|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Gene*** | ***Gene*** | ***Gene*** | ***Gene*** | ***Gene*** | ***Gene*** | ***Gene*** | ***MS\_round2*** | ***MS\_round3*** | ***MS\_round4*** |
| **GRB2** | 122 | N/A | 4 | 4 |  | 106 | 122 | 111 | 110 |
| **DNM2** | 138 | 14.37129174 | 7 | 4 |  | 114 | 138 | 105 | 132 |
| **CBL** | 108 | 14.45699621 | 4 | 4 |  | 108 | 98 | 94 | 84 |
| **SOS1** | 91 | 14.45699621 | 4 | 4 |  | 88 | 91 | 68 | 75 |
| **BAT2** | 89 | 13.62879424 | 25 | 4 |  | 89 | 59 | 76 | 68 |
| **ARAP1** | 61 | 14.45699621 | 4 | 4 |  | 34 | 61 | 33 | 59 |
| **ASAP1** | 56 | 14.45699621 | 4 | 4 |  | 56 | 56 | 44 | 54 |
| **DNM1** | 53 | 14.45699621 | 4 | 4 |  | 41 | 53 | 43 | 52 |
| **PIK3R2** | 53 | 8.485025971 | 30 | 4 |  | 53 | 52 | 40 | 41 |
| **CBLB** | 49 | 14.45699621 | 4 | 4 |  | 42 | 49 | 33 | 45 |
| **SOS2** | 38 | 14.45699621 | 4 | 4 |  | 34 | 38 | 16 | 37 |
| **KIFC1** | 36 | 14.43472629 | 5 | 4 |  | 19 | 28 | 15 | 36 |
| **WASL** | 34 | 14.45699621 | 4 | 4 |  | 28 | 34 | 29 | 29 |
| **WIPF2** | 34 | 14.45699621 | 4 | 4 |  | 26 | 30 | 25 | 34 |
| **WIPF1** | 29 | 14.45699621 | 4 | 4 |  | 19 | 29 | 23 | 23 |
| **DNM3** | 28 | 14.45699621 | 4 | 4 |  | 23 | 28 | 19 | 28 |
| **SH3PXD2B** | 27 | 14.45699621 | 4 | 4 |  | 26 | 22 | 19 | 27 |
| **PIK3R1** | 22 | 13.88351802 | 8 | 4 |  | 22 | 20 | 15 | 18 |
| **WIPF3** | 18 | 14.45699621 | 4 | 4 |  | 14 | 18 | 13 | 15 |
| **SGK269** | 13 | 14.45699621 | 4 | 4 |  | 13 | 12 | 10 | 5 |
| **GAB1** | 12 | 14.45699621 | 4 | 4 |  | 12 | 5 | 11 | 7 |
| **RBM15** | 12 | 14.25999135 | 5 | 4 |  | 10 | 2 | 12 | 4 |
| **WDR6** | 12 | 9.585305816 | 30 | 4 |  | 12 | 9 | 7 | 4 |
| **DIAPH1** | 11 | 14.45699621 | 4 | 4 |  | 4 | 10 | 3 | 11 |
| **MAP4K5** | 11 | 14.45699621 | 4 | 4 |  | 6 | 10 | 8 | 11 |
| **PTPN23** | 11 | 14.39757453 | 5 | 4 |  | 3 | 11 | 6 | 9 |
| **PTPN11** | 10 | 14.45699621 | 4 | 4 |  | 5 | 8 | 7 | 10 |
| **KHDRBS1** | 10 | 11.35420464 | 23 | 4 |  | 3 | 10 | 7 | 10 |
| **NKX2-5** | 8 | 14.024372 | 5 | 4 |  | 4 | 6 | 7 | 8 |
