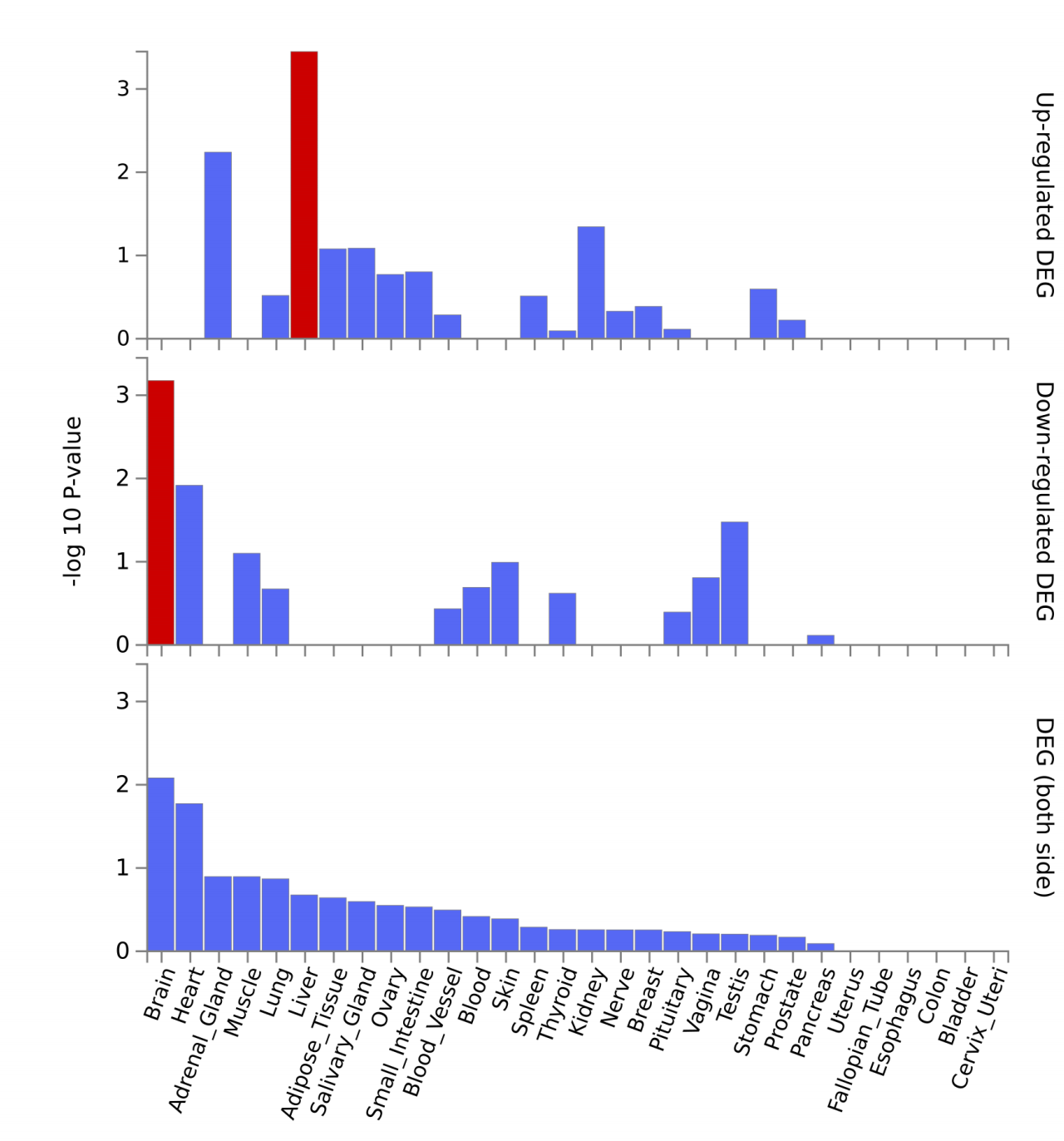
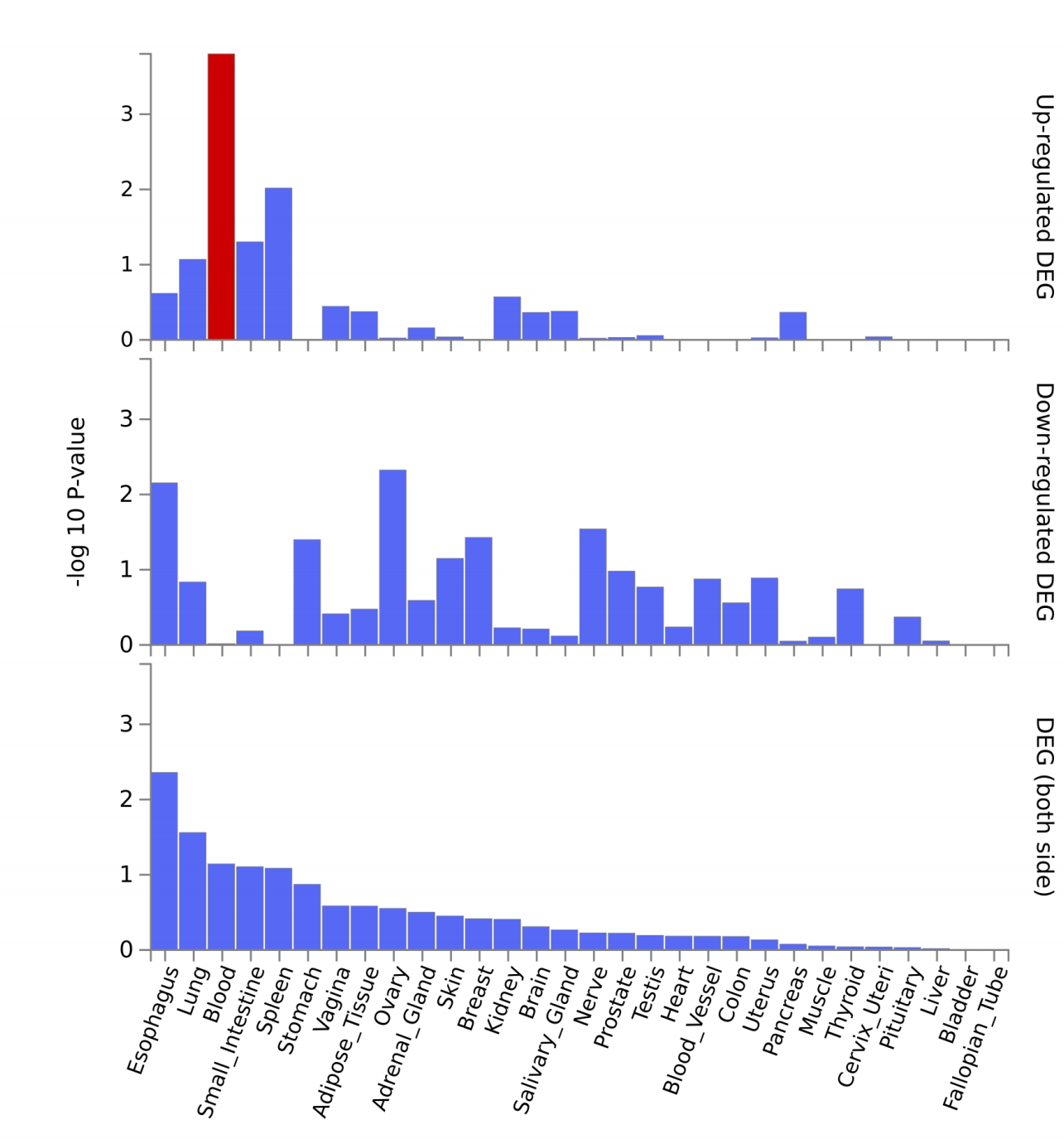
**Fig. S1. Manhattan plots of GWASPTSD (a) and MTAGPTSD (b).** The x-axis denotes the chromosomal position, and the y-axis shows the −log10 *P* value. The horizontal black line corresponds to the genome-wide significance threshold (*P*<5×10−8).



**Fig. S2. Tissue enrichment analysis between PTSD and IBD**. Red bar represents significant tissue enrichment after Benjamin-Hochberg correction.



**Fig. S3. Tissue enrichment analysis between PTSD and PGM**. Red bar represents significant tissue enrichment after Benjamin-Hochberg correction.



**Table S1.** Summary of GWAS datasets.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| GWAS summary data |  | Cases | Control | Sample size | Phenotype source/definition |
| PTSD |  | 23212 | 151447 | 174659 | PGC data described in Caroline M et al. |
| PUD |  | 16666 | 439661 | 456327 | UKB data code described in Wu et al. |
| PGM |  | 90175 | 366152 | 456327 |
| IBS |  | 28518 | 426803 | 455321 |
| IBD |  | 7045 | 449282 | 456327 |
| GORD |  | 54854 | 401473 | 456327 |

PTSD, post-traumatic stress disorder; PUD, peptic ulcer disease, GORD, gastroesophageal reflux disease; PGM, PUD and/or GERD and/or medications; IBS, irritable bowel disease; IBD, inflammatory bowel disease; UKB, United Kingdom Biobank; PGC, Psychiatric Genomics Consortium.

