

Molecular Alterations Caused by Alcohol Consumption in the UK Biobank: A Mendelian Randomisation Study

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Table S1. Genetic variants used in Mendelian randomisation analysis.

| SNP | effect allele | other allele | effect allele frequency | p value | effect estimate | standard error | sample size | F-statistics | SNP strength |
|------------|---------------|--------------|-------------------------|-----------------------|-----------------|----------------|-------------|--------------|--------------|
| rs705687 | A | G | 0.796 | 2.2×10^{-01} | -0.004 | 0.004 | 221645 | 1.501 | Weak |
| rs58107686 | C | A | 0.344 | 3.1×10^{-04} | -0.013 | 0.004 | 186537 | 12.960 | Strong |
| rs12088813 | A | C | 0.26 | 2.3×10^{-01} | -0.004 | 0.003 | 223144 | 1.472 | Weak |
| rs5024204 | A | T | 0.267 | 2.0×10^{-02} | 0.008 | 0.003 | 220093 | 5.402 | Weak |
| rs10753661 | G | A | 0.702 | 2.7×10^{-02} | -0.007 | 0.003 | 219744 | 4.909 | Weak |
| rs28680958 | G | A | 0.23 | 3.2×10^{-04} | -0.013 | 0.004 | 221508 | 12.991 | Strong |
| rs823114 | G | A | 0.553 | 1.1×10^{-03} | 0.010 | 0.003 | 220432 | 10.633 | Strong |
| rs77165542 | C | T | 0.0283 | 1.3×10^{-01} | -0.013 | 0.009 | 190275 | 2.287 | Weak |
| rs1260326 | T | C | 0.595 | 4.7×10^{-06} | 0.014 | 0.003 | 221214 | 20.796 | Strong |
| rs2178197 | A | G | 0.542 | 4.6×10^{-01} | -0.002 | 0.003 | 224519 | 0.553 | Weak |
| rs13383034 | C | T | 0.336 | 2.0×10^{-04} | 0.012 | 0.003 | 219150 | 13.762 | Strong |

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|------------|---------------|--------------|-------------------------|-----------------------|-----------------|----------------|-------------|--------------|--------------|
| rs13032049 | A | G | 0.28 | 1.4×10^{-06} | 0.016 | 0.003 | 219119 | 23.225 | Strong |
| rs828867 | G | A | 0.544 | 2.3×10^{-02} | 0.007 | 0.003 | 215058 | 5.157 | Weak |
| rs11692435 | G | A | 0.0856 | 1.8×10^{-01} | 0.007 | 0.005 | 197923 | 1.789 | Weak |
| rs13024996 | C | A | 0.352 | 4.8×10^{-03} | -0.009 | 0.003 | 221113 | 7.967 | Weak |
| rs72859280 | G | T | 0.0355 | 2.7×10^{-05} | 0.035 | 0.008 | 210722 | 17.638 | Strong |
| rs56337305 | T | C | 0.375 | 5.0×10^{-04} | -0.011 | 0.003 | 219788 | 12.000 | Strong |
| rs13094887 | A | T | 0.286 | 3.7×10^{-02} | -0.007 | 0.003 | 220966 | 4.335 | Weak |
| rs62250685 | A | G | 0.612 | 5.5×10^{-05} | -0.012 | 0.003 | 220967 | 16.208 | Strong |
| rs13066454 | C | T | 0.401 | 1.4×10^{-01} | -0.005 | 0.003 | 219462 | 2.216 | Weak |
| rs9838144 | G | C | 0.194 | 7.4×10^{-02} | -0.007 | 0.004 | 217833 | 3.208 | Weak |
| rs2011092 | T | C | 0.314 | 6.1×10^{-01} | -0.002 | 0.003 | 223636 | 0.253 | Weak |
| rs60654199 | C | A | 0.067 | 6.6×10^{-04} | -0.022 | 0.006 | 216549 | 11.639 | Strong |
| rs6787172 | T | G | 0.546 | 8.5×10^{-05} | -0.012 | 0.003 | 222544 | 15.312 | Strong |
| rs3748034 | G | T | 0.133 | 5.9×10^{-05} | -0.017 | 0.004 | 196985 | 16.038 | Strong |
| rs7682824 | C | T | 0.217 | 4.2×10^{-03} | -0.010 | 0.003 | 123149 | 8.216 | Weak |
| rs11940694 | A | G | 0.595 | 4.8×10^{-14} | 0.023 | 0.003 | 222804 | 56.745 | Strong |
| rs4501255 | C | G | 0.236 | 6.7×10^{-03} | 0.009 | 0.004 | 221053 | 7.352 | Weak |
| rs12499107 | A | G | 0.123 | 5.2×10^{-01} | 0.003 | 0.004 | 219969 | 0.410 | Weak |
| rs1229984 | T | C | 0.953 | 1.1×10^{-65} | 0.145 | 0.008 | 203476 | 294.457 | Strong |
| rs10028756 | G | A | 0.126 | 1.5×10^{-01} | -0.007 | 0.005 | 216539 | 2.125 | Weak |
| rs36052336 | A | G | 0.0519 | 1.0×10^{-02} | -0.016 | 0.006 | 215241 | 6.652 | Weak |
| rs2165670 | G | A | 0.0984 | 2.0×10^{-08} | 0.026 | 0.005 | 221948 | 31.517 | Strong |
| rs79139602 | A | T | 0.0339 | 4.6×10^{-01} | 0.008 | 0.010 | 220441 | 0.544 | Weak |

