

SUPPLEMENTAL TABLE 1: List of shRNAs used for validation.

| shRNA | Gene | Target | Sequence |
|---------------|-------|-----------------|---|
| TRC0000010342 | ERBB2 | Coding Sequence | CCGGATCACAGGTTACCTATACATCTCGAGA TGTATAGGTAACCTGTGATCTTTTTG |
| TRC0000039878 | ERBB2 | 3' UTR | CCGGTGTGAGTATCCAGGCTTTGTACTIONG GTACAAAGCCTGGATACTGACATTTTTG |
| TRC0000010379 | MET | Coding Sequence | CCGGCATCAGAACCAGAGGCTTGGTCTCGA GACCAAGCCTCTGGTTCTGATGTTTTG |
| TRC0000196443 | MET | 3' UTR | CCGGGTGTGTTGTATGGTCAATAACCTCGAG GTTATTGACCATAACAACACTTTTTG |
| TRC0000196685 | MET | Coding Sequence | CCGGGCTGTGAGAATATACTTACCTCGAG GTAAGTGTATATTCTCACAGCTTTTTG |
| TRC0000040047 | MET | Coding Sequence | CCGGGCCAGCCTGAATGATGACATTCTCGA GAATGTCATCATTGAGGCTGGCTTTTTG |

SUPPLEMENTAL TABLE 2: SLATs (E-value cut off of E value ≤ 2) in UMSCC25, 584-A2, and CCL30.

| UMSCC25 | | | | | | | |
|---------|-------------|-----------------|----------|------|-------------|-----------------|----------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 1 | CLUAP1 | 5.15E-07 | 5.15E-07 | 48 | FHL1 | 4.84E-04 | 2.32E-02 |
| 2 | ZFR | 8.78E-07 | 1.76E-06 | 49 | RABGGTB | 5.03E-04 | 2.46E-02 |
| 3 | MET | 1.94E-06 | 5.83E-06 | 50 | THPO | 5.28E-04 | 2.64E-02 |
| 4 | MEMO1 | 1.95E-06 | 7.79E-06 | 50 | BCAP29 | 5.28E-04 | 2.64E-02 |
| 5 | NPAT | 3.00E-06 | 1.50E-05 | 52 | KBTBD4 | 5.28E-04 | 2.75E-02 |
| 6 | EPB41L4B | 3.18E-06 | 1.91E-05 | 53 | MEX3B | 5.28E-04 | 2.80E-02 |
| 7 | G2E3 | 3.43E-06 | 2.40E-05 | 54 | EML4 | 5.29E-04 | 2.85E-02 |
| 8 | PSMD13 | 4.10E-06 | 3.28E-05 | 55 | C20orf7 | 5.29E-04 | 2.91E-02 |
| 9 | MUC7 | 5.60E-06 | 5.04E-05 | 56 | GPR126 | 5.29E-04 | 2.96E-02 |
| 10 | ARSD | 5.67E-06 | 5.67E-05 | 56 | PNPO | 5.29E-04 | 2.96E-02 |
| 11 | TMEM163 | 1.13E-05 | 1.24E-04 | 58 | TJAP1 | 5.29E-04 | 3.07E-02 |
| 12 | PCTK2 | 1.38E-05 | 1.65E-04 | 58 | SLC26A2 | 5.29E-04 | 3.07E-02 |
| 13 | ANP32E | 1.38E-05 | 1.80E-04 | 58 | NETO2 | 5.29E-04 | 3.07E-02 |
| 14 | ITGA6 | 2.62E-05 | 3.66E-04 | 61 | MAML3 | 5.29E-04 | 3.23E-02 |
| 15 | C14orf147 | 2.74E-05 | 4.11E-04 | 62 | HLA-DRB3 | 5.30E-04 | 3.29E-02 |
| 16 | MDH1B | 3.18E-05 | 5.08E-04 | 62 | HLA-DRB1 | 5.30E-04 | 3.29E-02 |
| 17 | SP1 | 3.68E-05 | 6.25E-04 | 62 | HLA-DRB5 | 5.30E-04 | 3.29E-02 |
| 18 | ALDOB | 4.96E-05 | 8.92E-04 | 62 | SPRYD5 | 5.30E-04 | 3.29E-02 |
| 19 | ANAPC5 | 5.12E-05 | 9.72E-04 | 66 | SYT14L | 5.30E-04 | 3.50E-02 |
| 20 | FCGR3B | 5.17E-05 | 1.03E-03 | 67 | DGAT2 | 5.31E-04 | 3.56E-02 |
| 21 | TBXA2R | 5.39E-05 | 1.13E-03 | 68 | ZNF10 | 5.32E-04 | 3.62E-02 |
| 22 | MT1X | 5.80E-05 | 1.28E-03 | 69 | ZNF764 | 5.32E-04 | 3.67E-02 |
| 23 | SCRN3 | 6.54E-05 | 1.51E-03 | 70 | E4F1 | 5.32E-04 | 3.73E-02 |
| 24 | PAPOLA | 7.53E-05 | 1.81E-03 | 70 | NOV | 5.32E-04 | 3.73E-02 |
| 25 | FGFR1OP2 | 7.54E-05 | 1.88E-03 | 70 | SSBP3 | 5.32E-04 | 3.73E-02 |
| 26 | KCTD14 | 1.06E-04 | 2.75E-03 | 73 | COL6A1 | 5.33E-04 | 3.89E-02 |
| 27 | LLGL2 | 1.39E-04 | 3.76E-03 | 74 | PLEKHA6 | 5.33E-04 | 3.94E-02 |
| 28 | PYGM | 1.45E-04 | 4.06E-03 | 75 | TMEM196 | 5.33E-04 | 4.00E-02 |
| 29 | MF12 | 1.52E-04 | 4.40E-03 | 76 | DCN | 5.33E-04 | 4.05E-02 |
| 30 | FAM136A | 1.67E-04 | 5.02E-03 | 77 | ZNF280B | 5.34E-04 | 4.11E-02 |
| 31 | ZNF787 | 1.68E-04 | 5.22E-03 | 78 | PDCD11 | 5.34E-04 | 4.17E-02 |
| 32 | FPR2 | 1.89E-04 | 6.04E-03 | 79 | CXADR | 5.35E-04 | 4.22E-02 |
| 33 | TMED5 | 2.07E-04 | 6.83E-03 | 79 | HLA-G | 5.35E-04 | 4.22E-02 |
| 34 | PTP4A1 | 2.10E-04 | 7.16E-03 | 81 | RUNX2 | 5.35E-04 | 4.33E-02 |
| 35 | LSM4 | 2.16E-04 | 7.57E-03 | 82 | ERBB2 | 5.35E-04 | 4.39E-02 |
| 36 | FARSA | 2.26E-04 | 8.13E-03 | 82 | TRIB2 | 5.35E-04 | 4.39E-02 |
| 37 | AGRN | 2.37E-04 | 8.76E-03 | 84 | C12orf48 | 5.36E-04 | 4.50E-02 |
| 38 | FAM172A | 2.52E-04 | 9.58E-03 | 85 | MAST1 | 5.37E-04 | 4.56E-02 |
| 39 | PTPN11 | 2.58E-04 | 1.01E-02 | 86 | THAP10 | 5.37E-04 | 4.62E-02 |
| 40 | TBX5 | 2.74E-04 | 1.10E-02 | 87 | BCL11A | 5.38E-04 | 4.68E-02 |
| 41 | MBD6 | 3.55E-04 | 1.46E-02 | 88 | CCDC88A | 5.38E-04 | 4.74E-02 |
| 42 | TRAM1 | 3.99E-04 | 1.68E-02 | 89 | MARS2 | 5.39E-04 | 4.80E-02 |
| 43 | VEGFA | 4.12E-04 | 1.77E-02 | 90 | C3AR1 | 5.40E-04 | 4.86E-02 |
| 44 | ZNF79 | 4.13E-04 | 1.82E-02 | 91 | KIAA0892 | 5.41E-04 | 4.92E-02 |
| 45 | SCOC | 4.14E-04 | 1.86E-02 | 92 | POLD3 | 5.41E-04 | 4.98E-02 |
| 46 | SEMA4D | 4.42E-04 | 2.03E-02 | 93 | C2orf52 | 5.44E-04 | 5.06E-02 |
| 47 | CALM1 | 4.44E-04 | 2.09E-02 | 94 | FSTL5 | 5.44E-04 | 5.12E-02 |