**Table S2.** Heritability enrichment analysis for PTSD and GIT disorders.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Functional category | Trait | Prop.\_SNPs | Prop.\_h2 | Prop.\_h2\_std\_error | Enrichment | Enrichment\_std\_error | Enrichment\_p |
| Coding | PUD | 0.014 | 0.247 | 0.112 | 17.316 | 7.873 | 0.046 |
| PGM | 0.014 | 0.024 | 0.021 | 1.659 | 1.504 | 0.662 |
| GORD | 0.014 | 0.025 | 0.036 | 1.730 | 2.501 | 0.770 |
| IBS | 0.014 | -0.013 | 0.049 | -0.904 | 3.398 | 0.572 |
| IBD | 0.014 | 0.123 | 0.074 | 8.645 | 5.185 | 0.143 |
| PTSD | 0.064 | 0.065 | 0.130 | 1.016 | 2.044 | 0.994 |
| Conserved | PUD | 0.026 | 0.401 | 0.135 | 15.596 | 5.248 | 0.006 |
| PGM | 0.026 | 0.373 | 0.045 | 14.535 | 1.769 | **0.000** |
| GORD | 0.026 | 0.386 | 0.065 | 15.017 | 2.523 | **0.000** |
| IBS | 0.026 | 0.499 | 0.097 | 19.441 | 3.766 | **0.000** |
| IBD | 0.026 | 0.255 | 0.085 | 9.933 | 3.328 | 0.007 |
| PTSD | 0.026 | 0.302 | 0.203 | 11.767 | 7.919 | 0.164 |
| CTCF | PUD | 0.024 | 0.032 | 0.107 | 1.348 | 4.482 | 0.938 |
| PGM | 0.024 | -0.017 | 0.034 | -0.725 | 1.436 | 0.229 |
| GORD | 0.024 | -0.025 | 0.049 | -1.063 | 2.073 | 0.322 |
| IBS | 0.024 | -0.101 | 0.098 | -4.238 | 4.092 | 0.197 |
| IBD | 0.024 | -0.005 | 0.118 | -0.216 | 4.955 | 0.805 |
| PTSD | 0.024 | 0.005 | 0.171 | 0.198 | 7.172 | 0.910 |
| DGF | PUD | 0.136 | 0.195 | 0.294 | 1.432 | 2.165 | 0.842 |
| PGM | 0.136 | 0.254 | 0.086 | 1.870 | 0.634 | 0.175 |
| GORD | 0.136 | 0.202 | 0.125 | 1.482 | 0.916 | 0.601 |
| IBS | 0.136 | -0.016 | 0.230 | -0.120 | 1.689 | 0.506 |
| IBD | 0.136 | 1.012 | 0.276 | 7.439 | 2.032 | 0.002 |
| PTSD | 0.136 | 0.322 | 0.399 | 2.365 | 2.934 | 0.640 |
| DHS | PUD | 0.166 | 0.346 | 0.292 | 2.081 | 1.759 | 0.539 |
| PGM | 0.111 | 0.225 | 0.079 | 2.037 | 0.710 | 0.146 |
| GORD | 0.111 | 0.169 | 0.114 | 1.528 | 1.034 | 0.611 |
| IBS | 0.111 | -0.196 | 0.212 | -1.771 | 1.917 | 0.140 |
| IBD | 0.111 | 0.348 | 0.243 | 3.147 | 2.194 | 0.334 |
| PTSD | 0.111 | -0.083 | 0.440 | -0.747 | 3.982 | 0.658 |
| Enhancer | PUD | 0.004 | -0.032 | 0.049 | -7.354 | 11.361 | 0.466 |
| PGM | 0.004 | 0.011 | 0.015 | 2.651 | 3.501 | 0.638 |
| GORD | 0.004 | 0.003 | 0.022 | 0.629 | 5.153 | 0.943 |
| IBS | 0.004 | -0.071 | 0.044 | -16.443 | 10.056 | 0.079 |
| IBD | 0.004 | 0.198 | 0.050 | 45.800 | 11.519 | **0.000** |
| PTSD | 0.004 | 0.006 | 0.074 | 1.314 | 17.191 | 0.985 |
| FetalDHS | PUD | 0.084 | -0.019 | 0.218 | -0.230 | 2.599 | 0.635 |
| PGM | 0.084 | 0.348 | 0.067 | 4.142 | 0.798 | **0.000** |
| GORD | 0.084 | 0.269 | 0.091 | 3.209 | 1.089 | 0.045 |
| IBS | 0.084 | 0.234 | 0.174 | 2.789 | 2.073 | 0.390 |
| IBD | 0.084 | 0.420 | 0.240 | 5.001 | 2.865 | 0.164 |
| PTSD | 0.084 | -0.235 | 0.341 | -2.796 | 4.066 | 0.339 |
| H3K27ac | PUD | 0.269 | 0.682 | 0.158 | 2.536 | 0.588 | 0.008 |
| PGM | 0.269 | 0.438 | 0.048 | 1.631 | 0.178 | **0.001** |
| GORD | 0.269 | 0.389 | 0.070 | 1.445 | 0.259 | 0.087 |
| IBS | 0.269 | 0.521 | 0.132 | 1.938 | 0.490 | 0.052 |
| IBD | 0.269 | 0.818 | 0.167 | 3.044 | 0.621 | **0.001** |
| PTSD | 0.269 | 0.602 | 0.266 | 2.238 | 0.990 | 0.221 |
| H3K4me1 | PUD | 0.424 | 0.644 | 0.242 | 1.519 | 0.572 | 0.357 |
| PGM | 0.170 | 0.423 | 0.078 | 2.493 | 0.457 | **0.001** |
| GORD | 0.170 | 0.473 | 0.098 | 2.785 | 0.574 | 0.002 |
| IBS | 0.170 | 0.592 | 0.208 | 3.489 | 1.224 | 0.040 |
| IBD | 0.170 | 0.823 | 0.235 | 4.848 | 1.384 | 0.007 |
| PTSD | 0.170 | 0.410 | 0.373 | 2.416 | 2.199 | 0.525 |
| H3K4me3 | PUD | 0.133 | 0.376 | 0.153 | 2.830 | 1.152 | 0.113 |
| PGM | 0.042 | 0.201 | 0.046 | 4.822 | 1.108 | **0.001** |
| GORD | 0.042 | 0.150 | 0.063 | 3.597 | 1.522 | 0.091 |
| IBS | 0.042 | 0.207 | 0.125 | 4.977 | 3.012 | 0.192 |
| IBD | 0.042 | 0.359 | 0.187 | 8.611 | 4.485 | 0.087 |
| PTSD | 0.042 | 0.363 | 0.259 | 8.725 | 6.229 | 0.211 |
| H3K9ac | PUD | 0.125 | 0.440 | 0.186 | 3.510 | 1.484 | 0.104 |
| PGM | 0.038 | 0.191 | 0.049 | 4.961 | 1.262 | 0.002 |
| GORD | 0.038 | 0.194 | 0.067 | 5.036 | 1.731 | 0.022 |
| IBS | 0.038 | 0.367 | 0.142 | 9.530 | 3.692 | 0.018 |
| IBD | 0.038 | 0.286 | 0.144 | 7.428 | 3.744 | 0.090 |
| PTSD | 0.038 | 0.007 | 0.208 | 0.176 | 5.397 | 0.879 |
| Intron | PUD | 0.387 | 0.398 | 0.106 | 1.026 | 0.274 | 0.922 |
| PGM | 0.387 | 0.481 | 0.023 | 1.240 | 0.059 | **0.000** |
| GORD | 0.387 | 0.482 | 0.034 | 1.244 | 0.089 | 0.006 |
| IBS | 0.387 | 0.520 | 0.065 | 1.343 | 0.168 | 0.034 |
| IBD | 0.387 | 0.390 | 0.080 | 1.006 | 0.206 | 0.977 |
| PTSD | 0.387 | 0.458 | 0.117 | 1.182 | 0.303 | 0.545 |
| PromoterFlanking | PUD | 0.008 | 0.012 | 0.088 | 1.480 | 10.645 | 0.963 |
| PGM | 0.008 | 0.028 | 0.025 | 3.380 | 2.988 | 0.427 |
| GORD | 0.008 | 0.047 | 0.029 | 5.649 | 3.444 | 0.178 |
| IBS | 0.008 | -0.035 | 0.058 | -4.223 | 6.963 | 0.453 |
| IBD | 0.008 | -0.102 | 0.058 | -12.244 | 7.040 | 0.055 |
| PTSD | 0.008 | 0.046 | 0.110 | 5.523 | 13.241 | 0.731 |
| Promoter | PUD | 0.031 | 0.195 | 0.123 | 6.347 | 3.996 | 0.188 |
| PGM | 0.031 | 0.066 | 0.028 | 2.145 | 0.921 | 0.214 |
| GORD | 0.031 | 0.080 | 0.035 | 2.599 | 1.158 | 0.165 |
| IBS | 0.031 | -0.057 | 0.061 | -1.852 | 2.003 | 0.159 |
| IBD | 0.031 | 0.100 | 0.069 | 3.256 | 2.257 | 0.320 |
| PTSD | 0.031 | 0.014 | 0.142 | 0.443 | 4.619 | 0.904 |
| Repressed | PUD | 0.461 | 0.186 | 0.220 | 0.404 | 0.478 | 0.211 |
| PGM | 0.461 | 0.403 | 0.077 | 0.874 | 0.167 | 0.450 |
| GORD | 0.461 | 0.421 | 0.096 | 0.914 | 0.209 | 0.679 |
| IBS | 0.461 | 0.466 | 0.178 | 1.011 | 0.387 | 0.977 |
| IBD | 0.461 | 0.071 | 0.180 | 0.155 | 0.391 | 0.037 |
| PTSD | 0.461 | 0.644 | 0.330 | 1.398 | 0.717 | 0.569 |
| SuperEnhancer | PUD | 0.167 | 0.245 | 0.064 | 1.465 | 0.380 | 0.225 |
| PGM | 0.167 | 0.243 | 0.018 | 1.455 | 0.105 | **0.000** |
| GORD | 0.167 | 0.240 | 0.025 | 1.435 | 0.152 | 0.005 |
| IBS | 0.167 | 0.243 | 0.049 | 1.456 | 0.291 | 0.130 |
| IBD | 0.167 | 0.551 | 0.072 | 3.293 | 0.429 | **0.000** |
| PTSD | 0.167 | 0.026 | 0.096 | 0.154 | 0.577 | 0.110 |
| TFBS | PUD | 0.131 | 0.279 | 0.248 | 2.126 | 1.891 | 0.548 |
| PGM | 0.131 | 0.324 | 0.074 | 2.469 | 0.566 | 0.011 |
| GORD | 0.131 | 0.273 | 0.107 | 2.081 | 0.813 | 0.188 |
| IBS | 0.131 | 0.134 | 0.176 | 1.022 | 1.343 | 0.987 |
| IBD | 0.131 | 1.160 | 0.291 | 8.839 | 2.219 | **0.000** |
| PTSD | 0.131 | 0.528 | 0.390 | 4.022 | 2.976 | 0.302 |
| Transcribed | PUD | 0.346 | 0.299 | 0.206 | 0.864 | 0.595 | 0.819 |
| PGM | 0.346 | 0.239 | 0.070 | 0.690 | 0.204 | 0.133 |
| GORD | 0.346 | 0.291 | 0.088 | 0.840 | 0.255 | 0.533 |
| IBS | 0.346 | 0.353 | 0.165 | 1.021 | 0.478 | 0.965 |
| IBD | 0.346 | 0.344 | 0.165 | 0.995 | 0.477 | 0.992 |
| PTSD | 0.346 | 0.270 | 0.277 | 0.780 | 0.800 | 0.782 |
| TSS | PUD | 0.018 | 0.044 | 0.095 | 2.487 | 5.348 | 0.780 |
| PGM | 0.018 | 0.114 | 0.027 | 6.397 | 1.519 | **0.000** |
| GORD | 0.018 | 0.116 | 0.036 | 6.514 | 2.036 | 0.007 |
| IBS | 0.018 | 0.091 | 0.066 | 5.086 | 3.688 | 0.266 |
| IBD | 0.018 | 0.206 | 0.076 | 11.577 | 4.283 | 0.013 |
| PTSD | 0.018 | -0.042 | 0.122 | -2.371 | 6.845 | 0.624 |
| UTR\_3 | PUD | 0.011 | 0.137 | 0.061 | 12.239 | 5.459 | 0.043 |
| PGM | 0.011 | 0.011 | 0.015 | 0.957 | 1.322 | 0.974 |
| GORD | 0.011 | 0.005 | 0.024 | 0.439 | 2.119 | 0.791 |
| IBS | 0.011 | -0.044 | 0.038 | -3.952 | 3.372 | 0.131 |
| IBD | 0.011 | 0.030 | 0.045 | 2.670 | 4.004 | 0.677 |
| PTSD | 0.011 | 0.100 | 0.105 | 8.964 | 9.417 | 0.389 |
| UTR\_5 | PUD | 0.005 | 0.090 | 0.071 | 16.440 | 12.950 | 0.233 |
| PGM | 0.005 | 0.006 | 0.009 | 1.056 | 1.705 | 0.974 |
| GORD | 0.005 | 0.007 | 0.016 | 1.205 | 2.834 | 0.942 |
| IBS | 0.005 | 0.008 | 0.029 | 1.500 | 5.270 | 0.924 |
| IBD | 0.005 | 0.000 | 0.050 | 0.030 | 9.029 | 0.915 |
| PTSD | 0.005 | -0.076 | 0.057 | -13.889 | 10.359 | 0.148 |
| WeakEnhancer | PUD | 0.021 | 0.238 | 0.117 | 11.331 | 5.591 | 0.058 |
| PGM | 0.021 | 0.130 | 0.033 | 6.196 | 1.558 | **0.001** |
| GORD | 0.021 | 0.070 | 0.044 | 3.352 | 2.091 | 0.263 |
| IBS | 0.021 | 0.189 | 0.094 | 9.029 | 4.474 | 0.072 |
| IBD | 0.021 | 0.244 | 0.103 | 11.609 | 4.895 | 0.032 |
| PTSD | 0.021 | 0.095 | 0.164 | 4.528 | 7.811 | 0.654 |
| H3K27ac\_Hnisz | PUD | 0.389 | 0.683 | 0.092 | 1.755 | 0.236 | 0.002 |
| PGM | 0.389 | 0.514 | 0.032 | 1.321 | 0.082 | **0.000** |
| GORD | 0.389 | 0.517 | 0.043 | 1.328 | 0.110 | 0.004 |
| IBS | 0.389 | 0.487 | 0.078 | 1.253 | 0.199 | 0.213 |
| IBD | 0.389 | 0.963 | 0.100 | 2.475 | 0.256 | **0.000** |
| PTSD | 0.389 | 0.246 | 0.168 | 0.631 | 0.431 | 0.368 |
| Enhancer\_Hoffman | PUD | 0.042 | 0.149 | 0.121 | 3.549 | 2.886 | 0.377 |
| PGM | 0.042 | 0.144 | 0.036 | 3.430 | 0.855 | 0.005 |
| GORD | 0.042 | 0.139 | 0.052 | 3.322 | 1.240 | 0.064 |
| IBS | 0.042 | 0.245 | 0.102 | 5.832 | 2.430 | 0.050 |
| IBD | 0.042 | 0.317 | 0.121 | 7.555 | 2.870 | 0.015 |
| PTSD | 0.042 | 0.012 | 0.171 | 0.278 | 4.080 | 0.859 |

**Table S3.** Genomic risk loci by FUMA using GWASPTSD (a) and MTAGPTSD (b).

(a) Genomic risk loci of GWASPTSD.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genomic Risk Loci | A1 | A2 | nSNPs | BP | P | nGWASSNPs | nIndSigSNPs | IndSigSNPs | LeadSNPs |
| chr6:157780424-157801753 | A | T | 21 | 157789333 | 3.16E-09 | 21 | 1 | rs34517852 | rs34517852 |
| chr6:162157139-162168506 | C | T | 12 | 162163506 | 4.36E-08 | 12 | 1 | rs9364611 | rs9364611 |

