**Supplementary Information**

**Standard quality control (QC) procedures.** For all studies obtained from the database of Genotypes and Phenotypes (dbGaP), we began by applying all participant-level and SNP-level QC procedures that were recommended as part of the dbGaP release. We then applied our own standard set of QC procedures to remove participants with a missing rate >3%, sample duplication (identity-by-state >90%), first-degree relatedness (identity-by-descent >40%), gender discordance (FST <0.2 for chromosome X SNPs to confirm females and FST >0.8 to confirm males), excessive homozygosity (FST >0.5 or FST <-0.2), or chromosomal anomalies and to remove any SNPs with a missing rate >3% or Hardy-Weinberg equilibrium (HWE) P<1×10-4.

**1000 Genomes imputation.** Genotype imputation was conducted in each U.S.-based sample using IMPUTE2[25](#_ENREF_25) with reference to the 1000 Genomes ALL phase I integrated variant set (released on December 9, 2013 at https://mathgen.stats.ox.ac.uk/impute/data\_download\_1000G\_phase1\_integrated\_SHAPEIT2\_9-12-13.html). This panel contains 36,820,992 SNPs and 1,384,273 short bi-allelic insertions/deletions (indels) available across all 1000 Genomes populations. Genotype imputation was preceded by pre-phasing the study genotypes using SHAPEIT2[26](#_ENREF_26) with default settings applied, except for the following: 500 conditioning states to improve the accuracy of phasing; an effective population size of 11,418, which is recommended for populations of European-ancestry; 10 burn-in iterations; 10 pruning iterations; and 50 iterations for the algorithm to compute transition probabilities in the haplotype graphs. The resulting haplotype estimates were used as the basis for imputation on 5 MB chromosomal chunks and 1 MB flanking buffers with default IMPUTE2 settings applied, except for specifying the expected number of most useful reference haplotypes as 170 (number of CEU haplotypes).

**Assessing imputation quality for rs2273500.** To assess the fidelity of imputation for our lead *CHRNA4* SNP rs2273500, we compared its observed genotypes and imputed dosages using a subset of the COGEND discovery sample. Rs2273500 was genotyped on the Illumina 2.5M array in this subset (N=920); the remainder of the COGEND sample (N=1,015) was genotyped on the Illumina 1M array. To circumvent bias that may arise from conducting imputation on subjects genotyped on different arrays, we carried forward only the SNPs genotyped across both arrays. In the 920 COGEND subjects with Illumina 2.5M array genotyping, we observed high agreement (R2=0.83) between the rs2273500 genotypes and its imputation dosages that were based on the overlapping 1M-2.5M SNP genotype set with rs2273500 blinded.

Our categorical FTND regression models were repeated in this COGEND subset (N=920) to compare the nicotine dependence association results when using the observed genotypes vs. imputed dosages. Although neither model was significantly associated likely due to the reduced sample size and reduced statistical power, the magnitude for rs2273500 association with nicotine dependence was stronger when using observed genotypes (β=0.047, standard error=0.040, and *P*=0.24) compared to using imputed dosages (β=0.028, standard error=0.042, and *P*=0.50), suggesting that the rs2273500 association was underestimated in the genome-wide association study of COGEND and possibly the other samples that relied on rs2273500 imputation.

**Selection of sample-specific covariates for nicotine dependence association testing**. Besides age, sex, and principal component eigenvectors, other sample-specific covariates were included due to the original study’s ascertainment scheme. The SAGE\* sample, which was ascertained based on addictions other than nicotine, included two additional covariates to adjust for DSM-IV-defined alcohol dependence and cocaine dependence. The EAGLE and COPDGene samples were ascertained based on smoking-related clinical outcomes. EAGLE was ascertained for lung cancer, but FTND data were collected based on lifetime smoking habits among current and former smokers. Adjustments for lung cancer case/control status and current/former smoking were not included in the primary analyses in EAGLE, but *post hoc* analyses with adjustment for these statuses showed that the direction and magnitude of our most significant SNP association with nicotine dependence were consistent with the primary result (results not shown). In contrast, COPDGene had FTND data collected based on current smoking status among COPD cases and controls. Since their current cigarette smoking behavior may be influenced by the onset and progression of lung disease, the regression models used to conduct GWAS analyses in COPDGene were additionally adjusted for severity of COPD, coded as three dummy variables corresponding to GOLD stages of 0, 1-2, and 3-4.

**Supplementary Table 1.** Chromosome 20q13 SNP and indel associations with nicotine dependence at meta-analysis *P*<5×10-5. Results were taken from a linear regression model in each sample with categorical nicotine dependence (mild, moderate, and severe) as the outcome, SNP/indel genotype dosage as the predictor, and age, sex, principal component eigenvectors (if applicable), and other sample-specific variables (if applicable) as covariates. The sample-specific results following correction for genomic control are shown. SNPs/indels are sorted by the meta-analysis *P* values, and the genome-wide significant *P* value (*P*<5**×**10-8) is bolded.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP / indel** | **Base pair position (NCBI build 37)** | **Minor allele** | **MAF1** | **deCODE (N=9,090)** | | | **EAGLE (N=3,006)** | | | **COPDGene (N=2,211)** | | | **COGEND (N=1,935)** | | | **SAGE (N=832)** | | | **Meta-analysis *P*** |
| **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** |
| rs4809294 | 61977723 | A | 0.049 | 0.99 | 0.12 | 3.5×10-6 | 0.78 | 0.051 | 0.31 | 0.87 | 0.13 | 0.026 | 0.82 | 0.10 | 0.16 | 0.85 | 0.18 | 0.083 | **3.8×10-8** |
| rs4809293 | 61977640 | A | 0.043 | 0.99 | 0.12 | 3.2×10-5 | 0.76 | 0.052 | 0.33 | 0.85 | 0.15 | 0.013 | 0.80 | 0.13 | 0.070 | 0.84 | 0.21 | 0.046 | 7.2×10-8 |
| rs45618935 | 61979347 | A | 0.057 | 0.97 | 0.10 | 1.9×10-5 | 0.78 | 0.046 | 0.36 | 0.87 | 0.14 | 0.016 | 0.82 | 0.09 | 0.21 | 0.86 | 0.19 | 0.058 | 1.5×10-7 |
| rs4809292 | 61977506 | G | 0.058 | 0.99 | 0.096 | 2.7×10-5 | 0.78 | 0.045 | 0.36 | 0.87 | 0.14 | 0.015 | 0.82 | 0.08 | 0.22 | 0.86 | 0.19 | 0.060 | 2.2×10-7 |
| rs45470098 | 61979328 | A | 0.028 | 0.99 | 0.14 | 2.7×10-4 | 0.79 | 0.067 | 0.24 | 0.86 | 0.16 | 0.017 | 0.83 | 0.19 | 0.019 | 0.86 | 0.21 | 0.065 | 2.4×10-7 |
| rs4809543 | 61986950 | A | 0.071 | 0.99 | 0.093 | 1.8×10-5 | 0.77 | 0.071 | 0.11 | 0.90 | 0.075 | 0.11 | 0.84 | 0.07 | 0.17 | 0.87 | 0.088 | 0.28 | 3.0×10-7 |
| rs199666656 | 61975634 | T | 0.059 | 0.99 | 0.097 | 3.2×10-5 | 0.78 | 0.038 | 0.42 | 0.87 | 0.14 | 0.012 | 0.82 | 0.08 | 0.22 | 0.86 | 0.17 | 0.085 | 3.3×10-7 |
| rs4809542 | 61986787 | G | 0.065 | 0.99 | 0.093 | 2.6×10-5 | 0.76 | 0.063 | 0.19 | 0.89 | 0.089 | 0.073 | 0.83 | 0.07 | 0.20 | 0.86 | 0.12 | 0.15 | 3.9×10-7 |
| rs151176846 | 61997500 | C | 0.073 | 0.98 | 0.090 | 2.1×10-5 | 0.79 | 0.063 | 0.16 | 0.88 | 0.087 | 0.065 | 0.83 | 0.05 | 0.33 | 0.86 | 0.11 | 0.18 | 4.4×10-7 |
| rs45577732 | 61983934 | G | 0.074 | 0.99 | 0.091 | 1.6×10-5 | 0.77 | 0.064 | 0.14 | 0.90 | 0.081 | 0.079 | 0.84 | 0.06 | 0.24 | 0.86 | 0.073 | 0.37 | 4.6×10-7 |
| rs45449494 | 61987930 | G | 0.079 | 0.98 | 0.082 | 4.4×10-5 | 0.77 | 0.067 | 0.12 | 0.90 | 0.081 | 0.076 | 0.85 | 0.07 | 0.21 | 0.87 | 0.095 | 0.23 | 5.7×10-7 |
| rs45508092 | 61974731 | G | 0.054 | 0.98 | 0.10 | 3.3×10-5 | 0.78 | 0.032 | 0.51 | 0.88 | 0.13 | 0.018 | 0.84 | 0.09 | 0.19 | 0.87 | 0.16 | 0.10 | 5.8×10-7 |
| rs45456294 | 61974832 | G | 0.058 | 0.98 | 0.095 | 4.3×10-5 | 0.78 | 0.037 | 0.44 | 0.88 | 0.14 | 0.014 | 0.84 | 0.08 | 0.25 | 0.87 | 0.16 | 0.10 | 6.2×10-7 |
| rs45623037 | 61989658 | C | 0.080 | 0.98 | 0.081 | 5.9×10-5 | 0.77 | 0.069 | 0.12 | 0.90 | 0.081 | 0.078 | 0.84 | 0.07 | 0.21 | 0.87 | 0.096 | 0.23 | 7.2×10-7 |
| rs45612034 | 61974970 | A | 0.058 | 0.98 | 0.091 | 8.4×10-5 | 0.78 | 0.037 | 0.44 | 0.88 | 0.14 | 0.014 | 0.83 | 0.08 | 0.24 | 0.86 | 0.16 | 0.10 | 1.2×10-6 |
| rs45461993 | 61983901 | A | 0.078 | 0.98 | 0.077 | 1.8×10-4 | 0.78 | 0.065 | 0.14 | 0.91 | 0.082 | 0.072 | 0.85 | 0.07 | 0.21 | 0.88 | 0.097 | 0.22 | 2.1×10-6 |
| rs45497800 | 61991833 | T | 0.080 | 0.98 | 0.074 | 2.1×10-4 | 0.78 | 0.069 | 0.12 | 0.88 | 0.088 | 0.053 | 0.84 | 0.06 | 0.26 | 0.85 | 0.096 | 0.23 | 2.2×10-6 |
| rs2273500 | 61986949 | C | 0.15 | 0.99 | 0.058 | 3.4×10-4 | 0.85 | 0.035 | 0.24 | 0.94 | 0.050 | 0.12 | 0.90 | 0.09 | 0.016 | 0.92 | 0.069 | 0.23 | 2.3×10-6 |
| rs144298540 | 61984931 | T | 0.044 | 0.83 | 0.095 | 5.9×10-4 | 0.71 | 0.10 | 0.088 | 0.82 | 0.16 | 0.017 | 0.75 | 0.06 | 0.45 | 0.79 | 0.13 | 0.26 | 4.1×10-6 |
| rs6011779 | 61984317 | C | 0.19 | 0.98 | 0.049 | 8.6×10-4 | 0.90 | 0.024 | 0.35 | 0.96 | 0.035 | 0.22 | 0.91 | 0.10 | 0.0038 | 0.94 | 0.075 | 0.12 | 6.0×10-6 |
| rs6062901 | 61980261 | G | 0.17 | 0.99 | 0.049 | 0.0012 | 0.91 | 0.020 | 0.46 | 0.95 | 0.036 | 0.24 | 0.90 | 0.12 | 8.5×10-4 | 0.95 | 0.082 | 0.11 | 7.0×10-6 |
| rs6062899 | 61979793 | G | 0.18 | 0.99 | 0.046 | 0.0017 | 0.92 | 0.019 | 0.46 | 0.94 | 0.036 | 0.24 | 0.90 | 0.13 | 8.5×10-4 | 0.95 | 0.082 | 0.11 | 9.8×10-6 |
| rs201806007 | 61988398 | AT | 0.15 | 0.88 | 0.050 | 0.0030 | 0.80 | 0.028 | 0.33 | 0.89 | 0.045 | 0.16 | 0.86 | 0.11 | 0.0047 | 0.87 | 0.096 | 0.090 | 1.2×10-5 |

MAF, minor allele frequency.

1MAF was weighted by sample size across the five samples.