| UMSCC25 | | | | | | | |
|---------|-------------|-----------------|----------|------|-------------|-----------------|----------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 94 | ZNF511 | 5.44E-04 | 5.12E-02 | 142 | PLEKHO1 | 5.79E-04 | 8.22E-02 |
| 94 | CD55 | 5.44E-04 | 5.12E-02 | 143 | ZFP64 | 5.83E-04 | 8.33E-02 |
| 94 | ST5 | 5.44E-04 | 5.12E-02 | 144 | RPL28 | 5.83E-04 | 8.39E-02 |
| 94 | NYX | 5.44E-04 | 5.12E-02 | 145 | C5orf45 | 5.86E-04 | 8.50E-02 |
| 99 | FLJ22662 | 5.45E-04 | 5.39E-02 | 145 | SQSTM1 | 5.86E-04 | 8.50E-02 |
| 100 | BCAS2 | 5.46E-04 | 5.46E-02 | 147 | COL5A3 | 5.88E-04 | 8.65E-02 |
| 100 | FRAT2 | 5.46E-04 | 5.46E-02 | 148 | CDV3 | 5.92E-04 | 8.76E-02 |
| 102 | MAP7 | 5.46E-04 | 5.57E-02 | 148 | SF3B14 | 5.92E-04 | 8.76E-02 |
| 103 | KRT222P | 5.46E-04 | 5.63E-02 | 150 | HGD | 5.95E-04 | 8.92E-02 |
| 104 | AGPAT9 | 5.46E-04 | 5.68E-02 | 150 | NIACR2 | 5.95E-04 | 8.92E-02 |
| 105 | FAT2 | 5.46E-04 | 5.74E-02 | 150 | RNF20 | 5.95E-04 | 8.92E-02 |
| 106 | ITIH5 | 5.46E-04 | 5.79E-02 | 153 | VWA5A | 5.97E-04 | 9.13E-02 |
| 106 | RAB3IP | 5.46E-04 | 5.79E-02 | 153 | PNPLA8 | 5.97E-04 | 9.13E-02 |
| 108 | CYP2A7 | 5.48E-04 | 5.91E-02 | 155 | FOXN3 | 6.00E-04 | 9.30E-02 |
| 109 | FBXO31 | 5.48E-04 | 5.98E-02 | 156 | LFNG | 6.00E-04 | 9.37E-02 |
| 109 | JCLN | 5.48E-04 | 5.98E-02 | 157 | PRKAB2 | 6.01E-04 | 9.44E-02 |
| 109 | RPL24 | 5.48E-04 | 5.98E-02 | 158 | CISH | 6.07E-04 | 9.59E-02 |
| 112 | MLH3 | 5.52E-04 | 6.18E-02 | 159 | ACOX3 | 6.08E-04 | 9.66E-02 |
| 113 | TGOLN2 | 5.53E-04 | 6.25E-02 | 159 | FSCN3 | 6.08E-04 | 9.66E-02 |
| 114 | C21orf62 | 5.54E-04 | 6.31E-02 | 161 | PIP4K2C | 6.09E-04 | 9.80E-02 |
| 115 | ZNF407 | 5.55E-04 | 6.38E-02 | 162 | SORBS2 | 6.11E-04 | 9.89E-02 |
| 116 | KIR2DL1 | 5.56E-04 | 6.45E-02 | 162 | SKP2 | 6.11E-04 | 9.89E-02 |
| 116 | GTF2I | 5.56E-04 | 6.45E-02 | 164 | MGLL | 6.11E-04 | 0.1003 |
| 116 | KIR2DL2 | 5.56E-04 | 6.45E-02 | 165 | CEACAM7 | 6.12E-04 | 0.1010 |
| 119 | ARL6IP5 | 5.57E-04 | 6.63E-02 | 166 | GNB4 | 6.12E-04 | 0.1016 |
| 120 | YAF2 | 5.57E-04 | 6.69E-02 | 167 | COL5A2 | 6.12E-04 | 0.1023 |
| 121 | RSF1 | 5.59E-04 | 6.76E-02 | 168 | PHB2 | 6.15E-04 | 0.1033 |
| 122 | MMP14 | 5.63E-04 | 6.87E-02 | 169 | PTBP2 | 6.16E-04 | 0.1041 |
| 123 | PPAP2B | 5.64E-04 | 6.94E-02 | 170 | DCUN1D1 | 6.17E-04 | 0.1048 |
| 123 | BCOR | 5.64E-04 | 6.94E-02 | 170 | OSTM1 | 6.17E-04 | 0.1048 |
| 125 | ABTB2 | 5.65E-04 | 7.06E-02 | 172 | CLCN7 | 6.17E-04 | 0.1061 |
| 125 | OGFR | 5.65E-04 | 7.06E-02 | 173 | PTP4A2 | 6.21E-04 | 0.1075 |
| 127 | TMPO | 5.67E-04 | 7.20E-02 | 173 | TACR2 | 6.21E-04 | 0.1075 |
| 128 | FASTKD1 | 5.70E-04 | 7.30E-02 | 173 | WWC2 | 6.21E-04 | 0.1075 |
| 129 | DOK7 | 5.71E-04 | 7.36E-02 | 176 | GNRHR | 6.26E-04 | 0.1101 |
| 130 | TRIOBP | 5.71E-04 | 7.42E-02 | 176 | PCDHB5 | 6.26E-04 | 0.1101 |
| 130 | PDE1A | 5.71E-04 | 7.42E-02 | 178 | CBX3 | 6.26E-04 | 0.1114 |
| 132 | TRAM2 | 5.71E-04 | 7.54E-02 | 179 | PDS5A | 6.30E-04 | 0.1127 |
| 133 | THAP11 | 5.72E-04 | 7.61E-02 | 180 | FAM62B | 6.34E-04 | 0.1141 |
| 134 | CNOT6L | 5.74E-04 | 7.69E-02 | 180 | CRYAA | 6.34E-04 | 0.1141 |
| 134 | TEX2 | 5.74E-04 | 7.69E-02 | 182 | TRIM27 | 6.36E-04 | 0.1157 |
| 136 | SEPT6 | 5.75E-04 | 7.82E-02 | 183 | MLXIP | 6.36E-04 | 0.1165 |
| 137 | HSP90B1 | 5.76E-04 | 7.90E-02 | 184 | HRASLS | 6.40E-04 | 0.1178 |
| 138 | HNRNPR | 5.76E-04 | 7.96E-02 | 185 | AVL9 | 6.40E-04 | 0.1185 |
| 138 | PITPNM2 | 5.76E-04 | 7.96E-02 | 185 | IGF2BP3 | 6.40E-04 | 0.1185 |
| 140 | NFIB | 5.77E-04 | 8.08E-02 | 187 | CSNK1G2 | 6.42E-04 | 0.1200 |
| 141 | SYT14 | 5.78E-04 | 8.16E-02 | 188 | EPO | 6.47E-04 | 0.1216 |

| UMSCC25 | | | | | | | |
|---------|-------------|-----------------|---------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 188 | PDZRN3 | 6.47E-04 | 0.1216 | 234 | SLC38A3 | 7.58E-04 | 0.1774 |
| 188 | CBX7 | 6.47E-04 | 0.1216 | 234 | CXorf48 | 7.58E-04 | 0.1774 |
| 188 | PHF8 | 6.47E-04 | 0.1216 | 234 | ATF5 | 7.58E-04 | 0.1774 |
| 188 | SLC1A4 | 6.47E-04 | 0.1216 | 239 | SNCA | 7.59E-04 | 0.1813 |
| 193 | TMEM49 | 6.53E-04 | 0.1261 | 240 | SRR | 7.63E-04 | 0.1832 |
| 193 | CC2D1A | 6.53E-04 | 0.1261 | 240 | TSR1 | 7.63E-04 | 0.1832 |
| 195 | PPIG | 6.53E-04 | 0.1274 | 242 | SHB | 7.65E-04 | 0.1851 |
| 196 | SNX25 | 6.59E-04 | 0.1291 | 243 | PCDHGA1 | 7.71E-04 | 0.1873 |
| 197 | RAB9A | 6.59E-04 | 0.1299 | 244 | GNL3 | 7.73E-04 | 0.1886 |
| 198 | PFTK1 | 6.60E-04 | 0.1307 | 244 | KCNQ5 | 7.73E-04 | 0.1886 |
| 198 | NCLN | 6.60E-04 | 0.1307 | 244 | ST3GAL3 | 7.73E-04 | 0.1886 |
| 198 | TMEM53 | 6.60E-04 | 0.1307 | 244 | CACYBP | 7.73E-04 | 0.1886 |
| 201 | RNF114 | 6.66E-04 | 0.1339 | 244 | VGLL4 | 7.73E-04 | 0.1886 |
| 202 | DHX8 | 6.67E-04 | 0.1348 | 249 | PSME3 | 7.79E-04 | 0.1939 |
| 203 | USP38 | 6.68E-04 | 0.1355 | 250 | ISY1 | 7.79E-04 | 0.1948 |
| 204 | TINAGL1 | 6.75E-04 | 0.1377 | 250 | MED17 | 7.79E-04 | 0.1948 |
| 205 | PIP5K1A | 6.77E-04 | 0.1387 | 252 | TTC22 | 7.82E-04 | 0.1970 |
| 206 | PCM1 | 6.81E-04 | 0.1403 | 253 | ICA1L | 7.82E-04 | 0.1978 |
| 207 | SPIN2B | 6.82E-04 | 0.1411 | 254 | ATF6B | 7.90E-04 | 0.2006 |
| 207 | SPIN2A | 6.82E-04 | 0.1411 | 255 | UTRN | 7.90E-04 | 0.2014 |
| 209 | OR5L1 | 6.86E-04 | 0.1435 | 256 | NET1 | 7.92E-04 | 0.2028 |
| 209 | OR5L2 | 6.86E-04 | 0.1435 | 257 | EHD1 | 7.94E-04 | 0.2041 |
| 209 | REV1 | 6.86E-04 | 0.1435 | 258 | SPAM1 | 7.95E-04 | 0.2051 |
| 212 | TAF6 | 6.87E-04 | 0.1457 | 259 | MLLT10 | 8.03E-04 | 0.2080 |
| 213 | DPY19L4 | 6.90E-04 | 0.1470 | 260 | STRADB | 8.08E-04 | 0.2102 |
| 214 | PDLIM7 | 6.91E-04 | 0.1478 | 261 | ARL15 | 8.10E-04 | 0.2115 |
| 215 | KCNQ1 | 6.98E-04 | 0.1502 | 262 | DECR2 | 8.14E-04 | 0.2132 |
| 216 | LATS2 | 7.09E-04 | 0.1532 | 262 | ALOX15B | 8.14E-04 | 0.2132 |
| 216 | PLA2G2E | 7.09E-04 | 0.1532 | 264 | AP1S2 | 8.30E-04 | 0.2191 |
| 218 | PPAT | 7.17E-04 | 0.1562 | 264 | ZBTB41 | 8.30E-04 | 0.2191 |
| 219 | NFX1 | 7.18E-04 | 0.1573 | 264 | ZNF19 | 8.30E-04 | 0.2191 |
| 220 | KREMEN2 | 7.19E-04 | 0.1582 | 264 | KAZALD1 | 8.30E-04 | 0.2191 |
| 220 | RAB1A | 7.19E-04 | 0.1582 | 268 | TM9SF4 | 8.33E-04 | 0.2232 |
| 220 | LRP4 | 7.19E-04 | 0.1582 | 269 | IL15RA | 8.33E-04 | 0.2242 |
| 223 | C1orf116 | 7.23E-04 | 0.1613 | 270 | ZNF160 | 8.41E-04 | 0.2271 |
| 224 | HEXIM1 | 7.31E-04 | 0.1638 | 271 | ZNF804A | 8.43E-04 | 0.2285 |
| 225 | FNDC3B | 7.32E-04 | 0.1647 | 272 | SLC11A2 | 8.51E-04 | 0.2314 |
| 225 | AQP1 | 7.32E-04 | 0.1647 | 273 | NSUN7 | 8.53E-04 | 0.2327 |
| 227 | RHOQ | 7.32E-04 | 0.1663 | 274 | HISPPD2A | 8.57E-04 | 0.2349 |
| 228 | P2RY14 | 7.40E-04 | 0.1688 | 274 | MYOZ3 | 8.57E-04 | 0.2349 |
| 229 | SERP1 | 7.42E-04 | 0.1700 | 276 | LUZP2 | 8.58E-04 | 0.2369 |
| 230 | P4HTM | 7.45E-04 | 0.1714 | 277 | FHOD3 | 8.61E-04 | 0.2385 |
| 230 | PDX1 | 7.45E-04 | 0.1714 | 278 | SLC2A12 | 8.73E-04 | 0.2428 |
| 230 | HIF3A | 7.45E-04 | 0.1714 | 279 | MC3R | 8.77E-04 | 0.2448 |
| 233 | KCNJ1 | 7.54E-04 | 0.1758 | 280 | ATM | 8.84E-04 | 0.2475 |
| 234 | RPL3 | 7.58E-04 | 0.1774 | 280 | NBS | 8.84E-04 | 0.2475 |
| 234 | CSNK2A1 | 7.58E-04 | 0.1774 | 280 | LRR61 | 8.84E-04 | 0.2475 |