(b) Genomic risk loci of MTAGPTSD.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genomic Risk Loci | A1 | A2 | nSNPs | BP | P | nGWASSNPs | nIndSigSNPs | IndSigSNPs | LeadSNPs |
| chr2:100479963-100507053 | A | C | 33 | 100479963 | 2.99E-08 | 23 | 1 | rs1346622 | rs1346622 |
| chr4:103001649-103198082 | C | T | 5 | 103188709 | 6.18E-09 | 4 | 1 | rs13107325 | rs13107325 |
| chr6:26350810-29607101 | A | G | 951 | 28619353 | 2.33E-10 | 647 | 8 | rs34229567;  rs12199218;  rs67859638;  rs2237235;  rs1977200;  rs34724414;  rs1233578;  rs200965 | rs34229567;  rs34724414 |
| chr7:1810624-1964357 | A | G | 235 | 1823265 | 5.27E-09 | 170 | 3 | rs62435650;  rs6973700;  rs55995895 | rs62435650 |
| chr8:90226426-90364550 | C | T | 181 | 90328147 | 3.12E-08 | 154 | 1 | rs1383037 | rs1383037 |
| chr11:112826867-112912811 | C | T | 112 | 112830663 | 7.76E-09 | 78 | 1 | rs10789929 | rs10789929 |
| chr22:31191872-31270163 | C | T | 6 | 31262905 | 1.82E-08 | 5 | 1 | rs73154693 | rs73154693 |

**Table S4.** Lead SNPs (*P*<5×10-8 and *R*2<0.1) of GWASPTSD (a) and MTAGPTSD (b).

1. Lead SNPs of GWASPTSD.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SNP | NO.GenomicLocus | CHR | BP | P | nIndSigSNPs | IndSigSNPs |
| rs34517852 | 1 | 6 | 157789333 | 3.16E-09 | 1 | rs34517852 |
| rs9364611 | 2 | 6 | 162163506 | 4.36E-08 | 1 | rs9364611 |

1. Lead SNPs of MTAGPTSD.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SNP | NO.GenomicLocus | CHR | BP | P | nIndSigSNPs | IndSigSNPs |
| rs1346622 | 1 | 2 | 100479963 | 2.99E-08 | 1 | rs1346622 |
| rs13107325 | 2 | 4 | 103188709 | 6.18E-09 | 1 | rs13107325 |
| rs34229567 | 3 | 6 | 26588521 | 2.80E-09 | 5 | rs34229567;  rs12199218;  rs67859638;  rs2237235;  rs1977200 |
| rs34724414 | 4 | 6 | 28619353 | 2.33E-10 | 3 | rs34724414;  rs1233578;  rs200965 |
| rs62435650 | 5 | 7 | 1823265 | 5.27E-09 | 3 | rs62435650;  rs6973700;  rs55995895 |
| rs1383037 | 6 | 8 | 90328147 | 3.12E-08 | 1 | rs1383037 |
| rs10789929 | 7 | 11 | 112830663 | 7.76E-09 | 1 | rs10789929 |
| rs73154693 | 8 | 22 | 31262905 | 1.82E-08 | 1 | rs73154693 |

**Table S5.** Pleiotropic loci between PTSD and PGM identified from cross-trait meta-analysis (*P*PLACO<5×10-8, trait-specific *P*MTAG of PTSD<1×10-5).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Index SNP | Chromosome: Position | Effect allele | Other allele | PTSD | | | | *P*PLACO | Overlap\_  genes | Proximal\_  genes |
| BetaGWAS | *P*GWAS | BetaMTAG | *P*MTAG |
| rs13107325 | chr4:103188709 | T | C | 0.102 | 2.368E-04 | 0.023 | 6.180E-09 | 3.859E-08 | *SLC39A8* | \ |
| rs1632855 | chr6:30971769 | A | G | 0.077 | 1.218E-04 | 0.017 | 1.530E-09 | 1.073E-09 | \ | *MUC21, PBMUCL1, HCG22, HCG21* |
| rs1800628 | chr6:31546850 | A | G | -0.074 | 1.703E-03 | -0.020 | 1.613E-09 | 3.016E-08 | \ | *LST1, NFKBIL1, DDX39B-AS1, SNORD117, LTA, TNF, BAT2, SNORA38, BAT1, AIF1, NCR3, SNORD84, LTB, ATP6V1G2* |
| rs2188100 | chr6:30181883 | A | G | -0.066 | 1.909E-03 | -0.020 | 1.228E-10 | 1.357E-08 | \ | *TRIM26, HLA-L* |
| rs3129953 | chr6:32361821 | T | C | -0.068 | 8.512E-04 | -0.018 | 3.287E-09 | 2.015E-08 | *HCG23* | *C6orf10, BTNL2, HLA-DRA* |
| rs6973700 | chr7:1856669 | A | G | 0.076 | 3.063E-05 | 0.015 | 1.439E-08 | 1.616E-08 | *MAD1L1* | *AC104129.1* |
| rs73154693 | chr22:31262905 | T | C | 0.123 | 4.460E-06 | 0.022 | 1.822E-08 | 1.661E-08 | *OSBP2* | *C22orf27* |

**Table S6.** Pleiotropic loci between PTSD and GORD, IBS, or IBD identified from cross-trait meta-analysis (*P*PLACO<5×10-8, trait-specific *P*MTAG of PTSD<1×10-5).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Index SNP | rs4937872 | rs114969413 | rs3132450 | rs1632855 | rs13107325 |
| Chromosome | 11 | 6 | 6 | 6 | 4 |
| Position | 112827715 | 31925679 | 31596138 | 30971769 | 103188709 |
| Effect allele | A | A | A | A | T |
| Other allele | G | G | G | G | C |
| Trait 1 | PTSD | PTSD | PTSD | PTSD | PTSD |
| Trait 2 | IBS | IBD | GORD | GORD | GORD |
| PTSD MTAG Beta | -0.013 | 0.045 | 0.020 | 0.017 | 0.023 |
| PTSD MTAG *P*-value | 8.30E-09 | 2.410E-07 | 4.807E-09 | 1.530E-09 | 6.180E-09 |
| *P*PLACO | 2.875E-08 | 2.959E-13 | 7.340E-09 | 1.840E-09 | 2.311E-08 |
| Overlap\_genes | / | *RDBP* | *BAT2* | / | *SLC39A8* |
| Proximal\_genes | *NCAM1, AP000802.1* | *DOM3Z, C2, C4A-AS1, CYP21A2, SKIV2L, STK19, CFB, C4A, C2-AS1, MIR1236* | *LST1, AIF1, GPANK1, C6orf47, APOM, SNORA38, CSNK2B, LY6G5B, BAT3, NCR3, C6orf47-AS1, LTB* | *MUC21, PBMUCL1, HCG22, HCG21* | / |
| Position is under build 37 (hg19). SNP: single nucleotide polymorphism; | | | | | |

