |
| Hist1h1t | 144.410267 | 1.908131645 | 1.16E-10 |
| Hist1h2ah | 1028.79413 | 1.517138127 | 0.0007381 |
| Hist1h2bc | 5590.87618 | 1.741484756 | 3.56E-05 |
| Hist1h2bh | 5514.26928 | 1.073331896 | 0.01045003 |
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| Hist1h2bk | 3528.31875 | 1.316933342 | 0.00155439 |
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| Hist1h3a | 4909.22746 | 1.23019769 | 0.00595776 |
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| Hist1h3e | 10344.9022 | 1.091620069 | 0.01287906 |
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| Hist1h4i | 1124.73805 | 1.007919521 | 0.02486412 |
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| Hivep3 | 6600.21144 | 1.836570572 | 1.85E-28 |
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| Hmbs | 1065.75839 | 1.154600329 | 3.86E-09 |
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| Hmgb3 | 810.156995 | 1.625166703 | 3.23E-11 |
| Hmgcr | 8121.50914 | 1.356744711 | 5.50E-10 |
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| Hmgn3 | 146.664589 | 1.87130634 | 6.24E-21 |
| Hmgn5 | 887.837233 | 1.017218425 | 0.0002897 |
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| Hn1l | 1471.6015 | 1.05485641 | 4.34E-12 |
| Hnrnpa1 | 17072.4031 | 1.314607221 | 1.82E-14 |
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| Hnrnp1l | 1823.97617 | 1.766342862 | 2.68E-42 |
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| Hsd17b11 | 798.818012 | -1.000589724 | 1.04E-12 |
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| Hspa13 | 551.153931 | 1.145313208 | 7.01E-05 |
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| Hspa9 | 10623.5225 | 1.477652295 | 3.71E-27 |
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| Hunk | 128.154915 | 1.530263847 | 1.64E-09 |
| Hyal2 | 226.126328 | 1.201623869 | 4.57E-06 |
| Hyou1 | 4553.05729 | 1.500732071 | 1.47E-08 |
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| ldnk | 1381.43423 | -1.131164431 | 1.94E-09 |
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| lfit1 | 183.154463 | -1.364362854 | 7.05E-06 |
| lfit1bl1 | 519.627819 | -3.442500222 | 3.48E-35 |
| lfit1bl2 | 124.903973 | -1.212430403 | 4.04E-06 |
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| lfitm1 | 1930.87479 | -2.50591708 | 0.00137777 |
| lfitm10 | 326.992945 | -2.279378886 | 5.28E-16 |
| lfnar2 | 1706.9671 | -1.242424395 | 1.29E-09 |
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| lfngr1 | 12643.5946 | -1.024366817 | 4.24E-09 |
| lfngr2 | 1311.28513 | -2.042855855 | 8.82E-25 |
| lfrd2 | 1130.9832 | 1.192807175 | 2.38E-13 |
| lft43 | 160.124052 | 1.370387349 | 4.18E-11 |
| lgf2bp2 | 351.545432 | -2.555894921 | 8.16E-15 |
| lgf2bp3 | 1320.83122 | 1.006712824 | 3.21E-05 |
| lgfbp4 | 3108.27514 | -3.078706832 | 1.88E-17 |
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| ll12rb2 | 11602.7669 | 1.207012749 | 1.03E-09 |
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| ll17ra | 7216.99104 | -1.28140011 | 7.79E-14 |
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| ll2ra | 23588.2245 | 1.827737965 | 3.29E-11 |
| ll4ra | 11740.0029 | -1.350309017 | 5.66E-16 |
| ll6ra | 7075.76139 | -3.205178923 | 2.62E-19 |
| ll6st | 9655.86854 | -1.979626211 | 3.04E-09 |
| ll7r | 6069.90292 | 1.018854919 | 4.40E-06 |
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| lpo4 | 1536.17044 | 1.290562111 | 1.58E-09 |
| lpo5 | 9249.76824 | 1.207656772 | 2.79E-12 |
| lrak1bp1 | 187.017775 | 1.355512305 | 1.25E-10 |
| lrak4 | 1220.50424 | -1.044694031 | 2.60E-16 |
| lrf1 | 6084.24023 | -1.988042873 | 1.03E-19 |
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| lrgc1 | 149.572205 | -1.378701558 | 2.49E-11 |
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| lrgm2 | 2478.74894 | -1.824206906 | 2.16E-29 |