Singleton, Kim, Hinz, Marek, Casas-Selves, Hatheway, Tan, DeGregori and Heasley. A Receptor Tyrosine Kinase Network Comprised of FGFRs, EGFR, ERBB2 and MET Drives Growth and Survival of Head and Neck Squamous Carcinoma Cell Lines. MOLPHARM #084111

| UMSCC25 | | | | | | | |
|---------|-------------|-----------------|---------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 280 | NBN | 8.84E-04 | 0.2475 | 330 | C12orf41 | 1.14E-03 | 0.3766 |
| 284 | PGRMC1 | 8.91E-04 | 0.2530 | 330 | P76 | 1.14E-03 | 0.3766 |
| 285 | CHRNA3 | 9.10E-04 | 0.2594 | 332 | ZNF184 | 1.14E-03 | 0.3792 |
| 286 | C22orf29 | 9.12E-04 | 0.2609 | 333 | ADRBK1 | 1.15E-03 | 0.3817 |
| 287 | LCE1E | 9.12E-04 | 0.2619 | 334 | C20orf20 | 1.15E-03 | 0.3836 |
| 287 | OGT | 9.12E-04 | 0.2619 | 335 | DUSP6 | 1.20E-03 | 0.4016 |
| 287 | STAT2 | 9.12E-04 | 0.2619 | 336 | PSME4 | 1.20E-03 | 0.4033 |
| 290 | LRRRC66 | 9.25E-04 | 0.2683 | 337 | SERPINB3 | 1.20E-03 | 0.4047 |
| 290 | RUSC2 | 9.25E-04 | 0.2683 | 338 | PIM2 | 1.21E-03 | 0.4073 |
| 292 | PIAS2 | 9.40E-04 | 0.2745 | 339 | NUBPL | 1.21E-03 | 0.4114 |
| 293 | ACTR8 | 9.45E-04 | 0.2770 | 339 | TRPS1 | 1.21E-03 | 0.4114 |
| 293 | SMURF2 | 9.45E-04 | 0.2770 | 339 | CYP2C19 | 1.21E-03 | 0.4114 |
| 293 | COX5A | 9.45E-04 | 0.2770 | 339 | ARFIP1 | 1.21E-03 | 0.4114 |
| 293 | ARMC10 | 9.45E-04 | 0.2770 | 339 | RASGRP2 | 1.21E-03 | 0.4114 |
| 293 | PDE4C | 9.45E-04 | 0.2770 | 339 | FAM35A | 1.21E-03 | 0.4114 |
| 298 | CNGA3 | 9.46E-04 | 0.2819 | 345 | TBX2 | 1.22E-03 | 0.4199 |
| 298 | HTR5A | 9.46E-04 | 0.2819 | 346 | MFF | 1.23E-03 | 0.4257 |
| 300 | ADCY7 | 9.66E-04 | 0.2899 | 347 | ENOX2 | 1.25E-03 | 0.4331 |
| 301 | ATPAF2 | 9.68E-04 | 0.2914 | 348 | CDK10 | 1.26E-03 | 0.4382 |
| 302 | SLC2A4RG | 9.69E-04 | 0.2925 | 349 | HIF1AN | 1.27E-03 | 0.4448 |
| 303 | AIFM1 | 9.83E-04 | 0.2979 | 350 | SECISBP2 | 1.28E-03 | 0.4464 |
| 303 | KRT19 | 9.83E-04 | 0.2979 | 351 | DNAH7 | 1.30E-03 | 0.4565 |
| 305 | NR5A2 | 9.88E-04 | 0.3013 | 352 | PRKG2 | 1.30E-03 | 0.4579 |
| 305 | LEPROT | 9.88E-04 | 0.3013 | 353 | SLC1A1 | 1.30E-03 | 0.4603 |
| 307 | CPEB3 | 9.94E-04 | 0.3050 | 354 | TOX4 | 1.31E-03 | 0.4635 |
| 308 | LOC57228 | 9.94E-04 | 0.3063 | 354 | CD300A | 1.31E-03 | 0.4635 |
| 309 | GJD3 | 1.00E-03 | 0.3092 | 354 | BCAR3 | 1.31E-03 | 0.4635 |
| 310 | STAB1 | 1.01E-03 | 0.3136 | 354 | TAF6L | 1.31E-03 | 0.4635 |
| 311 | FANCC | 1.02E-03 | 0.3161 | 354 | MAG | 1.31E-03 | 0.4635 |
| 311 | BST1 | 1.02E-03 | 0.3161 | 359 | SNX26 | 1.33E-03 | 0.4786 |
| 311 | ARHGDI3 | 1.02E-03 | 0.3161 | 360 | PEBP1 | 1.33E-03 | 0.4806 |
| 311 | ADA | 1.02E-03 | 0.3161 | 361 | HTR3A | 1.34E-03 | 0.4852 |
| 315 | CENPB | 1.02E-03 | 0.3228 | 362 | FBXO24 | 1.38E-03 | 0.4989 |
| 315 | UGT2B15 | 1.02E-03 | 0.3228 | 363 | PIGF | 1.38E-03 | 0.5026 |
| 315 | PJA1 | 1.02E-03 | 0.3228 | 364 | CYP2C9 | 1.39E-03 | 0.5046 |
| 318 | CUL3 | 1.05E-03 | 0.3330 | 365 | RBM39 | 1.39E-03 | 0.5065 |
| 319 | CALCB | 1.07E-03 | 0.3410 | 366 | CDC2L1 | 1.42E-03 | 0.5203 |
| 320 | CCDC117 | 1.08E-03 | 0.3455 | 366 | CDC2L2 | 1.42E-03 | 0.5203 |
| 320 | BIVM | 1.08E-03 | 0.3455 | 368 | MIPOL1 | 1.43E-03 | 0.5245 |
| 320 | TUBGCP5 | 1.08E-03 | 0.3455 | 368 | ZC3HAV1L | 1.43E-03 | 0.5245 |
| 320 | ETS2 | 1.08E-03 | 0.3455 | 370 | GPR18 | 1.45E-03 | 0.5374 |
| 320 | AQP4 | 1.08E-03 | 0.3455 | 371 | MSRB2 | 1.50E-03 | 0.5581 |
| 320 | GABRG1 | 1.08E-03 | 0.3455 | 372 | HMGB1 | 1.53E-03 | 0.5678 |
| 320 | TRPC4AP | 1.08E-03 | 0.3455 | 372 | HMGB1L1 | 1.53E-03 | 0.5678 |
| 327 | STAT1 | 1.09E-03 | 0.3569 | 372 | SP100 | 1.53E-03 | 0.5678 |
| 328 | GFOD1 | 1.10E-03 | 0.3622 | 372 | BAT4 | 1.53E-03 | 0.5678 |
| 329 | PHF6 | 1.11E-03 | 0.3647 | 372 | LSM1 | 1.53E-03 | 0.5678 |

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| UMSCC25 | | | | | | | |
|---------|---------------|-----------------|---------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 377 | LRRC50 | 1.53E-03 | 0.5768 | 424 | CHKA | 1.92E-03 | 0.8123 |
| 378 | WDR17 | 1.53E-03 | 0.5798 | 425 | SUPT6H | 1.93E-03 | 0.8195 |
| 379 | TMEM14C | 1.54E-03 | 0.5824 | 426 | CBLC | 1.95E-03 | 0.8326 |
| 380 | ECHDC1 | 1.55E-03 | 0.5890 | 427 | NOP56 | 1.96E-03 | 0.8364 |
| 381 | UBOX5 | 1.56E-03 | 0.5928 | 427 | ATP5SL | 1.96E-03 | 0.8364 |
| 381 | C16orf72 | 1.56E-03 | 0.5928 | 429 | FUSIP1 | 1.99E-03 | 0.8519 |
| 381 | SHMT2 | 1.56E-03 | 0.5928 | 430 | MGAT1 | 2.04E-03 | 0.8757 |
| 381 | MED8 | 1.56E-03 | 0.5928 | 431 | KRCC1 | 2.04E-03 | 0.8798 |
| 381 | CACNA1H | 1.56E-03 | 0.5928 | 432 | NEDD4 | 2.11E-03 | 0.9122 |
| 381 | GALNT2 | 1.56E-03 | 0.5928 | 432 | CST1 | 2.11E-03 | 0.9122 |
| 381 | SOX2 | 1.56E-03 | 0.5928 | 432 | RUNDC3B | 2.11E-03 | 0.9122 |
| 381 | CFH | 1.56E-03 | 0.5928 | 432 | FBXL8 | 2.11E-03 | 0.9122 |
| 381 | RPSA | 1.56E-03 | 0.5928 | 432 | TIMM44 | 2.11E-03 | 0.9122 |
| 390 | EYA3 | 1.57E-03 | 0.6119 | 432 | HSD17B7 | 2.11E-03 | 0.9122 |
| 391 | FTHL17 | 1.61E-03 | 0.6276 | 432 | OR51E2 | 2.11E-03 | 0.9122 |
| 392 | FAM134B | 1.62E-03 | 0.6350 | 432 | GATAD1 | 2.11E-03 | 0.9122 |
| 393 | GRLF1 | 1.68E-03 | 0.6587 | 432 | FGFRL1 | 2.11E-03 | 0.9122 |
| 394 | TRPV2 | 1.68E-03 | 0.6614 | 432 | DENR | 2.11E-03 | 0.9122 |
| 394 | PDIA2 | 1.68E-03 | 0.6614 | 432 | MS4A7 | 2.11E-03 | 0.9122 |
| 396 | NME1-NME2 | 1.68E-03 | 0.6654 | 443 | OASL | 2.12E-03 | 0.9386 |
| 396 | NME1 | 1.68E-03 | 0.6654 | 444 | PRRT3 | 2.18E-03 | 0.9665 |
| 398 | SETDB2 | 1.70E-03 | 0.6748 | 444 | C12orf54 | 2.18E-03 | 0.9665 |
| 399 | RTN4IP1 | 1.70E-03 | 0.6784 | 446 | UFM1 | 2.21E-03 | 0.9852 |
| 399 | FBLIM1 | 1.70E-03 | 0.6784 | 447 | RACGAP1 | 2.22E-03 | 0.9914 |
| 399 | ZSCAN2 | 1.70E-03 | 0.6784 | 448 | CABC1 | 2.22E-03 | 0.9951 |
| 399 | ROD1 | 1.70E-03 | 0.6784 | 449 | HFE | 2.25E-03 | 1.0115 |
| 399 | GABRA1 | 1.70E-03 | 0.6784 | 450 | PRUNE | 2.27E-03 | 1.0193 |
| 399 | MUTED | 1.70E-03 | 0.6784 | 451 | MCAM | 2.29E-03 | 1.0316 |
| 405 | CCDC90A | 1.72E-03 | 0.6972 | 452 | APLP2 | 2.32E-03 | 1.0498 |
| 406 | OFD1 | 1.73E-03 | 0.7034 | 453 | H2AFB2 | 2.32E-03 | 1.0522 |
| 406 | EDEM3 | 1.73E-03 | 0.7034 | 453 | H2AFB3 | 2.32E-03 | 1.0522 |
| 408 | ATP6V0E1 | 1.74E-03 | 0.7080 | 455 | ADAMTS2 | 2.34E-03 | 1.0646 |
| 409 | NIN | 1.77E-03 | 0.7229 | 456 | RYBP | 2.34E-03 | 1.0686 |
| 410 | NR2F2 | 1.78E-03 | 0.7312 | 457 | CACNB3 | 2.35E-03 | 1.0717 |
| 411 | SMEK1 | 1.80E-03 | 0.7382 | 458 | MBD4 | 2.36E-03 | 1.0810 |
| 412 | NT5C1B | 1.82E-03 | 0.7482 | 459 | H2AFX | 2.39E-03 | 1.0981 |
| 413 | HTRA1 | 1.82E-03 | 0.7504 | 460 | LMAN1 | 2.39E-03 | 1.1006 |
| 414 | RECQL | 1.82E-03 | 0.7539 | 460 | ZNF446 | 2.39E-03 | 1.1006 |
| 415 | ZNF286A | 1.83E-03 | 0.7582 | 460 | AK7 | 2.39E-03 | 1.1006 |
| 416 | DKFZP564O0823 | 1.83E-03 | 0.7623 | 460 | RTP4 | 2.39E-03 | 1.1006 |
| 417 | SPG7 | 1.84E-03 | 0.7677 | 460 | SP140L | 2.39E-03 | 1.1006 |
| 417 | IFI44 | 1.84E-03 | 0.7677 | 460 | ACTR10 | 2.39E-03 | 1.1006 |
| 419 | SLAMF7 | 1.85E-03 | 0.7731 | 460 | RWDD2B | 2.39E-03 | 1.1006 |
| 420 | ANXA10 | 1.87E-03 | 0.7851 | 460 | GRM7 | 2.39E-03 | 1.1006 |
| 421 | ANK1 | 1.87E-03 | 0.7892 | 460 | C7orf58 | 2.39E-03 | 1.1006 |
| 422 | PSAT1 | 1.88E-03 | 0.7926 | 460 | ZNF644 | 2.39E-03 | 1.1006 |
| 422 | IRAK4 | 1.88E-03 | 0.7926 | 470 | IL17B | 2.42E-03 | 1.1359 |