**Table S7.** Characteristics of identified loci identified by GWAS catalog.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| index SNP | mapped gene | REGION | MAPPED\_TRAIT | LINK |
| rs13107325 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107326 | *SLC39A8* | 4q24 | intelligence | www.ncbi.nlm.nih.gov/pubmed/29326435 |
| rs13107327 | *SLC39A8* | 4q24 | low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/29507422 |
| rs13107328 | *SLC39A8* | 4q24 | diastolic blood pressure, alcohol drinking | www.ncbi.nlm.nih.gov/pubmed/29912962 |
| rs13107329 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/26961502 |
| rs13107330 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/30578418 |
| rs13107331 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/29381148 |
| rs13107332 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/31676860 |
| rs13107333 | *SLC39A8* | 4q24 | balding measurement | www.ncbi.nlm.nih.gov/pubmed/30573740 |
| rs13107334 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/30239722 |
| rs13107335 | *SLC39A8* | 4q24 | hypertension | www.ncbi.nlm.nih.gov/pubmed/31879980 |
| rs13107336 | *SLC39A8* | 4q24 | body fat percentage | www.ncbi.nlm.nih.gov/pubmed/30593698 |
| rs13107337 | *SLC39A8* | 4q24 | schizophrenia | www.ncbi.nlm.nih.gov/pubmed/31740837 |
| rs13107338 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/32203549 |
| rs13107339 | *SLC39A8* | 4q24 | body fat percentage | www.ncbi.nlm.nih.gov/pubmed/30593698 |
| rs13107340 | *SLC39A8* | 4q24 | BMI-adjusted waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/31669095 |
| rs13107341 | *SLC39A8* | 4q24 | apolipoprotein A 1 measurement | www.ncbi.nlm.nih.gov/pubmed/32203549 |
| rs13107342 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/29615537 |
| rs13107343 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/31998841 |
| rs13107344 | *SLC39A8* | 4q24 | total cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/29507422 |
| rs13107345 | *SLC39A8* | 4q24 | total cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/29507422 |
| rs13107346 | *SLC39A8* | 4q24 | intelligence | www.ncbi.nlm.nih.gov/pubmed/29942086 |
| rs13107347 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/24097068 |
| rs13107348 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/20935630 |
| rs13107349 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27618452 |
| rs13107350 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27841878 |
| rs13107351 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27841878 |
| rs13107352 | *SLC39A8* | 4q24 | schizophrenia | www.ncbi.nlm.nih.gov/pubmed/26198764 |
| rs13107353 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/26604143 |
| rs13107354 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/26604143 |
| rs13107355 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27618452 |
| rs13107356 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/26426971 |
| rs13107357 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27841878 |
| rs13107358 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27841878 |
| rs13107359 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27841878 |
| rs13107360 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27841878 |
| rs13107361 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107362 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/27618447 |
| rs13107363 | *SLC39A8* | 4q24 | BMI-adjusted waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/30239722 |
| rs13107364 | *SLC39A8* | 4q24 | mean arterial pressure, alcohol drinking | www.ncbi.nlm.nih.gov/pubmed/29912962 |
| rs13107365 | *SLC39A8* | 4q24 | BMI-adjusted waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/30239722 |
| rs13107366 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30679032 |
| rs13107367 | *SLC39A8* | 4q24 | diastolic blood pressure, alcohol drinking | www.ncbi.nlm.nih.gov/pubmed/29912962 |
| rs13107368 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107369 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107370 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/30239722 |
| rs13107371 | *SLC39A8* | 4q24 | metabolic syndrome | www.ncbi.nlm.nih.gov/pubmed/31589552 |
| rs13107372 | *SLC39A8* | 4q24 | balding measurement | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107373 | *SLC39A8* | 4q24 | systolic blood pressure, alcohol drinking | www.ncbi.nlm.nih.gov/pubmed/29912962 |
| rs13107374 | *SLC39A8* | 4q24 | liver fat measurement, liver disease biomarker | www.ncbi.nlm.nih.gov/pubmed/32247823 |
| rs13107375 | *SLC39A8* | 4q24 | intelligence | www.ncbi.nlm.nih.gov/pubmed/29844566 |
| rs13107376 | *SLC39A8* | 4q24 | hematocrit | www.ncbi.nlm.nih.gov/pubmed/32888493 |
| rs13107377 | *SLC39A8* | 4q24 | neuroimaging measurement, brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/32665545 |
| rs13107378 | *SLC39A8* | 4q24 | hemoglobin measurement | www.ncbi.nlm.nih.gov/pubmed/32888493 |
| rs13107379 | *SLC39A8* | 4q24 | alcohol use disorder measurement | www.ncbi.nlm.nih.gov/pubmed/32451486 |
| rs13107380 | *SLC39A8* | 4q24 | eosinophil percentage of leukocytes | www.ncbi.nlm.nih.gov/pubmed/32888494 |
| rs13107381 | *SLC39A8* | 4q24 | cortical thickness, neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/32665545 |
| rs13107382 | *SLC39A8* | 4q24 | brain measurement, neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/32665545 |
| rs13107383 | *SLC39A8* | 4q24 | osteoarthritis | www.ncbi.nlm.nih.gov/pubmed/30664745 |
| rs13107384 | *SLC39A8* | 4q24 | neuroimaging measurement, brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/32665545 |
| rs13107385 | *SLC39A8* | 4q24 | type 2 diabetes mellitus | www.ncbi.nlm.nih.gov/pubmed/32541925 |
| rs13107386 | *SLC39A8* | 4q24 | cortical surface area measurement, neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/32665545 |
| rs13107387 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/33339817 |
| rs13107388 | *SLC39A8* | 4q24 | gait measurement | www.ncbi.nlm.nih.gov/pubmed/33128006 |
| rs13107389 | *SLC39A8* | 4q24 | mean arterial pressure | www.ncbi.nlm.nih.gov/pubmed/21909110 |
| rs13107390 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/20686565 |
| rs13107391 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/21909115 |
| rs13107392 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/21909115 |
| rs13107393 | *SLC39A8* | 4q24 | hypertension | www.ncbi.nlm.nih.gov/pubmed/21909115 |
| rs13107394 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/30926973 |
| rs13107395 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/30578418 |
| rs13107396 | *SLC39A8* | 4q24 | Parkinson disease | www.ncbi.nlm.nih.gov/pubmed/32201043 |
| rs13107397 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/30239722 |
| rs13107398 | *SLC39A8* | 4q24 | hemoglobin measurement | www.ncbi.nlm.nih.gov/pubmed/32327693 |
| rs13107399 | *SLC39A8* | 4q24 | low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/32154731 |
| rs13107400 | *SLC39A8* | 4q24 | triglyceride measurement | www.ncbi.nlm.nih.gov/pubmed/32203549 |
| rs13107401 | *SLC39A8* | 4q24 | nucleus accumbens volume | www.ncbi.nlm.nih.gov/pubmed/31636452 |
| rs13107402 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107403 | *SLC39A8* | 4q24 | low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/32203549 |
| rs13107404 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30643258 |
| rs13107405 | *SLC39A8* | 4q24 | Abnormality of refraction | www.ncbi.nlm.nih.gov/pubmed/32231278 |
| rs13107406 | *SLC39A8* | 4q24 | triglyceride measurement | www.ncbi.nlm.nih.gov/pubmed/32154731 |
| rs13107407 | *SLC39A8* | 4q24 | skin aging measurement | www.ncbi.nlm.nih.gov/pubmed/32339537 |
| rs13107408 | *SLC39A8* | 4q24 | risk-taking behaviour | www.ncbi.nlm.nih.gov/pubmed/30643258 |
| rs13107409 | *SLC39A8* | 4q24 | lifestyle measurement | www.ncbi.nlm.nih.gov/pubmed/32317632 |
| rs13107410 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/31676860 |
| rs13107411 | *SLC39A8* | 4q24 | refractive error | www.ncbi.nlm.nih.gov/pubmed/32352494 |
| rs13107412 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/31676860 |
| rs13107413 | *SLC39A8* | 4q24 | cardiovascular disease biomarker measurement | www.ncbi.nlm.nih.gov/pubmed/26908625 |
| rs13107414 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/31358974 |
| rs13107415 | *SLC39A8* | 4q24 | schizophrenia | www.ncbi.nlm.nih.gov/pubmed/32606422 |
| rs13107416 | *SLC39A8* | 4q24 | hematocrit | www.ncbi.nlm.nih.gov/pubmed/32888493 |
| rs13107417 | *SLC39A8* | 4q24 | schizophrenia | www.ncbi.nlm.nih.gov/pubmed/32606422 |
| rs13107418 | *SLC39A8* | 4q24 | hematocrit | www.ncbi.nlm.nih.gov/pubmed/32888494 |
| rs13107419 | *SLC39A8* | 4q24 | brain measurement, neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/32665545 |
| rs13107420 | *SLC39A8* | 4q24 | hemoglobin measurement | www.ncbi.nlm.nih.gov/pubmed/32888493 |
| rs13107421 | *SLC39A8* | 4q24 | hemoglobin measurement | www.ncbi.nlm.nih.gov/pubmed/32888494 |
| rs13107422 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/25673413 |
| rs13107423 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/25673413 |
| rs13107424 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/25673413 |
| rs13107425 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/25673413 |
| rs13107426 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/29507422 |
| rs13107427 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/29507422 |
| rs13107428 | *SLC39A8* | 4q24 | smoking behavior, body mass index | www.ncbi.nlm.nih.gov/pubmed/28443625 |
| rs13107429 | *SLC39A8* | 4q24 | smoking behavior, body mass index | www.ncbi.nlm.nih.gov/pubmed/28443625 |
| rs13107430 | *SLC39A8* | 4q24 | mean arterial pressure | www.ncbi.nlm.nih.gov/pubmed/27618448 |
| rs13107431 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/28739976 |
| rs13107432 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107433 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107434 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107435 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107436 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/28443625 |
| rs13107437 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/28443625 |
| rs13107438 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/28739976 |
| rs13107439 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107440 | *SLC39A8* | 4q24 | smoking behavior, body mass index | www.ncbi.nlm.nih.gov/pubmed/28443625 |
| rs13107441 | *SLC39A8* | 4q24 | smoking behavior, body mass index | www.ncbi.nlm.nih.gov/pubmed/28443625 |
| rs13107442 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107443 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107444 | *SLC39A8* | 4q24 | physical activity measurement, body mass index | www.ncbi.nlm.nih.gov/pubmed/28448500 |
| rs13107445 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30336701 |
| rs13107446 | *SLC39A8* | 4q24 | Agents acting on the renin-angiotensin system use measurement | www.ncbi.nlm.nih.gov/pubmed/31015401 |
| rs13107447 | *SLC39A8* | 4q24 | body height | www.ncbi.nlm.nih.gov/pubmed/32376654 |
| rs13107448 | *SLC39A8* | 4q24 | sleep duration | www.ncbi.nlm.nih.gov/pubmed/30846698 |
| rs13107449 | *SLC39A8* | 4q24 | grip strength measurement | www.ncbi.nlm.nih.gov/pubmed/29691431 |
| rs13107450 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/30305740 |
| rs13107451 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/30305740 |
| rs13107452 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/30305740 |
| rs13107453 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/30305740 |
| rs13107454 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30643251 |
| rs13107455 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/30275531 |
| rs13107456 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107457 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107458 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107459 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107460 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107461 | *SLC39A8* | 4q24 | white matter microstructure measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107462 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107463 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107464 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107465 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107466 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107467 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107468 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107469 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107470 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107471 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107472 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107473 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107474 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107475 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107476 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107477 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107478 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107479 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107480 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107481 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107482 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107483 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107484 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107485 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107486 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107487 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107488 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107489 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107490 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107491 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107492 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107493 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107494 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107495 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107496 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107497 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107498 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107499 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107500 | *SLC39A8* | 4q24 | white matter integrity | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107501 | *SLC39A8* | 4q24 | white matter integrity | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107502 | *SLC39A8* | 4q24 | white matter microstructure measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107503 | *SLC39A8* | 4q24 | white matter microstructure measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107504 | *SLC39A8* | 4q24 | white matter microstructure measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107505 | *SLC39A8* | 4q24 | white matter integrity | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107506 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107507 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107508 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107509 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107510 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107511 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107512 | *SLC39A8* | 4q24 | grip strength measurement | www.ncbi.nlm.nih.gov/pubmed/33510174 |
| rs13107513 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107514 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107515 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107516 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107517 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/30108127 |
| rs13107518 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/30649180 |
| rs13107519 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/30649180 |
| rs13107520 | *SLC39A8* | 4q24 | alcohol use disorder measurement, alcohol dependence | www.ncbi.nlm.nih.gov/pubmed/30940813 |
| rs13107521 | *SLC39A8* | 4q24 | alcohol use disorder measurement, alcohol dependence | www.ncbi.nlm.nih.gov/pubmed/30940813 |
| rs13107522 | *SLC39A8* | 4q24 | alcohol use disorder measurement, longitudinal alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30940813 |
| rs13107523 | *SLC39A8* | 4q24 | alcohol use disorder measurement, longitudinal alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30940813 |
| rs13107524 | *SLC39A8* | 4q24 | rotator cuff tear, shoulder impingement syndrome | www.ncbi.nlm.nih.gov/pubmed/33482370 |
| rs13107525 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107526 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107527 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107528 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107529 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107530 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107531 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107532 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107533 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107534 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107535 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107536 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107537 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107538 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107539 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107540 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107541 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107542 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107543 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107544 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107545 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107546 | *SLC39A8* | 4q24 | brain measurement | www.ncbi.nlm.nih.gov/pubmed/33821002 |
| rs13107547 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107548 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107549 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107550 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107551 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107552 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107553 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107554 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107555 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107556 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107557 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107558 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107559 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107560 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107561 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107562 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107563 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107564 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107565 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107566 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107567 | *SLC39A8* | 4q24 | brain volume measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107568 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107569 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107570 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107571 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107572 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107573 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107574 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107575 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107576 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107577 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/29273807 |
| rs13107578 | *SLC39A8* | 4q24 | handedness | www.ncbi.nlm.nih.gov/pubmed/32989287 |
| rs13107579 | *SLC39A8* | 4q24 | schizophrenia | www.ncbi.nlm.nih.gov/pubmed/29483656 |
| rs13107580 | *SLC39A8* | 4q24 | BMI-adjusted waist circumference | www.ncbi.nlm.nih.gov/pubmed/31669095 |
| rs13107581 | *SLC39A8* | 4q24 | alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/30643251 |
| rs13107582 | *SLC39A8* | 4q24 | neuroimaging measurement | www.ncbi.nlm.nih.gov/pubmed/33875891 |
| rs13107583 | *SLC39A8* | 4q24 | calcium measurement | www.ncbi.nlm.nih.gov/pubmed/33887147 |
| rs13107584 | *SLC39A8* | 4q24 | alcohol use disorder measurement, longitudinal alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/33861876 |
| rs13107585 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/33045005 |
| rs13107586 | *SLC39A8* | 4q24 | cognitive function measurement, self reported educational attainment | www.ncbi.nlm.nih.gov/pubmed/33414549 |
| rs13107587 | *SLC39A8* | 4q24 | urate measurement | www.ncbi.nlm.nih.gov/pubmed/33356394 |
| rs13107588 | *SLC39A8* | 4q24 | mean corpuscular volume | www.ncbi.nlm.nih.gov/pubmed/32888494 |
| rs13107589 | *SLC39A8* | 4q24 | systolic blood pressure, body mass index | www.ncbi.nlm.nih.gov/pubmed/33619380 |
| rs13107590 | *SLC39A8* | 4q24 | body height | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107591 | *SLC39A8* | 4q24 | osteoarthritis | www.ncbi.nlm.nih.gov/pubmed/34450027 |
| rs13107592 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/34560273 |
| rs13107593 | *SLC39A8* | 4q24 | serum gamma-glutamyl transferase measurement | www.ncbi.nlm.nih.gov/pubmed/33972514 |
| rs13107594 | *SLC39A8* | 4q24 | thalamus volume | www.ncbi.nlm.nih.gov/pubmed/34006833 |
| rs13107595 | *SLC39A8* | 4q24 | thalamus volume | www.ncbi.nlm.nih.gov/pubmed/34006833 |
| rs13107596 | *SLC39A8* | 4q24 | red blood cell density measurement | www.ncbi.nlm.nih.gov/pubmed/32888493 |
| rs13107597 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/31669095 |
| rs13107598 | *SLC39A8* | 4q24 | aspartate aminotransferase measurement, serum alanine aminotransferase measurement, low density lipoprotein triglyceride measurement, body fat percentage, high density lipoprotein cholesterol measurement, sex hormone-binding globulin measurement | www.ncbi.nlm.nih.gov/pubmed/33980691 |
| rs13107599 | *SLC39A8* | 4q24 | serum alanine aminotransferase measurement | www.ncbi.nlm.nih.gov/pubmed/33980691 |
| rs13107600 | *SLC39A8* | 4q24 | body fat percentage | www.ncbi.nlm.nih.gov/pubmed/33980691 |
| rs13107601 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/33980691 |
| rs13107602 | *SLC39A8* | 4q24 | triglyceride measurement | www.ncbi.nlm.nih.gov/pubmed/33980691 |
| rs13107603 | *SLC39A8* | 4q24 | aspartate aminotransferase measurement | www.ncbi.nlm.nih.gov/pubmed/33980691 |
| rs13107604 | *SLC39A8* | 4q24 | red blood cell density measurement | www.ncbi.nlm.nih.gov/pubmed/32888493 |
| rs13107605 | *SLC39A8* | 4q24 | coffee consumption measurement, neuroticism measurement | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107606 | *SLC39A8* | 4q24 | coffee consumption measurement, insomnia | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107607 | *SLC39A8* | 4q24 | coffee consumption measurement, alcohol use disorder measurement | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107608 | *SLC39A8* | 4q24 | coffee consumption measurement, alcohol consumption measurement | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107609 | *SLC39A8* | 4q24 | coffee consumption measurement, alcohol dependence measurement | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107610 | *SLC39A8* | 4q24 | coffee consumption measurement, Cannabis use | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107611 | *SLC39A8* | 4q24 | coffee consumption measurement, major depressive disorder | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs13107612 | *SLC39A8* | 4q24 | self reported educational attainment | www.ncbi.nlm.nih.gov/pubmed/30038396 |
| rs13107613 | *SLC39A8* | 4q24 | gastroesophageal reflux disease | www.ncbi.nlm.nih.gov/pubmed/34187846 |
| rs13107614 | *SLC39A8* | 4q24 | cortical surface area measurement | www.ncbi.nlm.nih.gov/pubmed/34560273 |
| rs13107615 | *SLC39A8* | 4q24 | apolipoprotein A 1 measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107616 | *SLC39A8* | 4q24 | choline measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107617 | *SLC39A8* | 4q24 | sphingomyelin measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107618 | *SLC39A8* | 4q24 | cortical thickness | www.ncbi.nlm.nih.gov/pubmed/34910505 |
| rs13107619 | *SLC39A8* | 4q24 | attention deficit hyperactivity disorder, autism spectrum disorder, intelligence | www.ncbi.nlm.nih.gov/pubmed/35764056 |
| rs13107620 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107621 | *SLC39A8* | 4q24 | BMI-adjusted waist circumference | www.ncbi.nlm.nih.gov/pubmed/34021172 |
| rs13107622 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107623 | *SLC39A8* | 4q24 | triglyceride measurement, phospholipid measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107624 | *SLC39A8* | 4q24 | cognitive function measurement | www.ncbi.nlm.nih.gov/pubmed/30038396 |
| rs13107625 | *SLC39A8* | 4q24 | body height | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107626 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107627 | *SLC39A8* | 4q24 | platelet component distribution width | www.ncbi.nlm.nih.gov/pubmed/32888494 |
| rs13107628 | *SLC39A8* | 4q24 | cholesteryl ester measurement, chylomicron measurement, very low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107629 | *SLC39A8* | 4q24 | hemoglobin measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107630 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, very low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107631 | *SLC39A8* | 4q24 | glycine measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107632 | *SLC39A8* | 4q24 | BMI-adjusted waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/34021172 |
| rs13107633 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107634 | *SLC39A8* | 4q24 | very low density lipoprotein cholesterol measurement, phospholipids:total lipids ratio | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107635 | *SLC39A8* | 4q24 | lipoprotein measurement, phospholipid measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107636 | *SLC39A8* | 4q24 | lipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107637 | *SLC39A8* | 4q24 | cognitive function measurement | www.ncbi.nlm.nih.gov/pubmed/30038396 |
| rs13107638 | *SLC39A8* | 4q24 | very low density lipoprotein cholesterol measurement, cholesterol:total lipids ratio | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107639 | *SLC39A8* | 4q24 | calcium measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107640 | *SLC39A8* | 4q24 | free cholesterol:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107641 | *SLC39A8* | 4q24 | lipoprotein measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107642 | *SLC39A8* | 4q24 | cholesteryl ester measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107643 | *SLC39A8* | 4q24 | free cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107644 | *SLC39A8* | 4q24 | serum gamma-glutamyl transferase measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107645 | *SLC39A8* | 4q24 | total cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107646 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107647 | *SLC39A8* | 4q24 | waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107648 | *SLC39A8* | 4q24 | mean arterial pressure | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107649 | *SLC39A8* | 4q24 | mathematical ability | www.ncbi.nlm.nih.gov/pubmed/30038396 |
| rs13107650 | *SLC39A8* | 4q24 | total cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107651 | *SLC39A8* | 4q24 | hematocrit | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107652 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107653 | *SLC39A8* | 4q24 | phospholipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107654 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107655 | *SLC39A8* | 4q24 | very low density lipoprotein cholesterol measurement, cholesteryl esters:total lipids ratio | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107656 | *SLC39A8* | 4q24 | esterified cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107657 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, intermediate density lipoprotein measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107658 | *SLC39A8* | 4q24 | free cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107659 | *SLC39A8* | 4q24 | cholesteryl ester measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107660 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107661 | *SLC39A8* | 4q24 | phospholipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107662 | *SLC39A8* | 4q24 | total cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107663 | *SLC39A8* | 4q24 | lipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107664 | *SLC39A8* | 4q24 | brain measurement | www.ncbi.nlm.nih.gov/pubmed/35505052 |
| rs13107665 | *SLC39A8* | 4q24 | brain measurement | www.ncbi.nlm.nih.gov/pubmed/35505052 |
| rs13107666 | *SLC39A8* | 4q24 | brain measurement | www.ncbi.nlm.nih.gov/pubmed/35505052 |
| rs13107667 | *SLC39A8* | 4q24 | high density lipoprotein particle size measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107668 | *SLC39A8* | 4q24 | low density lipoprotein cholesterol measurement, free cholesterol:total lipids ratio | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107669 | *SLC39A8* | 4q24 | self reported educational attainment | www.ncbi.nlm.nih.gov/pubmed/30038396 |
| rs13107670 | *SLC39A8* | 4q24 | cholesterol:total lipids ratio, low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107671 | *SLC39A8* | 4q24 | taste liking measurement | www.ncbi.nlm.nih.gov/pubmed/35585065 |
| rs13107672 | *SLC39A8* | 4q24 | cholesterol:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107673 | *SLC39A8* | 4q24 | cholesteryl esters:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107674 | *SLC39A8* | 4q24 | cholesteryl ester measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107675 | *SLC39A8* | 4q24 | aspartate aminotransferase measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107676 | *SLC39A8* | 4q24 | taste liking measurement | www.ncbi.nlm.nih.gov/pubmed/35585065 |
| rs13107677 | *SLC39A8* | 4q24 | cholesterol:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107678 | *SLC39A8* | 4q24 | high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107679 | *SLC39A8* | 4q24 | phospholipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107680 | *SLC39A8* | 4q24 | cholesteryl esters:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107681 | *SLC39A8* | 4q24 | cholesteryl ester measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107682 | *SLC39A8* | 4q24 | lipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107683 | *SLC39A8* | 4q24 | brain measurement | www.ncbi.nlm.nih.gov/pubmed/34910505 |
| rs13107684 | *SLC39A8* | 4q24 | free cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107685 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107686 | *SLC39A8* | 4q24 | glomerular filtration rate | www.ncbi.nlm.nih.gov/pubmed/35710981 |
| rs13107687 | *SLC39A8* | 4q24 | cholesterol:total lipids ratio, low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107688 | *SLC39A8* | 4q24 | diastolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/35762941 |
| rs13107689 | *SLC39A8* | 4q24 | free cholesterol:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107690 | *SLC39A8* | 4q24 | phospholipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107691 | *SLC39A8* | 4q24 | phospholipids:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107692 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107693 | *SLC39A8* | 4q24 | free cholesterol measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107694 | *SLC39A8* | 4q24 | lipid measurement, high density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107695 | *SLC39A8* | 4q24 | serum albumin measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107696 | *SLC39A8* | 4q24 | triglycerides:total lipids ratio, low density lipoprotein cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107697 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/35762941 |
| rs13107698 | *SLC39A8* | 4q24 | body mass index | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107699 | *SLC39A8* | 4q24 | cortical surface area measurement | www.ncbi.nlm.nih.gov/pubmed/34910505 |
| rs13107700 | *SLC39A8* | 4q24 | phospholipid measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107701 | *SLC39A8* | 4q24 | phospholipid measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107702 | *SLC39A8* | 4q24 | fatty acid measurement | www.ncbi.nlm.nih.gov/pubmed/35213538 |
| rs13107703 | *SLC39A8* | 4q24 | diastolic blood pressure, unipolar depression | www.ncbi.nlm.nih.gov/pubmed/34734193 |
| rs13107704 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107705 | *SLC39A8* | 4q24 | insomnia | www.ncbi.nlm.nih.gov/pubmed/35835914 |
| rs13107706 | *SLC39A8* | 4q24 | erythrocyte count | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107707 | *SLC39A8* | 4q24 | erythrocyte count | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107708 | *SLC39A8* | 4q24 | uric acid measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107709 | *SLC39A8* | 4q24 | total cholesterol measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107710 | *SLC39A8* | 4q24 | Agents acting on the renin-angiotensin system use measurement | www.ncbi.nlm.nih.gov/pubmed/34594039 |
| rs13107711 | *SLC39A8* | 4q24 | insomnia | www.ncbi.nlm.nih.gov/pubmed/35835914 |
| rs13107712 | *SLC39A8* | 4q24 | Eczema | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107713 | *SLC39A8* | 4q24 | systolic blood pressure | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107714 | *SLC39A8* | 4q24 | BMI-adjusted waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/34021172 |
| rs13107715 | *SLC39A8* | 4q24 | vital capacity | www.ncbi.nlm.nih.gov/pubmed/30595370 |
| rs13107716 | *SLC39A8* | 4q24 | BMI-adjusted waist circumference | www.ncbi.nlm.nih.gov/pubmed/34021172 |
| rs1632855 | *MUC21 - MUC22* | 6p21.33 | Diastolic blood pressure | [www.ncbi.nlm.nih.gov/pubmed/35762941](http://www.ncbi.nlm.nih.gov/pubmed/35762941) |
| rs1800628 | *TNF - LTB* | 6p21.33 | Oral cavity cancer | [www.ncbi.nlm.nih.gov/pubmed/27749845](http://www.ncbi.nlm.nih.gov/pubmed/27749845) |
| rs1800628 | *TNF - LTB* | 6p21.33 | Inguinal hernia | [www.ncbi.nlm.nih.gov/pubmed/34382107](http://www.ncbi.nlm.nih.gov/pubmed/34382107) |
| rs3129953 | *FAM209A - FAM209B* | 20q13.31 | Diffuse plaques (SNP x SNP interaction) | [www.ncbi.nlm.nih.gov/pubmed/32450446](http://www.ncbi.nlm.nih.gov/pubmed/32450446) |
| rs4937872 | *LINC02763 - NCAM1* | 11q23.2 | feeling tense measurement | www.ncbi.nlm.nih.gov/pubmed/29500382 |
| rs4937872 | *LINC02763 - NCAM1* | 11q23.2 | anxiety | www.ncbi.nlm.nih.gov/pubmed/29942085 |
| rs4937872 | *LINC02763 - NCAM1* | 11q23.2 | post-traumatic stress disorder | [www.ncbi.nlm.nih.gov/pubmed/35181757](http://www.ncbi.nlm.nih.gov/pubmed/35181757) |
| rs4937872 | *LINC02763 - NCAM1* | 11q23.2 | anxiety measurement | www.ncbi.nlm.nih.gov/pubmed/33859377 |
| rs4937872 | *LINC02763 - NCAM1* | 11q23.2 | coffee consumption measurement, major depressive disorder | www.ncbi.nlm.nih.gov/pubmed/35898629 |
| rs3132450 | *PRRC2A, PRRC2A, PRRC2A, PRRC2A* | 6p21.33 | Inguinal hernia | www.ncbi.nlm.nih.gov/pubmed/34382107 |
| rs3132450 | *PRRC2A, PRRC2A, PRRC2A, PRRC2A* | 6p21.33 | BMI-adjusted waist circumference | www.ncbi.nlm.nih.gov/pubmed/34021172 |
| rs3132450 | *PRRC2A, PRRC2A, PRRC2A, PRRC2A* | 6p21.33 | BMI-adjusted waist-hip ratio | www.ncbi.nlm.nih.gov/pubmed/34021172 |

