

| symbol    | mean AUC | adj-p | Entrez    | chr | band info     | gene name                                                                               |
|-----------|----------|-------|-----------|-----|---------------|-----------------------------------------------------------------------------------------|
| ASIC2     | 0.985    | 0     | 40        | 17  | 17q12         | acid-sensing (proton-gated) ion channel 2                                               |
| TMEM132C  | 0.985    | 0     | 92293     | 12  | 12q24.32      | transmembrane protein 132C                                                              |
| DPF6      | 0.984    | 0     | 1804      | 7   | 7q36.2        | dipeptidyl-peptidase 6                                                                  |
| PRKCB     | 0.984    | 0     | 5579      | 16  | 16p11.2       | protein kinase C, beta                                                                  |
| LINC00461 | 0.983    | 0     | 645323    | 5   | 5q14.3        | long intergenic non-protein coding RNA 461                                              |
| TNR       | 0.983    | 0     | 7143      | 1   | 1q24          | tenascin R (restrictin, janusin)                                                        |
| CNTNAP5   | 0.983    | 0     | 129684    | 2   | 2q14.3        | contactin associated protein-like 5                                                     |
| NRXN1     | 0.983    | 0     | 9378      | 2   | 2p16.3        | neurexin 1                                                                              |
| CACNA1A   | 0.983    | 0     | 773       | 19  | 19p13         | calcium channel, voltage-dependent, P/Q type, alpha 1A subunit                          |
| OPCML     | 0.982    | 0     | 4978      | 11  | 11q25         | opioid binding protein/cell adhesion molecule-like                                      |
| EPHA10    | 0.982    | 0     | 284656    | 1   | 1p34.3        | EPH receptor A10                                                                        |
| CADM3     | 0.982    | 0     | 57863     | 1   | 1q21.2-q22    | cell adhesion molecule 3                                                                |
| NTM       | 0.982    | 0     | 50863     | 11  | 11q25         | neurotrimin                                                                             |
| MAGI2     | 0.982    | 0     | 9863      | 7   | 7q21          | membrane associated guanylate kinase, WW and PDZ domain containing 2                    |
| RBFOX1    | 0.982    | 0     | 54715     | 16  | 16p13.3       | RNA binding protein, fox-1 homolog (C. elegans) 1                                       |
| NRXN2     | 0.981    | 0     | 9379      | 11  | 11q13         | neurexin 2                                                                              |
| PAX6      | 0.981    | 0     | 5080      | 11  | 11p13         | paired box 6                                                                            |
| VAX1      | 0.981    | 0     | 11023     | 10  | 10q26.1       | ventral anterior homeobox 1                                                             |
| CACNA1E   | 0.981    | 0     | 777       | 1   | 1q25-q31      | calcium channel, voltage-dependent, R type, alpha 1E subunit                            |
| FAM123C   | 0.981    | 0     | 205147    | 2   | 2q21.1        | family with sequence similarity 123C                                                    |
| PAX5      | 0.981    | 0     | 5079      | 9   | 9p13          | paired box 5                                                                            |
| SHANK1    | 0.981    | 0     | 50944     | 19  | 19q13.3       | SH3 and multiple ankyrin repeat domains 1                                               |
| LDLRAD2   | 0.981    | 0     | 401944    | 1   | 1p36.12       | low density lipoprotein receptor class A domain containing 2                            |
| ANK1      | 0.981    | 0     | 286       | 8   | 8p11.1        | ankyrin 1, erythrocytic                                                                 |
| TNFRSF8   | 0.981    | 0     | 943       | 1   | 1p36          | tumor necrosis factor receptor superfamily, member 8                                    |
| CA10      | 0.98     | 0     | 56934     | 17  | 17q21.33      | carbonic anhydrase X                                                                    |
| PAX3      | 0.98     | 0     | 5077      | 2   | 2q35          | paired box 3                                                                            |
| SHOX2     | 0.98     | 0     | 6474      | 3   | 3q25.32       | short stature homeobox 2                                                                |
| KCNK9     | 0.98     | 0     | 51305     | 8   | 8q24.3        | potassium channel, subfamily K, member 9                                                |
| SLC17A7   | 0.98     | 0     | 57030     | 19  | 19q13         | solute carrier family 17 (sodium-dependent inorganic phosphate cotransporter), member 7 |
| CD8A      | 0.98     | 0     | 925       | 2   | 2p12          | CD8a molecule                                                                           |
| RPH3A     | 0.98     | 0     | 22895     | 12  | 12q24.13      | rabphilin 3A homolog (mouse)                                                            |