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| UMSCC25 | | | | | | | |
|---------|-------------|-----------------|---------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 471 | GPRC5B | 2.47E-03 | 1.1637 | 518 | DDX19A | 3.27E-03 | 1.6952 |
| 472 | NCKAP1L | 2.51E-03 | 1.1824 | 519 | FGR | 3.34E-03 | 1.7315 |
| 473 | MT1F | 2.51E-03 | 1.1886 | 520 | CD81 | 3.34E-03 | 1.7383 |
| 474 | IGF1 | 2.54E-03 | 1.2026 | 521 | NR1H2 | 3.40E-03 | 1.7738 |
| 475 | PDCD1LG2 | 2.56E-03 | 1.2156 | 522 | GBP3 | 3.46E-03 | 1.8061 |
| 475 | RAC3 | 2.56E-03 | 1.2156 | 523 | PTK2 | 3.49E-03 | 1.8231 |
| 477 | DBC1 | 2.57E-03 | 1.2260 | 523 | YWHAZ | 3.49E-03 | 1.8231 |
| 478 | FBXO9 | 2.62E-03 | 1.2546 | 523 | GFRA1 | 3.49E-03 | 1.8231 |
| 479 | PEX3 | 2.63E-03 | 1.2615 | 523 | ATP2A1 | 3.49E-03 | 1.8231 |
| 480 | C18orf54 | 2.67E-03 | 1.2814 | 527 | MFN2 | 3.53E-03 | 1.8589 |
| 481 | SELENBP1 | 2.72E-03 | 1.3086 | 527 | C9orf5 | 3.53E-03 | 1.8589 |
| 481 | RALA | 2.72E-03 | 1.3086 | 527 | CASC1 | 3.53E-03 | 1.8589 |
| 483 | BAZ2A | 2.73E-03 | 1.3187 | 527 | JMJD2A | 3.53E-03 | 1.8589 |
| 484 | TIMM8B | 2.74E-03 | 1.3260 | 531 | SLC35E3 | 3.55E-03 | 1.8855 |
| 485 | PPFIBP1 | 2.74E-03 | 1.3293 | 532 | ESR1 | 3.55E-03 | 1.8908 |
| 486 | ARHGEF9 | 2.75E-03 | 1.3378 | 533 | PROK1 | 3.55E-03 | 1.8945 |
| 486 | ACLY | 2.75E-03 | 1.3378 | 534 | ENTPD6 | 3.57E-03 | 1.9054 |
| 486 | ZMYND10 | 2.75E-03 | 1.3378 | 535 | REST | 3.59E-03 | 1.9207 |
| 486 | SIRT4 | 2.75E-03 | 1.3378 | 536 | TNS1 | 3.67E-03 | 1.9681 |
| 486 | EDF1 | 2.75E-03 | 1.3378 | 537 | GMPR | 3.70E-03 | 1.9887 |
| 486 | UBQLN1 | 2.75E-03 | 1.3378 | 537 | RARG | 3.70E-03 | 1.9887 |
| 486 | POLR2C | 2.75E-03 | 1.3378 | | | | |
| 486 | NDUFS8 | 2.75E-03 | 1.3378 | | | | |
| 486 | ZNF771 | 2.75E-03 | 1.3378 | | | | |
| 495 | CENPT | 2.76E-03 | 1.3649 | | | | |
| 496 | ATP2B3 | 2.77E-03 | 1.3742 | | | | |
| 496 | SMN2 | 2.77E-03 | 1.3742 | | | | |
| 496 | TBX1 | 2.77E-03 | 1.3742 | | | | |
| 496 | SMN1 | 2.77E-03 | 1.3742 | | | | |
| 500 | RGS12 | 2.79E-03 | 1.3946 | | | | |
| 501 | ZNF268 | 2.90E-03 | 1.4522 | | | | |
| 502 | CUEDC1 | 2.92E-03 | 1.4665 | | | | |
| 503 | CWC22 | 3.00E-03 | 1.5098 | | | | |
| 504 | KCNJ13 | 3.10E-03 | 1.5640 | | | | |
| 505 | PAPD4 | 3.12E-03 | 1.5742 | | | | |
| 506 | CLIP2 | 3.14E-03 | 1.5887 | | | | |
| 507 | SLC5A4 | 3.15E-03 | 1.5960 | | | | |
| 508 | TCIRG1 | 3.22E-03 | 1.6368 | | | | |
| 509 | ZNF623 | 3.25E-03 | 1.6545 | | | | |
| 509 | DNHD1 | 3.25E-03 | 1.6545 | | | | |
| 509 | BPI | 3.25E-03 | 1.6545 | | | | |
| 509 | CATSPER2 | 3.25E-03 | 1.6545 | | | | |
| 509 | CARKD | 3.25E-03 | 1.6545 | | | | |
| 509 | SYNCRIP | 3.25E-03 | 1.6545 | | | | |
| 509 | SERPINH1 | 3.25E-03 | 1.6545 | | | | |
| 516 | SPCS1 | 3.26E-03 | 1.6825 | | | | |
| 517 | TMEM40 | 3.27E-03 | 1.6900 | | | | |

| 584-A2 | | | | | | | |
|--------|-------------|-----------------|----------|------|-------------|-----------------|----------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 1 | NAP1L1 | 8.86E-06 | 8.86E-06 | 48 | HNRPDL | 8.14E-04 | 3.91E-02 |
| 2 | ARHGDI1 | 1.14E-05 | 2.28E-05 | 49 | WAC | 8.14E-04 | 3.99E-02 |
| 3 | TOX4 | 1.39E-05 | 4.18E-05 | 50 | SBNO1 | 8.16E-04 | 4.08E-02 |
| 4 | PPIL1 | 3.84E-05 | 1.54E-04 | 51 | PPP5C | 8.17E-04 | 4.17E-02 |
| 5 | MPPED2 | 3.89E-05 | 1.95E-04 | 51 | MCM6 | 8.17E-04 | 4.17E-02 |
| 6 | TTC6 | 7.91E-05 | 4.75E-04 | 53 | IKZF1 | 8.18E-04 | 4.33E-02 |
| 7 | LAMB4 | 8.05E-05 | 5.63E-04 | 54 | LSR | 8.20E-04 | 4.43E-02 |
| 8 | NRP2 | 8.12E-05 | 6.49E-04 | 55 | MAG | 8.21E-04 | 4.51E-02 |
| 9 | HFE | 1.15E-04 | 1.03E-03 | 56 | KLF3 | 8.21E-04 | 4.60E-02 |
| 10 | HOXA3 | 1.17E-04 | 1.17E-03 | 57 | TIMP1 | 8.22E-04 | 4.69E-02 |
| 11 | WDR1 | 1.17E-04 | 1.29E-03 | 58 | CHD1L | 8.23E-04 | 4.78E-02 |
| 12 | ADAMTS8 | 1.30E-04 | 1.56E-03 | 59 | NKIRAS2 | 8.36E-04 | 4.93E-02 |
| 13 | SEMA6D | 2.01E-04 | 2.61E-03 | 60 | C14orf119 | 8.36E-04 | 5.01E-02 |
| 14 | SLCO4C1 | 2.23E-04 | 3.12E-03 | 61 | SRP72 | 8.39E-04 | 5.12E-02 |
| 15 | SCOC | 2.41E-04 | 3.62E-03 | 62 | ACO1 | 8.43E-04 | 5.23E-02 |
| 16 | ZNF460 | 2.61E-04 | 4.17E-03 | 63 | TP63 | 8.47E-04 | 5.33E-02 |
| 17 | EHF | 2.65E-04 | 4.50E-03 | 64 | C21orf66 | 8.49E-04 | 5.43E-02 |
| 18 | CADM3 | 2.90E-04 | 5.22E-03 | 65 | FARP2 | 8.49E-04 | 5.52E-02 |
| 19 | DNAJC10 | 4.34E-04 | 8.25E-03 | 66 | APOBEC3F | 8.57E-04 | 5.65E-02 |
| 20 | TRIM5 | 4.51E-04 | 9.02E-03 | 66 | ZNF763 | 8.57E-04 | 5.65E-02 |
| 21 | HLF | 5.02E-04 | 1.05E-02 | 66 | APOBEC3G | 8.57E-04 | 5.65E-02 |
| 22 | VPS13A | 5.22E-04 | 1.15E-02 | 69 | HNRNPU | 8.77E-04 | 6.05E-02 |
| 23 | KLK13 | 6.70E-04 | 1.54E-02 | 69 | SOS2 | 8.77E-04 | 6.05E-02 |
| 24 | TAF9B | 7.88E-04 | 1.89E-02 | 71 | NUDT21 | 8.80E-04 | 6.25E-02 |
| 25 | ACVR1C | 8.02E-04 | 2.00E-02 | 72 | GNRH1 | 8.81E-04 | 6.34E-02 |
| 25 | IGSF1 | 8.02E-04 | 2.00E-02 | 73 | FER | 9.00E-04 | 6.57E-02 |
| 27 | POLK | 8.02E-04 | 2.17E-02 | 74 | SCO1 | 9.00E-04 | 6.66E-02 |
| 27 | CREB5 | 8.02E-04 | 2.17E-02 | 75 | ATP11B | 9.01E-04 | 6.76E-02 |
| 29 | NADK | 8.02E-04 | 2.33E-02 | 76 | ATRNL1 | 9.06E-04 | 6.88E-02 |
| 30 | MAGT1 | 8.02E-04 | 2.41E-02 | 76 | EID1 | 9.06E-04 | 6.88E-02 |
| 30 | ABHD6 | 8.02E-04 | 2.41E-02 | 78 | SLC2A12 | 9.10E-04 | 7.10E-02 |
| 30 | DNAJC13 | 8.02E-04 | 2.41E-02 | 79 | ACTR10 | 9.15E-04 | 7.23E-02 |
| 33 | SOST | 8.02E-04 | 2.65E-02 | 79 | DNAL1 | 9.15E-04 | 7.23E-02 |
| 34 | SENP2 | 8.02E-04 | 2.73E-02 | 81 | NT5C1B | 9.20E-04 | 7.45E-02 |
| 35 | VGLL4 | 8.02E-04 | 2.81E-02 | 82 | P2RY12 | 9.27E-04 | 7.60E-02 |
| 36 | LRP11 | 8.02E-04 | 2.89E-02 | 83 | SSSCA1 | 9.28E-04 | 7.70E-02 |
| 37 | KCNIP4 | 8.03E-04 | 2.97E-02 | 84 | YBX1 | 9.34E-04 | 7.85E-02 |
| 38 | FAM172A | 8.03E-04 | 3.05E-02 | 85 | FAM122B | 9.37E-04 | 7.96E-02 |
| 39 | NTN4 | 8.03E-04 | 3.13E-02 | 86 | DPH5 | 9.49E-04 | 8.16E-02 |
| 40 | SMG7 | 8.03E-04 | 3.21E-02 | 87 | RTP4 | 9.50E-04 | 8.26E-02 |
| 41 | KIAA1530 | 8.04E-04 | 3.30E-02 | 88 | INSRR | 9.69E-04 | 8.53E-02 |
| 42 | IGSF2 | 8.04E-04 | 3.38E-02 | 89 | THUMPD1 | 9.73E-04 | 8.66E-02 |
| 43 | FILIP1L | 8.05E-04 | 3.46E-02 | 90 | ZSCAN5A | 9.85E-04 | 8.86E-02 |
| 44 | UIMC1 | 8.07E-04 | 3.55E-02 | 91 | CACNG6 | 9.91E-04 | 9.02E-02 |
| 45 | TBC1D9B | 8.07E-04 | 3.63E-02 | 92 | HCFC2 | 9.93E-04 | 9.13E-02 |
| 45 | CTSS | 8.07E-04 | 3.63E-02 | 93 | TNS1 | 1.01E-03 | 9.37E-02 |
| 47 | OR10R2 | 8.11E-04 | 3.81E-02 | 94 | ST8SIA2 | 1.02E-03 | 9.60E-02 |