**Supplementary Table 2.** Chromosome 15q25SNP and indel associations with nicotine dependence at meta-analysis *P*<5×10-5. Results were taken from a linear regression model in each sample with categorical nicotine dependence (mild, moderate, and severe) as the outcome, SNP/indel genotype dosage as the predictor, and age, sex, principal component eigenvectors (if applicable), and other sample-specific variables (if applicable) as covariates. The sample-specific results following correction for genomic control are shown. SNPs/indels are sorted by the meta-analysis *P* values, and the genome-wide significant *P* values (*P*<5**×**10-8) are bolded.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP /**  **indel** | **Base pair position (NCBI build 37)** | **Minor allele** | **MAF1** | **deCODE (N=9,090)** | | | **EAGLE (N=3,006)** | | | **COPDGene (N=2,211)** | | | **COGEND (N=1,935)** | | | **SAGE (N=832)** | | | **Meta-analysis P** |
| **info** | **β** | **P** | **info** | **β** | **P** | **info** | **Β** | **P** | **info** | **β** | **P** | **info** | **Β** | **P** |
| rs34684276 | 78813155 | A | 0.35 | 1.00 | 0.067 | 1.3×10-8 | 0.97 | 0.088 | 4.6×10-5 | 0.98 | 0.078 | 0.0018 | 0.98 | 0.11 | 3.3×10-4 | 0.98 | 0.052 | 0.21 | **3.5×10-17** |
| rs114205691 | 78901113 | T | 0.36 | 1.00 | 0.068 | 8.5×10-9 | 1.00 | 0.073 | 6.1×10-4 | 1.00 | 0.072 | 0.0037 | 1.00 | 0.13 | 1.2×10-5 | 1.00 | 0.057 | 0.16 | **3.8×10-17** |
| rs8192482 | 78886198 | T | 0.36 | 1.00 | 0.069 | 7.1×10-9 | 1.00 | 0.072 | 7.3×10-4 | 1.00 | 0.072 | 0.0037 | 1.00 | 0.12 | 1.9×10-5 | 1.00 | 0.061 | 0.13 | **4.1×10-17** |
| rs4887067 | 78886947 | A | 0.36 | 1.00 | 0.068 | 7.3×10-9 | 1.00 | 0.072 | 7.2×10-4 | 1.00 | 0.072 | 0.0037 | 1.00 | 0.12 | 2.0×10-5 | 1.00 | 0.061 | 0.13 | **4.2×10-17** |
| rs1051730 | 78894339 | A | 0.36 | 1.00 | 0.068 | 8.4×10-9 | 1.00 | 0.074 | 4.8×10-4 | 1.00 | 0.069 | 0.0050 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.061 | 0.13 | **4.3×10-17** |
| rs55676755 | 78898932 | G | 0.36 | 1.00 | 0.068 | 9.1×10-9 | 1.00 | 0.073 | 5.9×10-4 | 1.00 | 0.071 | 0.0039 | 1.00 | 0.12 | 1.3×10-5 | 1.00 | 0.056 | 0.16 | **4.6×10-17** |
| rs16969968 | 78882925 | A | 0.36 | 1.00 | 0.068 | 8.9×10-9 | 0.99 | 0.072 | 7.5×10-4 | 1.00 | 0.072 | 0.0039 | 1.00 | 0.12 | 1.6×10-5 | 1.00 | 0.061 | 0.13 | **5.1×10-17** |
| rs138544659 | 78900701 | G | 0.35 | 1.00 | 0.068 | 9.8×10-9 | 0.95 | 0.080 | 2.7×10-4 | 0.96 | 0.071 | 0.0067 | 0.96 | 0.13 | 1.7×10-5 | 0.95 | 0.057 | 0.18 | **5.9×10-17** |
| rs147144681 | 78900908 | T | 0.35 | 1.00 | 0.068 | 9.8×10-9 | 0.95 | 0.080 | 2.6×10-4 | 0.96 | 0.070 | 0.0073 | 0.96 | 0.13 | 1.6×10-5 | 0.96 | 0.054 | 0.19 | **6.7×10-17** |
| rs141518190 | 78900647 | G | 0.35 | 1.00 | 0.068 | 9.6×10-9 | 0.94 | 0.077 | 5.1×10-4 | 0.95 | 0.074 | 0.0048 | 0.95 | 0.13 | 1.5×10-5 | 0.95 | 0.052 | 0.22 | **9.4×10-17** |
| rs147499554 | 78900650 | T | 0.35 | 1.00 | 0.068 | 9.7×10-9 | 0.94 | 0.077 | 5.1×10-4 | 0.95 | 0.074 | 0.0048 | 0.95 | 0.13 | 1.5×10-5 | 0.95 | 0.052 | 0.22 | **9.5×10-17** |
| rs146009840 | 78906177 | T | 0.36 | 1.00 | 0.067 | 1.4×10-8 | 1.00 | 0.072 | 7.1×10-4 | 1.00 | 0.069 | 0.0055 | 0.99 | 0.12 | 3.2×10-5 | 0.99 | 0.065 | 0.11 | **1.3×10-16** |
| rs951266 | 78878541 | A | 0.36 | 1.00 | 0.067 | 2.0×10-8 | 0.99 | 0.076 | 3.7×10-4 | 1.00 | 0.067 | 0.0071 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.058 | 0.15 | **1.4×10-16** |
| rs7180002 | 78873993 | T | 0.36 | 1.00 | 0.067 | 1.8×10-8 | 0.99 | 0.076 | 4.0×10-4 | 1.00 | 0.066 | 0.0079 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.057 | 0.16 | **1.6×10-16** |
| rs56390833 | 78877381 | A | 0.36 | 1.00 | 0.067 | 2.0×10-8 | 0.99 | 0.076 | 3.8×10-4 | 1.00 | 0.066 | 0.0079 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.058 | 0.15 | **1.6×10-16** |
| rs11633958 | 78862064 | T | 0.36 | 1.00 | 0.067 | 1.4×10-8 | 0.99 | 0.073 | 6.9×10-4 | 1.00 | 0.068 | 0.0060 | 1.00 | 0.12 | 1.6×10-5 | 1.00 | 0.053 | 0.19 | **1.7×10-16** |
| rs17486195 | 78865197 | G | 0.36 | 1.00 | 0.067 | 1.8×10-8 | 0.99 | 0.075 | 4.1×10-4 | 1.00 | 0.066 | 0.0079 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.055 | 0.17 | **1.7×10-16** |
| rs140330585 | 78866445 | A | 0.36 | 1.00 | 0.067 | 1.9×10-8 | 0.99 | 0.075 | 4.1×10-4 | 1.00 | 0.066 | 0.0079 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.055 | 0.17 | **1.8×10-16** |
| rs1317286 | 78896129 | G | 0.36 | 1.00 | 0.066 | 2.0×10-8 | 1.00 | 0.074 | 5.2×10-4 | 1.00 | 0.070 | 0.0048 | 1.00 | 0.12 | 3.1×10-5 | 1.00 | 0.056 | 0.16 | **1.9×10-16** |
| rs56077333 | 78899003 | A | 0.35 | 1.00 | 0.069 | 5.2×10-9 | 0.95 | 0.077 | 5.1×10-4 | 0.96 | 0.061 | 0.018 | 0.96 | 0.13 | 9.7×10-6 | 0.96 | 0.043 | 0.30 | **1.9×10-16** |
| rs72740964 | 78868636 | A | 0.36 | 1.00 | 0.067 | 1.8×10-8 | 0.99 | 0.072 | 7.0×10-4 | 1.00 | 0.068 | 0.0060 | 1.00 | 0.12 | 1.6×10-5 | 1.00 | 0.056 | 0.17 | **2.0×10-16** |
| rs7172118 | 78862453 | A | 0.36 | 1.00 | 0.067 | 2.0×10-8 | 0.99 | 0.076 | 4.0×10-4 | 1.00 | 0.066 | 0.0079 | 1.00 | 0.12 | 1.8×10-5 | 1.00 | 0.054 | 0.18 | **2.0×10-16** |
| rs17486278 | 78867482 | C | 0.36 | 1.00 | 0.066 | 3.2×10-8 | 0.99 | 0.074 | 5.0×10-4 | 1.00 | 0.068 | 0.0059 | 1.00 | 0.12 | 1.7×10-5 | 1.00 | 0.056 | 0.16 | **2.5×10-16** |
| rs8034191 | 78806023 | C | 0.36 | 1.00 | 0.066 | 2.7×10-8 | 1.00 | 0.082 | 1.0×10-4 | 1.00 | 0.064 | 0.0089 | 1.00 | 0.11 | 7.6×10-5 | 1.00 | 0.046 | 0.26 | **3.2×10-16** |
| rs55853698 | 78857939 | G | 0.36 | 0.99 | 0.065 | 5.1×10-8 | 0.98 | 0.079 | 2.4×10-4 | 0.99 | 0.070 | 0.0051 | 0.99 | 0.12 | 2.3×10-5 | 0.99 | 0.048 | 0.24 | **3.4×10-16** |
| rs72740955 | 78849779 | T | 0.36 | 1.00 | 0.065 | 4.2×10-8 | 0.98 | 0.081 | 1.5×10-4 | 1.00 | 0.067 | 0.0067 | 1.00 | 0.12 | 3.7×10-5 | 1.00 | 0.043 | 0.29 | **4.0×10-16** |
| rs2036527 | 78851615 | A | 0.36 | 1.00 | 0.065 | 4.3×10-8 | 0.98 | 0.081 | 1.5×10-4 | 1.00 | 0.066 | 0.0078 | 1.00 | 0.12 | 3.5×10-5 | 1.00 | 0.043 | 0.29 | **4.7×10-16** |
| rs9788721 | 78802869 | C | 0.37 | 1.00 | 0.065 | 3.0×10-8 | 0.99 | 0.083 | 8.3×10-5 | 0.99 | 0.064 | 0.0091 | 1.00 | 0.11 | 2.0×10-4 | 0.99 | 0.047 | 0.24 | **5.2×10-16** |
| rs11852372 | 78801394 | C | 0.36 | 0.99 | 0.067 | 1.9×10-8 | 0.97 | 0.082 | 1.5×10-4 | 0.97 | 0.064 | 0.011 | 0.97 | 0.11 | 1.8×10-4 | 0.97 | 0.047 | 0.26 | **6.8×10-16** |
| rs8031948 | 78816057 | T | 0.36 | 1.00 | 0.065 | 4.6×10-8 | 0.99 | 0.081 | 1.3×10-4 | 1.00 | 0.067 | 0.0062 | 1.00 | 0.11 | 9.9×10-5 | 1.00 | 0.041 | 0.31 | **7.0×10-16** |
| rs4243084 | 78911672 | C | 0.37 | 1.00 | 0.064 | 6.1×10-8 | 0.99 | 0.074 | 4.7×10-4 | 1.00 | 0.067 | 0.0066 | 1.00 | 0.12 | 2.8×10-5 | 1.00 | 0.058 | 0.15 | **7.4×10-16** |
| rs55781567 | 78857986 | G | 0.36 | 0.99 | 0.063 | 1.2×10-7 | 0.98 | 0.080 | 1.7×10-4 | 0.99 | 0.067 | 0.0070 | 0.99 | 0.12 | 2.5×10-5 | 0.99 | 0.048 | 0.24 | **9.7×10-16** |
| rs72738786 | 78828086 | T | 0.36 | 1.00 | 0.065 | 3.9×10-8 | 1.00 | 0.080 | 1.7×10-4 | 1.00 | 0.067 | 0.0061 | 1.00 | 0.11 | 1.5×10-4 | 1.00 | 0.039 | 0.33 | **1.0×10-15** |
| rs58365910 | 78849034 | C | 0.36 | 1.00 | 0.063 | 9.9×10-8 | 0.98 | 0.083 | 1.2×10-4 | 1.00 | 0.066 | 0.0073 | 1.00 | 0.12 | 4.6×10-5 | 1.00 | 0.043 | 0.29 | **1.0×10-15** |
| rs931794 | 78826180 | G | 0.37 | 1.00 | 0.064 | 6.9×10-8 | 1.00 | 0.083 | 9.9×10-5 | 1.00 | 0.064 | 0.0086 | 1.00 | 0.10 | 3.5×10-4 | 1.00 | 0.043 | 0.28 | **2.4×10-15** |
| rs10519203 | 78814046 | G | 0.37 | 1.00 | 0.064 | 7.9×10-8 | 0.99 | 0.081 | 1.5×10-4 | 1.00 | 0.066 | 0.0072 | 1.00 | 0.11 | 1.7×10-4 | 1.00 | 0.039 | 0.33 | **2.4×10-15** |
| rs8042849 | 78817929 | C | 0.37 | 1.00 | 0.063 | 8.4×10-8 | 0.98 | 0.087 | 4.7×10-5 | 0.99 | 0.062 | 0.011 | 0.99 | 0.10 | 4.7×10-4 | 0.98 | 0.033 | 0.41 | **4.0×10-15** |
| rs139043337 | 78734588 | A | 0.36 | 1.00 | 0.065 | 3.7×10-8 | 1.00 | 0.072 | 4.1×10-4 | 1.00 | 0.052 | 0.027 | 1.00 | 0.10 | 5.2×10-4 | 1.00 | 0.063 | 0.11 | **7.3×10-15** |
| rs201844830 | 78751682 | GT | 0.36 | 1.00 | 0.064 | 4.2×10-8 | 0.99 | 0.072 | 4.6×10-4 | 1.00 | 0.052 | 0.026 | 0.99 | 0.10 | 3.4×10-4 | 1.00 | 0.054 | 0.18 | **1.0×10-14** |
| rs199642525 | 78901173 | G | 0.25 | 0.99 | 0.068 | 6.7×10-9 | 0.71 | 0.14 | 5.7×10-5 | 0.76 | 0.097 | 0.0084 | 0.75 | 0.094 | 0.041 | 0.76 | 0.11 | 0.080 | **1.1×10-14** |
| rs2009746 | 78754102 | G | 0.36 | 1.00 | 0.066 | 4.0×10-8 | 0.99 | 0.074 | 5.6×10-4 | 0.99 | 0.055 | 0.028 | 0.99 | 0.10 | 8.5×10-4 | 1.00 | 0.062 | 0.14 | **1.7×10-14** |
| rs72738736 | 78765122 | T | 0.36 | 1.00 | 0.065 | 4.2×10-8 | 0.99 | 0.074 | 5.9×10-4 | 0.99 | 0.055 | 0.027 | 0.99 | 0.10 | 8.6×10-4 | 1.00 | 0.062 | 0.14 | **1.9×10-14** |
| rs1504550 | 78766250 | G | 0.36 | 1.00 | 0.065 | 5.9×10-8 | 0.98 | 0.074 | 6.4×10-4 | 0.99 | 0.055 | 0.026 | 0.99 | 0.11 | 3.0×10-4 | 1.00 | 0.054 | 0.20 | **2.0×10-14** |
| rs55958997 | 78915872 | A | 0.40 | 1.00 | 0.058 | 4.3×10-7 | 0.99 | 0.071 | 8.6×10-4 | 0.99 | 0.072 | 0.0030 | 0.99 | 0.11 | 1.7×10-4 | 0.99 | 0.049 | 0.22 | **2.2×10-14** |
| rs17483686 | 78733390 | T | 0.36 | 1.00 | 0.065 | 4.8×10-8 | 1.00 | 0.072 | 8.0×10-4 | 1.00 | 0.052 | 0.036 | 1.00 | 0.10 | 6.6×10-4 | 1.00 | 0.063 | 0.13 | **3.0×10-14** |
| rs55983731 | 78735269 | T | 0.36 | 1.00 | 0.065 | 4.9×10-8 | 1.00 | 0.072 | 7.9×10-4 | 1.00 | 0.052 | 0.037 | 1.00 | 0.10 | 7.1×10-4 | 1.00 | 0.063 | 0.13 | **3.2×10-14** |
| rs72738718 | 78735438 | C | 0.36 | 1.00 | 0.065 | 4.9×10-8 | 1.00 | 0.072 | 7.9×10-4 | 1.00 | 0.052 | 0.037 | 1.00 | 0.10 | 7.1×10-4 | 1.00 | 0.063 | 0.13 | **3.2×10-14** |
| rs17483721 | 78733731 | C | 0.36 | 1.00 | 0.065 | 5.6×10-8 | 1.00 | 0.072 | 8.0×10-4 | 1.00 | 0.052 | 0.036 | 1.00 | 0.10 | 6.6×10-4 | 1.00 | 0.063 | 0.13 | **3.5×10-14** |
| rs8039449 | 78914534 | T | 0.40 | 1.00 | 0.058 | 3.8×10-7 | 0.99 | 0.070 | 9.4×10-4 | 0.99 | 0.069 | 0.0047 | 0.99 | 0.10 | 2.4×10-4 | 0.99 | 0.050 | 0.21 | **3.8×10-14** |
| rs56219465 | 78742579 | G | 0.36 | 1.00 | 0.065 | 4.7×10-8 | 1.00 | 0.072 | 7.4×10-4 | 1.00 | 0.052 | 0.037 | 1.00 | 0.10 | 9.2×10-4 | 1.00 | 0.061 | 0.14 | **3.8×10-14** |
| rs7181486 | 78741618 | C | 0.36 | 1.00 | 0.065 | 4.8×10-8 | 1.00 | 0.072 | 7.5×10-4 | 1.00 | 0.052 | 0.037 | 1.00 | 0.10 | 9.2×10-4 | 1.00 | 0.061 | 0.14 | **3.9×10-14** |
| rs17484524 | 78772676 | G | 0.36 | 1.00 | 0.064 | 8.6×10-8 | 0.98 | 0.073 | 8.0×10-4 | 0.99 | 0.056 | 0.026 | 0.99 | 0.10 | 3.7×10-4 | 1.00 | 0.052 | 0.21 | **4.1×10-14** |
| rs17483929 | 78742376 | A | 0.36 | 1.00 | 0.065 | 4.8×10-8 | 1.00 | 0.072 | 7.4×10-4 | 1.00 | 0.050 | 0.041 | 1.00 | 0.10 | 9.2×10-4 | 1.00 | 0.061 | 0.14 | **4.3×10-14** |
| rs72738732 | 78752188 | G | 0.36 | 1.00 | 0.064 | 6.9×10-8 | 0.99 | 0.071 | 9.8×10-4 | 1.00 | 0.052 | 0.035 | 1.00 | 0.10 | 3.8×10-4 | 1.00 | 0.052 | 0.21 | **5.6×10-14** |
| rs11858836 | 78783277 | A | 0.36 | 1.00 | 0.063 | 1.4×10-7 | 0.98 | 0.073 | 7.8×10-4 | 0.99 | 0.056 | 0.024 | 0.99 | 0.10 | 3.6×10-4 | 1.00 | 0.052 | 0.21 | **6.5×10-14** |
| rs2089162 | 78739763 | G | 0.36 | 1.00 | 0.064 | 8.3×10-8 | 0.99 | 0.070 | 0.0012 | 1.00 | 0.053 | 0.034 | 1.00 | 0.10 | 3.2×10-4 | 1.00 | 0.053 | 0.20 | **6.6×10-14** |
| rs17483548 | 78730313 | A | 0.36 | 1.00 | 0.064 | 7.0×10-8 | 0.99 | 0.069 | 0.0015 | 1.00 | 0.053 | 0.034 | 0.99 | 0.10 | 4.0×10-4 | 1.00 | 0.054 | 0.19 | **7.5×10-14** |
| rs2656065 | 78750549 | A | 0.36 | 1.00 | 0.065 | 4.0×10-8 | 1.00 | 0.074 | 5.7×10-4 | 1.00 | 0.047 | 0.055 | 1.00 | 0.086 | 0.0028 | 1.00 | 0.059 | 0.15 | **9.1×10-14** |
| rs951985 | 78720923 | G | 0.36 | 0.99 | 0.063 | 1.2×10-7 | 0.97 | 0.073 | 8.8×10-4 | 0.98 | 0.054 | 0.035 | 0.98 | 0.11 | 1.8×10-4 | 0.98 | 0.040 | 0.34 | **9.3×10-14** |
| rs2656052 | 78740932 | C | 0.36 | 1.00 | 0.065 | 4.7×10-8 | 1.00 | 0.072 | 7.8×10-4 | 1.00 | 0.049 | 0.046 | 1.00 | 0.089 | 0.0020 | 1.00 | 0.057 | 0.17 | **1.0×10-13** |
| rs2938670 | 78740688 | G | 0.36 | 1.00 | 0.065 | 4.8×10-8 | 1.00 | 0.072 | 7.8×10-4 | 1.00 | 0.049 | 0.046 | 1.00 | 0.089 | 0.0020 | 1.00 | 0.057 | 0.17 | **1.0×10-13** |
| rs2568494 | 78740964 | A | 0.36 | 1.00 | 0.065 | 4.8×10-8 | 1.00 | 0.072 | 7.8×10-4 | 1.00 | 0.049 | 0.045 | 1.00 | 0.088 | 0.0023 | 1.00 | 0.059 | 0.15 | **1.0×10-13** |
| rs12914385 | 78898723 | T | 0.40 | 1.00 | 0.060 | 2.4×10-7 | 1.00 | 0.061 | 0.0036 | 1.00 | 0.070 | 0.0035 | 1.00 | 0.095 | 7.9×10-4 | 1.00 | 0.051 | 0.19 | **1.1×10-13** |
| rs17405217 | 78731149 | T | 0.36 | 1.00 | 0.063 | 1.6×10-7 | 0.99 | 0.069 | 0.0014 | 1.00 | 0.053 | 0.034 | 0.99 | 0.10 | 4.0×10-4 | 1.00 | 0.054 | 0.19 | **1.7×10-13** |
| rs72743158 | 78926445 | C | 0.39 | 1.00 | 0.057 | 7.1×10-7 | 0.96 | 0.065 | 0.0024 | 0.97 | 0.061 | 0.013 | 0.97 | 0.11 | 1.5×10-4 | 0.97 | 0.060 | 0.14 | **2.3×10-13** |
| rs17487223 | 78923987 | T | 0.38 | 1.00 | 0.055 | 1.9×10-6 | 0.98 | 0.066 | 0.0020 | 0.98 | 0.063 | 0.010 | 0.98 | 0.11 | 7.6×10-5 | 0.98 | 0.052 | 0.20 | **4.3×10-13** |
| rs2869548 | 78922638 | A | 0.38 | 1.00 | 0.055 | 2.0×10-6 | 0.98 | 0.067 | 0.0019 | 0.98 | 0.061 | 0.013 | 0.98 | 0.11 | 9.1×10-5 | 0.98 | 0.052 | 0.20 | **6.1×10-13** |
| rs72738704 | 78719832 | C | 0.36 | 1.00 | 0.061 | 3.3×10-7 | 0.98 | 0.067 | 0.0022 | 0.99 | 0.058 | 0.021 | 0.98 | 0.094 | 0.0013 | 0.99 | 0.053 | 0.20 | **7.0×10-13** |
| rs72736802 | 78719501 | T | 0.37 | 0.99 | 0.062 | 1.3×10-7 | 0.98 | 0.068 | 0.0017 | 0.99 | 0.046 | 0.060 | 0.98 | 0.072 | 0.013 | 0.98 | 0.055 | 0.18 | **3.0×10-12** |
| rs8040868 | 78911181 | C | 0.42 | 1.00 | 0.053 | 2.9×10-6 | 0.99 | 0.061 | 0.0037 | 1.00 | 0.059 | 0.013 | 1.00 | 0.092 | 0.0011 | 1.00 | 0.056 | 0.15 | **5.1×10-12** |
| rs10851907 | 78915864 | A | 0.44 | 1.00 | 0.052 | 5.0×10-6 | 0.99 | 0.063 | 0.0031 | 0.99 | 0.066 | 0.0055 | 0.99 | 0.079 | 0.0049 | 0.99 | 0.045 | 0.25 | **1.7×10-11** |
| rs55988292 | 78936168 | G | 0.41 | 1.00 | 0.053 | 3.5×10-6 | 0.97 | 0.058 | 0.0062 | 0.99 | 0.049 | 0.044 | 0.98 | 0.10 | 7.1×10-4 | 0.98 | 0.061 | 0.13 | **2.3×10-11** |
| rs67426328 | 78934318 | G | 0.41 | 1.00 | 0.053 | 3.8×10-6 | 0.98 | 0.057 | 0.0070 | 0.99 | 0.047 | 0.056 | 0.98 | 0.093 | 9.4×10-4 | 0.98 | 0.063 | 0.12 | **3.8×10-11** |
| rs56117933 | 78832349 | C | 0.23 | 1.00 | 0.070 | 4.0×10-7 | 0.94 | 0.030 | 0.21 | 0.95 | 0.085 | 0.0032 | 0.95 | 0.10 | 0.0039 | 0.95 | 0.038 | 0.43 | **1.6×10-10** |
| rs200776369 | 78874842 | A | 0.38 | NA | NA | NA | 0.99 | 0.076 | 1.7×10-4 | 1.00 | 0.066 | 0.0050 | 1.00 | 0.12 | 1.1×10-5 | 1.00 | 0.057 | 0.14 | **2.2×10-10** |
| rs149959208 | 78912710 | TGCGCGGGGCAGGGCGACGGGCA | 0.28 | 0.84 | 0.41 | 0.39 | 0.96 | 0.075 | 2.9×10-4 | 0.96 | 0.070 | 0.0039 | 0.96 | 0.12 | 1.9×10-5 | 0.96 | 0.065 | 0.10 | **2.4×10-10** |
| rs190065944 | 78859610 | A | 0.39 | NA | NA | NA | 0.98 | 0.081 | 1.7×10-4 | 0.99 | 0.067 | 0.0070 | 0.99 | 0.12 | 2.9×10-5 | 0.99 | 0.050 | 0.22 | **8.2×10-10** |
| rs1394371 | 78724469 | T | 0.30 | 1.00 | 0.059 | 2.7×10-6 | 1.00 | 0.047 | 0.035 | 1.00 | 0.040 | 0.12 | 1.00 | 0.10 | 9.7×10-4 | 1.00 | 0.027 | 0.52 | **1.2×10-9** |
| rs951984 | 78720915 | A | 0.30 | 1.00 | 0.057 | 4.2×10-6 | 0.97 | 0.048 | 0.037 | 0.98 | 0.049 | 0.061 | 0.99 | 0.10 | 6.2×10-4 | 0.98 | 0.008 | 0.85 | **1.3×10-9** |
| rs518425 | 78883813 | G | 0.28 | 1.00 | -0.042 | 6.1×10-4 | 0.99 | -0.061 | 0.012 | 1.00 | -0.061 | 0.020 | 1.00 | -0.13 | 4.1×10-5 | 1.00 | -0.067 | 0.11 | **1.8×10-9** |
| rs200776054 | 78801393 | AC | 0.37 | NA | NA | NA | 0.96 | 0.081 | 8.3×10-5 | 0.96 | 0.061 | 0.011 | 0.97 | 0.11 | 8.8×10-5 | 0.97 | 0.046 | 0.25 | **1.9×10-9** |
| rs578776 | 78888400 | A | 0.27 | 1.00 | -0.043 | 5.9×10-4 | 1.00 | -0.056 | 0.021 | 1.00 | -0.058 | 0.025 | 1.00 | -0.13 | 2.0×10-5 | 1.00 | -0.068 | 0.11 | **2.4×10-9** |