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| ltga7 | 236.089348 | -2.381597411 | 0.0001546 |
| ltgae | 4483.4634 | -3.948670256 | 3.96E-42 |
| ltgav | 3544.66632 | 1.134194967 | 3.41E-14 |
| ltgax | 96.8103919 | -1.56348821 | 2.24E-06 |
| ltgb3 | 4529.41622 | -1.573409665 | 9.08E-16 |
| ltgb7 | 10963.8075 | -2.087545038 | 1.68E-16 |
| ltih5 | 2572.40964 | 2.012405298 | 1.22E-15 |
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| ltm2c | 1724.96864 | -1.256855931 | 3.93E-07 |
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| Kbtbd3 | 359.716036 | -1.036456303 | 1.04E-05 |

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| Kcnc1 | 337.551733 | -2.444998546 | 5.32E-15 |
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| Kdelc2 | 504.168688 | 1.276159278 | 3.73E-12 |
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| Kif2c | 1660.37926 | 1.491862362 | 9.84E-08 |
| Kif4 | 3525.42482 | 1.125204914 | 5.06E-05 |
| Kif5a | 125.918968 | 1.074839512 | 1.47E-07 |
| Kifap3 | 576.836567 | 1.481035124 | 5.49E-18 |
| Kifc2 | 176.847731 | -1.469063474 | 6.65E-10 |
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| Kirrel3 | 391.266254 | -1.120267099 | 1.75E-08 |
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| Klhl3 | 986.971671 | -1.093828647 | 0.0002281 |
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| Klhl42 | 1637.74439 | -1.012193247 | 0.00043338 |
| Klhl6 | 6474.64204 | -1.311362698 | 1.22E-15 |
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| Ksr2 | 531.372817 | -2.761832356 | 3.14E-13 |

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| Lag3 | 2550.40185 | 2.060747606 | 2.46E-12 |
| Lair1 | 956.178572 | -2.225655718 | 1.07E-08 |
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| Lap3 | 1843.54599 | 1.074423064 | 2.11E-07 |
| Lars | 4814.09867 | 1.286775233 | 8.99E-21 |
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| Lca5 | 815.899278 | -1.165833049 | 7.31E-07 |
| Lcn4 | 328.624238 | -2.125019313 | 5.12E-15 |
| Ldha | 40325.6603 | 1.765312543 | 8.36E-07 |
| Ldhb | 217.524347 | 1.570739618 | 1.25E-15 |
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| Ldlrad4 | 3339.02395 | -1.931959938 | 2.23E-11 |
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| Leng9 | 265.462708 | -1.245507776 | 9.32E-07 |
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| Lhfpl2 | 162.198972 | 1.598988717 | 3.41E-12 |
| Lhfpl3 | 212.630084 | -1.719394596 | 1.34E-10 |
| Lif | 597.647527 | 1.08694008 | 0.02197496 |
| Lig1 | 5627.21513 | 1.297215526 | 6.16E-06 |
| Limd2 | 10800.3894 | -1.087795982 | 2.48E-06 |
| Lipg | 186.26325 | 2.136443414 | 8.95E-14 |
| Litaf | 1090.80485 | 1.602957864 | 1.09E-14 |
| Lman1 | 1879.77449 | 1.268136796 | 3.27E-25 |
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| Lmnb2 | 1236.08474 | 1.006212413 | 5.76E-08 |
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| Lncpint | 13041.5587 | -1.342063784 | 1.61E-06 |
| Lonp1 | 3985.32145 | 1.668301049 | 3.78E-12 |
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| Lonrf3 | 193.491459 | 1.075069982 | 3.46E-07 |
| Lpar3 | 120.751903 | 1.825595592 | 5.05E-18 |
| Lpgat1 | 2477.67032 | 1.056771552 | 1.70E-08 |
| Lrmp | 7299.20991 | 1.025393493 | 1.73E-13 |
| Lrp8 | 1277.81227 | 1.753587001 | 5.72E-17 |
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| Lrrc59 | 3904.70881 | 1.125735346 | 3.37E-08 |
| Lrrc61 | 512.497648 | -1.191994332 | 1.37E-08 |
| Lrrc75b | 312.686566 | -2.21274227 | 9.18E-15 |
| Lrrc8a | 173.086375 | -1.193386727 | 1.77E-07 |
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| Lrrk1 | 1614.14883 | 1.782811052 | 1.78E-11 |
| Lrrk2 | 126.359391 | 1.488948289 | 1.41E-09 |