| 584-A2 | | | | | | | |
|--------|-------------|-----------------|----------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 95 | PPPDE1 | 1.02E-03 | 9.72E-02 | 142 | DST | 1.40E-03 | 0.1993 |
| 96 | LDLRAD2 | 1.03E-03 | 9.85E-02 | 143 | MOBKL1B | 1.41E-03 | 0.2011 |
| 96 | HSPG2 | 1.03E-03 | 9.85E-02 | 144 | MAP3K6 | 1.41E-03 | 0.2026 |
| 98 | IL1RAPL1 | 1.03E-03 | 0.1012 | 144 | KCTD14 | 1.41E-03 | 0.2026 |
| 99 | SRPK2 | 1.05E-03 | 0.1039 | 144 | NCR1 | 1.41E-03 | 0.2026 |
| 100 | ZMYM4 | 1.07E-03 | 0.1072 | 147 | ABCB1 | 1.41E-03 | 0.2075 |
| 101 | RNF122 | 1.08E-03 | 0.1091 | 147 | ABCB4 | 1.41E-03 | 0.2075 |
| 101 | ROBO3 | 1.08E-03 | 0.1091 | 149 | TMCC1 | 1.44E-03 | 0.2142 |
| 101 | MPP7 | 1.08E-03 | 0.1091 | 150 | MAPK1IP1L | 1.44E-03 | 0.2161 |
| 104 | NF2 | 1.08E-03 | 0.1126 | 151 | MYO1B | 1.47E-03 | 0.2213 |
| 104 | GNA12 | 1.08E-03 | 0.1126 | 152 | FLRT1 | 1.47E-03 | 0.2240 |
| 106 | EIF5B | 1.08E-03 | 0.1150 | 153 | HBG2 | 1.49E-03 | 0.2284 |
| 107 | FBXO28 | 1.09E-03 | 0.1166 | 153 | HBG1 | 1.49E-03 | 0.2284 |
| 108 | SDCCAG10 | 1.09E-03 | 0.1179 | 155 | TKTL2 | 1.51E-03 | 0.2343 |
| 109 | NRXN3 | 1.09E-03 | 0.1192 | 156 | ILF3 | 1.51E-03 | 0.2360 |
| 110 | USP21 | 1.10E-03 | 0.1206 | 157 | CAPRIN2 | 1.52E-03 | 0.2388 |
| 110 | ZNF781 | 1.10E-03 | 0.1206 | 158 | ASMTL | 1.56E-03 | 0.2458 |
| 110 | PKD2L1 | 1.10E-03 | 0.1206 | 159 | TBX10 | 1.57E-03 | 0.2498 |
| 113 | ETV1 | 1.10E-03 | 0.1242 | 159 | PPBP | 1.57E-03 | 0.2498 |
| 114 | EXOSC2 | 1.11E-03 | 0.1263 | 159 | PMP2 | 1.57E-03 | 0.2498 |
| 115 | ISCA1 | 1.11E-03 | 0.1278 | 159 | ARF3 | 1.57E-03 | 0.2498 |
| 116 | DAB2 | 1.12E-03 | 0.1296 | 163 | FAM149A | 1.59E-03 | 0.2589 |
| 117 | TMEM155 | 1.13E-03 | 0.1327 | 164 | CALCA | 1.61E-03 | 0.2637 |
| 118 | DYRK4 | 1.14E-03 | 0.1339 | 165 | PARK7 | 1.62E-03 | 0.2680 |
| 119 | GRK4 | 1.15E-03 | 0.1365 | 166 | KIAA0284 | 1.66E-03 | 0.2750 |
| 120 | TRIB2 | 1.16E-03 | 0.1390 | 167 | DPPA4 | 1.68E-03 | 0.2798 |
| 121 | PANX2 | 1.18E-03 | 0.1425 | 167 | PFTK2 | 1.68E-03 | 0.2798 |
| 122 | NUCKS1 | 1.18E-03 | 0.1439 | 169 | MED24 | 1.74E-03 | 0.2948 |
| 123 | KDELC1 | 1.18E-03 | 0.1451 | 170 | FLT3LG | 1.76E-03 | 0.2989 |
| 124 | PFKFB2 | 1.19E-03 | 0.1475 | 171 | PAX8 | 1.77E-03 | 0.3020 |
| 125 | SURF1 | 1.21E-03 | 0.1513 | 172 | PTGDR | 1.80E-03 | 0.3087 |
| 126 | AQP1 | 1.21E-03 | 0.1530 | 172 | CRMP1 | 1.80E-03 | 0.3087 |
| 127 | PALM2-AKAP2 | 1.25E-03 | 0.1582 | 174 | TMPRSS2 | 1.85E-03 | 0.3226 |
| 127 | AKAP2 | 1.25E-03 | 0.1582 | 175 | HS6ST1 | 1.93E-03 | 0.3371 |
| 129 | RAD1 | 1.25E-03 | 0.1609 | 175 | PRB4 | 1.93E-03 | 0.3371 |
| 130 | C15orf54 | 1.26E-03 | 0.1643 | 175 | NCOA7 | 1.93E-03 | 0.3371 |
| 130 | RPL14 | 1.26E-03 | 0.1643 | 175 | FYCO1 | 1.93E-03 | 0.3371 |
| 132 | C10orf92 | 1.30E-03 | 0.1713 | 175 | PRB3 | 1.93E-03 | 0.3371 |
| 133 | PLEKHG6 | 1.32E-03 | 0.1753 | 180 | CD37 | 1.93E-03 | 0.3469 |
| 134 | BMPR2 | 1.35E-03 | 0.1803 | 181 | METTTL11A | 1.95E-03 | 0.3522 |
| 135 | LECT2 | 1.35E-03 | 0.1821 | 182 | COQ3 | 1.98E-03 | 0.3596 |
| 136 | LIMA1 | 1.37E-03 | 0.1859 | 183 | DNAJC4 | 1.99E-03 | 0.3635 |
| 137 | RBBP6 | 1.38E-03 | 0.1884 | 184 | ZXDC | 2.08E-03 | 0.3828 |
| 137 | IQGAP3 | 1.38E-03 | 0.1884 | 185 | C6orf106 | 2.12E-03 | 0.3916 |
| 137 | PPP2R2D | 1.38E-03 | 0.1884 | 186 | UQCC | 2.12E-03 | 0.3942 |
| 137 | CHAC2 | 1.38E-03 | 0.1884 | 187 | ATG12 | 2.14E-03 | 0.3998 |
| 141 | VCAN | 1.40E-03 | 0.1973 | 188 | C14orf126 | 2.14E-03 | 0.4025 |

