Research Article

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Causal Role Of Metabolites In Inflammatory Bowel Disease: Mendelian Randomization (MR) Study

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1. Abstract

1.1. Background:
The present Mendelian randomization (MR) study aimed to investigate the potential causal relationship between metabolites and inflammatory bowel diseases (IBD), including Crohn's disease (CD) and ulcerative colitis (UC).

1.2. Methods:
A comprehensive two-sample MR analysis of data from the FinnGen database determined the causal association between 1400 metabolite traits and IBD. Additionally, sensitivity analyses were used to verify the results' robustness and horizontal pleiotropy.

1.3. Results: Twenty-nine metabolites demonstrated protective effects on CD and UC, respectively. Thirty and thirty-four metabolites showed risk effects on CD and UC, respectively. In addition, CD and UC significantly affected one metabolite, respectively.

1.4. Conclusions:
Our study highlighted the relationship between metabolites and IBD while emphasizing their significance in the pathogenesis of CD and UC.

2. Keywords:
Inflammatory bowel diseases, Crohn's disease, Ulcerative colitis, Metabolites, MR analysis

3. Introduction

Inflammatory bowel disease (IBD) is a group of nonspecific chronic inflammatory diseases of the gastrointestinal tract with unknown etiology. It is classified as a type of digestive disorder and is characterized by severe diarrhea, electrolyte loss, bleeding, and abdominal pain [1]. The incidence of IBD is relatively high. IBD includes Crohn's disease (CD) and ulcerative colitis (UC). The underlying physiological process involves the production of a large number of cytokines (inflammatory factors), immune complexes, or metabolites from intestinal microbiota, which activate neutrophils and macrophages, leading to the generation of excessive reactive oxygen species and causing cellular oxidative damage, resulting in chronic inflammatory injury to the intestines. Numerous studies have confirmed the association between IBD and factors such as increased intestinal permeability, genetics, ischemia, biochemical abnormalities, infectious and parasitic pathogens, food allergies, and adverse drug reactions [2, 3]. The most prominent clinical manifestations of IBD include vomiting, diarrhea, changes in appetite, weight loss, anorexia, ascites, and peripheral edema.

With in-depth research on gut microbiota, researchers have gradually realized that its metabolites play an important role as mediators of the interaction between gut microbiota and host in the development of IBD. Metabolites of gut microbiota can be detected in various tissues, including feces, serum, urine, liver, cerebrospinal fluid, and intestinal tissue [4]. A study in the United States conducted fecal non-targeted metabolomics and metagenomic sequencing on 121 IBD patients and 34 healthy controls. The results showed that the metabolic profile of IBD patients underwent extensive changes, with over 2700 differential metabolites, including various fatty acids, bile acids, amino acids, sheath lipids, etc. The changes in metabolites were associated with a correlation to IBD inflammation, indicating that metabolites of gut microbiota play a role in maintaining intestinal homeostasis. Based on current research results, there is a wide variety of metabolites in the gut microbiota, which may be involved in various complex pathological and physiological processes of the host. Clarifying the gut microbiota host metabolic signal is crucial for revealing the pathogenesis of IBD. Mendelian randomization (MR) is a statistical analysis technique that uses genetic variation as an instrumental variable (IV) to detect and quantify causal relationships. This method has gained popularity recently due to its ability to overcome potential

confounding and reverse causal effects in observational research. The approach relies on three hypotheses, namely: (1) instrumental variables are strongly correlated with exposure factors, (2) instrumental variables are not correlated with confounding factors, and (3) instrumental variables are only correlated with exposure and outcomes. MR uses genotype instrumental variables to infer the relationship between exposure factors and outcomes. Due to its ability to avoid residual confounding factors, MR produces more reliable association results than observational studies or randomized controlled trials. More research is needed to utilize the MR method to assess the association between metabolites and IBD. This study aims to investigate the potential causal relationship between metabolite and IBD using a two-sample MR approach to establish a theoretical foundation for understanding the association between metabolite and the pathogenesis of IBD.

4. Materials and Methods

4.1. Study design

We used two-sample MR analyses to investigate the causal relationship between 1400 metabolites and IBD, which includes UC and CD. The MR analysis relies on three core assumptions: association, independence, and exclusion. These are as follows: 1) instrumental variables must have a strong correlation with exposure factors, 2) instrumental variables should not be associated with any exposure outcome related to confounding factors, and 3) instrumental variables can only be influenced by exposure factors and outcome variables.

4.2. Genome-wide association study (GWAS) data sources

We obtained data comprising approximately 19 million single nucleotide polymorphisms (SNPs) associated with IBD from data freeze 10 of the FinnGen study. This dataset included 2,033 and 5,931 patients and 409,940 and 405,386 healthy controls for CD and UC, respectively (https:// storage.Googleapis.com/finngen-public-data-r10/summary_stats/). Notably, all the cases included in this study were of European origin. A research study [5] was conducted on the Canadian Longitudinal Study on Aging (CLSA) cohort, which included 8,299 European individuals. The study involved a series of large GWASs that examined 1,091 metabolites and 309 metabolite ratios publicly available from the GWAS Catalog (accession numbers from GCST90199621 to GCST90201020) (Supplementary File 1). Of the 1,091 plasma metabolites tested, 850 belonged to eight super pathways: lipid, amino acid, xenobiotics, nucleotide, cofactor and vitamins, carbohydrate, peptide, and energy. The remaining 241 metabolites were either unknown or only partially characterized.

Supplementary File 1:

First Author	Accession Id	Reported Trait	Discovery Sample Ancestry	SummaryStatistics
Chen Y	GCST90199621	Carnitine levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199621/GCST90199621_buildGRCh38.tsv.gz
Chen Y	GCST90199622	Benzoate levels	7306 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199622/GCST90199622_buildGRCh38.tsv.gz
Chen Y	GCST90199623	Maltotriose levels	4641 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199623/GCST90199623_buildGRCh38.tsv.gz
Chen Y	GCST90199624	Hippurate levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199624/GCST90199624_buildGRCh38.tsv.gz
Chen Y	GCST90199625	Methionine sulfoxide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199625/GCST90199625_buildGRCh38.tsv.gz
Chen Y	GCST90199626	Xanthurenate levels	7965 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199626/GCST90199626_buildGRCh38.tsv.gz
Chen Y	GCST90199627	N-alpha-acetylornithine levels	5606 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199627/GCST90199627_buildGRCh38.tsv.gz
Chen Y	GCST90199628	3-methylhistidine levels	8289 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199628/GCST90199628_buildGRCh38.tsv.gz
Chen Y	GCST90199629	Glycerophosphorylcholine (GPC) levels	8212 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199629/GCST90199629_buildGRCh38.tsv.gz
Chen Y	GCST90199630	Phenylacetate levels	7059 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199630/GCST90199630_buildGRCh38.tsv.gz
Chen Y	GCST90199631	3-methyl-2-oxovalerate levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199631/GCST90199631_buildGRCh38.tsv.gz
Chen Y	GCST90199632	Tartarate levels	7099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199632/GCST90199632_buildGRCh38.tsv.gz
Chen Y	GCST90199633	Suberate (C8-DC) levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199633/GCST90199633_buildGRCh38.tsv.gz
Chen Y	GCST90199634	5-hydroxylysine levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199634/GCST90199634_buildGRCh38.tsv.gz

Chen Y	GCST90199635	3-phenylpropionate hydrocinnamate levels	7925 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199635/GCST90199635_buildGRCh38.tsv.gz
Chen Y	GCST90199636	Kynurenine levels	8244 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199636/GCST90199636_buildGRCh38.tsv.gz
Chen Y	GCST90199637	N-acetylglutamate levels	7802 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199637/GCST90199637_buildGRCh38.tsv.gz
Chen Y	GCST90199638	Glycerol3-phosphate levels	8201 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199638/GCST90199638_buildGRCh38.tsv.gz
Chen Y	GCST90199639	Imidazole lactate levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199639/GCST90199639_buildGRCh38.tsv.gz
Chen Y	GCST90199640	4-guanidinobutanoate levels	8144 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199640/GCST90199640_buildGRCh38.tsv.gz
Chen Y	GCST90199641	Glucuronate levels	7988 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199641/GCST90199641_buildGRCh38.tsv.gz
Chen Y	GCST90199642	Ribitol levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199642/GCST90199642_buildGRCh38.tsv.gz
Chen Y	GCST90199643	Glycodeoxycholate levels	6877 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199643/GCST90199643_buildGRCh38.tsv.gz
Chen Y	GCST90199644	Theobromine levels	8137 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199644/GCST90199644_buildGRCh38.tsv.gz
Chen Y	GCST90199645	Quinate levels	8200 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199645/GCST90199645_buildGRCh38.tsv.gz
Chen Y	GCST90199646	Gentisate levels	8013 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199646/GCST90199646_buildGRCh38.tsv.gz
Chen Y	GCST90199647	Theophylline levels	7822 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199647/GCST90199647_buildGRCh38.tsv.gz
Chen Y	GCST90199648	1,5-anhydroglucitol (1,5-ag) levels	8139 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199648/GCST90199648_buildGRCh38.tsv.gz
Chen Y	GCST90199649	1-stearoyl-2-arachidonoyl-GPI (18:0/20:4) levels	8134 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199649/GCST90199649_buildGRCh38.tsv.gz
Chen Y	GCST90199650	Indolelactate levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199650/GCST90199650_buildGRCh38.tsv.gz
Chen Y	GCST90199651	Docosahexaenoate DHA; 22:6n3 levels	8279 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199651/GCST90199651_buildGRCh38.tsv.gz
Chen Y	GCST90199652	1-stearoyl-2-oleoyl-GPS (18:0/18:1) levels	8055 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199652/GCST90199652_buildGRCh38.tsv.gz
Chen Y	GCST90199653	1-myristoyl-2-palmitoyl-gpc (14:0/16:0) levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199653/GCST90199653_buildGRCh38.tsv.gz
Chen Y	GCST90199654	Paraxanthine levels in elite athletes	7840 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199654/GCST90199654_buildGRCh38.tsv.gz
Chen Y	GCST90199655	4-methyl-2-oxopentanoate levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199655/GCST90199655_buildGRCh38.tsv.gz
Chen Y	GCST90199656	3-indoxyl sulfate levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199656/GCST90199656_buildGRCh38.tsv.gz
Chen Y	GCST90199657	Sphingosine 1-phosphate levels	8246 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199657/GCST90199657_buildGRCh38.tsv.gz
Chen Y	GCST90199658	Alpha-hydroxyisocaproate levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199658/GCST90199658_buildGRCh38.tsv.gz
Chen Y	GCST90199659	1-stearoyl-GPI (18:0) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199659/GCST90199659_buildGRCh38.tsv.gz
Chen Y	GCST90199660	1,2-dipalmitoyl-gpc (16:0/16:0) levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199660/GCST90199660_buildGRCh38.tsv.gz
Chen Y	GCST90199661	Maleate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199661/GCST90199661_buildGRCh38.tsv.gz
Chen Y	GCST90199662	Isovalerate (i5:0) levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199662/GCST90199662_buildGRCh38.tsv.gz

Chen Y	GCST90199663	4-acetylphenol sulfate levels	7135 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199663/GCST90199663_buildGRCh38.tsv.gz
Chen Y	GCST90199664	Phenyllactate (PLA) levels in elite athletes	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199664/GCST90199664_buildGRCh38.tsv.gz
Chen Y	GCST90199665	N-acetylaspartate (naa) levels	8148 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199665/GCST90199665_buildGRCh38.tsv.gz
Chen Y	GCST90199666	Palmitoylcarnitine levels (Metabolon platform)	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199666/GCST90199666_buildGRCh38.tsv.gz
Chen Y	GCST90199667	Erythritol levels in elite athletes	8167 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199667/GCST90199667_buildGRCh38.tsv.gz
Chen Y	GCST90199668	Hexanoylcarnitine levels (Biocrates platform)	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199668/GCST90199668_buildGRCh38.tsv.gz
Chen Y	GCST90199669	Acetylcarnitine levels (Biocrates platform)	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199669/GCST90199669_buildGRCh38.tsv.gz
Chen Y	GCST90199670	Iminodiacetate (IDA) levels	8213 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199670/GCST90199670_buildGRCh38.tsv.gz
Chen Y	GCST90199671	Cysteine s-sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199671/GCST90199671_buildGRCh38.tsv.gz
Chen Y	GCST90199672	Oxalate (ethanedioate) levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199672/GCST90199672_buildGRCh38.tsv.gz
Chen Y	GCST90199673	DHEAS levels	8228 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199673/GCST90199673_buildGRCh38.tsv.gz
Chen Y	GCST90199674	3-hydroxymyristate levels	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199674/GCST90199674_buildGRCh38.tsv.gz
Chen Y	GCST90199675	Homoarginine levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199675/GCST90199675_buildGRCh38.tsv.gz
Chen Y	GCST90199676	1-oleoylglycerol (18:1) levels	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199676/GCST90199676_buildGRCh38.tsv.gz
Chen Y	GCST90199677	3-methyl-2-oxobutyrate levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199677/GCST90199677_buildGRCh38.tsv.gz
Chen Y	GCST90199678	Tartronate (hydroxymalonate) levels	8125 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199678/GCST90199678_buildGRCh38.tsv.gz
Chen Y	GCST90199679	2,3-dihydroxypyridine levels	6496 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199679/GCST90199679_buildGRCh38.tsv.gz
Chen Y	GCST90199680	3-hydroxyoctanoate levels	8182 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199680/GCST90199680_buildGRCh38.tsv.gz
Chen Y	GCST90199681	2-hydroxyoctanoate levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199681/GCST90199681_buildGRCh38.tsv.gz
Chen Y	GCST90199682	Homocitrulline levels	7998 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199682/GCST90199682_buildGRCh38.tsv.gz
Chen Y	GCST90199683	Indoleacetate levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199683/GCST90199683_buildGRCh38.tsv.gz
Chen Y	GCST90199684	1-linoleoylglycerol (18:2) levels	8212 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199684/GCST90199684_buildGRCh38.tsv.gz
Chen Y	GCST90199685	2-linoleoylglycerol (18:2) levels	6378 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199685/GCST90199685_buildGRCh38.tsv.gz
Chen Y	GCST90199686	Indolepropionate levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199686/GCST90199686_buildGRCh38.tsv.gz
Chen Y	GCST90199687	Threonate levels	8151 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199687/GCST90199687_buildGRCh38.tsv.gz
Chen Y	GCST90199688	N-acetylglycine levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199688/GCST90199688_buildGRCh38.tsv.gz
Chen Y	GCST90199689	Glycolithocholate levels	7158 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199689/GCST90199689_buildGRCh38.tsv.gz
Chen Y	GCST90199690	EDTA levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199690/GCST90199690_buildGRCh38.tsv.gz

Chen Y	GCST90199691	1-methylhistidine levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199691/GCST90199691_buildGRCh38.tsv.gz
Chen Y	GCST90199692	Citramalate levels	7125 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199692/GCST90199692_buildGRCh38.tsv.gz
Chen Y	GCST90199693	3-hydroxydecanoate levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199693/GCST90199693_buildGRCh38.tsv.gz
Chen Y	GCST90199694	1,3-dimethylurate levels	7444 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199694/GCST90199694_buildGRCh38.tsv.gz
Chen Y	GCST90199695	Galactonate levels	7518 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199695/GCST90199695_buildGRCh38.tsv.gz
Chen Y	GCST90199696	Trigonelline levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199696/GCST90199696_buildGRCh38.tsv.gz
Chen Y	GCST90199697	Dodecanedioate levels	8240 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199697/GCST90199697_buildGRCh38.tsv.gz
Chen Y	GCST90199698	Isobutyrylcarnitine (c4) levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199698/GCST90199698_buildGRCh38.tsv.gz
Chen Y	GCST90199699	3-methylxanthine levels	8085 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199699/GCST90199699_buildGRCh38.tsv.gz
Chen Y	GCST90199700	3-hydroxylaurate levels	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199700/GCST90199700_buildGRCh38.tsv.gz
Chen Y	GCST90199701	Pyridoxate levels	8089 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199701/GCST90199701_buildGRCh38.tsv.gz
Chen Y	GCST90199702	5-hydroxyhexanoate levels	7097 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199702/GCST90199702_buildGRCh38.tsv.gz
Chen Y	GCST90199703	Gamma-glutamylvaline levels	8179 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199703/GCST90199703_buildGRCh38.tsv.gz
Chen Y	GCST90199704	3-hydroxysebacate levels	7325 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199704/GCST90199704_buildGRCh38.tsv.gz
Chen Y	GCST90199705	Propionylglycine levels	7311 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199705/GCST90199705_buildGRCh38.tsv.gz
Chen Y	GCST90199706	Butyrylglycine levels	6044 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199706/GCST90199706_buildGRCh38.tsv.gz
Chen Y	GCST90199707	Pro-hydroxy-pro levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199707/GCST90199707_buildGRCh38.tsv.gz
Chen Y	GCST90199708	Propionylcarnitine (c3) levels	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199708/GCST90199708_buildGRCh38.tsv.gz
Chen Y	GCST90199709	Adrenate (22:4n6) levels	8279 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199709/GCST90199709_buildGRCh38.tsv.gz
Chen Y	GCST90199710	Docosatrienoate (22:3n3) levels	6511 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199710/GCST90199710_buildGRCh38.tsv.gz
Chen Y	GCST90199711	Docosadienoate (22:2n6) levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199711/GCST90199711_buildGRCh38.tsv.gz
Chen Y	GCST90199712	3-carboxy-4-methyl-5-propyl-2-uranpropanoate (cmpf) levels	8270 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199712/GCST90199712_buildGRCh38.tsv.gz
Chen Y	GCST90199713	Docosapentaenoate n3 DPA; 22:5n3 levels	8284 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199713/GCST90199713_buildGRCh38.tsv.gz
Chen Y	GCST90199714	3-hydroxy-2-ethylpropionate levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199714/GCST90199714_buildGRCh38.tsv.gz
Chen Y	GCST90199715	Myristoleate (14:1n5) levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199715/GCST90199715_buildGRCh38.tsv.gz
Chen Y	GCST90199716	10-undecenoate (11:1n1) levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199716/GCST90199716_buildGRCh38.tsv.gz
Chen Y	GCST90199717	1-methyl-4-imidazoleacetate levels	8090 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199717/GCST90199717_buildGRCh38.tsv.gz
Chen Y	GCST90199718	Sebacate (C10-DC) levels	7926 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199718/GCST90199718_buildGRCh38.tsv.gz

Chen Y	GCST90199719	Tauro-beta-muricholate levels	4661 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199719/GCST90199719_buildGRCh38.tsv.gz
Chen Y	GCST90199720	Octanoylcarnitine (c8) levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199720/GCST90199720_buildGRCh38.tsv.gz
Chen Y	GCST90199721	Stearidonate (18:4n3) levels	8240 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199721/GCST90199721_buildGRCh38.tsv.gz
Chen Y	GCST90199722	Decanoylcarnitine (C10) levels	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199722/GCST90199722_buildGRCh38.tsv.gz
Chen Y	GCST90199723	5-dodecenoate (12:1n7) levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199723/GCST90199723_buildGRCh38.tsv.gz
Chen Y	GCST90199724	N-acetylisoleucine levels	7223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199724/GCST90199724_buildGRCh38.tsv.gz
Chen Y	GCST90199725	Campesterol levels	5300 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199725/GCST90199725_buildGRCh38.tsv.gz
Chen Y	GCST90199726	N-acetylthreonine levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199726/GCST90199726_buildGRCh38.tsv.gz
Chen Y	GCST90199727	1-oleoyl-GPC (18:1) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199727/GCST90199727_buildGRCh38.tsv.gz
Chen Y	GCST90199728	10-nonadecenoate (19:1n9) levels	8277 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199728/GCST90199728_buildGRCh38.tsv.gz
Chen Y	GCST90199729	Piperine levels	8155 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199729/GCST90199729_buildGRCh38.tsv.gz
Chen Y	GCST90199730	Carnitine C14 levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199730/GCST90199730_buildGRCh38.tsv.gz
Chen Y	GCST90199731	10-heptadecenoate (17:1n7) levels	8282 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199731/GCST90199731_buildGRCh38.tsv.gz
Chen Y	GCST90199732	1-stearoyl-gpc (18:0) levels	8240 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199732/GCST90199732_buildGRCh38.tsv.gz
Chen Y	GCST90199733	1-palmitoyl-GPC (16:0) levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199733/GCST90199733_buildGRCh38.tsv.gz
Chen Y	GCST90199734	Hyocholate levels	5782 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199734/GCST90199734_buildGRCh38.tsv.gz
Chen Y	GCST90199735	N-acetylhistidine levels	7054 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199735/GCST90199735_buildGRCh38.tsv.gz
Chen Y	GCST90199736	Alpha-hydroxyisovalerate levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199736/GCST90199736_buildGRCh38.tsv.gz
Chen Y	GCST90199737	N-acetylproline levels	7100 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199737/GCST90199737_buildGRCh38.tsv.gz
Chen Y	GCST90199738	Stachydrine levels	8297 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199738/GCST90199738_buildGRCh38.tsv.gz
Chen Y	GCST90199739	Salicyluric glucuronide levels	5190 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199739/GCST90199739_buildGRCh38.tsv.gz
Chen Y	GCST90199740	P-cresol sulfate levels	8183 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199740/GCST90199740_buildGRCh38.tsv.gz
Chen Y	GCST90199741	Gamma-glutamylglycine levels	8263 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199741/GCST90199741_buildGRCh38.tsv.gz
Chen Y	GCST90199742	1-linoleoyl-gpc (18:2) levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199742/GCST90199742_buildGRCh38.tsv.gz
Chen Y	GCST90199743	Stearoylcarnitine levels	8133 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199743/GCST90199743_buildGRCh38.tsv.gz
Chen Y	GCST90199744	Eicosenoate (20:1) levels	8277 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199744/GCST90199744_buildGRCh38.tsv.gz
Chen Y	GCST90199745	Aconitate [cis or trans] levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199745/GCST90199745_buildGRCh38.tsv.gz
Chen Y	GCST90199746	Erythronate levels	8198 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199746/GCST90199746_buildGRCh38.tsv.gz

Chen Y	GCST90199747	Isovalerylcarnitine (C5) levels	8266 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199747/GCST90199747_buildGRCh38.tsv.gz
Chen Y	GCST90199748	Linolenate [alpha or gamma; (18:3n3 or 6)] levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199748/GCST90199748_buildGRCh38.tsv.gz
Chen Y	GCST90199749	Gamma-glutamylthreonine levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199749/GCST90199749_buildGRCh38.tsv.gz
Chen Y	GCST90199750	Laurylcarnitine levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199750/GCST90199750_buildGRCh38.tsv.gz
Chen Y	GCST90199751	Gamma-glutamylmethionine levels	8237 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199751/GCST90199751_buildGRCh38.tsv.gz
Chen Y	GCST90199752	Epiandrosterone sulfate levels	8174 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199752/GCST90199752_buildGRCh38.tsv.gz
Chen Y	GCST90199753	Gamma-glutamyltryptophan levels	7902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199753/GCST90199753_buildGRCh38.tsv.gz
Chen Y	GCST90199754	7-methylxanthine levels	8019 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199754/GCST90199754_buildGRCh38.tsv.gz
Chen Y	GCST90199755	3,7-dimethylurate levels	6894 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199755/GCST90199755_buildGRCh38.tsv.gz
Chen Y	GCST90199756	1,7-dimethyluric acid levels	7950 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199756/GCST90199756_buildGRCh38.tsv.gz
Chen Y	GCST90199757	1,3,7-trimethylurate levels	7446 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199757/GCST90199757_buildGRCh38.tsv.gz
Chen Y	GCST90199758	N4-acetylcytidine levels	7425 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199758/GCST90199758_buildGRCh38.tsv.gz
Chen Y	GCST90199759	Indolebutyrate levels	4423 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199759/GCST90199759_buildGRCh38.tsv.gz
Chen Y	GCST90199760	5-acetylamino-6-amino-3-methyluracil levels	8006 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199760/GCST90199760_buildGRCh38.tsv.gz
Chen Y	GCST90199761	N1-methylinosine levels	8147 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199761/GCST90199761_buildGRCh38.tsv.gz
Chen Y	GCST90199762	N6-carbamoylthreonyladenosine levels	8176 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199762/GCST90199762_buildGRCh38.tsv.gz
Chen Y	GCST90199763	1-methylxanthine levels	7959 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199763/GCST90199763_buildGRCh38.tsv.gz
Chen Y	GCST90199764	N2,n2-dimethylguanosine levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199764/GCST90199764_buildGRCh38.tsv.gz
Chen Y	GCST90199765	4-hydroxyhippurate levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199765/GCST90199765_buildGRCh38.tsv.gz
Chen Y	GCST90199766	3-(3-amino-3-carboxypropyl) uridine levels	7679 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199766/GCST90199766_buildGRCh38.tsv.gz
Chen Y	GCST90199767	5,6-dihydrouridine levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199767/GCST90199767_buildGRCh38.tsv.gz
Chen Y	GCST90199768	Phenylacetylglutamine levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199768/GCST90199768_buildGRCh38.tsv.gz
Chen Y	GCST90199769	3-hydroxydodecanedioate levels	7168 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199769/GCST90199769_buildGRCh38.tsv.gz
Chen Y	GCST90199770	1-arachidonylglycerol (20:4) levels	7650 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199770/GCST90199770_buildGRCh38.tsv.gz
Chen Y	GCST90199771	7-methylguanine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199771/GCST90199771_buildGRCh38.tsv.gz
Chen Y	GCST90199772	1-stearoyl-GPE (18:0) levels	8270 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199772/GCST90199772_buildGRCh38.tsv.gz
Chen Y	GCST90199773	Phenol sulfate levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199773/GCST90199773_buildGRCh38.tsv.gz
Chen Y	GCST90199774	Oleoylcarnitine levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199774/GCST90199774_buildGRCh38.tsv.gz

Chen Y	GCST90199775	Gamma-glutamylisoleucine levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199775/GCST90199775_buildGRCh38.tsv.gz
Chen Y	GCST90199776	Malonylcarnitine levels	5822 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199776/GCST90199776_buildGRCh38.tsv.gz
Chen Y	GCST90199777	1-palmitoleoyl-GPC (16:1) levels	8227 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199777/GCST90199777_buildGRCh38.tsv.gz
Chen Y	GCST90199778	N-methyl-2-pyridone-5-carboxamide levels	8177 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199778/GCST90199778_buildGRCh38.tsv.gz
Chen Y	GCST90199779	Gamma-glutamyl-2-aminobutyrate levels	7826 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199779/GCST90199779_buildGRCh38.tsv.gz
Chen Y	GCST90199780	1-stearoyl-GPG (18:0) levels	6806 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199780/GCST90199780_buildGRCh38.tsv.gz
Chen Y	GCST90199781	Hexanoylglycine levels	6015 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199781/GCST90199781_buildGRCh38.tsv.gz
Chen Y	GCST90199782	Glutamine degradant levels	8293 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199782/GCST90199782_buildGRCh38.tsv.gz
Chen Y	GCST90199783	5-methyluridine (ribothymidine) levels	8168 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199783/GCST90199783_buildGRCh38.tsv.gz
Chen Y	GCST90199784	Cysteine-glutathione disulfide levels	7812 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199784/GCST90199784_buildGRCh38.tsv.gz
Chen Y	GCST90199785	Isovalerylglycine levels	7100 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199785/GCST90199785_buildGRCh38.tsv.gz
Chen Y	GCST90199786	2-hydroxy-3-methylvalerate levels	8246 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199786/GCST90199786_buildGRCh38.tsv.gz
Chen Y	GCST90199787	Homostachydrine levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199787/GCST90199787_buildGRCh38.tsv.gz
Chen Y	GCST90199788	1-arachidonoyl-gpc (20:4n6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199788/GCST90199788_buildGRCh38.tsv.gz
Chen Y	GCST90199789	2-palmitoyl-GPC (16:0) levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199789/GCST90199789_buildGRCh38.tsv.gz
Chen Y	GCST90199790	2-palmitoleoyl-GPC (16:1) levels	6697 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199790/GCST90199790_buildGRCh38.tsv.gz
Chen Y	GCST90199791	1-arachidonoyl-GPE (20:4n6) levels	8270 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199791/GCST90199791_buildGRCh38.tsv.gz
Chen Y	GCST90199792	1-palmitoyl-GPE (16:0) levels	8276 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199792/GCST90199792_buildGRCh38.tsv.gz
Chen Y	GCST90199793	1-linoleoyl-GPE (18:2) levels	8279 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199793/GCST90199793_buildGRCh38.tsv.gz
Chen Y	GCST90199794	1-oleoyl-GPE (18:1) levels	8283 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199794/GCST90199794_buildGRCh38.tsv.gz
Chen Y	GCST90199795	2-hydroxypalmitate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199795/GCST90199795_buildGRCh38.tsv.gz
Chen Y	GCST90199796	Docosapentaenoate (n6 DPA; 22:5n6) levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199796/GCST90199796_buildGRCh38.tsv.gz
Chen Y	GCST90199797	Gulonate levels	7731 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199797/GCST90199797_buildGRCh38.tsv.gz
Chen Y	GCST90199798	Isobutyrylglycine levels	7465 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199798/GCST90199798_buildGRCh38.tsv.gz
Chen Y	GCST90199799	Glutarylcarnitine (c5-dc) levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199799/GCST90199799_buildGRCh38.tsv.gz
Chen Y	GCST90199800	Carnitine C5:1 levels	8097 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199800/GCST90199800_buildGRCh38.tsv.gz
Chen Y	GCST90199801	Hydroquinone sulfate levels	7682 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199801/GCST90199801_buildGRCh38.tsv.gz
Chen Y	GCST90199802	Beta-hydroxyisovaleroylcarnitine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199802/GCST90199802_buildGRCh38.tsv.gz

Chen Y	GCST90199803	Catechol sulfate levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199803/GCST90199803_buildGRCh38.tsv.gz
Chen Y	GCST90199804	7-alpha-hydroxy-3-oxo-4-cholestenoate (7-hoca) levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199804/GCST90199804_buildGRCh38.tsv.gz
Chen Y	GCST90199805	Octadecanedioate levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199805/GCST90199805_buildGRCh38.tsv.gz
Chen Y	GCST90199806	Tetradecanedioate (C14-DC) levels	8268 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199806/GCST90199806_buildGRCh38.tsv.gz
Chen Y	GCST90199807	Hexadecanedioate (C16-DC) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199807/GCST90199807_buildGRCh38.tsv.gz
Chen Y	GCST90199808	Glycerophosphoethanolamine levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199808/GCST90199808_buildGRCh38.tsv.gz
Chen Y	GCST90199809	Taurolithocholate 3-sulfate levels	8124 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199809/GCST90199809_buildGRCh38.tsv.gz
Chen Y	GCST90199810	1-palmitoyl-GPI (16:0) levels	8246 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199810/GCST90199810_buildGRCh38.tsv.gz
Chen Y	GCST90199811	Glycolithocholate sulfate levels	8165 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199811/GCST90199811_buildGRCh38.tsv.gz
Chen Y	GCST90199812	3-(3-hydroxyphenyl)propionate levels	7304 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199812/GCST90199812_buildGRCh38.tsv.gz
Chen Y	GCST90199813	Deoxycarnitine levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199813/GCST90199813_buildGRCh38.tsv.gz
Chen Y	GCST90199814	Alpha-hydroxycaproate levels	5169 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199814/GCST90199814_buildGRCh38.tsv.gz
Chen Y	GCST90199815	1-ribosyl-imidazoleacetate levels	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199815/GCST90199815_buildGRCh38.tsv.gz
Chen Y	GCST90199816	3,4-dihydroxybutyrate levels	8142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199816/GCST90199816_buildGRCh38.tsv.gz
Chen Y	GCST90199817	Indoleacetylglutamine levels	6161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199817/GCST90199817_buildGRCh38.tsv.gz
Chen Y	GCST90199818	Mannitol/sorbitol levels	8211 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199818/GCST90199818_buildGRCh38.tsv.gz
Chen Y	GCST90199819	Tryptophan betaine levels	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199819/GCST90199819_buildGRCh38.tsv.gz
Chen Y	GCST90199820	Dihomo-linolenate (20:3n3 or n6) levels	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199820/GCST90199820_buildGRCh38.tsv.gz
Chen Y	GCST90199821	1-linoleoyl-GPI (18:2) levels	8268 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199821/GCST90199821_buildGRCh38.tsv.gz
Chen Y	GCST90199822	1-oleoyl-GPI (18:1) levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199822/GCST90199822_buildGRCh38.tsv.gz
Chen Y	GCST90199823	O-cresol sulfate levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199823/GCST90199823_buildGRCh38.tsv.gz
Chen Y	GCST90199824	4-vinylphenol sulfate levels	8280 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199824/GCST90199824_buildGRCh38.tsv.gz
Chen Y	GCST90199825	Pyrraline levels	7920 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199825/GCST90199825_buildGRCh38.tsv.gz
Chen Y	GCST90199826	N6-acetyllysine levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199826/GCST90199826_buildGRCh38.tsv.gz
Chen Y	GCST90199827	Thymol sulfate levels	8063 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199827/GCST90199827_buildGRCh38.tsv.gz
Chen Y	GCST90199828	N-acetylserine levels	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199828/GCST90199828_buildGRCh38.tsv.gz
Chen Y	GCST90199829	3-methyladipate levels	6958 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199829/GCST90199829_buildGRCh38.tsv.gz
Chen Y	GCST90199830	4-ethylphenylsulfate levels	8139 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199830/GCST90199830_buildGRCh38.tsv.gz

Chen Y	GCST90199831	1-stearoyl-2-oleoyl-GPE (18:0/18:1) levels	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199831/GCST90199831_buildGRCh38.tsv.gz
Chen Y	GCST90199832	Dimethylarginine (sdma + adma) levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199832/GCST90199832_buildGRCh38.tsv.gz
Chen Y	GCST90199833	Hexanoylglutamine levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199833/GCST90199833_buildGRCh38.tsv.gz
Chen Y	GCST90199834	Gamma-glutamylalanine levels	7518 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199834/GCST90199834_buildGRCh38.tsv.gz
Chen Y	GCST90199835	5alpha-androstan-3beta,17beta-diol disulfate levels	8199 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199835/GCST90199835_buildGRCh38.tsv.gz
Chen Y	GCST90199836	N-methylproline levels	8299 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199836/GCST90199836_buildGRCh38.tsv.gz
Chen Y	GCST90199837	Carotenoid levels (cryptoxanthin)	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199837/GCST90199837_buildGRCh38.tsv.gz
Chen Y	GCST90199838	5alpha-pregnan-3beta,20alpha-diol disulfate levels	8130 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199838/GCST90199838_buildGRCh38.tsv.gz
Chen Y	GCST90199839	Taurocholenate sulfate levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199839/GCST90199839_buildGRCh38.tsv.gz
Chen Y	GCST90199840	Pregnenediol disulfate (C21H34O8S2) levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199840/GCST90199840_buildGRCh38.tsv.gz
Chen Y	GCST90199841	Glycocholenate sulfate levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199841/GCST90199841_buildGRCh38.tsv.gz
Chen Y	GCST90199842	Androstenediol (3beta,17beta) disulfate (1) levels	8222 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199842/GCST90199842_buildGRCh38.tsv.gz
Chen Y	GCST90199843	Chiro-inositol levels	4429 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199843/GCST90199843_buildGRCh38.tsv.gz
Chen Y	GCST90199844	1-palmitoyl-2-linoleoyl-GPE (16:0/18:2) levels	8266 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199844/GCST90199844_buildGRCh38.tsv.gz
Chen Y	GCST90199845	Sphinganine-1-phosphate levels	8126 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199845/GCST90199845_buildGRCh38.tsv.gz
Chen Y	GCST90199846	Glycosyl-N-stearoyl-sphingosine (d18:1/18:0) levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199846/GCST90199846_buildGRCh38.tsv.gz
Chen Y	GCST90199847	4-allylphenol sulfate levels	8240 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199847/GCST90199847_buildGRCh38.tsv.gz
Chen Y	GCST90199848	Succinylcarnitine levels	8212 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199848/GCST90199848_buildGRCh38.tsv.gz
Chen Y	GCST90199849	21-hydroxypregnenolone disulfate levels	8132 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199849/GCST90199849_buildGRCh38.tsv.gz
Chen Y	GCST90199850	5alpha-androstan-3alpha,17alpha-diol monosulfate levels	5524 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199850/GCST90199850_buildGRCh38.tsv.gz
Chen Y	GCST90199851	Androstenediol (3beta,17beta) disulfate (2) levels	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199851/GCST90199851_buildGRCh38.tsv.gz
Chen Y	GCST90199852	5alpha-androstan-3beta,17alpha-diol disulfate levels	7103 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199852/GCST90199852_buildGRCh38.tsv.gz
Chen Y	GCST90199853	5alpha-pregnan-3beta,20beta-diol monosulfate (1) levels	7772 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199853/GCST90199853_buildGRCh38.tsv.gz
Chen Y	GCST90199854	5alpha-pregnan-3beta,20alpha-diol monosulfate (2) levels	8028 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199854/GCST90199854_buildGRCh38.tsv.gz
Chen Y	GCST90199855	5alpha-androstan-3beta,17beta-diol monosulfate (2) levels	7066 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199855/GCST90199855_buildGRCh38.tsv.gz
Chen Y	GCST90199856	Androstenediol (3alpha, 17alpha) monosulfate (3) levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199856/GCST90199856_buildGRCh38.tsv.gz
Chen Y	GCST90199857	5alpha-pregnan-diol disulfate levels	4110 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199857/GCST90199857_buildGRCh38.tsv.gz
Chen Y	GCST90199858	5alpha-androstan-3alpha,17beta-diol monosulfate (1) levels	7608 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199858/GCST90199858_buildGRCh38.tsv.gz