**Table S8.** Annotation of significant SNPs identified from cross-trait meta-analysis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Index SNP | Chromosome: Position | Consequence | IMPACT | SYMBOL | Feature\_type | BIOTYPE |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | 11:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | 11:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
| rs4937872 | 11:112827715-112827715 | regulatory\_region\_variant | MODIFIER | *-* | RegulatoryFeature | open\_chromatin\_region |
| rs4937872 | 11:112827715-112827715 | regulatory\_region\_variant | MODIFIER | *-* | RegulatoryFeature | open\_chromatin\_region |
| rs13107325 | 4:103188709-103188709 | missense\_variant | MODERATE | *SLC39A8* | Transcript | protein\_coding |
| rs13107325 | 4:103188709-103188709 | missense\_variant | MODERATE | *SLC39A8* | Transcript | protein\_coding |
| rs13107325 | 4:103188709-103188709 | missense\_variant | MODERATE | *SLC39A8* | Transcript | protein\_coding |
| rs13107325 | 4:103188709-103188709 | missense\_variant | MODERATE | *SLC39A8* | Transcript | protein\_coding |
| rs13107325 | 4:103188709-103188709 | missense\_variant | MODERATE | *SLC39A8* | Transcript | protein\_coding |
| rs13107325 | 4:103188709-103188709 | missense\_variant | MODERATE | *SLC39A8* | Transcript | protein\_coding |
| rs13107325 | 4:103188709-103188709 | downstream\_gene\_variant | MODIFIER | *SLC39A8* | Transcript | processed\_transcript |
| rs13107325 | 4:103188709-103188709 | downstream\_gene\_variant | MODIFIER | *SLC39A8* | Transcript | processed\_transcript |
| rs1632855 | 6:30971769-30971769 | intergenic\_variant | MODIFIER | *-* | - | - |
| rs3132450 | 6:31596138-31596138 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | 6:31596138-31596138 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | 6:31596138-31596138 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | 6:31596138-31596138 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | 6:31596138-31596138 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | processed\_transcript |
| rs3132450 | 6:31596138-31596138 | upstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *MIR1236* | Transcript | miRNA |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | nonsense\_mediated\_decay |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | nonsense\_mediated\_decay |
| rs114969413 | 6:31925679-31925679 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | 6:31925679-31925679 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | intron\_variant,NMD\_transcript\_variant | MODIFIER | *NELFE* | Transcript | nonsense\_mediated\_decay |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | 6:31925679-31925679 | intron\_variant,NMD\_transcript\_variant | MODIFIER | *NELFE* | Transcript | nonsense\_mediated\_decay |
| rs114969413 | 6:31925679-31925679 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | protein\_coding |
| rs114969413 | 6:31925679-31925679 | regulatory\_region\_variant | MODIFIER | *-* | RegulatoryFeature | promoter |
| rs4937872 | HG306\_PATCH:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | HG306\_PATCH:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | HG306\_PATCH:112827715-112827715 | downstream\_gene\_variant | MODIFIER | *RP11-629G13.1* | Transcript | antisense |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
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| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | processed\_transcript |
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| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs4937872 | HG306\_PATCH:112827715-112827715 | upstream\_gene\_variant | MODIFIER | *NCAM1* | Transcript | protein\_coding |
| rs1632855 | HSCHR6\_MHC\_APD:30980010-30980010 | intergenic\_variant | MODIFIER | *-* | - | - |
| rs1632855 | HSCHR6\_MHC\_COX:30961484-30961484 | downstream\_gene\_variant | MODIFIER | *AL663093.2* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | upstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | processed\_transcript |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_COX:31583549-31583549 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_COX:31913231-31913231 | upstream\_gene\_variant | MODIFIER | *hsa-mir-1236* | Transcript | miRNA |
| rs1632855 | HSCHR6\_MHC\_DBB:30962483-30962483 | intergenic\_variant | MODIFIER | *-* | - | - |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | upstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | retained\_intron |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | downstream\_gene\_variant | MODIFIER | *PRRC2A* | Transcript | processed\_transcript |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_DBB:31578313-31578313 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant | MODIFIER | *NELFE* | Transcript | protein\_coding |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | processed\_transcript |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | intron\_variant,non\_coding\_transcript\_variant | MODIFIER | *NELFE* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *SKIV2L* | Transcript | retained\_intron |
| rs114969413 | HSCHR6\_MHC\_DBB:31907865-31907865 | upstream\_gene\_variant | MODIFIER | *hsa-mir-1236* | Transcript | miRNA |
| rs3132450 | HSCHR6\_MHC\_MANN:31635625-31635625 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
| rs3132450 | HSCHR6\_MHC\_MANN:31635625-31635625 | intron\_variant | MODIFIER | *PRRC2A* | Transcript | protein\_coding |
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| rs114969413 | HSCHR6\_MHC\_MCF:32002126-32002126 | upstream\_gene\_variant | MODIFIER | *hsa-mir-1236* | Transcript | miRNA |
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| rs114969413 | HSCHR6\_MHC\_QBL:31916071-31916071 | upstream\_gene\_variant | MODIFIER | *hsa-mir-1236* | Transcript | miRNA |
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| rs2188100 | HSCHR6\_MHC\_COX:30171780-30171780 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_COX:30171780-30171780 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_COX:30171780-30171780 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | processed\_transcript |
| rs1632855 | HSCHR6\_MHC\_COX:30961484-30961484 | downstream\_gene\_variant | MODIFIER | *AL663093.2* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *TNF* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_COX:31534262-31534262 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_COX:32310038-32310038 | downstream\_gene\_variant | MODIFIER | *HCG23* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_COX:32310038-32310038 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_COX:32310038-32310038 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_COX:32310038-32310038 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_COX:32310038-32310038 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_COX:32310038-32310038 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_DBB:30172170-30172170 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_DBB:30172170-30172170 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_DBB:30172170-30172170 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_DBB:30172170-30172170 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_DBB:30172170-30172170 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_DBB:30172170-30172170 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | processed\_transcript |
| rs1632855 | HSCHR6\_MHC\_DBB:30962483-30962483 | intergenic\_variant | MODIFIER | *-* | - | - |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *TNF* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_DBB:31528994-31528994 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs3129953 | HSCHR6\_MHC\_DBB:32337323-32337323 | downstream\_gene\_variant | MODIFIER | *HCG23* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_DBB:32337323-32337323 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_DBB:32337323-32337323 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_DBB:32337323-32337323 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_DBB:32337323-32337323 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_DBB:32337323-32337323 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_MANN:30226982-30226982 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_MANN:30226982-30226982 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_MANN:30226982-30226982 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_MANN:30226982-30226982 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_MANN:30226982-30226982 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_MANN:30226982-30226982 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *TNF* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_MANN:31586337-31586337 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | downstream\_gene\_variant | MODIFIER | *HCG23* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MANN:32401260-32401260 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs1632855 | HSCHR6\_MHC\_MCF:31050319-31050319 | intergenic\_variant | MODIFIER | *-* | - | - |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *TNF* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_MCF:31623159-31623159 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_MCF:32437982-32437982 | downstream\_gene\_variant | MODIFIER | *HCG23* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_MCF:32437982-32437982 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MCF:32437982-32437982 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MCF:32437982-32437982 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MCF:32437982-32437982 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_MCF:32437982-32437982 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_QBL:30171407-30171407 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_QBL:30171407-30171407 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_QBL:30171407-30171407 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_QBL:30171407-30171407 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_QBL:30171407-30171407 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_QBL:30171407-30171407 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | processed\_transcript |
| rs1632855 | HSCHR6\_MHC\_QBL:30961787-30961787 | downstream\_gene\_variant | MODIFIER | *AL805909.3* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *TNF* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_QBL:31537093-31537093 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | downstream\_gene\_variant | MODIFIER | *HCG23* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_QBL:32319282-32319282 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_SSTO:30171437-30171437 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_SSTO:30171437-30171437 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_SSTO:30171437-30171437 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_SSTO:30171437-30171437 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_SSTO:30171437-30171437 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | protein\_coding |
| rs2188100 | HSCHR6\_MHC\_SSTO:30171437-30171437 | upstream\_gene\_variant | MODIFIER | *TRIM26* | Transcript | processed\_transcript |
| rs1632855 | HSCHR6\_MHC\_SSTO:30963142-30963142 | intergenic\_variant | MODIFIER | *-* | - | - |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *TNF* | Transcript | protein\_coding |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTA* | Transcript | retained\_intron |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs1800628 | HSCHR6\_MHC\_SSTO:31536793-31536793 | downstream\_gene\_variant | MODIFIER | *LTB* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | downstream\_gene\_variant | MODIFIER | *HCG23* | Transcript | processed\_transcript |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | downstream\_gene\_variant | MODIFIER | *BTNL2* | Transcript | protein\_coding |
| rs3129953 | HSCHR6\_MHC\_SSTO:32368406-32368406 | synonymous\_variant | LOW | *BTNL2* | Transcript | protein\_coding |