| rs564585 | 78886227 | G | 0.27 | 1.00 | -0.042 | 6.5×10-4 | 1.00 | -0.055 | 0.025 | 1.00 | -0.056 | 0.032 | 1.00 | -0.13 | 2.0×10-5 | 1.00 | -0.071 | 0.094 | **3.6×10-9** |
| rs71852607 | 78799060 | ACT | 0.38 | 1.00 | -0.039 | 5.6×10-4 | 0.96 | -0.057 | 0.0072 | 0.97 | -0.062 | 0.0059 | 0.97 | -0.072 | 0.011 | 0.97 | -0.069 | 0.082 | **5.1×10-9** |
| rs12903285 | 78778953 | A | 0.38 | 0.99 | -0.043 | 2.5×10-4 | 1.00 | -0.053 | 0.016 | 1.00 | -0.060 | 0.011 | 1.00 | -0.067 | 0.018 | 1.00 | -0.054 | 0.18 | **1.5×10-8** |
| rs8192477 | 78910463 | C | 0.26 | 1.00 | -0.040 | 0.0014 | 0.97 | -0.054 | 0.029 | 0.97 | -0.065 | 0.015 | 0.97 | -0.14 | 7.6×10-6 | 0.97 | -0.032 | 0.46 | **1.5×10-8** |
| rs8192478 | 78910462 | G | 0.26 | 1.00 | -0.040 | 0.0014 | 0.97 | -0.054 | 0.029 | 0.97 | -0.065 | 0.015 | 0.97 | -0.14 | 7.6×10-6 | 0.97 | -0.032 | 0.46 | **1.5×10-8** |
| rs72366880 | 78868963 | A | 0.22 | 1.00 | -0.041 | 0.0017 | 0.99 | -0.052 | 0.032 | 1.00 | -0.067 | 0.011 | 1.00 | -0.12 | 2.6×10-4 | 1.00 | -0.075 | 0.087 | **1.8×10-8** |
| rs4299116 | 78766194 | T | 0.38 | 1.00 | -0.041 | 3.5×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0086 | 1.00 | -0.070 | 0.014 | 1.00 | -0.054 | 0.18 | **1.9×10-8** |
| rs138110943 | 78785544 | C | 0.21 | 1.00 | -0.046 | 5.6×10-4 | 1.00 | -0.045 | 0.075 | 1.00 | -0.085 | 0.0014 | 1.00 | -0.068 | 0.041 | 1.00 | -0.10 | 0.022 | **2.0×10-8** |
| rs3832992 | 78739233 | C | 0.21 | 1.00 | -0.046 | 5.0×10-4 | 0.99 | -0.045 | 0.081 | 1.00 | -0.085 | 0.0016 | 1.00 | -0.067 | 0.043 | 1.00 | -0.10 | 0.022 | **2.1×10-8** |
| rs8042238 | 78774271 | C | 0.38 | 1.00 | -0.041 | 3.9×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.063 | 0.0080 | 1.00 | -0.068 | 0.017 | 1.00 | -0.057 | 0.16 | **2.2×10-8** |
| rs1504549 | 78766629 | C | 0.38 | 1.00 | -0.041 | 3.9×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0085 | 1.00 | -0.069 | 0.015 | 1.00 | -0.054 | 0.18 | **2.3×10-8** |
| rs12910910 | 78767850 | C | 0.38 | 1.00 | -0.041 | 3.9×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0085 | 1.00 | -0.069 | 0.015 | 1.00 | -0.054 | 0.18 | **2.3×10-8** |
| rs8042260 | 78774374 | A | 0.38 | 1.00 | -0.041 | 4.2×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.063 | 0.0080 | 1.00 | -0.068 | 0.017 | 1.00 | -0.055 | 0.18 | **2.5×10-8** |
| rs11072766 | 78771546 | T | 0.21 | 1.00 | -0.048 | 3.5×10-4 | 1.00 | -0.046 | 0.084 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.047 | 1.00 | -0.10 | 0.033 | **2.5×10-8** |
| rs12592111 | 78767346 | G | 0.38 | 1.00 | -0.041 | 4.6×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0085 | 1.00 | -0.070 | 0.014 | 1.00 | -0.054 | 0.18 | **2.6×10-8** |
| rs28602670 | 78768167 | G | 0.21 | 1.00 | -0.048 | 3.7×10-4 | 1.00 | -0.047 | 0.081 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.047 | 1.00 | -0.10 | 0.033 | **2.7×10-8** |
| rs2568485 | 78752114 | C | 0.21 | 1.00 | -0.049 | 3.4×10-4 | 1.00 | -0.046 | 0.088 | 1.00 | -0.084 | 0.0029 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **2.8×10-8** |
| rs11637656 | 78751961 | C | 0.38 | 1.00 | -0.041 | 3.9×10-4 | 1.00 | -0.050 | 0.023 | 1.00 | -0.061 | 0.010 | 1.00 | -0.069 | 0.015 | 1.00 | -0.054 | 0.18 | **2.9×10-8** |
| rs2938674 | 78757913 | A | 0.21 | 1.00 | -0.048 | 3.8×10-4 | 1.00 | -0.046 | 0.089 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.044 | 1.00 | -0.099 | 0.033 | **2.9×10-8** |
| rs958025 | 78759348 | T | 0.21 | 1.00 | -0.048 | 4.3×10-4 | 1.00 | -0.046 | 0.084 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.047 | 1.00 | -0.10 | 0.027 | **3.0×10-8** |
| rs28480606 | 78762313 | G | 0.21 | 1.00 | -0.048 | 4.3×10-4 | 1.00 | -0.046 | 0.084 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.047 | 1.00 | -0.10 | 0.027 | **3.0×10-8** |
| rs7174190 | 78763617 | T | 0.21 | 1.00 | -0.048 | 4.3×10-4 | 1.00 | -0.046 | 0.084 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.047 | 1.00 | -0.10 | 0.027 | **3.0×10-8** |
| rs2456020 | 78868398 | T | 0.23 | 1.00 | -0.042 | 0.0013 | 0.99 | -0.051 | 0.047 | 1.00 | -0.064 | 0.020 | 1.00 | -0.12 | 2.1×10-4 | 1.00 | -0.075 | 0.098 | **3.1×10-8** |
| rs2568483 | 78752343 | G | 0.21 | 1.00 | -0.048 | 3.8×10-4 | 1.00 | -0.046 | 0.089 | 1.00 | -0.084 | 0.0029 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **3.1×10-8** |
| rs8043227 | 78768871 | C | 0.38 | 1.00 | -0.040 | 5.2×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0085 | 1.00 | -0.069 | 0.015 | 1.00 | -0.054 | 0.18 | **3.2×10-8** |
| rs4362358 | 78796104 | C | 0.38 | 1.00 | -0.040 | 6.5×10-4 | 0.99 | -0.052 | 0.019 | 0.99 | -0.063 | 0.0080 | 0.99 | -0.069 | 0.016 | 0.99 | -0.058 | 0.15 | **3.3×10-8** |
| rs2656069 | 78745707 | C | 0.21 | 1.00 | -0.048 | 3.8×10-4 | 1.00 | -0.046 | 0.090 | 1.00 | -0.084 | 0.0031 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **3.3×10-8** |
| rs2656071 | 78745343 | T | 0.21 | 1.00 | -0.048 | 3.9×10-4 | 1.00 | -0.046 | 0.089 | 1.00 | -0.084 | 0.0031 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **3.4×10-8** |
| rs36146269 | 78779510 | T | 0.38 | 1.00 | -0.040 | 5.9×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.063 | 0.0079 | 1.00 | -0.069 | 0.015 | 1.00 | -0.055 | 0.18 | **3.4×10-8** |
| rs12899351 | 78792398 | T | 0.38 | 1.00 | -0.040 | 6.0×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.063 | 0.0080 | 1.00 | -0.068 | 0.016 | 1.00 | -0.057 | 0.16 | **3.5×10-8** |
| rs2958719 | 78743029 | G | 0.21 | 1.00 | -0.048 | 4.1×10-4 | 1.00 | -0.046 | 0.086 | 1.00 | -0.084 | 0.0031 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **3.6×10-8** |
| rs2036529 | 78726272 | A | 0.21 | 1.00 | -0.048 | 4.6×10-4 | 1.00 | -0.043 | 0.11 | 0.99 | -0.088 | 0.0018 | 0.99 | -0.067 | 0.049 | 1.00 | -0.10 | 0.027 | **3.6×10-8** |
| rs12594711 | 78793921 | C | 0.38 | 1.00 | -0.040 | 6.2×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.063 | 0.0080 | 1.00 | -0.068 | 0.016 | 1.00 | -0.057 | 0.16 | **3.6×10-8** |
| rs77438389 | 78726271 | G | 0.21 | 1.00 | -0.048 | 4.6×10-4 | 1.00 | -0.043 | 0.11 | 0.99 | -0.088 | 0.0018 | 0.99 | -0.067 | 0.049 | 1.00 | -0.10 | 0.027 | **3.7×10-8** |
| rs4887059 | 78782095 | C | 0.38 | 1.00 | -0.040 | 6.4×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.063 | 0.0079 | 1.00 | -0.069 | 0.015 | 1.00 | -0.055 | 0.18 | **3.8×10-8** |
| rs12593229 | 78765290 | T | 0.38 | 1.00 | -0.040 | 6.0×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0085 | 1.00 | -0.069 | 0.015 | 1.00 | -0.054 | 0.18 | **3.8×10-8** |
| rs2568488 | 78736593 | T | 0.21 | 1.00 | -0.048 | 4.7×10-4 | 1.00 | -0.046 | 0.089 | 1.00 | -0.084 | 0.0031 | 1.00 | -0.069 | 0.044 | 1.00 | -0.10 | 0.026 | **3.8×10-8** |
| rs2656072 | 78744292 | A | 0.21 | 1.00 | -0.048 | 4.4×10-4 | 1.00 | -0.046 | 0.088 | 1.00 | -0.084 | 0.0031 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **3.9×10-8** |
| rs2656070 | 78730252 | A | 0.21 | 1.00 | -0.047 | 4.9×10-4 | 1.00 | -0.044 | 0.10 | 0.99 | -0.087 | 0.0021 | 0.99 | -0.068 | 0.048 | 1.00 | -0.10 | 0.026 | **4.0×10-8** |
| rs9672608 | 78797463 | A | 0.21 | 1.00 | -0.045 | 7.4×10-4 | 0.97 | -0.047 | 0.082 | 0.98 | -0.087 | 0.0025 | 0.98 | -0.073 | 0.034 | 0.97 | -0.11 | 0.019 | **4.1×10-8** |
| rs12903295 | 78778972 | A | 0.38 | 1.00 | -0.040 | 5.9×10-4 | 1.00 | -0.053 | 0.016 | 1.00 | -0.061 | 0.010 | 1.00 | -0.066 | 0.021 | 1.00 | -0.055 | 0.18 | **4.1×10-8** |
| rs924840 | 78731808 | T | 0.21 | 1.00 | -0.047 | 5.2×10-4 | 1.00 | -0.044 | 0.10 | 0.99 | -0.087 | 0.0022 | 0.99 | -0.068 | 0.047 | 1.00 | -0.10 | 0.026 | **4.3×10-8** |
| rs12916801 | 78769130 | A | 0.38 | 1.00 | -0.040 | 5.2×10-4 | 1.00 | -0.049 | 0.025 | 1.00 | -0.061 | 0.0095 | 1.00 | -0.069 | 0.016 | 1.00 | -0.052 | 0.20 | **4.4×10-8** |
| rs7164594 | 78803057 | T | 0.22 | 1.00 | -0.044 | 7.2×10-4 | 0.97 | -0.037 | 0.16 | 0.99 | -0.068 | 0.017 | 0.98 | -0.12 | 5.5×10-4 | 0.99 | -0.10 | 0.030 | **4.4×10-8** |
| rs1964678 | 78754000 | A | 0.38 | 1.00 | -0.039 | 7.6×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.064 | 0.0072 | 1.00 | -0.069 | 0.015 | 1.00 | -0.055 | 0.18 | **4.4×10-8** |
| rs12904234 | 78779384 | C | 0.38 | 1.00 | -0.040 | 5.9×10-4 | 1.00 | -0.053 | 0.016 | 1.00 | -0.061 | 0.010 | 1.00 | -0.064 | 0.024 | 1.00 | -0.056 | 0.17 | **4.4×10-8** |
| rs2656073 | 78742276 | T | 0.21 | 1.00 | -0.047 | 5.1×10-4 | 1.00 | -0.046 | 0.086 | 1.00 | -0.084 | 0.0032 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **4.6×10-8** |
| rs569207 | 78873119 | T | 0.22 | 1.00 | -0.041 | 0.0018 | 0.99 | -0.053 | 0.040 | 1.00 | -0.066 | 0.017 | 1.00 | -0.12 | 3.7×10-4 | 1.00 | -0.076 | 0.094 | **4.6×10-8** |
| rs5019044 | 78796282 | A | 0.21 | 0.99 | -0.046 | 7.0×10-4 | 0.98 | -0.046 | 0.093 | 0.98 | -0.086 | 0.0029 | 0.99 | -0.077 | 0.024 | 0.98 | -0.10 | 0.031 | **4.7×10-8** |
| rs2568490 | 78738370 | T | 0.21 | 1.00 | -0.047 | 5.5×10-4 | 1.00 | -0.046 | 0.088 | 1.00 | -0.083 | 0.0032 | 1.00 | -0.068 | 0.045 | 1.00 | -0.10 | 0.027 | **4.9×10-8** |
| rs2656074 | 78741384 | T | 0.21 | 1.00 | -0.047 | 5.4×10-4 | 1.00 | -0.046 | 0.087 | 1.00 | -0.084 | 0.0032 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.028 | **4.9×10-8** |
| rs13180 | 78789488 | C | 0.38 | 1.00 | -0.039 | 8.1×10-4 | 1.00 | -0.050 | 0.022 | 1.00 | -0.063 | 0.0079 | 1.00 | -0.070 | 0.014 | 1.00 | -0.055 | 0.18 | 5.1×10-8 |
| rs667282 | 78863472 | C | 0.22 | 1.00 | -0.041 | 0.0019 | 0.99 | -0.053 | 0.040 | 1.00 | -0.066 | 0.018 | 1.00 | -0.12 | 3.3×10-4 | 1.00 | -0.074 | 0.10 | 5.1×10-8 |
| rs576982 | 78870803 | T | 0.22 | 1.00 | -0.041 | 0.0020 | 0.99 | -0.053 | 0.040 | 1.00 | -0.066 | 0.018 | 1.00 | -0.12 | 3.6×10-4 | 1.00 | -0.075 | 0.096 | 5.2×10-8 |
| rs637137 | 78873976 | A | 0.22 | 1.00 | -0.041 | 0.0020 | 0.99 | -0.053 | 0.040 | 1.00 | -0.066 | 0.017 | 1.00 | -0.12 | 3.8×10-4 | 1.00 | -0.076 | 0.094 | 5.2×10-8 |
| rs4887057 | 78760918 | A | 0.38 | 1.00 | -0.040 | 6.2×10-4 | 1.00 | -0.051 | 0.021 | 1.00 | -0.060 | 0.011 | 1.00 | -0.067 | 0.018 | 1.00 | -0.054 | 0.18 | 5.3×10-8 |
| rs2915695 | 78739471 | T | 0.21 | 1.00 | -0.047 | 6.0×10-4 | 1.00 | -0.046 | 0.088 | 1.00 | -0.084 | 0.0031 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.027 | 5.4×10-8 |
| rs2568497 | 78721397 | G | 0.21 | 0.99 | -0.047 | 5.1×10-4 | 0.99 | -0.042 | 0.12 | 0.99 | -0.086 | 0.0023 | 1.00 | -0.067 | 0.051 | 1.00 | -0.10 | 0.027 | 5.5×10-8 |
| rs2568499 | 78722359 | T | 0.21 | 1.00 | -0.047 | 5.3×10-4 | 0.99 | -0.042 | 0.11 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.066 | 0.052 | 1.00 | -0.10 | 0.026 | 5.5×10-8 |
| rs74925218 | 78796732 | T | 0.21 | 0.99 | -0.045 | 8.8×10-4 | 0.98 | -0.047 | 0.084 | 0.98 | -0.087 | 0.0024 | 0.99 | -0.071 | 0.038 | 0.98 | -0.11 | 0.021 | 5.6×10-8 |
| rs11072763 | 78724256 | A | 0.21 | 1.00 | -0.046 | 7.8×10-4 | 0.99 | -0.036 | 0.18 | 0.99 | -0.090 | 0.0015 | 0.99 | -0.084 | 0.013 | 0.99 | -0.093 | 0.046 | 5.7×10-8 |
| rs2656056 | 78722519 | T | 0.21 | 1.00 | -0.047 | 5.4×10-4 | 0.99 | -0.041 | 0.13 | 0.99 | -0.085 | 0.0027 | 0.99 | -0.070 | 0.041 | 0.99 | -0.10 | 0.026 | 5.9×10-8 |
| rs2568493 | 78740233 | G | 0.21 | 1.00 | -0.047 | 6.0×10-4 | 1.00 | -0.046 | 0.087 | 1.00 | -0.083 | 0.0032 | 1.00 | -0.068 | 0.046 | 1.00 | -0.10 | 0.032 | 5.9×10-8 |
| rs28511883 | 78783683 | T | 0.21 | 1.00 | -0.045 | 7.5×10-4 | 1.00 | -0.046 | 0.083 | 1.00 | -0.086 | 0.0022 | 1.00 | -0.067 | 0.047 | 1.00 | -0.10 | 0.032 | 6.0×10-8 |
| rs7359276 | 78892661 | C | 0.23 | 1.00 | -0.042 | 0.0014 | 1.00 | -0.048 | 0.057 | 1.00 | -0.064 | 0.020 | 1.00 | -0.12 | 4.7×10-4 | 1.00 | -0.072 | 0.11 | 6.0×10-8 |
| chr15\_78835915 | 78835915 | TG | 0.22 | 1.00 | -0.042 | 0.0012 | 0.97 | -0.033 | 0.19 | 0.98 | -0.074 | 0.0070 | 0.98 | -0.12 | 3.7×10-4 | 0.98 | -0.086 | 0.059 | 6.2×10-8 |
| rs2938671 | 78732754 | A | 0.21 | 1.00 | -0.047 | 5.6×10-4 | 0.99 | -0.046 | 0.089 | 0.99 | -0.085 | 0.0026 | 0.99 | -0.065 | 0.055 | 0.99 | -0.094 | 0.043 | 6.2×10-8 |
| rs11418931 | 78907997 | AT | 0.23 | 1.00 | -0.040 | 0.0020 | 1.00 | -0.047 | 0.051 | 1.00 | -0.065 | 0.014 | 1.00 | -0.11 | 6.4×10-4 | 1.00 | -0.073 | 0.093 | 6.5×10-8 |
| rs35031105 | 78772806 | T | 0.21 | 1.00 | -0.045 | 8.2×10-4 | 1.00 | -0.046 | 0.084 | 1.00 | -0.086 | 0.0023 | 1.00 | -0.068 | 0.047 | 1.00 | -0.10 | 0.032 | 6.8×10-8 |
| rs7174348 | 78792439 | A | 0.21 | 1.00 | -0.045 | 7.3×10-4 | 0.99 | -0.046 | 0.092 | 0.99 | -0.086 | 0.0026 | 0.99 | -0.071 | 0.038 | 0.99 | -0.097 | 0.039 | 6.9×10-8 |
| rs10851906 | 78774676 | G | 0.21 | 1.00 | -0.045 | 8.5×10-4 | 1.00 | -0.047 | 0.083 | 1.00 | -0.086 | 0.0022 | 1.00 | -0.067 | 0.047 | 1.00 | -0.10 | 0.032 | 6.9×10-8 |
| rs7183604 | 78899213 | T | 0.23 | 1.00 | -0.041 | 0.0019 | 1.00 | -0.048 | 0.058 | 1.00 | -0.070 | 0.012 | 1.00 | -0.12 | 5.6×10-4 | 1.00 | -0.072 | 0.11 | 7.1×10-8 |
| rs11637630 | 78899719 | G | 0.23 | 1.00 | -0.041 | 0.0019 | 1.00 | -0.048 | 0.058 | 1.00 | -0.070 | 0.013 | 1.00 | -0.11 | 5.7×10-4 | 1.00 | -0.072 | 0.11 | 7.2×10-8 |
| rs2656055 | 78720194 | C | 0.21 | 1.00 | -0.047 | 4.6×10-4 | 0.99 | -0.039 | 0.15 | 0.99 | -0.087 | 0.0022 | 0.99 | -0.068 | 0.047 | 1.00 | -0.094 | 0.045 | 7.3×10-8 |
| rs2036533 | 78781687 | A | 0.21 | 1.00 | -0.045 | 9.0×10-4 | 1.00 | -0.047 | 0.083 | 1.00 | -0.086 | 0.0022 | 1.00 | -0.067 | 0.047 | 1.00 | -0.10 | 0.032 | 7.4×10-8 |
| rs1062980 | 78792527 | C | 0.38 | 1.00 | -0.040 | 6.0×10-4 | 1.00 | -0.053 | 0.016 | 1.00 | -0.058 | 0.014 | 1.00 | -0.061 | 0.033 | 1.00 | -0.053 | 0.19 | 7.5×10-8 |
| rs16969894 | 78776456 | T | 0.21 | 1.00 | -0.044 | 9.9×10-4 | 1.00 | -0.047 | 0.078 | 1.00 | -0.085 | 0.0024 | 1.00 | -0.070 | 0.040 | 1.00 | -0.098 | 0.035 | 7.6×10-8 |
| rs12101809 | 78779801 | T | 0.21 | 1.00 | -0.045 | 9.3×10-4 | 1.00 | -0.046 | 0.083 | 1.00 | -0.086 | 0.0022 | 1.00 | -0.067 | 0.047 | 1.00 | -0.10 | 0.032 | 7.7×10-8 |
| rs9788682 | 78802586 | A | 0.21 | 1.00 | -0.044 | 0.0010 | 0.96 | -0.035 | 0.20 | 0.98 | -0.077 | 0.0086 | 0.97 | -0.11 | 0.0015 | 0.98 | -0.11 | 0.024 | 7.7×10-8 |
| rs664172 | 78862762 | A | 0.22 | 1.00 | -0.041 | 0.0018 | 0.97 | -0.046 | 0.088 | 0.99 | -0.073 | 0.0095 | 0.99 | -0.12 | 6.4×10-4 | 0.99 | -0.080 | 0.082 | 7.8×10-8 |
| rs3743078 | 78894759 | C | 0.23 | 1.00 | -0.042 | 0.0014 | 1.00 | -0.045 | 0.076 | 1.00 | -0.065 | 0.019 | 1.00 | -0.12 | 5.0×10-4 | 1.00 | -0.072 | 0.11 | 8.0×10-8 |
| rs12910984 | 78891627 | G | 0.23 | 1.00 | -0.041 | 0.0019 | 1.00 | -0.051 | 0.047 | 1.00 | -0.067 | 0.016 | 1.00 | -0.11 | 8.3×10-4 | 1.00 | -0.072 | 0.11 | 8.3×10-8 |
| rs17484235 | 78761414 | G | 0.37 | NA | NA | NA | 0.98 | 0.073 | 8.1×10-4 | 0.99 | 0.055 | 0.026 | 0.99 | 0.10 | 3.7×10-4 | 1.00 | 0.052 | 0.21 | 8.9×10-8 |
| rs965604 | 78789223 | G | 0.38 | 1.00 | -0.037 | 0.0013 | 1.00 | -0.051 | 0.021 | 1.00 | -0.062 | 0.0084 | 1.00 | -0.069 | 0.015 | 1.00 | -0.055 | 0.18 | 8.9×10-8 |
| rs57064725 | 78833036 | A | 0.22 | 1.00 | -0.043 | 9.3×10-4 | 0.99 | -0.030 | 0.24 | 1.00 | -0.070 | 0.014 | 1.00 | -0.12 | 4.0×10-4 | 1.00 | -0.086 | 0.062 | 1.1×10-7 |
| rs938682 | 78896547 | G | 0.23 | 1.00 | -0.040 | 0.0023 | 1.00 | -0.048 | 0.059 | 1.00 | -0.070 | 0.012 | 1.00 | -0.11 | 7.1×10-4 | 1.00 | -0.068 | 0.13 | 1.1×10-7 |
| rs2036534 | 78826948 | C | 0.22 | 1.00 | -0.042 | 0.0012 | 1.00 | -0.035 | 0.18 | 1.00 | -0.069 | 0.016 | 1.00 | -0.12 | 6.3×10-4 | 1.00 | -0.091 | 0.048 | 1.1×10-7 |
| rs905739 | 78845110 | G | 0.22 | 1.00 | -0.042 | 0.0015 | 0.96 | -0.033 | 0.20 | 0.99 | -0.071 | 0.013 | 0.99 | -0.12 | 2.8×10-4 | 0.99 | -0.084 | 0.067 | 1.2×10-7 |
| rs28498264 | 78837673 | T | 0.22 | 1.00 | -0.042 | 0.0013 | 0.96 | -0.030 | 0.27 | 0.98 | -0.074 | 0.010 | 0.98 | -0.12 | 4.2×10-4 | 0.98 | -0.098 | 0.037 | 1.2×10-7 |