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| Lsm3 | 964.952749 | 1.058930171 | 8.36E-06 |
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| Ltb | 5681.39537 | -2.291841247 | 3.14E-10 |
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| Ly6g5b | 126.253772 | -1.601484887 | 6.94E-08 |
| Lyar | 1922.70832 | 1.577796234 | 6.25E-18 |
| Lyn | 305.055039 | 1.002084367 | 0.00079452 |
| Lynx1 | 109.811693 | -1.410298972 | 6.56E-13 |
| Lypd6b | 1504.83267 | -3.299782819 | 3.59E-28 |
| Lysmd1 | 390.446631 | -1.012658339 | 8.97E-05 |
| Maats1 | 515.81656 | 4.419636497 | 2.80E-119 |
| Macf1 | 51087.4465 | -1.017235123 | 1.47E-14 |
| Madd | 8582.06223 | -1.02934828 | 3.99E-16 |
| Maff | 640.770022 | -1.239690763 | 0.0036069 |
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| Maged2 | 203.069742 | 1.372114265 | 1.87E-09 |
| Malat1 | 63054.595 | -1.162704398 | 0.00055033 |
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| Maml3 | 10282.0519 | -1.128343191 | 2.48E-05 |
| Maneal | 208.63906 | -1.175931704 | 3.50E-11 |
| Manf | 2092.6358 | 1.094844536 | 0.00014175 |
| Map3k20 | 360.289058 | 3.377877109 | 1.74E-42 |
| Map3k8 | 4629.55279 | -1.448228357 | 4.04E-07 |
| Map4k3 | 762.4649 | -1.027443716 | 5.07E-08 |
| Map9 | 434.184131 | 1.923572802 | 1.10E-23 |
| Mapk1ip1 | 1009.19663 | -1.482737751 | 8.33E-08 |
| March3 | 1904.49372 | -2.274882177 | 8.42E-14 |
| March8 | 304.575967 | 2.366939304 | 4.14E-37 |
| Marcks | 116.295154 | 1.082681847 | 2.88E-07 |
| Marcks1 | 628.797687 | 2.411164136 | 7.33E-13 |
| Mars | 3452.46167 | 1.788840554 | 1.04E-19 |
| Marveld2 | 401.652107 | 1.351836607 | 1.27E-15 |
| Mast2 | 3313.15719 | 1.306001334 | 2.28E-19 |
| Mastl | 1916.34723 | 1.052329247 | 0.0001145 |
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| Mcm4 | 7644.59954 | 1.085355389 | 1.85E-05 |
| Mcm5 | 8887.73617 | 1.33763104 | 1.23E-05 |
| Mcm6 | 12305.3399 | 1.251034976 | 1.72E-07 |
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| Mcm8 | 825.93972 | 1.427297934 | 7.47E-12 |
| Mcoln2 | 2274.54466 | -1.214752986 | 3.22E-06 |
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| Mex3b | 301.566279 | -1.03039447 | 4.29E-05 |
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| Mfsd13a | 597.542921 | 1.553552787 | 1.36E-13 |
| Mfsd2a | 622.232293 | 1.173887513 | 0.00012029 |
| Mgat4a | 4856.69162 | -1.230829146 | 7.03E-07 |
| Mgme1 | 474.518255 | 1.13460876 | 3.09E-15 |
| Mgst2 | 7055.33618 | -1.988612479 | 6.86E-09 |
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| Mki67 | 36660.7574 | 1.280349027 | 9.98E-06 |
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| Mlf2 | 2286.97298 | 1.036067262 | 0.00030258 |
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| Mmd | 1126.90187 | 1.05774752 | 3.81E-16 |
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| Mob3c | 756.323581 | -1.138674184 | 1.17E-13 |
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| Morf4l2 | 2924.70615 | 1.213738878 | 1.42E-07 |
| Morn4 | 121.686407 | 1.283326242 | 2.57E-15 |
| Mospd1 | 637.769053 | -1.076314963 | 6.20E-17 |
| Mpp6 | 2522.61966 | 1.169513927 | 3.94E-10 |
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| Mpzl3 | 856.076809 | 2.243386779 | 2.42E-23 |
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| Mrpl11 | 805.907387 | 1.029885639 | 5.17E-06 |
| Mrpl12 | 1032.60247 | 1.081323424 | 0.00036212 |
| Mrpl28 | 1015.6892 | 1.230002866 | 9.32E-09 |
| Mrpl45 | 1399.82768 | 1.286416984 | 1.19E-10 |
| Mrpl51 | 1260.41529 | 1.023541781 | 3.21E-05 |

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| Mrps6 | 1217.7885 | 1.558720794 | 1.62E-16 |
| Mrps7 | 1232.77548 | 1.118314582 | 8.08E-08 |
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| Mrvi1 | 159.229917 | -1.218637085 | 2.58E-10 |