**Table S9.** GO enrichment analysis of shared genes between PTSD and GIT disorders identified from cross-trait meta-analysis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| GO terms | ID | link | FDR-corrected *P*-value | Overlap Genes |
| PTSD and PGM | | | | |
| regulation of immune system process | GO:0002682 | http://amigo.geneontology.org/amigo/term/GO:0002682 | 1.83E-04 | *MUC21; LST1; NFKBIL1; LTA; TNF; AIF1; NCR3; MAD1L1; BTNL2; HLA-DRA* |
| immune response | GO:0006955 | http://amigo.geneontology.org/amigo/term/GO:0006955 | 1.83E-04 | *MUC21; LST1; NFKBIL1; LTA; TNF; AIF1; NCR3; LTB; TRIM26; BTNL2; HLA-DRA* |
| positive regulation of immune system process | GO:0002684 | http://amigo.geneontology.org/amigo/term/GO:0002684 | 1.86E-03 | *MUC21; NFKBIL1; LTA; TNF; AIF1; NCR3; BTNL2; HLA-DRA* |
| positive regulation of immune response | GO:0050778 | http://amigo.geneontology.org/amigo/term/GO:0050778 | 2.58E-03 | *MUC21; NFKBIL1; LTA; TNF; NCR3; BTNL2; HLA-DRA* |
| regulation of immune response | GO:0050776 | http://amigo.geneontology.org/amigo/term/GO:0050776 | 1.12E-02 | *MUC21; NFKBIL1; LTA; TNF; NCR3; BTNL2; HLA-DRA* |
| positive regulation of humoral immune response mediated by circulating immunoglobulin | GO:0002925 | http://amigo.geneontology.org/amigo/term/GO:0002925 | 1.14E-02 | *LTA; TNF* |
| negative regulation of multi-organism process | GO:0043901 | http://amigo.geneontology.org/amigo/term/GO:0043901 | 1.51E-02 | *NFKBIL1; LTA; TNF; TRIM26* |
| defense response | GO:0006952 | http://amigo.geneontology.org/amigo/term/GO:0006952 | 1.90E-02 | *MUC21; NFKBIL1; LTA; TNF; AIF1; NCR3; TRIM26; HLA-DRA* |
| positive regulation of defense response | GO:0031349 | http://amigo.geneontology.org/amigo/term/GO:0031349 | 2.47E-02 | *MUC21; NFKBIL1; LTA; TNF; NCR3* |
| regulation of chronic inflammatory response | GO:0002676 | http://amigo.geneontology.org/amigo/term/GO:0002676 | 2.47E-02 | *LTA; TNF* |
| *Post Traumatic Stress Disorder and IBD* |  |  |  |  |
| regulation of complement activation | GO:0030449 | http://amigo.geneontology.org/amigo/term/GO:0030449 | 2.30E-03 | *C2; CFB; C4A* |
| regulation of protein activation cascade | GO:2000257 | http://amigo.geneontology.org/amigo/term/GO:2000257 | 2.30E-03 | *C2; CFB; C4A* |
| regulation of humoral immune response | GO:0002920 | http://amigo.geneontology.org/amigo/term/GO:0002920 | 2.93E-03 | *C2; CFB; C4A* |
| complement activation | GO:0006956 | http://amigo.geneontology.org/amigo/term/GO:0006956 | 2.93E-03 | *C2; CFB; C4A* |
| positive regulation of apoptotic cell clearance | GO:2000427 | http://amigo.geneontology.org/amigo/term/GO:2000427 | 4.12E-03 | *C2; C4A* |
| regulation of acute inflammatory response | GO:0002673 | http://amigo.geneontology.org/amigo/term/GO:0002673 | 4.18E-03 | *C2; CFB; C4A* |
| protein activation cascade | GO:0072376 | http://amigo.geneontology.org/amigo/term/GO:0072376 | 4.18E-03 | *C2; CFB; C4A* |
| regulation of apoptotic cell clearance | GO:2000425 | http://amigo.geneontology.org/amigo/term/GO:2000425 | 4.41E-03 | *C2; C4A* |
| regulation of protein processing | GO:0070613 | http://amigo.geneontology.org/amigo/term/GO:0070613 | 5.44E-03 | *C2; CFB; C4A* |
| regulation of protein maturation | GO:1903317 | http://amigo.geneontology.org/amigo/term/GO:1903317 | 5.44E-03 | *C2; CFB; C4A* |

**Table S10.** KEGG enrichment analysis of shared genes between PTSD and GIT disorders identified from cross-trait meta-analysis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| KEGG terms | ID | Input number | Background number | FDR-corrected *P*-value | *Overlapped genes* |
| PTSD and PGM | | | | | |
| Rheumatoid arthritis | hsa05323 | 4 | 90 | 0.0004 | *TNF; LTB; ATP6V1G2; HLA-DRA* |
| Type I diabetes mellitus | hsa04940 | 3 | 43 | 0.0016 | *LTA; TNF; HLA-DRA* |
| NF-kappa B signaling pathway | hsa04064 | 3 | 95 | 0.0116 | *LTA; TNF; LTB* |
| Asthma | hsa05310 | 2 | 31 | 0.037461063 | *TNF; HLA-DRA* |
| Allograft rejection | hsa05330 | 2 | 38 | 0.037546829 | *TNF; HLA-DRA* |
| Herpes simplex infection | hsa05168 | 3 | 185 | 0.037546829 | *LTA; TNF; HLA-DRA* |
| Graft-versus-host disease | hsa05332 | 2 | 41 | 0.037546829 | *TNF; HLA-DRA* |
| *PTSD and IBD* | | | | | |
| *Staphylococcus aureus* infection | hsa05150 | 3 | 56 | 0.001287991 | *C2; CFB; C4A* |
| Complement and coagulation cascades | hsa04610 | 3 | 79 | 0.001828655 | *C2; CFB; C4A* |