Chen Y	GCST90199859	5alpha-androstan-3alpha,17beta-diol disulfate levels	5082 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199859/GCST90199859_buildGRCh38.tsv.gz
Chen Y	GCST90199860	Andro steroid monosulfate C19H28O6S (1) levels	7415 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199860/GCST90199860_buildGRCh38.tsv.gz
Chen Y	GCST90199861	Pregnenediol sulfate (C21H34O5S) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199861/GCST90199861_buildGRCh38.tsv.gz
Chen Y	GCST90199862	4-hydroxycoumarin levels	6944 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199862/GCST90199862_buildGRCh38.tsv.gz
Chen Y	GCST90199863	16a-hydroxy DHEA 3-sulfate levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199863/GCST90199863_buildGRCh38.tsv.gz
Chen Y	GCST90199864	Gamma-CEHC levels	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199864/GCST90199864_buildGRCh38.tsv.gz
Chen Y	GCST90199865	2-hydroxyglutarate levels	7769 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199865/GCST90199865_buildGRCh38.tsv.gz
Chen Y	GCST90199866	N-acetyl-beta-alanine levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199866/GCST90199866_buildGRCh38.tsv.gz
Chen Y	GCST90199867	Tridecenedioate (C13:1-DC) levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199867/GCST90199867_buildGRCh38.tsv.gz
Chen Y	GCST90199868	N-acetyl-3-methylhistidine levels	7018 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199868/GCST90199868_buildGRCh38.tsv.gz
Chen Y	GCST90199869	2-hydroxyhippurate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199869/GCST90199869_buildGRCh38.tsv.gz
Chen Y	GCST90199870	4-cholesten-3-one levels	6990 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199870/GCST90199870_buildGRCh38.tsv.gz
Chen Y	GCST90199871	Androstenediol (3beta,17beta) monosulfate (2) levels	7811 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199871/GCST90199871_buildGRCh38.tsv.gz
Chen Y	GCST90199872	Androstenediol (3beta,17beta) monosulfate (1) levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199872/GCST90199872_buildGRCh38.tsv.gz
Chen Y	GCST90199873	Pregnenolone sulfate levels	7772 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199873/GCST90199873_buildGRCh38.tsv.gz
Chen Y	GCST90199874	S-methylmethionine levels	6674 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199874/GCST90199874_buildGRCh38.tsv.gz
Chen Y	GCST90199875	13-HODE + 9-HODE levels	8207 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199875/GCST90199875_buildGRCh38.tsv.gz
Chen Y	GCST90199876	Palmitoyl sphingomyelin (d18:1/16:0) levels	8269 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199876/GCST90199876_buildGRCh38.tsv.gz
Chen Y	GCST90199877	Indole-3-carboxylate levels	4989 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199877/GCST90199877_buildGRCh38.tsv.gz
Chen Y	GCST90199878	Sphingomyelin (d18:1/18:1, d18:2/18:0) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199878/GCST90199878_buildGRCh38.tsv.gz
Chen Y	GCST90199879	Ergothioneine levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199879/GCST90199879_buildGRCh38.tsv.gz
Chen Y	GCST90199880	Cis-4-decenoylcarnitine (C10:1) levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199880/GCST90199880_buildGRCh38.tsv.gz
Chen Y	GCST90199881	5-(galactosylhydroxy)-L-lysine levels	6898 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199881/GCST90199881_buildGRCh38.tsv.gz
Chen Y	GCST90199882	2s,3R-dihydroxybutyrate levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199882/GCST90199882_buildGRCh38.tsv.gz
Chen Y	GCST90199883	Cysteinylglycine disulfide levels	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199883/GCST90199883_buildGRCh38.tsv.gz
Chen Y	GCST90199884	2,3-dihydroxyisovalerate levels	8268 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199884/GCST90199884_buildGRCh38.tsv.gz
Chen Y	GCST90199885	Alpha-ketoglutaramate levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199885/GCST90199885_buildGRCh38.tsv.gz
Chen Y	GCST90199886	3-methylglutaconate levels	8197 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199886/GCST90199886_buildGRCh38.tsv.gz

Chen Y	GCST90199887	(16 or 17)-methylstearate (a19:0 or i19:0) levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199887/GCST90199887_buildGRCh38.tsv.gz
Chen Y	GCST90199888	Cinnamoylglycine levels	7824 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199888/GCST90199888_buildGRCh38.tsv.gz
Chen Y	GCST90199889	2R,3R-dihydroxybutyrate levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199889/GCST90199889_buildGRCh38.tsv.gz
Chen Y	GCST90199890	4-hydroxyglutamate levels	7226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199890/GCST90199890_buildGRCh38.tsv.gz
Chen Y	GCST90199891	S-methylcysteine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199891/GCST90199891_buildGRCh38.tsv.gz
Chen Y	GCST90199892	Isoursodeoxycholate levels	8234 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199892/GCST90199892_buildGRCh38.tsv.gz
Chen Y	GCST90199893	Cis-4-decenoate (10:1n6) levels	8173 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199893/GCST90199893_buildGRCh38.tsv.gz
Chen Y	GCST90199894	4-oxo-retinoic acid levels	7514 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199894/GCST90199894_buildGRCh38.tsv.gz
Chen Y	GCST90199895	1-lignoceroyl-GPC (24:0) levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199895/GCST90199895_buildGRCh38.tsv.gz
Chen Y	GCST90199896	Sulfate levels	8230 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199896/GCST90199896_buildGRCh38.tsv.gz
Chen Y	GCST90199897	4-hydroxy-2-oxoglutaric acid levels	7919 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199897/GCST90199897_buildGRCh38.tsv.gz
Chen Y	GCST90199898	Glycoursodeoxycholate levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199898/GCST90199898_buildGRCh38.tsv.gz
Chen Y	GCST90199899	1-(1-enyl-palmitoyl)-GPC (p-16:0) levels	8170 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199899/GCST90199899_buildGRCh38.tsv.gz
Chen Y	GCST90199900	Argininate levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199900/GCST90199900_buildGRCh38.tsv.gz
Chen Y	GCST90199901	1-methyl-5-imidazoleacetate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199901/GCST90199901_buildGRCh38.tsv.gz
Chen Y	GCST90199902	Hydantoin-5-propionate levels	8164 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199902/GCST90199902_buildGRCh38.tsv.gz
Chen Y	GCST90199903	2-oxoarginine levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199903/GCST90199903_buildGRCh38.tsv.gz
Chen Y	GCST90199904	Pantoate levels	7662 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199904/GCST90199904_buildGRCh38.tsv.gz
Chen Y	GCST90199905	Formiminoglutamate levels	8175 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199905/GCST90199905_buildGRCh38.tsv.gz
Chen Y	GCST90199906	1-(1-enyl-palmitoyl)-GPE (p-16:0) levels	8227 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199906/GCST90199906_buildGRCh38.tsv.gz
Chen Y	GCST90199907	S-methylcysteine sulfoxide levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199907/GCST90199907_buildGRCh38.tsv.gz
Chen Y	GCST90199908	2-o-methylascorbic acid levels	8219 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199908/GCST90199908_buildGRCh38.tsv.gz
Chen Y	GCST90199909	Eicosanedioate (C20-DC) levels	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199909/GCST90199909_buildGRCh38.tsv.gz
Chen Y	GCST90199910	1-(1-enyl-stearoyl)-GPE (p-18:0) levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199910/GCST90199910_buildGRCh38.tsv.gz
Chen Y	GCST90199911	Beta-citrylglutamate levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199911/GCST90199911_buildGRCh38.tsv.gz
Chen Y	GCST90199912	N-oleoyltaurine levels	7375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199912/GCST90199912_buildGRCh38.tsv.gz
Chen Y	GCST90199913	Docosadioate (C22-DC) levels	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199913/GCST90199913_buildGRCh38.tsv.gz
Chen Y	GCST90199914	Oleoyl-linoleoyl-glycerol (18:1/18:2) [2] levels	8069 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199914/GCST90199914_buildGRCh38.tsv.gz

Chen Y	GCST90199915	Imidazole propionate levels	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199915/GCST90199915_buildGRCh38.tsv.gz
Chen Y	GCST90199916	Carnitine C18:2 levels	8268 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199916/GCST90199916_buildGRCh38.tsv.gz
Chen Y	GCST90199917	Pregnanediol-3-glucuronide levels	7905 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199917/GCST90199917_buildGRCh38.tsv.gz
Chen Y	GCST90199918	Carboxyethyl-gaba levels	8090 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199918/GCST90199918_buildGRCh38.tsv.gz
Chen Y	GCST90199919	Alliin levels	6517 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199919/GCST90199919_buildGRCh38.tsv.gz
Chen Y	GCST90199920	Trimethylamine n-oxide levels	8218 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199920/GCST90199920_buildGRCh38.tsv.gz
Chen Y	GCST90199921	Dihydroferulate levels	6398 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199921/GCST90199921_buildGRCh38.tsv.gz
Chen Y	GCST90199922	Prolylglycine levels	7907 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199922/GCST90199922_buildGRCh38.tsv.gz
Chen Y	GCST90199923	N-palmitoylglycine levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199923/GCST90199923_buildGRCh38.tsv.gz
Chen Y	GCST90199924	N-methyltaurine levels	5440 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199924/GCST90199924_buildGRCh38.tsv.gz
Chen Y	GCST90199925	Succinimide levels	5865 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199925/GCST90199925_buildGRCh38.tsv.gz
Chen Y	GCST90199926	N-acetylcarnosine levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199926/GCST90199926_buildGRCh38.tsv.gz
Chen Y	GCST90199927	Histidine betaine (hercynine) levels	7518 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199927/GCST90199927_buildGRCh38.tsv.gz
Chen Y	GCST90199928	2-stearoyl-GPE (18:0) levels	8073 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199928/GCST90199928_buildGRCh38.tsv.gz
Chen Y	GCST90199929	Margaroylcarnitine (C17) levels	8112 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199929/GCST90199929_buildGRCh38.tsv.gz
Chen Y	GCST90199930	(R)-3-hydroxybutyrylcarnitine levels	7787 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199930/GCST90199930_buildGRCh38.tsv.gz
Chen Y	GCST90199931	Lanthionine levels	7760 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199931/GCST90199931_buildGRCh38.tsv.gz
Chen Y	GCST90199932	Mannonate levels	8166 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199932/GCST90199932_buildGRCh38.tsv.gz
Chen Y	GCST90199933	3b-hydroxy-5-cholenoic acid levels	6846 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199933/GCST90199933_buildGRCh38.tsv.gz
Chen Y	GCST90199934	2-hydroxydecanoate levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199934/GCST90199934_buildGRCh38.tsv.gz
Chen Y	GCST90199935	Glycohyocholate levels	7095 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199935/GCST90199935_buildGRCh38.tsv.gz
Chen Y	GCST90199936	3-methyl catechol sulfate (2) levels	6320 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199936/GCST90199936_buildGRCh38.tsv.gz
Chen Y	GCST90199937	2-aminooctanoate levels	8178 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199937/GCST90199937_buildGRCh38.tsv.gz
Chen Y	GCST90199938	3-methyl catechol sulfate (1) levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199938/GCST90199938_buildGRCh38.tsv.gz
Chen Y	GCST90199939	4-methylcatechol sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199939/GCST90199939_buildGRCh38.tsv.gz
Chen Y	GCST90199940	Guaiacol sulfate levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199940/GCST90199940_buildGRCh38.tsv.gz
Chen Y	GCST90199941	Gamma-CEHC glucuronide levels	6305 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199941/GCST90199941_buildGRCh38.tsv.gz
Chen Y	GCST90199942	Dimethyl sulfone levels	7905 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199942/GCST90199942_buildGRCh38.tsv.gz

Chen Y	GCST90199943	2-piperidinone levels	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199943/GCST90199943_buildGRCh38.tsv.gz
Chen Y	GCST90199944	Indolin-2-one levels	7027 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199944/GCST90199944_buildGRCh38.tsv.gz
Chen Y	GCST90199945	Sphingomyelin (d18:1/14:0, d16:1/16:0) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199945/GCST90199945_buildGRCh38.tsv.gz
Chen Y	GCST90199946	3-acetylphenol sulfate levels	6897 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199946/GCST90199946_buildGRCh38.tsv.gz
Chen Y	GCST90199947	Sphingomyelin (d18:2/16:0, d18:1/16:1) levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199947/GCST90199947_buildGRCh38.tsv.gz
Chen Y	GCST90199948	S-allylcysteine levels	6857 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199948/GCST90199948_buildGRCh38.tsv.gz
Chen Y	GCST90199949	6-oxopiperidine-2-carboxylate levels	8032 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199949/GCST90199949_buildGRCh38.tsv.gz
Chen Y	GCST90199950	2-aminophenol sulfate levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199950/GCST90199950_buildGRCh38.tsv.gz
Chen Y	GCST90199951	N-acetylalliin levels	5432 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199951/GCST90199951_buildGRCh38.tsv.gz
Chen Y	GCST90199952	2-aminoheptanoate levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199952/GCST90199952_buildGRCh38.tsv.gz
Chen Y	GCST90199953	3-methoxytyramine sulfate levels	5419 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199953/GCST90199953_buildGRCh38.tsv.gz
Chen Y	GCST90199954	N2,N5-diacetylornithine levels	7596 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199954/GCST90199954_buildGRCh38.tsv.gz
Chen Y	GCST90199955	Ferulic acid 4-sulfate levels	7332 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199955/GCST90199955_buildGRCh38.tsv.gz
Chen Y	GCST90199956	1H-indole-7-acetic acid levels	5986 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199956/GCST90199956_buildGRCh38.tsv.gz
Chen Y	GCST90199957	3-(3-hydroxyphenyl)propionate sulfate levels	5773 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199957/GCST90199957_buildGRCh38.tsv.gz
Chen Y	GCST90199958	1-linolenoyl-GPC (18:3) levels	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199958/GCST90199958_buildGRCh38.tsv.gz
Chen Y	GCST90199959	O-sulfo-l-tyrosine levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199959/GCST90199959_buildGRCh38.tsv.gz
Chen Y	GCST90199960	N-formylanthranilic acid levels	7534 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199960/GCST90199960_buildGRCh38.tsv.gz
Chen Y	GCST90199961	Methionine sulfone levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199961/GCST90199961_buildGRCh38.tsv.gz
Chen Y	GCST90199962	Acisoga levels	7489 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199962/GCST90199962_buildGRCh38.tsv.gz
Chen Y	GCST90199963	17alpha-hydroxypregnanolone glucuronide levels	5582 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199963/GCST90199963_buildGRCh38.tsv.gz
Chen Y	GCST90199964	Etiocholanolone glucuronide levels	7821 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199964/GCST90199964_buildGRCh38.tsv.gz
Chen Y	GCST90199965	Fructosyllysine levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199965/GCST90199965_buildGRCh38.tsv.gz
Chen Y	GCST90199966	1-(1-enyl-oleoyl)-GPE (p-18:1) levels	8157 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199966/GCST90199966_buildGRCh38.tsv.gz
Chen Y	GCST90199967	N-acetyltaurine levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199967/GCST90199967_buildGRCh38.tsv.gz
Chen Y	GCST90199968	1-palmitoyl-GPG (16:0) levels	7708 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199968/GCST90199968_buildGRCh38.tsv.gz
Chen Y	GCST90199969	1-oleoyl-GPG (18:1) levels	6990 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199969/GCST90199969_buildGRCh38.tsv.gz
Chen Y	GCST90199970	Octadecenedioylcarnitine (C18:1-DC) levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199970/GCST90199970_buildGRCh38.tsv.gz

Chen Y	GCST90199971	3-methylglutarylcarnitine (2) levels	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199971/GCST90199971_buildGRCh38.tsv.gz
Chen Y	GCST90199972	Sphingomyelin (d18:1/24:1, d18:2/24:0) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199972/GCST90199972_buildGRCh38.tsv.gz
Chen Y	GCST90199973	Methyl glucopyranoside (alpha + beta) levels	7973 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199973/GCST90199973_buildGRCh38.tsv.gz
Chen Y	GCST90199974	9-hydroxystearate levels	7474 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199974/GCST90199974_buildGRCh38.tsv.gz
Chen Y	GCST90199975	Sphingomyelin (d18:2/14:0, d18:1/14:1) levels	8278 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199975/GCST90199975_buildGRCh38.tsv.gz
Chen Y	GCST90199976	1-dihomo-linolenylglycerol (20:3) levels	6470 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199976/GCST90199976_buildGRCh38.tsv.gz
Chen Y	GCST90199977	4-hydroxychlorothalonil levels	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199977/GCST90199977_buildGRCh38.tsv.gz
Chen Y	GCST90199978	Vanillactate levels	7935 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199978/GCST90199978_buildGRCh38.tsv.gz
Chen Y	GCST90199979	Carnitine C14:1 levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199979/GCST90199979_buildGRCh38.tsv.gz
Chen Y	GCST90199980	N-formylphenylalanine levels	7229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199980/GCST90199980_buildGRCh38.tsv.gz
Chen Y	GCST90199981	2-acetamidophenol sulfate levels	6984 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199981/GCST90199981_buildGRCh38.tsv.gz
Chen Y	GCST90199982	4-vinylguaiacol sulfate levels	7592 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199982/GCST90199982_buildGRCh38.tsv.gz
Chen Y	GCST90199983	5alpha-androstan-3alpha,17beta-diol monosulfate (2) levels	5920 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199983/GCST90199983_buildGRCh38.tsv.gz
Chen Y	GCST90199984	Vanillic alcohol sulfate levels	5076 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199984/GCST90199984_buildGRCh38.tsv.gz
Chen Y	GCST90199985	Methyl-4-hydroxybenzoate sulfate levels	8285 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199985/GCST90199985_buildGRCh38.tsv.gz
Chen Y	GCST90199986	Eugenol sulfate levels	7063 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199986/GCST90199986_buildGRCh38.tsv.gz
Chen Y	GCST90199987	2-methoxyresorcinol sulfate levels	5897 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199987/GCST90199987_buildGRCh38.tsv.gz
Chen Y	GCST90199988	Tyramine O-sulfate levels	7254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199988/GCST90199988_buildGRCh38.tsv.gz
Chen Y	GCST90199989	4-methylguaiacol sulfate levels	7141 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199989/GCST90199989_buildGRCh38.tsv.gz
Chen Y	GCST90199990	3-hydroxypyridine sulfate levels	8270 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199990/GCST90199990_buildGRCh38.tsv.gz
Chen Y	GCST90199991	Arabonate/xylonate levels	8211 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199991/GCST90199991_buildGRCh38.tsv.gz
Chen Y	GCST90199992	Octadecanedioylcarnitine (C18-DC) levels	8049 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199992/GCST90199992_buildGRCh38.tsv.gz
Chen Y	GCST90199993	Phenylacetylcarnitine levels	8127 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199993/GCST90199993_buildGRCh38.tsv.gz
Chen Y	GCST90199994	Ethylparaben sulfate levels	6408 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199994/GCST90199994_buildGRCh38.tsv.gz
Chen Y	GCST90199995	Sphingomyelin (d18:1/20:2, d18:2/20:1, d16:1/22:2) levels	8124 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199995/GCST90199995_buildGRCh38.tsv.gz
Chen Y	GCST90199996	Sphingomyelin (d18:1/20:1, d18:2/20:0) levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199996/GCST90199996_buildGRCh38.tsv.gz
Chen Y	GCST90199997	Behenoyl sphingomyelin (d18:1/22:0) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199997/GCST90199997_buildGRCh38.tsv.gz
Chen Y	GCST90199998	Propyl 4-hydroxybenzoate sulfate levels	7855 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199998/GCST90199998_buildGRCh38.tsv.gz

Chen Y	GCST90199999	4-methoxyphenol sulfate levels	7500 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199999/GCST90199999_buildGRCh38.tsv.gz
Chen Y	GCST90200000	Umbelliferone sulfate levels	5598 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90200000/GCST90200000_buildGRCh38.tsv.gz
Chen Y	GCST90200001	Sphingomyelin (d18:1/20:0, d16:1/22:0) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200001/GCST90200001_buildGRCh38.tsv.gz
Chen Y	GCST90200002	6-hydroxyindole sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200002/GCST90200002_buildGRCh38.tsv.gz
Chen Y	GCST90200003	P-cresol glucuronide levels	7969 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200003/GCST90200003_buildGRCh38.tsv.gz
Chen Y	GCST90200004	N-carbamoylalanine levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200004/GCST90200004_buildGRCh38.tsv.gz
Chen Y	GCST90200005	Citraconate/glutaconate levels	8263 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200005/GCST90200005_buildGRCh38.tsv.gz
Chen Y	GCST90200006	1,2,3-benzenetriol sulfate (2) levels	7484 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200006/GCST90200006_buildGRCh38.tsv.gz
Chen Y	GCST90200007	3-methoxycatechol sulfate (2) levels	7286 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200007/GCST90200007_buildGRCh38.tsv.gz
Chen Y	GCST90200008	C-glycosyltryptophan levels	8204 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200008/GCST90200008_buildGRCh38.tsv.gz
Chen Y	GCST90200009	3-methoxycatechol sulfate (1) levels	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200009/GCST90200009_buildGRCh38.tsv.gz
Chen Y	GCST90200010	Sphingomyelin (d18:1/22:1, d18:2/22:0, d16:1/24:1) levels	8246 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200010/GCST90200010_buildGRCh38.tsv.gz
Chen Y	GCST90200011	Arabitol/xylitol levels	8219 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200011/GCST90200011_buildGRCh38.tsv.gz
Chen Y	GCST90200012	3-hydroxyhexanoate levels	8268 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200012/GCST90200012_buildGRCh38.tsv.gz
Chen Y	GCST90200013	Sphingomyelin (d18:1/22:2, d18:2/22:1, d16:1/24:2) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200013/GCST90200013_buildGRCh38.tsv.gz
Chen Y	GCST90200014	3beta-hydroxy-5-cholestenoate levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200014/GCST90200014_buildGRCh38.tsv.gz
Chen Y	GCST90200015	N-acetylkynurenine (2) levels	6193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200015/GCST90200015_buildGRCh38.tsv.gz
Chen Y	GCST90200016	Dopamine 4-sulfate levels	6888 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200016/GCST90200016_buildGRCh38.tsv.gz
Chen Y	GCST90200017	Sphingomyelin (d17:1/16:0, d18:1/15:0, d16:1/17:0) levels	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200017/GCST90200017_buildGRCh38.tsv.gz
Chen Y	GCST90200018	Adipoylcarnitine (C6-DC) levels	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200018/GCST90200018_buildGRCh38.tsv.gz
Chen Y	GCST90200019	Dopamine 3-o-sulfate levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200019/GCST90200019_buildGRCh38.tsv.gz
Chen Y	GCST90200020	Lignoceroyl sphingomyelin (d18:1/24:0) levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200020/GCST90200020_buildGRCh38.tsv.gz
Chen Y	GCST90200021	N-acetylglucosamine/n-acetylgalactosamine levels	7940 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200021/GCST90200021_buildGRCh38.tsv.gz
Chen Y	GCST90200022	Glycochenodeoxycholate 3-sulfate levels	8123 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200022/GCST90200022_buildGRCh38.tsv.gz
Chen Y	GCST90200023	Trans 3,4-methyleneheptanoate levels	7104 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200023/GCST90200023_buildGRCh38.tsv.gz
Chen Y	GCST90200024	Taurodeoxycholic acid 3-sulfate levels	7333 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200024/GCST90200024_buildGRCh38.tsv.gz
Chen Y	GCST90200025	Phenol glucuronide levels	4466 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200025/GCST90200025_buildGRCh38.tsv.gz
Chen Y	GCST90200026	Glycodeoxycholate 3-sulfate levels	8066 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200026/GCST90200026_buildGRCh38.tsv.gz

Chen Y	GCST90200027	4-hydroxyphenylacetoylcarnitine levels	7523 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200027/GCST90200027_buildGRCh38.tsv.gz
Chen Y	GCST90200028	1-stearoyl-2-oleoyl-gpc (18:0/18:1) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200028/GCST90200028_buildGRCh38.tsv.gz
Chen Y	GCST90200029	Linoleoyl ethanolamide levels	7214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200029/GCST90200029_buildGRCh38.tsv.gz
Chen Y	GCST90200030	1,2-dilinoleoyl-GPC (18:2/18:2) levels	8227 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200030/GCST90200030_buildGRCh38.tsv.gz
Chen Y	GCST90200031	Nonanoylcarnitine (C9) levels	7669 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200031/GCST90200031_buildGRCh38.tsv.gz
Chen Y	GCST90200032	2-hydroxybutyrate/2-hydroxyisobutyrate levels	8215 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200032/GCST90200032_buildGRCh38.tsv.gz
Chen Y	GCST90200033	Sphingomyelin (d18:2/23:0, d18:1/23:1, d17:1/24:1) levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200033/GCST90200033_buildGRCh38.tsv.gz
Chen Y	GCST90200034	Tricosanoyl sphingomyelin (d18:1/23:0) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200034/GCST90200034_buildGRCh38.tsv.gz
Chen Y	GCST90200035	Palmitoyl dihydrosphingomyelin (d18:0/16:0) levels	8269 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200035/GCST90200035_buildGRCh38.tsv.gz
Chen Y	GCST90200036	1-palmitoleoylglycerol (16:1) levels	6432 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200036/GCST90200036_buildGRCh38.tsv.gz
Chen Y	GCST90200037	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200037/GCST90200037_buildGRCh38.tsv.gz
Chen Y	GCST90200038	1-palmitoyl-2-palmitoleoyl-gpc (16:0/16:1) levels	8276 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200038/GCST90200038_buildGRCh38.tsv.gz
Chen Y	GCST90200039	1-stearoyl-2-linoleoyl-GPE (18:0/18:2) levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200039/GCST90200039_buildGRCh38.tsv.gz
Chen Y	GCST90200040	Sphingomyelin (d18:2/24:1, d18:1/24:2) levels	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200040/GCST90200040_buildGRCh38.tsv.gz
Chen Y	GCST90200041	1-palmitoyl-2-stearoyl-gpc (16:0/18:0) levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200041/GCST90200041_buildGRCh38.tsv.gz
Chen Y	GCST90200042	Oleate/vaccenate (18:1) levels	8230 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200042/GCST90200042_buildGRCh38.tsv.gz
Chen Y	GCST90200043	1-palmitoyl-2-docosahexaenoyl-gpc (16:0/22:6) levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200043/GCST90200043_buildGRCh38.tsv.gz
Chen Y	GCST90200044	1-(1-enyl-stearoyl)-2-oleoyl-GPE (p-18:0/18:1) levels	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200044/GCST90200044_buildGRCh38.tsv.gz
Chen Y	GCST90200045	1-stearoyl-2-arachidonoyl-GPE (18:0/20:4) levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200045/GCST90200045_buildGRCh38.tsv.gz
Chen Y	GCST90200046	1-stearoyl-2-docosahexaenoyl-gpc (18:0/22:6) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200046/GCST90200046_buildGRCh38.tsv.gz
Chen Y	GCST90200047	Sphingomyelin (d18:1/17:0, d17:1/18:0, d19:1/16:0) levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200047/GCST90200047_buildGRCh38.tsv.gz
Chen Y	GCST90200048	1-(1-enyl-palmitoyl)-2-arachidonoyl-GPE (p-16:0/20:4) levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200048/GCST90200048_buildGRCh38.tsv.gz
Chen Y	GCST90200049	Myristoyl dihydrosphingomyelin (d18:0/14:0) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200049/GCST90200049_buildGRCh38.tsv.gz
Chen Y	GCST90200050	5-hydroxyindole sulfate levels	6163 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200050/GCST90200050_buildGRCh38.tsv.gz
Chen Y	GCST90200051	1-palmitoyl-2-dihomo-linolenoyl-GPC (16:0/20:3n3 or 6) levels	8230 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200051/GCST90200051_buildGRCh38.tsv.gz
Chen Y	GCST90200052	1-(1-enyl-palmitoyl)-2-arachidonoyl-gpc (p-16:0/20:4) levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200052/GCST90200052_buildGRCh38.tsv.gz
Chen Y	GCST90200053	Sphingomyelin (d18:1/21:0, d17:1/22:0, d16:1/23:0) levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200053/GCST90200053_buildGRCh38.tsv.gz
Chen Y	GCST90200054	1-palmitoyl-2-arachidonoyl-GPE (16:0/20:4) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200054/GCST90200054_buildGRCh38.tsv.gz

Chen Y	GCST90200055	Lactosyl-N-palmitoyl-sphingosine (d18:1/16:0) levels	8266 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200055/GCST90200055_buildGRCh38.tsv.gz
Chen Y	GCST90200056	Sphingomyelin (d18:0/18:0, d19:0/17:0) levels	8274 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200056/GCST90200056_buildGRCh38.tsv.gz
Chen Y	GCST90200057	1-(1-enyl-palmitoyl)-2-oleoyl-gpc (p-16:0/18:1) levels	8222 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200057/GCST90200057_buildGRCh38.tsv.gz
Chen Y	GCST90200058	1-(1-enyl-stearoyl)-2-arachidonoyl-GPE (p-18:0/20:4) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200058/GCST90200058_buildGRCh38.tsv.gz
Chen Y	GCST90200059	Behenoyl dihydrosphingomyelin (d18:0/22:0) levels	8275 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200059/GCST90200059_buildGRCh38.tsv.gz
Chen Y	GCST90200060	1-(1-enyl-palmitoyl)-2-linoleoyl-GPC (p-16:0/18:2) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200060/GCST90200060_buildGRCh38.tsv.gz
Chen Y	GCST90200061	1-(1-enyl-palmitoyl)-2-oleoyl-GPE (p-16:0/18:1) levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200061/GCST90200061_buildGRCh38.tsv.gz
Chen Y	GCST90200062	1-palmitoyl-2-arachidonoyl-GPI (16:0/20:4) levels	8057 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200062/GCST90200062_buildGRCh38.tsv.gz
Chen Y	GCST90200063	1-palmitoyl-2-docosahexaenoyl-GPE (16:0/22:6) levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200063/GCST90200063_buildGRCh38.tsv.gz
Chen Y	GCST90200064	N-palmitoyl-sphinganine (d18:0/16:0) levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200064/GCST90200064_buildGRCh38.tsv.gz
Chen Y	GCST90200065	1-stearoyl-2-docosahexaenoyl-GPE (18:0/22:6) levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200065/GCST90200065_buildGRCh38.tsv.gz
Chen Y	GCST90200066	Gamma-tocopherol/beta-tocopherol levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200066/GCST90200066_buildGRCh38.tsv.gz
Chen Y	GCST90200067	1-stearoyl-2-linoleoyl-GPI (18:0/18:2) levels	8113 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200067/GCST90200067_buildGRCh38.tsv.gz
Chen Y	GCST90200068	1,2-dilinoleoyl-GPE (18:2/18:2) levels	6804 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200068/GCST90200068_buildGRCh38.tsv.gz
Chen Y	GCST90200069	Phenylacetylglutamate levels	6227 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200069/GCST90200069_buildGRCh38.tsv.gz
Chen Y	GCST90200070	1-(1-enyl-palmitoyl)-2-palmitoleoyl-GPC (P-16:0/16:1) levels	8083 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200070/GCST90200070_buildGRCh38.tsv.gz
Chen Y	GCST90200071	Palmitoylcholine levels	8209 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200071/GCST90200071_buildGRCh38.tsv.gz
Chen Y	GCST90200072	Thioproline levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200072/GCST90200072_buildGRCh38.tsv.gz
Chen Y	GCST90200073	1-linoleoyl-2-arachidonoyl-GPC (18:2/20:4n6) levels	8063 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200073/GCST90200073_buildGRCh38.tsv.gz
Chen Y	GCST90200074	1-linoleoyl-GPG (18:2) levels	8115 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200074/GCST90200074_buildGRCh38.tsv.gz
Chen Y	GCST90200075	1-(1-enyl-palmitoyl)-2-linoleoyl-GPE (p-16:0/18:2) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200075/GCST90200075_buildGRCh38.tsv.gz
Chen Y	GCST90200076	1-(1-enyl-stearoyl)-2-linoleoyl-GPE (p-18:0/18:2) levels	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200076/GCST90200076_buildGRCh38.tsv.gz
Chen Y	GCST90200077	1-stearoyl-2-oleoyl-GPI (18:0/18:1) levels	8111 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200077/GCST90200077_buildGRCh38.tsv.gz
Chen Y	GCST90200078	1-myristoyl-2-arachidonoyl-GPC (14:0/20:4) levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200078/GCST90200078_buildGRCh38.tsv.gz
Chen Y	GCST90200079	1-oleoyl-2-arachidonoyl-GPE (18:1/20:4) levels	8121 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200079/GCST90200079_buildGRCh38.tsv.gz
Chen Y	GCST90200080	1-palmitoyl-2-oleoyl-GPI (16:0/18:1) levels	8123 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200080/GCST90200080_buildGRCh38.tsv.gz
Chen Y	GCST90200081	1-oleoyl-2-docosahexaenoyl-GPC (18:1/22:6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200081/GCST90200081_buildGRCh38.tsv.gz
Chen Y	GCST90200082	1-oleoyl-2-linoleoyl-GPE (18:1/18:2) levels	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200082/GCST90200082_buildGRCh38.tsv.gz

Chen Y	GCST90200083	1-(1-enyl-palmitoyl)-2-palmitoyl-GPC (P-16:0/16:0) levels	8266 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200083/GCST90200083_buildGRCh38.tsv.gz
Chen Y	GCST90200084	Oleoylcholine levels	8120 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200084/GCST90200084_buildGRCh38.tsv.gz
Chen Y	GCST90200085	Glycosyl-N-palmitoyl-sphingosine (d18:1/16:0) levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200085/GCST90200085_buildGRCh38.tsv.gz
Chen Y	GCST90200086	Arachidonoylcholine levels	8170 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200086/GCST90200086_buildGRCh38.tsv.gz
Chen Y	GCST90200087	2-methylserine levels	7722 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200087/GCST90200087_buildGRCh38.tsv.gz
Chen Y	GCST90200088	(S)-3-hydroxybutyrylcarnitine levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200088/GCST90200088_buildGRCh38.tsv.gz
Chen Y	GCST90200089	Methylsuccinoylcarnitine levels	8004 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200089/GCST90200089_buildGRCh38.tsv.gz
Chen Y	GCST90200090	Dihomo-linolenoyl-choline levels	6954 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200090/GCST90200090_buildGRCh38.tsv.gz
Chen Y	GCST90200091	Docosahexaenoylcholine levels	7440 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200091/GCST90200091_buildGRCh38.tsv.gz
Chen Y	GCST90200092	Glycocholate glucuronide (1) levels	4381 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200092/GCST90200092_buildGRCh38.tsv.gz
Chen Y	GCST90200093	Caffeic acid sulfate levels	7798 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200093/GCST90200093_buildGRCh38.tsv.gz
Chen Y	GCST90200094	Ascorbic acid 2-sulfate levels	8089 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200094/GCST90200094_buildGRCh38.tsv.gz
Chen Y	GCST90200095	1-linoleoyl-2-linolenoyl-GPC (18:2/18:3) levels	8188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200095/GCST90200095_buildGRCh38.tsv.gz
Chen Y	GCST90200096	Catechol glucuronide levels	4698 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200096/GCST90200096_buildGRCh38.tsv.gz
Chen Y	GCST90200097	Furaneol sulfate levels	5882 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200097/GCST90200097_buildGRCh38.tsv.gz
Chen Y	GCST90200098	Ceramide (d18:1/24:1) levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200098/GCST90200098_buildGRCh38.tsv.gz
Chen Y	GCST90200099	N-oleoylserine levels	7591 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200099/GCST90200099_buildGRCh38.tsv.gz
Chen Y	GCST90200100	Perfluorooctanesulfonate (PFOS) levels	8218 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200100/GCST90200100_buildGRCh38.tsv.gz
Chen Y	GCST90200101	Pimeloylcarnitine/3-methyladipoylcarnitine (C7-DC) levels	7837 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200101/GCST90200101_buildGRCh38.tsv.gz
Chen Y	GCST90200102	1-palmitoleoyl-2-linolenoyl-GPC (16:1/18:3) levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200102/GCST90200102_buildGRCh38.tsv.gz
Chen Y	GCST90200103	Linoleoyl-arachidonoyl-glycerol (18:2/20:4) [1] levels	7731 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200103/GCST90200103_buildGRCh38.tsv.gz
Chen Y	GCST90200104	Hexadecadienoate (16:2n6) levels	8274 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200104/GCST90200104_buildGRCh38.tsv.gz
Chen Y	GCST90200105	Glycosyl-N-behenoyl-sphingadienine (d18:2/22:0) levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200105/GCST90200105_buildGRCh38.tsv.gz
Chen Y	GCST90200106	4-hydroxyphenylacetylglutamine levels	7752 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200106/GCST90200106_buildGRCh38.tsv.gz
Chen Y	GCST90200107	Gamma-glutamyl-alpha-lysine levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200107/GCST90200107_buildGRCh38.tsv.gz
Chen Y	GCST90200108	N-palmitoyl-sphingadienine (d18:2/16:0) levels	7805 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200108/GCST90200108_buildGRCh38.tsv.gz
Chen Y	GCST90200109	Linoleoyl-arachidonoyl-glycerol (18:2/20:4) [2] levels	7744 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200109/GCST90200109_buildGRCh38.tsv.gz
Chen Y	GCST90200110	Palmitoleoylcarnitine (C16:1) levels	8263 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200110/GCST90200110_buildGRCh38.tsv.gz

Chen Y	GCST90200111	N-stearoyl-sphingadienine (d18:2/18:0) levels	7229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200111/GCST90200111_buildGRCh38.tsv.gz
Chen Y	GCST90200112	2,3-dihydroxy-2-methylbutyrate levels	8018 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200112/GCST90200112_buildGRCh38.tsv.gz
Chen Y	GCST90200113	Stearoylcholine levels	7140 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200113/GCST90200113_buildGRCh38.tsv.gz
Chen Y	GCST90200114	Glycosyl-N-tricosanoyl-sphingadienine (d18:2/23:0) levels	7274 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200114/GCST90200114_buildGRCh38.tsv.gz
Chen Y	GCST90200115	N-palmitoyl-heptadecasphingosine (d17:1/16:0) levels	7141 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200115/GCST90200115_buildGRCh38.tsv.gz
Chen Y	GCST90200116	Ceramide (d18:1/14:0, d16:1/16:0) levels	7270 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200116/GCST90200116_buildGRCh38.tsv.gz
Chen Y	GCST90200117	Glycosyl-N-(2-hydroxynervonoyl)-sphingosine (d18:1/24:1(2OH)) levels	8012 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200117/GCST90200117_buildGRCh38.tsv.gz
Chen Y	GCST90200118	Glycosyl ceramide (d18:2/24:1, d18:1/24:2) levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200118/GCST90200118_buildGRCh38.tsv.gz
Chen Y	GCST90200119	Glycosyl ceramide (d18:1/23:1, d17:1/24:1) levels	5309 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200119/GCST90200119_buildGRCh38.tsv.gz
Chen Y	GCST90200120	Sphingadienine levels	4533 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200120/GCST90200120_buildGRCh38.tsv.gz
Chen Y	GCST90200121	Ceramide (d18:1/17:0, d17:1/18:0) levels	6073 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200121/GCST90200121_buildGRCh38.tsv.gz
Chen Y	GCST90200122	Nisinate (24:6n3) levels	4765 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200122/GCST90200122_buildGRCh38.tsv.gz
Chen Y	GCST90200123	Sphingomyelin (d18:0/20:0, d16:0/22:0) levels	8277 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200123/GCST90200123_buildGRCh38.tsv.gz
Chen Y	GCST90200124	Sphingomyelin (d18:2/24:2) levels	8140 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200124/GCST90200124_buildGRCh38.tsv.gz
Chen Y	GCST90200125	Sphingomyelin (d17:2/16:0, d18:2/15:0) levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200125/GCST90200125_buildGRCh38.tsv.gz
Chen Y	GCST90200126	Sphingomyelin (d18:2/23:1) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200126/GCST90200126_buildGRCh38.tsv.gz
Chen Y	GCST90200127	Behenoylcarnitine (C22) levels	7368 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200127/GCST90200127_buildGRCh38.tsv.gz
Chen Y	GCST90200128	Sphingomyelin (d18:2/18:1) levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200128/GCST90200128_buildGRCh38.tsv.gz
Chen Y	GCST90200129	Sphingomyelin (d18:2/21:0, d16:2/23:0) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200129/GCST90200129_buildGRCh38.tsv.gz
Chen Y	GCST90200130	Linoleoylcholine levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200130/GCST90200130_buildGRCh38.tsv.gz
Chen Y	GCST90200131	Sphingomyelin (d18:1/19:0, d19:1/18:0) levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200131/GCST90200131_buildGRCh38.tsv.gz
Chen Y	GCST90200132	Linolenoylcarnitine (C18:3) levels	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200132/GCST90200132_buildGRCh38.tsv.gz
Chen Y	GCST90200133	Heneicosapentaenoate (21:5n3) levels	4827 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200133/GCST90200133_buildGRCh38.tsv.gz
Chen Y	GCST90200134	Sphingomyelin (d18:1/25:0,d19:0/24:1, d20:1/23:0, d19:1/24:0) levels	8126 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200134/GCST90200134_buildGRCh38.tsv.gz
Chen Y	GCST90200135	Arachidoylcarnitine (C20) levels	7682 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200135/GCST90200135_buildGRCh38.tsv.gz
Chen Y	GCST90200136	Cerotoylcarnitine (C26) levels	8266 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200136/GCST90200136_buildGRCh38.tsv.gz
Chen Y	GCST90200137	Lignoceroylcarnitine (C24) levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200137/GCST90200137_buildGRCh38.tsv.gz
Chen Y	GCST90200138	Docosatrienoate (22:3n6) levels	5398 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200138/GCST90200138_buildGRCh38.tsv.gz