| SNP | effect allele | other allele | effect allele frequency | p value | effect estimate | standard error | sample size | F-statistics | SNP strength |
|------------|---------------|--------------|-------------------------|-----------------------|-----------------|----------------|-------------|--------------|--------------|
| rs4699791 | G | A | 0.114 | 6.4×10^{-01} | 0.002 | 0.005 | 216148 | 0.215 | Weak |
| rs13107325 | C | T | 0.0654 | 1.3×10^{-07} | -0.035 | 0.007 | 217038 | 27.784 | Strong |
| rs4690727 | C | G | 0.728 | 3.9×10^{-04} | 0.012 | 0.003 | 224095 | 12.724 | Strong |
| rs10004020 | G | A | 0.705 | 3.8×10^{-01} | 0.003 | 0.003 | 224239 | 0.773 | Weak |
| rs12651313 | C | G | 0.463 | 4.7×10^{-03} | -0.008 | 0.003 | 223005 | 7.987 | Weak |
| rs4916723 | A | C | 0.404 | 2.0×10^{-03} | -0.009 | 0.003 | 219877 | 9.587 | Weak |
| rs12655091 | G | A | 0.508 | 2.8×10^{-04} | -0.011 | 0.003 | 223535 | 13.135 | Strong |
| rs55872084 | G | T | 0.218 | 2.2×10^{-08} | 0.020 | 0.004 | 222708 | 31.247 | Strong |
| rs10085696 | A | G | 0.201 | 1.6×10^{-04} | -0.015 | 0.004 | 225774 | 14.258 | Strong |
| rs6460047 | T | C | 0.203 | 6.4×10^{-02} | 0.007 | 0.004 | 215693 | 3.432 | Weak |
| rs10236149 | A | G | 0.17 | 3.0×10^{-03} | -0.014 | 0.005 | 220984 | 8.779 | Weak |
| rs35034355 | G | A | 0.486 | 2.1×10^{-03} | -0.009 | 0.003 | 224533 | 9.469 | Weak |
| rs6951574 | T | C | 0.459 | 3.5×10^{-03} | 0.009 | 0.003 | 207047 | 8.505 | Weak |
| rs13250583 | C | T | 0.204 | 8.0×10^{-03} | -0.010 | 0.004 | 224238 | 7.038 | Weak |
| rs1217091 | T | C | 0.81 | 3.9×10^{-03} | 0.011 | 0.004 | 218773 | 8.356 | Weak |
| rs28601761 | C | G | 0.405 | 4.4×10^{-05} | 0.012 | 0.003 | 218148 | 16.588 | Strong |
| rs55932213 | A | G | 0.701 | 9.3×10^{-03} | 0.009 | 0.003 | 218281 | 6.757 | Weak |
| rs10978550 | T | C | 0.205 | 7.8×10^{-02} | -0.006 | 0.004 | 223278 | 3.101 | Weak |
| rs7074871 | G | A | 0.254 | 3.2×10^{-03} | -0.010 | 0.003 | 225774 | 8.721 | Weak |
| rs17665139 | C | T | 0.144 | 3.5×10^{-03} | -0.012 | 0.004 | 225644 | 8.519 | Weak |
| rs7950166 | C | T | 0.614 | 2.4×10^{-03} | -0.009 | 0.003 | 224871 | 9.235 | Weak |
| rs11030084 | C | T | 0.198 | 3.8×10^{-03} | -0.011 | 0.004 | 224959 | 8.395 | Weak |
| rs56030824 | G | A | 0.317 | 5.0×10^{-05} | -0.013 | 0.003 | 219170 | 16.449 | Strong |