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| Ms4a4c | 1238.95371 | -1.675386034 | 0.0001895 |
| Ms4a4d | 119.82684 | -1.087581069 | 4.79E-11 |
| Ms4a6b | 17552.1342 | -1.8339251 | 1.04E-42 |
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| Mt2 | 145.941008 | 2.059783106 | 1.66E-10 |
| Mtbp | 2682.34484 | 1.28822736 | 2.67E-13 |
| Mtf2 | 3506.61256 | 1.096898517 | 2.93E-06 |
| Mtfp1 | 121.88191 | 1.051755377 | 4.33E-05 |
| Mtfr2 | 644.868993 | 1.388780344 | 1.70E-08 |
| Mthfd1 | 2872.78131 | 1.147721163 | 5.19E-18 |
| Mthfd2 | 2650.43928 | 1.718973355 | 7.23E-27 |
| Mturn | 1668.24303 | -3.361998374 | 5.26E-43 |
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| Myb | 2303.05157 | 1.194006337 | 0.00098509 |
| Mybbp1a | 9517.85905 | 1.236359361 | 9.25E-09 |
| Mybl2 | 2062.20642 | 1.82105315 | 8.06E-15 |
| Mybpc3 | 199.67689 | -1.594202864 | 8.59E-24 |
| Myh10 | 1583.71457 | 1.831166964 | 1.36E-20 |
| Myl10 | 682.591741 | -2.823910673 | 1.07E-20 |
| Mylip | 1496.19871 | -3.200911173 | 8.76E-97 |
| Myo10 | 3878.51188 | 3.967205566 | 6.40E-38 |
| Myo16 | 170.594695 | 1.352599115 | 3.22E-06 |
| Myo18b | 124.446528 | -1.523353664 | 1.67E-07 |
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| Myo1e | 3576.81101 | 2.087908809 | 4.32E-14 |
| Myo1f | 4739.34201 | -1.457166277 | 1.97E-13 |
| Myo3b | 2100.91731 | -4.027802915 | 4.56E-27 |
| N4bp2l1 | 1586.88697 | -1.344934997 | 3.62E-06 |
| Nab2 | 977.694159 | 1.861537478 | 3.77E-12 |
| Nacad | 362.79626 | -1.707256301 | 1.19E-20 |
| Nacc1 | 4432.75878 | 1.040577999 | 1.48E-06 |
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| Nasp | 5825.56813 | 1.395724946 | 3.54E-09 |
| Nav1 | 309.38892 | 1.322044828 | 0.00024145 |
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| Ncf4 | 1573.32947 | -1.023840064 | 4.31E-15 |
| Nck2 | 5124.49375 | -1.41511155 | 1.19E-05 |
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| Ndufa4 | 1662.54396 | 1.014248652 | 3.26E-05 |
| Neat1 | 5424.40716 | -1.205582873 | 0.00141342 |
| Neb | 4468.73402 | 1.947569839 | 9.46E-23 |
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| Nek4 | 356.660684 | 1.528945715 | 5.51E-31 |
| Nek6 | 2091.00486 | 3.496831381 | 1.70E-53 |
| Nemp1 | 1727.5495 | 1.045051439 | 2.09E-12 |
| Nespas | 212.929148 | 1.094132017 | 0.00049964 |
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| Nfia | 1803.35084 | -1.544393316 | 5.70E-06 |
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| Nop16 | 1160.67566 | 1.267238072 | 3.37E-12 |
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| Osbp15 | 1700.45747 | -1.09488937 | 4.64E-16 |
| Osgin2 | 980.919591 | 1.201456068 | 1.05E-13 |
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| Pag1 | 7662.63137 | -1.637980082 | 1.20E-15 |
| Palb2 | 836.461193 | 1.275682782 | 9.21E-11 |
| Palm3 | 834.622448 | -2.752170638 | 2.42E-14 |
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| Parp12 | 494.333799 | -1.610755532 | 2.60E-16 |
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| Parvb | 92.7355155 | -1.548383039 | 2.28E-11 |
| Pask | 968.621333 | 1.45530546 | 3.74E-11 |
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| Pcx | 927.894557 | 2.163460446 | 2.47E-38 |
| Pcyox1l | 358.471865 | 1.25492174 | 2.81E-12 |
| Pcyt1a | 2184.2779 | 1.296728306 | 9.71E-09 |
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| Pfas | 4781.96089 | 1.969134405 | 2.26E-27 |
| Pfkl | 4437.34421 | 1.041874095 | 0.00226691 |
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| Pgam2 | 346.903781 | -1.356781207 | 1.81E-15 |
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| Pglyrp2 | 1458.02946 | -2.69271351 | 9.03E-56 |
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| Phb2 | 2838.85244 | 1.364840576 | 6.54E-08 |
| Phf1 | 721.598853 | -1.790594394 | 9.30E-16 |