| rs201696144 | 78961263 | A | 0.48 | 1.00 | 0.039 | 3.6×10-4 | 0.98 | -0.036 | 0.070 | 0.99 | -0.041 | 0.065 | 0.98 | -0.068 | 0.012 | 0.98 | -0.069 | 0.061 | 1.4×10-7 |
| rs8042374 | 78908032 | G | 0.23 | 1.00 | -0.040 | 0.0023 | 1.00 | -0.048 | 0.059 | 1.00 | -0.065 | 0.020 | 1.00 | -0.11 | 8.7×10-4 | 1.00 | -0.076 | 0.090 | 1.4×10-7 |
| rs8042494 | 78908010 | T | 0.23 | 1.00 | -0.040 | 0.0023 | 1.00 | -0.047 | 0.067 | 1.00 | -0.066 | 0.018 | 1.00 | -0.11 | 7.6×10-4 | 1.00 | -0.073 | 0.10 | 1.5×10-7 |
| rs12438181 | 78812098 | A | 0.22 | 1.00 | -0.041 | 0.0016 | 0.98 | -0.036 | 0.17 | 0.99 | -0.071 | 0.013 | 0.98 | -0.12 | 7.9×10-4 | 0.99 | -0.090 | 0.052 | 1.5×10-7 |
| rs7177514 | 78907406 | G | 0.23 | 1.00 | -0.040 | 0.0023 | 1.00 | -0.047 | 0.064 | 1.00 | -0.065 | 0.020 | 1.00 | -0.11 | 8.7×10-4 | 1.00 | -0.074 | 0.10 | 1.6×10-7 |
| rs12441354 | 78821016 | A | 0.22 | 1.00 | -0.041 | 0.0017 | 0.99 | -0.037 | 0.16 | 1.00 | -0.068 | 0.017 | 0.99 | -0.12 | 6.0×10-4 | 1.00 | -0.091 | 0.051 | 1.6×10-7 |
| rs28437878 | 78807872 | T | 0.22 | 1.00 | -0.041 | 0.0016 | 0.98 | -0.039 | 0.14 | 0.99 | -0.066 | 0.020 | 0.98 | -0.11 | 8.5×10-4 | 0.99 | -0.093 | 0.044 | 1.6×10-7 |
| rs7163730 | 78814681 | G | 0.22 | 1.00 | -0.041 | 0.0016 | 0.98 | -0.038 | 0.14 | 1.00 | -0.067 | 0.019 | 0.99 | -0.12 | 6.9×10-4 | 1.00 | -0.090 | 0.053 | 1.6×10-7 |
| rs8042059 | 78907859 | C | 0.23 | 1.00 | -0.040 | 0.0023 | 1.00 | -0.047 | 0.064 | 1.00 | -0.065 | 0.020 | 1.00 | -0.11 | 8.7×10-4 | 1.00 | -0.073 | 0.10 | 1.7×10-7 |
| rs7181245 | 78814389 | T | 0.22 | 1.00 | -0.042 | 0.0015 | 0.98 | -0.034 | 0.20 | 1.00 | -0.069 | 0.015 | 0.99 | -0.12 | 6.2×10-4 | 1.00 | -0.089 | 0.053 | 1.7×10-7 |
| rs8043009 | 78908154 | C | 0.23 | 1.00 | -0.040 | 0.0023 | 1.00 | -0.047 | 0.065 | 1.00 | -0.065 | 0.020 | 1.00 | -0.11 | 8.7×10-4 | 1.00 | -0.072 | 0.11 | 1.7×10-7 |
| rs59133824 | 78833450 | A | 0.22 | 1.00 | -0.042 | 0.0014 | 0.99 | -0.031 | 0.24 | 0.99 | -0.071 | 0.013 | 0.99 | -0.12 | 4.2×10-4 | 0.99 | -0.085 | 0.066 | 1.7×10-7 |
| rs6495308 | 78907656 | C | 0.23 | 1.00 | -0.040 | 0.0024 | 1.00 | -0.047 | 0.064 | 1.00 | -0.065 | 0.020 | 1.00 | -0.11 | 8.7×10-4 | 1.00 | -0.073 | 0.10 | 1.7×10-7 |
| rs59683676 | 78833453 | C | 0.22 | 1.00 | -0.042 | 0.0014 | 0.99 | -0.031 | 0.24 | 0.99 | -0.071 | 0.013 | 0.99 | -0.12 | 4.3×10-4 | 0.99 | -0.085 | 0.066 | 1.7×10-7 |
| rs12441426 | 78812329 | C | 0.22 | 1.00 | -0.041 | 0.0016 | 0.98 | -0.039 | 0.14 | 1.00 | -0.065 | 0.022 | 0.98 | -0.12 | 7.7×10-4 | 0.99 | -0.090 | 0.052 | 1.8×10-7 |
| rs35212593 | 78831826 | A | 0.22 | 1.00 | -0.042 | 0.0014 | 1.00 | -0.032 | 0.22 | 1.00 | -0.071 | 0.013 | 1.00 | -0.12 | 6.2×10-4 | 1.00 | -0.086 | 0.062 | 1.8×10-7 |
| rs61204066 | 78815298 | A | 0.22 | 1.00 | -0.041 | 0.0018 | 0.98 | -0.038 | 0.15 | 1.00 | -0.067 | 0.019 | 0.99 | -0.12 | 6.9×10-4 | 1.00 | -0.090 | 0.052 | 1.8×10-7 |
| rs3813570 | 78832832 | C | 0.22 | 1.00 | -0.042 | 0.0014 | 0.99 | -0.032 | 0.22 | 1.00 | -0.071 | 0.013 | 1.00 | -0.12 | 5.8×10-4 | 1.00 | -0.082 | 0.075 | 2.0×10-7 |
| rs7169584 | 78822660 | T | 0.22 | 1.00 | -0.040 | 0.0020 | 1.00 | -0.036 | 0.17 | 1.00 | -0.069 | 0.016 | 1.00 | -0.12 | 6.1×10-4 | 1.00 | -0.091 | 0.050 | 2.0×10-7 |
| rs7181447 | 78814567 | G | 0.22 | 1.00 | -0.041 | 0.0017 | 0.98 | -0.034 | 0.20 | 1.00 | -0.069 | 0.015 | 0.99 | -0.12 | 6.1×10-4 | 1.00 | -0.089 | 0.053 | 2.0×10-7 |
| rs7171869 | 78900909 | A | 0.24 | 1.00 | -0.041 | 0.0018 | 0.94 | -0.050 | 0.050 | 0.95 | -0.059 | 0.034 | 0.95 | -0.11 | 0.0012 | 0.95 | -0.064 | 0.16 | 2.1×10-7 |
| rs12438659 | 78824924 | A | 0.22 | 1.00 | -0.040 | 0.0021 | 1.00 | -0.036 | 0.17 | 1.00 | -0.069 | 0.016 | 1.00 | -0.12 | 6.0×10-4 | 1.00 | -0.091 | 0.049 | 2.1×10-7 |
| rs4461039 | 78817447 | T | 0.22 | 1.00 | -0.041 | 0.0019 | 0.99 | -0.033 | 0.21 | 1.00 | -0.070 | 0.014 | 0.99 | -0.12 | 5.8×10-4 | 1.00 | -0.091 | 0.050 | 2.2×10-7 |
| rs12439240 | 78829091 | C | 0.22 | 1.00 | -0.041 | 0.0017 | 1.00 | -0.032 | 0.22 | 1.00 | -0.071 | 0.013 | 1.00 | -0.12 | 6.0×10-4 | 1.00 | -0.086 | 0.062 | 2.3×10-7 |
| rs1700006 | 78875623 | G | 0.21 | 1.00 | -0.041 | 0.0020 | 0.95 | -0.043 | 0.12 | 0.99 | -0.071 | 0.014 | 0.97 | -0.10 | 0.0030 | 0.98 | -0.097 | 0.040 | 2.3×10-7 |
| rs34138960 | 78831668 | G | 0.22 | 1.00 | -0.041 | 0.0018 | 1.00 | -0.032 | 0.22 | 1.00 | -0.071 | 0.013 | 1.00 | -0.12 | 6.1×10-4 | 1.00 | -0.086 | 0.062 | 2.3×10-7 |
| rs34664138 | 78831624 | G | 0.22 | 1.00 | -0.041 | 0.0018 | 1.00 | -0.032 | 0.22 | 1.00 | -0.071 | 0.013 | 1.00 | -0.12 | 6.1×10-4 | 1.00 | -0.086 | 0.062 | 2.3×10-7 |
| rs71448806 | 78913353 | C | 0.45 | NA | NA | NA | 0.99 | 0.057 | 0.0043 | 0.99 | 0.056 | 0.012 | 0.99 | 0.093 | 7.3×10-4 | 0.99 | 0.057 | 0.13 | 2.3×10-7 |
| rs1711731 | 78861918 | A | 0.21 | 1.00 | -0.041 | 0.0023 | 0.94 | -0.044 | 0.11 | 0.98 | -0.072 | 0.013 | 0.97 | -0.11 | 0.0028 | 0.97 | -0.097 | 0.042 | 2.3×10-7 |
| rs7173514 | 78849918 | T | 0.23 | 1.00 | -0.040 | 0.0019 | 0.95 | -0.029 | 0.27 | 0.98 | -0.063 | 0.025 | 0.98 | -0.13 | 1.9×10-4 | 0.97 | -0.097 | 0.038 | 2.5×10-7 |
| rs503464 | 78857896 | A | 0.22 | 0.98 | -0.041 | 0.0019 | 0.96 | -0.030 | 0.25 | 0.98 | -0.062 | 0.029 | 0.98 | -0.13 | 1.3×10-4 | 0.97 | -0.082 | 0.074 | 2.8×10-7 |
| rs113352275 | 78840567 | T | 0.21 | 1.00 | -0.042 | 0.0018 | 0.94 | -0.025 | 0.36 | 0.99 | -0.076 | 0.0089 | 0.97 | -0.12 | 9.6×10-4 | 0.98 | -0.10 | 0.029 | 2.8×10-7 |
| rs201432274 | 78910461 | C | 0.25 | NA | NA | NA | 0.96 | -0.052 | 0.028 | 0.97 | -0.066 | 0.0096 | 0.97 | -0.14 | 6.6×10-6 | 0.97 | -0.037 | 0.40 | 2.9×10-7 |
| rs2869032 | 78714561 | C | 0.20 | 1.00 | -0.043 | 0.0018 | 0.99 | -0.040 | 0.14 | 1.00 | -0.085 | 0.0029 | 1.00 | -0.077 | 0.026 | 1.00 | -0.089 | 0.059 | 3.1×10-7 |
| rs28395178 | 78850558 | A | 0.21 | 1.00 | -0.042 | 0.0017 | 0.94 | -0.025 | 0.36 | 0.98 | -0.075 | 0.010 | 0.97 | -0.12 | 0.0012 | 0.97 | -0.10 | 0.030 | 3.2×10-7 |
| rs6495309 | 78915245 | T | 0.21 | 1.00 | -0.041 | 0.0023 | 1.00 | -0.045 | 0.081 | 0.99 | -0.068 | 0.017 | 0.99 | -0.11 | 0.0013 | 1.00 | -0.062 | 0.18 | 3.2×10-7 |
| rs13329271 | 78914230 | C | 0.21 | 1.00 | -0.040 | 0.0027 | 1.00 | -0.046 | 0.078 | 0.99 | -0.067 | 0.018 | 0.99 | -0.11 | 0.0012 | 1.00 | -0.062 | 0.18 | 3.7×10-7 |
| rs2869045 | 78718899 | T | 0.20 | 0.99 | -0.042 | 0.0022 | 0.99 | -0.041 | 0.13 | 1.00 | -0.085 | 0.0030 | 1.00 | -0.077 | 0.027 | 1.00 | -0.089 | 0.059 | 3.9×10-7 |
| rs4887077 | 78978364 | T | 0.41 | 1.00 | 0.046 | 6.0×10-5 | 1.00 | 0.027 | 0.20 | 0.99 | 0.048 | 0.047 | 0.99 | 0.059 | 0.035 | 1.00 | 0.032 | 0.41 | 3.9×10-7 |
| rs684513 | 78858400 | G | 0.21 | 1.00 | -0.041 | 0.0020 | 0.94 | -0.025 | 0.36 | 0.97 | -0.075 | 0.011 | 0.97 | -0.11 | 0.0012 | 0.97 | -0.10 | 0.032 | 4.1×10-7 |
| rs28681284 | 78908565 | T | 0.21 | 1.00 | -0.040 | 0.0027 | 0.95 | -0.039 | 0.16 | 0.99 | -0.074 | 0.010 | 0.97 | -0.10 | 0.0048 | 0.97 | -0.095 | 0.043 | 4.6×10-7 |
| rs4887053 | 78712699 | A | 0.20 | 1.00 | -0.042 | 0.0021 | 1.00 | -0.037 | 0.17 | 1.00 | -0.090 | 0.0017 | 1.00 | -0.072 | 0.039 | 1.00 | -0.089 | 0.062 | 4.7×10-7 |
| rs200422183 | 78719501 | AT | 0.38 | NA | NA | NA | 0.98 | 0.068 | 8.9×10-4 | 0.99 | 0.049 | 0.038 | 0.98 | 0.085 | 0.0027 | 0.98 | 0.056 | 0.16 | 4.9×10-7 |
| rs72743199 | 78975855 | T | 0.40 | 1.00 | 0.046 | 7.2×10-5 | 1.00 | 0.026 | 0.21 | 0.99 | 0.048 | 0.048 | 0.99 | 0.060 | 0.033 | 0.99 | 0.032 | 0.42 | 5.0×10-7 |
| rs3825845 | 78910258 | T | 0.22 | 1.00 | -0.037 | 0.0052 | 0.99 | -0.046 | 0.072 | 1.00 | -0.067 | 0.017 | 0.99 | -0.11 | 7.4×10-4 | 1.00 | -0.065 | 0.16 | 5.3×10-7 |
| rs12901913 | 78981348 | T | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 1.00 | 0.029 | 0.17 | 0.99 | 0.049 | 0.043 | 0.99 | 0.059 | 0.037 | 1.00 | 0.041 | 0.30 | 6.3×10-7 |
| rs146474671 | 78774982 | A | 0.09 | 0.99 | 0.083 | 1.8×10-5 | 0.81 | 0.042 | 0.26 | 0.83 | 0.10 | 0.025 | 0.83 | 0.008 | 0.88 | 0.82 | 0.15 | 0.055 | 7.1×10-7 |
| rs1996371 | 78956806 | C | 0.41 | 1.00 | 0.044 | 1.4×10-4 | 1.00 | 0.026 | 0.22 | 1.00 | 0.049 | 0.040 | 1.00 | 0.059 | 0.034 | 1.00 | 0.038 | 0.33 | 7.5×10-7 |
| rs11853054 | 79054919 | A | 0.37 | 1.00 | 0.040 | 3.8×10-4 | 0.77 | 0.043 | 0.093 | 0.81 | 0.066 | 0.019 | 0.81 | 0.053 | 0.11 | 0.81 | 0.064 | 0.17 | 7.8×10-7 |
| rs35238224 | 78945980 | A | 0.41 | 1.00 | 0.041 | 2.5×10-4 | 0.98 | 0.024 | 0.23 | 0.98 | 0.048 | 0.036 | 0.98 | 0.060 | 0.030 | 0.99 | 0.049 | 0.21 | 8.6×10-7 |
| rs56136424 | 79023805 | CAAAGT | 0.40 | 1.00 | 0.043 | 1.5×10-4 | 0.92 | 0.026 | 0.23 | 0.94 | 0.054 | 0.022 | 0.91 | 0.065 | 0.027 | 0.92 | 0.015 | 0.70 | 8.7×10-7 |
| rs11072790 | 78992025 | T | 0.42 | 1.00 | 0.045 | 8.5×10-5 | 0.98 | 0.025 | 0.24 | 0.98 | 0.048 | 0.047 | 0.99 | 0.056 | 0.046 | 0.99 | 0.029 | 0.47 | 8.9×10-7 |
| rs922692 | 78984214 | A | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 1.00 | 0.028 | 0.19 | 0.99 | 0.048 | 0.045 | 0.99 | 0.060 | 0.035 | 1.00 | 0.032 | 0.41 | 8.9×10-7 |
| rs11638372 | 78983559 | T | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 1.00 | 0.028 | 0.19 | 0.99 | 0.048 | 0.046 | 0.99 | 0.060 | 0.035 | 1.00 | 0.032 | 0.41 | 9.0×10-7 |
| rs35186448 | 78888234 | ACCCC | 0.22 | 1.00 | -1.44 | 0.45 | 1.00 | -0.050 | 0.037 | 1.00 | -0.070 | 0.0078 | 1.00 | -0.11 | 4.4×10-4 | 1.00 | -0.072 | 0.097 | 9.2×10-7 |
| rs11853608 | 79030693 | C | 0.41 | 1.00 | 0.045 | 9.7×10-5 | 0.96 | 0.025 | 0.24 | 0.96 | 0.046 | 0.059 | 0.94 | 0.059 | 0.042 | 0.94 | 0.037 | 0.36 | 9.2×10-7 |
| rs11638830 | 78948319 | C | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 1.00 | 0.024 | 0.25 | 1.00 | 0.049 | 0.039 | 1.00 | 0.058 | 0.040 | 1.00 | 0.043 | 0.27 | 9.3×10-7 |
| rs71148554 | 78966167 | GT | 0.41 | 1.00 | 0.042 | 2.0×10-4 | 1.00 | 0.024 | 0.24 | 1.00 | 0.050 | 0.028 | 1.00 | 0.060 | 0.030 | 1.00 | 0.033 | 0.38 | 9.3×10-7 |
| rs11072801 | 79054932 | C | 0.37 | 0.99 | 0.040 | 3.8×10-4 | 0.77 | 0.042 | 0.096 | 0.81 | 0.064 | 0.022 | 0.81 | 0.051 | 0.12 | 0.81 | 0.064 | 0.17 | 9.3×10-7 |
| rs4886584 | 79021464 | A | 0.40 | 1.00 | 0.043 | 2.1×10-4 | 0.94 | 0.030 | 0.18 | 0.95 | 0.048 | 0.050 | 0.92 | 0.067 | 0.024 | 0.93 | 0.033 | 0.42 | 9.3×10-7 |
| rs4887069 | 78909070 | G | 0.23 | 1.00 | -0.038 | 0.0032 | 0.98 | -0.040 | 0.11 | 0.98 | -0.060 | 0.031 | 0.98 | -0.11 | 0.0015 | 0.98 | -0.065 | 0.15 | 9.4×10-7 |
| rs4887084 | 79025593 | C | 0.41 | 1.00 | 0.043 | 1.7×10-4 | 0.99 | 0.026 | 0.22 | 1.00 | 0.052 | 0.031 | 0.97 | 0.058 | 0.041 | 0.97 | 0.031 | 0.43 | 9.5×10-7 |
| rs11072791 | 78997076 | A | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 0.99 | 0.024 | 0.25 | 0.99 | 0.052 | 0.032 | 0.99 | 0.061 | 0.031 | 0.99 | 0.029 | 0.46 | 1.0×10-6 |
| rs2170311 | 78947611 | A | 0.41 | 1.00 | 0.043 | 1.9×10-4 | 0.99 | 0.025 | 0.24 | 0.99 | 0.049 | 0.044 | 0.99 | 0.059 | 0.037 | 0.99 | 0.045 | 0.25 | 1.0×10-6 |
| rs4886583 | 79021445 | A | 0.40 | 1.00 | 0.042 | 2.4×10-4 | 0.93 | 0.031 | 0.16 | 0.94 | 0.047 | 0.058 | 0.91 | 0.067 | 0.024 | 0.92 | 0.034 | 0.41 | 1.1×10-6 |
| rs28590060 | 79052312 | A | 0.40 | 0.98 | 0.046 | 8.0×10-5 | 0.92 | 0.017 | 0.44 | 0.94 | 0.052 | 0.032 | 0.94 | 0.062 | 0.033 | 0.94 | 0.031 | 0.45 | 1.1×10-6 |
| rs4886582 | 79021441 | G | 0.40 | 1.00 | 0.042 | 2.5×10-4 | 0.94 | 0.030 | 0.18 | 0.95 | 0.048 | 0.050 | 0.92 | 0.067 | 0.024 | 0.93 | 0.033 | 0.42 | 1.1×10-6 |
| rs2869566 | 79026496 | T | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 0.99 | 0.025 | 0.23 | 1.00 | 0.050 | 0.037 | 0.97 | 0.057 | 0.044 | 0.97 | 0.033 | 0.40 | 1.1×10-6 |
| rs4887087 | 79026541 | T | 0.41 | 1.00 | 0.043 | 1.6×10-4 | 0.99 | 0.025 | 0.23 | 1.00 | 0.050 | 0.037 | 0.97 | 0.057 | 0.044 | 0.97 | 0.033 | 0.40 | 1.1×10-6 |
| rs6495314 | 78960529 | C | 0.41 | 1.00 | 0.042 | 2.4×10-4 | 1.00 | 0.029 | 0.16 | 1.00 | 0.050 | 0.038 | 1.00 | 0.054 | 0.054 | 1.00 | 0.034 | 0.39 | 1.2×10-6 |
| rs3894347 | 79026001 | A | 0.41 | 1.00 | 0.043 | 2.1×10-4 | 0.98 | 0.029 | 0.18 | 0.99 | 0.049 | 0.042 | 0.97 | 0.054 | 0.058 | 0.97 | 0.038 | 0.34 | 1.2×10-6 |
| rs12899135 | 78954379 | G | 0.41 | 1.00 | 0.042 | 2.4×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.049 | 0.040 | 1.00 | 0.059 | 0.036 | 1.00 | 0.041 | 0.29 | 1.3×10-6 |
| rs1825084 | 79023577 | T | 0.40 | 1.00 | 0.042 | 2.5×10-4 | 0.93 | 0.025 | 0.26 | 0.94 | 0.055 | 0.028 | 0.91 | 0.072 | 0.015 | 0.92 | 0.020 | 0.63 | 1.3×10-6 |
| rs1825085 | 79023578 | G | 0.40 | 1.00 | 0.042 | 2.5×10-4 | 0.93 | 0.025 | 0.26 | 0.94 | 0.055 | 0.028 | 0.91 | 0.072 | 0.015 | 0.92 | 0.020 | 0.63 | 1.3×10-6 |
| rs11852980 | 79054911 | G | 0.37 | 0.99 | 0.041 | 3.3×10-4 | 0.78 | 0.041 | 0.11 | 0.82 | 0.061 | 0.029 | 0.81 | 0.049 | 0.14 | 0.81 | 0.054 | 0.25 | 1.4×10-6 |
| rs189218934 | 78903987 | T | 0.26 | 0.99 | -0.040 | 0.0020 | 0.86 | -0.045 | 0.070 | 0.86 | -0.052 | 0.053 | 0.86 | -0.085 | 0.0093 | 0.86 | -0.056 | 0.22 | 1.5×10-6 |
| rs4886585 | 79026315 | A | 0.39 | 1.00 | 0.043 | 1.7×10-4 | 0.88 | 0.021 | 0.36 | 0.90 | 0.064 | 0.014 | 0.88 | 0.069 | 0.025 | 0.88 | 0.008 | 0.85 | 1.5×10-6 |
| rs80162468 | 79026316 | C | 0.39 | 1.00 | 0.043 | 1.8×10-4 | 0.88 | 0.021 | 0.36 | 0.90 | 0.064 | 0.014 | 0.88 | 0.069 | 0.025 | 0.88 | 0.008 | 0.85 | 1.5×10-6 |
| rs11634351 | 78944718 | A | 0.41 | 1.00 | 0.042 | 3.0×10-4 | 0.98 | 0.023 | 0.28 | 0.98 | 0.049 | 0.042 | 0.98 | 0.060 | 0.034 | 0.99 | 0.049 | 0.22 | 1.6×10-6 |
| rs12910627 | 78994933 | C | 0.41 | 1.00 | 0.043 | 1.8×10-4 | 0.98 | 0.024 | 0.25 | 0.98 | 0.049 | 0.041 | 0.99 | 0.057 | 0.042 | 0.99 | 0.030 | 0.45 | 1.6×10-6 |
| rs3971860 | 79026278 | G | 0.34 | 0.96 | 0.043 | 2.3×10-4 | 0.78 | 0.039 | 0.14 | 0.81 | 0.066 | 0.022 | 0.79 | 0.080 | 0.019 | 0.80 | -0.024 | 0.61 | 1.7×10-6 |
| rs12902602 | 78967401 | G | 0.41 | 1.00 | 0.042 | 2.4×10-4 | 1.00 | 0.024 | 0.26 | 1.00 | 0.050 | 0.038 | 1.00 | 0.060 | 0.034 | 1.00 | 0.033 | 0.40 | 1.7×10-6 |
| rs4886586 | 79026674 | A | 0.41 | 1.00 | 0.042 | 2.2×10-4 | 0.95 | 0.027 | 0.21 | 0.95 | 0.052 | 0.033 | 0.94 | 0.051 | 0.080 | 0.93 | 0.036 | 0.37 | 1.7×10-6 |
| rs11633178 | 78944538 | G | 0.41 | 1.00 | 0.041 | 3.0×10-4 | 0.98 | 0.023 | 0.28 | 0.98 | 0.048 | 0.047 | 0.98 | 0.060 | 0.034 | 0.99 | 0.049 | 0.22 | 1.7×10-6 |
| rs1021071 | 78968179 | C | 0.41 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.024 | 0.26 | 1.00 | 0.050 | 0.038 | 1.00 | 0.060 | 0.034 | 1.00 | 0.033 | 0.40 | 1.7×10-6 |
| rs4887083 | 79025577 | T | 0.42 | 1.00 | 0.043 | 1.7×10-4 | 0.99 | 0.027 | 0.20 | 1.00 | 0.047 | 0.051 | 0.97 | 0.050 | 0.078 | 0.97 | 0.034 | 0.39 | 1.8×10-6 |
| rs8038543 | 79017685 | T | 0.41 | 1.00 | 0.042 | 2.1×10-4 | 0.98 | 0.022 | 0.30 | 0.98 | 0.047 | 0.050 | 0.96 | 0.062 | 0.031 | 0.96 | 0.037 | 0.35 | 1.8×10-6 |
| rs7170068 | 78912943 | A | 0.21 | 0.99 | -0.036 | 0.0084 | 0.99 | -0.048 | 0.065 | 0.98 | -0.065 | 0.025 | 0.98 | -0.11 | 0.0012 | 0.99 | -0.058 | 0.22 | 1.8×10-6 |
| rs200246180 | 79018854 | TA | 0.33 | 0.84 | 0.043 | 1.8×10-4 | 0.99 | 0.025 | 0.21 | 1.00 | 0.046 | 0.044 | 0.97 | 0.050 | 0.072 | 0.97 | 0.032 | 0.41 | 1.8×10-6 |
| rs11072785 | 78968229 | T | 0.41 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.024 | 0.26 | 1.00 | 0.049 | 0.043 | 1.00 | 0.060 | 0.034 | 1.00 | 0.033 | 0.41 | 1.9×10-6 |
| rs12908207 | 79025963 | T | 0.42 | 0.99 | 0.043 | 1.8×10-4 | 0.99 | 0.027 | 0.20 | 1.00 | 0.046 | 0.052 | 0.97 | 0.050 | 0.078 | 0.97 | 0.034 | 0.39 | 1.9×10-6 |
| rs4886579 | 78969256 | T | 0.41 | 1.00 | 0.042 | 2.4×10-4 | 0.99 | 0.024 | 0.26 | 1.00 | 0.048 | 0.047 | 1.00 | 0.060 | 0.033 | 1.00 | 0.032 | 0.41 | 1.9×10-6 |
| rs12593950 | 78920935 | C | 0.22 | 1.00 | -0.035 | 0.0082 | 0.97 | -0.042 | 0.11 | 0.97 | -0.076 | 0.0076 | 0.97 | -0.10 | 0.0028 | 0.97 | -0.055 | 0.24 | 2.0×10-6 |