| SNP | effect allele | other allele | effect allele frequency | p value | effect estimate | standard error | sample size | F-statistics | SNP strength |
|-------------|---------------|--------------|-------------------------|-----------------------|-----------------|----------------|-------------|--------------|--------------|
| rs10750025 | C | T | 0.698 | 2.7×10^{-04} | 0.012 | 0.003 | 220854 | 13.325 | Strong |
| rs1713676 | A | G | 0.522 | 1.9×10^{-02} | -0.007 | 0.003 | 223561 | 5.502 | Weak |
| rs4938230 | C | A | 0.837 | 3.9×10^{-03} | 0.012 | 0.004 | 222828 | 8.361 | Weak |
| rs682011 | T | C | 0.567 | 8.7×10^{-03} | 0.008 | 0.003 | 222378 | 6.899 | Weak |
| rs12795042 | A | C | 0.621 | 2.3×10^{-05} | -0.013 | 0.003 | 214048 | 17.973 | Strong |
| rs10876188 | C | T | 0.466 | 7.1×10^{-03} | -0.008 | 0.003 | 224376 | 7.231 | Weak |
| rs3809162 | A | G | 0.414 | 2.3×10^{-03} | 0.009 | 0.003 | 218440 | 9.299 | Weak |
| rs10506274 | G | T | 0.458 | 1.1×10^{-02} | -0.008 | 0.003 | 224459 | 6.487 | Weak |
| rs4842786 | G | A | 0.588 | 1.8×10^{-06} | -0.015 | 0.003 | 220405 | 22.750 | Strong |
| rs500321 | A | T | 0.729 | 1.2×10^{-03} | -0.011 | 0.003 | 220776 | 10.654 | Strong |
| rs1123285 | C | G | 0.339 | 1.7×10^{-03} | -0.010 | 0.003 | 221889 | 9.920 | Weak |
| rs2180870 | T | C | 0.132 | 1.5×10^{-04} | -0.017 | 0.004 | 218628 | 14.358 | Strong |
| rs28929474 | C | T | 0.0154 | 1.9×10^{-03} | -0.036 | 0.012 | 217304 | 9.626 | Weak |
| rs11625650 | G | A | 0.24 | 4.9×10^{-03} | -0.010 | 0.004 | 180176 | 7.959 | Weak |
| rs2472297 | C | T | 0.206 | 9.4×10^{-03} | 0.009 | 0.003 | 204466 | 6.769 | Weak |
| rs12907323 | A | G | 0.423 | 8.9×10^{-03} | 0.008 | 0.003 | 220126 | 6.850 | Weak |
| rs2764771 | G | A | 0.324 | 7.8×10^{-03} | 0.008 | 0.003 | 221589 | 7.067 | Weak |
| rs17177078 | C | T | 0.0664 | 2.0×10^{-03} | -0.019 | 0.006 | 219671 | 9.585 | Weak |
| rs378421 | G | A | 0.405 | 3.7×10^{-07} | -0.015 | 0.003 | 211061 | 25.832 | Strong |
| rs113443718 | G | A | 0.282 | 9.7×10^{-03} | -0.008 | 0.003 | 201951 | 6.667 | Weak |
| rs62044525 | C | G | 0.172 | 3.2×10^{-05} | -0.016 | 0.004 | 219063 | 17.202 | Strong |
| rs7185555 | G | C | 0.141 | 5.6×10^{-05} | -0.017 | 0.004 | 218108 | 16.228 | Strong |
| rs79616692 | G | C | 0.11 | 1.1×10^{-03} | 0.016 | 0.005 | 220007 | 10.619 | Strong |

| SNP | effect allele | other allele | effect allele frequency | p value | effect estimate | standard error | sample size | F-statistics | SNP strength |
|------------|---------------|--------------|-------------------------|-----------------------|-----------------|----------------|-------------|--------------|--------------|
| rs1104608 | G | C | 0.418 | 1.8×10^{-02} | -0.007 | 0.003 | 207406 | 5.590 | Weak |
| rs4548913 | G | A | 0.621 | 1.7×10^{-01} | -0.004 | 0.003 | 216859 | 1.911 | Weak |
| rs3803800 | A | G | 0.772 | 4.6×10^{-03} | 0.010 | 0.004 | 215507 | 7.959 | Weak |
| rs2854334 | A | G | 0.608 | 8.8×10^{-05} | 0.012 | 0.003 | 220715 | 15.323 | Strong |
| rs10438820 | C | T | 0.685 | 3.0×10^{-04} | 0.012 | 0.003 | 224723 | 13.102 | Strong |
| rs9950000 | C | T | 0.411 | 2.6×10^{-02} | -0.007 | 0.003 | 224879 | 5.000 | Weak |
| rs4092465 | A | G | 0.61 | 4.9×10^{-05} | -0.013 | 0.003 | 210391 | 16.578 | Strong |
| rs281379 | G | A | 0.477 | 6.1×10^{-09} | 0.017 | 0.003 | 218248 | 33.930 | Strong |
| rs4815364 | G | A | 0.628 | 1.8×10^{-02} | 0.007 | 0.003 | 214401 | 5.556 | Weak |
| rs9607814 | C | A | 0.212 | 1.1×10^{-01} | -0.007 | 0.004 | 186672 | 2.580 | Weak |