| Phf11c | 1050.32823 | -1.551386212 | 3.23E-11 |
| Phf21a | 8300.85134 | -1.110549999 | 0.00016048 |
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| Phlda3 | 202.260328 | 1.775254012 | 1.61E-08 |
| Phldb1 | 340.895234 | 1.427641784 | 1.97E-07 |
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| Phtf2 | 2413.9239 | 1.022054375 | 1.81E-05 |
| Pi4k2b | 771.56173 | 1.278952392 | 6.91E-29 |
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| Pigz | 203.410282 | -1.548182072 | 1.83E-16 |
| Pik3ap1 | 2262.08821 | 1.003718987 | 0.0009806 |
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| Pik3ip1 | 3258.40359 | -2.543626567 | 9.79E-27 |
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| Pik3r5 | 10971.4842 | -1.508254525 | 1.26E-33 |
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| Pisd-ps1 | 716.031589 | -1.098822646 | 1.49E-07 |
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| Pkm | 35870.2944 | 1.013063676 | 0.00947294 |
| Pkmyt1 | 1192.82082 | 1.106277059 | 6.57E-07 |
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| Pkp2 | 169.164216 | 1.648139972 | 1.45E-08 |
| Pla1a | 493.528209 | 2.7098868 | 5.28E-23 |
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| Plekhg3 | 737.174784 | -1.36881567 | 1.86E-07 |
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| Plod3 | 596.213231 | 1.728133404 | 3.57E-13 |
| Pls1 | 701.26224 | 1.102944251 | 0.00024114 |
| Plscr1 | 2273.91886 | 2.167240754 | 3.74E-23 |
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| Plxdc2 | 2961.16146 | 1.026675922 | 1.81E-05 |
| Plxna1 | 296.541349 | 1.756257179 | 3.59E-16 |
| Plxna3 | 265.873933 | 2.548612992 | 1.97E-18 |
| Plxnb2 | 173.263236 | 1.000493582 | 0.00478615 |
| Plxnc1 | 4390.71623 | 2.060629896 | 8.47E-25 |
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| Pmel | 958.360025 | -2.155370177 | 1.05E-56 |
| Pmvk | 850.517277 | 1.441330824 | 3.74E-18 |
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| Pnrc1 | 4768.01624 | -1.074815534 | 1.49E-07 |
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| Podxl | 230.449803 | -1.040282265 | 3.79E-05 |
| Pola1 | 10979.9116 | 1.266860557 | 0.00080554 |
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| Pole3 | 1119.36987 | 1.341266861 | 1.72E-08 |
| Polk | 2026.99676 | 1.123427003 | 3.20E-07 |
| Polq | 2765.14322 | 1.764304912 | 2.91E-11 |
| Polr2c | 1473.16184 | 1.026892011 | 1.83E-05 |
| Polr2e | 1378.41718 | 1.400335122 | 2.43E-10 |
| Polr2f | 1133.0097 | 1.101791287 | 1.06E-07 |
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| Popdc2 | 140.947093 | 1.518884052 | 4.02E-15 |
| Pou6f1 | 1035.13499 | -3.499449175 | 1.03E-40 |
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| Ppfibp1 | 1120.15163 | 1.630240193 | 5.30E-24 |
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| Prdm1 | 529.355157 | 2.167514169 | 1.75E-10 |
| Prdm11 | 1179.50041 | -1.443527733 | 1.25E-09 |
| Prdm5 | 304.261146 | 2.259646265 | 2.01E-12 |
| Prdx2 | 2386.99221 | 1.092600168 | 1.41E-05 |
| Prelid2 | 6207.05343 | -1.169307159 | 1.38E-08 |
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| Prf1 | 3655.60288 | 3.97534619 | 4.63E-27 |
| Prickle2 | 129.588842 | 1.702462782 | 2.08E-15 |
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| Prim2 | 5960.15317 | 1.179781544 | 4.17E-06 |
| Prkaca | 1737.52817 | 1.07744887 | 1.19E-05 |
| Prkacb | 9440.63147 | -1.61649778 | 1.16E-53 |
| Prkar1b | 209.536319 | -1.69893397 | 2.13E-08 |
| Prkcq | 27287.501 | -1.298342129 | 1.37E-11 |
| Prkcz | 974.269715 | -2.410926639 | 6.49E-15 |
| Prkd2 | 5927.52815 | -1.081730819 | 1.44E-10 |
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| Prmt5 | 2957.75143 | 1.308071869 | 2.09E-09 |
| Prmt8 | 83.4476107 | 1.094446017 | 1.38E-08 |