| GRIN2A    | 0.98     | 0     | 2903      | 16  | 16p13.2       | glutamate receptor, ionotropic, N-methyl D-aspartate 2A                                 |
| TMEM132D  | 0.98     | 0     | 121256    | 12  | 12q24.33      | transmembrane protein 132D                                                              |
| NRN1      | 0.98     | 0     | 51299     | 6   | 6p25.1        | neuritin 1                                                                              |
| ZIC4      | 0.98     | 0     | 84107     | 3   | 3q24          | Zic family member 4                                                                     |
| SLC6A3    | 0.98     | 0     | 6531      | 5   | 5p15.3        | solute carrier family 6 (neurotransmitter transporter, dopamine), member 3              |
| GRID2IP   | 0.98     | 0     | 392862    | 7   | 7p22.1        | glutamate receptor, ionotropic, delta 2 (Grid2) interacting protein                     |
| PAX7      | 0.98     | 0     | 5081      | 1   | 1p36.13       | paired box 7                                                                            |
| ZNF536    | 0.98     | 0     | 9745      | 19  | 19q12         | zinc finger protein 536                                                                 |
| EN1       | 0.98     | 0     | 2019      | 2   | 2q14.2        | engrailed homeobox 1                                                                    |
| TBR1      | 0.979    | 0     | 10716     | 2   | 2q24          | T-box, brain, 1                                                                         |
| FLI1      | 0.979    | 0     | 2313      | 11  | 11q24.1-q24.3 | Friend leukemia virus integration 1                                                     |
| CACNG3    | 0.979    | 0     | 10368     | 16  | 16p12.1       | calcium channel, voltage-dependent, gamma subunit 3                                     |
| GCM2      | 0.979    | 0     | 9247      | 6   | 6p23          | glial cells missing homolog 2 (Drosophila)                                              |
| PTPRR     | 0.979    | 0     | 5801      | 12  | 12q15         | protein tyrosine phosphatase, receptor type, R                                          |
| SEZ6      | 0.979    | 0     | 124925    | 17  | 17q11.2       | seizure related 6 homolog (mouse)                                                       |
| CNGA3     | 0.979    | 0     | 1261      | 2   | 2q11.2        | cyclic nucleotide gated channel alpha 3                                                 |
| VIPR2     | 0.979    | 0     | 7434      | 7   | 7q36.3        | vasoactive intestinal peptide receptor 2                                                |
| OTX2      | 0.979    | 0     | 5015      | 14  | 14q22.3       | orthodenticle homeobox 2                                                                |
| LHX3      | 0.979    | 0     | 8022      | 9   | 9q34.3        | LIM homeobox 3                                                                          |
| DAB1      | 0.979    | 0     | 1600      | 1   | 1p32-p31      | disabled homolog 1 (Drosophila)                                                         |
| RYR1      | 0.979    | 0     | 6261      | 19  | 19q13.1       | ryanodine receptor 1 (skeletal)                                                         |
| DLG2      | 0.979    | 0     | 1740      | 11  | 11q14.1       | discs, large homolog 2 (Drosophila)                                                     |
| FOXP1     | 0.979    | 0     | 2290      | 14  | 14q13         | forkhead box G1                                                                         |
| NTSR1     | 0.978    | 0     | 4923      | 20  | 20q13         | neurotensin receptor 1 (high affinity)                                                  |
| SRRM4     | 0.978    | 0     | 84530     | 12  | 12q24.23      | serine/arginine repetitive matrix 4                                                     |
| EBF2      | 0.978    | 0     | 64641     | 8   | 8p21.2        | early B-cell factor 2                                                                   |
| PRDM14    | 0.978    | 0     | 63978     | 8   | 8q13.3        | PR domain containing 14                                                                 |
| DLK1      | 0.978    | 0     | 8788      | 14  | 14q32         | delta-like 1 homolog (Drosophila)                                                       |
| ANKS1B    | 0.978    | 0     | 56899     | 12  | 12q23.1       | ankyrin repeat and sterile alpha motif domain containing 1B                             |
| EBF1      | 0.978    | 0     | 1879      | 5   | 5q34          | early B-cell factor 1                                                                   |
| BRSK2     | 0.978    | 0     | 9024      | 11  | 11p15.5       | BR serine/threonine kinase 2                                                            |
| CELF5     | 0.978    | 0     | 60680     | 19  | 19p13         | CUGBP, Elav-like family member 5                                                        |
| SLC12A5   | 0.978    | 0     | 57468     | 20  | 20p13.12      | solute carrier family 12 (potassium/chloride transporter), member 5                     |
| HS3ST4    | 0.978    | 0     | 9951      | 16  | 16p11.2       | heparan sulfate (glucosamine) 3-O-sulfotransferase 4                                    |