**Table S11.** Genes associated with PTSD based on MAGMA analysis using summary data from MTAG analysis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Gene | CHR | START | STOP | NSNPS | ZSTAT | *P* |
| TRIM26 | 6 | 30152232 | 30181204 | 98 | 5.70 | 6.04E-09 |
| SFTA2 | 6 | 30899130 | 30899952 | 8 | 5.68 | 6.86E-09 |
| HIST1H4L | 6 | 27840926 | 27841289 | 1 | 5.61 | 1.02E-08 |
| HIST1H3J | 6 | 27858093 | 27860884 | 6 | 5.57 | 1.25E-08 |
| MSH5 | 6 | 31707725 | 31732622 | 52 | 5.56 | 1.39E-08 |
| HIST1H2BN | 6 | 27806323 | 27823487 | 21 | 5.55 | 1.42E-08 |
| MSH5-SAPCD1 | 6 | 31707797 | 31732628 | 51 | 5.54 | 1.48E-08 |
| BTN3A2 | 6 | 26365387 | 26378546 | 78 | 5.44 | 2.60E-08 |
| ZKSCAN8 | 6 | 28109688 | 28127250 | 37 | 5.34 | 4.72E-08 |
| BTN2A1 | 6 | 26458150 | 26476849 | 56 | 5.30 | 5.79E-08 |
| VARS | 6 | 31745295 | 31763730 | 27 | 5.23 | 8.28E-08 |
| HIST1H2AL | 6 | 27833034 | 27833606 | 1 | 5.19 | 1.04E-07 |
| C6orf48 | 6 | 31802385 | 31807541 | 16 | 5.17 | 1.14E-07 |
| HLA-C | 6 | 31236526 | 31239907 | 111 | 5.17 | 1.14E-07 |
| ZSCAN16 | 6 | 28092338 | 28097860 | 9 | 5.12 | 1.49E-07 |
| HIST1H2BL | 6 | 27775257 | 27775709 | 1 | 5.09 | 1.81E-07 |
| PRRC2A | 6 | 31588497 | 31605548 | 54 | 5.05 | 2.15E-07 |
| SGCD | 5 | 155297354 | 156194799 | 2197 | 4.96 | 3.62E-07 |
| ZKSCAN4 | 6 | 28212401 | 28227011 | 26 | 4.93 | 4.22E-07 |
| HIST1H1B | 6 | 27834570 | 27835359 | 3 | 4.92 | 4.22E-07 |
| PWWP2A | 5 | 159488808 | 159546430 | 78 | 4.92 | 4.34E-07 |
| VWA7 | 6 | 31733367 | 31745108 | 21 | 4.86 | 5.92E-07 |
| HLA-DOB | 6 | 32780540 | 32784825 | 31 | 4.85 | 6.03E-07 |
| DPCR1 | 6 | 30908749 | 30921998 | 34 | 4.84 | 6.39E-07 |
| ABT1 | 6 | 26597180 | 26600278 | 12 | 4.80 | 7.76E-07 |
| OR2B2 | 6 | 27878963 | 27880174 | 3 | 4.80 | 8.05E-07 |
| LSM2 | 6 | 31765173 | 31774761 | 24 | 4.79 | 8.50E-07 |
| CLIC1 | 6 | 31698358 | 31707540 | 11 | 4.70 | 1.29E-06 |
| TRIM31 | 6 | 30070674 | 30080883 | 56 | 4.68 | 1.43E-06 |
| ZNF165 | 6 | 28048753 | 28057341 | 18 | 4.67 | 1.51E-06 |
| DDR1 | 6 | 30844198 | 30867933 | 64 | 4.66 | 1.56E-06 |
| HLA-DRA | 6 | 32407619 | 32412823 | 53 | 4.62 | 1.89E-06 |
| PGBD1 | 6 | 28249314 | 28270326 | 44 | 4.59 | 2.25E-06 |
| BTN1A1 | 6 | 26501449 | 26510650 | 17 | 4.58 | 2.35E-06 |
| HLA-B | 6 | 31321649 | 31324965 | 89 | 4.58 | 2.36E-06 |

**Table S12.** Genes associated with PTSD based on GCTA-fastBAT analysis using summary data from MTAG analysis.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Gene | Chr | Start | End | No.SNPs | SNP\_start | SNP\_end | Chisq(Obs) | Pvalue | TopSNP.Pvalue | TopSNP |
| HCG18 | 6 | 30255173 | 30294933 | 88 | rs2517585 | rs3094062 | 578.907 | 1.83E-10 | 1.34E-10 | rs3094071 |
| HCG17 | 6 | 30201815 | 30293911 | 118 | rs13215307 | rs2844745 | 748.803 | 2.18E-10 | 1.23E-10 | rs2188100 |
| BTN3A2 | 6 | 26365386 | 26378548 | 89 | rs16891549 | rs12201546 | 634.911 | 7.52E-10 | 6.52E-09 | rs2237235 |
| MICA | 6 | 31367560 | 31383092 | 410 | rs13193224 | rs11757667 | 2530.27 | 1.30E-09 | 1.34E-10 | rs3130477 |
| TRIM39-RPP21 | 6 | 30297087 | 30314635 | 71 | rs2523737 | rs2516688 | 447.853 | 2.04E-09 | 2.92E-10 | rs3094059 |
| TRIM39 | 6 | 30294620 | 30311506 | 71 | rs2097574 | rs3094041 | 447.825 | 2.05E-09 | 2.92E-10 | rs3094059 |
| BTN2A2 | 6 | 26383323 | 26395100 | 84 | rs73401243 | rs3846846 | 567.782 | 4.69E-09 | 6.52E-09 | rs2237235 |
| HLA-B | 6 | 31321648 | 31324989 | 476 | rs9264870 | rs111824766 | 3129.83 | 5.87E-09 | 5.64E-10 | rs2596565 |
| MIR6891 | 6 | 31323000 | 31323093 | 470 | rs7760988 | rs202036493 | 3082.81 | 6.00E-09 | 5.64E-10 | rs2596565 |
| RPP21 | 6 | 30312905 | 30314635 | 70 | rs56183729 | rs2516688 | 422.015 | 6.41E-09 | 2.92E-10 | rs3094059 |
| BTN3A3 | 6 | 26440699 | 26453643 | 81 | rs2076029 | rs75496707 | 553.972 | 9.22E-09 | 6.52E-09 | rs2237235 |
| IER3 | 6 | 30710975 | 30712327 | 120 | rs143716986 | rs3131058 | 729.115 | 9.66E-09 | 1.12E-09 | rs3095327 |
| SFTA2 | 6 | 30899126 | 30899952 | 97 | rs73727106 | rs2517425 | 529.514 | 9.84E-09 | 2.46E-09 | rs3132579 |
| MIR6891 | 6 | 30229276 | 30229317 | 72 | rs2844775 | rs117660163 | 460.185 | 1.03E-08 | 1.23E-10 | rs2188100 |
| FLOT1 | 6 | 30695510 | 30710453 | 122 | rs73422011 | rs3131053 | 721.552 | 1.17E-08 | 1.12E-09 | rs3095327 |
| HLA-L | 6 | 30227338 | 30234728 | 74 | rs3130381 | rs78194719 | 462.054 | 1.33E-08 | 1.23E-10 | rs2188100 |
| ABT1 | 6 | 26597170 | 26600277 | 54 | rs34246779 | rs2494713 | 343.303 | 1.38E-08 | 2.80E-09 | rs34229567 |
| TUBB | 6 | 30688156 | 30693195 | 104 | rs9295902 | rs17481190 | 596.173 | 1.40E-08 | 1.12E-09 | rs3095327 |
| VARS2 | 6 | 30881981 | 30894235 | 102 | rs2535326 | rs2517434 | 544.208 | 1.52E-08 | 2.46E-09 | rs3132579 |
| BTN2A1 | 6 | 26458131 | 26476849 | 69 | rs75782365 | rs35355150 | 462.739 | 1.54E-08 | 1.09E-08 | rs75782365 |
| LOC285819 | 6 | 26472171 | 26482737 | 67 | rs55786210 | rs9467776 | 456.187 | 1.64E-08 | 1.80E-08 | rs9379882 |
| TRIM15 | 6 | 30130982 | 30140473 | 91 | rs9261425 | rs3094131 | 503.352 | 1.65E-08 | 1.23E-10 | rs2188100 |
| BTNL2 | 6 | 32362512 | 32374900 | 197 | rs9268268 | rs28895190 | 1193.14 | 1.75E-08 | 3.29E-09 | rs3129953 |
| AIF1 | 6 | 31582993 | 31584798 | 114 | rs2857602 | rs9267529 | 526.346 | 1.82E-08 | 1.61E-09 | rs1800628 |
| DPCR1 | 6 | 30908776 | 30921998 | 118 | rs1049622 | rs1632855 | 588.933 | 1.89E-08 | 1.45E-09 | rs1634714 |
| BTN2A3P | 6 | 26421618 | 26430816 | 91 | rs12173854 | rs9357008 | 613.711 | 1.96E-08 | 6.52E-09 | rs2237235 |
| MDC1 | 6 | 30667583 | 30685458 | 100 | rs9262134 | rs73432796 | 545.495 | 2.06E-08 | 1.12E-09 | rs3095327 |
| BTN1A1 | 6 | 26501494 | 26510652 | 60 | rs2237236 | rs11752946 | 401.527 | 2.27E-08 | 1.17E-08 | rs16901784 |
| HCG23 | 6 | 32358286 | 32361468 | 171 | rs2395144 | rs2239805 | 982.192 | 2.30E-08 | 3.29E-09 | rs3129953 |
| ZKSCAN8 | 6 | 28109687 | 28127250 | 42 | rs75911928 | rs1233666 | 356.696 | 2.60E-08 | 7.00E-10 | rs68188794 |
| PRRC2A | 6 | 31588449 | 31605554 | 117 | rs3093540 | rs10573 | 526.39 | 2.65E-08 | 1.61E-09 | rs1800628 |
| HCG11 | 6 | 26521933 | 26527612 | 49 | rs6927012 | rs6913462 | 335.739 | 3.15E-08 | 1.17E-08 | rs16901784 |
| SNORA38 | 6 | 31590855 | 31590987 | 109 | rs4647195 | rs1266076 | 495.077 | 3.17E-08 | 1.61E-09 | rs1800628 |
| HMGN4 | 6 | 26538571 | 26547164 | 54 | rs16891727 | rs3807029 | 347.282 | 3.33E-08 | 2.80E-09 | rs34229567 |
| ZSCAN12P1 | 6 | 28058584 | 28063493 | 48 | rs76583990 | rs1225715 | 309.622 | 3.38E-08 | 7.00E-10 | rs68188794 |
| MUC21 | 6 | 30951484 | 30957675 | 167 | rs111474353 | rs2517552 | 714.125 | 3.43E-08 | 1.45E-09 | rs1634714 |
| ZNF165 | 6 | 28048481 | 28057340 | 50 | rs9380038 | rs1480646 | 308.271 | 5.19E-08 | 7.00E-10 | rs68188794 |
| ZNF192P1 | 6 | 28129538 | 28137373 | 45 | rs13203816 | rs72849214 | 334.734 | 6.05E-08 | 7.00E-10 | rs68188794 |
| ZSCAN16 | 6 | 28092386 | 28097856 | 38 | rs72851138 | rs144344058 | 238.506 | 6.89E-08 | 7.00E-10 | rs68188794 |
| POM121L2 | 6 | 27276841 | 27280011 | 105 | rs9393796 | rs114157955 | 599.016 | 7.34E-08 | 9.82E-09 | rs72839477 |
| ZSCAN16-AS1 | 6 | 28089572 | 28105094 | 41 | rs4713135 | rs1150680 | 286.676 | 7.37E-08 | 7.00E-10 | rs68188794 |
| HLA-DRA | 6 | 32407618 | 32412826 | 203 | rs12529049 | rs113147503 | 1245.59 | 8.44E-08 | 3.29E-09 | rs3129953 |
| TOB2P1 | 6 | 28183115 | 28186707 | 61 | rs9368558 | rs73742509 | 486.232 | 8.79E-08 | 1.07E-09 | rs35098436 |
| ZKSCAN4 | 6 | 28212489 | 28220002 | 67 | rs1225596 | rs1997660 | 504.443 | 8.89E-08 | 9.95E-10 | rs33932084 |
| LST1 | 6 | 31553955 | 31556686 | 135 | rs9267482 | rs368669046 | 566.78 | 9.22E-08 | 1.61E-09 | rs1800628 |
| GTF2H4 | 6 | 30875976 | 30881880 | 72 | rs2535328 | rs3131934 | 420.6 | 1.03E-07 | 4.93E-09 | rs1264308 |
| UBD | 6 | 29523388 | 29527702 | 89 | rs3130858 | rs29258 | 518.788 | 1.06E-07 | 2.10E-09 | rs1233385 |
| ZSCAN9 | 6 | 28193028 | 28201264 | 64 | rs9380064 | rs184050810 | 503.161 | 1.12E-07 | 1.09E-09 | rs34832585 |
| TRIM10 | 6 | 30119722 | 30128711 | 115 | rs1108052 | rs3132671 | 606.007 | 1.15E-07 | 1.44E-10 | rs3129695 |
| TRIM26 | 6 | 30152231 | 30181271 | 107 | rs2844798 | rs3094073 | 566.687 | 1.22E-07 | 1.23E-10 | rs2188100 |
| NCR3 | 6 | 31556659 | 31560762 | 134 | rs2071596 | rs1052486 | 558.537 | 1.23E-07 | 1.61E-09 | rs1800628 |
| SNORD32B | 6 | 29550028 | 29550105 | 71 | rs886381 | rs1805056 | 421.265 | 1.26E-07 | 2.10E-09 | rs1233385 |
| BTN3A1 | 6 | 26402464 | 26415444 | 87 | rs72836464 | rs12202419 | 518.195 | 1.33E-07 | 6.52E-09 | rs2237235 |
| MIR4655 | 7 | 1883815 | 1883889 | 109 | rs112447439 | rs4721167 | 751.419 | 1.33E-07 | 1.23E-08 | rs11768191 |
| OR2J2 | 6 | 29141310 | 29142351 | 50 | rs6932333 | rs12660419 | 336.438 | 1.76E-07 | 1.41E-09 | rs3116830 |
| OR2H2 | 6 | 29555682 | 29556745 | 82 | rs3025671 | rs114183654 | 433.386 | 1.77E-07 | 2.10E-09 | rs1233385 |
| LOC100270746 | 6 | 26987144 | 26988085 | 41 | rs10498732 | rs13194491 | 263.997 | 2.19E-07 | 8.44E-09 | rs12199218 |
| HIST1H2AK | 6 | 27805657 | 27806117 | 45 | rs666846 | rs200974 | 347.205 | 2.20E-07 | 2.01E-09 | rs200976 |
| HIST1H2BN | 6 | 27806439 | 27806888 | 45 | rs115250161 | rs200974 | 347.227 | 2.20E-07 | 2.01E-09 | rs200976 |
| C6orf10 | 6 | 32260474 | 32339689 | 184 | rs17201875 | rs3135363 | 929.922 | 2.22E-07 | 3.29E-09 | rs3129953 |
| MIR6832 | 6 | 31601563 | 31601635 | 103 | rs116646885 | rs2844462 | 428.365 | 2.29E-07 | 4.24E-09 | rs3117582 |
| ELFN1 | 7 | 1748797 | 1787590 | 156 | rs72575924 | rs2398735 | 671.837 | 2.57E-07 | 5.27E-09 | rs62435650 |
| TRIM40 | 6 | 30103884 | 30116512 | 138 | rs1245367 | rs2523721 | 649.712 | 3.53E-07 | 1.58E-10 | rs2517618 |
| LTB | 6 | 31548335 | 31550202 | 131 | rs9267480 | rs41273264 | 528.612 | 3.61E-07 | 1.61E-09 | rs1800628 |
| LINC01015 | 6 | 29497182 | 29501345 | 85 | rs114570214 | rs2023497 | 472.555 | 3.84E-07 | 2.21E-09 | rs926552 |
| HIST1H2AL | 6 | 27833106 | 27833576 | 50 | rs2747054 | rs1497525 | 403.133 | 4.09E-07 | 8.66E-10 | rs34788973 |
| PRSS16 | 6 | 27215501 | 27224399 | 89 | rs12207614 | rs16897467 | 492.293 | 4.83E-07 | 2.90E-08 | rs72839445 |
| ZNF322 | 6 | 26634610 | 26659980 | 41 | rs9379893 | rs199925467 | 237.289 | 5.42E-07 | 2.80E-09 | rs34229567 |
| HIST1H1B | 6 | 27834569 | 27835359 | 53 | rs200504 | rs731132 | 409.788 | 6.52E-07 | 8.66E-10 | rs34788973 |
| HIST1H4L | 6 | 27840925 | 27841289 | 54 | rs200499 | rs6933825 | 387.611 | 7.24E-07 | 8.66E-10 | rs34788973 |
| HLA-C | 6 | 31236525 | 31239913 | 332 | rs9263969 | rs28752783 | 1695.07 | 7.93E-07 | 9.16E-10 | rs1639108 |
| VN1R10P | 6 | 27292539 | 27293741 | 92 | rs9393801 | rs12374649 | 476.433 | 8.25E-07 | 9.82E-09 | rs72839477 |
| MUC22 | 6 | 30973728 | 31003179 | 224 | rs12212418 | rs9263477 | 926.544 | 8.27E-07 | 1.45E-09 | rs1634714 |
| HIST1H3I | 6 | 27839622 | 27840099 | 54 | rs78718062 | rs9461420 | 386.749 | 9.83E-07 | 8.66E-10 | rs34788973 |
| HCP5 | 6 | 31430956 | 31433586 | 253 | rs6934403 | rs9267444 | 1006.44 | 1.06E-06 | 1.34E-10 | rs3130477 |
| HIST1H3J | 6 | 27858092 | 27858570 | 54 | rs201002 | rs115537782 | 377.919 | 1.15E-06 | 8.66E-10 | rs34788973 |
| HIST1H2AM | 6 | 27860476 | 27860963 | 53 | rs35819751 | rs72848767 | 363.273 | 1.22E-06 | 8.66E-10 | rs34788973 |
| TNF | 6 | 31543343 | 31546112 | 127 | rs2516486 | rs1046080 | 491.6 | 1.25E-06 | 1.61E-09 | rs1800628 |
| BAG6 | 6 | 31606804 | 31620477 | 101 | rs11575842 | rs114276434 | 398.072 | 1.26E-06 | 4.24E-09 | rs3117582 |
| HIST1H2BO | 6 | 27861202 | 27861669 | 54 | rs200997 | rs191555630 | 364.845 | 1.28E-06 | 8.66E-10 | rs34788973 |
| HIST1H4K | 6 | 27798951 | 27799305 | 43 | rs146990167 | rs12214465 | 301.862 | 1.36E-06 | 1.02E-08 | rs45509595 |
| HCG26 | 6 | 31439005 | 31440185 | 258 | rs75428775 | rs9267462 | 1014.62 | 1.48E-06 | 1.34E-10 | rs3130477 |
| LTA | 6 | 31539875 | 31542100 | 129 | rs3093994 | rs2280801 | 492.038 | 1.49E-06 | 1.61E-09 | rs1800628 |
| MIR4640 | 6 | 30858659 | 30858749 | 66 | rs2517582 | rs2844648 | 342.767 | 1.50E-06 | 4.93E-09 | rs1264308 |
| HIST1H2BL | 6 | 27775256 | 27775709 | 45 | rs73389068 | rs72847356 | 351.237 | 1.52E-06 | 1.76E-08 | rs13212651 |
| LINC00240 | 6 | 26924771 | 26991753 | 62 | rs2754624 | rs13212021 | 379.582 | 1.54E-06 | 8.44E-09 | rs12199218 |
| HIST1H4J | 6 | 27791902 | 27792258 | 45 | rs1985099 | rs77576207 | 340.148 | 1.58E-06 | 1.02E-08 | rs45509595 |
| NCAM1 | 11 | 112831968 | 113149158 | 268 | rs4937833 | rs10502172 | 776.796 | 1.67E-06 | 7.76E-09 | rs10789929 |
| HIST1H2BM | 6 | 27782821 | 27783267 | 45 | rs9468220 | rs200981 | 351.409 | 1.84E-06 | 1.76E-08 | rs13212651 |
| HIST1H2AJ | 6 | 27782079 | 27782518 | 46 | rs62401405 | rs146435830 | 353.099 | 1.85E-06 | 1.76E-08 | rs13212651 |
| HIST1H3H | 6 | 27777841 | 27778314 | 46 | rs7773070 | rs9380022 | 351.692 | 1.92E-06 | 1.76E-08 | rs13212651 |
| HIST1H2AI | 6 | 27775976 | 27776445 | 46 | rs9468217 | rs9461416 | 351.516 | 1.93E-06 | 1.76E-08 | rs13212651 |
| NKAPL | 6 | 28227074 | 28228736 | 60 | rs73740584 | rs34950484 | 367.734 | 2.01E-06 | 9.95E-10 | rs33932084 |