| Prpf19 | 3958.95074 | 1.241981544 | 3.75E-08 |
| Prpf40b | 269.938432 | 1.151783782 | 1.20E-06 |
| Prr29 | 161.459921 | -1.27126865 | 7.86E-10 |
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| Psmc2 | 3160.50901 | 1.081088639 | 1.03E-09 |
| Psmc3 | 3816.98281 | 1.044719417 | 4.85E-05 |
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| Psmc4 | 3029.7318 | 1.090745127 | 1.19E-06 |

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| Psmc5 | 2349.36225 | 1.257485927 | 2.39E-09 |
| Psmd1 | 4227.60035 | 1.14676746 | 2.88E-15 |
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| Psmd7 | 2336.87565 | 1.181663565 | 2.88E-12 |
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| Pter | 309.428591 | 1.85794843 | 8.38E-19 |
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| Ptk2 | 454.725104 | 1.079935907 | 2.08E-07 |
| Ptma | 22492.2651 | 1.002823625 | 0.00083859 |
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| Rad51 | 2153.76041 | 1.57941126 | 1.10E-10 |
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| Rel | 4633.77293 | 1.048214673 | 1.70E-08 |
| Rem2 | 117.520745 | 1.383943659 | 2.93E-13 |
| Rere | 7028.24761 | -1.247674523 | 1.19E-05 |
| Ret | 98.0137474 | -1.998879302 | 6.42E-09 |
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| Scrib | 1809.20653 | 1.224321009 | 1.65E-08 |
| Sdc1 | 621.908362 | 4.403511426 | 1.10E-44 |
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| Senp7 | 3978.25332 | -1.280655127 | 1.11E-05 |
| Sephs2 | 1424.10076 | 1.074790592 | 4.75E-05 |
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| Serf1 | 113.61028 | 1.02401304 | 1.16E-05 |
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| Sh2d3c | 4000.14072 | -1.099202698 | 8.50E-12 |
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| Skap1 | 33572.3079 | -1.112482143 | 1.57E-05 |
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| Slamf7 | 1170.02037 | -1.284549414 | 3.64E-08 |
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| Sln9 | 1256.2152 | 1.215835634 | 1.88E-05 |
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| Smad7 | 3729.46082 | -1.438735483 | 7.09E-20 |
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| Sntb2 | 3542.87473 | -1.976468514 | 4.95E-24 |
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| Snx24 | 94.1929884 | 1.149549169 | 3.40E-08 |
| Snx29 | 3715.62165 | -1.080107443 | 2.78E-05 |
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| Sobp | 115.346238 | 1.442483724 | 1.91E-11 |

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| Soga1 | 132.451697 | 1.235769216 | 3.61E-09 |
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| Sorcs2 | 2161.41588 | -5.089620595 | 7.59E-95 |
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| Sp4 | 5118.9555 | -1.219613217 | 1.59E-08 |
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| Spata24 | 405.095532 | 1.036060722 | 3.05E-06 |
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| Spata7 | 242.822196 | 1.789104248 | 1.16E-16 |
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| Ssx2ip | 587.354058 | 1.617328287 | 4.24E-29 |
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| St14 | 1225.75303 | 2.352602102 | 2.11E-25 |
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| Stat3 | 13649.2679 | 1.705152971 | 2.36E-14 |

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| Stau2 | 211.570431 | 1.967764717 | 9.84E-20 |
| Stil | 2877.26298 | 1.053103935 | 4.74E-05 |
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| Stk39 | 16724.3654 | 1.458139118 | 1.69E-10 |
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| Stom | 126.892421 | 1.114964263 | 2.33E-06 |
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| Tex15 | 414.744459 | 2.17922185 | 5.37E-18 |