Chen Y	GCST90200139	Dihomo-linolenoylcarnitine (C20:3n3 or 6) levels	8092 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200139/GCST90200139_buildGRCh38.tsv.gz
Chen Y	GCST90200140	Carotene diol (2) levels	8196 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200140/GCST90200140_buildGRCh38.tsv.gz
Chen Y	GCST90200141	Ethyl alpha-glucopyranoside levels	6620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200141/GCST90200141_buildGRCh38.tsv.gz
Chen Y	GCST90200142	Carotene diol (1) levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200142/GCST90200142_buildGRCh38.tsv.gz
Chen Y	GCST90200143	Nervonoylcarnitine (C24:1) levels	7880 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200143/GCST90200143_buildGRCh38.tsv.gz
Chen Y	GCST90200144	Dihomo-linoleoylcarnitine (C20:2) levels	7887 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200144/GCST90200144_buildGRCh38.tsv.gz
Chen Y	GCST90200145	Glycosyl ceramide (d18:1/20:0, d16:1/22:0) levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200145/GCST90200145_buildGRCh38.tsv.gz
Chen Y	GCST90200146	Docosahexaenoylcarnitine (C22:6) levels	6287 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200146/GCST90200146_buildGRCh38.tsv.gz
Chen Y	GCST90200147	N,N,N-trimethyl-5-aminovalerate levels	8214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200147/GCST90200147_buildGRCh38.tsv.gz
Chen Y	GCST90200148	Eicosenoylcarnitine (C20:1) levels	8145 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200148/GCST90200148_buildGRCh38.tsv.gz
Chen Y	GCST90200149	Ximenoylcarnitine (C26:1) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200149/GCST90200149_buildGRCh38.tsv.gz
Chen Y	GCST90200150	Arachidonoylcarnitine (C20:4) levels	8202 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200150/GCST90200150_buildGRCh38.tsv.gz
Chen Y	GCST90200151	5-dodecenoylcarnitine (C12:1) levels	7899 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200151/GCST90200151_buildGRCh38.tsv.gz
Chen Y	GCST90200152	2-butenoylglycine levels	6253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200152/GCST90200152_buildGRCh38.tsv.gz
Chen Y	GCST90200153	(N(1) + N(8))-acetylspermidine levels	8219 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200153/GCST90200153_buildGRCh38.tsv.gz
Chen Y	GCST90200154	Hydroxy-cmpf levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200154/GCST90200154_buildGRCh38.tsv.gz
Chen Y	GCST90200155	2-furoylcarnitine levels	6448 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200155/GCST90200155_buildGRCh38.tsv.gz
Chen Y	GCST90200156	Cortolone glucuronide (1) levels	8152 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200156/GCST90200156_buildGRCh38.tsv.gz
Chen Y	GCST90200157	Carotene diol (3) levels	7650 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200157/GCST90200157_buildGRCh38.tsv.gz
Chen Y	GCST90200158	3-hydroxyoleoylcarnitine levels	7532 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200158/GCST90200158_buildGRCh38.tsv.gz
Chen Y	GCST90200159	Dodecenedioate (C12:1-DC) levels	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200159/GCST90200159_buildGRCh38.tsv.gz
Chen Y	GCST90200160	Trans-2-hexenoylglycine levels	6545 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200160/GCST90200160_buildGRCh38.tsv.gz
Chen Y	GCST90200161	2-hydroxyarachidate levels	8170 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200161/GCST90200161_buildGRCh38.tsv.gz
Chen Y	GCST90200162	3-hydroxyphenylacetoylglutamine levels	5371 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200162/GCST90200162_buildGRCh38.tsv.gz
Chen Y	GCST90200163	Heptenedioate (C7:1-DC) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200163/GCST90200163_buildGRCh38.tsv.gz
Chen Y	GCST90200164	Hexadecenedioate (C16:1-DC) levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200164/GCST90200164_buildGRCh38.tsv.gz
Chen Y	GCST90200165	Octadecenedioate (C18:1-DC) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200165/GCST90200165_buildGRCh38.tsv.gz
Chen Y	GCST90200166	Dihydroferulic acid sulfate levels	5188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200166/GCST90200166_buildGRCh38.tsv.gz

Chen Y	GCST90200167	Glutamine conjugate of C7H12O2 levels	7881 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200167/GCST90200167_buildGRCh38.tsv.gz
Chen Y	GCST90200168	Hydroxyasparagine levels	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200168/GCST90200168_buildGRCh38.tsv.gz
Chen Y	GCST90200169	Sphingomyelin (d17:1/14:0, d16:1/15:0) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200169/GCST90200169_buildGRCh38.tsv.gz
Chen Y	GCST90200170	Octadecadienedioate (C18:2-DC) levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200170/GCST90200170_buildGRCh38.tsv.gz
Chen Y	GCST90200171	Perfluorooctanoate (PFOA) levels	8199 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200171/GCST90200171_buildGRCh38.tsv.gz
Chen Y	GCST90200172	3-carboxy-4-methyl-5-pentyl-2-furanpropionate (3-CMPFP) levels	8234 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200172/GCST90200172_buildGRCh38.tsv.gz
Chen Y	GCST90200173	Glutamine conjugate of C6H10O2 (2) levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200173/GCST90200173_buildGRCh38.tsv.gz
Chen Y	GCST90200174	3-hydroxybutyroylglycine levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200174/GCST90200174_buildGRCh38.tsv.gz
Chen Y	GCST90200175	Glycine conjugate of C10H14O2 (1) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200175/GCST90200175_buildGRCh38.tsv.gz
Chen Y	GCST90200176	Glutamine conjugate of C6H10O2 (1) levels	7980 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200176/GCST90200176_buildGRCh38.tsv.gz
Chen Y	GCST90200177	N-methylhydroxyproline levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200177/GCST90200177_buildGRCh38.tsv.gz
Chen Y	GCST90200178	Glucuronide of C10H18O2 (7) levels	6090 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200178/GCST90200178_buildGRCh38.tsv.gz
Chen Y	GCST90200179	Glyco-beta-muricholate levels	7206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200179/GCST90200179_buildGRCh38.tsv.gz
Chen Y	GCST90200180	Glucuronide of C12H22O4 (1) levels	5831 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200180/GCST90200180_buildGRCh38.tsv.gz
Chen Y	GCST90200181	N,n,n-trimethyl-alanylproline betaine (tmap) levels	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200181/GCST90200181_buildGRCh38.tsv.gz
Chen Y	GCST90200182	Glycine conjugate of C10H12O2 levels	6177 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200182/GCST90200182_buildGRCh38.tsv.gz
Chen Y	GCST90200183	N-acetyl-2-aminooctanoate levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200183/GCST90200183_buildGRCh38.tsv.gz
Chen Y	GCST90200184	3-formylindole levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200184/GCST90200184_buildGRCh38.tsv.gz
Chen Y	GCST90200185	Gamma-glutamylcitrulline levels	8163 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200185/GCST90200185_buildGRCh38.tsv.gz
Chen Y	GCST90200186	8-methoxykynurenate levels	6938 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200186/GCST90200186_buildGRCh38.tsv.gz
Chen Y	GCST90200187	Tetradecadienoate (14:2) levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200187/GCST90200187_buildGRCh38.tsv.gz
Chen Y	GCST90200188	3-amino-2-piperidone levels	8237 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200188/GCST90200188_buildGRCh38.tsv.gz
Chen Y	GCST90200189	Glucuronide of piperine metabolite C17H21NO3 (3) levels	6512 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200189/GCST90200189_buildGRCh38.tsv.gz
Chen Y	GCST90200190	Dodecadienoate (12:2) levels	8244 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200190/GCST90200190_buildGRCh38.tsv.gz
Chen Y	GCST90200191	N-lactoyl tyrosine levels	6389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200191/GCST90200191_buildGRCh38.tsv.gz
Chen Y	GCST90200192	N,N-dimethylalanine levels	8219 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200192/GCST90200192_buildGRCh38.tsv.gz
Chen Y	GCST90200193	Ethyl beta-glucopyranoside levels	8152 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200193/GCST90200193_buildGRCh38.tsv.gz
Chen Y	GCST90200194	N-lactoyl phenylalanine levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200194/GCST90200194_buildGRCh38.tsv.gz

Chen Y	GCST90200195	N-acetyl-isoputreanine levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200195/GCST90200195_buildGRCh38.tsv.gz
Chen Y	GCST90200196	2,2'-Methylenebis(6-tert-butyl-p-cresol) levels	7397 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200196/GCST90200196_buildGRCh38.tsv.gz
Chen Y	GCST90200197	N-lactoyl isoleucine levels	7526 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200197/GCST90200197_buildGRCh38.tsv.gz
Chen Y	GCST90200198	2-hydroxysebacate levels	7865 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200198/GCST90200198_buildGRCh38.tsv.gz
Chen Y	GCST90200199	Ascorbic acid 3-sulfate levels	8186 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200199/GCST90200199_buildGRCh38.tsv.gz
Chen Y	GCST90200200	N-lactoyl valine levels	8133 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200200/GCST90200200_buildGRCh38.tsv.gz
Chen Y	GCST90200201	6-bromotryptophan levels	8214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200201/GCST90200201_buildGRCh38.tsv.gz
Chen Y	GCST90200202	Delta-CEHC levels	6233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200202/GCST90200202_buildGRCh38.tsv.gz
Chen Y	GCST90200203	Indoleacetoylcarnitine levels	7777 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200203/GCST90200203_buildGRCh38.tsv.gz
Chen Y	GCST90200204	N-acetyl leucine levels	7646 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200204/GCST90200204_buildGRCh38.tsv.gz
Chen Y	GCST90200205	3-indoleglyoxylic acid levels	7848 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200205/GCST90200205_buildGRCh38.tsv.gz
Chen Y	GCST90200206	Sulfate of piperine metabolite C18H21NO3 (1) levels	7021 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200206/GCST90200206_buildGRCh38.tsv.gz
Chen Y	GCST90200207	Methyl vanillate sulfate levels	4303 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200207/GCST90200207_buildGRCh38.tsv.gz
Chen Y	GCST90200208	Glucuronide of piperine metabolite C17H21NO3 (4) levels	7833 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200208/GCST90200208_buildGRCh38.tsv.gz
Chen Y	GCST90200209	Sulfate of piperine metabolite C16H19NO3 (3) levels	7705 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200209/GCST90200209_buildGRCh38.tsv.gz
Chen Y	GCST90200210	Sulfate of piperine metabolite C16H19NO3 (2) levels	7950 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200210/GCST90200210_buildGRCh38.tsv.gz
Chen Y	GCST90200211	3-hydroxypyridine glucuronide levels	5882 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200211/GCST90200211_buildGRCh38.tsv.gz
Chen Y	GCST90200212	Glucuronide of piperine metabolite C17H21NO3 (5) levels	6582 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200212/GCST90200212_buildGRCh38.tsv.gz
Chen Y	GCST90200213	2-naphthol sulfate levels	7673 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200213/GCST90200213_buildGRCh38.tsv.gz
Chen Y	GCST90200214	11beta-hydroxyandrosterone glucuronide levels	8081 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200214/GCST90200214_buildGRCh38.tsv.gz
Chen Y	GCST90200215	4-ethylcatechol sulfate levels	8222 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200215/GCST90200215_buildGRCh38.tsv.gz
Chen Y	GCST90200216	Sulfate of piperine metabolite C18H21NO3 (3) levels	7006 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200216/GCST90200216_buildGRCh38.tsv.gz
Chen Y	GCST90200217	(2,4 or 2,5)-dimethylphenol sulfate levels	5189 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200217/GCST90200217_buildGRCh38.tsv.gz
Chen Y	GCST90200218	11beta-hydroxyetiocholanolone glucuronide levels	7220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200218/GCST90200218_buildGRCh38.tsv.gz
Chen Y	GCST90200219	Cholic acid glucuronide levels	4414 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200219/GCST90200219_buildGRCh38.tsv.gz
Chen Y	GCST90200220	4-allylcatechol sulfate levels	8139 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200220/GCST90200220_buildGRCh38.tsv.gz
Chen Y	GCST90200221	Glycoursodeoxycholic acid sulfate (1) levels	6622 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200221/GCST90200221_buildGRCh38.tsv.gz
Chen Y	GCST90200222	Dihydrocaffeate sulfate (2) levels	6519 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200222/GCST90200222_buildGRCh38.tsv.gz

Chen Y	GCST90200223	4-methylhexanoylglutamine levels	5576 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200223/GCST90200223_buildGRCh38.tsv.gz
Chen Y	GCST90200224	2-ketocaprylate levels	8240 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200224/GCST90200224_buildGRCh38.tsv.gz
Chen Y	GCST90200225	3-hydroxy-2-methylpyridine sulfate levels	7446 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200225/GCST90200225_buildGRCh38.tsv.gz
Chen Y	GCST90200226	5-hydroxy-2-methylpyridine sulfate levels	6977 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200226/GCST90200226_buildGRCh38.tsv.gz
Chen Y	GCST90200227	3-ethylcatechol sulfate (2) levels	4814 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200227/GCST90200227_buildGRCh38.tsv.gz
Chen Y	GCST90200228	3-hydroxyhexanoylcarnitine (1) levels	8227 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200228/GCST90200228_buildGRCh38.tsv.gz
Chen Y	GCST90200229	2,6-dihydroxybenzoic acid levels	8269 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200229/GCST90200229_buildGRCh38.tsv.gz
Chen Y	GCST90200230	3-ethylcatechol sulfate (1) levels	7062 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200230/GCST90200230_buildGRCh38.tsv.gz
Chen Y	GCST90200231	Lithocholate sulfate (1) levels	7891 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200231/GCST90200231_buildGRCh38.tsv.gz
Chen Y	GCST90200232	4-acetylcatechol sulfate (1) levels	7565 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200232/GCST90200232_buildGRCh38.tsv.gz
Chen Y	GCST90200233	2,3-dihydroxy-5-methylthio-4-pentenoate (dmtpa) levels	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200233/GCST90200233_buildGRCh38.tsv.gz
Chen Y	GCST90200234	Picolinoylglycine levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200234/GCST90200234_buildGRCh38.tsv.gz
Chen Y	GCST90200235	Succinoyltaurine levels	7897 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200235/GCST90200235_buildGRCh38.tsv.gz
Chen Y	GCST90200236	Undecenoylcarnitine (C11:1) levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200236/GCST90200236_buildGRCh38.tsv.gz
Chen Y	GCST90200237	Palmitoyl-sphingosine-phosphoethanolamine (d18:1/16:0) levels	8140 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200237/GCST90200237_buildGRCh38.tsv.gz
Chen Y	GCST90200238	Pregnenetriol disulfate levels	8228 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200238/GCST90200238_buildGRCh38.tsv.gz
Chen Y	GCST90200239	Tetradecadienedioate (C14:2-DC) levels	7857 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200239/GCST90200239_buildGRCh38.tsv.gz
Chen Y	GCST90200240	Hydroxy-N6,N6,N6-trimethyllysine levels	8190 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200240/GCST90200240_buildGRCh38.tsv.gz
Chen Y	GCST90200241	Pregnenetriol sulfate levels	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200241/GCST90200241_buildGRCh38.tsv.gz
Chen Y	GCST90200242	Taurochenodeoxycholic acid 3-sulfate levels	7157 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200242/GCST90200242_buildGRCh38.tsv.gz
Chen Y	GCST90200243	Hydroxypalmitoyl sphingomyelin (d18:1/16:0(OH)) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200243/GCST90200243_buildGRCh38.tsv.gz
Chen Y	GCST90200244	5-hydroxymethyl-2-furoylcarnitine levels	4803 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200244/GCST90200244_buildGRCh38.tsv.gz
Chen Y	GCST90200245	Eicosenedioate (C20:1-DC) levels	7861 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200245/GCST90200245_buildGRCh38.tsv.gz
Chen Y	GCST90200246	3-hydroxydecanoylcarnitine levels	8237 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200246/GCST90200246_buildGRCh38.tsv.gz
Chen Y	GCST90200247	Levulinoylcarnitine levels	7197 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200247/GCST90200247_buildGRCh38.tsv.gz
Chen Y	GCST90200248	Cis 3,4-methyleneheptanoate levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200248/GCST90200248_buildGRCh38.tsv.gz
Chen Y	GCST90200249	Branched-chain, straight-chain, or cyclopropyl 12:1 fatty acid levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200249/GCST90200249_buildGRCh38.tsv.gz

Chen Y	GCST90200250	Deoxycholic acid 12-sulfate levels	7438 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200250/GCST90200250_buildGRCh38.tsv.gz
Chen Y	GCST90200251	Branched-chain, straight-chain, or cyclopropyl 10:1 fatty acid (1) levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200251/GCST90200251_buildGRCh38.tsv.gz
Chen Y	GCST90200252	3,5-dichloro-2,6-dihydroxybenzoic acid levels	8218 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200252/GCST90200252_buildGRCh38.tsv.gz
Chen Y	GCST90200253	Vanillic acid glycine levels	7512 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200253/GCST90200253_buildGRCh38.tsv.gz
Chen Y	GCST90200254	(S)-a-amino-omega-caprolactam levels	8185 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200254/GCST90200254_buildGRCh38.tsv.gz
Chen Y	GCST90200255	3-bromo-5-chloro-2,6-dihydroxybenzoic acid levels	8127 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200255/GCST90200255_buildGRCh38.tsv.gz
Chen Y	GCST90200256	Dibutyl sulfosuccinate levels	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200256/GCST90200256_buildGRCh38.tsv.gz
Chen Y	GCST90200257	Metabolonic lactone sulfate levels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200257/GCST90200257_buildGRCh38.tsv.gz
Chen Y	GCST90200258	2-hydroxy-4-(methylthio)butanoic acid levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200258/GCST90200258_buildGRCh38.tsv.gz
Chen Y	GCST90200259	Pentose acid levels	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200259/GCST90200259_buildGRCh38.tsv.gz
Chen Y	GCST90200260	Branched chain 14:0 dicarboxylic acid levels	7990 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200260/GCST90200260_buildGRCh38.tsv.gz
Chen Y	GCST90200261	S-carboxyethylcysteine levels	8010 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200261/GCST90200261_buildGRCh38.tsv.gz
Chen Y	GCST90200262	N-succinyl-phenylalanine levels	6199 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200262/GCST90200262_buildGRCh38.tsv.gz
Chen Y	GCST90200263	(2 or 3)-decenoate (10:1n7 or n8) levels	8124 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200263/GCST90200263_buildGRCh38.tsv.gz
Chen Y	GCST90200264	Bilirubin degradation product, C17H20N2O5 (2) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200264/GCST90200264_buildGRCh38.tsv.gz
Chen Y	GCST90200265	Bilirubin degradation product, C16H18N2O5 (4) levels	8159 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200265/GCST90200265_buildGRCh38.tsv.gz
Chen Y	GCST90200266	Cis-3,4-methyleneheptanoylcarnitine levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200266/GCST90200266_buildGRCh38.tsv.gz
Chen Y	GCST90200267	Tetrahydrocortisol glucuronide levels	8182 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200267/GCST90200267_buildGRCh38.tsv.gz
Chen Y	GCST90200268	N-acetyl-2-aminoadipate levels	7606 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200268/GCST90200268_buildGRCh38.tsv.gz
Chen Y	GCST90200269	Bilirubin degradation product, C17H20N2O5 (1) levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200269/GCST90200269_buildGRCh38.tsv.gz
Chen Y	GCST90200270	2-methoxyhydroquinone sulfate (1) levels	7487 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200270/GCST90200270_buildGRCh38.tsv.gz
Chen Y	GCST90200271	Bilirubin degradation product, C16H18N2O5 (3) levels	7970 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200271/GCST90200271_buildGRCh38.tsv.gz
Chen Y	GCST90200272	3-hydroxyoctanoylcarnitine (1) levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200272/GCST90200272_buildGRCh38.tsv.gz
Chen Y	GCST90200273	2-methoxyhydroquinone sulfate (2) levels	5778 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200273/GCST90200273_buildGRCh38.tsv.gz
Chen Y	GCST90200274	Cis-3,4-methyleneheptanoylglycine levels	8106 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200274/GCST90200274_buildGRCh38.tsv.gz
Chen Y	GCST90200275	Bilirubin degradation product, C16H18N2O5 (2) levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200275/GCST90200275_buildGRCh38.tsv.gz
Chen Y	GCST90200276	2,4-di-tert-butylphenol levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200276/GCST90200276_buildGRCh38.tsv.gz

Chen Y	GCST90200277	Bilirubin degradation product, C16H18N2O5 (1) levels	7864 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200277/GCST90200277_buildGRCh38.tsv.gz
Chen Y	GCST90200278	3-hydroxyoctanoylcarnitine (2) levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200278/GCST90200278_buildGRCh38.tsv.gz
Chen Y	GCST90200279	Pantothenate levels	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200279/GCST90200279_buildGRCh38.tsv.gz
Chen Y	GCST90200280	5-oxoproline levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200280/GCST90200280_buildGRCh38.tsv.gz
Chen Y	GCST90200281	Phosphoethanolamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200281/GCST90200281_buildGRCh38.tsv.gz
Chen Y	GCST90200282	Picolinate levels	7051 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200282/GCST90200282_buildGRCh38.tsv.gz
Chen Y	GCST90200283	3-ureidopropionate levels	7543 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200283/GCST90200283_buildGRCh38.tsv.gz
Chen Y	GCST90200284	Erucate (22:1n9) levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200284/GCST90200284_buildGRCh38.tsv.gz
Chen Y	GCST90200285	Eicosenedioate (C20:1-DC) levels	8166 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200285/GCST90200285_buildGRCh38.tsv.gz
Chen Y	GCST90200286	Allantoin levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200286/GCST90200286_buildGRCh38.tsv.gz
Chen Y	GCST90200287	N-acetylvaline levels	8218 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200287/GCST90200287_buildGRCh38.tsv.gz
Chen Y	GCST90200288	N-acetylleucine levels	7905 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200288/GCST90200288_buildGRCh38.tsv.gz
Chen Y	GCST90200289	N-acetylmethionine levels	7993 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200289/GCST90200289_buildGRCh38.tsv.gz
Chen Y	GCST90200290	Glycerate levels	8222 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200290/GCST90200290_buildGRCh38.tsv.gz
Chen Y	GCST90200291	Sarcosine levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200291/GCST90200291_buildGRCh38.tsv.gz
Chen Y	GCST90200292	Trans-4-hydroxyproline levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200292/GCST90200292_buildGRCh38.tsv.gz
Chen Y	GCST90200293	Thyroxine levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200293/GCST90200293_buildGRCh38.tsv.gz
Chen Y	GCST90200294	Pipecolate levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200294/GCST90200294_buildGRCh38.tsv.gz
Chen Y	GCST90200295	Gamma-glutamyltyrosine levels	8221 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200295/GCST90200295_buildGRCh38.tsv.gz
Chen Y	GCST90200296	Methyl indole-3-acetate levels	7032 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200296/GCST90200296_buildGRCh38.tsv.gz
Chen Y	GCST90200297	Ursodeoxycholate levels	6206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200297/GCST90200297_buildGRCh38.tsv.gz
Chen Y	GCST90200298	3-hydroxy-3-methylglutarate levels	8073 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200298/GCST90200298_buildGRCh38.tsv.gz
Chen Y	GCST90200299	Oleoyl ethanolamide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200299/GCST90200299_buildGRCh38.tsv.gz
Chen Y	GCST90200300	4-hydroxyphenylpyruvate levels	7813 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200300/GCST90200300_buildGRCh38.tsv.gz
Chen Y	GCST90200301	Gamma-glutamylglutamine levels	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200301/GCST90200301_buildGRCh38.tsv.gz
Chen Y	GCST90200302	Alpha-tocopherol levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200302/GCST90200302_buildGRCh38.tsv.gz
Chen Y	GCST90200303	N-acetyl-L-alanine levels	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200303/GCST90200303_buildGRCh38.tsv.gz

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Chen Y	GCST90200304	Citrate levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200304/GCST90200304_buildGRCh38.tsv.gz
Chen Y	GCST90200305	2-aminobutyrate levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200305/GCST90200305_buildGRCh38.tsv.gz
Chen Y	GCST90200306	Butyrate/isobutyrate (4:0) levels	8004 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200306/GCST90200306_buildGRCh38.tsv.gz
Chen Y	GCST90200307	Urate levels	8264 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200307/GCST90200307_buildGRCh38.tsv.gz
Chen Y	GCST90200308	3-hydroxyisobutyrate levels	8177 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200308/GCST90200308_buildGRCh38.tsv.gz
Chen Y	GCST90200309	Vanillylmandelate (VMA) levels	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200309/GCST90200309_buildGRCh38.tsv.gz
Chen Y	GCST90200310	3-aminoisobutyrate levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200310/GCST90200310_buildGRCh38.tsv.gz
Chen Y	GCST90200311	4-acetamidobutanoate levels	8154 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200311/GCST90200311_buildGRCh38.tsv.gz
Chen Y	GCST90200312	2-hydroxystearate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200312/GCST90200312_buildGRCh38.tsv.gz
Chen Y	GCST90200313	N1-methyladenosine levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200313/GCST90200313_buildGRCh38.tsv.gz
Chen Y	GCST90200314	N-acetylneuraminate levels	8200 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200314/GCST90200314_buildGRCh38.tsv.gz
Chen Y	GCST90200315	Gamma-glutamylhistidine levels	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200315/GCST90200315_buildGRCh38.tsv.gz
Chen Y	GCST90200316	N-acetylglucosaminylasparagine levels	8144 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200316/GCST90200316_buildGRCh38.tsv.gz
Chen Y	GCST90200317	Homovanillate (hva) levels	6320 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200317/GCST90200317_buildGRCh38.tsv.gz
Chen Y	GCST90200318	Acetoacetate levels	6883 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200318/GCST90200318_buildGRCh38.tsv.gz
Chen Y	GCST90200319	Cys-gly, oxidized levels	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200319/GCST90200319_buildGRCh38.tsv.gz
Chen Y	GCST90200320	Dihomo-linoleate (20:2n6) levels	8284 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200320/GCST90200320_buildGRCh38.tsv.gz
Chen Y	GCST90200321	Cholate levels	7892 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200321/GCST90200321_buildGRCh38.tsv.gz
Chen Y	GCST90200322	Beta-hydroxyisovalerate levels	8201 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200322/GCST90200322_buildGRCh38.tsv.gz
Chen Y	GCST90200323	Creatine levels	8285 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200323/GCST90200323_buildGRCh38.tsv.gz
Chen Y	GCST90200324	Anthranilate levels	5773 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200324/GCST90200324_buildGRCh38.tsv.gz
Chen Y	GCST90200325	Glycerol levels	8285 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200325/GCST90200325_buildGRCh38.tsv.gz
Chen Y	GCST90200326	Gamma-glutamylleucine levels	8041 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200326/GCST90200326_buildGRCh38.tsv.gz
Chen Y	GCST90200327	Choline levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200327/GCST90200327_buildGRCh38.tsv.gz
Chen Y	GCST90200328	3-methoxytyrosine levels	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200328/GCST90200328_buildGRCh38.tsv.gz
Chen Y	GCST90200329	3-phosphoglycerate levels	8196 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200329/GCST90200329_buildGRCh38.tsv.gz
Chen Y	GCST90200330	1-palmitoyl-2-linoleoyl-gpc (16:0/18:2) levels	8230 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200330/GCST90200330_buildGRCh38.tsv.gz

Chen Y	GCST90200331	1-palmitoyl-2-oleoyl-GPE (16:0/18:1) levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200331/GCST90200331_buildGRCh38.tsv.gz
Chen Y	GCST90200332	1-palmitoyl-2-linoleoyl-GPI (16:0/18:2) levels	8115 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200332/GCST90200332_buildGRCh38.tsv.gz
Chen Y	GCST90200333	Taurocholic acid levels	7743 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200333/GCST90200333_buildGRCh38.tsv.gz
Chen Y	GCST90200334	Taurodeoxycholate levels	7287 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200334/GCST90200334_buildGRCh38.tsv.gz
Chen Y	GCST90200335	Stearoyl sphingomyelin (d18:1/18:0) levels	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200335/GCST90200335_buildGRCh38.tsv.gz
Chen Y	GCST90200336	Ceramide (d18:1/16:0) levels	8266 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200336/GCST90200336_buildGRCh38.tsv.gz
Chen Y	GCST90200337	Taurochenodeoxycholate levels	8048 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200337/GCST90200337_buildGRCh38.tsv.gz
Chen Y	GCST90200338	4-hydroxyphenylacetate levels	7906 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200338/GCST90200338_buildGRCh38.tsv.gz
Chen Y	GCST90200339	5,6-dihydrothymine levels	8219 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200339/GCST90200339_buildGRCh38.tsv.gz
Chen Y	GCST90200340	1-palmitoyl-2-oleoyl-gpc (16:0/18:1) levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200340/GCST90200340_buildGRCh38.tsv.gz
Chen Y	GCST90200341	N-stearoyl-sphingosine (d18:1/18:0) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200341/GCST90200341_buildGRCh38.tsv.gz
Chen Y	GCST90200342	Glycochenodeoxycholate levels	8164 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200342/GCST90200342_buildGRCh38.tsv.gz
Chen Y	GCST90200343	N-formylmethionine levels	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200343/GCST90200343_buildGRCh38.tsv.gz
Chen Y	GCST90200344	N6,n6,n6-trimethyllysine levels	8180 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200344/GCST90200344_buildGRCh38.tsv.gz
Chen Y	GCST90200345	S-adenosylhomocysteine (SAH) levels	6142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200345/GCST90200345_buildGRCh38.tsv.gz
Chen Y	GCST90200346	4-acetaminophen sulfate levels	4197 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200346/GCST90200346_buildGRCh38.tsv.gz
Chen Y	GCST90200347	2-hydroxyhippurate (salicylurate) levels	8244 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200347/GCST90200347_buildGRCh38.tsv.gz
Chen Y	GCST90200348	Quinolinate levels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200348/GCST90200348_buildGRCh38.tsv.gz
Chen Y	GCST90200349	Eicosapentaenoate (EPA; 20:5n3) levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200349/GCST90200349_buildGRCh38.tsv.gz
Chen Y	GCST90200350	Laurate (12:0) levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200350/GCST90200350_buildGRCh38.tsv.gz
Chen Y	GCST90200351	N-acetylputrescine levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200351/GCST90200351_buildGRCh38.tsv.gz
Chen Y	GCST90200352	Methylsuccinate levels	7965 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200352/GCST90200352_buildGRCh38.tsv.gz
Chen Y	GCST90200353	9,10-DiHOME levels	7557 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200353/GCST90200353_buildGRCh38.tsv.gz
Chen Y	GCST90200354	Linoleate (18:2n6) levels	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200354/GCST90200354_buildGRCh38.tsv.gz
Chen Y	GCST90200355	Adenosine 5'-diphosphate (ADP) levels	4607 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200355/GCST90200355_buildGRCh38.tsv.gz
Chen Y	GCST90200356	Adenosine 5'-monophosphate (AMP) levels	8218 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200356/GCST90200356_buildGRCh38.tsv.gz
Chen Y	GCST90200357	Adenosine 3',5'-cyclic monophosphate (camp) levels	6756 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200357/GCST90200357_buildGRCh38.tsv.gz
Chen Y	GCST90200358	Arachidonate (20:4n6) levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200358/GCST90200358_buildGRCh38.tsv.gz

Chen Y	GCST90200359	5-methylthioadenosine (mta) levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200359/GCST90200359_buildGRCh38.tsv.gz
Chen Y	GCST90200360	Cortisone levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200360/GCST90200360_buildGRCh38.tsv.gz
Chen Y	GCST90200361	Beta-alanine levels	8114 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200361/GCST90200361_buildGRCh38.tsv.gz
Chen Y	GCST90200362	Succinate levels	7943 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200362/GCST90200362_buildGRCh38.tsv.gz
Chen Y	GCST90200363	Phosphocholine levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200363/GCST90200363_buildGRCh38.tsv.gz
Chen Y	GCST90200364	Cysteinylglycine levels	8214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200364/GCST90200364_buildGRCh38.tsv.gz
Chen Y	GCST90200365	Phenylpyruvate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200365/GCST90200365_buildGRCh38.tsv.gz
Chen Y	GCST90200366	Creatinine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200366/GCST90200366_buildGRCh38.tsv.gz
Chen Y	GCST90200367	3-Hydroxybutyrate levels	8292 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200367/GCST90200367_buildGRCh38.tsv.gz
Chen Y	GCST90200368	Cholesterol levels	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200368/GCST90200368_buildGRCh38.tsv.gz
Chen Y	GCST90200369	2-hydroxyphenylacetate levels	7564 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200369/GCST90200369_buildGRCh38.tsv.gz
Chen Y	GCST90200370	Aspartate levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200370/GCST90200370_buildGRCh38.tsv.gz
Chen Y	GCST90200371	3-(4-hydroxyphenyl)lactate levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200371/GCST90200371_buildGRCh38.tsv.gz
Chen Y	GCST90200372	Arginine levels	8237 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200372/GCST90200372_buildGRCh38.tsv.gz
Chen Y	GCST90200373	Gluconate levels	8106 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200373/GCST90200373_buildGRCh38.tsv.gz
Chen Y	GCST90200374	Sphinganine levels	7429 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200374/GCST90200374_buildGRCh38.tsv.gz
Chen Y	GCST90200375	Gamma-glutamylglutamate levels	8244 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200375/GCST90200375_buildGRCh38.tsv.gz
Chen Y	GCST90200376	Flavin adenine dinucleotide (FAD) levels	6257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200376/GCST90200376_buildGRCh38.tsv.gz
Chen Y	GCST90200377	Histidine levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200377/GCST90200377_buildGRCh38.tsv.gz
Chen Y	GCST90200378	Cortisol levels (plasma)	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200378/GCST90200378_buildGRCh38.tsv.gz
Chen Y	GCST90200379	Hypotaurine levels	8212 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200379/GCST90200379_buildGRCh38.tsv.gz
Chen Y	GCST90200380	Glutarate (C5-DC) levels	7757 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200380/GCST90200380_buildGRCh38.tsv.gz
Chen Y	GCST90200381	S-1-pyrroline-5-carboxylate levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200381/GCST90200381_buildGRCh38.tsv.gz
Chen Y	GCST90200382	Cystine levels	8177 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200382/GCST90200382_buildGRCh38.tsv.gz
Chen Y	GCST90200383	Cystathionine levels	8014 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200383/GCST90200383_buildGRCh38.tsv.gz
Chen Y	GCST90200384	Guanidinoacetate levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200384/GCST90200384_buildGRCh38.tsv.gz
Chen Y	GCST90200385	Sphingosine levels	7982 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200385/GCST90200385_buildGRCh38.tsv.gz
Chen Y	GCST90200386	Deoxycholate levels	7649 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200386/GCST90200386_buildGRCh38.tsv.gz

Chen Y	GCST90200387	Glycocholate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200387/GCST90200387_buildGRCh38.tsv.gz
Chen Y	GCST90200388	Palmitoleate (16:1n7) levels	8290 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200388/GCST90200388_buildGRCh38.tsv.gz
Chen Y	GCST90200389	Leucine levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200389/GCST90200389_buildGRCh38.tsv.gz
Chen Y	GCST90200390	Stearate (18:0) levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200390/GCST90200390_buildGRCh38.tsv.gz
Chen Y	GCST90200391	Methionine levels	8222 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200391/GCST90200391_buildGRCh38.tsv.gz
Chen Y	GCST90200392	Orotate levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200392/GCST90200392_buildGRCh38.tsv.gz
Chen Y	GCST90200393	Phosphate levels (UKB data field 30810)	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200393/GCST90200393_buildGRCh38.tsv.gz
Chen Y	GCST90200394	Inosine levels	4940 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200394/GCST90200394_buildGRCh38.tsv.gz
Chen Y	GCST90200395	Inosine 5'-monophosphate (IMP) levels	4639 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200395/GCST90200395_buildGRCh38.tsv.gz
Chen Y	GCST90200396	Phenylalanine levels	8228 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200396/GCST90200396_buildGRCh38.tsv.gz
Chen Y	GCST90200397	Palmitate (16:0) levels	8269 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200397/GCST90200397_buildGRCh38.tsv.gz
Chen Y	GCST90200398	Malate levels	8187 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200398/GCST90200398_buildGRCh38.tsv.gz
Chen Y	GCST90200399	Isoleucine levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200399/GCST90200399_buildGRCh38.tsv.gz
Chen Y	GCST90200400	Nicotinamide levels	8110 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200400/GCST90200400_buildGRCh38.tsv.gz
Chen Y	GCST90200401	Myo-inositol levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200401/GCST90200401_buildGRCh38.tsv.gz
Chen Y	GCST90200402	Lysine levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200402/GCST90200402_buildGRCh38.tsv.gz
Chen Y	GCST90200403	Citrulline levels	8157 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200403/GCST90200403_buildGRCh38.tsv.gz
Chen Y	GCST90200404	Ornithine levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200404/GCST90200404_buildGRCh38.tsv.gz
Chen Y	GCST90200405	Retinol (Vitamin A) levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200405/GCST90200405_buildGRCh38.tsv.gz
Chen Y	GCST90200406	1-methylnicotinamide levels	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200406/GCST90200406_buildGRCh38.tsv.gz
Chen Y	GCST90200407	Uridine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200407/GCST90200407_buildGRCh38.tsv.gz
Chen Y	GCST90200408	Plasma lactate levels	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200408/GCST90200408_buildGRCh38.tsv.gz
Chen Y	GCST90200409	Pristanate levels	6497 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200409/GCST90200409_buildGRCh38.tsv.gz
Chen Y	GCST90200410	Phytanate levels	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200410/GCST90200410_buildGRCh38.tsv.gz
Chen Y	GCST90200411	Plasma free proline levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200411/GCST90200411_buildGRCh38.tsv.gz
Chen Y	GCST90200412	Glutamate levels	8287 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200412/GCST90200412_buildGRCh38.tsv.gz
Chen Y	GCST90200413	2'-deoxyuridine levels	7915 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200413/GCST90200413_buildGRCh38.tsv.gz
Chen Y	GCST90200414	Myristate (14:0) levels	8282 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200414/GCST90200414_buildGRCh38.tsv.gz