| 584-A2 | | | | | | | |
|--------|-------------|-----------------|---------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 189 | TMED2 | 2.17E-03 | 0.4097 | 236 | STARD10 | 3.29E-03 | 0.7767 |
| 190 | KIAA0467 | 2.19E-03 | 0.4163 | 237 | NEIL3 | 3.32E-03 | 0.7863 |
| 191 | TMC5 | 2.23E-03 | 0.4254 | 238 | TMLHE | 3.33E-03 | 0.7914 |
| 192 | RPA1 | 2.24E-03 | 0.4307 | 239 | AGFG1 | 3.46E-03 | 0.8263 |
| 193 | IKZF2 | 2.27E-03 | 0.4372 | 240 | FMR1 | 3.48E-03 | 0.8340 |
| 194 | MUTYH | 2.29E-03 | 0.4438 | 241 | TMEM49 | 3.53E-03 | 0.8495 |
| 194 | ACSL6 | 2.29E-03 | 0.4438 | 241 | USP38 | 3.53E-03 | 0.8495 |
| 196 | LUZP2 | 2.33E-03 | 0.4566 | 241 | KCTD20 | 3.53E-03 | 0.8495 |
| 196 | HPS6 | 2.33E-03 | 0.4566 | 241 | PLAC8 | 3.53E-03 | 0.8495 |
| 198 | PSRC1 | 2.34E-03 | 0.4638 | 245 | TAF11 | 3.57E-03 | 0.8744 |
| 199 | ZNF562 | 2.38E-03 | 0.4745 | 245 | UHRF1BP1 | 3.57E-03 | 0.8744 |
| 200 | TMEM9 | 2.40E-03 | 0.4797 | 247 | TGFB3 | 3.59E-03 | 0.8875 |
| 200 | LIFR | 2.40E-03 | 0.4797 | 248 | ALB | 3.61E-03 | 0.8962 |
| 202 | ACE2 | 2.40E-03 | 0.4845 | 249 | PSMD6 | 3.76E-03 | 0.9364 |
| 203 | YPEL1 | 2.50E-03 | 0.5069 | 249 | RPRD1A | 3.76E-03 | 0.9364 |
| 203 | TLR10 | 2.50E-03 | 0.5069 | 249 | MED16 | 3.76E-03 | 0.9364 |
| 203 | CDC37 | 2.50E-03 | 0.5069 | 252 | TOMM70A | 3.84E-03 | 0.9666 |
| 203 | ARPC4 | 2.50E-03 | 0.5069 | 253 | DSN1 | 3.85E-03 | 0.9737 |
| 203 | EIF4G1 | 2.50E-03 | 0.5069 | 253 | SP100 | 3.85E-03 | 0.9737 |
| 203 | ADM2 | 2.50E-03 | 0.5069 | 253 | EFCAB2 | 3.85E-03 | 0.9737 |
| 203 | APOBEC3C | 2.50E-03 | 0.5069 | 253 | RAD21 | 3.85E-03 | 0.9737 |
| 210 | C12orf65 | 2.52E-03 | 0.5297 | 257 | RNGTT | 3.88E-03 | 0.9969 |
| 210 | EPB41L2 | 2.52E-03 | 0.5297 | 258 | SPTBN1 | 4.03E-03 | 1.0408 |
| 212 | C19orf6 | 2.53E-03 | 0.5373 | 259 | PI4K2A | 4.04E-03 | 1.0459 |
| 212 | DEFA5 | 2.53E-03 | 0.5373 | 260 | KLRG1 | 4.08E-03 | 1.0598 |
| 214 | NDRG3 | 2.55E-03 | 0.5465 | 261 | KIAA1217 | 4.13E-03 | 1.0789 |
| 215 | METTL2A | 2.59E-03 | 0.5575 | 261 | SH3BP4 | 4.13E-03 | 1.0789 |
| 216 | SOX2 | 2.60E-03 | 0.5624 | 263 | VANGL1 | 4.21E-03 | 1.1078 |
| 217 | RGS3 | 2.69E-03 | 0.5839 | 264 | FGF1 | 4.22E-03 | 1.1153 |
| 218 | MED28 | 2.72E-03 | 0.5933 | 265 | ANKRD20A3 | 4.23E-03 | 1.1221 |
| 219 | SLC26A1 | 2.77E-03 | 0.6077 | 265 | RHEBL1 | 4.23E-03 | 1.1221 |
| 220 | AFTPH | 2.79E-03 | 0.6142 | 265 | ANKRD20A1 | 4.23E-03 | 1.1221 |
| 221 | PPIL2 | 2.81E-03 | 0.6213 | 265 | ANKRD20A2 | 4.23E-03 | 1.1221 |
| 222 | RBM6 | 2.83E-03 | 0.6273 | 269 | EDA | 4.26E-03 | 1.1448 |
| 222 | C3orf37 | 2.83E-03 | 0.6273 | 270 | TCEAL2 | 4.31E-03 | 1.1642 |
| 224 | TFAM | 2.83E-03 | 0.6335 | 270 | C16orf58 | 4.31E-03 | 1.1642 |
| 225 | CNOT2 | 2.83E-03 | 0.6373 | 270 | ETNK1 | 4.31E-03 | 1.1642 |
| 226 | SDCCAG1 | 2.86E-03 | 0.6462 | 273 | PRKCE | 4.36E-03 | 1.1893 |
| 226 | ANKRD12 | 2.86E-03 | 0.6462 | 274 | TMEM27 | 4.36E-03 | 1.1960 |
| 226 | TNFSF13B | 2.86E-03 | 0.6462 | 275 | RYR1 | 4.60E-03 | 1.2643 |
| 229 | SLC16A3 | 2.95E-03 | 0.6763 | 276 | PIK3C3 | 4.64E-03 | 1.2807 |
| 230 | NRXN1 | 3.10E-03 | 0.7127 | 276 | SAC3D1 | 4.64E-03 | 1.2807 |
| 231 | FSCN3 | 3.16E-03 | 0.7302 | 276 | RRP15 | 4.64E-03 | 1.2807 |
| 232 | SFRP1 | 3.17E-03 | 0.7346 | 279 | ADH4 | 4.72E-03 | 1.3161 |
| 233 | SPDEF | 3.21E-03 | 0.7486 | 280 | OLFML2A | 4.72E-03 | 1.3215 |
| 234 | ETV4 | 3.22E-03 | 0.7529 | 281 | NFIB | 4.76E-03 | 1.3367 |
| 235 | ABI3 | 3.28E-03 | 0.7710 | 282 | RPS11 | 4.76E-03 | 1.3415 |

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| 584-A2 | | | |
|--------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 282 | FUT4 | 4.76E-03 | 1.3415 |
| 282 | POP4 | 4.76E-03 | 1.3415 |
| 282 | RPL9 | 4.76E-03 | 1.3415 |
| 282 | KIF18A | 4.76E-03 | 1.3415 |
| 287 | KBTBD4 | 4.86E-03 | 1.3952 |
| 288 | SEMA4G | 4.91E-03 | 1.4149 |
| 289 | 7-Mar | 4.92E-03 | 1.4214 |
| 289 | SF3A2 | 4.92E-03 | 1.4214 |
| 291 | UBE2J1 | 4.97E-03 | 1.4469 |
| 292 | PRICKLE4 | 5.03E-03 | 1.4681 |
| 293 | CHD7 | 5.09E-03 | 1.4922 |
| 294 | MCM10 | 5.10E-03 | 1.4985 |
| 295 | TRAM1 | 5.17E-03 | 1.5254 |
| 296 | CA11 | 5.26E-03 | 1.5571 |
| 296 | MFF | 5.26E-03 | 1.5571 |
| 296 | ALDH4A1 | 5.26E-03 | 1.5571 |
| 296 | TNKS | 5.26E-03 | 1.5571 |
| 296 | PIGO | 5.26E-03 | 1.5571 |
| 296 | TFPI2 | 5.26E-03 | 1.5571 |
| 296 | RAB7A | 5.26E-03 | 1.5571 |
| 296 | ADAM12 | 5.26E-03 | 1.5571 |
| 296 | MAPK8IP3 | 5.26E-03 | 1.5571 |
| 296 | ZFP82 | 5.26E-03 | 1.5571 |
| 296 | PLEK2 | 5.26E-03 | 1.5571 |
| 307 | CTSZ | 5.27E-03 | 1.6174 |
| 308 | MTMR1 | 5.28E-03 | 1.6257 |
| 309 | PER2 | 5.31E-03 | 1.6408 |
| 310 | NF1 | 5.32E-03 | 1.6490 |
| 311 | PDZD11 | 5.52E-03 | 1.7174 |
| 312 | TCEA1 | 5.53E-03 | 1.7264 |
| 313 | C16orf35 | 5.55E-03 | 1.7370 |
| 314 | SLC6A12 | 5.61E-03 | 1.7613 |
| 315 | RAP2B | 5.75E-03 | 1.8107 |
| 316 | PSMF1 | 5.76E-03 | 1.8197 |
| 317 | PROL1 | 5.79E-03 | 1.8340 |
| 318 | KBTBD10 | 5.84E-03 | 1.8579 |
| 319 | STRN | 5.90E-03 | 1.8814 |
| 320 | TRIM38 | 5.93E-03 | 1.8974 |
| 321 | KIAA0020 | 5.94E-03 | 1.9080 |
| 322 | NPAL2 | 6.01E-03 | 1.9348 |
| 323 | UBAP2L | 6.08E-03 | 1.9650 |
| 324 | OAS2 | 6.14E-03 | 1.9878 |
| 324 | EPPK1 | 6.14E-03 | 1.9878 |
| 324 | COL14A1 | 6.14E-03 | 1.9878 |