| Tex45 | 155.674371 | -1.601414664 | 2.45E-05 |
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| Thap3 | 956.5961 | -1.672964668 | 3.53E-13 |
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| Timeless | 2597.21497 | 1.278098626 | 9.33E-09 |
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| Timm50 | 1218.16037 | 1.659167093 | 2.37E-11 |
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| Tmem237 | 374.636495 | 1.228969369 | 2.41E-12 |
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| Tnn | 258.937284 | -1.622527793 | 8.38E-06 |
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| Tns3 | 117.318418 | 1.491308378 | 4.15E-11 |
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| Traf4 | 1659.87605 | 1.094520409 | 8.18E-06 |
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| Trav14-1 | 263.713801 | -1.204694492 | 6.16E-06 |
| Trav15-2-dv6-2 | 172.054012 | -1.093193364 | 5.40E-07 |
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| Trdc | 505.5109 | -1.176206106 | 1.85E-10 |
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| Trim15 | 174.762977 | -1.030930706 | 1.51E-09 |
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| Trp53cor1 | 137.24016 | 1.614070309 | 7.21E-10 |
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| Ttc38 | 1083.95581 | -1.495613534 | 1.40E-26 |
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| Tuba1b | 11787.2214 | 1.378410785 | 0.00020246 |
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| Tubb4b | 6269.32948 | 1.275544503 | 0.00022631 |
| Tubb6 | 1303.69409 | 3.133914723 | 5.74E-28 |
| Tube1 | 614.731415 | 1.22010937 | 6.18E-10 |
| Tubg1 | 1265.13938 | 1.465758401 | 9.57E-08 |
| Tufm | 1666.7358 | 1.411459178 | 1.38E-08 |
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| Twist2 | 171.10528 | 2.595617757 | 7.09E-35 |
| Twsg1 | 2382.73598 | 2.098599868 | 1.78E-71 |
| Txk | 7742.13798 | -2.514810688 | 3.84E-28 |
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| Ube2c | 2178.98498 | 1.023657808 | 0.00354072 |
| Ube2e2 | 423.074085 | 2.119231806 | 1.94E-16 |
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| Umps | 2059.70574 | 1.391089822 | 1.38E-10 |
| Unc119 | 385.051393 | 1.010851074 | 0.00037799 |
| Unc5a | 183.212878 | -1.559304501 | 9.68E-13 |
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| Ung | 1085.14296 | 1.356101987 | 9.25E-09 |
| Upp1 | 146.541986 | 1.993733872 | 1.01E-10 |
| Uqcr10 | 1750.6351 | 1.102948135 | 0.00035342 |
| Uqcrq | 1891.26699 | 1.13393752 | 0.00040476 |
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| Usp50 | 270.662999 | -1.115412515 | 4.23E-12 |
| Usp6nl | 2071.0444 | 1.183593125 | 1.52E-05 |
| Ust | 9082.39353 | -1.424864643 | 3.91E-06 |
| Utp11 | 1276.56884 | 1.076892801 | 5.31E-21 |
| Utp20 | 4678.33136 | 1.014886655 | 3.74E-12 |
| Utrn | 35605.6445 | -1.31180473 | 2.73E-08 |
| Vash1 | 134.378784 | 1.191046166 | 1.64E-07 |
| Vat1 | 1118.40684 | 1.041138975 | 2.94E-06 |
| Vav2 | 1597.71382 | 1.491919247 | 5.56E-10 |
| Vcan | 163.362358 | 1.153113863 | 2.60E-08 |
| Vcl | 1298.00568 | 1.220674818 | 3.99E-08 |
| Vdac1 | 5735.05355 | 1.092338493 | 1.65E-08 |
| Vegfa | 888.162505 | 1.117414142 | 0.01198287 |
| Vipr1 | 961.114915 | -3.436004096 | 1.73E-65 |
| Vldlr | 159.608153 | 1.628967767 | 0.00012199 |
| Vmac | 389.396593 | -1.290081953 | 6.68E-09 |
| Vmn2r96 | 278.41662 | -1.69345204 | 2.14E-07 |
| Vmn2r97 | 114.649979 | -1.108000184 | 7.40E-05 |
| Vrk3 | 1743.57767 | -1.683183038 | 5.53E-29 |
| Vsig2 | 154.725088 | 2.023748349 | 7.04E-17 |
| Vwa3b | 312.199734 | -2.968112341 | 6.87E-30 |
| Vwa5a | 1738.12363 | -1.446333331 | 7.05E-15 |
| Vwa8 | 4072.28829 | 1.056890297 | 8.01E-05 |
| Wdfy2 | 829.832232 | 1.036229097 | 6.99E-11 |
| Wdhd1 | 3389.77045 | 1.433337041 | 2.74E-13 |