Chen Y	GCST90200415	Serine levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200415/GCST90200415_buildGRCh38.tsv.gz
Chen Y	GCST90200416	Trans-urocanate levels	8198 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200416/GCST90200416_buildGRCh38.tsv.gz
Chen Y	GCST90200417	Urea levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200417/GCST90200417_buildGRCh38.tsv.gz
Chen Y	GCST90200418	Pyridoxal levels	8021 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200418/GCST90200418_buildGRCh38.tsv.gz
Chen Y	GCST90200419	Glutamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200419/GCST90200419_buildGRCh38.tsv.gz
Chen Y	GCST90200420	Taurine levels	8219 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200420/GCST90200420_buildGRCh38.tsv.gz
Chen Y	GCST90200421	Salicylate levels	8191 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200421/GCST90200421_buildGRCh38.tsv.gz
Chen Y	GCST90200422	Serotonin levels	7498 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200422/GCST90200422_buildGRCh38.tsv.gz
Chen Y	GCST90200423	Spermidine levels	7348 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200423/GCST90200423_buildGRCh38.tsv.gz
Chen Y	GCST90200424	Dimethylglycine levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200424/GCST90200424_buildGRCh38.tsv.gz
Chen Y	GCST90200425	Betaine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200425/GCST90200425_buildGRCh38.tsv.gz
Chen Y	GCST90200426	Xylose levels	6822 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200426/GCST90200426_buildGRCh38.tsv.gz
Chen Y	GCST90200427	Tyrosine levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200427/GCST90200427_buildGRCh38.tsv.gz
Chen Y	GCST90200428	Caprate (10:0) levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200428/GCST90200428_buildGRCh38.tsv.gz
Chen Y	GCST90200429	Cytidine levels	7659 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200429/GCST90200429_buildGRCh38.tsv.gz
Chen Y	GCST90200430	Pyruvate levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200430/GCST90200430_buildGRCh38.tsv.gz
Chen Y	GCST90200431	Alanine levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200431/GCST90200431_buildGRCh38.tsv.gz
Chen Y	GCST90200432	Threonine levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200432/GCST90200432_buildGRCh38.tsv.gz
Chen Y	GCST90200433	Cytosine levels	6990 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200433/GCST90200433_buildGRCh38.tsv.gz
Chen Y	GCST90200434	12,13-DiHOME levels	7918 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200434/GCST90200434_buildGRCh38.tsv.gz
Chen Y	GCST90200435	Mannose levels	8212 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200435/GCST90200435_buildGRCh38.tsv.gz
Chen Y	GCST90200436	Caffeine levels	8005 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200436/GCST90200436_buildGRCh38.tsv.gz
Chen Y	GCST90200437	Fructose levels	8137 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200437/GCST90200437_buildGRCh38.tsv.gz
Chen Y	GCST90200438	Alpha-ketobutyrate levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200438/GCST90200438_buildGRCh38.tsv.gz
Chen Y	GCST90200439	Cysteine levels	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200439/GCST90200439_buildGRCh38.tsv.gz
Chen Y	GCST90200440	Blood sugar levels	8123 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200440/GCST90200440_buildGRCh38.tsv.gz
Chen Y	GCST90200441	Tryptophan levels	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200441/GCST90200441_buildGRCh38.tsv.gz
Chen Y	GCST90200442	Valine levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200442/GCST90200442_buildGRCh38.tsv.gz

Chen Y	GCST90200443	Pseudouridine levels	8213 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200443/GCST90200443_buildGRCh38.tsv.gz
Chen Y	GCST90200444	Dihydroorotate levels	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200444/GCST90200444_buildGRCh38.tsv.gz
Chen Y	GCST90200445	Caprylate (8:0) levels	8163 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200445/GCST90200445_buildGRCh38.tsv.gz
Chen Y	GCST90200446	Arachidate (20:0) levels	8228 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200446/GCST90200446_buildGRCh38.tsv.gz
Chen Y	GCST90200447	Maltose levels in coronary artery disease	6351 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200447/GCST90200447_buildGRCh38.tsv.gz
Chen Y	GCST90200448	N-stearoyl-sphinganine (d18:0/18:0) levels	6737 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200448/GCST90200448_buildGRCh38.tsv.gz
Chen Y	GCST90200449	Sucrose levels	7803 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200449/GCST90200449_buildGRCh38.tsv.gz
Chen Y	GCST90200450	Caproate (6:0) levels	7564 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200450/GCST90200450_buildGRCh38.tsv.gz
Chen Y	GCST90200451	Nonadecanoate (19:0) levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200451/GCST90200451_buildGRCh38.tsv.gz
Chen Y	GCST90200452	Plasma free asparagine levels	8245 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200452/GCST90200452_buildGRCh38.tsv.gz
Chen Y	GCST90200453	X-07765 levels	8127 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200453/GCST90200453_buildGRCh38.tsv.gz
Chen Y	GCST90200454	Kynurenate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200454/GCST90200454_buildGRCh38.tsv.gz
Chen Y	GCST90200455	Alpha-ketoglutarate levels	8212 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200455/GCST90200455_buildGRCh38.tsv.gz
Chen Y	GCST90200456	X-11308 levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200456/GCST90200456_buildGRCh38.tsv.gz
Chen Y	GCST90200457	Pentadecanoate (15:0) levels	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200457/GCST90200457_buildGRCh38.tsv.gz
Chen Y	GCST90200458	X-11315 levels	8139 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200458/GCST90200458_buildGRCh38.tsv.gz
Chen Y	GCST90200459	Margarate (17:0) levels	8279 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200459/GCST90200459_buildGRCh38.tsv.gz
Chen Y	GCST90200460	X-11372 levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200460/GCST90200460_buildGRCh38.tsv.gz
Chen Y	GCST90200461	X-10458 levels	7970 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200461/GCST90200461_buildGRCh38.tsv.gz
Chen Y	GCST90200462	X-11299 levels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200462/GCST90200462_buildGRCh38.tsv.gz
Chen Y	GCST90200463	X-11478 levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200463/GCST90200463_buildGRCh38.tsv.gz
Chen Y	GCST90200464	X-11849 levels	7679 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200464/GCST90200464_buildGRCh38.tsv.gz
Chen Y	GCST90200465	X-11787 levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200465/GCST90200465_buildGRCh38.tsv.gz
Chen Y	GCST90200466	X-11632 levels	7784 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200466/GCST90200466_buildGRCh38.tsv.gz
Chen Y	GCST90200467	X-11852 levels	7295 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200467/GCST90200467_buildGRCh38.tsv.gz
Chen Y	GCST90200468	X-11847 levels	7193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200468/GCST90200468_buildGRCh38.tsv.gz
Chen Y	GCST90200469	X-11483 levels	7798 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200469/GCST90200469_buildGRCh38.tsv.gz
Chen Y	GCST90200470	X-11470 levels	8134 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200470/GCST90200470_buildGRCh38.tsv.gz

Chen Y	GCST90200471	X-11381 levels	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200471/GCST90200471_buildGRCh38.tsv.gz
Chen Y	GCST90200472	X-11850 levels	7629 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200472/GCST90200472_buildGRCh38.tsv.gz
Chen Y	GCST90200473	X-11795 levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200473/GCST90200473_buildGRCh38.tsv.gz
Chen Y	GCST90200474	X-11444 levels	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200474/GCST90200474_buildGRCh38.tsv.gz
Chen Y	GCST90200475	X-11858 levels	6008 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200475/GCST90200475_buildGRCh38.tsv.gz
Chen Y	GCST90200476	X-11843 levels	7230 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200476/GCST90200476_buildGRCh38.tsv.gz
Chen Y	GCST90200477	X-12127 levels	5878 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200477/GCST90200477_buildGRCh38.tsv.gz
Chen Y	GCST90200478	X-12221 levels	6819 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200478/GCST90200478_buildGRCh38.tsv.gz
Chen Y	GCST90200479	X-12283 levels	7763 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200479/GCST90200479_buildGRCh38.tsv.gz
Chen Y	GCST90200480	X-12410 levels	7442 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200480/GCST90200480_buildGRCh38.tsv.gz
Chen Y	GCST90200481	X-12104 levels	7194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200481/GCST90200481_buildGRCh38.tsv.gz
Chen Y	GCST90200482	X-12193 levels	7705 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200482/GCST90200482_buildGRCh38.tsv.gz
Chen Y	GCST90200483	X-12216 levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200483/GCST90200483_buildGRCh38.tsv.gz
Chen Y	GCST90200484	X-12306 levels	6054 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200484/GCST90200484_buildGRCh38.tsv.gz
Chen Y	GCST90200485	X-12100 levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200485/GCST90200485_buildGRCh38.tsv.gz
Chen Y	GCST90200486	X-12261 levels	4347 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200486/GCST90200486_buildGRCh38.tsv.gz
Chen Y	GCST90200487	X-11880 levels	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200487/GCST90200487_buildGRCh38.tsv.gz
Chen Y	GCST90200488	X-12117 levels	7379 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200488/GCST90200488_buildGRCh38.tsv.gz
Chen Y	GCST90200489	X-12407 levels	6534 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200489/GCST90200489_buildGRCh38.tsv.gz
Chen Y	GCST90200490	X-12101 levels	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200490/GCST90200490_buildGRCh38.tsv.gz
Chen Y	GCST90200491	X-12026 levels	8180 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200491/GCST90200491_buildGRCh38.tsv.gz
Chen Y	GCST90200492	X-12411 levels	8174 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200492/GCST90200492_buildGRCh38.tsv.gz
Chen Y	GCST90200493	X-12013 levels	5848 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200493/GCST90200493_buildGRCh38.tsv.gz
Chen Y	GCST90200494	X-12007 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200494/GCST90200494_buildGRCh38.tsv.gz
Chen Y	GCST90200495	X-12462 levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200495/GCST90200495_buildGRCh38.tsv.gz
Chen Y	GCST90200496	X-12714 levels	6870 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200496/GCST90200496_buildGRCh38.tsv.gz
Chen Y	GCST90200497	X-12740 levels	6449 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200497/GCST90200497_buildGRCh38.tsv.gz
Chen Y	GCST90200498	X-12730 levels	7133 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200498/GCST90200498_buildGRCh38.tsv.gz

Chen Y	GCST90200499	X-12701 levels	6278 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200499/GCST90200499_buildGRCh38.tsv.gz
Chen Y	GCST90200500	X-12816 levels	5190 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200500/GCST90200500_buildGRCh38.tsv.gz
Chen Y	GCST90200501	X-12731 levels	5770 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200501/GCST90200501_buildGRCh38.tsv.gz
Chen Y	GCST90200502	X-12707 levels	7461 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200502/GCST90200502_buildGRCh38.tsv.gz
Chen Y	GCST90200503	X-12729 levels	7446 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200503/GCST90200503_buildGRCh38.tsv.gz
Chen Y	GCST90200504	X-12830 levels	5725 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200504/GCST90200504_buildGRCh38.tsv.gz
Chen Y	GCST90200505	X-12818 levels	6246 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200505/GCST90200505_buildGRCh38.tsv.gz
Chen Y	GCST90200506	X-12812 levels	6435 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200506/GCST90200506_buildGRCh38.tsv.gz
Chen Y	GCST90200507	X-12822 levels	7957 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200507/GCST90200507_buildGRCh38.tsv.gz
Chen Y	GCST90200508	X-12738 levels	5874 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200508/GCST90200508_buildGRCh38.tsv.gz
Chen Y	GCST90200509	X-12544 levels	7471 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200509/GCST90200509_buildGRCh38.tsv.gz
Chen Y	GCST90200510	X-12680 levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200510/GCST90200510_buildGRCh38.tsv.gz
Chen Y	GCST90200511	X-12906 levels	7896 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200511/GCST90200511_buildGRCh38.tsv.gz
Chen Y	GCST90200512	X-13684 levels	8112 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200512/GCST90200512_buildGRCh38.tsv.gz
Chen Y	GCST90200513	X-13507 levels	7936 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200513/GCST90200513_buildGRCh38.tsv.gz
Chen Y	GCST90200514	X-12851 levels	7385 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200514/GCST90200514_buildGRCh38.tsv.gz
Chen Y	GCST90200515	X-12849 levels	7555 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200515/GCST90200515_buildGRCh38.tsv.gz
Chen Y	GCST90200516	X-12847 levels	7790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200516/GCST90200516_buildGRCh38.tsv.gz
Chen Y	GCST90200517	X-13553 levels	8118 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200517/GCST90200517_buildGRCh38.tsv.gz
Chen Y	GCST90200518	X-12839 levels	4867 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200518/GCST90200518_buildGRCh38.tsv.gz
Chen Y	GCST90200519	X-13729 levels	7724 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200519/GCST90200519_buildGRCh38.tsv.gz
Chen Y	GCST90200520	X-13007 levels	6270 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200520/GCST90200520_buildGRCh38.tsv.gz
Chen Y	GCST90200521	X-13844 levels	7501 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200521/GCST90200521_buildGRCh38.tsv.gz
Chen Y	GCST90200522	X-13728 levels	7905 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200522/GCST90200522_buildGRCh38.tsv.gz
Chen Y	GCST90200523	X-12844 levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200523/GCST90200523_buildGRCh38.tsv.gz
Chen Y	GCST90200524	X-13695 levels	6486 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200524/GCST90200524_buildGRCh38.tsv.gz
Chen Y	GCST90200525	X-13723 levels	5269 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200525/GCST90200525_buildGRCh38.tsv.gz
Chen Y	GCST90200526	X-14056 levels	8242 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200526/GCST90200526_buildGRCh38.tsv.gz

Chen Y	GCST90200527	X-13866 levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200527/GCST90200527_buildGRCh38.tsv.gz
Chen Y	GCST90200528	X-17146 levels	7778 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200528/GCST90200528_buildGRCh38.tsv.gz
Chen Y	GCST90200529	X-16397 levels	8057 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200529/GCST90200529_buildGRCh38.tsv.gz
Chen Y	GCST90200530	X-17335 levels	7747 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200530/GCST90200530_buildGRCh38.tsv.gz
Chen Y	GCST90200531	X-16964 levels	8048 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200531/GCST90200531_buildGRCh38.tsv.gz
Chen Y	GCST90200532	X-16935 levels	7804 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200532/GCST90200532_buildGRCh38.tsv.gz
Chen Y	GCST90200533	X-15486 levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200533/GCST90200533_buildGRCh38.tsv.gz
Chen Y	GCST90200534	X-16580 levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200534/GCST90200534_buildGRCh38.tsv.gz
Chen Y	GCST90200535	X-17325 levels	7448 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200535/GCST90200535_buildGRCh38.tsv.gz
Chen Y	GCST90200536	X-17328 levels	5856 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200536/GCST90200536_buildGRCh38.tsv.gz
Chen Y	GCST90200537	X-16087 levels	7071 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200537/GCST90200537_buildGRCh38.tsv.gz
Chen Y	GCST90200538	X-17010 levels	7879 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200538/GCST90200538_buildGRCh38.tsv.gz
Chen Y	GCST90200539	X-14939 levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200539/GCST90200539_buildGRCh38.tsv.gz
Chen Y	GCST90200540	X-15461 levels	8144 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200540/GCST90200540_buildGRCh38.tsv.gz
Chen Y	GCST90200541	X-15523 levels	8071 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200541/GCST90200541_buildGRCh38.tsv.gz
Chen Y	GCST90200542	X-15728 levels	7874 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200542/GCST90200542_buildGRCh38.tsv.gz
Chen Y	GCST90200543	X-15503 levels	8237 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200543/GCST90200543_buildGRCh38.tsv.gz
Chen Y	GCST90200544	X-16124 levels	5337 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200544/GCST90200544_buildGRCh38.tsv.gz
Chen Y	GCST90200545	X-17438 levels	6913 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200545/GCST90200545_buildGRCh38.tsv.gz
Chen Y	GCST90200546	X-17354 levels	5375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200546/GCST90200546_buildGRCh38.tsv.gz
Chen Y	GCST90200547	X-17654 levels	7690 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200547/GCST90200547_buildGRCh38.tsv.gz
Chen Y	GCST90200548	X-17676 levels	8118 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200548/GCST90200548_buildGRCh38.tsv.gz
Chen Y	GCST90200549	X-17367 levels	6092 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200549/GCST90200549_buildGRCh38.tsv.gz
Chen Y	GCST90200550	X-17357 levels	8041 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200550/GCST90200550_buildGRCh38.tsv.gz
Chen Y	GCST90200551	X-18886 levels	8198 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200551/GCST90200551_buildGRCh38.tsv.gz
Chen Y	GCST90200552	X-18887 levels	6790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200552/GCST90200552_buildGRCh38.tsv.gz
Chen Y	GCST90200553	X-17653 levels	8025 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200553/GCST90200553_buildGRCh38.tsv.gz
Chen Y	GCST90200554	X-17346 levels	6459 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200554/GCST90200554_buildGRCh38.tsv.gz

Chen Y	GCST90200555	X-17690 levels	7043 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200555/GCST90200555_buildGRCh38.tsv.gz
Chen Y	GCST90200556	X-18345 levels	5476 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200556/GCST90200556_buildGRCh38.tsv.gz
Chen Y	GCST90200557	X-17685 levels	7327 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200557/GCST90200557_buildGRCh38.tsv.gz
Chen Y	GCST90200558	X-18888 levels	6974 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200558/GCST90200558_buildGRCh38.tsv.gz
Chen Y	GCST90200559	X-18901 levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200559/GCST90200559_buildGRCh38.tsv.gz
Chen Y	GCST90200560	X-17351 levels	7281 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200560/GCST90200560_buildGRCh38.tsv.gz
Chen Y	GCST90200561	X-18779 levels	8144 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200561/GCST90200561_buildGRCh38.tsv.gz
Chen Y	GCST90200562	X-21286 levels	8231 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200562/GCST90200562_buildGRCh38.tsv.gz
Chen Y	GCST90200563	X-21355 levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200563/GCST90200563_buildGRCh38.tsv.gz
Chen Y	GCST90200564	X-21319 levels	8109 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200564/GCST90200564_buildGRCh38.tsv.gz
Chen Y	GCST90200565	X-21258 levels	8198 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200565/GCST90200565_buildGRCh38.tsv.gz
Chen Y	GCST90200566	X-21364 levels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200566/GCST90200566_buildGRCh38.tsv.gz
Chen Y	GCST90200567	X-21353 levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200567/GCST90200567_buildGRCh38.tsv.gz
Chen Y	GCST90200568	X-19438 levels	7259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200568/GCST90200568_buildGRCh38.tsv.gz
Chen Y	GCST90200569	X-18913 levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200569/GCST90200569_buildGRCh38.tsv.gz
Chen Y	GCST90200570	X-18921 levels	8257 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200570/GCST90200570_buildGRCh38.tsv.gz
Chen Y	GCST90200571	X-21339 levels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200571/GCST90200571_buildGRCh38.tsv.gz
Chen Y	GCST90200572	X-19299 levels	6100 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200572/GCST90200572_buildGRCh38.tsv.gz
Chen Y	GCST90200573	X-18935 levels	4952 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200573/GCST90200573_buildGRCh38.tsv.gz
Chen Y	GCST90200574	X-21310 levels	7801 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200574/GCST90200574_buildGRCh38.tsv.gz
Chen Y	GCST90200575	X-21283 levels	7055 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200575/GCST90200575_buildGRCh38.tsv.gz
Chen Y	GCST90200576	X-21285 levels	6180 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200576/GCST90200576_buildGRCh38.tsv.gz
Chen Y	GCST90200577	X-21312 levels	4897 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200577/GCST90200577_buildGRCh38.tsv.gz
Chen Y	GCST90200578	X-18922 levels	8174 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200578/GCST90200578_buildGRCh38.tsv.gz
Chen Y	GCST90200579	X-21442 levels	6827 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200579/GCST90200579_buildGRCh38.tsv.gz
Chen Y	GCST90200580	X-21796 levels	8130 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200580/GCST90200580_buildGRCh38.tsv.gz
Chen Y	GCST90200581	X-21441 levels	8030 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200581/GCST90200581_buildGRCh38.tsv.gz
Chen Y	GCST90200582	X-21752 levels	6526 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200582/GCST90200582_buildGRCh38.tsv.gz

Chen Y	GCST90200583	X-21807 levels	5602 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200583/GCST90200583_buildGRCh38.tsv.gz
Chen Y	GCST90200584	X-21736 levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200584/GCST90200584_buildGRCh38.tsv.gz
Chen Y	GCST90200585	X-21829 levels	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200585/GCST90200585_buildGRCh38.tsv.gz
Chen Y	GCST90200586	X-21471 levels	7982 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200586/GCST90200586_buildGRCh38.tsv.gz
Chen Y	GCST90200587	X-21733 levels	6916 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200587/GCST90200587_buildGRCh38.tsv.gz
Chen Y	GCST90200588	X-21742 levels	5918 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200588/GCST90200588_buildGRCh38.tsv.gz
Chen Y	GCST90200589	X-21821 levels	7699 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200589/GCST90200589_buildGRCh38.tsv.gz
Chen Y	GCST90200590	X-21470 levels	7700 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200590/GCST90200590_buildGRCh38.tsv.gz
Chen Y	GCST90200591	X-21383 levels	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200591/GCST90200591_buildGRCh38.tsv.gz
Chen Y	GCST90200592	X-21607 levels	7975 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200592/GCST90200592_buildGRCh38.tsv.gz
Chen Y	GCST90200593	X-21834 levels	7466 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200593/GCST90200593_buildGRCh38.tsv.gz
Chen Y	GCST90200594	X-21467 levels	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200594/GCST90200594_buildGRCh38.tsv.gz
Chen Y	GCST90200595	X-22776 levels	6944 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200595/GCST90200595_buildGRCh38.tsv.gz
Chen Y	GCST90200596	X-23655 levels	6764 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200596/GCST90200596_buildGRCh38.tsv.gz
Chen Y	GCST90200597	X-22834 levels	6531 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200597/GCST90200597_buildGRCh38.tsv.gz
Chen Y	GCST90200598	X-22771 levels	8087 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200598/GCST90200598_buildGRCh38.tsv.gz
Chen Y	GCST90200599	X-23639 levels	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200599/GCST90200599_buildGRCh38.tsv.gz
Chen Y	GCST90200600	X-23648 levels	7357 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200600/GCST90200600_buildGRCh38.tsv.gz
Chen Y	GCST90200601	X-23654 levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200601/GCST90200601_buildGRCh38.tsv.gz
Chen Y	GCST90200602	X-22520 levels	5389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200602/GCST90200602_buildGRCh38.tsv.gz
Chen Y	GCST90200603	X-23641 levels	6673 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200603/GCST90200603_buildGRCh38.tsv.gz
Chen Y	GCST90200604	X-23276 levels	5407 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200604/GCST90200604_buildGRCh38.tsv.gz
Chen Y	GCST90200605	X-21845 levels	4874 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200605/GCST90200605_buildGRCh38.tsv.gz
Chen Y	GCST90200606	X-22509 levels	5423 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200606/GCST90200606_buildGRCh38.tsv.gz
Chen Y	GCST90200607	X-23644 levels	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200607/GCST90200607_buildGRCh38.tsv.gz
Chen Y	GCST90200608	X-22162 levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200608/GCST90200608_buildGRCh38.tsv.gz
Chen Y	GCST90200609	X-23587 levels	7662 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200609/GCST90200609_buildGRCh38.tsv.gz
Chen Y	GCST90200610	X-23593 levels	7988 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200610/GCST90200610_buildGRCh38.tsv.gz

Chen Y	GCST90200611	X-23636 levels	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200611/GCST90200611_buildGRCh38.tsv.gz
Chen Y	GCST90200612	X-23678 levels	5745 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200612/GCST90200612_buildGRCh38.tsv.gz
Chen Y	GCST90200613	X-23680 levels	8215 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200613/GCST90200613_buildGRCh38.tsv.gz
Chen Y	GCST90200614	X-23780 levels	7878 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200614/GCST90200614_buildGRCh38.tsv.gz
Chen Y	GCST90200615	X-23974 levels	7752 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200615/GCST90200615_buildGRCh38.tsv.gz
Chen Y	GCST90200616	X-23659 levels	8176 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200616/GCST90200616_buildGRCh38.tsv.gz
Chen Y	GCST90200617	X-23665 levels	8214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200617/GCST90200617_buildGRCh38.tsv.gz
Chen Y	GCST90200618	X-23782 levels	8263 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200618/GCST90200618_buildGRCh38.tsv.gz
Chen Y	GCST90200619	X-24295 levels	7987 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200619/GCST90200619_buildGRCh38.tsv.gz
Chen Y	GCST90200620	X-24243 levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200620/GCST90200620_buildGRCh38.tsv.gz
Chen Y	GCST90200621	X-23739 levels	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200621/GCST90200621_buildGRCh38.tsv.gz
Chen Y	GCST90200622	X-23997 levels	7804 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200622/GCST90200622_buildGRCh38.tsv.gz
Chen Y	GCST90200623	X-24241 levels	8053 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200623/GCST90200623_buildGRCh38.tsv.gz
Chen Y	GCST90200624	X-24328 levels	7807 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200624/GCST90200624_buildGRCh38.tsv.gz
Chen Y	GCST90200625	X-24456 levels	6523 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200625/GCST90200625_buildGRCh38.tsv.gz
Chen Y	GCST90200626	X-24418 levels	5952 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200626/GCST90200626_buildGRCh38.tsv.gz
Chen Y	GCST90200627	X-24344 levels	5457 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200627/GCST90200627_buildGRCh38.tsv.gz
Chen Y	GCST90200628	X-24556 levels	8004 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200628/GCST90200628_buildGRCh38.tsv.gz
Chen Y	GCST90200629	X-24337 levels	8088 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200629/GCST90200629_buildGRCh38.tsv.gz
Chen Y	GCST90200630	X-24546 levels	6391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200630/GCST90200630_buildGRCh38.tsv.gz
Chen Y	GCST90200631	X-24306 levels	8074 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200631/GCST90200631_buildGRCh38.tsv.gz
Chen Y	GCST90200632	X-24307 levels	8119 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200632/GCST90200632_buildGRCh38.tsv.gz
Chen Y	GCST90200633	X-24334 levels	6975 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200633/GCST90200633_buildGRCh38.tsv.gz
Chen Y	GCST90200634	X-24518 levels	6131 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200634/GCST90200634_buildGRCh38.tsv.gz
Chen Y	GCST90200635	X-24494 levels	6767 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200635/GCST90200635_buildGRCh38.tsv.gz
Chen Y	GCST90200636	X-24544 levels	7939 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200636/GCST90200636_buildGRCh38.tsv.gz
Chen Y	GCST90200637	X-24531 levels	6455 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200637/GCST90200637_buildGRCh38.tsv.gz
Chen Y	GCST90200638	X-24811 levels	6349 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200638/GCST90200638_buildGRCh38.tsv.gz

Chen Y	GCST90200639	X-24757 levels	6251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200639/GCST90200639_buildGRCh38.tsv.gz
Chen Y	GCST90200640	X-24978 levels	5151 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200640/GCST90200640_buildGRCh38.tsv.gz
Chen Y	GCST90200641	X-24970 levels	8263 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200641/GCST90200641_buildGRCh38.tsv.gz
Chen Y	GCST90200642	X-24795 levels	4986 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200642/GCST90200642_buildGRCh38.tsv.gz
Chen Y	GCST90200643	X-24951 levels	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200643/GCST90200643_buildGRCh38.tsv.gz
Chen Y	GCST90200644	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
Chen Y	GCST90200645	X-24565 levels	4364 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200645/GCST90200645_buildGRCh38.tsv.gz
Chen Y	GCST90200646	X-24801 levels	8059 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200646/GCST90200646_buildGRCh38.tsv.gz
Chen Y	GCST90200647	X-24736 levels	4846 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200647/GCST90200647_buildGRCh38.tsv.gz
Chen Y	GCST90200648	X-24585 levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200648/GCST90200648_buildGRCh38.tsv.gz
Chen Y	GCST90200649	X-24588 levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200649/GCST90200649_buildGRCh38.tsv.gz
Chen Y	GCST90200650	X-25109 levels	7477 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200650/GCST90200650_buildGRCh38.tsv.gz
Chen Y	GCST90200651	X-24947 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200651/GCST90200651_buildGRCh38.tsv.gz
Chen Y	GCST90200652	X-24949 levels	7174 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200652/GCST90200652_buildGRCh38.tsv.gz
Chen Y	GCST90200653	X-24812 levels	7878 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200653/GCST90200653_buildGRCh38.tsv.gz
Chen Y	GCST90200654	X-25217 levels	4098 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200654/GCST90200654_buildGRCh38.tsv.gz
Chen Y	GCST90200655	X-25828 levels	8156 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200655/GCST90200655_buildGRCh38.tsv.gz
Chen Y	GCST90200656	X-25371 levels	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200656/GCST90200656_buildGRCh38.tsv.gz
Chen Y	GCST90200657	X-25419 levels	7994 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200657/GCST90200657_buildGRCh38.tsv.gz
Chen Y	GCST90200658	X-25265 levels	7916 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200658/GCST90200658_buildGRCh38.tsv.gz
Chen Y	GCST90200659	X-25172 levels	8117 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200659/GCST90200659_buildGRCh38.tsv.gz
Chen Y	GCST90200660	X-25957 levels	7335 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200660/GCST90200660_buildGRCh38.tsv.gz
Chen Y	GCST90200661	X-25422 levels	8210 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200661/GCST90200661_buildGRCh38.tsv.gz
Chen Y	GCST90200662	X-25790 levels	8221 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200662/GCST90200662_buildGRCh38.tsv.gz
Chen Y	GCST90200663	X-25420 levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200663/GCST90200663_buildGRCh38.tsv.gz
Chen Y	GCST90200664	X-25810 levels	8167 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200664/GCST90200664_buildGRCh38.tsv.gz
Chen Y	GCST90200665	X-25433 levels	6516 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200665/GCST90200665_buildGRCh38.tsv.gz
Chen Y	GCST90200666	X-25343 levels	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200666/GCST90200666_buildGRCh38.tsv.gz

Chen Y	GCST90200667	X-25271 levels	7906 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200667/GCST90200667_buildGRCh38.tsv.gz
Chen Y	GCST90200668	X-25520 levels	7997 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200668/GCST90200668_buildGRCh38.tsv.gz
Chen Y	GCST90200669	X-25519 levels	8080 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200669/GCST90200669_buildGRCh38.tsv.gz
Chen Y	GCST90200670	X-26111 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200670/GCST90200670_buildGRCh38.tsv.gz
Chen Y	GCST90200671	X-26109 levels	6992 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200671/GCST90200671_buildGRCh38.tsv.gz
Chen Y	GCST90200672	X-26054 levels	8046 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200672/GCST90200672_buildGRCh38.tsv.gz
Chen Y	GCST90200673	Carnitine C4 levels	8111 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200673/GCST90200673_buildGRCh38.tsv.gz
Chen Y	GCST90200674	Androsterone sulfate levels	8182 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200674/GCST90200674_buildGRCh38.tsv.gz
Chen Y	GCST90200675	N-acetyltyrosine levels	7841 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200675/GCST90200675_buildGRCh38.tsv.gz
Chen Y	GCST90200676	N-acetyl-L-glutamine levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200676/GCST90200676_buildGRCh38.tsv.gz
Chen Y	GCST90200677	N-acetylphenylalanine levels	8228 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200677/GCST90200677_buildGRCh38.tsv.gz
Chen Y	GCST90200678	N-acetylasparagine levels	7935 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200678/GCST90200678_buildGRCh38.tsv.gz
Chen Y	GCST90200679	N-acetylarginine levels	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200679/GCST90200679_buildGRCh38.tsv.gz
Chen Y	GCST90200680	5-acetylamino-6-formylamino-3-methyluracil levels	7599 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200680/GCST90200680_buildGRCh38.tsv.gz
Chen Y	GCST90200681	Orotidine levels	8017 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200681/GCST90200681_buildGRCh38.tsv.gz
Chen Y	GCST90200682	3-methylcytidine levels	8117 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200682/GCST90200682_buildGRCh38.tsv.gz
Chen Y	GCST90200683	N-acetylcitrulline levels	7324 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200683/GCST90200683_buildGRCh38.tsv.gz
Chen Y	GCST90200684	N-acetyl-aspartyl-glutamate (naag) levels	7705 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200684/GCST90200684_buildGRCh38.tsv.gz
Chen Y	GCST90200685	1-stearoyl-2-arachidonoyl-gpc (18:0/20:4) levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200685/GCST90200685_buildGRCh38.tsv.gz
Chen Y	GCST90200686	Bilirubin (E,E) levels	8263 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200686/GCST90200686_buildGRCh38.tsv.gz
Chen Y	GCST90200687	Bilirubin (E,Z or Z,E) levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200687/GCST90200687_buildGRCh38.tsv.gz
Chen Y	GCST90200688	Androsterone glucuronide levels	7980 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200688/GCST90200688_buildGRCh38.tsv.gz
Chen Y	GCST90200689	N6-methyllysine levels	8299 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200689/GCST90200689_buildGRCh38.tsv.gz
Chen Y	GCST90200690	N-acetyl-1-methylhistidine levels	7588 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200690/GCST90200690_buildGRCh38.tsv.gz
Chen Y	GCST90200691	N-delta-acetylornithine levels	8259 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200691/GCST90200691_buildGRCh38.tsv.gz
Chen Y	GCST90200692	1-palmitoyl-2-arachidonoyl-gpc (16:0/20:4n6) levels	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200692/GCST90200692_buildGRCh38.tsv.gz
Chen Y	GCST90200693	Glycochenodeoxycholate glucuronide (1) levels	8236 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200693/GCST90200693_buildGRCh38.tsv.gz
Chen Y	GCST90200694	2'-o-methylcytidine levels	8122 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200694/GCST90200694_buildGRCh38.tsv.gz

Chen Y	GCST90200695	2'-o-methyluridine levels	7582 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200695/GCST90200695_buildGRCh38.tsv.gz
Chen Y	GCST90200696	N6,N6-dimethyllysine levels	8265 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200696/GCST90200696_buildGRCh38.tsv.gz
Chen Y	GCST90200697	N2-acetyl,N6,N6-dimethyllysine levels	7891 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200697/GCST90200697_buildGRCh38.tsv.gz
Chen Y	GCST90200698	N2-acetyl,N6-methyllysine levels	8069 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200698/GCST90200698_buildGRCh38.tsv.gz
Chen Y	GCST90200699	Deoxycholic acid glucuronide levels	8060 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200699/GCST90200699_buildGRCh38.tsv.gz
Chen Y	GCST90200700	Decadienedioic acid (C10:2-DC) levels	8131 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200700/GCST90200700_buildGRCh38.tsv.gz
Chen Y	GCST90200701	Bilirubin degradation product, C17H18N2O4 (1) levels	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200701/GCST90200701_buildGRCh38.tsv.gz
Chen Y	GCST90200702	Bilirubin degradation product, C17H18N2O4 (2) levels	8255 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200702/GCST90200702_buildGRCh38.tsv.gz
Chen Y	GCST90200703	Bilirubin degradation product, C17H18N2O4 (3) levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200703/GCST90200703_buildGRCh38.tsv.gz
Chen Y	GCST90200704	Bilirubin (z,z) levels	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200704/GCST90200704_buildGRCh38.tsv.gz
Chen Y	GCST90200705	Ethylmalonate levels	8172 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200705/GCST90200705_buildGRCh38.tsv.gz
Chen Y	GCST90200706	Biliverdin levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200706/GCST90200706_buildGRCh38.tsv.gz
Chen Y	GCST90200707	Glycine levels	8262 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200707/GCST90200707_buildGRCh38.tsv.gz
Chen Y	GCST90200708	X-12112 levels	8211 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200708/GCST90200708_buildGRCh38.tsv.gz
Chen Y	GCST90200709	X-12798 levels	8186 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200709/GCST90200709_buildGRCh38.tsv.gz
Chen Y	GCST90200710	X-13431 levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200710/GCST90200710_buildGRCh38.tsv.gz
Chen Y	GCST90200711	X-19141 levels	8244 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200711/GCST90200711_buildGRCh38.tsv.gz
Chen Y	GCST90200712	Spermidine to 5-methylthioadenosine (MTA) ratio	7320 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200712/GCST90200712_buildGRCh38.tsv.gz
Chen Y	GCST90200713	Spermidine to ornithine ratio	7309 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200713/GCST90200713_buildGRCh38.tsv.gz
Chen Y	GCST90200714	Alpha-ketoglutarate to alpha-ketobutyrate ratio	8216 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200714/GCST90200714_buildGRCh38.tsv.gz
Chen Y	GCST90200715	Alpha-ketoglutarate to glutamate ratio	8274 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200715/GCST90200715_buildGRCh38.tsv.gz
Chen Y	GCST90200716	Adenosine 5'-diphosphate (ADP) to phosphoethanolamine ratio	4579 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200716/GCST90200716_buildGRCh38.tsv.gz
Chen Y	GCST90200717	3-phosphoglycerate to adenosine 5'-diphosphate (ADP) ratio	4530 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200717/GCST90200717_buildGRCh38.tsv.gz
Chen Y	GCST90200718	Alpha-ketoglutarate to succinate ratio	8260 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200718/GCST90200718_buildGRCh38.tsv.gz
Chen Y	GCST90200719	Adenosine 3',5'-cyclic monophosphate (cAMP) to adenosine 5'-monophosphate (AMP) ratio	6726 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200719/GCST90200719_buildGRCh38.tsv.gz
Chen Y	GCST90200720	Adenosine 5'-diphosphate (ADP) to pantothenate ratio	4561 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200720/GCST90200720_buildGRCh38.tsv.gz
Chen Y	GCST90200721	Adenosine 5'-diphosphate (ADP) to phosphate ratio	4559 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200721/GCST90200721_buildGRCh38.tsv.gz
Chen Y	GCST90200722	S-adenosylhomocysteine (SAH) to leucine ratio	6122 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200722/GCST90200722_buildGRCh38.tsv.gz

Chen Y	GCST90200723	S-adenosylhomocysteine (SAH) to 5-methyluridine (ribothymidine) ratio	6078 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200723/GCST90200723_buildGRCh38.tsv.gz
Chen Y	GCST90200724	Cholate to taurocholate ratio	7328 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200724/GCST90200724_buildGRCh38.tsv.gz
Chen Y	GCST90200725	Adenosine 5'-diphosphate (ADP) to creatine ratio	4561 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200725/GCST90200725_buildGRCh38.tsv.gz
Chen Y	GCST90200726	N-acetylputrescine to (N(1) + N(8))-acetylspermidine ratio	8144 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200726/GCST90200726_buildGRCh38.tsv.gz
Chen Y	GCST90200727	Adenosine 3',5'-cyclic monophosphate (cAMP) to taurocholate ratio	6329 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200727/GCST90200727_buildGRCh38.tsv.gz
Chen Y	GCST90200728	Adenosine 5'-diphosphate (ADP) to Adenosine 5'-monophosphate (AMP) ratio	4573 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200728/GCST90200728_buildGRCh38.tsv.gz
Chen Y	GCST90200729	3-phosphoglycerate to phosphate ratio	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200729/GCST90200729_buildGRCh38.tsv.gz
Chen Y	GCST90200730	Adenosine 5'-diphosphate (ADP) to fructose ratio	4571 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200730/GCST90200730_buildGRCh38.tsv.gz
Chen Y	GCST90200731	Adenosine 5'-diphosphate (ADP) to mannose ratio	4587 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200731/GCST90200731_buildGRCh38.tsv.gz
Chen Y	GCST90200732	Adenosine 5'-diphosphate (ADP) to tyrosine ratio	4560 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200732/GCST90200732_buildGRCh38.tsv.gz
Chen Y	GCST90200733	Adenosine 5'-diphosphate (ADP) to N-acetylglucosamine to N-acetylgalactosamine ratio	4392 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200733/GCST90200733_buildGRCh38.tsv.gz
Chen Y	GCST90200734	Adenosine 5'-monophosphate (AMP) to palmitate (16:0) ratio	8227 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200734/GCST90200734_buildGRCh38.tsv.gz
Chen Y	GCST90200735	Arginine to ornithine ratio	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200735/GCST90200735_buildGRCh38.tsv.gz
Chen Y	GCST90200736	Adenosine 5'-diphosphate (ADP) to arginine ratio	4568 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200736/GCST90200736_buildGRCh38.tsv.gz
Chen Y	GCST90200737	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	4391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200737/GCST90200737_buildGRCh38.tsv.gz
Chen Y	GCST90200738	Adenosine 5'-monophosphate (AMP) to inosine 5'-monophosphate (IMP) ratio	4601 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200738/GCST90200738_buildGRCh38.tsv.gz
Chen Y	GCST90200739	Adenosine 5'-monophosphate (AMP) to proline ratio	8190 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200739/GCST90200739_buildGRCh38.tsv.gz
Chen Y	GCST90200740	Arachidonate (20:4n6) to oleate to vaccenate (18:1) ratio	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200740/GCST90200740_buildGRCh38.tsv.gz
Chen Y	GCST90200741	Adenosine 5'-monophosphate (AMP) to alanine ratio	8172 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200741/GCST90200741_buildGRCh38.tsv.gz
Chen Y	GCST90200742	Aspartate to citrate ratio	8191 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200742/GCST90200742_buildGRCh38.tsv.gz
Chen Y	GCST90200743	Arginine to citrulline ratio	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200743/GCST90200743_buildGRCh38.tsv.gz
Chen Y	GCST90200744	Arginine to glutamate ratio	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200744/GCST90200744_buildGRCh38.tsv.gz
Chen Y	GCST90200745	Adenosine 5'-monophosphate (AMP) to phenylalanine ratio	8189 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200745/GCST90200745_buildGRCh38.tsv.gz
Chen Y	GCST90200746	Adenosine 5'-diphosphate (ADP) to gluconate ratio	4540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200746/GCST90200746_buildGRCh38.tsv.gz
Chen Y	GCST90200747	Adenosine 5'-monophosphate (AMP) to phosphate ratio	8184 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200747/GCST90200747_buildGRCh38.tsv.gz
Chen Y	GCST90200748	Aspartate to glutamate ratio	8190 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200748/GCST90200748_buildGRCh38.tsv.gz
Chen Y	GCST90200749	Arachidonate (20:4n6) to pyruvate ratio	8200 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200749/GCST90200749_buildGRCh38.tsv.gz
Chen Y	GCST90200750	Aspartate to asparagine ratio	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200750/GCST90200750_buildGRCh38.tsv.gz