| **PIK3CB** | 7 | 13.17213209 | 5 | 4 |  | 3 | 5 | 3 | 7 |
| **ELMO2** | 7 | 14.45699621 | 2 | 2 |  | 7 | 0 | 4 | 0 |
| **PTPRA** | 5 | 14.45699621 | 4 | 4 |  | 1 | 4 | 1 | 5 |
| **C2orf44** | 5 | 9.999507365 | 8 | 4 |  | 2 | 5 | 2 | 2 |
| **GAB2** | 4 | 14.45699621 | 4 | 4 |  | 4 | 4 | 4 | 3 |
| **CPSF7** | 4 | 5.818925801 | 8 | 4 |  | 3 | 4 | 2 | 2 |
| **STAMBP** | 4 | 14.45699621 | 3 | 3 |  | 1 | 4 | 0 | 2 |
| **DOCK1** | 4 | 14.45699621 | 3 | 3 |  | 4 | 0 | 2 | 2 |
| **NISCH** | 4 | 7.014590623 | 4 | 2 |  | 4 | 0 | 1 | 0 |
| **PIK3AP1** | 3 | 14.45699621 | 4 | 4 |  | 3 | 2 | 3 | 3 |
| **ZMYM2** | 3 | 14.45699621 | 4 | 4 |  | 1 | 1 | 1 | 3 |
| **FAM59A** | 3 | 14.45699621 | 4 | 4 |  | 3 | 1 | 1 | 3 |
| **KIF4B** | 3 | 14.45699621 | 4 | 4 |  | 2 | 3 | 2 | 1 |
| **PIK3C2B** | 3 | 14.45699621 | 3 | 3 |  | 3 | 1 | 2 | 0 |
| **KHDRBS3** | 3 | 14.45699621 | 3 | 3 |  | 3 | 2 | 0 | 3 |
| **SNX18** | 3 | 14.45699621 | 3 | 3 |  | 1 | 0 | 3 | 1 |
| **PIK3CA** | 3 | 5.019595332 | 3 | 3 |  | 2 | 0 | 3 | 2 |
| **POLD1** | 3 | 8.476334328 | 9 | 3 |  | 0 | 3 | 3 | 3 |
| **OCRL** | 3 | 14.45699621 | 2 | 2 |  | 0 | 1 | 0 | 3 |
| **SATB1** | 2 | 14.45699621 | 4 | 4 |  | 1 | 1 | 1 | 2 |
| **SHC1** | 2 | 14.45699621 | 2 | 2 |  | 1 | 0 | 2 | 0 |
| **KIF4A** | 2 | 14.45699621 | 2 | 2 |  | 0 | 2 | 0 | 1 |
| ADSS | 1 | 7.176680245 | 5 | 3 |  | 0 | 1 | 1 | 1 |
| ELMO1 | 1 | 14.45699621 | 2 | 2 |  | 0 | 1 | 1 | 0 |
| PTPN12 | 1 | 14.45699621 | 2 | 2 |  | 1 | 0 | 1 | 0 |
| IPI:IPI00929345.1 | 1 | 10.19827139 | 2 | 2 |  | 1 | 0 | 0 | 1 |
| MAP4K3 | 1 | 14.45699621 | 1 | 1 |  | 0 | 1 | 0 | 0 |
| PIK3CD | 1 | 14.45699621 | 1 | 1 |  | 0 | 1 | 0 | 0 |
| COL27A1 | 1 | 14.45699621 | 1 | 1 |  | 0 | 0 | 0 | 1 |
| DOCK2 | 1 | 14.45699621 | 1 | 1 |  | 1 | 0 | 0 | 0 |
| EPS15L1 | 1 | 14.45699621 | 1 | 1 |  | 0 | 0 | 1 | 0 |
| FAM125A | 1 | 14.45699621 | 1 | 1 |  | 0 | 1 | 0 | 0 |
| FAM59B | 1 | 14.45699621 | 1 | 1 |  | 0 | 0 | 1 | 0 |
| GLTSCR1 | 1 | 14.45699621 | 1 | 1 |  | 0 | 0 | 0 | 1 |