| Wdpcp | 615.391296 | 1.088819004 | 0.00020754 |
| Wdr18 | 1491.42434 | 1.372993476 | 9.93E-15 |
| Wdr31 | 110.218831 | 1.134355965 | 5.87E-08 |
| Wdr35 | 344.763711 | 2.112731552 | 6.95E-34 |
| Wdr37 | 5546.37862 | -1.020956818 | 7.01E-05 |
| Wdr41 | 832.789679 | -1.18322254 | 1.34E-05 |
| Wdr49 | 168.092506 | -1.386923977 | 2.20E-07 |
| Wdr54 | 105.43829 | 1.048884977 | 0.0001178 |

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| Wdr60 | 215.335724 | 2.189688839 | 2.62E-50 |
| Wdr62 | 1064.9845 | 1.189765022 | 8.04E-06 |
| Wdr66 | 150.525322 | -1.185863139 | 1.63E-06 |
| Wdr76 | 2990.63661 | 1.05229435 | 9.12E-07 |
| Wdr78 | 892.616968 | -1.138933089 | 1.47E-05 |
| Wdr86 | 180.81292 | -1.332166358 | 3.38E-12 |
| Wdr95 | 204.954659 | -2.065367684 | 1.33E-09 |
| Wnk3 | 191.545726 | -1.062273804 | 0.0017177 |
| Wnt10b | 436.063262 | 3.436232417 | 1.80E-47 |
| Xbp1 | 2329.0352 | 1.370453515 | 2.14E-06 |
| Xkr5 | 334.910512 | 1.118517963 | 6.06E-07 |
| Xpot | 3864.01643 | 1.280116388 | 2.27E-27 |
| Xrra1 | 219.291454 | -1.034113574 | 1.47E-07 |
| Yap1 | 144.345003 | 1.557603214 | 1.18E-19 |
| Yars | 3014.90448 | 1.496837374 | 1.31E-25 |
| Ybx1 | 14482.4541 | 1.637367192 | 1.46E-12 |
| Ybx3 | 8615.30496 | 1.733783386 | 6.72E-23 |
| Ypel1 | 563.44189 | -1.572524695 | 4.12E-14 |
| Ypel2 | 866.976248 | 2.077999358 | 2.64E-22 |
| Ypel3 | 1408.71087 | -2.189405468 | 4.50E-23 |
| Ypel5 | 1603.45684 | -1.313690846 | 1.97E-13 |
| Zan | 195.469518 | 1.499549061 | 1.11E-08 |
| Zbp1 | 1941.61346 | -1.649836454 | 3.50E-12 |
| Zbtb10 | 257.108331 | -1.140220154 | 9.45E-08 |
| Zbtb20 | 20200.6993 | -1.415307045 | 5.42E-05 |
| Zbtb32 | 2300.139 | 4.230201795 | 1.07E-85 |
| Zbtb4 | 1961.2313 | -2.088037341 | 5.38E-23 |
| Zbtb7b | 424.75006 | 1.598386688 | 5.40E-06 |
| Zbtb8a | 439.197845 | -1.088249273 | 2.79E-13 |
| Zc3h12a | 2008.14979 | -1.389644428 | 2.88E-08 |
| Zc3h12c | 100.148234 | 1.250434157 | 5.00E-11 |
| Zc3h6 | 1927.07965 | -1.577518213 | 0.00051642 |
| Zdhhc15 | 2025.87262 | -1.243844073 | 2.27E-05 |
| Zdhhc17 | 2055.07023 | -1.283026452 | 1.70E-07 |
| Zdhhc19 | 146.567533 | -1.159810055 | 1.52E-07 |
| Zdhhc2 | 1170.98791 | 1.144440354 | 1.99E-06 |
| Zeb2 | 954.440628 | 3.096862327 | 5.10E-35 |
| Zfand4 | 530.101024 | 1.051282993 | 8.06E-05 |
| Zfp12 | 941.458963 | -1.028203273 | 2.70E-06 |
| Zfp219 | 1419.41447 | 1.851142555 | 8.42E-26 |
| Zfp260 | 1757.22765 | -1.0954164 | 5.16E-09 |
| Zfp280b | 3439.82876 | 1.815336187 | 1.49E-20 |
| Zfp36 | 2519.49832 | -1.48027565 | 4.87E-07 |
| Zfp362 | 1686.93057 | -1.099783083 | 1.53E-07 |
| Zfp386 | 2481.33773 | -1.950946439 | 3.20E-26 |
| Zfp41 | 429.369351 | 1.024273834 | 2.24E-06 |
| Zfp429 | 212.297026 | -1.080032709 | 7.70E-08 |
| Zfp455 | 233.797461 | -1.080449123 | 2.37E-06 |
| Zfp518b | 175.180346 | 1.004725986 | 1.49E-07 |
| Zfp52 | 1049.81408 | 1.693307071 | 5.58E-13 |

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| Zfp608 | 3303.22426 | 1.432178901 | 8.29E-07 |
| Zfp652 | 5703.41057 | -1.929393652 | 1.01E-19 |
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| Zfp768 | 145.919021 | 1.658316982 | 1.23E-13 |
| Zfp773 | 230.539564 | -1.194074287 | 9.78E-05 |
| Zfp831 | 3073.29587 | -1.231769353 | 5.96E-05 |
| Zfp862-ps | 344.424951 | 1.675557355 | 7.51E-21 |
| Zfp870 | 135.845694 | 1.881968438 | 3.53E-23 |
| Zfp874b | 454.276814 | -1.198764743 | 6.19E-12 |
| Zfp945 | 1012.7188 | -2.492680701 | 4.97E-21 |
| Zfp948 | 718.463564 | 1.652253301 | 7.96E-06 |
| Zfp976 | 113.176877 | 1.28307821 | 4.75E-07 |
| Zfr2 | 217.001496 | -1.438129588 | 8.65E-07 |
| Zgrf1 | 2885.80535 | 1.157649105 | 3.54E-06 |
| Zmynd12 | 136.226969 | -1.360375617 | 1.83E-07 |
| Znrf2 | 9463.49173 | -1.180446505 | 9.92E-10 |
| Zwilch | 1279.41126 | 1.693535843 | 8.69E-17 |