**Table S13.** Genes associated with PTSD based on TWAS analysis using summary data from MTAG analysis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Gene | test\_score | Pvalue | gene | test\_score | Pvalue |
| ZKSCAN4 | 25.59584047 | 2.95E-12 | ZKSCAN8 | 13.95618267 | 5.71E-07 |
| ZSCAN9 | 23.40257654 | 1.73E-11 | PPP1R3A | 13.94708319 | 5.71E-07 |
| SFR1 | 95.2830281 | 2.18E-11 | OR12D2 | -4.994951881 | 5.89E-07 |
| HIST1H2BK | 18.99411929 | 2.53E-09 | SGCD | 13.56553255 | 6.23E-07 |
| HIST1H2BO | 18.96070161 | 5.83E-09 | OR2B6 | 14.15415632 | 6.46E-07 |
| PRPF3 | 17.03342222 | 1.42E-08 | OR2B3 | 4.884883614 | 1.03E-06 |
| HIST1H3J | 17.72919123 | 1.87E-08 | C6orf10 | 4.862067156 | 1.16E-06 |
| TREH | 16.71944623 | 1.95E-08 | ABT1 | 12.29925124 | 1.57E-06 |
| HIST1H2BJ | 17.73762336 | 1.96E-08 | C6orf15 | 13.02414292 | 1.77E-06 |
| MDFIC | 15.65377038 | 5.17E-08 | RBBP8NL | 12.70052536 | 1.95E-06 |
| HIST1H4J | 15.1158702 | 8.79E-08 | HMGN4 | 12.24841196 | 2.02E-06 |
| BTN3A2 | 14.2539101 | 9.94E-08 | ZSCAN31 | 11.86263302 | 2.27E-06 |
| ZSCAN12 | 14.86163705 | 2.42E-07 | HIST1H2BB | 11.98009824 | 2.31E-06 |
| TRIM31 | 15.10749927 | 2.50E-07 | ZNF184 | 12.25898483 | 2.69E-06 |
| HIST1H2AH | 14.9098167 | 3.27E-07 | OR10C1 | 4.659845218 | 3.16E-06 |
| NKAPL | 14.14279169 | 5.11E-07 |  |  |  |

**Table S14.** Summary of MR analysis PTSD and GIT disorders.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Exposure (nSNPs) | Outcome | Inverse variance weighted | | Weighted median | | MR-Egger | | Simple mode | | Weighted mode | | MR-PRESSO | | | | |
| BETA | P | BETA | P | BETA | P | BETA | P | BETA | P | Global test P | Raw beta | P | Corrected beta | P |
| PTSD (32) | IBD | 0.028 | 5.169E-01 | 0.032 | 5.923E-01 | 0.172 | 1.106E-01 | 0.035 | 7.973E-01 | 0.019 | 8.907E-01 | 0.275 | 0.0062 | 0.9043 | NA | NA |
| IBD (132) | PTSD | 0.034 | 1.903E-02 | 0.053 | 1.388E-02 | 0.046 | 2.744E-01 | 0.101 | 4.355E-02 | 0.067 | 1.595E-01 | 0.189 | 0.0350 | 0.0361 | NA | NA |
| PTSD (32) | IBS | 0.037 | 8.098E-02 | 0.056 | 6.656E-02 | 0.073 | 1.665E-01 | 0.065 | 3.197E-01 | 0.060 | 3.165E-01 | 0.723 | 0.0362 | 0.1084 | NA | NA |
| IBS (51) | PTSD | 0.176 | 1.400E-03 | 0.207 | 4.999E-03 | 0.288 | 6.866E-02 | 0.258 | 1.590E-01 | 0.264 | 1.197E-01 | 0.125 | 0.1740 | 0.0087 | NA | NA |
| PTSD (32) | PGM | 0.037 | 4.999E-02 | 0.022 | 2.440E-01 | -0.009 | 8.470E-01 | 0.020 | 5.888E-01 | 0.019 | 6.062E-01 | <0.001 | 0.0445 | 0.0618 | 0.0322 | 6.7420E-02 |
| PGM (201) | PTSD | 0.323 | 7.180E-12 | 0.325 | 5.780E-07 | 0.465 | 3.788E-03 | 0.388 | 6.004E-02 | 0.340 | 7.694E-02 | 0.012 | 0.3022 | 0.0000 | 0.2909 | 2.7310E-08 |
| PTSD (32) | PUD | -0.023 | 5.026E-01 | -0.049 | 2.590E-01 | -0.048 | 5.802E-01 | -0.144 | 1.709E-01 | -0.151 | 1.321E-01 | 0.021 | -0.0204 | 0.6182 | NA | NA |
| PUD (45) | PTSD | 0.009 | 8.316E-01 | 0.033 | 5.865E-01 | 0.073 | 6.154E-01 | 0.024 | 8.313E-01 | 0.028 | 7.716E-01 | 0.379 | 0.0009 | 0.9825 | NA | NA |
| PTSD (32) | GORD | 0.055 | 1.810E-03 | 0.048 | 3.026E-02 | 0.023 | 6.049E-01 | 0.046 | 3.146E-01 | 0.050 | 2.536E-01 | 0.076 | 0.0627 | 0.0083 | NA | NA |
| GORD (116) | PTSD | 0.242 | 1.35E-06 | 0.226 | 5.878E-04 | 0.327 | 3.181E-02 | -0.046 | 8.165E-01 | 0.145 | 4.532E-01 | 0.033 | 0.2511 | 0.0000 | NA | NA |

PTSD Post-traumatic stress disorder, GORD gastroesophageal reflux disease, PUD peptic ulcer disease, PGM GWAS combining disease-diagnosis of PUD and/or GERD and/or medications for their treatments, IBS irritable bowel disease, IBD inflammatory bowel disease, UKB United Kingdom Biobank, PGC Psychiatric Genomics Consortium.