| rs11639372 | 78966655 | T | 0.41 | 1.00 | 0.042 | 2.6×10-4 | 0.99 | 0.023 | 0.28 | 1.00 | 0.049 | 0.039 | 1.00 | 0.059 | 0.035 | 1.00 | 0.033 | 0.40 | 2.0×10-6 |
| rs11634543 | 79005504 | T | 0.41 | 1.00 | 0.043 | 2.0×10-4 | 0.99 | 0.024 | 0.26 | 0.99 | 0.048 | 0.047 | 1.00 | 0.056 | 0.047 | 1.00 | 0.030 | 0.44 | 2.0×10-6 |
| rs62010337 | 78924542 | T | 0.46 | 0.86 | -0.040 | 8.9×10-4 | 0.77 | -0.017 | 0.50 | 0.79 | -0.065 | 0.013 | 0.78 | -0.090 | 0.0041 | 0.78 | -0.038 | 0.39 | 2.1×10-6 |
| rs61496709 | 79022432 | G | 0.40 | 0.97 | 0.041 | 4.3×10-4 | 0.98 | 0.025 | 0.22 | 0.99 | 0.049 | 0.032 | 0.96 | 0.057 | 0.040 | 0.95 | 0.034 | 0.39 | 2.2×10-6 |
| rs28669908 | 78910267 | A | 0.20 | 1.00 | -0.037 | 0.0068 | 0.95 | -0.037 | 0.18 | 0.99 | -0.075 | 0.0098 | 0.97 | -0.10 | 0.0066 | 0.97 | -0.089 | 0.062 | 2.2×10-6 |
| rs4886580 | 78969385 | G | 0.41 | 1.00 | 0.042 | 2.4×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.048 | 0.047 | 1.00 | 0.055 | 0.048 | 1.00 | 0.032 | 0.41 | 2.2×10-6 |
| rs4887086 | 79026529 | T | 0.42 | 1.00 | 0.042 | 2.2×10-4 | 0.99 | 0.028 | 0.19 | 1.00 | 0.046 | 0.052 | 0.97 | 0.050 | 0.080 | 0.97 | 0.034 | 0.38 | 2.2×10-6 |
| rs2869561 | 79025516 | C | 0.42 | 1.00 | 0.042 | 2.2×10-4 | 0.99 | 0.027 | 0.20 | 1.00 | 0.047 | 0.051 | 0.97 | 0.050 | 0.078 | 0.97 | 0.034 | 0.39 | 2.2×10-6 |
| rs28534575 | 78923845 | G | 0.22 | 1.00 | -0.035 | 0.0085 | 0.97 | -0.041 | 0.12 | 0.97 | -0.078 | 0.0063 | 0.97 | -0.10 | 0.0037 | 0.96 | -0.054 | 0.24 | 2.3×10-6 |
| rs3971859 | 79026277 | T | 0.33 | 0.95 | 0.043 | 3.4×10-4 | 0.78 | 0.039 | 0.14 | 0.81 | 0.066 | 0.022 | 0.79 | 0.080 | 0.019 | 0.80 | -0.024 | 0.61 | 2.4×10-6 |
| rs4886587 | 79026822 | A | 0.42 | 1.00 | 0.042 | 2.2×10-4 | 0.99 | 0.027 | 0.20 | 1.00 | 0.045 | 0.058 | 0.97 | 0.050 | 0.079 | 0.97 | 0.034 | 0.39 | 2.5×10-6 |
| rs56354501 | 79033520 | G | 0.42 | 1.00 | 0.040 | 4.1×10-4 | 0.97 | 0.030 | 0.16 | 0.98 | 0.047 | 0.049 | 0.96 | 0.059 | 0.039 | 0.96 | 0.026 | 0.52 | 2.5×10-6 |
| rs4887072 | 78925435 | G | 0.22 | 1.00 | -0.035 | 0.0082 | 0.96 | -0.039 | 0.13 | 0.97 | -0.078 | 0.0062 | 0.97 | -0.10 | 0.0042 | 0.97 | -0.053 | 0.25 | 2.8×10-6 |
| rs8031513 | 79034276 | C | 0.42 | 1.00 | 0.040 | 4.4×10-4 | 0.97 | 0.029 | 0.17 | 0.98 | 0.048 | 0.047 | 0.96 | 0.059 | 0.038 | 0.96 | 0.026 | 0.52 | 2.8×10-6 |
| rs11638490 | 79007950 | T | 0.42 | 1.00 | 0.041 | 3.2×10-4 | 0.99 | 0.025 | 0.24 | 0.99 | 0.048 | 0.044 | 1.00 | 0.055 | 0.050 | 1.00 | 0.030 | 0.44 | 2.9×10-6 |
| rs11629637 | 79019024 | T | 0.42 | 1.00 | 0.042 | 2.4×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.047 | 0.97 | 0.050 | 0.079 | 0.97 | 0.034 | 0.39 | 2.9×10-6 |
| rs7182642 | 79052277 | T | 0.41 | 0.99 | 0.042 | 2.4×10-4 | 0.94 | 0.021 | 0.34 | 0.96 | 0.047 | 0.052 | 0.96 | 0.064 | 0.026 | 0.95 | 0.027 | 0.50 | 3.0×10-6 |
| rs11639375 | 79024214 | A | 0.42 | 1.00 | 0.042 | 2.3×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.049 | 0.081 | 0.97 | 0.034 | 0.39 | 3.0×10-6 |
| rs11639382 | 79024268 | A | 0.42 | 1.00 | 0.042 | 2.3×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.049 | 0.081 | 0.97 | 0.034 | 0.39 | 3.0×10-6 |
| rs11639049 | 79023730 | G | 0.42 | 1.00 | 0.042 | 2.4×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.047 | 0.050 | 0.97 | 0.050 | 0.081 | 0.97 | 0.034 | 0.39 | 3.1×10-6 |
| rs11639347 | 79024350 | T | 0.42 | 1.00 | 0.042 | 2.4×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.049 | 0.081 | 0.97 | 0.034 | 0.39 | 3.1×10-6 |
| rs11639181 | 79024016 | G | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.049 | 0.081 | 0.97 | 0.034 | 0.39 | 3.2×10-6 |
| rs11639166 | 79023766 | C | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 0.99 | 0.025 | 0.24 | 1.00 | 0.047 | 0.050 | 0.97 | 0.050 | 0.081 | 0.97 | 0.034 | 0.39 | 3.2×10-6 |
| rs34563625 | 79020278 | C | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.050 | 0.080 | 0.97 | 0.034 | 0.38 | 3.2×10-6 |
| rs35583595 | 79020152 | G | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.050 | 0.080 | 0.97 | 0.034 | 0.38 | 3.2×10-6 |
| rs1825083 | 79023467 | C | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.050 | 0.97 | 0.050 | 0.080 | 0.97 | 0.034 | 0.39 | 3.2×10-6 |
| rs2869554 | 79021037 | C | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.050 | 0.080 | 0.97 | 0.034 | 0.38 | 3.2×10-6 |
| rs1825082 | 79023433 | A | 0.42 | 1.00 | 0.042 | 2.5×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.050 | 0.97 | 0.050 | 0.080 | 0.97 | 0.034 | 0.39 | 3.2×10-6 |
| rs8027972 | 79022615 | C | 0.41 | 1.00 | 0.041 | 3.1×10-4 | 0.96 | 0.025 | 0.24 | 0.97 | 0.045 | 0.065 | 0.95 | 0.062 | 0.031 | 0.95 | 0.026 | 0.52 | 3.3×10-6 |
| rs34225855 | 79022136 | G | 0.41 | 0.99 | 0.041 | 3.9×10-4 | 0.99 | 0.026 | 0.22 | 0.99 | 0.048 | 0.046 | 0.96 | 0.054 | 0.056 | 0.97 | 0.034 | 0.39 | 3.3×10-6 |
| rs80229697 | 79022616 | A | 0.41 | 1.00 | 0.041 | 3.2×10-4 | 0.96 | 0.025 | 0.24 | 0.97 | 0.045 | 0.065 | 0.95 | 0.062 | 0.031 | 0.95 | 0.026 | 0.52 | 3.4×10-6 |
| rs76919723 | 79017281 | C | 0.41 | 1.00 | 0.042 | 2.6×10-4 | 0.99 | 0.022 | 0.30 | 0.99 | 0.047 | 0.049 | 0.97 | 0.054 | 0.057 | 0.97 | 0.035 | 0.38 | 3.4×10-6 |
| rs112236733 | 78783832 | GTATGTATTTATT | 0.38 | 0.99 | 0.37 | 0.66 | 0.99 | -0.049 | 0.018 | 0.99 | -0.063 | 0.0050 | 0.99 | -0.068 | 0.014 | 0.99 | -0.062 | 0.12 | 3.5×10-6 |
| rs11072792 | 78999911 | G | 0.42 | 1.00 | 0.042 | 2.6×10-4 | 0.98 | 0.017 | 0.42 | 0.99 | 0.053 | 0.027 | 0.99 | 0.056 | 0.047 | 1.00 | 0.029 | 0.46 | 3.6×10-6 |
| rs3829786 | 79019546 | A | 0.42 | 1.00 | 0.042 | 2.8×10-4 | 1.00 | 0.025 | 0.24 | 1.00 | 0.047 | 0.051 | 0.97 | 0.050 | 0.079 | 0.97 | 0.034 | 0.38 | 3.6×10-6 |
| rs1807007 | 79062102 | G | 0.41 | 1.00 | 0.040 | 3.9×10-4 | 0.87 | 0.022 | 0.33 | 0.89 | 0.049 | 0.054 | 0.89 | 0.063 | 0.034 | 0.89 | 0.043 | 0.30 | 3.7×10-6 |
| rs113134286 | 79012888 | T | 0.41 | 1.00 | 0.041 | 3.2×10-4 | 0.99 | 0.023 | 0.27 | 0.99 | 0.047 | 0.048 | 0.99 | 0.055 | 0.052 | 0.99 | 0.031 | 0.43 | 3.7×10-6 |
| rs3813565 | 79019610 | T | 0.41 | 1.00 | 0.040 | 5.6×10-4 | 1.00 | 0.023 | 0.27 | 1.00 | 0.054 | 0.024 | 0.97 | 0.052 | 0.065 | 0.97 | 0.035 | 0.37 | 4.0×10-6 |
| rs11630236 | 79058298 | C | 0.42 | 0.98 | 0.041 | 3.0×10-4 | 0.95 | 0.022 | 0.31 | 0.97 | 0.047 | 0.049 | 0.96 | 0.058 | 0.042 | 0.97 | 0.024 | 0.55 | 4.3×10-6 |
| rs4887090 | 79043402 | A | 0.42 | 1.00 | 0.041 | 3.2×10-4 | 0.96 | 0.022 | 0.31 | 0.98 | 0.048 | 0.046 | 0.97 | 0.057 | 0.043 | 0.97 | 0.024 | 0.54 | 4.5×10-6 |
| rs56195905 | 79040317 | C | 0.42 | 1.00 | 0.040 | 3.9×10-4 | 0.96 | 0.022 | 0.31 | 0.98 | 0.049 | 0.041 | 0.97 | 0.059 | 0.037 | 0.97 | 0.022 | 0.57 | 4.7×10-6 |
| rs4887101 | 79067449 | C | 0.29 | 1.00 | 0.038 | 8.3×10-4 | 0.64 | 0.059 | 0.10 | 0.68 | 0.087 | 0.022 | 0.66 | 0.070 | 0.13 | 0.66 | 0.089 | 0.17 | 5.3×10-6 |
| rs4887100 | 79067448 | C | 0.29 | 1.00 | 0.038 | 8.3×10-4 | 0.64 | 0.059 | 0.10 | 0.68 | 0.087 | 0.022 | 0.66 | 0.070 | 0.13 | 0.66 | 0.089 | 0.17 | 5.3×10-6 |
| rs200227748 | 78835913 | TTTG | 0.21 | NA | NA | NA | 0.97 | -0.033 | 0.19 | 0.98 | -0.074 | 0.0070 | 0.98 | -0.12 | 3.7×10-4 | 0.98 | -0.086 | 0.059 | 5.3×10-6 |
| rs201677370 | 78835914 | TTG | 0.21 | NA | NA | NA | 0.97 | -0.033 | 0.19 | 0.98 | -0.074 | 0.0070 | 0.98 | -0.12 | 3.7×10-4 | 0.98 | -0.086 | 0.059 | 5.3×10-6 |
| rs55834964 | 79049766 | A | 0.42 | 1.00 | 0.040 | 4.5×10-4 | 0.95 | 0.022 | 0.30 | 0.98 | 0.049 | 0.043 | 0.97 | 0.058 | 0.042 | 0.97 | 0.023 | 0.56 | 5.6×10-6 |
| rs141502139 | 78747916 | AAAAAAG | 0.37 | NA | NA | NA | 1.00 | -0.051 | 0.015 | 1.00 | -0.060 | 0.0075 | 1.00 | -0.069 | 0.013 | 1.00 | -0.050 | 0.20 | 5.6×10-6 |
| rs12906653 | 79052580 | A | 0.42 | 0.99 | 0.042 | 2.7×10-4 | 0.95 | 0.022 | 0.31 | 0.98 | 0.043 | 0.073 | 0.97 | 0.057 | 0.046 | 0.97 | 0.023 | 0.56 | 5.9×10-6 |
| rs899984 | 79042736 | C | 0.42 | 1.00 | 0.040 | 4.8×10-4 | 0.96 | 0.022 | 0.31 | 0.98 | 0.048 | 0.045 | 0.97 | 0.057 | 0.043 | 0.97 | 0.024 | 0.54 | 6.5×10-6 |
| rs11633351 | 79056815 | T | 0.43 | 1.00 | 0.040 | 4.0×10-4 | 0.95 | 0.022 | 0.31 | 0.97 | 0.045 | 0.063 | 0.96 | 0.056 | 0.049 | 0.97 | 0.026 | 0.52 | 7.1×10-6 |
| rs8043119 | 79061002 | A | 0.43 | 1.00 | 0.040 | 3.9×10-4 | 0.94 | 0.022 | 0.31 | 0.97 | 0.045 | 0.064 | 0.96 | 0.056 | 0.050 | 0.96 | 0.025 | 0.52 | 7.1×10-6 |
| rs12286 | 79051759 | A | 0.42 | 0.99 | 0.039 | 7.4×10-4 | 0.94 | 0.024 | 0.27 | 0.97 | 0.048 | 0.048 | 0.96 | 0.059 | 0.038 | 0.96 | 0.028 | 0.48 | 7.4×10-6 |
| rs1809419 | 79053814 | A | 0.42 | 1.00 | 0.040 | 3.9×10-4 | 0.95 | 0.021 | 0.33 | 0.97 | 0.045 | 0.062 | 0.97 | 0.057 | 0.047 | 0.97 | 0.024 | 0.55 | 7.5×10-6 |
| rs11635931 | 79064080 | A | 0.43 | 1.00 | 0.040 | 4.0×10-4 | 0.94 | 0.022 | 0.30 | 0.97 | 0.044 | 0.066 | 0.96 | 0.055 | 0.052 | 0.96 | 0.025 | 0.53 | 7.5×10-6 |
| rs1809409 | 79063474 | T | 0.43 | 1.00 | 0.040 | 3.9×10-4 | 0.94 | 0.023 | 0.29 | 0.96 | 0.045 | 0.063 | 0.96 | 0.055 | 0.056 | 0.96 | 0.021 | 0.59 | 7.7×10-6 |
| rs12916648 | 79054129 | T | 0.42 | 0.99 | 0.040 | 4.0×10-4 | 0.95 | 0.023 | 0.29 | 0.98 | 0.043 | 0.073 | 0.97 | 0.057 | 0.046 | 0.97 | 0.023 | 0.56 | 7.7×10-6 |
| rs4887095 | 79053207 | A | 0.42 | 1.00 | 0.040 | 3.9×10-4 | 0.95 | 0.022 | 0.31 | 0.97 | 0.045 | 0.064 | 0.97 | 0.056 | 0.048 | 0.97 | 0.023 | 0.57 | 7.7×10-6 |
| rs12898346 | 79054117 | C | 0.42 | 1.00 | 0.039 | 5.2×10-4 | 0.95 | 0.022 | 0.31 | 0.97 | 0.049 | 0.044 | 0.96 | 0.055 | 0.052 | 0.97 | 0.022 | 0.57 | 8.0×10-6 |
| rs1807006 | 79062340 | G | 0.43 | 1.00 | 0.040 | 4.4×10-4 | 0.94 | 0.022 | 0.30 | 0.97 | 0.045 | 0.065 | 0.96 | 0.056 | 0.051 | 0.96 | 0.025 | 0.52 | 8.1×10-6 |
| rs200692991 | 79018174 | A | 0.36 | 0.99 | 0.040 | 4.7×10-4 | 0.82 | 0.014 | 0.54 | 0.85 | 0.053 | 0.040 | 0.83 | 0.082 | 0.0094 | 0.84 | 0.009 | 0.84 | 8.1×10-6 |
| rs11635870 | 79064143 | G | 0.43 | 1.00 | 0.040 | 4.3×10-4 | 0.94 | 0.022 | 0.30 | 0.97 | 0.044 | 0.066 | 0.96 | 0.055 | 0.052 | 0.96 | 0.025 | 0.53 | 8.1×10-6 |
| rs4420500 | 78962964 | T | 0.43 | 1.00 | 0.039 | 6.4×10-4 | 0.99 | 0.017 | 0.43 | 0.99 | 0.057 | 0.017 | 0.99 | 0.047 | 0.090 | 1.00 | 0.034 | 0.38 | 8.4×10-6 |
| rs12898323 | 79054084 | C | 0.42 | 1.00 | 0.039 | 5.4×10-4 | 0.95 | 0.024 | 0.27 | 0.97 | 0.044 | 0.070 | 0.97 | 0.057 | 0.045 | 0.97 | 0.024 | 0.54 | 8.5×10-6 |
| rs4887096 | 79053284 | C | 0.43 | 1.00 | 0.040 | 4.4×10-4 | 0.95 | 0.022 | 0.31 | 0.98 | 0.043 | 0.073 | 0.97 | 0.057 | 0.046 | 0.97 | 0.023 | 0.56 | 8.9×10-6 |
| rs1809420 | 79056769 | C | 0.43 | 1.00 | 0.039 | 5.1×10-4 | 0.95 | 0.022 | 0.31 | 0.97 | 0.045 | 0.063 | 0.96 | 0.056 | 0.049 | 0.97 | 0.026 | 0.52 | 8.9×10-6 |
| rs6495267 | 79057093 | A | 0.42 | 1.00 | 0.040 | 3.9×10-4 | 0.92 | 0.019 | 0.38 | 0.95 | 0.047 | 0.054 | 0.95 | 0.059 | 0.040 | 0.94 | 0.016 | 0.69 | 9.0×10-6 |
| rs144134168 | 78712101 | T | 0.33 | NA | NA | NA | 0.92 | 0.060 | 0.0056 | 0.94 | 0.045 | 0.071 | 0.93 | 0.10 | 0.0013 | 0.94 | 0.035 | 0.41 | 9.2×10-6 |
| rs12916326 | 79054011 | G | 0.43 | 1.00 | 0.039 | 6.1×10-4 | 0.95 | 0.024 | 0.27 | 0.98 | 0.044 | 0.068 | 0.97 | 0.056 | 0.049 | 0.97 | 0.023 | 0.56 | 1.0×10-5 |
| rs3894352 | 79059526 | G | 0.43 | 0.99 | 0.041 | 2.9×10-4 | 0.94 | 0.021 | 0.34 | 0.96 | 0.040 | 0.098 | 0.95 | 0.052 | 0.065 | 0.96 | 0.025 | 0.54 | 1.0×10-5 |
| rs2904223 | 79059691 | A | 0.43 | 1.00 | 0.041 | 3.4×10-4 | 0.94 | 0.020 | 0.35 | 0.97 | 0.040 | 0.098 | 0.96 | 0.055 | 0.053 | 0.96 | 0.025 | 0.52 | 1.0×10-5 |
| rs3894351 | 79059523 | A | 0.43 | 1.00 | 0.041 | 3.5×10-4 | 0.94 | 0.020 | 0.35 | 0.97 | 0.040 | 0.098 | 0.96 | 0.054 | 0.055 | 0.96 | 0.026 | 0.51 | 1.1×10-5 |
| rs3743063 | 79065171 | A | 0.43 | 1.00 | 0.039 | 5.1×10-4 | 0.93 | 0.026 | 0.24 | 0.96 | 0.043 | 0.079 | 0.95 | 0.048 | 0.089 | 0.96 | 0.023 | 0.57 | 1.2×10-5 |
| rs4887102 | 79067495 | G | 0.35 | 0.99 | 0.036 | 0.0016 | 0.76 | 0.025 | 0.35 | 0.80 | 0.066 | 0.020 | 0.78 | 0.071 | 0.038 | 0.79 | 0.037 | 0.43 | 1.3×10-5 |
| rs4887099 | 79059547 | C | 0.43 | 1.00 | 0.040 | 4.4×10-4 | 0.94 | 0.020 | 0.35 | 0.97 | 0.040 | 0.098 | 0.96 | 0.054 | 0.055 | 0.96 | 0.026 | 0.51 | 1.4×10-5 |
| rs1809423 | 79059670 | C | 0.43 | 1.00 | 0.040 | 4.6×10-4 | 0.94 | 0.020 | 0.35 | 0.97 | 0.040 | 0.098 | 0.96 | 0.055 | 0.054 | 0.96 | 0.025 | 0.52 | 1.4×10-5 |
| rs7168391 | 79055163 | T | 0.43 | 1.00 | 0.040 | 4.9×10-4 | 0.95 | 0.025 | 0.25 | 0.97 | 0.042 | 0.081 | 0.96 | 0.047 | 0.10 | 0.97 | 0.023 | 0.56 | 1.4×10-5 |
| rs4887098 | 79057950 | C | 0.42 | 1.00 | 0.041 | 2.9×10-4 | 0.92 | 0.018 | 0.40 | 0.95 | 0.042 | 0.084 | 0.94 | 0.050 | 0.081 | 0.95 | 0.019 | 0.64 | 1.4×10-5 |
| rs4887097 | 79057949 | C | 0.42 | 0.99 | 0.041 | 2.9×10-4 | 0.92 | 0.018 | 0.40 | 0.95 | 0.042 | 0.084 | 0.94 | 0.050 | 0.081 | 0.95 | 0.019 | 0.64 | 1.5×10-5 |
| rs35934157 | 79067385 | A | 0.41 | 1.00 | 0.038 | 9.7×10-4 | 0.93 | 0.025 | 0.26 | 0.96 | 0.048 | 0.046 | 0.95 | 0.051 | 0.076 | 0.96 | 0.023 | 0.57 | 1.5×10-5 |
| rs1810165 | 79059449 | G | 0.43 | 1.00 | 0.039 | 5.5×10-4 | 0.94 | 0.021 | 0.34 | 0.96 | 0.039 | 0.10 | 0.96 | 0.055 | 0.051 | 0.96 | 0.027 | 0.50 | 1.5×10-5 |
| rs12909179 | 79047632 | A | 0.39 | 0.90 | 0.041 | 9.9×10-4 | 0.95 | 0.023 | 0.30 | 0.97 | 0.046 | 0.058 | 0.97 | 0.059 | 0.037 | 0.96 | 0.019 | 0.62 | 1.5×10-5 |
| rs201710748 | 78712114 | T | 0.31 | NA | NA | NA | 0.94 | 0.058 | 0.0077 | 0.96 | 0.039 | 0.11 | 0.95 | 0.10 | 6.1×10-4 | 0.96 | 0.031 | 0.46 | 1.6×10-5 |
| rs7174367 | 79064667 | G | 0.42 | 0.98 | 0.040 | 5.6×10-4 | 0.91 | 0.012 | 0.59 | 0.95 | 0.050 | 0.044 | 0.93 | 0.059 | 0.041 | 0.94 | 0.026 | 0.53 | 1.6×10-5 |
| rs12440014 | 78926726 | G | 0.23 | 1.00 | -0.030 | 0.023 | 0.96 | -0.035 | 0.18 | 0.97 | -0.067 | 0.019 | 0.97 | -0.11 | 0.0014 | 0.96 | -0.054 | 0.24 | 1.7×10-5 |
| rs7161774 | 79069734 | G | 0.41 | 0.99 | 0.037 | 0.0011 | 0.92 | 0.028 | 0.21 | 0.95 | 0.046 | 0.061 | 0.94 | 0.049 | 0.092 | 0.95 | 0.021 | 0.60 | 1.9×10-5 |
| rs11636753 | 78928946 | T | 0.39 | 1.00 | -0.038 | 7.0×10-4 | 1.00 | -0.056 | 0.012 | 0.99 | -0.021 | 0.40 | 1.00 | -0.026 | 0.34 | 1.00 | -0.021 | 0.60 | 2.0×10-5 |
| rs28544432 | 78924538 | G | 0.19 | 0.96 | -0.034 | 0.015 | 0.89 | -0.053 | 0.075 | 0.91 | -0.047 | 0.13 | 0.91 | -0.11 | 0.0024 | 0.91 | -0.071 | 0.18 | 2.0×10-5 |
| rs12442456 | 78751962 | T | 0.13 | 1.00 | -0.041 | 0.011 | 0.88 | -0.061 | 0.078 | 0.95 | -0.094 | 0.0054 | 0.93 | -0.060 | 0.16 | 0.93 | -0.048 | 0.41 | 2.5×10-5 |
| rs7171916 | 79067951 | G | 0.41 | 1.00 | 0.038 | 9.5×10-4 | 0.92 | 0.026 | 0.24 | 0.95 | 0.044 | 0.069 | 0.94 | 0.043 | 0.13 | 0.95 | 0.015 | 0.71 | 3.2×10-5 |
| rs2277545 | 79083591 | C | 0.43 | 0.99 | 0.040 | 4.6×10-4 | 0.97 | 0.008 | 0.72 | 0.99 | 0.047 | 0.044 | 0.99 | 0.045 | 0.11 | 1.00 | 0.028 | 0.48 | 3.3×10-5 |
| rs7171578 | 79067922 | T | 0.41 | 1.00 | 0.038 | 9.1×10-4 | 0.93 | 0.023 | 0.28 | 0.95 | 0.043 | 0.075 | 0.94 | 0.043 | 0.14 | 0.95 | 0.018 | 0.66 | 3.7×10-5 |
| rs11631955 | 79085915 | G | 0.42 | 1.00 | 0.037 | 0.0011 | 0.89 | 0.006 | 0.81 | 0.92 | 0.050 | 0.043 | 0.92 | 0.054 | 0.066 | 0.93 | 0.045 | 0.28 | 4.2×10-5 |
| rs17487514 | 78953785 | T | 0.31 | 0.99 | 0.044 | 3.4×10-4 | 1.00 | 0.017 | 0.44 | 1.00 | 0.042 | 0.099 | 1.00 | 0.045 | 0.13 | 1.00 | 0.010 | 0.82 | 4.3×10-5 |
| rs11639044 | 79083814 | T | 0.44 | 1.00 | 0.038 | 6.9×10-4 | 0.97 | 0.008 | 0.69 | 0.99 | 0.047 | 0.044 | 0.98 | 0.045 | 0.11 | 1.00 | 0.025 | 0.53 | 4.5×10-5 |
| rs28699256 | 79058951 | C | 0.45 | 0.97 | 0.033 | 0.0033 | 0.91 | 0.028 | 0.20 | 0.94 | 0.036 | 0.14 | 0.94 | 0.062 | 0.030 | 0.95 | 0.029 | 0.47 | 4.6×10-5 |
| rs11854507 | 79069121 | G | 0.41 | 0.99 | 0.038 | 9.6×10-4 | 0.90 | 0.027 | 0.23 | 0.93 | 0.040 | 0.10 | 0.92 | 0.043 | 0.14 | 0.93 | 0.010 | 0.81 | 4.7×10-5 |