Chen Y	GCST90200751	Cortisone to cortisol ratio	8173 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200751/GCST90200751_buildGRCh38.tsv.gz
Chen Y	GCST90200752	Succinate to acetoacetate ratio	6829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200752/GCST90200752_buildGRCh38.tsv.gz
Chen Y	GCST90200753	Aspartate to citrulline ratio	8139 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200753/GCST90200753_buildGRCh38.tsv.gz
Chen Y	GCST90200754	Sphingosine to phosphate ratio	8017 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200754/GCST90200754_buildGRCh38.tsv.gz
Chen Y	GCST90200755	Inosine 5'-monophosphate (IMP) to phosphate ratio	4605 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200755/GCST90200755_buildGRCh38.tsv.gz
Chen Y	GCST90200756	Glycine to pyridoxal ratio	8173 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200756/GCST90200756_buildGRCh38.tsv.gz
Chen Y	GCST90200757	Glycine to alanine ratio	8167 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200757/GCST90200757_buildGRCh38.tsv.gz
Chen Y	GCST90200758	Glycine to serine ratio	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200758/GCST90200758_buildGRCh38.tsv.gz
Chen Y	GCST90200759	Histidine to trans-urocanate ratio	8109 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200759/GCST90200759_buildGRCh38.tsv.gz
Chen Y	GCST90200760	Methionine to methionine sulfoxide ratio	8214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200760/GCST90200760_buildGRCh38.tsv.gz
Chen Y	GCST90200761	Citrulline to dimethylarginine (SDMA + ADMA) ratio	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200761/GCST90200761_buildGRCh38.tsv.gz
Chen Y	GCST90200762	Palmitate (16:0) to myristate (14:0) ratio	8215 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200762/GCST90200762_buildGRCh38.tsv.gz
Chen Y	GCST90200763	Phosphate to N-acetylneuraminate ratio	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200763/GCST90200763_buildGRCh38.tsv.gz
Chen Y	GCST90200764	Phosphate to uridine ratio	8186 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200764/GCST90200764_buildGRCh38.tsv.gz
Chen Y	GCST90200765	Phosphate to alanine ratio	8230 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200765/GCST90200765_buildGRCh38.tsv.gz
Chen Y	GCST90200766	Phosphate to phosphoethanolamine ratio	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200766/GCST90200766_buildGRCh38.tsv.gz
Chen Y	GCST90200767	Phosphate to glucose ratio	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200767/GCST90200767_buildGRCh38.tsv.gz
Chen Y	GCST90200768	Phosphate to 2'-deoxyuridine ratio	7846 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200768/GCST90200768_buildGRCh38.tsv.gz
Chen Y	GCST90200769	Phosphate to mannose ratio	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200769/GCST90200769_buildGRCh38.tsv.gz
Chen Y	GCST90200770	Phenylalanine to tyrosine ratio	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200770/GCST90200770_buildGRCh38.tsv.gz
Chen Y	GCST90200771	Phosphate to fructose ratio	8209 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200771/GCST90200771_buildGRCh38.tsv.gz
Chen Y	GCST90200772	Phosphate to citrate ratio	8238 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200772/GCST90200772_buildGRCh38.tsv.gz
Chen Y	GCST90200773	Serine to alpha-tocopherol ratio	8197 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200773/GCST90200773_buildGRCh38.tsv.gz
Chen Y	GCST90200774	Uridine to pseudouridine ratio	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200774/GCST90200774_buildGRCh38.tsv.gz
Chen Y	GCST90200775	Serine to pyruvate ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200775/GCST90200775_buildGRCh38.tsv.gz
Chen Y	GCST90200776	Glutamate to glutamine ratio	8228 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200776/GCST90200776_buildGRCh38.tsv.gz
Chen Y	GCST90200777	Uridine to cytidine ratio	7705 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200777/GCST90200777_buildGRCh38.tsv.gz
Chen Y	GCST90200778	Pyruvate to 3-methyl-2-oxobutyrate ratio	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200778/GCST90200778_buildGRCh38.tsv.gz

Chen Y	GCST90200779	Pyruvate to N-acetylneuraminate ratio	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200779/GCST90200779_buildGRCh38.tsv.gz
Chen Y	GCST90200780	Alanine to pyruvate ratio	8250 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200780/GCST90200780_buildGRCh38.tsv.gz
Chen Y	GCST90200781	Glucose to maltose ratio	6308 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200781/GCST90200781_buildGRCh38.tsv.gz
Chen Y	GCST90200782	Mannose to trans-4-hydroxyproline ratio	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200782/GCST90200782_buildGRCh38.tsv.gz
Chen Y	GCST90200783	Mannose to S-methylcysteine ratio	8182 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200783/GCST90200783_buildGRCh38.tsv.gz
Chen Y	GCST90200784	Glutamate to cysteine ratio	8199 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200784/GCST90200784_buildGRCh38.tsv.gz
Chen Y	GCST90200785	Cysteine to 5-oxoproline ratio	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200785/GCST90200785_buildGRCh38.tsv.gz
Chen Y	GCST90200786	Cysteine to alanine ratio	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200786/GCST90200786_buildGRCh38.tsv.gz
Chen Y	GCST90200787	Glutamine to asparagine ratio	8251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200787/GCST90200787_buildGRCh38.tsv.gz
Chen Y	GCST90200788	5-oxoproline to citrate ratio	8256 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200788/GCST90200788_buildGRCh38.tsv.gz
Chen Y	GCST90200789	Alpha-tocopherol to sulfate ratio	8201 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200789/GCST90200789_buildGRCh38.tsv.gz
Chen Y	GCST90200790	Thyroxine to taurocholate ratio	7615 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200790/GCST90200790_buildGRCh38.tsv.gz
Chen Y	GCST90200791	Creatine to carnitine ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200791/GCST90200791_buildGRCh38.tsv.gz
Chen Y	GCST90200792	Carnitine to palmitoylcarnitine (C16) ratio	8146 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200792/GCST90200792_buildGRCh38.tsv.gz
Chen Y	GCST90200793	Glycolithocholate to glycolithocholate sulfate ratio	7043 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200793/GCST90200793_buildGRCh38.tsv.gz
Chen Y	GCST90200794	Oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [1] ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200794/GCST90200794_buildGRCh38.tsv.gz
Chen Y	GCST90200795	Oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [2] ratio	7615 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200795/GCST90200795_buildGRCh38.tsv.gz
Chen Y	GCST90200796	Spermidine to (N(1) + N(8))-acetylspermidine ratio	7287 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200796/GCST90200796_buildGRCh38.tsv.gz
Chen Y	GCST90200797	Spermidine to N-acetylputrescine ratio	7299 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200797/GCST90200797_buildGRCh38.tsv.gz
Chen Y	GCST90200798	Dopamine 4-sulfate to dopamine 3-O-sulfate ratio	6840 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200798/GCST90200798_buildGRCh38.tsv.gz
Chen Y	GCST90200799	Spermidine to adenosine 5'-diphosphate (ADP) ratio	4195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200799/GCST90200799_buildGRCh38.tsv.gz
Chen Y	GCST90200800	Spermidine to histidine ratio	7297 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200800/GCST90200800_buildGRCh38.tsv.gz
Chen Y	GCST90200801	5-methylthioadenosine (MTA) to phosphate ratio	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200801/GCST90200801_buildGRCh38.tsv.gz
Chen Y	GCST90200802	Histidine to pyruvate ratio	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200802/GCST90200802_buildGRCh38.tsv.gz
Chen Y	GCST90200803	Spermidine to phosphate ratio	7382 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200803/GCST90200803_buildGRCh38.tsv.gz
Chen Y	GCST90200804	Spermidine to pyruvate ratio	7296 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200804/GCST90200804_buildGRCh38.tsv.gz
Chen Y	GCST90200805	Spermidine to carnitine ratio	7338 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200805/GCST90200805_buildGRCh38.tsv.gz

Chen Y	GCST90200806	Spermidine to ergothioneine ratio	7291 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200806/GCST90200806_buildGRCh38.tsv.gz
Chen Y	GCST90200807	Carnitine to ergothioneine ratio	8110 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200807/GCST90200807_buildGRCh38.tsv.gz
Chen Y	GCST90200808	Spermidine to choline ratio	7295 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200808/GCST90200808_buildGRCh38.tsv.gz
Chen Y	GCST90200809	Spermidine to taurocholate ratio	6777 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200809/GCST90200809_buildGRCh38.tsv.gz
Chen Y	GCST90200810	Alpha-ketoglutarate to kynurenine ratio	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200810/GCST90200810_buildGRCh38.tsv.gz
Chen Y	GCST90200811	Choline to taurocholate ratio	7625 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200811/GCST90200811_buildGRCh38.tsv.gz
Chen Y	GCST90200812	Glutamate to kynurenine ratio	8184 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200812/GCST90200812_buildGRCh38.tsv.gz
Chen Y	GCST90200813	Ornithine to glutamate ratio	8202 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200813/GCST90200813_buildGRCh38.tsv.gz
Chen Y	GCST90200814	Alpha-ketoglutarate to ornithine ratio	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200814/GCST90200814_buildGRCh38.tsv.gz
Chen Y	GCST90200815	3-hydroxyisobutyrate to adenosine 5'-diphosphate (ADP) ratio	4488 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200815/GCST90200815_buildGRCh38.tsv.gz
Chen Y	GCST90200816	Alpha-ketoglutarate to aspartate ratio	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200816/GCST90200816_buildGRCh38.tsv.gz
Chen Y	GCST90200817	3-hydroxyisobutyrate to phosphate ratio	8170 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200817/GCST90200817_buildGRCh38.tsv.gz
Chen Y	GCST90200818	Adenosine 5'-diphosphate (ADP) to glycerate ratio	4544 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200818/GCST90200818_buildGRCh38.tsv.gz
Chen Y	GCST90200819	3-phosphoglycerate to glycerate ratio	8101 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200819/GCST90200819_buildGRCh38.tsv.gz
Chen Y	GCST90200820	Adenosine 5'-diphosphate (ADP) to valine ratio	4608 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200820/GCST90200820_buildGRCh38.tsv.gz
Chen Y	GCST90200821	Adenosine 5'-diphosphate (ADP) to glycine ratio	4577 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200821/GCST90200821_buildGRCh38.tsv.gz
Chen Y	GCST90200822	Phosphate to valine ratio	8277 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200822/GCST90200822_buildGRCh38.tsv.gz
Chen Y	GCST90200823	Adenosine 5'-diphosphate (ADP) to N-palmitoyl-sphingosine (d18:1 to 16:0) ratio	4561 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200823/GCST90200823_buildGRCh38.tsv.gz
Chen Y	GCST90200824	Adenosine 5'-diphosphate (ADP) to sulfate ratio	4570 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200824/GCST90200824_buildGRCh38.tsv.gz
Chen Y	GCST90200825	Phosphate to sulfate ratio	8211 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200825/GCST90200825_buildGRCh38.tsv.gz
Chen Y	GCST90200826	Glycine to phosphate ratio	8271 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200826/GCST90200826_buildGRCh38.tsv.gz
Chen Y	GCST90200827	Phosphate to N-palmitoyl-sphingosine (d18:1 to 16:0) ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200827/GCST90200827_buildGRCh38.tsv.gz
Chen Y	GCST90200828	Cholate to bilirubin (Z,Z) ratio	7747 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200828/GCST90200828_buildGRCh38.tsv.gz
Chen Y	GCST90200829	Bilirubin (Z,Z) to taurocholate ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200829/GCST90200829_buildGRCh38.tsv.gz
Chen Y	GCST90200830	Cholate to adenosine 3',5'-cyclic monophosphate (cAMP) ratio	6359 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200830/GCST90200830_buildGRCh38.tsv.gz
Chen Y	GCST90200831	Cholate to phosphate ratio	7742 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200831/GCST90200831_buildGRCh38.tsv.gz
Chen Y	GCST90200832	Adenosine 5'-diphosphate (ADP) to citrate ratio	4567 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200832/GCST90200832_buildGRCh38.tsv.gz
Chen Y	GCST90200833	Cholate to adenosine 5'-monophosphate (AMP) ratio	7769 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200833/GCST90200833_buildGRCh38.tsv.gz

Chen Y	GCST90200834	Adenosine 5'-diphosphate (ADP) to glycerol 3-phosphate ratio	4588 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200834/GCST90200834_buildGRCh38.tsv.gz
Chen Y	GCST90200835	Adenosine 5'-diphosphate (ADP) to glycerol ratio	4575 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200835/GCST90200835_buildGRCh38.tsv.gz
Chen Y	GCST90200836	Glycerol to glycerol 3-phosphate ratio	8188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200836/GCST90200836_buildGRCh38.tsv.gz
Chen Y	GCST90200837	Adenosine 5'-diphosphate (ADP) to glutamate ratio	4556 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200837/GCST90200837_buildGRCh38.tsv.gz
Chen Y	GCST90200838	Phosphate to glutamate ratio	8211 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200838/GCST90200838_buildGRCh38.tsv.gz
Chen Y	GCST90200839	Adenosine 5'-diphosphate (ADP) to aspartate ratio	4563 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200839/GCST90200839_buildGRCh38.tsv.gz
Chen Y	GCST90200840	Adenosine 5'-diphosphate (ADP) to flavin adenine dinucleotide (FAD) ratio	3441 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200840/GCST90200840_buildGRCh38.tsv.gz
Chen Y	GCST90200841	Adenosine 5'-diphosphate (ADP) to oxalate (ethanedioate) ratio	4556 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200841/GCST90200841_buildGRCh38.tsv.gz
Chen Y	GCST90200842	Citrate to oxalate (ethanedioate) ratio	8097 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200842/GCST90200842_buildGRCh38.tsv.gz
Chen Y	GCST90200843	Adenosine 5'-monophosphate (AMP) to flavin adenine dinucleotide (FAD) ratio	6188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200843/GCST90200843_buildGRCh38.tsv.gz
Chen Y	GCST90200844	Aspartate to phosphate ratio	8297 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200844/GCST90200844_buildGRCh38.tsv.gz
Chen Y	GCST90200845	Adenosine 5'-monophosphate (AMP) to citrate ratio	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200845/GCST90200845_buildGRCh38.tsv.gz
Chen Y	GCST90200846	Phenylalanine to phosphate ratio	8294 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200846/GCST90200846_buildGRCh38.tsv.gz
Chen Y	GCST90200847	Phosphate to tryptophan ratio	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200847/GCST90200847_buildGRCh38.tsv.gz
Chen Y	GCST90200848	Adenosine 5'-monophosphate (AMP) to glutamine ratio	8196 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200848/GCST90200848_buildGRCh38.tsv.gz
Chen Y	GCST90200849	Adenosine 5'-monophosphate (AMP) to threonine ratio	8173 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200849/GCST90200849_buildGRCh38.tsv.gz
Chen Y	GCST90200850	Adenosine 5'-monophosphate (AMP) to tryptophan ratio	8180 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200850/GCST90200850_buildGRCh38.tsv.gz
Chen Y	GCST90200851	Adenosine 5'-monophosphate (AMP) to glycine ratio	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200851/GCST90200851_buildGRCh38.tsv.gz
Chen Y	GCST90200852	Adenosine 5'-monophosphate (AMP) to arginine ratio	8185 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200852/GCST90200852_buildGRCh38.tsv.gz
Chen Y	GCST90200853	Adenosine 5'-monophosphate (AMP) to tyrosine ratio	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200853/GCST90200853_buildGRCh38.tsv.gz
Chen Y	GCST90200854	Arginine to phosphate ratio	8297 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200854/GCST90200854_buildGRCh38.tsv.gz
Chen Y	GCST90200855	Phosphate to threonine ratio	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200855/GCST90200855_buildGRCh38.tsv.gz
Chen Y	GCST90200856	Phosphate to glutamine ratio	8258 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200856/GCST90200856_buildGRCh38.tsv.gz
Chen Y	GCST90200857	Adenosine 5'-monophosphate (AMP) to aspartate ratio	8205 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200857/GCST90200857_buildGRCh38.tsv.gz
Chen Y	GCST90200858	Phosphate to tyrosine ratio	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200858/GCST90200858_buildGRCh38.tsv.gz
Chen Y	GCST90200859	Adenosine 5'-monophosphate (AMP) to asparagine ratio	8188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200859/GCST90200859_buildGRCh38.tsv.gz
Chen Y	GCST90200860	Adenosine 5'-monophosphate (AMP) to serine ratio	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200860/GCST90200860_buildGRCh38.tsv.gz
Chen Y	GCST90200861	Histidine to phosphate ratio	8294 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200861/GCST90200861_buildGRCh38.tsv.gz

Chen Y	GCST90200862	Adenosine 5'-monophosphate (AMP) to methionine ratio	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200862/GCST90200862_buildGRCh38.tsv.gz
Chen Y	GCST90200863	Phosphate to serine ratio	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200863/GCST90200863_buildGRCh38.tsv.gz
Chen Y	GCST90200864	Methionine to phosphate ratio	8291 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200864/GCST90200864_buildGRCh38.tsv.gz
Chen Y	GCST90200865	Adenosine 5'-monophosphate (AMP) to histidine ratio	8180 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200865/GCST90200865_buildGRCh38.tsv.gz
Chen Y	GCST90200866	phosphate to asparagine ratio	8249 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200866/GCST90200866_buildGRCh38.tsv.gz
Chen Y	GCST90200867	Adenosine 5'-monophosphate (AMP) to isoleucine ratio	8200 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200867/GCST90200867_buildGRCh38.tsv.gz
Chen Y	GCST90200868	Isoleucine to phosphate ratio	8298 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200868/GCST90200868_buildGRCh38.tsv.gz
Chen Y	GCST90200869	Adenosine 5'-monophosphate (AMP) to valine ratio	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200869/GCST90200869_buildGRCh38.tsv.gz
Chen Y	GCST90200870	Adenosine 5'-monophosphate (AMP) to acetoacetate ratio	6773 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200870/GCST90200870_buildGRCh38.tsv.gz
Chen Y	GCST90200871	Adenosine 5'-monophosphate (AMP) to cysteine ratio	8177 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200871/GCST90200871_buildGRCh38.tsv.gz
Chen Y	GCST90200872	Phosphate to cysteine ratio	8195 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200872/GCST90200872_buildGRCh38.tsv.gz
Chen Y	GCST90200873	Cortisol to 4-cholesten-3-one ratio	7027 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200873/GCST90200873_buildGRCh38.tsv.gz
Chen Y	GCST90200874	Cysteinylglycine to taurine ratio	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200874/GCST90200874_buildGRCh38.tsv.gz
Chen Y	GCST90200875	Cysteinylglycine to glutamate ratio	8197 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200875/GCST90200875_buildGRCh38.tsv.gz
Chen Y	GCST90200876	Cortisone to 4-cholesten-3-one ratio	6971 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200876/GCST90200876_buildGRCh38.tsv.gz
Chen Y	GCST90200877	Taurine to glutamate ratio	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200877/GCST90200877_buildGRCh38.tsv.gz
Chen Y	GCST90200878	Glutarate (C5-DC) to caprylate (8:0) ratio	7685 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200878/GCST90200878_buildGRCh38.tsv.gz
Chen Y	GCST90200879	Adenosine 5'-monophosphate (AMP) to glutamate ratio	8213 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200879/GCST90200879_buildGRCh38.tsv.gz
Chen Y	GCST90200880	Glutarate (C5-DC) to salicylate ratio	7684 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200880/GCST90200880_buildGRCh38.tsv.gz
Chen Y	GCST90200881	Aspartate to N-acetylglucosamine to N-acetylgalactosamine ratio	7899 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200881/GCST90200881_buildGRCh38.tsv.gz
Chen Y	GCST90200882	Aspartate to mannose ratio	8162 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200882/GCST90200882_buildGRCh38.tsv.gz
Chen Y	GCST90200883	Phosphate to acetoacetate ratio	6791 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200883/GCST90200883_buildGRCh38.tsv.gz
Chen Y	GCST90200884	Mannose to N-acetylglucosamine to N-acetylgalactosamine ratio	7907 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200884/GCST90200884_buildGRCh38.tsv.gz
Chen Y	GCST90200885	Phenylpyruvate to citrate ratio	8177 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200885/GCST90200885_buildGRCh38.tsv.gz
Chen Y	GCST90200886	Phenylpyruvate to 4-hydroxyphenylpyruvate ratio	7829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200886/GCST90200886_buildGRCh38.tsv.gz
Chen Y	GCST90200887	Cholesterol to cortisol ratio	8211 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200887/GCST90200887_buildGRCh38.tsv.gz
Chen Y	GCST90200888	Citrate to 4-hydroxyphenylpyruvate ratio	7851 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200888/GCST90200888_buildGRCh38.tsv.gz
Chen Y	GCST90200889	Cholesterol to taurocholate ratio	7611 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200889/GCST90200889_buildGRCh38.tsv.gz

Chen Y	GCST90200890	Cortisol to taurocholate ratio	7610 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200890/GCST90200890_buildGRCh38.tsv.gz
Chen Y	GCST90200891	Salicylate to caprylate (8:0) ratio	8068 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200891/GCST90200891_buildGRCh38.tsv.gz
Chen Y	GCST90200892	Hypotaurine to taurine ratio	8157 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200892/GCST90200892_buildGRCh38.tsv.gz
Chen Y	GCST90200893	Taurine to cysteine ratio	8186 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200893/GCST90200893_buildGRCh38.tsv.gz
Chen Y	GCST90200894	Inosine to theophylline ratio	4662 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200894/GCST90200894_buildGRCh38.tsv.gz
Chen Y	GCST90200895	Hypotaurine to cysteine ratio	8134 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200895/GCST90200895_buildGRCh38.tsv.gz
Chen Y	GCST90200896	Inosine to EDTA ratio	4926 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200896/GCST90200896_buildGRCh38.tsv.gz
Chen Y	GCST90200897	Theophylline to EDTA ratio	7867 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200897/GCST90200897_buildGRCh38.tsv.gz
Chen Y	GCST90200898	Citrulline to phosphate ratio	8294 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200898/GCST90200898_buildGRCh38.tsv.gz
Chen Y	GCST90200899	Citrulline to ornithine ratio	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200899/GCST90200899_buildGRCh38.tsv.gz
Chen Y	GCST90200900	Phosphate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7992 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200900/GCST90200900_buildGRCh38.tsv.gz
Chen Y	GCST90200901	Ornithine to phosphate ratio	8295 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200901/GCST90200901_buildGRCh38.tsv.gz
Chen Y	GCST90200902	Phosphate to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [2] ratio	7649 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200902/GCST90200902_buildGRCh38.tsv.gz
Chen Y	GCST90200903	Phosphate to glycerol ratio	8179 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200903/GCST90200903_buildGRCh38.tsv.gz
Chen Y	GCST90200904	Phosphate to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [1] ratio	7623 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200904/GCST90200904_buildGRCh38.tsv.gz
Chen Y	GCST90200905	Glucose to glycerol ratio	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200905/GCST90200905_buildGRCh38.tsv.gz
Chen Y	GCST90200906	2'-deoxyuridine to cytidine ratio	7410 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200906/GCST90200906_buildGRCh38.tsv.gz
Chen Y	GCST90200907	Retinol (Vitamin A) to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [1] ratio	7617 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200907/GCST90200907_buildGRCh38.tsv.gz
Chen Y	GCST90200908	Retinol (Vitamin A) to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [2] ratio	7668 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200908/GCST90200908_buildGRCh38.tsv.gz
Chen Y	GCST90200909	Uridine to 2'-deoxyuridine ratio	7873 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200909/GCST90200909_buildGRCh38.tsv.gz
Chen Y	GCST90200910	Retinol (Vitamin A) to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7981 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200910/GCST90200910_buildGRCh38.tsv.gz
Chen Y	GCST90200911	Tryptophan to pyruvate ratio	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200911/GCST90200911_buildGRCh38.tsv.gz
Chen Y	GCST90200912	tryptophan to tyrosine ratio	8226 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200912/GCST90200912_buildGRCh38.tsv.gz
Chen Y	GCST90200913	Glucose to sucrose ratio	7695 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200913/GCST90200913_buildGRCh38.tsv.gz
Chen Y	GCST90200914	Tyrosine to pyruvate ratio	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200914/GCST90200914_buildGRCh38.tsv.gz
Chen Y	GCST90200915	Glucose to fructose ratio	8214 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200915/GCST90200915_buildGRCh38.tsv.gz
Chen Y	GCST90200916	Fructose to sucrose ratio	7719 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200916/GCST90200916_buildGRCh38.tsv.gz

Chen Y	GCST90200917	Alpha-ketobutyrate to 3-methyl-2-oxobutyrate ratio	8133 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200917/GCST90200917_buildGRCh38.tsv.gz
Chen Y	GCST90200918	N-palmitoyl-sphingosine (d18:1 to 16:0) to N-palmitoyl-sphinganine (d18:0 to 16:0) ratio	8155 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200918/GCST90200918_buildGRCh38.tsv.gz
Chen Y	GCST90200919	Caffeine to theophylline ratio	7756 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200919/GCST90200919_buildGRCh38.tsv.gz
Chen Y	GCST90200920	Mannose to glycerol ratio	8168 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200920/GCST90200920_buildGRCh38.tsv.gz
Chen Y	GCST90200921	Mannose to mannitol to sorbitol ratio	8208 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200921/GCST90200921_buildGRCh38.tsv.gz
Chen Y	GCST90200922	Alpha-ketobutyrate to pyruvate ratio	8129 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200922/GCST90200922_buildGRCh38.tsv.gz
Chen Y	GCST90200923	Glycerol to mannitol to sorbitol ratio	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200923/GCST90200923_buildGRCh38.tsv.gz
Chen Y	GCST90200924	Alpha-tocopherol to glycerol ratio	8158 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200924/GCST90200924_buildGRCh38.tsv.gz
Chen Y	GCST90200925	Caffeine to theobromine ratio	7952 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200925/GCST90200925_buildGRCh38.tsv.gz
Chen Y	GCST90200926	N-stearoyl-sphingosine (d18:1 to 18:0) to N-palmitoyl-sphinganine (d18:0 to 16:0) ratio	8159 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200926/GCST90200926_buildGRCh38.tsv.gz
Chen Y	GCST90200927	Theophylline to theobromine ratio	7858 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200927/GCST90200927_buildGRCh38.tsv.gz
Chen Y	GCST90200928	N-palmitoyl-sphingosine (d18:1 to 16:0) to N-stearoyl-sphingosine (d18:1 to 18:0) ratio	8191 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200928/GCST90200928_buildGRCh38.tsv.gz
Chen Y	GCST90200929	Glycerol to carnitine ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200929/GCST90200929_buildGRCh38.tsv.gz
Chen Y	GCST90200930	Carnitine to acetylcarnitine (C2) ratio	8206 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200930/GCST90200930_buildGRCh38.tsv.gz
Chen Y	GCST90200931	Glycerol to sulfate ratio	8176 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200931/GCST90200931_buildGRCh38.tsv.gz
Chen Y	GCST90200932	Glycerol to palmitoylcarnitine (C16) ratio	8165 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200932/GCST90200932_buildGRCh38.tsv.gz
Chen Y	GCST90200933	Alpha-ketoglutarate to proline ratio	8273 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200933/GCST90200933_buildGRCh38.tsv.gz
Chen Y	GCST90200934	Acetylcarnitine (C2) to propionylcarnitine (C3) ratio	8200 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200934/GCST90200934_buildGRCh38.tsv.gz
Chen Y	GCST90200935	Carnitine to propionylcarnitine (C3) ratio	8185 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200935/GCST90200935_buildGRCh38.tsv.gz
Chen Y	GCST90200936	Succinate to proline ratio	8209 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200936/GCST90200936_buildGRCh38.tsv.gz
Chen Y	GCST90200937	Alpha-ketoglutarate to trans-4-hydroxyproline ratio	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200937/GCST90200937_buildGRCh38.tsv.gz
Chen Y	GCST90200938	Alpha-ketoglutarate to alanine ratio	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200938/GCST90200938_buildGRCh38.tsv.gz
Chen Y	GCST90200939	Proline to trans-4-hydroxyproline ratio	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200939/GCST90200939_buildGRCh38.tsv.gz
Chen Y	GCST90200940	Adenosine 5'-diphosphate (ADP) to EDTA ratio	4563 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200940/GCST90200940_buildGRCh38.tsv.gz
Chen Y	GCST90200941	Succinate to trans-4-hydroxyproline ratio	8198 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200941/GCST90200941_buildGRCh38.tsv.gz
Chen Y	GCST90200942	Glutamate to pyruvate ratio	8188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200942/GCST90200942_buildGRCh38.tsv.gz
Chen Y	GCST90200943	Phosphate to EDTA ratio	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200943/GCST90200943_buildGRCh38.tsv.gz

Chen Y	GCST90200944	Alpha-ketoglutarate to pyruvate ratio	8272 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200944/GCST90200944_buildGRCh38.tsv.gz
Chen Y	GCST90200945	Adenosine 5'-monophosphate (AMP) to EDTA ratio	8179 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200945/GCST90200945_buildGRCh38.tsv.gz
Chen Y	GCST90200946	Glutamate to alanine ratio	8172 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200946/GCST90200946_buildGRCh38.tsv.gz
Chen Y	GCST90200947	Adenosine 5'-diphosphate (ADP) to glucose ratio	4581 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200947/GCST90200947_buildGRCh38.tsv.gz
Chen Y	GCST90200948	Adenosine 5'-diphosphate (ADP) to mannitol to sorbitol ratio	4566 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200948/GCST90200948_buildGRCh38.tsv.gz
Chen Y	GCST90200949	Adenosine 5'-diphosphate (ADP) to N-acetylneuraminate ratio	4553 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200949/GCST90200949_buildGRCh38.tsv.gz
Chen Y	GCST90200950	Glucose to mannitol to sorbitol ratio	8254 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200950/GCST90200950_buildGRCh38.tsv.gz
Chen Y	GCST90200951	Mannose to fructose ratio	8202 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200951/GCST90200951_buildGRCh38.tsv.gz
Chen Y	GCST90200952	Adenosine 5'-diphosphate (ADP) to cytidine ratio	4350 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200952/GCST90200952_buildGRCh38.tsv.gz
Chen Y	GCST90200953	Glucose-to-mannose ratio	8191 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200953/GCST90200953_buildGRCh38.tsv.gz
Chen Y	GCST90200954	Cytidine to N-acetylneuraminate ratio	7683 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200954/GCST90200954_buildGRCh38.tsv.gz
Chen Y	GCST90200955	Adenosine 5'-diphosphate (ADP) to choline phosphate ratio	4560 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200955/GCST90200955_buildGRCh38.tsv.gz
Chen Y	GCST90200956	Cytidine to N-acetylglucosamine to N-acetylgalactosamine ratio	7427 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200956/GCST90200956_buildGRCh38.tsv.gz
Chen Y	GCST90200957	N-acetylneuraminate to N-acetylglucosamine to N-acetylgalactosamine ratio	7988 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200957/GCST90200957_buildGRCh38.tsv.gz
Chen Y	GCST90200958	Adenosine 5'-diphosphate (ADP) to choline ratio	4560 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200958/GCST90200958_buildGRCh38.tsv.gz
Chen Y	GCST90200959	Choline phosphate to choline ratio	8196 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200959/GCST90200959_buildGRCh38.tsv.gz
Chen Y	GCST90200960	Choline phosphate to phosphoethanolamine ratio	8213 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200960/GCST90200960_buildGRCh38.tsv.gz
Chen Y	GCST90200961	Adenosine 5'-diphosphate (ADP) to ornithine ratio	4566 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200961/GCST90200961_buildGRCh38.tsv.gz
Chen Y	GCST90200962	Adenosine 5'-diphosphate (ADP) to glutamine ratio	4569 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200962/GCST90200962_buildGRCh38.tsv.gz
Chen Y	GCST90200963	Inosine 5'-monophosphate (IMP) to urate ratio	4598 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200963/GCST90200963_buildGRCh38.tsv.gz
Chen Y	GCST90200964	Adenosine 5'-diphosphate (ADP) to 5-oxoproline ratio	4570 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200964/GCST90200964_buildGRCh38.tsv.gz
Chen Y	GCST90200965	Glutamate to 5-oxoproline ratio	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200965/GCST90200965_buildGRCh38.tsv.gz
Chen Y	GCST90200966	Adenosine 5'-diphosphate (ADP) to uridine ratio	4565 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200966/GCST90200966_buildGRCh38.tsv.gz
Chen Y	GCST90200967	Phosphate to urate ratio	8204 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200967/GCST90200967_buildGRCh38.tsv.gz
Chen Y	GCST90200968	Phosphate to 5-oxoproline ratio	8217 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200968/GCST90200968_buildGRCh38.tsv.gz
Chen Y	GCST90200969	Adenosine 5'-monophosphate (AMP) to N-palmitoyl-sphingosine (d18:1 to 16:0) ratio	8188 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200969/GCST90200969_buildGRCh38.tsv.gz
Chen Y	GCST90200970	Adenosine 5'-monophosphate (AMP) to leucine ratio	8201 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200970/GCST90200970_buildGRCh38.tsv.gz
Chen Y	GCST90200971	Leucine to phosphate ratio	8298 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200971/GCST90200971_buildGRCh38.tsv.gz

Chen Y	GCST90200972	Leucine to N-palmitoyl-sphingosine (d18:1 to 16:0) ratio	8198 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200972/GCST90200972_buildGRCh38.tsv.gz
Chen Y	GCST90200973	Proline to glutamate ratio	8185 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200973/GCST90200973_buildGRCh38.tsv.gz
Chen Y	GCST90200974	Phosphate to proline ratio	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200974/GCST90200974_buildGRCh38.tsv.gz
Chen Y	GCST90200975	Arachidonate (20:4n6) to caffeine ratio	8000 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200975/GCST90200975_buildGRCh38.tsv.gz
Chen Y	GCST90200976	Adenosine 5'-monophosphate (AMP) to urate ratio	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200976/GCST90200976_buildGRCh38.tsv.gz
Chen Y	GCST90200977	Arachidonate (20:4n6) to paraxanthine ratio	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200977/GCST90200977_buildGRCh38.tsv.gz
Chen Y	GCST90200978	Caffeine to paraxanthine ratio	7873 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200978/GCST90200978_buildGRCh38.tsv.gz
Chen Y	GCST90200979	Arachidonate (20:4n6) to linoleate (18:2n6) ratio	8162 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200979/GCST90200979_buildGRCh38.tsv.gz
Chen Y	GCST90200980	Phosphoethanolamine to choline ratio	8204 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200980/GCST90200980_buildGRCh38.tsv.gz
Chen Y	GCST90200981	Caffeine to linoleate (18:2n6) ratio	7939 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200981/GCST90200981_buildGRCh38.tsv.gz
Chen Y	GCST90200982	Paraxanthine to linoleate (18:2n6) ratio	7785 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200982/GCST90200982_buildGRCh38.tsv.gz
Chen Y	GCST90200983	Cholesterol to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [1] ratio	7624 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200983/GCST90200983_buildGRCh38.tsv.gz
Chen Y	GCST90200984	Cholesterol to benzoate ratio	7387 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200984/GCST90200984_buildGRCh38.tsv.gz
Chen Y	GCST90200985	Cholesterol to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7981 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200985/GCST90200985_buildGRCh38.tsv.gz
Chen Y	GCST90200986	Cholesterol to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [2] ratio	7655 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200986/GCST90200986_buildGRCh38.tsv.gz
Chen Y	GCST90200987	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7162 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200987/GCST90200987_buildGRCh38.tsv.gz
Chen Y	GCST90200988	Benzoate to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [1] ratio	6813 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200988/GCST90200988_buildGRCh38.tsv.gz
Chen Y	GCST90200989	Histidine to asparagine ratio	8225 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200989/GCST90200989_buildGRCh38.tsv.gz
Chen Y	GCST90200990	Benzoate to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [2] ratio	6865 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200990/GCST90200990_buildGRCh38.tsv.gz
Chen Y	GCST90200991	Histidine to alanine ratio	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200991/GCST90200991_buildGRCh38.tsv.gz
Chen Y	GCST90200992	Alanine to asparagine ratio	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200992/GCST90200992_buildGRCh38.tsv.gz
Chen Y	GCST90200993	Salicylate to oxalate (ethanedioate) ratio	8107 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200993/GCST90200993_buildGRCh38.tsv.gz
Chen Y	GCST90200994	Glutamine to alanine ratio	8222 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200994/GCST90200994_buildGRCh38.tsv.gz
Chen Y	GCST90200995	Salicylate to taurocholate ratio	7614 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200995/GCST90200995_buildGRCh38.tsv.gz
Chen Y	GCST90200996	Citrate to taurocholate ratio	7618 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200996/GCST90200996_buildGRCh38.tsv.gz
Chen Y	GCST90200997	Histidine to glutamine ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200997/GCST90200997_buildGRCh38.tsv.gz
Chen Y	GCST90200998	Salicylate to citrate ratio	8147 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200998/GCST90200998_buildGRCh38.tsv.gz
Chen Y	GCST90200999	Taurocholate to oxalate (ethanedioate) ratio	7755 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200999/GCST90200999_buildGRCh38.tsv.gz

Chen Y	GCST90201000	Serine to threonine ratio	8237 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90201000/GCST90201000_buildGRCh38.tsv.gz
Chen Y	GCST90201001	Serine to alpha-ketobutyrate ratio	8100 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201001/GCST90201001_buildGRCh38.tsv.gz
Chen Y	GCST90201002	Maltose to sucrose ratio	5984 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201002/GCST90201002_buildGRCh38.tsv.gz
Chen Y	GCST90201003	Glucose to N-palmitoyl-sphingosine (d18:1 to 16:0) ratio	8173 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201003/GCST90201003_buildGRCh38.tsv.gz
Chen Y	GCST90201004	Glucose to N-stearoyl-sphingosine (d18:1 to 18:0) ratio	8179 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201004/GCST90201004_buildGRCh38.tsv.gz
Chen Y	GCST90201005	Fructose to maltose ratio	6307 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201005/GCST90201005_buildGRCh38.tsv.gz
Chen Y	GCST90201006	Alpha-ketobutyrate to 3-methyl-2-oxovalerate ratio	8136 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201006/GCST90201006_buildGRCh38.tsv.gz
Chen Y	GCST90201007	Glucose to N-palmitoyl-sphinganine (d18:0 to 16:0) ratio	8119 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201007/GCST90201007_buildGRCh38.tsv.gz
Chen Y	GCST90201008	Threonine to alpha-ketobutyrate ratio	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201008/GCST90201008_buildGRCh38.tsv.gz
Chen Y	GCST90201009	Threonine to pyruvate ratio	8220 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201009/GCST90201009_buildGRCh38.tsv.gz
Chen Y	GCST90201010	Alpha-ketobutyrate to 4-methyl-2-oxopentanoate ratio	8142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201010/GCST90201010_buildGRCh38.tsv.gz
Chen Y	GCST90201011	3-methyl-2-oxovalerate to 4-methyl-2-oxopentanoate ratio	8233 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201011/GCST90201011_buildGRCh38.tsv.gz
Chen Y	GCST90201012	3-methyl-2-oxovalerate to 3-methyl-2-oxobutyrate ratio	8200 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201012/GCST90201012_buildGRCh38.tsv.gz
Chen Y	GCST90201013	Androsterone glucuronide to etiocholanolone glucuronide ratio	7555 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201013/GCST90201013_buildGRCh38.tsv.gz
Chen Y	GCST90201014	Glucuronate to androsterone glucuronide ratio	7804 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201014/GCST90201014_buildGRCh38.tsv.gz
Chen Y	GCST90201015	Bilirubin (Z,Z) to androsterone glucuronide ratio	7888 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201015/GCST90201015_buildGRCh38.tsv.gz
Chen Y	GCST90201016	Bilirubin (Z,Z) to etiocholanolone glucuronide ratio	7707 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201016/GCST90201016_buildGRCh38.tsv.gz
Chen Y	GCST90201017	4-methyl-2-oxopentanoate to 3-methyl-2-oxobutyrate ratio	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201017/GCST90201017_buildGRCh38.tsv.gz
Chen Y	GCST90201018	Bilirubin (Z,Z) to glucuronate ratio	8103 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201018/GCST90201018_buildGRCh38.tsv.gz
Chen Y	GCST90201019	Glucuronate to etiocholanolone glucuronide ratio	7631 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201019/GCST90201019_buildGRCh38.tsv.gz
Chen Y	GCST90201020	Paraxanthine to 5-acetylamino-6-formylamino-3-methyluracil ratio	7388 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201020/GCST90201020_buildGRCh38.tsv.gz

4.3. Selection of instrumental variables (IVs)

To test the first hypothesis of MR, we selected SNPs strongly associated with each immune trait and have a P-value less than 1 × 10-5. We also ensured that their linkage disequilibrium (LD) r2 threshold is less than 0.001 within a distance of 10000 kb[6-8]. To test the second hypothesis of MR, we utilized the Phenoscanner database (http://www.phenoscanner.medschl.cam.ac.uk/) to ensure no associations between these SNPs and any known confounding factors. We excluded SNPs with significant heterogeneity and identified those significantly correlated with each metabolite. We used the F-statistic formula to measure the strength of each independent variable (IV). The formula follows: F = R2 (N-2) / (1-R2). Here, R2 denotes the proportion of the variability of physical activity explained by each IV, and N is the sample size of the GWAS for the SNP-physical activity association [9]. To calculate R2, we used the formula 2 x EAF x (1-EAF) x beta^2, where EAF represents the effect allele frequency, and beta is the standard error of the genetic effect [10] (Supplementary File 2).