| MDC1 | 1 | 14.45699621 | 1 | 1 |  | 0 | 1 | 0 | 0 |
| SYNJ2 | 1 | 14.45699621 | 1 | 1 |  | 0 | 0 | 0 | 1 |
| TSG101 | 2 | 14.45699621 | 1 | 1 |  | 0 | 0 | 0 | 2 |
| VPS37B | 2 | 14.45699621 | 1 | 1 |  | 0 | 0 | 0 | 2 |
| SHANK3 | 1 | 10.19827139 | 2 | 1 |  | 0 | 1 | 0 | 0 |
| HS1BP3 | 1 | 10.19827139 | 2 | 1 |  | 0 | 0 | 0 | 1 |
| WEE1 | 1 | 6.416023004 | 2 | 1 |  | 0 | 0 | 1 | 0 |
| LOC26010 | 1 | 8.306909133 | 3 | 1 |  | 1 | 0 | 0 | 0 |
| FTSJ1 | 1 | 6.403494307 | 4 | 1 |  | 0 | 0 | 1 | 0 |
| PFN2 | 1 | 5.831358275 | 6 | 1 |  | 0 | 0 | 1 | 0 |
| IRS4 | 79 | 7.869775323 | 380 | 4 |  | 79 | 57 | 68 | 55 |
| HNRNPK | 22 | 4.20966893 | 324 | 4 |  | 20 | 22 | 18 | 22 |
| YWHAQ | 4 | 2.695704811 | 42 | 2 |  | 2 | 0 | 4 | 0 |
| CAD | 33 | 2.609204835 | 255 | 4 |  | 12 | 26 | 16 | 33 |
| SEC24C | 1 | 1.746715412 | 12 | 1 |  | 0 | 1 | 0 | 0 |
| SNIP | 1 | 1.725870257 | 4 | 2 |  | 0 | 1 | 1 | 0 |
| DDX17 | 5 | 1.515334136 | 221 | 4 |  | 4 | 1 | 2 | 5 |
| TP53 | 1 | 1.427846943 | 8 | 1 |  | 1 | 0 | 0 | 0 |
| CSNK2A2 | 1 | 1.310228572 | 12 | 1 |  | 0 | 0 | 1 | 0 |
| HNRNPL | 2 | 1.271840283 | 48 | 3 |  | 0 | 1 | 2 | 1 |
| CMAS | 3 | 1.127722707 | 8 | 3 |  | 0 | 3 | 2 | 1 |
| CSNK2A1 | 2 | 1.110285448 | 19 | 2 |  | 1 | 0 | 2 | 0 |
| AP1B1 | 1 | 1.043841914 | 33 | 1 |  | 0 | 1 | 0 | 0 |
| IPI:IPI00384397.1 | 1 | 0.995810675 | 228 | 2 |  | 0 | 1 | 0 | 1 |
| MYH11 | 6 | 0.979333488 | 378 | 4 |  | 3 | 6 | 2 | 5 |
| MYH10 | 85 | 0.832253035 | 561 | 4 |  | 53 | 78 | 52 | 85 |
| HNRNPA3 | 1 | 0.828403705 | 20 | 2 |  | 0 | 1 | 0 | 1 |
| PAICS | 1 | 0.708572536 | 48 | 1 |  | 0 | 0 | 0 | 1 |
| MYH14 | 22 | 0.593256829 | 396 | 4 |  | 12 | 16 | 8 | 22 |
| YWHAZ | 2 | 0.558655113 | 109 | 4 |  | 1 | 2 | 2 | 2 |
| DDX5 | 5 | 0.541736295 | 345 | 4 |  | 4 | 5 | 3 | 4 |
| RUVBL2 | 5 | 0.520806155 | 213 | 2 |  | 3 | 0 | 0 | 5 |
| NPM1 | 6 | 0.449545631 | 301 | 4 |  | 6 | 5 | 2 | 4 |
| SF3B3 | 1 | 0.425436216 | 78 | 1 |  | 0 | 1 | 0 | 0 |
| AKAP8L | 2 | 0.411850391 | 149 | 3 |  | 1 | 2 | 0 | 1 |