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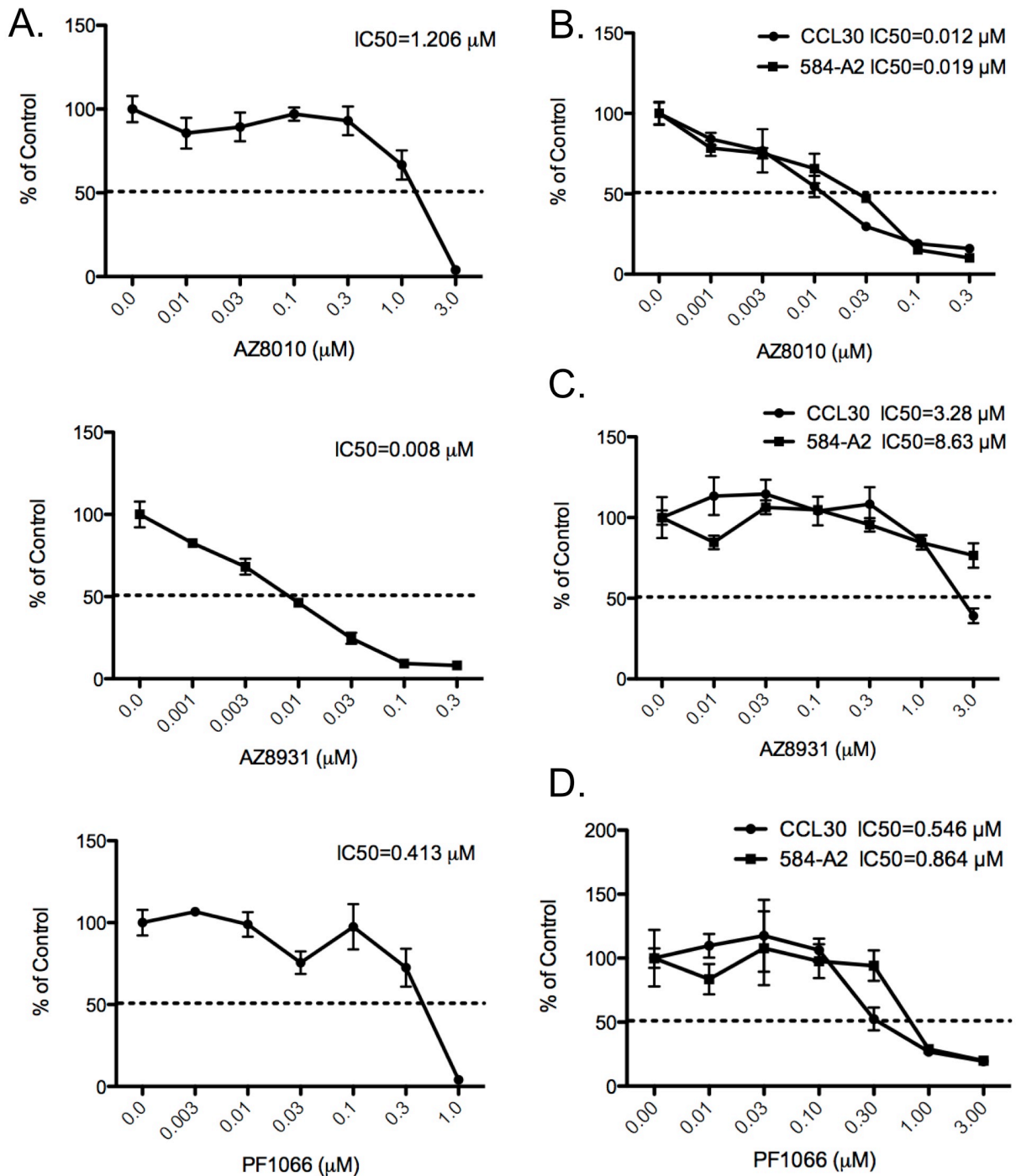
| CCL30 | | | | | | | |
|-------|-------------|-----------------|----------|------|-------------|-----------------|---------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value | Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 1 | BCLAF1 | 9.25E-04 | 9.25E-04 | 48 | VNN2 | 6.65E-03 | 0.3190 |
| 2 | FN1 | 1.14E-03 | 2.27E-03 | 49 | MPPED2 | 6.75E-03 | 0.3310 |
| 3 | FGF2 | 1.23E-03 | 3.70E-03 | 50 | YWHAZ | 6.87E-03 | 0.3437 |
| 4 | LRPPRC | 2.05E-03 | 8.20E-03 | 51 | CBX4 | 7.01E-03 | 0.3575 |
| 5 | GAPDH | 2.09E-03 | 1.05E-02 | 52 | ESR2 | 7.08E-03 | 0.3681 |
| 6 | ATP6AP2 | 2.18E-03 | 1.31E-02 | 53 | PTP4A1 | 7.21E-03 | 0.3822 |
| 7 | DBF4 | 2.22E-03 | 1.55E-02 | 54 | TMED2 | 7.29E-03 | 0.3934 |
| 8 | GYG1 | 2.29E-03 | 1.83E-02 | 55 | RPL22 | 7.30E-03 | 0.4013 |
| 9 | AK2 | 2.42E-03 | 2.18E-02 | 56 | CLUL1 | 7.40E-03 | 0.4143 |
| 10 | IL5RA | 2.44E-03 | 2.44E-02 | 57 | CSNK2A1 | 7.41E-03 | 0.4226 |
| 11 | OTUB2 | 2.57E-03 | 2.82E-02 | 58 | MAX | 7.72E-03 | 0.4478 |
| 12 | CSF2 | 2.57E-03 | 3.09E-02 | 59 | SGK1 | 7.81E-03 | 0.4608 |
| 13 | CHD4 | 2.59E-03 | 3.37E-02 | 60 | RAP2B | 8.03E-03 | 0.4821 |
| 14 | PAX8 | 2.61E-03 | 3.66E-02 | 61 | HMG20B | 8.19E-03 | 0.4998 |
| 15 | LPIN1 | 3.01E-03 | 4.51E-02 | 62 | PPP1CB | 8.23E-03 | 0.5100 |
| 16 | DKK3 | 3.04E-03 | 4.86E-02 | 63 | PDE8A | 8.26E-03 | 0.5207 |
| 17 | FABP4 | 3.06E-03 | 5.21E-02 | 64 | RUNX1 | 8.35E-03 | 0.5343 |
| 18 | PEX5 | 3.23E-03 | 5.81E-02 | 65 | KCNK7 | 8.38E-03 | 0.5445 |
| 19 | EEF1E1 | 3.30E-03 | 6.27E-02 | 66 | RRH | 8.47E-03 | 0.5587 |
| 20 | TRIM44 | 3.60E-03 | 7.21E-02 | 67 | FXR1 | 8.62E-03 | 0.5773 |
| 21 | CXCR6 | 3.73E-03 | 7.84E-02 | 68 | KLHL20 | 8.85E-03 | 0.6019 |
| 22 | LSM14A | 3.74E-03 | 8.24E-02 | 69 | CASP1 | 8.85E-03 | 0.6110 |
| 23 | DNAJC6 | 3.86E-03 | 8.89E-02 | 70 | SDF4 | 9.23E-03 | 0.6463 |
| 24 | RPS7 | 4.11E-03 | 9.85E-02 | 71 | IPO8 | 9.25E-03 | 0.6564 |
| 25 | MAPK9 | 4.16E-03 | 0.1039 | 72 | EPB41L3 | 9.76E-03 | 0.7024 |
| 26 | DYNC1LI2 | 4.17E-03 | 0.1084 | 73 | CCDC6 | 9.90E-03 | 0.7226 |
| 27 | SERPINB3 | 4.32E-03 | 0.1165 | 74 | TUBA1A | 9.94E-03 | 0.7358 |
| 28 | C1QBP | 4.38E-03 | 0.1227 | 75 | DNAJC24 | 9.96E-03 | 0.7471 |
| 29 | PDCD10 | 4.50E-03 | 0.1306 | 76 | ZMYND11 | 1.01E-02 | 0.7654 |
| 30 | VIPR2 | 4.73E-03 | 0.1418 | 77 | HYAL1 | 1.02E-02 | 0.7861 |
| 31 | CSRP2 | 5.06E-03 | 0.1568 | 78 | MALT1 | 1.05E-02 | 0.8172 |
| 32 | EZR | 5.06E-03 | 0.1620 | 79 | SIKE | 1.06E-02 | 0.8369 |
| 33 | RBM15B | 5.10E-03 | 0.1682 | 80 | TRIM8 | 1.10E-02 | 0.8769 |
| 34 | KCNA3 | 5.16E-03 | 0.1754 | 81 | ZNF208 | 1.10E-02 | 0.8895 |
| 35 | THAP4 | 5.16E-03 | 0.1807 | 82 | FAM83E | 1.12E-02 | 0.9157 |
| 36 | SLC35B1 | 5.21E-03 | 0.1875 | 83 | CCR3 | 1.13E-02 | 0.9343 |
| 37 | TPT1 | 5.27E-03 | 0.1949 | 84 | CSTF2T | 1.14E-02 | 0.9572 |
| 38 | PGM1 | 5.37E-03 | 0.2039 | 85 | PSG9 | 1.15E-02 | 0.9792 |
| 39 | SFRS10 | 5.56E-03 | 0.2168 | 86 | NUP50 | 1.16E-02 | 0.9994 |
| 40 | TLE4 | 5.76E-03 | 0.2305 | 87 | CYP2C18 | 1.17E-02 | 1.0149 |
| 41 | CLIC2 | 5.89E-03 | 0.2414 | 88 | CACYBP | 1.19E-02 | 1.0451 |
| 42 | NRXN1 | 5.94E-03 | 0.2494 | 89 | C1orf116 | 1.19E-02 | 1.0597 |
| 43 | KPNA4 | 6.01E-03 | 0.2584 | 90 | SH2B3 | 1.19E-02 | 1.0726 |
| 44 | ATP6V0E1 | 6.24E-03 | 0.2746 | 91 | DBT | 1.21E-02 | 1.0994 |
| 45 | HIST1H2AE | 6.26E-03 | 0.2817 | 92 | UBE2L3 | 1.23E-02 | 1.1344 |
| 46 | PCDHGA1 | 6.44E-03 | 0.2963 | 93 | ZFP106 | 1.24E-02 | 1.1577 |
| 47 | TMPRSS5 | 6.44E-03 | 0.3028 | 94 | GBF1 | 1.25E-02 | 1.1738 |

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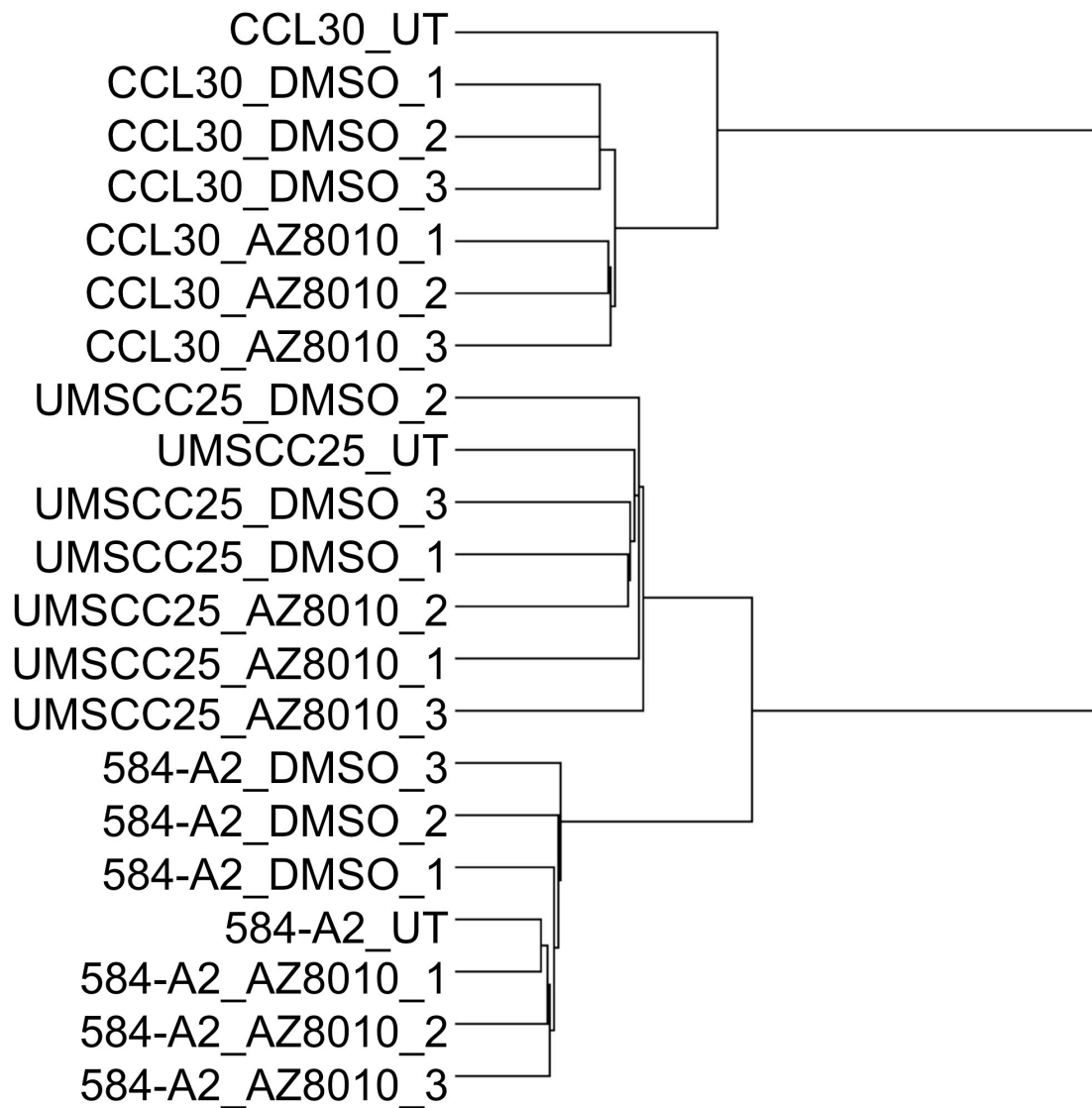
| CCL30 | | | |
|--------------|--------------------|------------------------|----------------|
| Rank | Gene Symbol | p-value [p(wZ)] | E value |
| 95 | TRIM2 | 1.27E-02 | 1.2025 |
| 96 | FGF3 | 1.29E-02 | 1.2339 |
| 97 | FGFR3 | 1.29E-02 | 1.2541 |
| 98 | GTF3C2 | 1.30E-02 | 1.2729 |
| 99 | GPBP1L1 | 1.31E-02 | 1.3003 |
| 100 | PCDH12 | 1.34E-02 | 1.3366 |
| 101 | MOBK1B | 1.34E-02 | 1.3530 |
| 102 | PTEN | 1.37E-02 | 1.4023 |
| 103 | GCN1L1 | 1.38E-02 | 1.4205 |
| 104 | EIF5B | 1.40E-02 | 1.4509 |
| 105 | TMSL3 | 1.40E-02 | 1.4693 |
| 105 | TMSB4X | 1.40E-02 | 1.4693 |
| 107 | GLUL | 1.41E-02 | 1.5096 |
| 108 | ZFX | 1.42E-02 | 1.5361 |
| 109 | DNAJC13 | 1.42E-02 | 1.5506 |
| 110 | ZNF217 | 1.43E-02 | 1.5778 |
| 111 | PAFAH2 | 1.45E-02 | 1.6143 |
| 112 | KIF5B | 1.46E-02 | 1.6339 |
| 113 | XPNPEP1 | 1.46E-02 | 1.6513 |
| 114 | TMEM30B | 1.47E-02 | 1.6760 |
| 115 | IRF9 | 1.48E-02 | 1.6977 |
| 116 | KCNJ1 | 1.50E-02 | 1.7385 |
| 117 | GCDH | 1.50E-02 | 1.7539 |
| 118 | PGM3 | 1.55E-02 | 1.8277 |
| 119 | USP9X | 1.56E-02 | 1.8522 |
| 120 | PI4K2A | 1.60E-02 | 1.9189 |
| 121 | AKAP4 | 1.63E-02 | 1.9689 |
| 122 | PHTF1 | 1.63E-02 | 1.9873 |

SUPPLEMENTAL FIGURE 1: Dose response of cell lines to RTK inhibition. The

indicated cell lines were treated with AZ8010 (A, B), AZ8931 (A, C) or PF1066 (A, D) at a range of doses and proliferation was measured by CyQuant assay. The IC₅₀ was calculated for each inhibitor and cell line.