Supplementary File 2:

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Casual effect of metabolites on IBD

# chrom	pos	ref	alt	rsids	nearest_ genes	pval	mlogp	beta	sebeta	af_alt	af_alt_ cases	af_alt_ controls	samplesize. exposure	eaf	R2	F
1	1440834	C	G	rs1240698	VWA1	3.34E-06	5.47622	0.0937909	0.0201757	0.294602	0.31406	0.294317	411317	0.993774541	5.25E-05	21.61036348
1	8075956	G	A	rs12736494	ERRFI1	3.70E-09	8.43218	-0.126424	0.021438	0.264806	0.241439	0.265148	411317	0.013147228	8.45E-05	34.77670323
1	19807487	T	TA	rs5772867	RNF186	1.37E-08	7.86207	-0.118704	0.0209111	0.74601	0.722424	0.746355	411317	0.013963813	7.83E-05	32.22365788
1	19875420	G	T	rs6674040	OTUD3	8.76E-23	22.0576	-0.18187	0.0185103	0.490822	0.446137	0.491476	411317	0.013106758	0.000234648	96.53684626
1	22382523	G	A	rs34145423	ZBTB40	1.68E-08	7.77412	-0.207834	0.0368378	0.0774263	0.0636523	0.0776278	411317	0.011854509	7.74E-05	31.83051822
1	67244548	A	G	rs148170789	IL23R	7.05E-14	13.1517	-0.36893	0.0492766	0.046007	0.0322258	0.0462086	411317	0.010100235	0.000136261	56.05371005
1	71601999	A	G	rs114007744	NEGR1	4.77E-07	6.32162	0.230067	0.04569	0.0372046	0.0463973	0.0370701	411317	0.997117433	6.16E-05	25.35503598
1	120147656	T	C	rs4606261	SEC22B	1.91E-07	6.71858	0.190816	0.0366409	0.062731	0.0746311	0.0625569	411317	0.997956108	6.59E-05	27.12034428
1	147704388	A	T	rs76198009	ACP6	1.02E-06	5.9926	0.206407	0.0422247	0.0452567	0.0544814	0.0451217	411317	0.996135387	5.81E-05	23.89536047
1	161509955	A	G	rs1801274	FCGR2A	1.37E-18	17.8637	-0.162744	0.0184938	0.503416	0.463308	0.504003	411317	0.013270702	0.000188235	77.43825306
1	200905967	T	C	rs12132298	C1orf106	3.05E-10	9.51521	-0.146813	0.0233183	0.21262	0.188476	0.212973	411317	0.012782192	9.64E-05	39.63995419
1	206769068	C	T	rs3024495	IL10	2.37E-28	27.6248	0.265226	0.0240177	0.15723	0.194821	0.15668	411317	0.999999983	0.00029639	121.9459125
2	60927190	T	C	rs3732179	REL	2.71E-08	7.56634	0.11123	0.0200092	0.671625	0.695544	0.671275	411317	0.998986422	7.51E-05	30.90169575
2	82046750	A	G	rs116286996	CTNNA2	2.20E-06	5.658	0.481781	0.101763	0.00646576	0.00980392	0.00641692	411317	0.994749451	5.45E-05	22.41389961
2	111060950	A	G	rs11692337	ACOXL	2.28E-07	6.64207	0.0963211	0.018613	0.444553	0.468786	0.444198	411317	0.997817851	6.51E-05	26.77984141
2	127092119	T	C	rs55678466	BIN1	1.03E-06	5.98729	0.0931758	0.0190704	0.375194	0.395578	0.374896	411317	0.996116724	5.80E-05	23.87176574
2	134671718	G	A	rs998451	TMEM163	7.42E-08	7.12945	0.100605	0.0186977	0.45273	0.476707	0.452379	411317	0.998552678	7.04E-05	28.95080501
2	162267541	C	T	rs1990760	IFIH1	1.66E-08	7.78099	-0.1058	0.0187436	0.585139	0.558271	0.585532	411317	0.013757609	7.75E-05	31.86127921
2	198694453	C	T	rs10931828	PLCL1	6.10E-09	8.21482	-0.109155	0.0187744	0.44086	0.414758	0.441242	411317	0.013565921	8.22E-05	33.80282703
2	199496059	AAA TT	A	rs149118281	SATB2	6.19E-07	6.20826	0.0928707	0.0186294	0.50004	0.522303	0.499714	411317	0.996813813	6.04E-05	24.85178517
2	203721233	T	A	rs55730955	CD28	1.96E-06	5.70684	-0.179808	0.0377979	0.0710342	0.0606683	0.0711859	411317	0.012316363	5.50E-05	22.62979218
2	218291184	A	T	rs2382818	PNKD, TMBIM1	2.32E-07	6.63514	0.102195	0.0197595	0.314123	0.335505	0.31381	411317	0.997804774	6.50E-05	26.74886029
2	240290013	C	T	rs139450634	OTOS	9.12E-08	7.03984	-0.19277	0.0360765	0.0801324	0.0677669	0.0803133	411317	0.012194736	6.94E-05	28.55143812
2	240628909	C	T	rs34236350	GPR35	2.18E-19	18.6614	0.183297	0.0203578	0.267497	0.305052	0.266948	411317	0.999998967	0.000197055	81.06752522
3	46430034	G	A	rs113595266	LTF	1.58E-09	8.80031	0.151365	0.0250788	0.151292	0.17129	0.151	411317	0.999609039	8.86E-05	36.42799889
3	49684099	G	A	rs3197999	MST1	4.51E-25	24.3461	0.193702	0.018728	0.39223	0.439168	0.391544	411317	0.999999929	0.000260013	106.9752467
3	188582684	G	T	rs58490414	LPP	6.52E-07	6.18553	-0.15365	0.0308842	0.111435	0.0971542	0.111644	411317	0.012572293	6.02E-05	24.75086065
3	188683070	T	A	rs6762648	LPP	2.37E-07	6.62526	-0.114113	0.0220819	0.24354	0.22241	0.243849	411317	0.013168939	6.49E-05	26.70516445
4	108369628	C	T	rs11097982	LEF1	1.70E-06	5.77049	0.0912435	0.0190623	0.380608	0.401923	0.380296	411317	0.995267772	5.57E-05	22.91137533
4	122639784	C	A	rs62324212	IL21	5.42E-07	6.26624	0.095294	0.0190173	0.586963	0.610946	0.586612	411317	0.996973211	6.10E-05	25.10910814
5	40496849	G	A	rs10076944	TTC33	4.69E-06	5.32904	0.0871945	0.0190452	0.59552	0.615375	0.59523	411317	0.992839915	5.10E-05	20.96066206
5	65867941	T	C	rs16894475	NLN	4.79E-06	5.31986	0.12888	0.0281774	0.114608	0.1281	0.11441	411317	0.992776952	5.09E-05	20.9202615
5	132292147	G	A	rs270610	P4HA2	2.59E-06	5.58636	0.0882297	0.0187693	0.549837	0.569971	0.549542	411317	0.994386377	5.37E-05	22.09689955
5	132461230	G	A	rs11745587	C5orf56	1.76E-11	10.7554	-0.127965	0.0190284	0.405247	0.376019	0.405675	411317	0.01337955	0.000109939	45.22470533
5	159397502	G	T	rs12518457	IL12B	3.32E-08	7.47846	0.111957	0.0202692	0.288297	0.311199	0.287962	411317	0.998912057	7.42E-05	30.50894412
6	21886258	T	C	rs74360995	SOX4	3.23E-06	5.49021	0.101671	0.0218397	0.225601	0.24333	0.225341	411317	0.99385596	5.27E-05	21.67198751
6	29970018	G	A	rs1061537	HLA-A	1.39E-14	13.8579	-0.147226	0.0191264	0.393366	0.358577	0.393874	411317	0.013144317	0.000144033	59.25164957
6	31835161	C	T	rs111432088	C6orf48	1.19E-13	12.9234	0.486843	0.0656338	0.0149661	0.0236894	0.0148385	411317	0.999975344	0.000133748	55.02000804
6	32625390	C	T	rs4587163	HLA-DQA1	2.32E-33	32.6343	-0.255166	0.0212016	0.283395	0.235618	0.284094	411317	0.011988575	0.000352029	144.8459066
6	33080825	C	A	rs1042131	HLA-DPB1	5.45E-14	13.264	-0.139269	0.0185179	0.502366	0.467958	0.502869	411317	0.013431929	0.000137496	56.56181457
6	96399099	A	C	rs9384578	UFL1	1.71E-06	5.76644	0.100603	0.0210259	0.254283	0.273719	0.253999	411317	0.99525007	5.57E-05	22.89341402
6	106041095	T	G	rs7761376	ATG5	2.89E-08	7.53854	-0.104791	0.0188889	0.601338	0.576132	0.601707	411317	0.013815329	7.48E-05	30.7774421
6	137652695	C	T	rs928722	OLIG3	2.80E-06	5.55327	0.108153	0.0230841	0.189251	0.206933	0.188992	411317	0.994209862	5.34E-05	21.95073847
7	4869839	T	C	rs12536069	RADIL	1.57E-12	11.8028	0.243305	0.0344247	0.068463	0.0851472	0.0682189	411317	0.999950369	0.000121432	49.95277596
7	5301033	T	C	rs10807943	SLC29A4	7.49E-21	20.1258	-0.32745	0.0349591	0.936726	0.915352	0.937039	411317	0.014090509	0.000213255	87.73389102
7	5433979	G	C	rs181316459	FBXL18	7.11E-60	59.1481	0.604016	0.0370107	0.0477545	0.0825566	0.0472453	411317	1	0.00064712	266.3423184
7	5804177	C	G	rs113827118	RNF216	3.30E-17	16.4818	0.194184	0.0230199	0.186174	0.216922	0.185724	411317	0.999996781	0.000172969	71.15704569
7	27186810	G	T	rs17427882	HOXA11	1.61E-06	5.79335	-0.258477	0.0538812	0.0360363	0.0280626	0.0361529	411317	0.011229938	5.59E-05	23.01267893
7	107816230	G	C	rs6952000	SLC26A3	3.96E-06	5.4024	-0.11897	0.0257873	0.164495	0.149346	0.164717	411317	0.013092956	5.17E-05	21.28438304
7	107843992	G	A	rs4730276	SLC26A3	1.27E-16	15.8965	-0.156065	0.0188566	0.430388	0.392243	0.430946	411317	0.013141545	0.000166508	68.49867084

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7	128935498	C	G	rs3778754	IRF5	1.69E-07	6.77325	0.0976271	0.018663	0.431602	0.455274	0.431256	411317	0.998049048	6.65E-05	27.36375881
7	134884109	G	A	rs9769438	CALD1	4.01E-06	5.39709	-18.2776	3.96394	0.000216664	2.64E-05	0.000219447	411317	0.001761615	5.17E-05	21.26092137
8	93790084	C	T	rs3134028	TMEM67	4.42E-06	5.35412	0.0865795	0.0188611	0.573389	0.592951	0.573103	411317	0.993009633	5.12E-05	21.07142952
9	5082333	A	G	rs7865719	JAK2	3.03E-09	8.51902	0.111096	0.0187342	0.556917	0.583371	0.55653	411317	0.999517282	8.55E-05	35.16611797
9	13862374	C	G	rs62533692	NFIB	4.90E-07	6.3095	-0.147023	0.029229	0.124346	0.109479	0.124563	411317	0.012696175	6.15E-05	25.3011659
9	114801407	T	G	rs4372078	TNFSF15	5.95E-07	6.22518	0.10729	0.0214893	0.739222	0.759312	0.738928	411317	0.996861401	6.06E-05	24.92710489
9	134071254	C	T	rs56303154	BRD3	3.43E-07	6.46434	0.114605	0.0224805	0.204395	0.224507	0.2041	411317	0.997455674	6.32E-05	25.98921049
9	134294823	A	C	rs7030448	RXRA	3.20E-06	5.49475	-0.0961828	0.0206512	0.29697	0.278401	0.297241	411317	0.01351922	5.27E-05	21.6921268
10	11670594	C	T	rs7101270	USP6NL	2.50E-08	7.60285	-0.122445	0.0219688	0.24666	0.224108	0.24699	411317	0.013101367	7.55E-05	31.06471182
10	62188210	T	C	rs6479789	RTKN2	1.10E-06	5.96011	-0.13412	0.0275201	0.14188	0.126436	0.142106	411317	0.012850761	5.77E-05	23.7511675
10	62685804	A	G	rs10761659	ZNF365	2.29E-09	8.63937	0.11128	0.0186228	0.528021	0.555038	0.527626	411317	0.999559122	8.68E-05	35.70607919
10	99555409	G	A	rs10786560	NKX2-3	1.07E-15	14.9698	0.169504	0.0211396	0.244859	0.276369	0.244398	411317	0.999992585	0.000156287	64.29308423
10	102173675	T	C	rs12769793	NOLC1	1.83E-08	7.73716	0.119714	0.0212743	0.2438	0.265618	0.243481	411317	0.999115583	7.70E-05	31.66483389
11	61858798	C	G	rs174604	FADS2	3.59E-06	5.4446	0.0884063	0.0190791	0.382335	0.402093	0.382046	411317	0.993585745	5.22E-05	21.47081595
11	76591023	C	A	rs7931483	EMSY	2.01E-10	9.69676	0.118971	0.0187045	0.41714	0.44595	0.416719	411317	0.999795853	9.83E-05	40.45646251
12	4172718	C	T	rs10849000	CCND2	4.46E-06	5.3503	0.1106	0.0241037	0.172811	0.18984	0.172562	411317	0.992983721	5.12E-05	21.05429557
12	68114342	G	A	rs11614178	IFNG	3.58E-10	9.44594	0.121856	0.0194308	0.336586	0.363039	0.336199	411317	0.999755956	9.56E-05	39.32876972
13	26957130	T	C	rs17085007	USP12	5.05E-07	6.29665	0.118176	0.0235205	0.180329	0.198122	0.180069	411317	0.997053442	6.14E-05	25.24430163
14	105863077	A	G	rs13379369	IGHJ6	9.60E-09	8.01767	0.180701	0.031494	0.875317	0.891068	0.875087	411317	0.999290775	8.00E-05	32.92026738
14	106011733	C	G	rs34399539	IGHV4-4	2.69E-10	9.57048	-0.185175	0.0293196	0.138186	0.119734	0.138456	411317	0.012494136	9.70E-05	39.8883905
15	67170768	C	T	rs118128985	SMAD3	2.76E-07	6.55832	0.295918	0.0575849	0.0222531	0.0297592	0.0221433	411317	0.997654771	6.42E-05	26.4072648
15	75071016	C	T	rs1867147	PPCDC	2.50E-06	5.60271	-0.0920948	0.0195595	0.356591	0.337944	0.356863	411317	0.013666692	5.39E-05	22.16933209
15	90648210	T	A	rs79973254	CRTC3	3.69E-08	7.43295	-0.212868	0.0386677	0.0693439	0.0572452	0.0695209	411317	0.011903941	7.37E-05	30.30553581
16	11611186	A	T	rs12928500	LITAF	3.73E-06	5.42859	-0.0917955	0.0198433	0.339346	0.318197	0.339656	411317	0.013522212	5.20E-05	21.39995574
16	23871011	G	A	rs11644964	PRKCB	9.94E-07	6.00257	-0.0964353	0.0197096	0.345465	0.32369	0.345784	411317	0.013511442	5.82E-05	23.9394594
16	30458598	C	T	rs12926510	SEPHS2	1.51E-06	5.82046	-0.0901765	0.0187491	0.542429	0.521488	0.542735	411317	0.01386381	5.62E-05	23.13256481
16	81858693	G	A	rs4888181	PLCG2	4.86E-06	5.3137	-0.08507	0.0186112	0.501585	0.481935	0.501873	411317	0.013856148	5.08E-05	20.8930576
16	85976134	T	C	rs16940186	IRF8	5.22E-11	10.2821	0.166186	0.0253161	0.145225	0.167275	0.144903	411317	0.999864206	0.000104755	43.09165288
17	34266955	G	A	rs3091316	CCL7	8.90E-07	6.0504	-0.0976553	0.0198711	0.33546	0.313893	0.335775	411317	0.01349328	5.87E-05	24.15158889
17	39783586	C	T	rs12942330	IKZF3	6.17E-12	11.2097	0.128182	0.0186429	0.528561	0.561019	0.528086	411317	0.999927122	0.000114921	47.2742922
17	42356523	G	A	rs3883338	STAT3	3.99E-07	6.39863	-0.0979222	0.0193169	0.378489	0.356382	0.378812	411317	0.013577889	6.25E-05	25.69717306
17	47738742	C	T	rs72648871	TBX21	1.21E-06	5.91744	-0.141152	0.0290789	0.126683	0.111976	0.126898	411317	0.012746413	5.73E-05	23.56220947
18	12805389	G	A	rs12967678	PTPN2	3.36E-06	5.47302	0.129008	0.0277605	0.119002	0.132927	0.118798	411317	0.993755643	5.25E-05	21.59616342
18	71114510	T	C	rs12954585	SOCS6	5.38E-07	6.26899	-0.094455	0.0188452	0.591738	0.570323	0.592051	411317	0.01389833	6.11E-05	25.12154186
19	10558356	T	C	rs892084	KRI1	3.00E-06	5.52276	-0.0890966	0.0190754	0.627787	0.606601	0.628097	411317	0.013934164	5.30E-05	21.8158854
19	33267421	C	A	rs10414008	CEBPA	9.71E-07	6.01273	0.0912132	0.0186248	0.456123	0.478162	0.455801	411317	0.996204827	5.83E-05	23.98446508
20	32182645	C	T	rs6142632	PLAGL2	1.54E-06	5.81143	0.0893089	0.0185848	0.483838	0.505618	0.48352	411317	0.995442372	5.61E-05	23.09253365
20	44436388	A	C	rs6017342	HNF4A	9.12E-17	16.0398	0.15623	0.0187875	0.559222	0.59788	0.558657	411317	0.999995909	0.00016809	69.1494558
20	63572597	C	T	rs6089926	HELZ2	2.84E-11	10.5473	-0.157565	0.0236767	0.208287	0.183019	0.208656	411317	0.012670317	0.00010766	44.2868767
21	39094818	G	A	rs2836883	PSMG1	8.48E-13	12.0717	-0.158251	0.0221231	0.247089	0.218756	0.247504	411317	0.012766072	0.000124386	51.168048
21	42815932	A	AT	rs139242250	WDR4	4.23E-07	6.37316	0.157129	0.0310649	0.0917612	0.105091	0.0915662	411317	0.997244991	6.22E-05	25.58413049
21	43995840	C	G	rs79541509	AGPAT3	2.57E-06	5.58991	-0.192751	0.0409897	0.0612473	0.0512035	0.0613942	411317	0.012056094	5.38E-05	22.11269565
22	37305332	G	A	rs6000657	CYTH4	1.01E-06	5.99757	0.317936	0.0650104	0.0171509	0.0231638	0.0170629	411317	0.996152631	5.81E-05	23.91727097
22	39274849	A	G	rs9607629	PDGFB	3.01E-11	10.5209	-0.196543	0.0295736	0.124865	0.104204	0.125167	411317	0.012033633	0.00010737	44.16768744
22	50000765	C	T	rs9617090	IL17REL	8.58E-16	15.0664	-0.156376	0.0194362	0.371904	0.336429	0.372423	411317	0.013044094	0.000157352	64.73145508

Casual effect of CD on metabolites

X. chrom	pos	ref	alt	rsids	nearest_genes	pval	mlogp	beta	sebeta	af_alt	af_alt_cases	af_alt_controls	samplesize.exposure	eaf	R2	F
1	67205233	G	A	rs2902440	C1orf141, IL23R	1.46E-10	9.8343	-0.223855	0.0349281	0.444167	0.387731	0.444418	411973	0.004308066	9.97E-05	41.07537778
1	119982857	G	T	rs116062645	NOTCH2	5.62E-07	6.25	0.393315	0.0786045	0.0395331	0.0575481	0.0394533	411973	0.990995716	6.08E-05	25.03710391
1	120386170	C	A	rs191615076	SEC22B	3.41E-07	6.46778	0.403467	0.0791192	0.0403762	0.0586539	0.0402951	411973	0.992553387	6.31E-05	26.00459864
5	40394559	T	A	rs60343748	TTC33	2.43E-12	11.6144	-0.255008	0.0363919	0.373696	0.315756	0.373953	411973	0.004170012	1.19E-04	49.10164488
5	159391737	A	C	rs6556416	IL12B	4.55E-06	5.34245	0.187062	0.0408008	0.742561	0.77701	0.742408	411973	0.979429995	5.10E-05	21.01995012
6	30941631	T	C	rs2243739	DPCR1, SFTA2	3.72E-09	8.43	-0.212075	0.0359668	0.388015	0.336391	0.388244	411973	0.004278567	8.44E-05	34.76748237

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6	32658309	G	A	rs7744001	HLA-DQB1	8.75E-12	11.0581	0.260222	0.0381236	0.246899	0.299802	0.246664	411973	0.999762474	1.13E-04	46.59057862
7	4824534	A	G	rs115509760	RADIL	3.24E-06	5.48881	0.332718	0.0714803	0.0497186	0.0690691	0.0496328	411973	0.982066524	5.26E-05	21.66595077
7	5301033	T	C	rs10807943	SLC29A4	6.21E-12	11.207	-0.430154	0.06257	0.93639	0.905357	0.936527	411973	0.004771336	1.15E-04	47.26215424
7	5433979	G	C	rs181316459	FBXL18	4.89E-22	21.3103	0.651911	0.0675525	0.0474632	0.0869929	0.0472879	411973	0.999999164	2.26E-04	93.13044061
7	13313683	T	C	rs76326248	ETV1	2.17E-08	7.66433	-0.793876	0.141809	0.0245791	0.0109227	0.0246397	411973	0.00219367	7.61E-05	31.3397587
7	50207563	C	T	rs118188341	C7orf72	1.07E-06	5.97001	-0.42608	0.0873467	0.0535279	0.0355391	0.0536077	411973	0.003277243	5.78E-05	23.79508093
7	81012505	A	G	rs77076184	SEMA3C	2.98E-07	6.52606	0.276311	0.0539162	0.0970059	0.125262	0.0968806	411973	0.99291872	6.37E-05	26.26368673
7	151246453	G	A	rs118179667	SMARCD3	6.39E-07	6.19459	0.537088	0.107869	0.0187574	0.0314185	0.0187013	411973	0.990545212	6.02E-05	24.79108216
8	87544224	C	G	rs6985561	CNBD1	9.85E-07	6.00659	0.169946	0.034721	0.535001	0.575705	0.534821	411973	0.988824536	5.81E-05	23.95716016
9	114562565	G	A	rs4979428	ATP6V1G1	2.31E-06	5.6368	0.195875	0.0414601	0.202159	0.236294	0.202008	411973	0.984364272	5.42E-05	22.32005293
9	114881082	C	T	rs13300483	TNFSF8	7.97E-09	8.09854	0.207573	0.0359802	0.326714	0.373167	0.326508	411973	0.998037736	8.08E-05	33.282234
9	136493166	A	G	rs7856092	NOTCH1	6.57E-07	6.18251	0.212302	0.042685	0.767883	0.802751	0.767729	411973	0.990443523	6.00E-05	24.73748199
10	62685804	A	G	rs10761659	ZNF365	2.46E-08	7.6099	0.192907	0.0345933	0.528016	0.574775	0.527808	411973	0.99711796	7.55E-05	31.09638321
10	99531715	T	C	rs10883370	NKX2-3	5.25E-07	6.27955	-0.172531	0.0343906	0.529984	0.485536	0.530181	411973	0.00452134	6.11E-05	25.16822947
11	103281869	G	A	rs10895390	DYNC2H1	1.34E-06	5.87187	0.173411	0.0358786	0.339957	0.380029	0.33978	411973	0.987384269	5.67E-05	23.36039599
12	51349475	T	A	rs117101860	GALNT6	3.18E-06	5.49815	-0.938604	0.201456	0.0135227	0.00566449	0.0135576	411973	0.002068184	5.27E-05	21.70712364
16	50474075	A	G	rs72790317	NKD1	4.54E-06	5.34338	0.464657	0.101338	0.0224968	0.0348819	0.0224419	411973	0.979449451	5.10E-05	21.02413818
16	50485831	A	G	rs76176364	NKD1	1.00E-12	11.9987	0.709001	0.0994377	0.0196373	0.0391827	0.0195506	411973	0.99987076	1.23E-04	50.83811581
17	66045243	T	A	rs1838103	CEP112	7.69E-07	6.11394	0.248007	0.0501732	0.844732	0.873631	0.844604	411973	0.98984507	5.93E-05	24.43330228
17	79694198	A	G	rs35192292	ENPP7	2.92E-07	6.53434	0.290633	0.0566711	0.877985	0.906004	0.87786	411973	0.992969002	6.38E-05	26.30052734
22	50283979	T	C	rs79966207	PLXNB2	2.52E-06	5.59815	-0.234626	0.0498537	0.161385	0.132178	0.161514	411973	0.004042502	5.38E-05	22.14906374

Casual effect of UC on metabolites

#chrom	pos	ref	alt	rsids	nearest_genes	pval	mlogp	beta	sebeta	af_alt	af_alt_=cases	af_alt_controls	samplesize.exposure	eaf	R2	F
1	1440834	C	G	rs1240698	VWA1	3.34E-06	5.47622	0.0937909	0.0201757	0.294602	0.31406	0.294317	411317	0.993774541	5.25E-05	21.61036348
1	8075956	G	A	rs12736494	ERRFI1	3.70E-09	8.43218	-0.126424	0.021438	0.264806	0.241439	0.265148	411317	0.013147228	8.45E-05	34.77670323
1	19807487	T	TA	rs5772867	RNF186	1.37E-08	7.86207	-0.118704	0.0209111	0.74601	0.722424	0.746355	411317	0.013963813	7.83E-05	32.22365788
1	19875420	G	T	rs6674040	OTUD3	8.76E-23	22.0576	-0.18187	0.0185103	0.490822	0.446137	0.491476	411317	0.013106758	0.000234648	96.53684626
1	22382523	G	A	rs34145423	ZBTB40	1.68E-08	7.77412	-0.207834	0.0368378	0.0774263	0.0636523	0.0776278	411317	0.011854509	7.74E-05	31.83051822
1	67244548	A	G	rs148170789	IL23R	7.05E-14	13.1517	-0.36893	0.0492766	0.046007	0.0322258	0.0462086	411317	0.010100235	0.000136261	56.05371005
1	71601999	A	G	rs114007744	NEGR1	4.77E-07	6.32162	0.230067	0.04569	0.0372046	0.0463973	0.0370701	411317	0.997117433	6.16E-05	25.35503598
1	120147656	T	C	rs4606261	SEC22B	1.91E-07	6.71858	0.190816	0.0366409	0.062731	0.0746311	0.0625569	411317	0.997956108	6.59E-05	27.12034428
1	147704388	A	T	rs76198009	ACP6	1.02E-06	5.9926	0.206407	0.0422247	0.0452567	0.0544814	0.0451217	411317	0.996135387	5.81E-05	23.89536047
1	161509955	A	G	rs1801274	FCGR2A	1.37E-18	17.8637	-0.162744	0.0184938	0.503416	0.463308	0.504003	411317	0.013270702	0.000188235	77.43825306
1	200905967	T	C	rs12132298	C1orf106	3.05E-10	9.51521	-0.146813	0.0233183	0.21262	0.188476	0.212973	411317	0.012782192	9.64E-05	39.63995419
1	206769068	C	T	rs3024495	IL10	2.37E-28	27.6248	0.265226	0.0240177	0.15723	0.194821	0.15668	411317	0.999999983	0.00029639	121.9459125
2	60927190	T	C	rs3732179	REL	2.71E-08	7.56634	0.11123	0.0200092	0.671625	0.695544	0.671275	411317	0.998986422	7.51E-05	30.90169575
2	82046750	A	G	rs116286996	CTNNA2	2.20E-06	5.658	0.481781	0.101763	0.00646576	0.00980392	0.00641692	411317	0.994749451	5.45E-05	22.41389961
2	111060950	A	G	rs11692337	ACOXL	2.28E-07	6.64207	0.0963211	0.018613	0.444553	0.468786	0.444198	411317	0.997817851	6.51E-05	26.77984141
2	127092119	T	C	rs55678466	BIN1	1.03E-06	5.98729	0.0931758	0.0190704	0.375194	0.395578	0.374896	411317	0.996116724	5.80E-05	23.87176574
2	134671718	G	A	rs998451	TMEM163	7.42E-08	7.12945	0.100605	0.0186977	0.45273	0.476707	0.452379	411317	0.998552678	7.04E-05	28.95080501
2	162267541	C	T	rs1990760	IFIH1	1.66E-08	7.78099	-0.1058	0.0187436	0.585139	0.558271	0.585532	411317	0.013757609	7.75E-05	31.86127921
2	198694453	C	T	rs10931828	PLCL1	6.10E-09	8.21482	-0.109155	0.0187744	0.44086	0.414758	0.441242	411317	0.013565921	8.22E-05	33.80282703
2	199496059	AAATT	A	rs149118281	SATB2	6.19E-07	6.20826	0.0928707	0.0186294	0.50004	0.522303	0.499714	411317	0.996813813	6.04E-05	24.85178517
2	203721233	T	A	rs55730955	CD28	1.96E-06	5.70684	-0.179808	0.0377979	0.0710342	0.0606683	0.0711859	411317	0.012316363	5.50E-05	22.62979218
2	218291184	A	T	rs2382818	PNKD, TMBIM1	2.32E-07	6.63514	0.102195	0.0197595	0.314123	0.335505	0.31381	411317	0.997804774	6.50E-05	26.74886029
2	240290013	C	T	rs139450634	OTOS	9.12E-08	7.03984	-0.19277	0.0360765	0.0801324	0.0677669	0.0803133	411317	0.012194736	6.94E-05	28.55143812
2	240628909	C	T	rs34236350	GPR35	2.18E-19	18.6614	0.183297	0.0203578	0.267497	0.305052	0.266948	411317	0.999998967	0.000197055	81.06752522
3	46430034	G	A	rs113595266	LTF	1.58E-09	8.80031	0.151365	0.0250788	0.151292	0.17129	0.151	411317	0.999609039	8.86E-05	36.42799889

3	49684099	G	A	rs3197999	MST1	4.51E-25	24.3461	0.193702	0.018728	0.39223	0.439168	0.391544	411317	0.999999929	0.000260013	106.9752467
3	188582684	G	T	rs58490414	LPP	6.52E-07	6.18553	-0.15365	0.0308842	0.111435	0.0971542	0.111644	411317	0.012572293	6.02E-05	24.75086065
3	188683070	T	A	rs6762648	LPP	2.37E-07	6.62526	-0.114113	0.0220819	0.24354	0.22241	0.243849	411317	0.013168939	6.49E-05	26.70516445
4	108369628	C	T	rs11097982	LEF1	1.70E-06	5.77049	0.0912435	0.0190623	0.380608	0.401923	0.380296	411317	0.995267772	5.57E-05	22.91137533
4	122639784	C	A	rs62324212	IL21	5.42E-07	6.26624	0.095294	0.0190173	0.586963	0.610946	0.586612	411317	0.996973211	6.10E-05	25.10910814
5	40496849	G	A	rs10076944	TTC33	4.69E-06	5.32904	0.0871945	0.0190452	0.59552	0.615375	0.59523	411317	0.992839915	5.10E-05	20.96066206
5	65867941	T	C	rs16894475	NLN	4.79E-06	5.31986	0.12888	0.0281774	0.114608	0.1281	0.11441	411317	0.992776952	5.09E-05	20.9202615
5	132292147	G	A	rs270610	P4HA2	2.59E-06	5.58636	0.0882297	0.0187693	0.549837	0.569971	0.549542	411317	0.994386377	5.37E-05	22.09689955
5	132461230	G	A	rs11745587	C5orf56	1.76E-11	10.7554	-0.127965	0.0190284	0.405247	0.376019	0.405675	411317	0.01337955	0.000109939	45.22470533
5	159397502	G	T	rs12518457	IL12B	3.32E-08	7.47846	0.111957	0.0202692	0.288297	0.311199	0.287962	411317	0.998912057	7.42E-05	30.50894412
6	21886258	T	C	rs74360995	SOX4	3.23E-06	5.49021	0.101671	0.0218397	0.225601	0.24333	0.225341	411317	0.99385596	5.27E-05	21.67198751
6	29970018	G	A	rs1061537	HLA-A	1.39E-14	13.8579	-0.147226	0.0191264	0.393366	0.358577	0.393874	411317	0.013144317	0.000144033	59.25164957
6	31835161	C	T	rs111432088	C6orf48	1.19E-13	12.9234	0.486843	0.0656338	0.0149661	0.0236894	0.0148385	411317	0.999975344	0.000133748	55.02000804
6	32625390	C	T	rs4587163	HLA-DQA1	2.32E-33	32.6343	-0.255166	0.0212016	0.283395	0.235618	0.284094	411317	0.011988575	0.000352029	144.8459066
6	33080825	C	A	rs1042131	HLA-DPB1	5.45E-14	13.264	-0.139269	0.0185179	0.502366	0.467958	0.502869	411317	0.013431929	0.000137496	56.56181457
6	96399099	A	C	rs9384578	UFL1	1.71E-06	5.76644	0.100603	0.0210259	0.254283	0.273719	0.253999	411317	0.99525007	5.57E-05	22.89341402
6	106041095	T	G	rs7761376	ATG5	2.89E-08	7.53854	-0.104791	0.0188889	0.601338	0.576132	0.601707	411317	0.013815329	7.48E-05	30.7774421
6	137652695	C	T	rs928722	OLIG3	2.80E-06	5.55327	0.108153	0.0230841	0.189251	0.206933	0.188992	411317	0.994209862	5.34E-05	21.95073847
7	4869839	T	C	rs12536069	RADIL	1.57E-12	11.8028	0.243305	0.0344247	0.068463	0.0851472	0.0682189	411317	0.999950369	0.000121432	49.95277596
7	5301033	T	C	rs10807943	SLC29A4	7.49E-21	20.1258	-0.32745	0.0349591	0.936726	0.915352	0.937039	411317	0.014090509	0.000213255	87.73389102
7	5433979	G	C	rs181316459	FBXL18	7.11E-60	59.1481	0.604016	0.0370107	0.0477545	0.0825566	0.0472453	411317	1	0.00064712	266.3423184
7	5804177	C	G	rs113827118	RNF216	3.30E-17	16.4818	0.194184	0.0230199	0.186174	0.216922	0.185724	411317	0.999996781	0.000172969	71.15704569
7	27186810	G	T	rs17427882	HOXA11	1.61E-06	5.79335	-0.258477	0.0538812	0.0360363	0.0280626	0.0361529	411317	0.011229938	5.59E-05	23.01267893
7	107816230	G	C	rs6952000	SLC26A3	3.96E-06	5.4024	-0.11897	0.0257873	0.164495	0.149346	0.164717	411317	0.013092956	5.17E-05	21.28438304
7	107843992	G	A	rs4730276	SLC26A3	1.27E-16	15.8965	-0.156065	0.0188566	0.430388	0.392243	0.430946	411317	0.013141545	0.000166508	68.49867084
7	128935498	C	G	rs3778754	IRF5	1.69E-07	6.77325	0.0976271	0.018663	0.431602	0.455274	0.431256	411317	0.998049048	6.65E-05	27.36375881
7	134884109	G	A	rs9769438	CALD1	4.01E-06	5.39709	-18.2776	3.96394	0.000216664	2.64E-05	0.000219447	411317	0.001761615	5.17E-05	21.26092137
8	93790084	C	T	rs3134028	TMEM67	4.42E-06	5.35412	0.0865795	0.0188611	0.573389	0.592951	0.573103	411317	0.993009633	5.12E-05	21.07142952
9	5082333	A	G	rs7865719	JAK2	3.03E-09	8.51902	0.111096	0.0187342	0.556917	0.583371	0.55653	411317	0.999517282	8.55E-05	35.16611797
9	13862374	C	G	rs62533692	NFIB	4.90E-07	6.3095	-0.147023	0.029229	0.124346	0.109479	0.124563	411317	0.012696175	6.15E-05	25.3011659
9	114801407	T	G	rs4372078	TNFSF15	5.95E-07	6.22518	0.10729	0.0214893	0.739222	0.759312	0.738928	411317	0.996861401	6.06E-05	24.92710489
9	134071254	C	T	rs56303154	BRD3	3.43E-07	6.46434	0.114605	0.0224805	0.204395	0.224507	0.2041	411317	0.997455674	6.32E-05	25.98921049
9	134294823	A	C	rs7030448	RXRA	3.20E-06	5.49475	-0.0961828	0.0206512	0.29697	0.278401	0.297241	411317	0.01351922	5.27E-05	21.6921268
10	11670594	C	T	rs7101270	USP6NL	2.50E-08	7.60285	-0.122445	0.0219688	0.24666	0.224108	0.24699	411317	0.013101367	7.55E-05	31.06471182
10	62188210	T	C	rs6479789	RTKN2	1.10E-06	5.96011	-0.13412	0.0275201	0.14188	0.126436	0.142106	411317	0.012850761	5.77E-05	23.7511675
10	62685804	A	G	rs10761659	ZNF365	2.29E-09	8.63937	0.11128	0.0186228	0.528021	0.555038	0.527626	411317	0.999559122	8.68E-05	35.70607919
10	99555409	G	A	rs10786560	NKX2-3	1.07E-15	14.9698	0.169504	0.0211396	0.244859	0.276369	0.244398	411317	0.999992585	0.000156287	64.29308423
10	102173675	T	C	rs12769793	NOLC1	1.83E-08	7.73716	0.119714	0.0212743	0.2438	0.265618	0.243481	411317	0.999115583	7.70E-05	31.66483389
11	61858798	C	G	rs174604	FADS2	3.59E-06	5.4446	0.0884063	0.0190791	0.382335	0.402093	0.382046	411317	0.993585745	5.22E-05	21.47081595
11	76591023	C	A	rs7931483	EMSY	2.01E-10	9.69676	0.118971	0.0187045	0.41714	0.44595	0.416719	411317	0.999795853	9.83E-05	40.45646251
12	4172718	C	T	rs10849000	CCND2	4.46E-06	5.3503	0.1106	0.0241037	0.172811	0.18984	0.172562	411317	0.992983721	5.12E-05	21.05429557
12	68114342	G	A	rs11614178	IFNG	3.58E-10	9.44594	0.121856	0.0194308	0.336586	0.363039	0.336199	411317	0.999755956	9.56E-05	39.32876972
13	26957130	T	C	rs17085007	USP12	5.05E-07	6.29665	0.118176	0.0235205	0.180329	0.198122	0.180069	411317	0.997053442	6.14E-05	25.24430163
14	105863077	A	G	rs13379369	IGHJ6	9.60E-09	8.01767	0.180701	0.031494	0.875317	0.891068	0.875087	411317	0.999290775	8.00E-05	32.92026738
14	106011733	C	G	rs34399539	IGHV4-4	2.69E-10	9.57048	-0.185175	0.0293196	0.138186	0.119734	0.138456	411317	0.012494136	9.70E-05	39.8883905
15	67170768	C	T	rs118128985	SMAD3	2.76E-07	6.55832	0.295918	0.0575849	0.0222531	0.0297592	0.0221433	411317	0.997654771	6.42E-05	26.4072648
15	75071016	C	T	rs1867147	PPCDC	2.50E-06	5.60271	-0.0920948	0.0195595	0.356591	0.337944	0.356863	411317	0.013666692	5.39E-05	22.16933209
15	90648210	T	A	rs79973254	CRTC3	3.69E-08	7.43295	-0.212868	0.0386677	0.0693439	0.0572452	0.0695209	411317	0.011903941	7.37E-05	30.30553581
16	11611186	A	T	rs12928500	LITAF	3.73E-06	5.42859	-0.0917955	0.0198433	0.339346	0.318197	0.339656	411317	0.013522212	5.20E-05	21.39995574
16	23871011	G	A	rs11644964	PRKCB	9.94E-07	6.00257	-0.0964353	0.0197096	0.345465	0.32369	0.345784	411317	0.013511442	5.82E-05	23.9394594
16	30458598	C	T	rs12926510	SEPHS2	1.51E-06	5.82046	-0.0901765	0.0187491	0.542429	0.521488	0.542735	411317	0.01386381	5.62E-05	23.13256481
16	81858693	G	A	rs4888181	PLCG2	4.86E-06	5.3137	-0.08507	0.0186112	0.501585	0.481935	0.501873	411317	0.013856148	5.08E-05	20.8930576
16	85976134	T	C	rs16940186	IRF8	5.22E-11	10.2821	0.166186	0.0253161	0.145225	0.167275	0.144903	411317	0.999864206	0.000104755	43.09165288
17	34266955	G	A	rs3091316	CCL7	8.90E-07	6.0504	-0.0976553	0.0198711	0.33546	0.313893	0.335775	411317	0.01349328	5.87E-05	24.15158889
17	39783586	C	T	rs12942330	IKZF3	6.17E-12	11.2097	0.128182	0.0186429	0.528561	0.561019	0.528086	411317	0.999927122	0.000114921	47.2742922
17	42356523	G	A	rs3883338	STAT3	3.99E-07	6.39863	-0.0979222	0.0193169	0.378489	0.356382	0.378812	411317	0.013577889	6.25E-05	25.69717306