| IPI:IPI00911039.1 | 1 | 0.407366338 | 189 | 4 |  | 1 | 1 | 1 | 1 |
| TBKBP1 | 1 | 0.395869935 | 14 | 2 |  | 0 | 1 | 0 | 1 |
| RUVBL1 | 3 | 0.381627535 | 181 | 2 |  | 0 | 3 | 0 | 2 |
| FXR2 | 1 | 0.36052577 | 33 | 1 |  | 0 | 0 | 1 | 0 |
| USP7 | 1 | 0.352060893 | 44 | 1 |  | 1 | 0 | 0 | 0 |
| HSPA7 | 5 | 0.333067601 | 504 | 4 |  | 2 | 2 | 4 | 5 |
| YWHAE | 5 | 0.309923927 | 155 | 4 |  | 2 | 2 | 5 | 1 |
| MYH9 | 88 | 0.217632137 | 599 | 4 |  | 78 | 88 | 75 | 85 |
| FXR1 | 1 | 0.18457475 | 63 | 1 |  | 1 | 0 | 0 | 0 |
| ACTA1 | 1 | 0.152730703 | 101 | 1 |  | 1 | 0 | 0 | 0 |
| ALB | 1 | 0.138043389 | 25 | 1 |  | 0 | 1 | 0 | 0 |
| HNRNPF | 5 | 0.133579791 | 439 | 4 |  | 2 | 1 | 5 | 3 |
| MYL12B | 3 | 0.077666973 | 310 | 4 |  | 1 | 1 | 3 | 2 |
| TUBB1 | 6 | 0.024158285 | 532 | 4 |  | 5 | 5 | 6 | 4 |
| TUBB2C | 24 | 0.020467736 | 528 | 4 |  | 24 | 16 | 20 | 12 |
| TOM1L2 | 1 | -0.029361344 | 155 | 1 |  | 0 | 0 | 1 | 0 |
| TUBA1C | 8 | -0.062604933 | 544 | 4 |  | 7 | 7 | 8 | 6 |
| TPM4 | 2 | -0.071477425 | 181 | 1 |  | 0 | 2 | 0 | 0 |
| MYL6 | 3 | -0.078366316 | 291 | 4 |  | 2 | 3 | 1 | 2 |
| UBA1 | 1 | -0.08967258 | 207 | 1 |  | 0 | 1 | 0 | 0 |
| MYL6B | 1 | -0.100666376 | 311 | 3 |  | 1 | 1 | 1 | 0 |
| SERBP1 | 2 | -0.126061958 | 214 | 1 |  | 2 | 0 | 0 | 0 |
| PRDX1 | 3 | -0.130235876 | 296 | 3 |  | 3 | 3 | 0 | 3 |
| DDX3X | 3 | -0.150296936 | 409 | 3 |  | 0 | 3 | 3 | 2 |
| SLC25A5 | 5 | -0.169283961 | 396 | 3 |  | 3 | 5 | 0 | 4 |
| RPL3 | 1 | -0.210627243 | 162 | 1 |  | 0 | 0 | 1 | 0 |
| TUBB | 8 | -0.226220256 | 554 | 4 |  | 7 | 7 | 8 | 8 |
| RPS3A | 1 | -0.236426801 | 159 | 1 |  | 1 | 0 | 0 | 0 |
| TUBA4A | 9 | -0.24737029 | 485 | 4 |  | 9 | 6 | 7 | 5 |
| CAPZB | 1 | -0.271499224 | 171 | 1 |  | 0 | 0 | 0 | 1 |
| UBC | 5 | -0.30658795 | 515 | 2 |  | 4 | 5 | 0 | 0 |
| ACTB | 27 | -0.318151188 | 526 | 4 |  | 21 | 21 | 27 | 16 |
| HSPA1L | 11 | -0.335367348 | 526 | 4 |  | 7 | 9 | 7 | 11 |
| EEF1A1 | 2 | -0.356336827 | 354 | 4 |  | 2 | 2 | 1 | 2 |
| CAPZA1 | 1 | -0.380504415 | 235 | 3 |  | 1 | 1 | 0 | 1 |