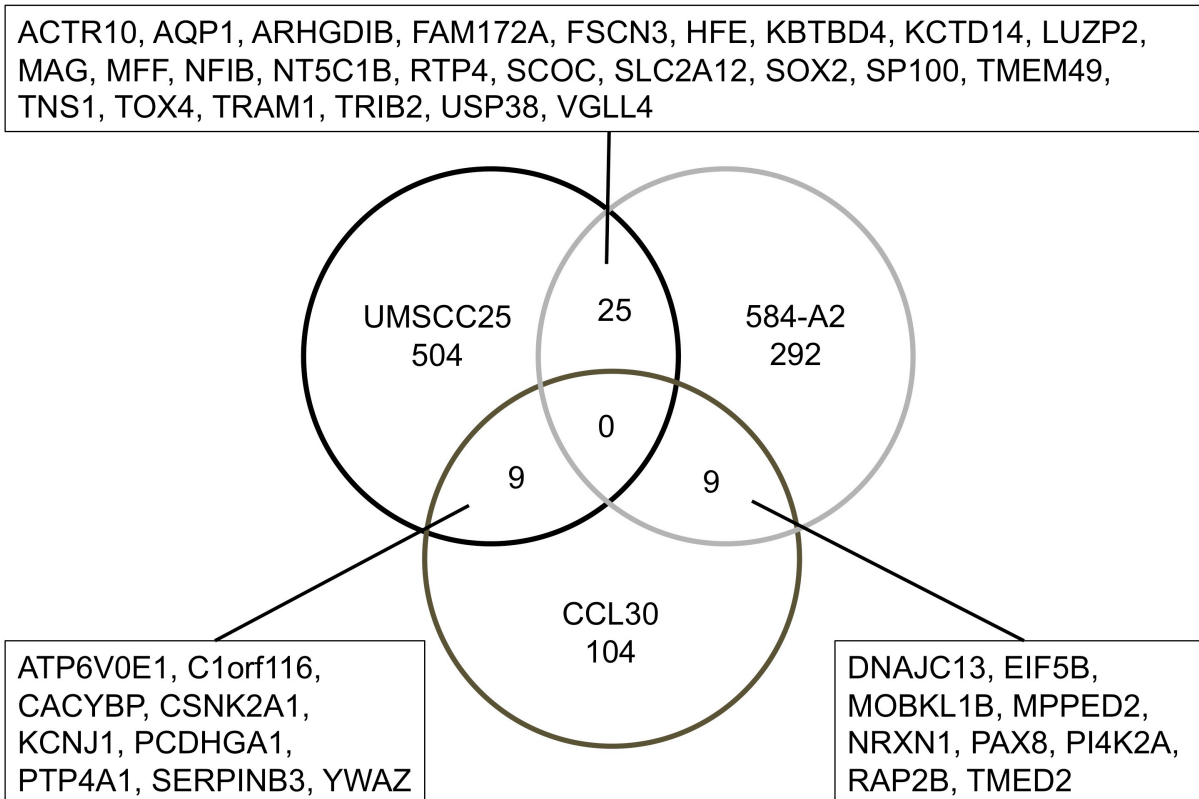


SUPPLEMENTAL FIGURE 2: Unsupervised hierarchical clustering of replicates and treatment groups within cell lines treated with AZ8010.



SUPPLEMENTAL FIGURE 3: Overlap of SLATs between cell lines. The figure

displays the number of SLATs identified in common between UMSCC25, 584-A2 and CCL30 cells and their gene names. Note that no SLAT was identified in all three cell lines.



SUPPLEMENTAL FIGURE 5: Combined inhibition of FGFR and ERBB family

members by the TKI, lapatinib, leads to impairment of cell line growth. The cell

lines indicated were treated in triplicate with DMSO, 0.1 μM lapatinib, 0.5 μM labatinib

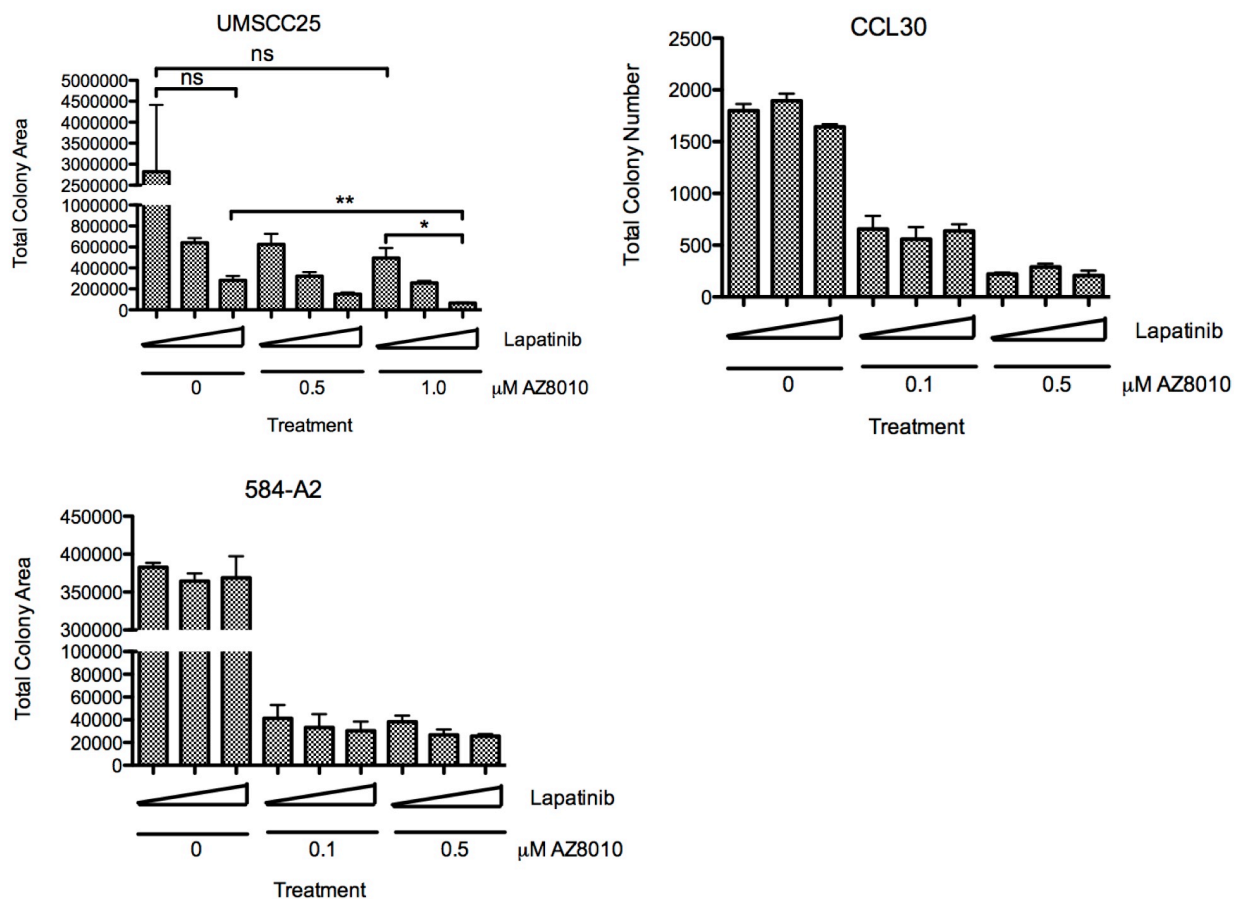
alone or in combination with the indicated doses of AZ8010. The effects of the treatment

on cell growth were measured by clonogenic assay (UMSCC25, 584-A2) or anchorage

independent growth assay (CCL30). Statistical analysis using a two-tailed Student's t-

test was used to show significant differences in growth where ns indicates not

significant, * indicates $p < 0.05$, ** indicates $p < 0.005$.



SUPPLEMENTAL FIGURE 6: Knockdown of ERBB2 or MET inhibits growth of two

HNSCC cell lines and improves response to AZ8010 treatment. A) Pooled UMSCC1

or UMSCC8 cells expressing either a negative control shRNA targeting GFP or two independent shRNAs targeting ERBB2 were measured for ERBB2 protein expression by immunoblot. The protein level of the α -subunit of Na/K-ATPase was measured by

immunoblot as a loading control. **B)** Pooled UMSCC1 cells expressing the control shRNA or one of two shRNAs targeting ERBB2 were used in triplicate in a clonogenic growth assay in the presence or absence of 1.0 μ M AZ8010. **C)** Pooled UMSCC8 cells

expressing the control shRNA or one of two shRNAs targeting ERBB2 were used in triplicate in a clonogenic growth assay in the presence or absence of 1.0 μ M AZ8010.

D) Pooled UMSCC1 or UMSCC8 cells expressing either a negative control shRNA targeting GFP or two independent shRNAs targeting MET were measured for MET protein expression by immunoblot. The protein level of the α -subunit of Na/K-ATPase

was measured by immunoblot as a loading control. **E)** Pooled UMSCC1 cells expressing the control shRNA or one of two shRNAs targeting MET were used in triplicate in a clonogenic growth assay in the presence or absence of 1.0 μ M AZ8010.

After two weeks, colonies were stained and quantified as described in the Materials and

Methods. **F)** Pooled UMSCC8 cells expressing the control shRNA or one of two shRNAs targeting MET were used in triplicate in a clonogenic growth assay in the

presence or absence of 1.0 μ M AZ8010. After two weeks, colonies were stained and quantified as described in the Materials and Methods. Data are the means and SEM of

three independent experiments. Statistical analysis using a two-tailed Student's t-test

was used to show significant differences in growth where ns indicates not significant, *

indicates $p < 0.05$, ** indicates $p < 0.005$, *** indicates $p < 0.0005$ and **** indicates

$p < 0.0001$.

