|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Disorder** | **Phenotype** | **Chromosome** | **SNP** | **Implicated Gene or Locus** | **Health-Related Outcomes** | **Reference** |
| **Smoking-Related Phenotypes** | Nicotine Dependence | 8p11 | rs1451240 | *CHRNB3* |  | (26) |
|  |  | 9q34 | rs3025343 | *DBH* | COPD | (10, 31) |
|  |  | 15q25 | rs16969968 | *CHRNA5* | Lung Cancer, tobacco-related cancers, Schizophrenia, COPD | (13, 14, 19, 27, 34) |
|  |  | 15q25 | rs1051730 | *CHRNA3* | Lung Cancer, peripheral artery disease, COPD | (2, 14, 17, 24, 32, 33) |
|  |  | 15q25 | rs206527 | *CHRNA5-CHRNA3-CHRNB4* |  | (5) |
|  |  | 15q25 | rs34684276 | *CHRNA5-CHRNA3-CHRNB4* |  | (12) |
|  |  | 20q11 | rs910083 | *DNMT3B* |  | (10) |
|  |  | 20q11 | rs57342388 | *NOL4L* |  | (10) |
|  |  | 20q13 | rs2273500 | *CHRNA4* |  | (12) |
|  | Nicotine metabolite ratio | 19q13 | rs56113850 | *CYP2A6* |  | (3, 20) |
|  |  | 19q13 | rs12461964 | *CYP2A6* |  | (20) |
|  |  | 19q13 | rs12459249 | *CYP2A6* |  | (3) |
|  |  | 19q13 | rs34226463 | *CYP2A6-CYPA27* |  | (3) |
| **Alcohol Use Disorder** | Alcohol dependence, Maximum drinks in a 24-hour period, Daily alcohol intake or weekly alcohol intake | 1q25 | rs1799876 | *SERPINC1* |  | (16, 37) |
|  |  | 2p23 | rs780094 | *GCKR* |  | (28) |
|  |  | 2p23 | rs4665985 | *GCKR* |  | (16) |
|  |  | 3p24 | rs11128951 | *SGOL1* |  | (23) |
|  |  | 4p14 | rs11940694 | *KLB* |  | (6, 28) |
|  |  | 4p14 | rs7686419 | *KLB* |  | (16) |
|  |  | 4q23 | rs1229984 | *ADH1B* |  | (4, 16, 37) |
|  |  | 4q23 | rs2066702 | *ADH1B* |  | (37) |
|  |  | 4q23 | rs145452708 | *ADH1B/ADH1C* |  | (6) |
|  |  | 7q11 | rs6943555 | *AUTS2* |  | (16, 28) |
|  |  | 17q24 | rs671 | *ALDH2* | East Asian population; males | (16, 25) |
|  |  | 17q24 | rs11066280 | *ALDH2* | Han Chinese population | (38) |
| **Cannabis Use Disorder** |  | 3q25 | rs143244591 | *RP11-206M11.7* |  | (30) |
|  |  | 8p21 | rs56372821 | *CHRN2A* |  | (7) |
|  |  | 8p23 | rs77378271 | *CSMD1* |  | (30) |
|  |  | 10q26 | rs1409568 | *Intergenic* |  | (1) |
|  |  | 21q22 | rs186825689 | *S100B/DIP2A* |  | (30) |
| **Stimulant Use Disorder** |  | 10q26 | rs2629540 | *FAM53B* | *Fam53b* associated with cocaine IVSA in mice | (8, 9) |
| **Opioid Use Disorder** |  | 1q42 | rs10799590 | *CHIH3* |  | (22) |
|  |  | 6q25 | rs9479757 | *OPRM1* | Disrupts alternative splicing of *OPRM1*. hnRNPH is a binding partner for the G allele. hnRNPH is associated with methamphetamine sensitivity in mice. | (36, 39) |
|  |  | 6q25 | rs3778150 | *OPRM1* |  | (12) |
|  |  | 18q12.4 | Deletion | *LOC647946, KC6, PIK3C3* |  | (18) |
|  |  | 18q23 | rs62103177 | *KCNG2* |  | (9) |
| **Polysubstance Abuse Disorder and General substance dependence** |  | 2q14 | rs2952621 | *LOC151121* |  | (35) |
|  |  | 3p24 | rs9829896 | *KAT2B* |  | (15) |
|  |  | 3q27 | rs1868152 | *CRYGS* |  | (21) |
|  |  | 6p25 | rs1799971 | *OPRM1* | Modest protective effect on general substance dependence | (29) |
|  |  | 18p11 | rs2567261 | *ARHGAP28* |  | (35) |

**Supplemental Table 1.** The genetics of addiction as revealed through GWAS studies of nicotine, alcohol, and other SUDs. The findings listed on the table are limited to common variants (single-nucleotide polymorphisms [SNPs]) for which there is independently replicated evidence of a robust association at a standard genome-wide significance threshold of P<5× 10−8. For more details see (11).

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