| MATR3 | 1 | -0.381844183 | 232 | 1 |  | 0 | 0 | 1 | 0 |
| CCT7 | 1 | -0.405500112 | 288 | 2 |  | 0 | 1 | 0 | 1 |
| MYO1C | 22 | -0.443664066 | 545 | 4 |  | 22 | 17 | 16 | 17 |
| ACTA2 | 14 | -0.467360381 | 501 | 4 |  | 12 | 12 | 12 | 14 |
| MYO1D | 2 | -0.479662912 | 281 | 1 |  | 0 | 2 | 0 | 0 |
| HNRNPU | 15 | -0.490852572 | 658 | 4 |  | 14 | 15 | 14 | 15 |
| ARPC1A | 2 | -0.49207243 | 290 | 1 |  | 0 | 0 | 2 | 0 |
| HSPA8 | 19 | -0.519405955 | 599 | 4 |  | 15 | 17 | 19 | 14 |
| ACTBL2 | 11 | -0.546471802 | 477 | 4 |  | 11 | 11 | 9 | 9 |
| CSDA | 1 | -0.548177213 | 375 | 1 |  | 0 | 0 | 0 | 1 |
| YBX1 | 1 | -0.549841938 | 367 | 1 |  | 0 | 0 | 0 | 1 |
| SLC25A13 | 1 | -0.559215457 | 301 | 1 |  | 0 | 1 | 0 | 0 |
| MYO1A | 1 | -0.586368323 | 375 | 3 |  | 1 | 1 | 0 | 1 |
| HSPA1A | 13 | -0.597473095 | 661 | 4 |  | 12 | 13 | 11 | 9 |
| TPM1 | 1 | -0.607187018 | 288 | 3 |  | 1 | 0 | 1 | 1 |
| ACTR3 | 7 | -0.612287585 | 405 | 4 |  | 7 | 2 | 5 | 3 |
| TTLL3 | 1 | -0.625883155 | 337 | 2 |  | 1 | 0 | 1 | 0 |
| TPM3 | 1 | -0.644515149 | 286 | 3 |  | 1 | 1 | 1 | 0 |
| PHGDH | 1 | -0.660736519 | 287 | 1 |  | 0 | 1 | 0 | 0 |
| HSP90AA1 | 1 | -0.664678831 | 469 | 2 |  | 1 | 0 | 0 | 1 |
| HSPA9 | 5 | -0.673151482 | 591 | 4 |  | 5 | 4 | 5 | 3 |
| EEF1A2 | 1 | -0.681052939 | 472 | 1 |  | 0 | 0 | 1 | 0 |
| ACTR3B | 1 | -0.702261975 | 327 | 1 |  | 0 | 0 | 0 | 1 |
| ARPC2 | 1 | -0.712115254 | 306 | 1 |  | 0 | 0 | 0 | 1 |
| MYO6 | 12 | -0.722389897 | 491 | 4 |  | 12 | 7 | 12 | 7 |
| HNRNPM | 2 | -0.759093457 | 452 | 1 |  | 2 | 0 | 0 | 0 |
| ACTR2 | 2 | -0.797204151 | 343 | 4 |  | 2 | 2 | 2 | 1 |
| MYO1B | 8 | -0.825293218 | 505 | 4 |  | 8 | 3 | 7 | 7 |
| RPA1 | 2 | -0.827237954 | 493 | 3 |  | 0 | 2 | 1 | 2 |
| TOM1 | 2 | -0.851535686 | 399 | 2 |  | 1 | 0 | 2 | 0 |
| HSPA5 | 7 | -0.892584209 | 625 | 4 |  | 4 | 7 | 4 | 6 |
| GSN | 1 | -0.907055448 | 358 | 1 |  | 0 | 0 | 0 | 1 |
| HNRNPH1 | 1 | -0.956462818 | 523 | 3 |  | 1 | 1 | 1 | 0 |
| KIF11 | 24 | -1.025558557 | 645 | 4 |  | 13 | 23 | 16 | 24 |