MAF, minor allele frequency; NA, not available.

1MAF was weighted by sample size across the five samples.

**Supplementary Table 3.** Chromosome 8q11SNP and indel associations with nicotine dependence at meta-analysis *P*<5×10-5. Results were taken from a linear regression model in each sample with categorical nicotine dependence (mild, moderate, and severe) as the outcome, SNP/indel genotype dosage as the predictor, and age, sex, principal component eigenvectors (if applicable), and other sample-specific variables (if applicable) as covariates. The sample-specific results following correction for genomic control are shown. SNPs/indels are sorted by the meta-analysis *P* values.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP \ indel** | **Base pair position (NCBI build 37)** | **Minor allele** | **MAF1** | **deCODE (N=9,090)** | | | **EAGLE (N=3,006)** | | | **COPDGene (N=2,211)** | | | **COGEND (N=1,935)** | | | **SAGE (N=832)** | | | **Meta-analysis *P*** |
| **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** |
| rs55828312 | 42589602 | G | 0.22 | 0.99 | -0.034 | 0.0092 | 0.96 | -0.077 | 0.0028 | 0.98 | -0.0092 | 0.75 | 0.97 | -0.10 | 0.0029 | 0.98 | -0.18 | 5.0×10-4 | 1.2×10-6 |
| rs1530848 | 42552908 | G | 0.23 | 1.00 | -0.034 | 0.0083 | 0.99 | -0.072 | 0.0042 | 1.00 | -0.015 | 0.59 | 1.00 | -0.096 | 0.0037 | 1.00 | -0.15 | 0.0028 | 1.6×10-6 |
| rs35116962 | 42545662 | GT | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0026 | 1.00 | -0.012 | 0.66 | 1.00 | -0.098 | 0.0023 | 1.00 | -0.16 | 6.7×10-4 | 2.0×10-6 |
| rs34708855 | 42541592 | AT | 0.22 | 1.00 | -0.030 | 0.023 | 1.00 | -0.071 | 0.0029 | 1.00 | -0.015 | 0.59 | 1.00 | -0.093 | 0.0041 | 1.00 | -0.16 | 6.7×10-4 | 2.6×10-6 |
| rs4236926 | 42578059 | T | 0.22 | 1.00 | -0.032 | 0.013 | 0.98 | -0.071 | 0.0050 | 0.98 | -0.0093 | 0.74 | 0.98 | -0.10 | 0.0029 | 0.99 | -0.17 | 8.2×10-4 | 2.9×10-6 |
| rs16891561 | 42579739 | T | 0.22 | 1.00 | -0.033 | 0.013 | 0.97 | -0.071 | 0.0051 | 0.98 | -0.0072 | 0.80 | 0.98 | -0.10 | 0.0025 | 0.98 | -0.17 | 7.6×10-4 | 3.0×10-6 |
| rs58379124 | 42579203 | T | 0.22 | 1.00 | -0.032 | 0.014 | 0.97 | -0.072 | 0.0048 | 0.98 | -0.0089 | 0.75 | 0.98 | -0.10 | 0.0030 | 0.99 | -0.17 | 7.8×10-4 | 3.1×10-6 |
| rs7459838 | 42584279 | G | 0.22 | 1.00 | -0.032 | 0.013 | 0.97 | -0.071 | 0.0052 | 0.98 | -0.0081 | 0.77 | 0.98 | -0.10 | 0.0031 | 0.98 | -0.17 | 6.9×10-4 | 3.2×10-6 |
| rs9693825 | 42545177 | C | 0.22 | 1.00 | -0.031 | 0.018 | 1.00 | -0.072 | 0.0039 | 1.00 | -0.012 | 0.67 | 1.00 | -0.099 | 0.0033 | 1.00 | -0.16 | 0.0013 | 3.8×10-6 |
| rs57645595 | 42579025 | T | 0.22 | 1.00 | -0.032 | 0.016 | 0.97 | -0.071 | 0.0050 | 0.98 | -0.0088 | 0.75 | 0.98 | -0.10 | 0.0030 | 0.99 | -0.17 | 8.0×10-4 | 3.8×10-6 |
| rs7004381 | 42551161 | A | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.015 | 0.60 | 1.00 | -0.099 | 0.0032 | 1.00 | -0.16 | 0.0011 | 4.0×10-6 |
| rs4951 | 42563557 | C | 0.22 | 1.00 | -0.030 | 0.021 | 0.99 | -0.071 | 0.0044 | 0.99 | -0.015 | 0.58 | 0.99 | -0.098 | 0.0034 | 1.00 | -0.16 | 0.0013 | 4.2×10-6 |
| rs6474412 | 42550498 | C | 0.22 | 1.00 | -0.030 | 0.020 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.012 | 0.66 | 1.00 | -0.099 | 0.0032 | 1.00 | -0.16 | 0.0013 | 4.3×10-6 |
| rs6474413 | 42551064 | C | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0039 | 1.00 | -0.013 | 0.65 | 1.00 | -0.099 | 0.0031 | 1.00 | -0.16 | 0.0011 | 4.3×10-6 |
| rs1955186 | 42549491 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.013 | 0.64 | 1.00 | -0.099 | 0.0032 | 1.00 | -0.16 | 0.0013 | 4.6×10-6 |
| rs1955185 | 42549647 | C | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.013 | 0.64 | 1.00 | -0.099 | 0.0032 | 1.00 | -0.16 | 0.0013 | 4.7×10-6 |
| rs13277524 | 42550057 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.013 | 0.65 | 1.00 | -0.099 | 0.0032 | 1.00 | -0.16 | 0.0013 | 4.7×10-6 |
| rs9643853 | 42556652 | A | 0.22 | 1.00 | -0.030 | 0.020 | 1.00 | -0.071 | 0.0047 | 1.00 | -0.014 | 0.62 | 1.00 | -0.096 | 0.0041 | 1.00 | -0.16 | 0.0013 | 4.7×10-6 |
| rs13273442 | 42544017 | A | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.013 | 0.63 | 1.00 | -0.097 | 0.0038 | 1.00 | -0.16 | 0.0013 | 4.8×10-6 |
| rs6985052 | 42551319 | C | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0043 | 1.00 | -0.013 | 0.65 | 1.00 | -0.099 | 0.0032 | 1.00 | -0.16 | 0.0013 | 4.8×10-6 |
| rs13254578 | 42545846 | G | 0.22 | 1.00 | -0.029 | 0.024 | 1.00 | -0.072 | 0.0041 | 1.00 | -0.014 | 0.61 | 1.00 | -0.099 | 0.0034 | 1.00 | -0.16 | 0.0013 | 5.0×10-6 |
| rs9792277 | 42545827 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0041 | 1.00 | -0.012 | 0.67 | 1.00 | -0.098 | 0.0034 | 1.00 | -0.16 | 0.0013 | 5.0×10-6 |
| rs9792257 | 42545551 | C | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.012 | 0.67 | 1.00 | -0.098 | 0.0035 | 1.00 | -0.16 | 0.0013 | 5.0×10-6 |
| rs1901281 | 42546888 | G | 0.22 | 1.00 | -0.030 | 0.022 | 1.00 | -0.072 | 0.0041 | 1.00 | -0.013 | 0.65 | 1.00 | -0.099 | 0.0034 | 1.00 | -0.16 | 0.0013 | 5.0×10-6 |
| rs9693858 | 42545357 | C | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.072 | 0.0042 | 1.00 | -0.012 | 0.67 | 1.00 | -0.098 | 0.0035 | 1.00 | -0.16 | 0.0013 | 5.0×10-6 |
| rs4736835 | 42547033 | T | 0.22 | 1.00 | -0.030 | 0.022 | 1.00 | -0.072 | 0.0041 | 1.00 | -0.012 | 0.66 | 1.00 | -0.099 | 0.0033 | 1.00 | -0.16 | 0.0013 | 5.1×10-6 |
| rs4736838 | 42547333 | T | 0.22 | 1.00 | -0.030 | 0.021 | 0.99 | -0.073 | 0.0037 | 1.00 | -0.0093 | 0.74 | 0.99 | -0.099 | 0.0031 | 1.00 | -0.16 | 0.0013 | 5.1×10-6 |
| rs4950 | 42552633 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.071 | 0.0045 | 1.00 | -0.014 | 0.62 | 1.00 | -0.095 | 0.0045 | 1.00 | -0.16 | 0.0013 | 5.2×10-6 |
| rs1451239 | 42546542 | G | 0.22 | 1.00 | -0.030 | 0.023 | 1.00 | -0.072 | 0.0041 | 1.00 | -0.012 | 0.66 | 1.00 | -0.099 | 0.0034 | 1.00 | -0.16 | 0.0013 | 5.3×10-6 |
| rs13280604 | 42559586 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.071 | 0.0047 | 1.00 | -0.013 | 0.63 | 1.00 | -0.096 | 0.0041 | 1.00 | -0.16 | 0.0013 | 5.3×10-6 |
| rs9643891 | 42556597 | C | 0.22 | 1.00 | -0.030 | 0.022 | 1.00 | -0.071 | 0.0047 | 1.00 | -0.014 | 0.62 | 1.00 | -0.096 | 0.0041 | 1.00 | -0.16 | 0.0013 | 5.4×10-6 |
| rs6474415 | 42562938 | G | 0.22 | 1.00 | -0.029 | 0.027 | 0.99 | -0.071 | 0.0044 | 0.99 | -0.016 | 0.58 | 0.99 | -0.098 | 0.0034 | 1.00 | -0.16 | 0.0011 | 5.4×10-6 |
| rs10958727 | 42554763 | C | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0050 | 1.00 | -0.014 | 0.60 | 1.00 | -0.095 | 0.0048 | 1.00 | -0.16 | 0.0012 | 5.4×10-6 |
| rs6474414 | 42560336 | A | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.071 | 0.0048 | 1.00 | -0.014 | 0.62 | 1.00 | -0.096 | 0.0041 | 1.00 | -0.16 | 0.0013 | 5.4×10-6 |
| rs6997909 | 42560249 | A | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0049 | 1.00 | -0.014 | 0.62 | 1.00 | -0.096 | 0.0041 | 1.00 | -0.16 | 0.0013 | 5.5×10-6 |
| rs4295650 | 42537811 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0053 | 1.00 | -0.015 | 0.60 | 1.00 | -0.095 | 0.0049 | 1.00 | -0.17 | 9.7×10-4 | 5.5×10-6 |
| rs13277254 | 42549982 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.071 | 0.0045 | 1.00 | -0.015 | 0.60 | 1.00 | -0.096 | 0.0044 | 1.00 | -0.16 | 0.0018 | 5.5×10-6 |
| rs6987704 | 42547623 | T | 0.20 | 1.00 | -0.032 | 0.018 | 1.00 | -0.074 | 0.0043 | 1.00 | -0.00035 | 0.99 | 1.00 | -0.11 | 0.0013 | 1.00 | -0.16 | 0.0017 | 5.5×10-6 |
| rs10958726 | 42535909 | G | 0.22 | 1.00 | -0.030 | 0.022 | 1.00 | -0.070 | 0.0054 | 1.00 | -0.015 | 0.60 | 1.00 | -0.095 | 0.0050 | 1.00 | -0.17 | 8.7×10-4 | 5.6×10-6 |
| rs7842601 | 42537055 | C | 0.22 | 1.00 | -0.030 | 0.022 | 1.00 | -0.070 | 0.0053 | 1.00 | -0.014 | 0.61 | 1.00 | -0.095 | 0.0050 | 1.00 | -0.17 | 9.3×10-4 | 5.6×10-6 |
| rs4736837 | 42547183 | C | 0.23 | 1.00 | -0.030 | 0.019 | 0.94 | -0.078 | 0.0018 | 0.94 | -0.0084 | 0.77 | 0.93 | -0.094 | 0.0054 | 0.95 | -0.15 | 0.0037 | 5.6×10-6 |
| rs11783507 | 42534395 | C | 0.22 | 1.00 | -0.030 | 0.022 | 0.99 | -0.070 | 0.0054 | 1.00 | -0.015 | 0.59 | 0.99 | -0.094 | 0.0053 | 1.00 | -0.17 | 9.6×10-4 | 5.8×10-6 |
| rs6474411 | 42541446 | A | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0050 | 1.00 | -0.014 | 0.62 | 1.00 | -0.095 | 0.0048 | 1.00 | -0.16 | 0.0012 | 5.8×10-6 |
| rs4736836 | 42547176 | C | 0.23 | 1.00 | -0.030 | 0.020 | 0.94 | -0.078 | 0.0018 | 0.94 | -0.0084 | 0.77 | 0.93 | -0.094 | 0.0054 | 0.95 | -0.15 | 0.0037 | 5.9×10-6 |
| rs7816726 | 42535437 | A | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0054 | 1.00 | -0.012 | 0.66 | 1.00 | -0.095 | 0.0051 | 1.00 | -0.17 | 8.7×10-4 | 6.3×10-6 |
| rs36011715 | 42530981 | C | 0.22 | 1.00 | -0.50 | 0.66 | 1.00 | -0.069 | 0.0038 | 1.00 | -0.013 | 0.63 | 1.00 | -0.094 | 0.0036 | 1.00 | -0.17 | 4.4×10-4 | 6.4×10-6 |
| rs78258002 | 42542494 | T | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0052 | 1.00 | -0.013 | 0.64 | 1.00 | -0.094 | 0.0053 | 0.99 | -0.16 | 0.0014 | 6.5×10-6 |
| rs77232073 | 42542356 | G | 0.22 | 1.00 | -0.030 | 0.021 | 1.00 | -0.070 | 0.0050 | 1.00 | -0.012 | 0.67 | 1.00 | -0.095 | 0.0048 | 1.00 | -0.16 | 0.0013 | 6.7×10-6 |
| rs1451240 | 42546711 | A | 0.22 | 1.00 | -0.029 | 0.027 | 1.00 | -0.072 | 0.0041 | 1.00 | -0.012 | 0.66 | 1.00 | -0.099 | 0.0034 | 1.00 | -0.16 | 0.0013 | 6.8×10-6 |
| rs1979140 | 42530836 | T | 0.22 | 1.00 | -0.030 | 0.023 | 1.00 | -0.069 | 0.0058 | 1.00 | -0.013 | 0.64 | 1.00 | -0.094 | 0.0053 | 1.00 | -0.17 | 8.7×10-4 | 6.9×10-6 |
| rs35599391 | 42540066 | C | 0.22 | 1.00 | -0.030 | 0.022 | 1.00 | -0.070 | 0.0051 | 1.00 | -0.011 | 0.69 | 0.99 | -0.095 | 0.0049 | 1.00 | -0.16 | 0.0012 | 7.3×10-6 |
| rs200716987 | 42603348 | T | 0.24 | 0.99 | -0.030 | 0.018 | 0.91 | -0.040 | 0.099 | 0.95 | -0.011 | 0.68 | 0.94 | -0.091 | 0.0044 | 0.94 | -0.22 | 2.4×10-6 | 8.1×10-6 |
| rs7017612 | 42599245 | C | 0.18 | 0.99 | -0.038 | 0.0053 | 0.93 | -0.060 | 0.048 | 0.96 | -0.014 | 0.66 | 0.95 | -0.10 | 0.0067 | 0.96 | -0.16 | 0.0041 | 1.0×10-5 |
| rs10958725 | 42524584 | T | 0.22 | 1.00 | -0.029 | 0.024 | 1.00 | -0.067 | 0.0077 | 1.00 | -0.012 | 0.66 | 1.00 | -0.088 | 0.0092 | 1.00 | -0.16 | 0.0011 | 1.3×10-5 |
| rs34456987 | 42523329 | G | 0.22 | 1.00 | -0.029 | 0.028 | 1.00 | -0.069 | 0.0060 | 1.00 | -0.011 | 0.68 | 1.00 | -0.088 | 0.0091 | 1.00 | -0.17 | 8.9×10-4 | 1.4×10-5 |
| rs138569594 | 42538848 | GGGAA | 0.22 | NA | NA | NA | 0.99 | -0.065 | 0.0058 | 0.99 | -0.011 | 0.68 | 0.99 | -0.086 | 0.0075 | 0.99 | -0.17 | 4.3×10-4 | 1.8×10-5 |
| rs9692914 | 42545296 | T | 0.23 | 1.00 | -0.030 | 0.022 | 0.94 | -0.069 | 0.0056 | 0.96 | 0.0040 | 0.88 | 0.95 | -0.095 | 0.0043 | 0.96 | -0.15 | 0.0029 | 2.1×10-5 |
| rs10958724 | 42517127 | G | 0.18 | 1.00 | -0.026 | 0.058 | 0.95 | -0.079 | 0.0055 | 0.97 | -0.015 | 0.65 | 0.97 | -0.12 | 0.0022 | 0.97 | -0.16 | 0.0058 | 3.9×10-5 |
| rs201404634 | 42603349 | T | 0.25 | NA | NA | NA | 0.91 | -0.040 | 0.098 | 0.95 | -0.011 | 0.68 | 0.94 | -0.091 | 0.0044 | 0.94 | -0.22 | 2.4×10-6 | 4.6×10-5 |
| chr8: 42603350 | 42603350 | T | 0.25 | NA | NA | NA | 0.91 | -0.040 | 0.099 | 0.95 | -0.011 | 0.68 | 0.94 | -0.091 | 0.0044 | 0.94 | -0.22 | 2.4×10-6 | 4.6×10-5 |