| C1orf94   | 0.978    | 0     | 84970     | 1   | 1p34.3        | chromosome 1 open reading frame 94                                                      |
| GDF6      | 0.978    | 0     | 392255    | 8   | 8q22.1        | growth differentiation factor 6                                                         |
| RNF220    | 0.978    | 0     | 55182     | 1   | 1p34.1        | ring finger protein 220                                                                 |
| CPEB1     | 0.978    | 0     | 64506     | 15  | 15q25.2       | cytoplasmic polyadenylation element binding protein 1                                   |
| OTP       | 0.978    | 0     | 23440     | 5   | 5q13.3        | orthopedia homeobox                                                                     |
| PPP10     | 0.978    | 0     | 57628     | 2   | 2q14.1        | dipeptidyl-peptidase 10 (non-functional)                                                |
| GPR123    | 0.978    | 0     | 84435     | 10  | 10q26         | G protein-coupled receptor 123                                                          |
| XKR4      | 0.978    | 0     | 114786    | 8   | 8q12.1        | XK, Kell blood group complex subunit-related family, member 4                           |
| MAST1     | 0.978    | 0     | 22983     | 19  | 19p13.2       | microtubule associated serine/threonine kinase 1                                        |
| ALX4      | 0.978    | 0     | 60529     | 11  | 11p11.2       | ALX homeobox 4                                                                          |
| ALX3      | 0.978    | 0     | 257       | 1   | 1p13.3        | ALX homeobox 3                                                                          |
| MMEL1     | 0.977    | 0     | 79258     | 1   | 1p36          | membrane metallo-endopeptidase-like 1                                                   |
| FAM19A1   | 0.977    | 0     | 407738    | 3   | 3p14.1        | family with sequence similarity 19 (chemokine (C-C motif)-like), member A1              |
| TBX15     | 0.977    | 0     | 6913      | 1   | 1p11.1        | T-box 15                                                                                |
| IRF4      | 0.977    | 0     | 3662      | 6   | 6p25-p23      | interferon regulatory factor 4                                                          |
| FAM135B   | 0.977    | 0     | 51059     | 8   | 8q24.23       | family with sequence similarity 135, member B                                           |
| NR2E1     | 0.977    | 0     | 7101      | 6   | 6q21          | nuclear receptor subfamily 2, group E, member 1                                         |
| OTX2OS1   | 0.977    | 0     | 100309464 | 14  |               | Otx2 opposite strand transcript 1                                                       |
| GRM1      | 0.977    | 0     | 2911      | 6   | 6q24          | glutamate receptor, metabotropic 1                                                      |
| HAS1      | 0.977    | 0     | 3036      | 19  | 19q13.4       | hyaluronan synthase 1                                                                   |
| LMX1A     | 0.977    | 0     | 4009      | 1   | 1q24.1        | LIM homeobox transcription factor 1, alpha                                              |
| MMP9      | 0.977    | 0     | 4318      | 20  | 20q11.2-q13.1 | matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)  |
| UNC13A    | 0.977    | 0     | 23025     | 19  | 19p13.11      | unc-13 homolog A (C. elegans)                                                           |
| CSMD1     | 0.977    | 0     | 64478     | 8   | 8p23.2        | CUB and Sushi multiple domains 1                                                        |
| CHRM2     | 0.977    | 0     | 1129      | 7   | 7q31-q35      | cholinergic receptor, muscarinic 2                                                      |
| GRM5      | 0.977    | 0     | 2915      | 11  | 11q14.3       | glutamate receptor, metabotropic 5                                                      |
| FGF14     | 0.977    | 0     | 2259      | 13  | 13q34         | fibroblast growth factor 14                                                             |
| PIK3R5    | 0.977    | 0     | 23533     | 17  | 17p13.1       | phosphoinositide-3-kinase, regulatory subunit 5                                         |
| LHX8      | 0.977    | 0     | 431707    | 1   | 1p31.1        | LIM homeobox 8                                                                          |
| NCAN      | 0.977    | 0     | 1463      | 19  | 19p12         | neurocan                                                                                |
| NELL1     | 0.977    | 0     | 4745      | 11  | 11p15.1       | NEL-like 1 (chicken)                                                                    |
| PRDM13    | 0.977    | 0     | 59336     | 6   | 6q16-q21      | PR domain containing 13                                                                 |
| LHFPL3    | 0.977    | 0     | 375612    | 7   | 7q22.2        | lipoma HMGIC fusion partner-like 3                                                      |
| KIF19     | 0.977    | 0     | 124602    | 17  | 17q25.1       | kinesin family member 19                                                                |

Table S1: Meta-analysis: 100 most significant most unstable genes