**Additional file 5. Mendelian randomization results after removing SNPs significantly (P < 5×10-8) associated with Alzheimer’s disease.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Metabolites | SNPs | OR | LCI | UCI | P-value |
| ApoB | 25 | 1.21  | 0.89  | 1.65  | 0.22  |
| IDL-C | 36 | 1.11  | 0.95  | 1.31  | 0.18  |
| IDL-FC | 38 | 1.07  | 0.91  | 1.25  | 0.41  |
| IDL-L | 40 | 1.04  | 0.89  | 1.22  | 0.62  |
| IDL-P | 37 | 1.04  | 0.88  | 1.23  | 0.67  |
| IDL-PL | 40 | 1.04  | 0.89  | 1.23  | 0.59  |
| LDL-C | 46 | 1.12  | 0.99  | 1.25  | 0.07  |
| L-LDL-C | 45 | 1.08  | 0.95  | 1.24  | 0.24  |
| L-LDL-CE | 42 | 1.07  | 0.93  | 1.24  | 0.33  |
| L-LDL-FC | 42 | 1.10  | 0.96  | 1.27  | 0.16  |
| L-LDL-L | 43 | 1.07  | 0.94  | 1.23  | 0.31  |
| L-LDL-P | 44 | 1.07  | 0.93  | 1.23  | 0.33  |
| L-LDL-PL | 43 | 1.10  | 0.96  | 1.27  | 0.17  |
| M-LDL-C | 41 | 1.08  | 0.95  | 1.23  | 0.23  |
| M-LDL-CE | 42 | 1.06  | 0.93  | 1.20  | 0.36  |
| M-LDL-L | 41 | 1.07  | 0.95  | 1.22  | 0.27  |
| M-LDL-P | 41 | 1.05  | 0.93  | 1.19  | 0.40  |
| M-LDL-PL | 30 | 1.06  | 0.91  | 1.25  | 0.45  |
| S-LDL-C | 32 | 1.12  | 0.94  | 1.34  | 0.21  |
| S-LDL-L | 34 | 1.08  | 0.93  | 1.25  | 0.33  |
| S-LDL-P | 30 | 1.06  | 0.89  | 1.25  | 0.53  |
| XS-VLDL-PL | 33 | 1.19  | 0.89  | 1.59  | 0.25  |
| Serum-C | 32 | 1.04  | 0.85  | 1.26  | 0.72  |
| Esterified cholesterol | 21 | 0.95  | 0.86  | 1.05  | 0.31  |

SNPs: single nucleotide polymorphisms; OR: odds ratio; LCI: lower 95% confidence interval; UCI: upper 95% confidence interval.