MAF, minor allele frequency; NA, not available.

1MAF was weighted by sample size across the five samples.

**Supplementary Table 4**. Interaction results between top nicotine dependence-associated chromosome 20q13 SNPs and indels (GWAS meta-analysis *P*<5×10-5)and known nicotine dependence-associated SNPs, rs16969968[1-4](#_ENREF_1) on chromosome 15q25 and rs6474413[5](#_ENREF_5), [6](#_ENREF_6) on chromosome 8p11. Linear regression models were run in each discovery sample with categorical nicotine dependence (mild, moderate, and severe) as the outcome, and *CHRNA4* SNP/indel genotype dosage, known SNP dosage (rs16969968-A or rs6474413-T as the minor coded allele), an interaction term between the *CHRNA4* SNP/indel and known SNP, age, sex, principal component eigenvectors (if applicable), and other sample-specific variables (if applicable) as the independent variables. The sample-specific regression coefficients for the interaction term were combined in an inverse variance-weighted meta-analysis. SNPs/indels are sorted by their chromosomal position.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SNP / indel** | **Base pair position**  **(NCBI build 37)** | **Minor allele** | **Meta-analysis for an interaction with rs16969968** | | **Meta-analysis for an interaction with rs6474413** | |
| **β** | ***P*** | **β** | ***P*** |
| rs45508092 | 61974731 | A | 0.0037 | 0.89 | 0.030 | 0.33 |
| rs45456294 | 61974832 | A | -0.0016 | 0.95 | 0.023 | 0.43 |
| rs45612034 | 61974970 | A | 0.0022 | 0.93 | 0.020 | 0.50 |
| rs199666656 | 61975634 | G | -0.0010 | 0.97 | 0.024 | 0.42 |
| rs4809292 | 61977506 | A | -0.0041 | 0.88 | 0.024 | 0.42 |
| rs4809293 | 61977640 | A | 0.0063 | 0.84 | 0.018 | 0.61 |
| rs4809294 | 61977723 | T | -0.015 | 0.60 | 0.023 | 0.48 |
| rs45470098 | 61979328 | G | 0.0045 | 0.90 | 0.068 | 0.11 |
| rs45618935 | 61979347 | C | -0.0046 | 0.86 | 0.023 | 0.45 |
| rs6062899 | 61979793 | G | -0.0095 | 0.54 | 0.028 | 0.12 |
| rs6062901 | 61980261 | G | -0.0053 | 0.74 | 0.029 | 0.11 |
| rs45461993 | 61983901 | G | 0.023 | 0.32 | 0.021 | 0.41 |
| rs45577732 | 61983934 | G | 0.025 | 0.28 | 0.0093 | 0.72 |
| rs6011779 | 61984317 | C | 0.0067 | 0.66 | 0.026 | 0.13 |
| rs144298540 | 61984931 | A | -0.017 | 0.58 | 0.022 | 0.54 |
| rs4809542 | 61986787 | A | 0.017 | 0.49 | 0.015 | 0.59 |
| rs2273500 | 61986949 | T | -0.0088 | 0.61 | 0.030 | 0.12 |
| rs4809543 | 61986950 | C | 0.018 | 0.43 | 0.020 | 0.45 |
| rs45449494 | 61987930 | T | 0.021 | 0.35 | 0.021 | 0.41 |
| rs201806007 | 61988398 | C | -0.0052 | 0.77 | 0.023 | 0.26 |
| rs45623037 | 61989658 | G | 0.023 | 0.30 | 0.020 | 0.42 |
| rs45497800 | 61991833 | G | 0.019 | 0.40 | 0.021 | 0.40 |
| rs151176846 | 61997500 | AT | 0.017 | 0.48 | 0.0047 | 0.86 |

**Supplementary Table 5**. *CHRNA4* SNPs and indels associated with nicotine dependence at genome-wide association study meta-analysis *P*<5×10-5 and tested for independent replication. Unless otherwise stated, results were taken from a linear regression model in each replication sample with categorical nicotine dependence (mild, moderate, and severe) as the outcome, SNP/indel genotype dosage as the predictor, and age, sex, and principal component eigenvectors as covariates. SNPs and indels are sorted by the meta-analysis *P* values.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP / indel** | **Minor allele** | **FTC1**  **(N=2,374)** | | | **Yale-Penn**  **(N=2,116)** | | | **UW-TTURC (N=1,534)** | | | **GAIN**  **(N=774)** | | | **nonGAIN**  **(N=671)** | | | **Meta-analysis**  ***P*** |
| **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** | **info** | **β** | ***P*** |
| rs6011779 | C | 0.95 | 0.11 | 0.014 | 0.85 | 0.055 | 0.050 | 1.00 | 0.064 | 0.038 | 0.77 | 0.052 | 0.37 | 0.78 | -0.029 | 0.62 | 5.5×10-4 |
| rs2273500 | C | 0.94 | 0.12 | 0.013 | 0.98 | 0.066 | 0.025 | 1.00 | 0.054 | 0.12 | 0.80 | 0.048 | 0.46 | 0.82 | -0.036 | 0.58 | 9.2×10-4 |
| rs6062901 | G | 0.95 | 0.090 | 0.11 | 0.85 | 0.060 | 0.039 | 0.99 | 0.053 | 0.10 | 0.80 | 0.050 | 0.41 | 0.79 | -0.019 | 0.76 | 2.1×10-3 |
| rs6062899 | G | 0.95 | 0.090 | 0.061 | 0.85 | 0.058 | 0.047 | 0.99 | 0.053 | 0.11 | 0.80 | 0.050 | 0.41 | 0.79 | -0.018 | 0.76 | 2.4×10-3 |
| rs201806007 | AT | 0.92 | 0.12 | 0.011 | 0.74 | 0.044 | 0.18 | 0.96 | 0.061 | 0.082 | 0.77 | 0.040 | 0.54 | 0.78 | -0.045 | 0.49 | 5.3×10-3 |
| rs45449494 | G | 0.93 | 0.11 | 0.12 | 0.95 | 0.027 | 0.51 | 1.00 | 0.059 | 0.20 | 0.69 | 0.047 | 0.62 | 0.69 | -0.056 | 0.56 | 0.059 |
| rs4809543 | A | 0.93 | 0.11 | 0.048 | 0.95 | 0.028 | 0.50 | 1.00 | 0.055 | 0.23 | 0.69 | 0.053 | 0.58 | 0.70 | -0.069 | 0.48 | 0.067 |
| rs45577732 | G | 0.92 | 0.099 | 0.11 | 0.83 | 0.024 | 0.57 | 1.00 | 0.059 | 0.20 | 0.69 | 0.055 | 0.57 | 0.70 | -0.058 | 0.54 | 0.074 |
| rs45461993 | A | 0.9. | 0.11 | 0.061 | 0.84 | 0.016 | 0.70 | 1.00 | 0.058 | 0.21 | 0.69 | 0.036 | 0.70 | 0.70 | -0.053 | 0.58 | 0.088 |
| rs45623037 | C | 0.93 | 0.11 | 0.062 | 0.92 | 0.011 | 0.79 | 0.99 | 0.059 | 0.20 | 0.68 | 0.049 | 0.61 | 0.69 | -0.058 | 0.55 | 0.092 |
| rs151176846 | C | 0.91 | 0.12 | 0.078 | 0.80 | 0.00047 | 0.99 | 0.99 | 0.062 | 0.17 | 0.67 | 0.058 | 0.55 | 0.66 | -0.075 | 0.45 | 0.12 |
| rs45497800 | T | 0.93 | 0.093 | 0.15 | 0.88 | 0.0093 | 0.83 | 0.98 | 0.057 | 0.21 | 0.68 | 0.017 | 0.86 | 0.68 | -0.068 | 0.48 | 0.16 |
| rs4809542 | G | 0.91 | 0.088 | 0.26 | 0.92 | 0.036 | 0.42 | 0.99 | 0.048 | 0.31 | 0.70 | -0.059 | 0.57 | 0.72 | -0.068 | 0.49 | 0.19 |
| rs4809292 | G | 0.93 | 0.082 | 0.38 | 0.79 | 0.029 | 0.58 | 1.00 | 0.037 | 0.51 | 0.75 | -0.090 | 0.43 | 0.76 | -0.045 | 0.66 | 0.35 |
| rs45618935 | A | 0.93 | 0.083 | 0.18 | 0.79 | 0.029 | 0.57 | 0.99 | 0.035 | 0.54 | 0.75 | -0.088 | 0.44 | 0.76 | -0.047 | 0.65 | 0.35 |
| rs4809294 | A | 0.94 | 0.081 | 0.21 | 0.79 | 0.030 | 0.57 | 1.00 | 0.031 | 0.59 | 0.77 | -0.079 | 0.49 | 0.78 | -0.058 | 0.57 | 0.38 |
| rs199666656 | T | 0.94 | 0.069 | 0.063 | 0.78 | 0.034 | 0.51 | 0.99 | 0.033 | 0.56 | 0.76 | -0.095 | 0.40 | 0.77 | -0.044 | 0.67 | 0.39 |
| rs45508092 | G | 0.94 | 0.068 | 0.22 | 0.77 | 0.032 | 0.53 | 1.00 | 0.036 | 0.54 | 0.78 | -0.098 | 0.38 | 0.78 | -0.047 | 0.65 | 0.40 |
| rs45612034 | A | 0.94 | 0.069 | 0.37 | 0.78 | 0.033 | 0.51 | 1.00 | 0.029 | 0.61 | 0.77 | -0.096 | 0.39 | 0.78 | -0.043 | 0.67 | 0.42 |
| rs45456294 | G | 0.94 | 0.069 | 0.86 | 0.78 | 0.033 | 0.52 | 1.00 | 0.028 | 0.62 | 0.77 | -0.097 | 0.39 | 0.78 | -0.043 | 0.67 | 0.43 |
| rs4809293 | A | 0.92 | 0.056 | 0.41 | 0.74 | 0.0057 | 0.93 | 0.99 | 0.029 | 0.62 | 0.75 | -0.13 | 0.26 | 0.76 | -0.042 | 0.69 | 0.75 |
| rs45470098 | A | 0.91 | 0.064 | 0.43 | 0.76 | -0.0084 | 0.90 | 0.94 | 0.037 | 0.58 | 0.78 | -0.20 | 0.13 | 0.79 | -0.050 | 0.66 | 0.82 |
| rs144298540 | T | 0.90 | 0.013 | 0.67 | 0.79 | 0.0041 | 0.93 | 0.90 | 0.050 | 0.43 | 0.67 | -0.046 | 0.72 | 0.70 | -0.12 | 0.29 | 0.88 |

UTR, untranslated region

1Rather than implementing a regression model, standardized residuals of the categorical FTND phenotype, regressed against SNP dosages, age, sex, and the 10 first principal components (calculated from chromosome 20 genotype data), were used in QFAM association test in PLINK.

**Supplementary Table 6**. Heterogeneity tests for *CHRNA4* SNPs and indels associated with nicotine dependence at genome-wide association study (GWAS) meta-analysis *P*<5×10-5 and followed up for independent replication testing. SNPs and indels are sorted by meta-analysis *P* values across all samples. The *I2* index, which quantifies the degree of heterogeneity in a meta-analysis, and the corresponding *P* values were generated using METAL software.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP / indel** | **Meta-analysis *P* across all samples** | **Heterogeneity tests across GWAS samples** | | **Heterogeneity tests across replication samples** | | **Heterogeneity tests across all samples** | |
| ***I2*** | ***P*** | ***I2*** | ***P*** | ***I2*** | ***P*** |
| rs2273500 | 8.0×10-9 | 0 | 0.85 | 0 | 0.42 | 0 | 0.79 |
| rs6011779 | 1.4×10-8 | 0 | 0.45 | 0 | 0.43 | 0 | 0.55 |
| rs6062901 | 5.2×10-8 | 33 | 0.20 | 0 | 0.71 | 0 | 0.52 |
| rs6062899 | 8.6×10-8 | 33.6 | 0.20 | 0 | 0.72 | 0 | 0.51 |
| rs4809543 | 1.3×10-7 | 0 | 0.99 | 0 | 0.59 | 0 | 0.85 |
| rs45449494 | 1.7×10-7 | 0 | 0.20 | 0 | 0.63 | 0 | 0.92 |
| rs45577732 | 1.9×10-7 | 0 | 0.54 | 0 | 0.67 | 0 | 0.88 |
| rs201806007 | 2.1×10-7 | 0 | 0.49 | 13.0 | 0.33 | 0 | 0.53 |
| rs151176846 | 3.4×10-7 | 0 | 0.72 | 0 | 0.42 | 0 | 0.69 |
| rs45623037 | 3.5×10-7 | 0 | 0.16 | 0 | 0.52 | 0 | 0.85 |
| rs4809294 | 3.8×10-7 | 0 | 0.70 | 0 | 0.67 | 0 | 0.49 |
| rs4809542 | 7.0×10-7 | 0 | 0.57 | 0 | 0.61 | 0 | 0.73 |
| rs45618935 | 7.3×10-7 | 0 | 0.64 | 0 | 0.68 | 0 | 0.46 |
| rs45461993 | 8.4×10-7 | 0 | 1.00 | 0 | 0.59 | 0 | 0.90 |
| rs4809292 | 8.9×10-6 | 0 | 0.64 | 0 | 0.67 | 0 | 0.49 |
| rs199666656 | 1.6×10-6 | 0 | 0.61 | 0 | 0.71 | 0 | 0.48 |
| rs45497800 | 2.0×10-6 | 0 | 0.99 | 0 | 0.59 | 0 | 0.85 |
| rs45456294 | 3.2×10-6 | 0 | 0.65 | 0 | 0.71 | 0 | 0.49 |
| rs45508092 | 3.2×10-6 | 0 | 0.61 | 0 | 0.69 | 0 | 0.45 |
| rs4809293 | 3.4×10-6 | 0 | 0.61 | 0 | 0.67 | 28.6 | 0.18 |
| rs45612034 | 5.0×10-6 | 0 | 0.65 | 0 | 0.71 | 0 | 0.53 |
| rs45470098 | 2.1×10-5 | 0 | 0.63 | 0 | 0.45 | 39.7 | 0.093 |
| rs144298540 | 1.3×10-4 | 0 | 0.90 | 0 | 0.75 | 6.3 | 0.38 |

**Supplementary Table 7**. Sample-specific associations of the rs2273500-C allele with each of the six specific Fagerström Test for Nicotine Dependence (FTND) items. The items were tested separately in regression models with rs2273500 genotype dosage as the predictor and age, sex, principal component eigenvectors (if applicable), and other sample-specific variables (if applicable) as covariates.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study sample1** | **Item 1:**  **How soon after you wake up do/did you smoke your first cigarette?** | | **Item 2:**  **Do/Did you find it difficult to refrain from smoking in places where it is forbidden?** | | **Item 3:**  **Which cigarette would you hate most to give up?** | | **Item 4:**  **How many cigarettes per day do/did you smoke?** | | **Item 5:**  **Do/did you smoke more frequently during the first hours after waking than during the rest of the day?** | | **Item 6:**  **Do/did you smoke if you are so ill that you are in bed most of the day?** | |
| **β** | ***P*** | **β** | ***P*** | **β** | ***P*** | **β** | ***P*** | **β** | ***P*** | **β** | ***P*** |
| *GWAS meta-analysis samples* | | | | | | | | | | | | |
| deCODE2 | 0.11 | 5.7×10-4 | 0.060 | 0.43 | 0.26 | 5.6×10-4 | 0.089 | 9.6×10-4 | 0.053 | 0.47 | 0.25 | 1.9×10-4 |
| EAGLE | 0.044 | 0.29 | 0.098 | 0.23 | 0.075 | 0.32 | 0.015 | 0.69 | 0.10 | 0.31 | 0.058 | 0.49 |
| COPDGene | 0.092 | 0.053 | 0.066 | 0.531 | 0.11 | 0.27 | 0.033 | 0.35 | 0.12 | 0.20 | -0.076 | 0.46 |
| COGEND | 0.16 | 0.0065 | -0.024 | 0.82 | 0.12 | 0.25 | 0.15 | 0.0038 | 0.19 | 0.070 | 0.12 | 0.24 |
| SAGE\* | 0.13 | 0.073 | 0.19 | 0.22 | -0.051 | 0.75 | 0.094 | 0.18 | 0.42 | 0.0066 | 0.32 | 0.042 |
| *Independent replication samples* | | | | | | | | | | | | |
| FTC3 | 0.059 | 0.32 | 0.070 | 0.18 | 0.064 | 0.25 | 0.12 | 0.019 | 0.049 | 0.32 | -0.012 | 0.73 |
| Yale-Penn | 0.078 | 0.040 | -0.016 | 0.85 | 0.087 | 0.32 | 0.054 | 0.13 | 0.18 | 0.042 | 0.11 | 0.25 |
| UW-TTURC | 0.065 | 0.13 | 0.18 | 0.12 | 0.030 | 0.77 | 0.017 | 0.65 | 0.18 | 0.067 | 0.11 | 0.28 |
| GAIN | 0.051 | 0.59 | -0.098 | 0.65 | 0.30 | 0.079 | 0.021 | 0.81 | 0.54 | 0.010 | 0.29 | 0.11 |
| nonGAIN | 0.043 | 0.64 | -0.22 | 0.30 | 0.057 | 0.82 | 0.0069 | 0.94 | NA4 | NA4 | -0.22 | 0.24 |
| Meta-analysis | 0.085 | 2.3×10-8 | 0.059 | 0.032 | 0.10 | 2.4×10-4 | 0.061 | 5.1×10-6 | 0.12 | 4.2×10-5 | 0.077 | 5.1×10-3 |

NA, not available

1For deCODE, only the 4,683 participants with both genotype and specific FTND data available were used for these analyses. Otherwise, all participants from the primary analyses of the discovery and replication samples were used. 2Genomic control was applied to each specific FTND item analysis in deCODE to correct for any inflation due to relatedness among sample participants. Genomic control was not applied in the specific FTND item analyses for the other samples, which were all comprised of unrelated participants. 3Rather than implementing a regression model, standardized residuals of the categorical FTND phenotype, regressed against SNP dosages, age, sex, and the 10 first principal components (calculated from chromosome 20 genotype data), were used in QFAM association test in PLINK. 4The regression model did not converge due to a high number of missing “No” responses. The meta-analysis results for this FTND item reflect the cohorts with available results.

**Supplementary Table 8.** Sample-specific associations of the rs16969968-A allele with each of the six specific Fagerström Test for Nicotine Dependence (FTND) items. The items were tested separately in regression models with rs16969968 genotype dosage as the predictor and age, sex, principal component eigenvectors (if applicable), and other sample-specific variables (if applicable) as covariates.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study sample1** | **Item 1:**  **How soon after you wake up do/did you smoke your first cigarette?** | | **Item 2:**  **Do/Did you find it difficult to refrain from smoking in places where it is forbidden?** | | **Item 3:**  **Which cigarette would you hate most to give up?** | | **Item 4:**  **How many cigarettes per day do/did you smoke?** | | **Item 5:**  **Do/did you smoke more frequently during the first hours after waking than during the rest of the day?** | | **Item 6:**  **Do/did you smoke if you are so ill that you are in bed most of the day?** | |
| **β** | ***P*** | **β** | ***P*** | **β** | ***P*** | **β** | ***P*** | **β** | ***P*** | **β** | ***P*** |
| *GWAS meta-analysis samples* | | | | | | | | | | | | |
| deCODE2 | 0.092 | 2.3×10-5 | 0.043 | 0.41 | 0.091 | 0.061 | 0.10 | 1.2×10-7 | 0.023 | 0.64 | 0.23 | 1.8×10-7 |
| EAGLE | 0.13 | 3.4×10-5 | 0.048 | 0.43 | 0.066 | 0.24 | 0.12 | 7.6×10-6 | -0.011 | 0.88 | 0.16 | 7.8×10-3 |
| COPDGene | 0.066 | 0.066 | 0.089 | 0.26 | 0.20 | 9.3×10-3 | 0.10 | 1.3×10-4 | 0.13 | 0.079 | 0.11 | 0.17 |
| COGEND | 0.17 | 7.0×10-5 | 0.19 | 0.012 | 0.28 | 7.9×10-5 | 0.20 | 1.5×10-7 | 0.25 | 1.3×10-3 | 0.17 | 0.018 |
| SAGE\* | 0.051 | 0.32 | -0.030 | 0.78 | 0.24 | 0.028 | 0.069 | 0.16 | 0.17 | 0.12 | 0.15 | 0.16 |
| *Independent replication samples* | | | | | | | | | | | | |
| FTC3 | 0.092 | 0.039 | 0.064 | 0.13 | 0.088 | 0.068 | 0.062 | 0.16 | 0.065 | 0.11 | 0.082 | 0.039 |
| Yale-Penn | 0.045 | 0.13 | 0.017 | 0.79 | 0.17 | 8.7×10-3 | 0.029 | 0.26 | 0.22 | 1.5×10-3 | 0.025 | 0.72 |
| UW-TTURC | 0.060 | 0.069 | 0.054 | 0.56 | 0.069 | 0.39 | 0.088 | 2.2×10-3 | -0.063 | 0.42 | -0.039 | 0.62 |
| GAIN | 0.098 | 0.095 | 0.18 | 0.16 | -0.014 | 0.90 | 0.17 | 1.7×10-3 | 0.087 | 0.54 | 0.21 | 0.073 |
| nonGAIN | 0.061 | 0.32 | 0.037 | 0.78 | 0.073 | 0.66 | 0.11 | 0.073 | NA4 | NA4 | 0.29 | 0.016 |
| Meta-analysis | 0.086 | 7.8×10-15 | 0.063 | 2.4×10-3 | 0.12 | 1.3×10-8 | 0.10 | 9.4×10-24 | 0.081 | 2.2×10-4 | 0.13 | 1.8×10-10 |

NA, not available

1For deCODE, only the 4,833 participants with specific FTND data available were used for these analyses. All COPDGene, COGEND, and SAGE\* participants were used. 2Genomic control was applied to each specific FTND item analysis in deCODE to correct for any inflation due to relatedness among sample participants. Genomic control was not applied in the specific FTND item analyses for the other samples, which were all comprised of unrelated participants. 3Rather than implementing a regression model, standardized residuals of the categorical FTND phenotype, regressed against SNP dosages, age, sex, and the 10 first principal components (calculated from chromosome 20 genotype data), were used in QFAM association test in PLINK. 4The regression model did not converge due to a high number of missing “No” responses. The meta-analysis results for this FTND item reflect the cohorts with available results.

**Supplementary Table 9**. SNP association results for cigarettes per day from the Tobacco and Genetics Consortium meta-analysis (available at http://www.med.unc.edu/pgc/downloads). The 57 HapMap phase II-imputed SNPs located from 50kb upstream to 50kb downstream of the *CHRNA4* gene are sorted by the meta-analysis *P* value. Linkage disequilibrium with our lead SNP rs2273500 in the 1000 Genomes EUR reference panel is also presented.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP** | **Base pair position**  **(NCBI build 37)** | **Distance to rs2273500** | **D’ with rs2273500** | **r2 with rs2273500** | **Allele1** | **Allele2** | **Allele1 frequency** | **β** | **SE** | **Meta-analysis *P*** |
| rs4809528 | 61943661 | 43288 | 0.67 | 0.19 | T | C | 0.065 | 0.88 | 0.31 | 4.8×10-3 |
| rs6090392 | 62008975 | 22026 | 0.24 | 0.015 | T | G | 0.38 | -0.23 | 0.10 | 0.027 |
| rs6089900 | 62005638 | 6824 | 0.54 | 0.23 | C | G | 0.58 | 0.29 | 0.13 | 0.027 |
| rs3746364 | 62038757 | 51808 | 1.00 | 0.016 | T | C | 0.12 | -0.36 | 0.17 | 0.031 |
| rs911053 | 62012775 | 25826 | 0.091 | 0.002 | C | G | 0.46 | -0.24 | 0.11 | 0.035 |
| rs6122435 | 62022805 | 35856 | 0.69 | 0.022 | T | C | 0.77 | 0.24 | 0.12 | 0.042 |
| rs4522666 | 61974480 | 12469 | 0.26 | 0.021 | A | G | 0.59 | -0.26 | 0.13 | 0.046 |
| rs6011747 | 61964667 | 22282 | 0.74 | 0.22 | A | G | 0.95 | -0.77 | 0.39 | 0.049 |
| rs6089899 | 61999308 | 7156 | 0.88 | 0.61 | A | G | 0.59 | -0.29 | 0.15 | 0.065 |
| rs6122434 | 62014997 | 28048 | 0.72 | 0.024 | A | G | 0.21 | -0.21 | 0.12 | 0.066 |
| rs13040963 | 62027516 | 40567 | 0.49 | 0.011 | A | T | 0.78 | 0.22 | 0.12 | 0.070 |
| rs6090403 | 62032935 | 45986 | 0.26 | 0.011 | T | C | 0.45 | 0.44 | 0.25 | 0.076 |
| rs6011730 | 61947082 | 39867 | 0.67 | 0.19 | T | C | 0.94 | -0.34 | 0.20 | 0.083 |
| rs6011731 | 61948489 | 38460 | 0.67 | 0.19 | A | G | 0.94 | -0.34 | 0.20 | 0.087 |
| rs3746380 | 61947830 | 39119 | 0.67 | 0.19 | T | C | 0.061 | 0.33 | 0.20 | 0.090 |
| rs6090378 | 61975378 | 11571 | 0.98 | 0.010 | A | G | 0.94 | -0.62 | 0.36 | 0.090 |
| rs7347209 | 61941586 | 45363 | 0.67 | 0.19 | T | C | 0.061 | 0.35 | 0.20 | 0.091 |
| rs12481469 | 62031217 | 44268 | 0.061 | 0 | C | G | 0.94 | -0.64 | 0.39 | 0.10 |
| rs3746383 | 61957750 | 29199 | 0.34 | 0.005 | T | G | 0.22 | -0.23 | 0.16 | 0.14 |
| rs2038442 | 62028210 | 41261 | 0.037 | 0 | A | G | 0.51 | -0.15 | 0.11 | 0.15 |
| rs755203 | 61994264 | 7315 | 0.98 | 0.19 | A | G | 0.55 | -0.15 | 0.11 | 0.15 |
| rs6062894 | 61954675 | 32274 | 0.39 | 0.12 | T | C | 0.89 | -0.19 | 0.14 | 0.19 |
| rs735501 | 62000202 | 13253 | 0.61 | 0.012 | T | C | 0.85 | -0.31 | 0.24 | 0.19 |
| rs2038441 | 62028063 | 41114 | 0.025 | 0 | A | C | 0.48 | 0.14 | 0.11 | 0.20 |
| rs4603829 | 61968892 | 18057 | 0.28 | 0.024 | T | C | 0.64 | -0.10 | 0.09 | 0.25 |
| rs6010927 | 62029711 | 42762 | 0.053 | 0.001 | A | G | 0.28 | -0.17 | 0.15 | 0.28 |
| rs9680065 | 61967037 | 19912 | 0.27 | 0.022 | A | G | 0.64 | -0.10 | 0.09 | 0.28 |
| rs2180614 | 61960671 | 26278 | 0.29 | 0.025 | T | C | 0.35 | 0.093 | 0.09 | 0.32 |
| rs4809552 | 62028308 | 41359 | 0.17 | 0.024 | T | C | 0.17 | 0.13 | 0.13 | 0.33 |
| rs6010918 | 61989501 | 2552 | 1.00 | 0.009 | A | G | 0.045 | 0.24 | 0.27 | 0.38 |
| rs3746369 | 62034258 | 47309 | 0.032 | 0 | A | C | 0.046 | 0.46 | 0.54 | 0.40 |
| rs6062897 | 61963973 | 22976 | 0.32 | 0.034 | T | G | 0.65 | -0.081 | 0.10 | 0.40 |
| rs3746381 | 61950792 | 36157 | 0.27 | 0.003 | T | C | 0.20 | -0.12 | 0.15 | 0.42 |
| rs3787138 | 61979224 | 7725 | 0.54 | 0.23 | A | G | 0.88 | -0.12 | 0.15 | 0.44 |
| rs6011776 | 61983756 | 3193 | 0.49 | 0.17 | T | C | 0.88 | -0.12 | 0.16 | 0.44 |
| rs4809525 | 61926823 | 60126 | 0.41 | 0.091 | A | G | 0.091 | 0.12 | 0.17 | 0.46 |
| rs6011805 | 62018747 | 31798 | 0.13 | 0.005 | A | G | 0.37 | 0.069 | 0.10 | 0.50 |
| rs8119606 | 62028353 | 41404 | 0.20 | 0.029 | T | C | 0.089 | -0.15 | 0.24 | 0.51 |
| rs1044394 | 61982085 | 4864 | 1.00 | 0.012 | A | G | 0.060 | 0.40 | 0.64 | 0.53 |
| rs6011770 | 61977431 | 9518 | 1.00 | 0.006 | T | C | 0.030 | 1.34 | 2.50 | 0.59 |
| rs1535243 | 62024275 | 37326 | 0.13 | 0.005 | A | G | 0.37 | 0.052 | 0.10 | 0.61 |
| rs6122438 | 62032671 | 45722 | 0.21 | 0.004 | A | G | 0.36 | 0.12 | 0.24 | 0.63 |
| rs2093107 | 61993942 | 6993 | 1.00 | 0.014 | A | G | 0.071 | -0.10 | 0.21 | 0.64 |
| rs6122425 | 61963292 | 23657 | 0.37 | 0.008 | A | C | 0.24 | -0.050 | 0.11 | 0.65 |
| rs4809538 | 61970176 | 16773 | 0.36 | 0.007 | A | G | 0.22 | -0.050 | 0.11 | 0.66 |
| rs964099 | 62026990 | 40041 | 0.23 | 0.038 | A | G | 0.12 | 0.074 | 0.17 | 0.67 |
| rs12625977 | 62029070 | 42121 | 0.19 | 0.020 | T | C | 0.77 | -0.051 | 0.13 | 0.69 |
| rs6010903 | 61960080 | 26869 | 0.090 | 0.003 | A | G | 0.95 | 0.086 | 0.22 | 0.70 |
| rs755041 | 61945759 | 41190 | 0.29 | 0.039 | A | G | 0.73 | -0.044 | 0.12 | 0.70 |
| rs3746367 | 62035103 | 48154 | 0.080 | 0.002 | T | C | 0.045 | -0.10 | 0.28 | 0.71 |
| rs12625971 | 62029016 | 42067 | 0.16 | 0.012 | T | C | 0.76 | -0.047 | 0.13 | 0.71 |
| rs6011817 | 62039549 | 52600 | 0.013 | 0 | A | G | 0.88 | -0.25 | 0.68 | 0.71 |
| rs6090404 | 62033164 | 46215 | 0.010 | 0 | T | C | 0.93 | 0.053 | 0.26 | 0.84 |
| rs1044396 | 61981134 | 5815 | 1.00 | 0.20 | A | G | 0.55 | -0.030 | 0.18 | 0.87 |
| rs4809526 | 61930017 | 56932 | 0.26 | 0.009 | A | G | 0.43 | -0.015 | 0.10 | 0.88 |
| rs755204 | 61994165 | 7216 | 0.97 | 0.36 | A | G | 0.072 | 0.021 | 0.21 | 0.92 |
| rs7265034 | 61950145 | 36804 | 0.29 | 0.036 | A | C | 0.27 | 0.00090 | 0.18 | 1.00 |

SE, standard error

**Supplementary Table 10**. Counts of split reads in liver and brain tissue for splices originating from exon 4 by rs2273500 genotype. For the liver tissue that showed a significant splicing effect by rs2273500, the percentages of counts inferred for the unobserved C/C genotype are presented.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Exon 4 to:** | **Base pair position**  **(NCBI build 37)** | **Liver** | | | | | | **Brain** | | | | |
| **T/T (N=25)** | | **T/C (N=7)** | | **C/C (inferred)** | ***P*** | **T/T (N=256)** | | **T/C (N=136)** | | ***P*** |
| **Counts** | **%** | **Counts** | **%** | **%** | **Counts** | **%** | **Counts** | **%** |
| Other | - | 8 | 0.4% | 14 | 1.7% | 3% | 5.4×10-58 | 46 | 1.7% | 33 | 2.4% | 0.30 |
| 5 | 61982379 | 1,032 | 52.9% | 374 | 46.2% | 39.4% | 2,406 | 88.6% | 1,193 | 87.8% |
| 4.21 | 61986106 | 237 | 12.1% | 190 | 23.5% | 34.8% | 198 | 7.3% | 107 | 7.9% |
| 4.1 + 6bp2 | 61986941 | 7 | 0.4% | 79 | 9.8% | 19.1% | 1 | 0.0% | 1 | 0.1% |
| 4.1 | 61986947 | 667 | 34.2% | 153 | 18.9% | 3.6% | 65 | 2.4% | 24 | 1.8% |

1Exon 4.2 is previously unannotated.

2This cryptic splice acceptor in exon 4.1 occurs 6 base pairs downstream of the regular 4.1 splice acceptor

**Supplementary Table 11**. Associations of the two top nicotine dependence-associated *CHRNA4* SNPs with overall lung cancer and two lung cancer sub-types in meta-analyses across six case-control samples (IARC, ICR, MDACC, NCI, SLRI, and HGF). SNP associations were adjusted for age, sex, and principal components.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SNP** | **Minor allele** | **MAF1** | **Meta-analysis of**  **all lung cancer**  **(total N=28,998)** | | **Meta-analysis of**  **lung adenocarcinoma**  **(total N=19,589)** | | **Meta-analysis of**  **squamous lung cancer**  **(total N=19,437)** | |
| **OR (95% CI)** | ***P*** | **OR (95% CI)** | ***P*** | **OR (95% CI)** | ***P*** |
| rs6011779 | C | 0.21 | 1.06 (1.01-1.11) | 0.013 | 1.02 (0.95-1.10) | 0.52 | 1.09 (1.01-1.17) | 0.025 |
| rs2273500 | C | 0.16 | 1.06 (1.00-1.12) | 0.036 | 1.02 (0.94-1.11) | 0.66 | 1.09 (1.00-1.19) | 0.046 |

CI, confidence interval; HGF, Helmholtz-Gemeinschaft Deutscher Forschungszentren in Germany; IARC, International Agency for Research on Cancer; ICR, Institute of Cancer Research; MAF, minor allele frequency; MDACC, MD Anderson Cancer Center; NCI, MD Anderson Cancer Center; OR, odds ratio; SLRI, Samuel Lunenfeld Research Institute in Toronto

1MAF was weighted by sample size across the six lung cancer case-control samples.

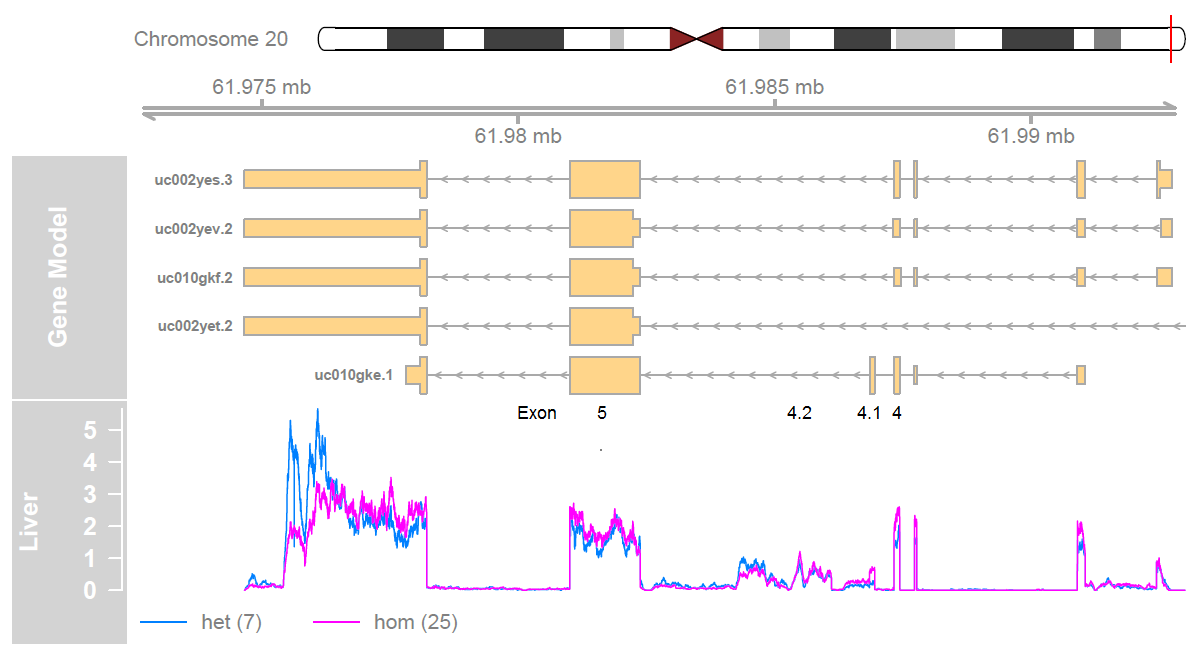
**Supplementary Table 12**. Associations of the two top nicotine dependence-associated *CHRNA4* SNPs with overall lung cancer in meta-analyses across a subset of three case-control samples (IARC, MDACC, and NCI). SNP associations were all adjusted for age, sex, and principal components, and follow-up testing included additional adjustment for smoking history (ever vs. never) and pack-years of smoking among ever smokers (0 for never smokers).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SNP** | **Minor allele** | **Meta-analysis of all lung cancer without adjustment for smoking**  **(total N=12,084)** | | **Meta-analysis of all lung cancer with adjustment for smoking**  **(total N=11,785)** | |
| **OR (95% CI)** | ***P*** | **OR (95% CI)** | ***P*** |
| rs6011779 | C | 1.07 (1.00-1.15) | 0.040 | 1.04 (0.97-1.12) | 0.30 |
| rs2273500 | C | 1.07 (0.99-1.17) | 0.090 | 1.03 (0.94-1.13) | 0.51 |

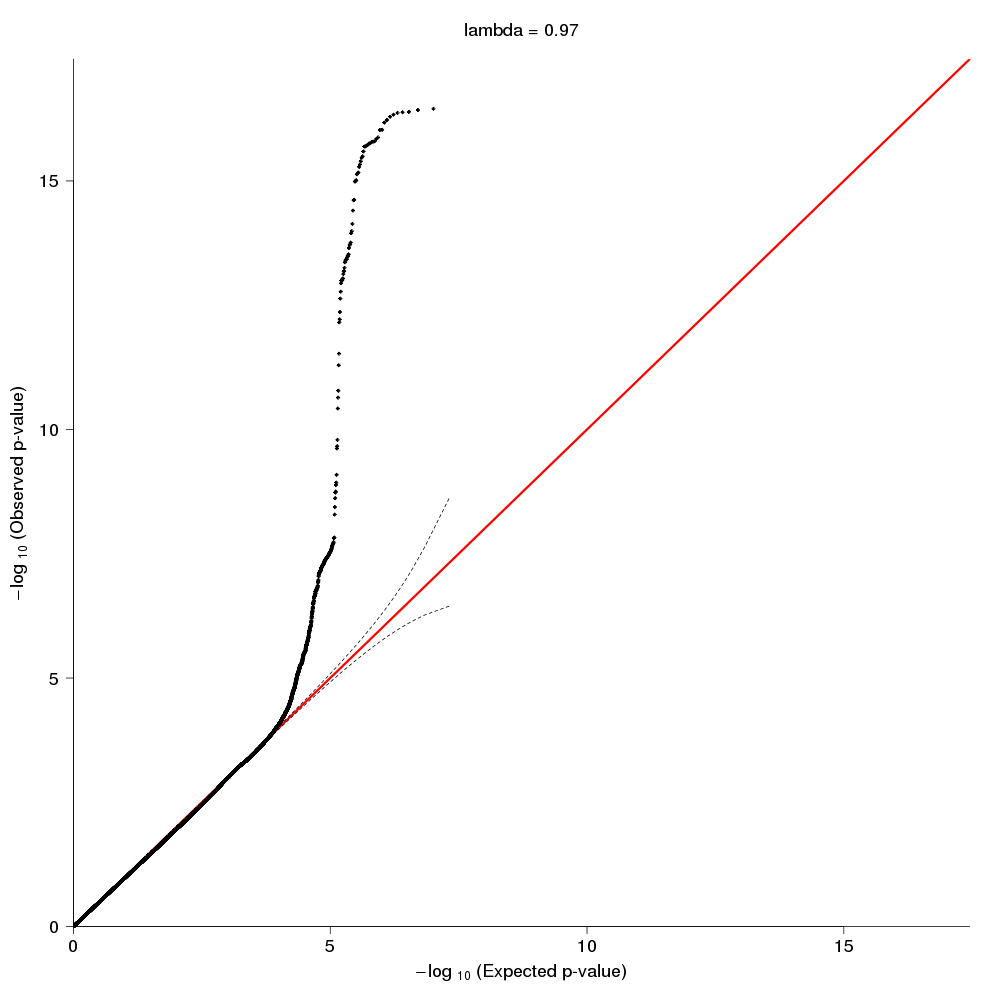
CI, confidence interval; IARC, International Agency for Research on Cancer; MAF, minor allele frequency; MDACC, MD Anderson Cancer Center; NCI, MD Anderson Cancer Center; OR, odds ratio

1MAF was weighted by sample size across the six lung cancer case-control samples.

**Supplementary Figure 1.** Known *CHRNA4* gene transcripts from the UCSC Genome Browser and median read coverage (normalized by total number of paired reads genome-wide) per liver sample from the Genotype-Tissue Expression (GTEx) project. Exon 4.1 designates the ancillary exon containing rs2273500 at the splice site acceptor, and exon 4.2 designates a previously unannotated exon that starts at base pair 61,986,106 (NCBI build 37).



**Supplementary Figure 2**. Quantile-quantile plot for the genome-wide association meta-analysis of 9.9 million SNPs and indels with nicotine dependence. The plots compare the observed vs. expected *P* values for the meta-analysis of five samples, totaling 17,079 participants of European-ancestry. Genomic control was applied to the sample-specific association results prior to combining in the meta-analysis.



λgc=0.97

**Supplementary Figure 3.** Linkage disequilibrium structure among our newly identified SNPs (marked by asterisks [\*]) and other *CHRNA4* SNPs previously reported for association with nicotine dependence and other smoking behaviors. (A) D’ values and (B) r2 values are shown with reference to the 1000 Genomes populations of European-ancestry (denoted EUR). Pink to red shading for D’ and grey to black shading for r2 indicate lower to higher correlation values. For D’ only, purple shading indicates little statistical support for the observed value.

(A)



(B)



**Supplementary Figure 4**. Associations of the two top nicotine dependence-associated SNPs with transcript-level *CHRNA4* mRNA expression across 10 different human brain regions taken from 134 European-ancestry participants in the UK Brain Expression Consortium.



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