17	47738742	C	T	rs72648871	TBX21	1.21E-06	5.91744	-0.141152	0.0290789	0.126683	0.111976	0.126898	411317	0.012746413	5.73E-05	23.56220947
18	12805389	G	A	rs12967678	PTPN2	3.36E-06	5.47302	0.129008	0.0277605	0.119002	0.132927	0.118798	411317	0.993755643	5.25E-05	21.59616342
18	71114510	T	C	rs12954585	SOCS6	5.38E-07	6.26899	-0.094455	0.0188452	0.591738	0.570323	0.592051	411317	0.01389833	6.11E-05	25.12154186
19	10558356	T	C	rs892084	KRI1	3.00E-06	5.52276	-0.0890966	0.0190754	0.627787	0.606601	0.628097	411317	0.013934164	5.30E-05	21.8158854
19	33267421	C	A	rs10414008	CEBPA	9.71E-07	6.01273	0.0912132	0.0186248	0.456123	0.478162	0.455801	411317	0.996204827	5.83E-05	23.98446508
20	32182645	C	T	rs6142632	PLAGL2	1.54E-06	5.81143	0.0893089	0.0185848	0.483838	0.505618	0.48352	411317	0.995442372	5.61E-05	23.09253365
20	44436388	A	C	rs6017342	HNF4A	9.12E-17	16.0398	0.15623	0.0187875	0.559222	0.59788	0.558657	411317	0.999995909	0.00016809	69.1494558
20	63572597	C	T	rs6089926	HELZ2	2.84E-11	10.5473	-0.157565	0.0236767	0.208287	0.183019	0.208656	411317	0.012670317	0.00010766	44.2868767
21	39094818	G	A	rs2836883	PSMG1	8.48E-13	12.0717	-0.158251	0.0221231	0.247089	0.218756	0.247504	411317	0.012766072	0.000124386	51.168048
21	42815932	A	AT	rs139242250	WDR4	4.23E-07	6.37316	0.157129	0.0310649	0.0917612	0.105091	0.0915662	411317	0.997244991	6.22E-05	25.58413049
21	43995840	C	G	rs79541509	AGPAT3	2.57E-06	5.58991	-0.192751	0.0409897	0.0612473	0.0512035	0.0613942	411317	0.012056094	5.38E-05	22.11269565
22	37305332	G	A	rs6000657	CYTH4	1.01E-06	5.99757	0.317936	0.0650104	0.0171509	0.0231638	0.0170629	411317	0.996152631	5.81E-05	23.91727097
22	39274849	A	G	rs9607629	PDGFB	3.01E-11	10.5209	-0.196543	0.0295736	0.124865	0.104204	0.125167	411317	0.012033633	0.00010737	44.16768744
22	50000765	C	T	rs9617090	IL17REL	8.58E-16	15.0664	-0.156376	0.0194362	0.371904	0.336429	0.372423	411317	0.013044094	0.000157352	64.73145508

5.1. The causal effect of metabolites on CD

Results of IVW method demonstrated significant protective effects of thirty metabolites on CD described as follows (Figure 1 and Supplementary File 3): Adenosine 5'−monophosphate (AMP) to EDT A ratio (OR: 0.6685, 95% CI: 0.4958−0.9013, P-value: 0.0082), 1−stearoyl−2−linoleoyl−gpc (18:0/18:2) levels (OR: 0.7249, 95% CI: 0.6024−0.8724, P-value: 0.006), Cortisone levels (OR: 0.7317, 95% CI: 0.5691−0.9407, P-value: 0.0148), 6−hydroxyindole sulfate levels (OR: 0.7330, 95% CI: 0.5486−0.9794, P-value: 0.0356), 4−methylhexanoylglutamine levels (OR: 0.7445, 95% CI: 0.5980−0.9271, P-value: 0.0084), X−25519 levels (OR: 0.7451, 95% CI: 0.5979−0.9285, P-value: 0.0088), Linoleoylcholine levels (OR: 0.7495, 95% CI: 0.5862−0.9583, P-value: 0.0215), Uridine levels (OR: 0.7500, 95% CI: 0.5957−0.9442, P-value: 0.0143), 5−methylthioadenosine (MTA) to phosphate ratio (OR: 0.7520, 95% CI: 0.6105−0.9262, P-value: 0.0073), Maleate levels (OR: 0.7561, 95% CI: 0.5990−0.9544, P-value: 0.0186), X−17354 levels (OR: 0.7609, 95% CI: 0.6147−0.9418, P-value: 0.0120), X−24243 levels (OR: 0.7769, 95% CI: 0.6392−0.9443, P-value: 0.0112), X−22834 levels (OR: 0.7809, 95% CI: 0.6390−0.9543, P-value: 0.0157), Carnitine levels (OR: 0.7911, 95% CI: 0.6842−0.9147, P-value: 0.0016), N−lactoyl tyrosine levels (OR: 0.7915, 95% CI: 0.6471−0.9681, P-value: 0.0229), Phenylpyruvate levels (OR: 0.7946, 95% CI: 0.6480−0.9744, P-value: 0.0272), Creatinine levels (OR: 0.7957, 95% CI: 0.6702−0.9447, P-value: 0.0091), Histidine to glutamine ratio (OR: 0.7974, 95% CI: 0.6423−0.9900, P-value: 0.0403), Adenosine 5'−monophosphate (AMP) to threonine ratio (OR: 0.7994, 95% CI: 0.6816−0.9374, P-value: 0.0059), Linoleoyl ethanolamide levels (OR: 0.8010, 95% CI: 0.6890−0.9311, P-value: 0.0039), X−13866 levels (OR: 0.8023, 95% CI: 0.6442−0.9993, P-value: 0.0492), Sphingadienine levels (OR: 0.8128, 95% CI: 0.6721−0.9829, P-value: 0.0326), N−oleoyltaurine levels (OR: 0.8176, 95% CI: 0.6810−0.9816, P-value: 0.0308),X−26111 levels (OR: 0.8201, 95% CI: 0.6865−0.9797, P-value: 0.0288), Phosphoethanolamine levels (OR: 0.8392, 95% CI: 0.7119−0.9893, P-value: 0.0368), Oleoyl ethanolamide levels (OR: 0.8414, 95% CI: 0.7204−0.9827, P-value: 0.0293), Betaine levels (OR: 0.8416, 95% CI: 0.7216−0.9816, P-value: 0.0280), Metabolonic lactone sulfate levels (OR: 0.8882, 95% CI: 0.8118−0.9718, P-value: 0.0098), Glucose to sucrose ratio (OR: 0.8939, 95% CI: 0.8001−0.9987, P-value: 0.0475), Oleoyl-linoleoyl-glycerol (18:1 to 18:2) to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) ratio (OR: 0.8987, 95% CI: 0.8120−0.9946, P-value: 0.0389).

In addition, significant risk effects of thirty metabolites on CD were observed as follows: Pipecolate levels (OR: 1.0524, 95% CI: 1.0021−1.1053, P-value: 0.0411), 1−arachidonoyl−gpc (20:4n6) levels (OR: 1.1318, 95% CI: 1.0152−1.2617, P-value: 0.0256), X−18345 levels (OR: 1.1518, 95% CI: 1.0038−1.3216, P-value: 0.0440), 2−hydroxyoctanoate levels (OR: 1.1534, 95% CI: 1.0017−1.3280, P-value: 0.0474), 3−methoxycatechol sulfate (1) levels (OR: 1.1845, 95% CI: 1.0085−1.3913, P-value: 0.0391), Adenosine 5'−diphosphate (ADP) to 2'−deoxyuridine ratio (OR: 1.1881, 95% CI: 1.0142−1.3919, P-value: 0.0328), Trans−2−hexenoylglycine levels (OR: 1.1945, 95% CI: 1.0012−1.4253, P-value: 0.0485), Suberate (C8−DC) levels (OR: 1.1966, 95% CI: 1.0039−1.4264, P-value: 0.0452), Kynurenate levels (OR: 1.1994, 95% CI: 1.0394−1.3842, P-value: 0.0128), Uridine to 2'−deoxyuridine ratio (OR: 1.2128, 95% CI: 1.0075−1.4598, P-value: 0.0414), S−adenosylhomocysteine (SAH) levels (OR: 1.2168, 95% CI: 1.0433−1.4193, P-value: 0.0124), Adipoylcarnitine (C6−DC) levels (OR: 1.2225, 95% CI: 1.0127−1.4758, P-value: 0.0365), Dopamine 4−sulfate levels (OR: 1.2258, 95% CI: 1.0467−1.4354, P-value: 0.0115), Oxalate (ethanedioate) levels (OR: 1.2268, 95% CI: 1.0031−1.5004, P-value: 0.0466), Succinate to acetoacetate ratio (OR: 1.2279, 95% CI: 1.0027−1.5037, P-value: 0.0470), Homostachydrine levels (OR: 1.2328, 95% CI: 1.0062−1.5105, P-value: 0.0434), X−24757 levels (OR: 1.2591, 95% CI: 1.0187−1.5563, P-value: 0.0330), Isovalerate (i5:0) levels (OR: 1.2676, 95% CI: 1.0164−1.5809, P-value: 0.0354), X−11847 levels (OR: 1.2841, 95% CI: 1.0403−1.5851, P-value: 0.0199), Imidazole propionate levels (OR: 1.2883, 95% CI: 1.0526−1.5768, P-value: 0.0140), X−12216 levels (OR: 1.3035, 95% CI: 1.0660−1.5939, P-value: 0.0098), X−24728 levels (OR: 1.3182, 95% CI: 1.1032−1.5751, P-value: 0.0024), Benzoate to oleoyl−linoleoyl−glycerol (18:1 to 18:2) [2] ratio (OR: 1.3193, 95% CI: 1.0514−1.6555, P-value: 0.0167), N−carbamoylalanine levels (OR: 1.3221, 95% CI: 1.0929−1.5993, P-value: 0.0040), Threonine to alpha−ketobutyrate ratio (OR: 1.3671, 95% CI: 1.0498−1.7803, P-value: 0.0203), X−18887 levels (OR: 1.3841, 95% CI: 1.0479−1.8282, P-value: 0.0221), 2−hydroxypalmitate levels (OR: 1.3890, 95% CI: 1.0322−1.8690, P-value: 0.0300), Heptenedioate (C7:1−DC) levels (OR: 1.4124, 95% CI: 1.0520−1.8963, P-value: 0.0216), 4−oxo−retinoic acid levels (OR: 1.4719, 95% CI: 1.1194−1.9354, P-value: 0.0056), Serine to pyruvate ratio (OR: 1.5566, 95% CI: 1.1799−2.0535, P-value: 0.0017). The reliability and validity of the causal relationships identified have been further supported by the findings from three different methods, namely the

weighted median, MR Egger, and simple mode (Supplementary Figure 1 and Supplementary File 3), along with a leave-one-out sensitivity analysis (Supplementary File 4). The intercept of MR-Egger was analyzed to ensure the absence of horizontal pleiotropy (Supplementary File 5). The forest plots are shown in Supplementary File 6. The stability of the results was also indicated by scatter plots (Supplementary File 7) and funnel plots (Supplementary File 8).

Figure 1: Forest plots showed the causal associations between CD and metabolite traits.

Trails	nsnp	pval	OR(95%CI)
Serine to pyruvate ratio	14	0.0017	1.5566 (1.1799–2.0535)
4–oxo–retinoic acid levels	12	0.0056	1.4719 (1.1194–1.9354)
Heptenedioate (C7:1–DC) levels	14	0.0216	1.4124 (1.0520–1.8963)
2–hydroxypalmitate levels	15	0.0300	1.3890 (1.0322–1.8690)
X–18887 levels	13	0.0221	1.3841 (1.0479–1.8282)
Threonine to alpha–ketobutyrate ratio	20	0.0203	1.3671 (1.0498–1.7803)
N–carbamoylalanine levels	20	0.0040	1.3221 (1.0929–1.5993)
Benzoate to oleoyl–linoleoyl–glycerol (18:1 to 18:2) [2] ratio	23	0.0167	1.3193 (1.0514–1.6555)
X–24728 levels	29	0.0024	1.3182 (1.1032–1.5751)
X–12216 levels	20	0.0098	1.3035 (1.0660–1.5939)
Imidazole propionate levels	20	0.0140	1.2883 (1.0526–1.5768)
X–11847 levels	15	0.0199	1.2841 (1.0403–1.5851)
Isovalerate (i5:0) levels	17	0.0354	1.2676 (1.0164–1.5809)
X–24757 levels	15	0.0330	1.2591 (1.0187–1.5563)
Homostachydrine levels	23	0.0434	1.2328 (1.0062–1.5105)
Succinate to acetoacetate ratio	13	0.0470	1.2279 (1.0027–1.5037)
Oxalate (ethanedioate) levels	19	0.0466	1.2268 (1.0031–1.5004)
Dopamine 4–sulfate levels	17	0.0115	1.2258 (1.0467–1.4354)
Adipoylcarnitine (C6–DC) levels	17	0.0365	1.2225 (1.0127–1.4758)
S–adenosylhomocysteine (SAH) levels	23	0.0124	1.2168 (1.0433–1.4193)
Uridine to 2'–deoxyuridine ratio	23	0.0414	1.2128 (1.0075–1.4598)
Kynurenate levels	28	0.0128	1.1994 (1.0394–1.3842)
Suberate (C8–DC) levels	23	0.0452	1.1966 (1.0039–1.4264)
Trans–2–hexenoylglycine levels	23	0.0485	1.1945 (1.0012–1.4253)
Adenosine 5'–diphosphate (ADP) to 2'–deoxyuridine ratio	20	0.0328	1.1881 (1.0142–1.3919)
3–methoxycatechol sulfate (1) levels	21	0.0391	1.1845 (1.0085–1.3913)
2–hydroxyoctanoate levels	19	0.0474	1.1534 (1.0017–1.3280)
X–18345 levels	27	0.0440	1.1518 (1.0038–1.3216)
1–arachidonoyl–gpc (20:4n6) levels	22	0.0256	1.1318 (1.0152–1.2617)
Pipecolate levels	24	0.0411	1.0524 (1.0021–1.1053)
Oleoyl–linoleoyl–glycerol (18:1 to 18:2) to linoleoyl–arachidonoyl–glycerol (18:2 to 20:4) ratio	21	0.0389	0.8987 (0.8120–0.9946)
Glucose to sucrose ratio	17	0.0475	0.8939 (0.8001–0.9987)
Metabolonic lactone sulfate levels	26	0.0098	0.8882 (0.8118–0.9718)
Betaine levels	20	0.0280	0.8416 (0.7216–0.9816)
Oleoyl ethanolamide levels	26	0.0293	0.8414 (0.7204–0.9827)
Phosphoethanolamine levels	19	0.0368	0.8392 (0.7119–0.9893)
X–26111 levels	17	0.0288	0.8201 (0.6865–0.9797)
N–oleoyltaurine levels	17	0.0308	0.8176 (0.6810–0.9816)
Sphingadienine levels	13	0.0326	0.8128 (0.6721–0.9829)
X–13866 levels	19	0.0492	0.8023 (0.6442–0.9993)
Linoleoyl ethanolamide levels	22	0.0039	0.8010 (0.6890–0.9311)
Adenosine 5'–monophosphate (AMP) to threonine ratio	23	0.0059	0.7994 (0.6816–0.9374)
Histidine to glutamine ratio	26	0.0403	0.7974 (0.6423–0.9900)
Creatinine levels	23	0.0091	0.7957 (0.6702–0.9447)
Phenylpyruvate levels	22	0.0272	0.7946 (0.6480–0.9744)
N–lactoyl tyrosine levels	21	0.0229	0.7915 (0.6471–0.9681)
Carnitine levels	22	0.0016	0.7911 (0.6842–0.9147)
X–22834 levels	17	0.0157	0.7809 (0.6390–0.9543)
X–24243 levels	20	0.0112	0.7769 (0.6392–0.9443)
X–17354 levels	14	0.0120	0.7609 (0.6147–0.9418)
Maleate levels	19	0.0186	0.7561 (0.5990–0.9544)
5–methylthioadenosine (MTA) to phosphate ratio	22	0.0073	0.7520 (0.6105–0.9262)
Uridine levels	13	0.0143	0.7500 (0.5957–0.9442)
Linoleoylcholine levels	17	0.0215	0.7495 (0.5862–0.9583)
X–25519 levels	17	0.0088	0.7451 (0.5979–0.9285)
4–methylhexanoylglutamine levels	20	0.0084	0.7445 (0.5980–0.9271)
6–hydroxyindole sulfate levels	12	0.0356	0.7330 (0.5486–0.9794)
Cortisone levels	15	0.0148	0.7317 (0.5691–0.9407)
1–stearoyl–2–linoleoyl–gpc (18:0/18:2) levels	20	<0.001	0.7249 (0.6024–0.8724)
Adenosine 5'–monophosphate (AMP) to EDTA ratio	11	0.0082	0.6685 (0.4958–0.9013)

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Supplementary Figure 1: Forest plots showed the causal associations between CD and metabolite traits using MR Egger, weighted median, inverse variance weighted, and simple mode methods.

Trails	method	nsnp	pval	OR(95%CI)
Carnitine levels	MR Egger	22	0.2083	0.8507 (0.6666−1.0855)
	Weighted median	22	0.0789	0.8362 (0.6849−1.0209)
	Inverse variance weighted	22	0.0016	0.7911 (0.6842−0.9147)
	Simple mode	22	0.2264	0.7744 (0.5180−1.1577)
	Weighted mode	22	0.0840	0.8304 (0.6793−1.0151)
Suberate (C8−DC) levels	MR Egger	23	0.1977	1.2641 (0.8950−1.7856)
	Weighted median	23	0.0501	1.2683 (0.9999−1.6089)
	Inverse variance weighted	23	0.0452	1.1966 (1.0039−1.4264)
	Simple mode	23	0.5627	1.1288 (0.7537−1.6905)
	Weighted mode	23	0.0818	1.2998 (0.9806−1.7229)
Maleate levels	MR Egger	19	0.6788	0.8867 (0.5067−1.5517)
	Weighted median	19	0.1072	0.7631 (0.5491−1.0604)
	Inverse variance weighted	19	0.0186	0.7561 (0.5990−0.9544)
	Simple mode	19	0.1781	0.6936 (0.4158−1.1570)
	Weighted mode	19	0.1825	0.7240 (0.4587−1.1428)
Isovalerate (i5:0) levels	MR Egger	17	0.2322	1.3822 (0.8304−2.3010)
	Weighted median	17	0.0993	1.2741 (0.9552−1.6994)
	Inverse variance weighted	17	0.0354	1.2676 (1.0164−1.5809)
	Simple mode	17	0.2159	1.3393 (0.8587−2.0889)
	Weighted mode	17	0.2904	1.2499 (0.8380−1.8643)
Oxalate (ethanedioate) levels	MR Egger	19	0.0683	1.4358 (0.9975−2.0666)
	Weighted median	19	0.0085	1.4491 (1.0991−1.9107)
	Inverse variance weighted	19	0.0466	1.2268 (1.0031−1.5004)
	Simple mode	19	0.0991	1.4631 (0.9528−2.2466)
	Weighted mode	19	0.0328	1.4631 (1.0597−2.0199)
2−hydroxyoctanoate levels	MR Egger	19	0.3557	1.1126 (0.8927−1.3866)
	Weighted median	19	0.2775	1.1222 (0.9114−1.3819)
	Inverse variance weighted	19	0.0474	1.1534 (1.0017−1.3280)
	Simple mode	19	0.1614	1.3220 (0.9089−1.9227)
	Weighted mode	19	0.2284	1.1297 (0.9326−1.3684)
Homostachydrine levels	MR Egger	23	0.5929	1.1206 (0.7428−1.6906)
	Weighted median	23	0.1958	1.2216 (0.9021−1.6543)
	Inverse variance weighted	23	0.0434	1.2328 (1.0062−1.5105)
	Simple mode	23	0.2922	1.3526 (0.7815−2.3410)
	Weighted mode	23	0.2738	1.3619 (0.7941−2.3356)
1−arachidonoyl−gpc (20:4n6) levels	MR Egger	22	0.1529	1.1331 (0.9609−1.3363)
	Weighted median	22	0.0437	1.1421 (1.0038−1.2994)
	Inverse variance weighted	22	0.0256	1.1318 (1.0152−1.2617)
	Simple mode	22	0.6101	1.0840 (0.7988−1.4709)
	Weighted mode	22	0.0515	1.1415 (1.0068−1.2943)
2−hydroxypalmitate levels	MR Egger	15	0.3643	1.3795 (0.7054−2.6976)
	Weighted median	15	0.0391	1.4260 (1.0179−1.9978)
	Inverse variance weighted	15	0.0300	1.3890 (1.0322−1.8690)
	Simple mode	15	0.2927	1.3715 (0.7785−2.4163)
	Weighted mode	15	0.1677	1.3868 (0.8927−2.1544)
4−oxo−retinoic acid levels	MR Egger	12	0.6657	1.1383 (0.6436−2.0131)
	Weighted median	12	0.0801	1.3941 (0.9610−2.0225)
	Inverse variance weighted	12	0.0056	1.4719 (1.1194−1.9354)
	Simple mode	12	0.3195	1.3360 (0.7750−2.3031)
	Weighted mode	12	0.2264	1.3360 (0.8578−2.0808)
N−oleoyltaurine levels	MR Egger	17	0.0686	0.6494 (0.4219−0.9996)
	Weighted median	17	0.0216	0.7439 (0.5779−0.9575)
	Inverse variance weighted	17	0.0308	0.8176 (0.6810−0.9816)
	Simple mode	17	0.7580	0.9194 (0.5436−1.5550)
	Weighted mode	17	0.0928	0.7657 (0.5714−1.0261)
Imidazole propionate levels	MR Egger	20	0.0966	1.4621 (0.9561−2.2358)
	Weighted median	20	0.1261	1.2528 (0.9386−1.6723)
	Inverse variance weighted	20	0.0140	1.2883 (1.0526−1.5768)
	Simple mode	20	0.4633	1.1880 (0.7566−1.8654)
	Weighted mode	20	0.3588	1.1880 (0.8296−1.7013)
6−hydroxyindole sulfate levels	MR Egger	12	0.0749	0.5329 (0.2865−0.9911)
	Weighted median	12	0.0146	0.6568 (0.4687−0.9205)
	Inverse variance weighted	12	0.0356	0.7330 (0.5486−0.9794)
	Simple mode	12	0.1040	0.6287 (0.3763−1.0504)
	Weighted mode	12	0.0567	0.6327 (0.4151−0.9643)
N−carbamoylalanine levels	MR Egger	20	0.0890	1.3792 (0.9714−1.9581)
	Weighted median	20	0.0678	1.3345 (0.9791−1.8191)
	Inverse variance weighted	20	0.0040	1.3221 (1.0929−1.5993)
	Simple mode	20	0.2162	1.3795 (0.8426−2.2585)

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	Inverse variance weighted	20	0.0040	1.3221 (1.0929–1.5993)
	Simple mode	20	0.2162	1.3795 (0.8426–2.2585)
	Weighted mode	20	0.0684	1.3697 (0.9955–1.8847)
3–methoxycatechol sulfate (1) levels	MR Egger	21	0.3544	1.1337 (0.8749–1.4691)
	Weighted median	21	0.2223	1.1684 (0.9100–1.5001)
	Inverse variance weighted	21	0.0391	1.1845 (1.0085–1.3913)
	Simple mode	21	0.8107	1.0450 (0.7326–1.4905)
	Weighted mode	21	0.2489	1.1465 (0.9149–1.4368)
Dopamine 4–sulfate levels	MR Egger	17	0.7441	1.0412 (0.8208–1.3206)
	Weighted median	17	0.2185	1.1583 (0.9166–1.4638)
	Inverse variance weighted	17	0.0115	1.2258 (1.0467–1.4354)
	Simple mode	17	0.3073	1.2398 (0.8315–1.8487)
	Weighted mode	17	0.7421	1.0426 (0.8166–1.3312)
Adipoylcarnitine (C6–DC) levels	MR Egger	17	0.5416	1.1376 (0.7591–1.7048)
	Weighted median	17	0.2495	1.1664 (0.8976–1.5157)
	Inverse variance weighted	17	0.0365	1.2225 (1.0127–1.4758)
	Simple mode	17	0.1692	1.3834 (0.8894–2.1518)
	Weighted mode	17	0.2823	1.2108 (0.8645–1.6960)
Linoleoyl ethanolamide levels	MR Egger	22	0.1687	0.8040 (0.5959–1.0846)
	Weighted median	22	0.0063	0.7428 (0.6002–0.9194)
	Inverse variance weighted	22	0.0039	0.8010 (0.6890–0.9311)
	Simple mode	22	0.0654	0.7132 (0.5073–1.0027)
	Weighted mode	22	0.0187	0.7226 (0.5629–0.9276)
1–stearoyl–2–linoleoyl–gpc (18:0/18:2) levels	MR Egger	20	0.4517	0.8469 (0.5545–1.2934)
	Weighted median	20	0.0457	0.7550 (0.5730–0.9947)
	Inverse variance weighted	20	<0.001	0.7249 (0.6024–0.8724)
	Simple mode	20	0.0984	0.6851 (0.4473–1.0495)
	Weighted mode	20	0.0358	0.7262 (0.5502–0.9585)
Sphingadienine levels	MR Egger	13	0.7377	0.9136 (0.5455–1.5300)
	Weighted median	13	0.2928	0.8741 (0.6802–1.1232)
	Inverse variance weighted	13	0.0326	0.8128 (0.6721–0.9829)
	Simple mode	13	0.4447	0.8566 (0.5835–1.2575)
	Weighted mode	13	0.4311	0.8679 (0.6171–1.2205)
Linoleoylcholine levels	MR Egger	17	0.3101	0.7134 (0.3799–1.3395)
	Weighted median	17	0.0223	0.6937 (0.5069–0.9494)
	Inverse variance weighted	17	0.0215	0.7495 (0.5862–0.9583)
	Simple mode	17	0.1453	0.6643 (0.3935–1.1215)
	Weighted mode	17	0.1487	0.6712 (0.4011–1.1234)
Trans–2–hexenoylglycine levels	MR Egger	23	0.3353	1.2169 (0.8238–1.7976)
	Weighted median	23	0.0784	1.2285 (0.9769–1.5451)
	Inverse variance weighted	23	0.0485	1.1945 (1.0012–1.4253)
	Simple mode	23	0.4085	1.1844 (0.7990–1.7557)
	Weighted mode	23	0.1150	1.2233 (0.9616–1.5563)
Heptenedioate (C7:1–DC) levels	MR Egger	14	0.3226	1.4775 (0.7037–3.1022)
	Weighted median	14	0.0060	1.6064 (1.1452–2.2532)
	Inverse variance weighted	14	0.0216	1.4124 (1.0520–1.8963)
	Simple mode	14	0.0554	1.8765 (1.0440–3.3728)
	Weighted mode	14	0.0740	1.7482 (0.9952–3.0709)
N–lactoyl tyrosine levels	MR Egger	21	0.3797	0.8292 (0.5513–1.2472)
	Weighted median	21	0.2536	0.8689 (0.6826–1.1060)
	Inverse variance weighted	21	0.0229	0.7915 (0.6471–0.9681)
	Simple mode	21	0.6456	0.9104 (0.6138–1.3503)
	Weighted mode	21	0.6648	0.9228 (0.6452–1.3199)
4–methylhexanoylglutamine levels	MR Egger	20	0.2051	0.7253 (0.4493–1.1707)
	Weighted median	20	0.0649	0.7741 (0.5899–1.0159)
	Inverse variance weighted	20	0.0084	0.7445 (0.5980–0.9271)
	Simple mode	20	0.9518	0.9822 (0.5532–1.7440)
	Weighted mode	20	0.8048	0.9405 (0.5822–1.5194)
Metabolonic lactone sulfate levels	MR Egger	26	0.0335	0.8662 (0.7646–0.9814)
	Weighted median	26	0.0199	0.8719 (0.7768–0.9785)
	Inverse variance weighted	26	0.0098	0.8882 (0.8118–0.9718)
	Simple mode	26	0.0128	0.7176 (0.5630–0.9147)
	Weighted mode	26	0.0114	0.8783 (0.8002–0.9640)
Phosphoethanolamine levels	MR Egger	19	0.3422	0.8802 (0.6814–1.1370)
	Weighted median	19	0.1095	0.8118 (0.6288–1.0480)
	Inverse variance weighted	19	0.0368	0.8392 (0.7119–0.9893)
	Simple mode	19	0.8438	0.9666 (0.6931–1.3482)
	Weighted mode	19	0.1669	0.8277 (0.6398–1.0706)

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	Inverse variance weighted	24	0.0411	1.0524 (1.0021−1.1053)
	Simple mode	24	0.1877	1.2211 (0.9152−1.6291)
	Weighted mode	24	0.0903	1.0501 (0.9947−1.1086)
Oleoyl ethanolamide levels	MR Egger	26	0.1816	0.8070 (0.5946−1.0953)
	Weighted median	26	0.0192	0.7605 (0.6048−0.9564)
	Inverse variance weighted	26	0.0293	0.8414 (0.7204−0.9827)
	Simple mode	26	0.4289	0.8334 (0.5345−1.2994)
	Weighted mode	26	0.0281	0.7520 (0.5917−0.9557)
S−adenosylhomocysteine (SAH) levels	MR Egger	23	0.0344	1.4041 (1.0465−1.8838)
	Weighted median	23	0.0061	1.3876 (1.0977−1.7539)
	Inverse variance weighted	23	0.0124	1.2168 (1.0433−1.4193)
	Simple mode	23	0.1708	1.3580 (0.8891−2.0741)
	Weighted mode	23	0.0471	1.4233 (1.0244−1.9775)
Cortisone levels	MR Egger	15	0.1393	0.6584 (0.3913−1.1077)
	Weighted median	15	0.2297	0.8078 (0.5702−1.1443)
	Inverse variance weighted	15	0.0148	0.7317 (0.5691−0.9407)
	Simple mode	15	0.4965	0.8186 (0.4667−1.4358)
	Weighted mode	15	0.6099	0.8610 (0.4908−1.5104)
Phenylpyruvate levels	MR Egger	22	0.5966	0.8681 (0.5185−1.4534)
	Weighted median	22	0.1470	0.8121 (0.6130−1.0759)
	Inverse variance weighted	22	0.0272	0.7946 (0.6480−0.9744)
	Simple mode	22	0.3515	0.7964 (0.4985−1.2721)
	Weighted mode	22	0.2749	0.7923 (0.5274−1.1903)
Creatinine levels	MR Egger	23	0.2121	0.8328 (0.6302−1.1004)
	Weighted median	23	0.1653	0.8307 (0.6393−1.0795)
	Inverse variance weighted	23	0.0091	0.7957 (0.6702−0.9447)
	Simple mode	23	0.0855	0.6969 (0.4704−1.0324)
	Weighted mode	23	0.1057	0.7713 (0.5705−1.0429)
Uridine levels	MR Egger	13	0.6451	0.8831 (0.5278−1.4776)
	Weighted median	13	0.0838	0.7552 (0.5494−1.0382)
	Inverse variance weighted	13	0.0143	0.7500 (0.5957−0.9442)
	Simple mode	13	0.7862	0.9287 (0.5505−1.5665)
	Weighted mode	13	0.8505	0.9480 (0.5505−1.6326)
Betaine levels	MR Egger	20	0.1343	0.7516 (0.5259−1.0740)
	Weighted median	20	0.3498	0.9047 (0.7333−1.1161)
	Inverse variance weighted	20	0.0280	0.8416 (0.7216−0.9816)
Adenosine 5'−monophosphate (AMP) to threonine ratio	MR Egger	23	0.1617	0.8246 (0.6354−1.0701)
	Weighted median	23	0.0536	0.7881 (0.6188−1.0037)
	Inverse variance weighted	23	0.0059	0.7994 (0.6816−0.9374)
	Simple mode	23	0.3549	0.8214 (0.5462−1.2352)
	Weighted mode	23	0.0557	0.7924 (0.6323−0.9931)
Uridine to 2'−deoxyuridine ratio	MR Egger	23	0.2193	1.3472 (0.8493−2.1371)
	Weighted median	23	0.3919	1.1216 (0.8625−1.4585)
	Inverse variance weighted	23	0.0414	1.2128 (1.0075−1.4598)
	Simple mode	23	0.9725	1.0088 (0.6174−1.6482)
	Weighted mode	23	0.9026	1.0286 (0.6580−1.6079)
Glucose to sucrose ratio	MR Egger	17	0.0320	0.8495 (0.7421−0.9726)
	Weighted median	17	0.1031	0.8836 (0.7614−1.0254)
	Inverse variance weighted	17	0.0475	0.8939 (0.8001−0.9987)
	Simple mode	17	0.9793	0.9944 (0.6558−1.5078)
	Weighted mode	17	0.0971	0.8898 (0.7814−1.0132)
Adenosine 5'−monophosphate (AMP) to EDTA ratio	MR Egger	11	0.7978	0.9246 (0.5164−1.6555)
	Weighted median	11	0.3981	0.8354 (0.5504−1.2679)
	Inverse variance weighted	11	0.0082	0.6685 (0.4958−0.9013)
	Simple mode	11	0.4094	0.7353 (0.3652−1.4806)
	Weighted mode	11	0.3955	0.7833 (0.4568−1.3430)
Benzoate to oleoyl−linoleoyl−glycerol (18:1 to 18:2) [2] ratio	MR Egger	23	0.8640	1.0602 (0.5476−2.0527)
	Weighted median	23	0.0534	1.3184 (0.9960−1.7450)
	Inverse variance weighted	23	0.0167	1.3193 (1.0514−1.6555)
	Simple mode	23	0.3033	1.3452 (0.7749−2.3353)
	Weighted mode	23	0.2628	1.3757 (0.7985−2.3701)
Histidine to glutamine ratio	MR Egger	26	0.2820	0.7725 (0.4878−1.2234)
	Weighted median	26	0.2925	0.8621 (0.6540−1.1364)
	Inverse variance weighted	26	0.0403	0.7974 (0.6423−0.9900)
	Simple mode	26	0.1766	0.6875 (0.4054−1.1659)
	Weighted mode	26	0.2916	0.8490 (0.6302−1.1436)
Threonine to alpha−ketobutyrate ratio	MR Egger	20	0.6424	1.1824 (0.5899−2.3702)
	Weighted median	20	0.0075	1.5285 (1.1199−2.0862)
	Inverse variance weighted	20	0.0203	1.3671 (1.0498−1.7803)
	Simple mode	20	0.0991	1.6519 (0.9367−2.9133)
	Weighted mode	20	0.1017	1.5258 (0.9427−2.4694)

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Supplementary File 3:

Casual effect of metabolites on CD

id	method	nsnp	b	se	pval	lo_ci	up_ci	or	or_lci95	or_uci95	first Author	reported Trait	discovery Sample Ancestry	summaryStatistics
GCST90199621	MR Egger	22	-0.161745044	0.124381535	0.208251951	-0.405532853	0.082042765	0.850658057	0.666621505	1.08550223	Chen Y	Carnitine levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199621/GCST90199621_buildGRCh38.tsv.gz
GCST90199621	Weighted median	22	-0.178894271	0.101810906	0.078891439	-0.378440027	0.020651486	0.836194305	0.684929047	1.020866203	Chen Y	Carnitine levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199621/GCST90199621_buildGRCh38.tsv.gz
GCST90199621	Inverse variance weighted	22	-0.234347138	0.074096397	0.001562955	-0.379576077	-0.0891182	0.791087152	0.684151375	0.914737446	Chen Y	Carnitine levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199621/GCST90199621_buildGRCh38.tsv.gz
GCST90199621	Simple mode	22	-0.255645256	0.205155601	0.226448913	-0.657750235	0.146459722	0.774416639	0.518015437	1.157728299	Chen Y	Carnitine levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199621/GCST90199621_buildGRCh38.tsv.gz
GCST90199621	Weighted mode	22	-0.185870782	0.102461721	0.083985098	-0.386695755	0.014954192	0.830380889	0.679297737	1.015066565	Chen Y	Carnitine levels	8192 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199621/GCST90199621_buildGRCh38.tsv.gz
GCST90199633	MR Egger	23	0.234397765	0.176194047	0.197674133	-0.110942567	0.579738097	1.264147226	0.894990149	1.785570724	Chen Y	Suberate (C8-DC) levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199633/GCST90199633_buildGRCh38.tsv.gz
GCST90199633	Weighted median	23	0.237708982	0.121304826	0.050124619	-0.000133608	0.475551571	1.268340029	0.999866401	1.608901377	Chen Y	Suberate (C8-DC) levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199633/GCST90199633_buildGRCh38.tsv.gz
GCST90199633	Inverse variance weighted	23	0.179494022	0.089600476	0.0451585	0.003868692	0.355119351	1.196601175	1.003876186	1.426305088	Chen Y	Suberate (C8-DC) levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199633/GCST90199633_buildGRCh38.tsv.gz
GCST90199633	Simple mode	23	0.121118497	0.206082956	0.562706739	-0.282804097	0.52504109	1.128758658	0.753667419	1.690552831	Chen Y	Suberate (C8-DC) levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199633/GCST90199633_buildGRCh38.tsv.gz
GCST90199633	Weighted mode	23	0.262228946	0.143769889	0.081774363	-0.019560036	0.544017928	1.299824098	0.980630021	1.722915524	Chen Y	Suberate (C8-DC) levels	6902 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199633/GCST90199633_buildGRCh38.tsv.gz
GCST90199661	MR Egger	19	-0.120287523	0.285520186	0.678820043	-0.679907087	0.439332041	0.886665463	0.506664066	1.551667042	Chen Y	Maleate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199661/GCST90199661_buildGRCh38.tsv.gz
GCST90199661	Weighted median	19	-0.270398285	0.167857015	0.107204872	-0.599398035	0.058601465	0.763075512	0.549142101	1.060352569	Chen Y	Maleate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199661/GCST90199661_buildGRCh38.tsv.gz
GCST90199661	Inverse variance weighted	19	-0.279598039	0.118843227	0.018639528	-0.512530763	-0.0466065315	0.756087598	0.598977788	0.954406769	Chen Y	Maleate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199661/GCST90199661_buildGRCh38.tsv.gz
GCST90199661	Simple mode	19	-0.365838842	0.261067183	0.178124657	-0.877530521	0.145852837	0.693614574	0.415808475	1.157025905	Chen Y	Maleate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199661/GCST90199661_buildGRCh38.tsv.gz
GCST90199661	Weighted mode	19	-0.322924969	0.232881028	0.182483196	-0.779371783	0.133521845	0.724028177	0.458609408	1.142846231	Chen Y	Maleate levels	8171 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199661/GCST90199661_buildGRCh38.tsv.gz
GCST90199662	MR Egger	17	0.323709477	0.260006585	0.232230025	-0.18590343	0.833322385	1.382245675	0.830353778	2.300950698	Chen Y	Isovalerate (i5:0) levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199662/GCST90199662_buildGRCh38.tsv.gz
GCST90199662	Weighted median	17	0.242206389	0.146961201	0.099332663	-0.045837565	0.530250342	1.274057116	0.955197107	1.699357675	Chen Y	Isovalerate (i5:0) levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199662/GCST90199662_buildGRCh38.tsv.gz
GCST90199662	Inverse variance weighted	17	0.237093027	0.112609136	0.035385875	0.016201796	0.457968093	1.267559029	1.016350185	1.580858562	Chen Y	Isovalerate (i5:0) levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199662/GCST90199662_buildGRCh38.tsv.gz
GCST90199662	Simple mode	17	0.292163506	0.226763607	0.215925158	-0.152293163	0.736620175	1.339321987	0.858736494	2.088863578	Chen Y	Isovalerate (i5:0) levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199662/GCST90199662_buildGRCh38.tsv.gz
GCST90199662	Weighted mode	17	0.223037786	0.203994458	0.290427821	-0.176791351	0.622866923	1.24958678	0.837954604	1.864265092	Chen Y	Isovalerate (i5:0) levels	7862 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199662/GCST90199662_buildGRCh38.tsv.gz
GCST90199672	MR Egger	19	0.361690993	0.185824844	0.068325958	-0.0025257	0.725907687	1.435755216	0.997477487	2.066660608	Chen Y	Oxalate (ethanedioate) levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199672/GCST90199672_buildGRCh38.tsv.gz
GCST90199672	Weighted median	19	0.370957579	0.141071952	0.00854947	0.094456554	0.647458604	1.449121599	1.099061412	1.910678863	Chen Y	Oxalate (ethanedioate) levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199672/GCST90199672_buildGRCh38.tsv.gz
GCST90199672	Inverse variance weighted	19	0.204405409	0.102717184	0.046592852	0.003079729	0.405731088	1.226795406	1.003084476	1.500399024	Chen Y	Oxalate (ethanedioate) levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199672/GCST90199672_buildGRCh38.tsv.gz

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GCST90199672	Simple mode	19	0.3805 27867	0.2188 24787	0.0991 15124	-0.0483 68715	0.8094 2445	1.4630 56686	0.9527 82417	2.2466 14575	Chen Y	Oxalate (ethanedioate) levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199672/GCST90199672_buildGRCh38.tsv.gz
GCST90199672	Weighted mode	19	0.3805 27867	0.1645 54578	0.0327 89165	0.0580 00894	0.7030 54841	1.4630 56686	1.0597 15943	2.0199 13807	Chen Y	Oxalate (ethanedioate) levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199672/GCST90199672_buildGRCh38.tsv.gz
GCST90199681	MR Egger	19	0.1066 61239	0.1123 40727	0.3556 98177	-0.1135 26585	0.3268 49064	1.1125 573	0.8926 80464	1.3865 92175	Chen Y	2-hydroxyoctanoate levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199681/GCST90199681_buildGRCh38.tsv.gz
GCST90199681	Weighted median	19	0.1153 3099	0.1062 01184	0.2774 93556	-0.0928 23331	0.3234 85311	1.1222 44828	0.9113 54494	1.3819 35856	Chen Y	2-hydroxyoctanoate levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199681/GCST90199681_buildGRCh38.tsv.gz
GCST90199681	Inverse variance weighted	19	0.1426 71657	0.0719 45534	0.0473 61743	0.0016 5841	0.2836 84903	1.1533 51044	1.0016 59786	1.3280 14411	Chen Y	2-hydroxyoctanoate levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199681/GCST90199681_buildGRCh38.tsv.gz
GCST90199681	Simple mode	19	0.2791 15825	0.1911 26102	0.1614 21998	-0.0954 91336	0.6537 22986	1.3219 60451	0.9089 26237	1.9226 85652	Chen Y	2-hydroxyoctanoate levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199681/GCST90199681_buildGRCh38.tsv.gz
GCST90199681	Weighted mode	19	0.1219 50087	0.0978 02584	0.2284 15833	-0.0697 42977	0.3136 43151	1.1296 97714	0.9326 33497	1.3684 01337	Chen Y	2-hydroxyoctanoate levels	8224 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199681/GCST90199681_buildGRCh38.tsv.gz
GCST90199787	MR Egger	23	0.1139 04968	0.2097 88351	0.5928 79697	-0.2972 80201	0.5250 90136	1.1206 45622	0.7428 3584	1.6906 11226	Chen Y	Homostachydrine levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199787/GCST90199787_buildGRCh38.tsv.gz
GCST90199787	Weighted median	23	0.2001 39633	0.1547 05884	0.1957 76592	-0.103 0839	0.5033 63165	1.2215 73318	0.9020 51288	1.6542 75527	Chen Y	Homostachydrine levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199787/GCST90199787_buildGRCh38.tsv.gz
GCST90199787	Inverse variance weighted	23	0.2093 04193	0.1036 38828	0.0434 29688	0.0061 72089	0.4124 36297	1.2328 19956	1.0061 91176	1.5104 93316	Chen Y	Homostachydrine levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199787/GCST90199787_buildGRCh38.tsv.gz
GCST90199787	Simple mode	23	0.3020 24532	0.2798 66174	0.2921 99917	-0.2465 13168	0.8505 62232	1.3525 94408	0.7815 2107	2.3409 62647	Chen Y	Homostachydrine levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199787/GCST90199787_buildGRCh38.tsv.gz
GCST90199787	Weighted mode	23	0.3088 72054	0.2752 11812	0.2738 31968	-0.2305 43098	0.8482 87206	1.3618 88111	0.7941 0221	2.3356 42949	Chen Y	Homostachydrine levels	8248 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199787/GCST90199787_buildGRCh38.tsv.gz
GCST90199788	MR Egger	22	0.1249 91096	0.0841 24178	0.1529 27558	-0.0398 92293	0.2898 74484	1.1331 38363	0.9608 92928	1.3362 59756	Chen Y	1-arachidonoyl-gpc (20:4n6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199788/GCST90199788_buildGRCh38.tsv.gz
GCST90199788	Weighted median	22	0.1328 25824	0.0658 39621	0.0436 52248	0.0037 80166	0.2618 71482	1.1420 51063	1.0037 8732	1.299 35954	Chen Y	1-arachidonoyl-gpc (20:4n6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199788/GCST90199788_buildGRCh38.tsv.gz
GCST90199788	Inverse variance weighted	22	0.1237 7816	0.0554 37956	0.0255 66548	0.0151 19767	0.2324 36554	1.1317 64773	1.0152 34649	1.2616 70395	Chen Y	1-arachidonoyl-gpc (20:4n6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199788/GCST90199788_buildGRCh38.tsv.gz
GCST90199788	Simple mode	22	0.0806 14071	0.1557 41413	0.6101 36999	-0.224 639098	0.3858 6724	1.0839 52487	0.7988 04457	1.4708 89383	Chen Y	1-arachidonoyl-gpc (20:4n6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199788/GCST90199788_buildGRCh38.tsv.gz
GCST90199788	Weighted mode	22	0.1323 58412	0.0640 91943	0.0514 74501	0.0067 38204	0.2579 78621	1.1415 1738	1.0067 60957	1.2943 11147	Chen Y	1-arachidonoyl-gpc (20:4n6) levels	8267 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199788/GCST90199788_buildGRCh38.tsv.gz
GCST90199795	MR Egger	15	0.3217 01315	0.3421 70282	0.3642 68103	-0.3489 52438	0.9923 55068	1.3794 72687	0.7054 26681	2.6975 79983	Chen Y	2-hydroxypalmitate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199795/GCST90199795_buildGRCh38.tsv.gz
GCST90199795	Weighted median	15	0.3549 06184	0.1720 09606	0.0390 84817	0.0177 67355	0.6920 45013	1.4260 46862	1.0179 26134	1.9977 96878	Chen Y	2-hydroxypalmitate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199795/GCST90199795_buildGRCh38.tsv.gz
GCST90199795	Inverse variance weighted	15	0.3285 5942	0.1514 38691	0.0300 38145	0.0317 39586	0.6253 79254	1.3889 6577	1.0322 48658	1.8689 54632	Chen Y	2-hydroxypalmitate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199795/GCST90199795_buildGRCh38.tsv.gz
GCST90199795	Simple mode	15	0.3159 28163	0.2889 42156	0.2926 77169	-0.2503 98462	0.8822 54788	1.3715 31725	0.7784 90522	2.4163 41907	Chen Y	2-hydroxypalmitate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199795/GCST90199795_buildGRCh38.tsv.gz
GCST90199795	Weighted mode	15	0.3270 30008	0.2247 4378	0.1676 89321	-0.1134 67802	0.7675 27818	1.3868 43093	0.8927 32941	2.1544 33512	Chen Y	2-hydroxypalmitate levels	8247 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199795/GCST90199795_buildGRCh38.tsv.gz
GCST90199894	MR Egger	12	0.1294 98853	0.2909 09971	0.6656 9172	-0.4406 8469	0.6996 82397	1.1382 57806	0.6435 95607	2.0131 13235	Chen Y	4-oxo-retinoic acid levels	7514 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199894/GCST90199894_buildGRCh38.tsv.gz
GCST90199894	Weighted median	12	0.3322 75854	0.1898 3108	0.0800 53375	-0.0397 93063	0.7043 44771	1.3941 37374	0.9609 88282	2.0225 21037	Chen Y	4-oxo-retinoic acid levels	7514 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199894/GCST90199894_buildGRCh38.tsv.gz
GCST90199894	Inverse variance weighted	12	0.3865 71417	0.1396 63717	0.0056 42346	0.1128 30531	0.6603 12303	1.4719 25514	1.1194 42206	1.9353 96671	Chen Y	4-oxo-retinoic acid levels	7514 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199894/GCST90199894_buildGRCh38.tsv.gz

GCST90199894	Simple mode	12	0.289679573	0.277847259	0.319512427	-0.254901054	0.834260201	1.33599933	0.774993176	2.30310958	Chen Y	4-oxo-retinoic acid levels	7514 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199894/GCST90199894_buildGRCh38.tsv.gz
GCST90199894	Weighted mode	12	0.289679573	0.226068607	0.226413362	-0.153414896	0.732774042	1.33599933	0.857773761	2.080844961	Chen Y	4-oxo-retinoic acid levels	7514 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199894/GCST90199894_buildGRCh38.tsv.gz
GCST90199912	MR Egger	17	-0.431703412	0.220058999	0.068621375	-0.86301905	-0.000387774	0.649401953	0.421886461	0.999612301	Chen Y	N-oleoyltaurine levels	7375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199912/GCST90199912_buildGRCh38.tsv.gz
GCST90199912	Weighted median	17	-0.295897382	0.128833464	0.021633423	-0.548410971	-0.043383794	0.743863758	0.577867329	0.95754382	Chen Y	N-oleoyltaurine levels	7375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199912/GCST90199912_buildGRCh38.tsv.gz
GCST90199912	Inverse variance eighted	17	-0.201411647	0.093269359	0.030814334	-0.384219591	-0.018603703	0.81757581	0.680981874	0.981568278	Chen Y	N-oleoyltaurine levels	7375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199912/GCST90199912_buildGRCh38.tsv.gz
GCST90199912	Simple mode	17	-0.084027154	0.268114046	0.758024761	-0.609530683	0.441476376	0.919406291	0.543605933	1.555001291	Chen Y	N-oleoyltaurine levels	7375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199912/GCST90199912_buildGRCh38.tsv.gz
GCST90199912	Weighted mode	17	-0.266969629	0.14935809	0.092820673	-0.559711486	0.025772227	0.765696326	0.571373889	1.026107202	Chen Y	N-oleoyltaurine levels	7375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199912/GCST90199912_buildGRCh38.tsv.gz
GCST90199915	MR Egger	20	0.37985661	0.216694569	0.096623572	-0.044864745	0.804577965	1.462074927	0.956126794	2.235752733	Chen Y	Imidazole propionate levels	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199915/GCST90199915_buildGRCh38.tsv.gz
GCST90199915	Weighted median	20	0.225417508	0.1473501	0.126064015	-0.063388688	0.514223704	1.25284568	0.938578589	1.672339767	Chen Y	Imidazole propionate levels	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199915/GCST90199915_buildGRCh38.tsv.gz
GCST90199915	Inverse variance weighted	20	0.253352218	0.103087789	0.013985501	0.051300151	0.455404285	1.288336973	1.052638797	1.576810736	Chen Y	Imidazole propionate levels	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199915/GCST90199915_buildGRCh38.tsv.gz
GCST90199915	Simple mode	20	0.172294543	0.230196465	0.463343535	-0.278890529	0.623479615	1.188027707	0.756622727	1.865407663	Chen Y	Imidazole propionate levels	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199915/GCST90199915_buildGRCh38.tsv.gz
GCST90199915	Weighted mode	20	0.172294543	0.183215839	0.358820079	-0.1868085	0.531397587	1.188027707	0.82960259	1.701308374	Chen Y	Imidazole propionate levels	7776 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90199001-GCST90200000/GCST90199915/GCST90199915_buildGRCh38.tsv.gz
GCST90200002	MR Egger	12	-0.629449222	0.316602973	0.074852714	-1.24999105	-0.008907395	0.532885221	0.286507361	0.991132159	Chen Y	6-hydroxyindole sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200002/GCST90200002_buildGRCh38.tsv.gz
GCST90200002	Weighted median	12	-0.42032328	0.172193226	0.014646745	-0.757822003	-0.082824557	0.656834444	0.468686113	0.92051263	Chen Y	6-hydroxyindole sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200002/GCST90200002_buildGRCh38.tsv.gz
GCST90200002	Inverse variance weighted	12	-0.310608961	0.14783646	0.035638259	-0.600368423	-0.0208495	0.73300451	0.548609479	0.979366348	Chen Y	6-hydroxyindole sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200002/GCST90200002_buildGRCh38.tsv.gz
GCST90200002	Simple mode	12	-0.464097044	0.261864467	0.104007439	-0.977351399	0.049157312	0.62870254	0.376306466	1.050385576	Chen Y	6-hydroxyindole sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200002/GCST90200002_buildGRCh38.tsv.gz
GCST90200002	Weighted mode	12	-0.457729645	0.21499745	0.056677854	-0.879124646	-0.036334644	0.632718512	0.415146152	0.964317537	Chen Y	6-hydroxyindole sulfate levels	8229 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200002/GCST90200002_buildGRCh38.tsv.gz
GCST90200004	MR Egger	20	0.321490552	0.178810242	0.088980891	-0.028977521	0.671958626	1.379181976	0.971438301	1.958068691	Chen Y	N-carbamoylalanine levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200004/GCST90200004_buildGRCh38.tsv.gz
GCST90200004	Weighted median	20	0.288584413	0.158029023	0.067827944	-0.021152472	0.598321299	1.334536998	0.979069672	1.819062574	Chen Y	N-carbamoylalanine levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200004/GCST90200004_buildGRCh38.tsv.gz
GCST90200004	Inverse variance weighted	20	0.279194644	0.097131598	0.004048015	0.088816712	0.469572576	1.322064651	1.092880326	1.599310463	Chen Y	N-carbamoylalanine levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200004/GCST90200004_buildGRCh38.tsv.gz
GCST90200004	Simple mode	20	0.321742356	0.251503947	0.216203727	-0.171205381	0.814690093	1.379529303	0.842648492	2.258475647	Chen Y	N-carbamoylalanine levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200004/GCST90200004_buildGRCh38.tsv.gz
GCST90200004	Weighted mode	20	0.314624027	0.162816319	0.068360176	-0.004495958	0.633744011	1.369744227	0.995514134	1.88465355	Chen Y	N-carbamoylalanine levels	7315 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200004/GCST90200004_buildGRCh38.tsv.gz
GCST90200009	MR Egger	21	0.125505571	0.132200271	0.354358198	-0.133606961	0.384618103	1.133721485	0.87493388	1.469053187	Chen Y	3-methoxycatechol sulfate (1) levels	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200009/GCST90200009_buildGRCh38.tsv.gz
GCST90200009	Weighted median	21	0.155613638	0.127508599	0.22230691	-0.094303217	0.405530492	1.1683747	0.910006791	1.50009808	Chen Y	3-methoxycatechol sulfate (1) levels	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200009/GCST90200009_buildGRCh38.tsv.gz
GCST90200009	Inverse variance eighted	21	0.169332647	0.082078608	0.039107445	0.008458574	0.330206719	1.184514098	1.008494449	1.391255698	Chen Y	3-methoxycatechol sulfate (1) levels	8194 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200009/GCST90200009_buildGRCh38.tsv.gz

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GCST90200009	Simple mode	21	0.043981358	0.181195339	0.810687288	-0.311161507	0.399124223	1.044962875	0.732595547	1.490518764	Chen Y	3-methoxycatechol sulfate (1) levels	8194	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200009/GCST90200009_buildGRCh38.tsv.gz
GCST90200009	Weighted mode	21	0.136750262	0.115137254	0.248860198	-0.088918755	0.362419279	1.146541778	0.914919904	1.436801237	Chen Y	3-methoxycatechol sulfate (1) levels	8194	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200009/GCST90200009_buildGRCh38.tsv.gz
GCST90200016	MR Egger	17	0.040332316	0.121316694	0.744146452	-0.197448405	0.278113036	1.041156709	0.82082249	1.320635469	Chen Y	Dopamine 4-sulfate levels	6888	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200016/GCST90200016_buildGRCh38.tsv.gz
GCST90200016	Weighted median	17	0.146966084	0.119427293	0.218476083	-0.087111409	0.381043578	1.158314677	0.916574975	1.463811394	Chen Y	Dopamine 4-sulfate levels	6888	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200016/GCST90200016_buildGRCh38.tsv.gz
GCST90200016	Inverse variance weighted	17	0.203573517	0.080562575	0.011507448	0.04567087	0.361476164	1.225677527	1.046729844	1.435446807	Chen Y	Dopamine 4-sulfate levels	6888	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200016/GCST90200016_buildGRCh38.tsv.gz
GCST90200016	Simple mode	17	0.214964922	0.203852527	0.307250452	-0.184532606	0.614462451	1.239818406	0.831492827	1.848662585	Chen Y	Dopamine 4-sulfate levels	6888	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200016/GCST90200016_buildGRCh38.tsv.gz
GCST90200016	Weighted mode	17	0.041743158	0.124668293	0.742099897	-0.202606697	0.286093013	1.042626654	0.816599349	1.331201627	Chen Y	Dopamine 4-sulfate levels	6888	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200016/GCST90200016_buildGRCh38.tsv.gz
GCST90200018	MR Egger	17	0.128907364	0.206386957	0.541624404	-0.275611072	0.5334258	1.137584738	0.759108112	1.704762492	Chen Y	Adipoylcarnitine (C6-DC) levels	8216	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200018/GCST90200018_buildGRCh38.tsv.gz
GCST90200018	Weighted median	17	0.153900797	0.133651998	0.24952499	-0.108057118	0.415858712	1.166375173	0.897576327	1.515671708	Chen Y	Adipoylcarnitine (C6-DC) levels	8216	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200018/GCST90200018_buildGRCh38.tsv.gz
GCST90200018	Inverse variance weighted	17	0.200922848	0.096068142	0.036486689	0.012629289	0.389216407	1.222530448	1.012709375	1.475823895	Chen Y	Adipoylcarnitine (C6-DC) levels	8216	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200018/GCST90200018_buildGRCh38.tsv.gz
GCST90200018	Simple mode	17	0.324519081	0.225392373	0.169204237	-0.11724997	0.766288132	1.383365652	0.889362852	2.151764347	Chen Y	Adipoylcarnitine (C6-DC) levels	8216	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200018/GCST90200018_buildGRCh38.tsv.gz
GCST90200018	Weighted mode	17	0.191305962	0.171921621	0.282254895	-0.145660416	0.528272339	1.210829863	0.864451207	1.695999664	Chen Y	Adipoylcarnitine (C6-DC) levels	8216	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200018/GCST90200018_buildGRCh38.tsv.gz
GCST90200029	MR Egger	22	-0.218179601	0.152765912	0.168666337	-0.517600789	0.081241586	0.803981033	0.595948641	1.084632897	Chen Y	Linoleoyl ethanolamide levels	7214	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200029/GCST90200029_buildGRCh38.tsv.gz
GCST90200029	Weighted median	22	-0.297281635	0.108816206	0.006295859	-0.5105614	-0.084001871	0.742834774	0.600158555	0.919429536	Chen Y	Linoleoyl ethanolamide levels	7214	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200029/GCST90200029_buildGRCh38.tsv.gz
GCST90200029	Inverse variance weighted	22	-0.221898265	0.076815843	0.003868325	-0.372457318	-0.071339213	0.800996849	0.689039061	0.931145981	Chen Y	Linoleoyl ethanolamide levels	7214	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200029/GCST90200029_buildGRCh38.tsv.gz
GCST90200029	Simple mode	22	-0.33798288	0.173834249	0.065379005	-0.678698008	0.00270032248	0.713207498	0.507277033	1.002735984	Chen Y	Linoleoyl ethanolamide levels	7214	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200029/GCST90200029_buildGRCh38.tsv.gz
GCST90200029	Weighted mode	22	-0.324935185	0.127451832	0.018664993	-0.574740775	-0.075129595	0.722574186	0.562850755	0.927623263	Chen Y	Linoleoyl ethanolamide levels	7214	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200029/GCST90200029_buildGRCh38.tsv.gz
GCST90200037	MR Egger	20	-0.166182688	0.216033766	0.451725197	-0.589608869	0.257243493	0.846891503	0.554544142	1.293360013	Chen Y	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	8231	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200037/GCST90200037_buildGRCh38.tsv.gz
GCST90200037	Weighted median	20	-0.281081624	0.140609192	0.045732715	-0.556837788	-0.005325461	0.754966709	0.573018207	0.994688694	Chen Y	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	8231	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200037/GCST90200037_buildGRCh38.tsv.gz
GCST90200037	Inverse variance weighted	20	-0.321688964	0.094497571	0.000663573	-0.506904203	-0.136473724	0.724923633	0.602357472	0.872429244	Chen Y	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	8231	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200037/GCST90200037_buildGRCh38.tsv.gz
GCST90200037	Simple mode	20	-0.378136613	0.217589204	0.098419652	-0.804611453	0.048338226	0.685136895	0.447261675	1.049525572	Chen Y	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	8231	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200037/GCST90200037_buildGRCh38.tsv.gz
GCST90200037	Weighted mode	20	-0.319897067	0.141576586	0.035792289	-0.597387176	-0.042406957	0.726223786	0.550247459	0.958479641	Chen Y	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	8231	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200037/GCST90200037_buildGRCh38.tsv.gz
GCST90200120	MR Egger	13	-0.090380352	0.263087725	0.737670922	-0.606032294	0.42527159	0.913583636	0.545511008	1.530005897	Chen Y	Sphingadienine levels	4533	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200120/GCST90200120_buildGRCh38.tsv.gz
GCST90200120	Weighted median	13	-0.134611677	0.127953192	0.292781911	-0.385399934	0.116176579	0.874055261	0.680178555	1.123194187	Chen Y	Sphingadienine levels	4533	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200120/GCST90200120_buildGRCh38.tsv.gz
GCST90200120	Inverse variance weighted	13	-0.2072796	0.096980383	0.032570726	-0.397361151	-0.01719805	0.812792361	0.672091256	0.982948992	Chen Y	Sphingadienine levels	4533	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200120/GCST90200120_buildGRCh38.tsv.gz

GCST90200120	Simple mode	13	-0.154792904	0.195866662	0.444691776	-0.538691562	0.229105753	0.856592556	0.583511241	1.257475014	Chen Y	Sphingadienine levels	4533 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200120/GCST90200120_buildGRCh38.tsv.gz
GCST90200120	Weighted mode	13	-0.141715129	0.173958753	0.431144695	-0.482674284	0.199244026	0.867868452	0.6171308	1.220479759	Chen Y	Sphingadienine levels	4533 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200120/GCST90200120_buildGRCh38.tsv.gz
GCST90200130	MR Egger	17	-0.337723608	0.321454991	0.310070499	-0.967775389	0.292328174	0.713392437	0.379927289	1.339542548	Chen Y	Linoleoylcholine levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200130/GCST90200130_buildGRCh38.tsv.gz
GCST90200130	Weighted median	17	-0.36572852	0.160097282	0.022347194	-0.679519192	-0.051937848	0.693691099	0.506860636	0.949387872	Chen Y	Linoleoylcholine levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200130/GCST90200130_buildGRCh38.tsv.gz
GCST90200130	Inverse variance eighted	17	-0.288319497	0.125383846	0.021476861	-0.534071835	-0.042567158	0.749522084	0.58621314	0.958326104	Chen Y	Linoleoylcholine levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200130/GCST90200130_buildGRCh38.tsv.gz
GCST90200130	Simple mode	17	-0.409064401	0.267206634	0.145327002	-0.932789404	0.114660601	0.664271451	0.393454674	1.121492739	Chen Y	Linoleoylcholine levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200130/GCST90200130_buildGRCh38.tsv.gz
GCST90200130	Weighted mode	17	-0.39864015	0.262760102	0.148743587	-0.913649951	0.11636965	0.671232201	0.401057708	1.123411065	Chen Y	Linoleoylcholine levels	8193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200130/GCST90200130_buildGRCh38.tsv.gz
GCST90200160	MR Egger	23	0.196309874	0.199052247	0.335251251	-0.19383253	0.586452278	1.216903934	0.823795854	1.797599705	Chen Y	Trans-2-hexenoylg-lycine levels	6545 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200160/GCST90200160_buildGRCh38.tsv.gz
GCST90200160	Weighted median	23	0.20582628	0.116957205	0.078434487	-0.023409842	0.435062402	1.228539763	0.976862042	1.545065947	Chen Y	Trans-2-hexenoylg-lycine levels	6545 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200160/GCST90200160_buildGRCh38.tsv.gz
GCST90200160	Inverse variance weighted	23	0.17776465	0.090108367	0.04851979	0.001152251	0.354377048	1.194544152	1.001152915	1.425292489	Chen Y	Trans-2-hexenoylg-lycine levels	6545 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200160/GCST90200160_buildGRCh38.tsv.gz
GCST90200160	Simple mode	23	0.169233914	0.200834995	0.408491389	-0.224402677	0.562870505	1.184397154	0.798993333	1.755705034	Chen Y	Trans-2-hexenoylg-lycine levels	6545 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200160/GCST90200160_buildGRCh38.tsv.gz
GCST90200160	Weighted mode	23	0.201569078	0.122838827	0.115033916	-0.039195024	0.44233318	1.223320739	0.961563163	1.556334193	Chen Y	Trans-2-hexenoylg-lycine levels	6545 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200160/GCST90200160_buildGRCh38.tsv.gz
GCST90200163	MR Egger	14	0.390372354	0.378436317	0.322630389	-0.351362828	1.132107535	1.477530856	0.703728375	3.102187585	Chen Y	Heptenedioate (C7:1-DC) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200163/GCST90200163_buildGRCh38.tsv.gz
GCST90200163	Weighted median	14	0.47397006	0.17264716	0.006045367	0.135581626	0.812358495	1.606358893	1.14520267	2.253215923	Chen Y	Heptenedioate (C7:1-DC) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200163/GCST90200163_buildGRCh38.tsv.gz
GCST90200163	Inverse variance weighted	14	0.34528339	0.150316985	0.021616768	0.050662099	0.639904681	1.412390121	1.051967373	1.896300118	Chen Y	Heptenedioate (C7:1-DC) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200163/GCST90200163_buildGRCh38.tsv.gz
GCST90200163	Simple mode	14	0.629407467	0.299157657	0.05541558	0.04305846	1.215756474	1.876498363	1.043998925	3.372844568	Chen Y	Heptenedioate (C7:1-DC) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200163/GCST90200163_buildGRCh38.tsv.gz
GCST90200163	Weighted mode	14	0.55859321	0.287443795	0.073950353	-0.004796627	1.121983048	1.748211404	0.995214858	3.070937985	Chen Y	Heptenedioate (C7:1-DC) levels	8128 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200163/GCST90200163_buildGRCh38.tsv.gz
GCST90200191	MR Egger	21	-0.187271609	0.208236292	0.379737644	-0.595414741	0.220871522	0.829218482	0.551333858	1.247163188	Chen Y	N-lactoyl tyrosine levels	6389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200191/GCST90200191_buildGRCh38.tsv.gz
GCST90200191	Weighted median	21	-0.140565525	0.123132946	0.253630615	-0.381906099	0.10077505	0.868866731	0.682559143	1.106027813	Chen Y	N-lactoyl tyrosine levels	6389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200191/GCST90200191_buildGRCh38.tsv.gz
GCST90200191	Inverse variance weighted	21	-0.233823531	0.102773441	0.022897787	-0.435259475	-0.032387587	0.791501479	0.64709674	0.968131274	Chen Y	N-lactoyl tyrosine levels	6389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200191/GCST90200191_buildGRCh38.tsv.gz
GCST90200191	Simple mode	21	-0.093919683	0.201128907	0.645573626	-0.488132341	0.30022974	0.910355876	0.613771641	1.350255434	Chen Y	N-lactoyl tyrosine levels	6389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200191/GCST90200191_buildGRCh38.tsv.gz
GCST90200191	Weighted mode	21	-0.080302568	0.182593488	0.66480574	-0.438185806	0.27758069	0.922837083	0.645205889	1.319932592	Chen Y	N-lactoyl tyrosine levels	6389 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200191/GCST90200191_buildGRCh38.tsv.gz
GCST90200223	MR Egger	20	-0.321193964	0.244272417	0.205050128	-0.799967902	0.15759973	0.725282558	0.449343387	1.170674377	Chen Y	4-methylhexanoylglutamine levels	5576 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200223/GCST90200223_buildGRCh38.tsv.gz
GCST90200223	Weighted median	20	-0.256022428	0.138683605	0.064879128	-0.527842294	0.01577439	0.774124607	0.589876377	1.015922878	Chen Y	4-methylhexanoylglutamine levels	5576 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200223/GCST90200223_buildGRCh38.tsv.gz
GCST90200223	Inverse variance weighted	20	-0.294979499	0.111871047	0.008369674	-0.514246751	-0.075712247	0.744546851	0.597950831	0.927082939	Chen Y	4-methylhexanoylglutamine levels	5576 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200223/GCST90200223_buildGRCh38.tsv.gz

GCST90200223	Simple mode	20	-0.017939188	0.292925777	0.951806573	-0.592073711	0.556195335	0.982220761	0.553178961	1.744024432	Chen Y	4-methylhexanoylglutamine levels	5576 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200223/GCST90200223_buildGRCh38.tsv.gz
GCST90200223	Weighted mode	20	-0.06134922	0.244733229	0.804753939	-0.541026349	0.418302791	0.940494743	0.582150456	1.519418825	Chen Y	4-methylhexanoylglutamine levels	5576 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200223/GCST90200223_buildGRCh38.tsv.gz
GCST90200257	MR Egger	26	-0.143589693	0.063675652	0.033528136	-0.26839397	-0.018785416	0.866243	0.764606489	0.98138993	Chen Y	Metabolonic lactone sulfatelevels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200257/GCST90200257_buildGRCh38.tsv.gz
GCST90200257	Weighted median	26	-0.137123865	0.058895107	0.019897633	-0.252558276	-0.021689455	0.871862226	0.776810942	0.97854407	Chen Y	Metabolonic lactone sulfate evels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200257/GCST90200257_buildGRCh38.tsv.gz
GCST90200257	Inverse variance weighted	26	-0.118521625	0.045895294	0.009810577	-0.208476401	-0.028566848	0.888232608	0.811820192	0.971837326	Chen Y	Metabolonic lactone sulfate evels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200257/GCST90200257_buildGRCh38.tsv.gz
GCST90200257	Simple mode	26	-0.331849397	0.123829653	0.012841605	-0.574555517	-0.089143278	0.717595386	0.562955037	0.914714506	Chen Y	Metabolonic lactone sulfate evels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200257/GCST90200257_buildGRCh38.tsv.gz
GCST90200257	Weighted mode	26	-0.129790827	0.047490884	0.011355717	-0.222872961	-0.036708694	0.878279124	0.800216502	0.963956901	Chen Y	Metabolonic lactone sulfate levels	8203 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200257/GCST90200257_buildGRCh38.tsv.gz
GCST90200281	MR Egger	19	-0.127621034	0.130613401	0.34222513	-0.383633	0.128381233	0.880186877	0.681388058	1.136986376	Chen Y	Phosphoethanolamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200281/GCST90200281_buildGRCh38.tsv.gz
GCST90200281	Weighted median	19	-0.208555513	0.130314736	0.109510198	-0.463972396	0.046861369	0.811775597	0.628780911	1.047976717	Chen Y	Phosphoethanolamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200281/GCST90200281_buildGRCh38.tsv.gz
GCST90200281	Inverse variance weighted	19	-0.175302649	0.083967422	0.036820752	-0.339878795	-0.010726503	0.839202998	0.711856598	0.989330821	Chen Y	Phosphoethanolamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200281/GCST90200281_buildGRCh38.tsv.gz
GCST90200281	Simple mode	19	-0.033936282	0.169729876	0.843766756	-0.3666 0684	0.298734276	0.966633094	0.693082084	1.348151339	Chen Y	Phosphoethanolamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200281/GCST90200281_buildGRCh38.tsv.gz
GCST90200281	Weighted mode	19	-0.189155794	0.131310126	0.166886915	-0.446502364	0.068212052	0.827657552	0.639848634	1.070592306	Chen Y	Phosphoethanolamine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200281/GCST90200281_buildGRCh38.tsv.gz
GCST90200294	MR Egger	24	0.050690894	0.027350794	0.077290603	-0.002916662	0.104298451	1.051997664	0.997087587	1.109931665	Chen Y	Pipecolate levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200294/GCST90200294_buildGRCh38.tsv.gz
GCST90200294	Weighted median	24	0.051042636	0.030236818	0.091392899	-0.008221527	0.110306799	1.052367761	0.991812177	1.116620596	Chen Y	Pipecolate levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200294/GCST90200294_buildGRCh38.tsv.gz
GCST90200294	Inverse variance weighted	24	0.051070043	0.025004278	0.041106699	0.002061657	0.100078428	1.052396603	1.002063784	1.105257598	Chen Y	Pipecolate levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200294/GCST90200294_buildGRCh38.tsv.gz
GCST90200294	Simple mode	24	0.19972521	0.147102666	0.187723015	-0.088596016	0.488046437	1.221067176	0.915215231	1.629130499	Chen Y	Pipecolate levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200294/GCST90200294_buildGRCh38.tsv.gz
GCST90200294	Weighted mode	24	0.048907365	0.027659126	0.090288448	-0.005304522	0.103119253	1.050123069	0.994709522	1.108623608	Chen Y	Pipecolate levels	8161 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200294/GCST90200294_buildGRCh38.tsv.gz
GCST90200299	MR Egger	26	-0.214379634	0.155821034	0.181586164	-0.519788861	0.091029593	0.807041946	0.594646088	1.095301418	Chen Y	Oleoyl ethanolamide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200299/GCST90200299_buildGRCh38.tsv.gz
GCST90200299	Weighted median	26	-0.273766446	0.116924324	0.019211644	-0.50293812	-0.044594772	0.760509674	0.604751215	0.956384957	Chen Y	Oleoyl ethanolamide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200299/GCST90200299_buildGRCh38.tsv.gz
GCST90200299	Inverse variance weighted	26	-0.172687467	0.07921418	0.02925642	-0.32794726	-0.017427675	0.841400539	0.720401013	0.982723309	Chen Y	Oleoyl ethanolamide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200299/GCST90200299_buildGRCh38.tsv.gz
GCST90200299	Simple mode	26	-0.182229395	0.226597634	0.428863965	-0.626360758	0.261901968	0.833410138	0.534533563	1.299399154	Chen Y	Oleoyl ethanolamide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200299/GCST90200299_buildGRCh38.tsv.gz
GCST90200299	Weighted mode	26	-0.285003706	0.122288218	0.028139659	-0.524688613	-0.045318798	0.752011468	0.591739596	0.955692761	Chen Y	Oleoyl ethanolamide levels	8243 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200299/GCST90200299_buildGRCh38.tsv.gz
GCST90200345	MR Egger	23	0.339383448	0.149965333	0.034350446	0.045451396	0.633315501	1.404081635	1.046500139	1.883884613	Chen Y	S-adenosylhomocysteine (SAH) levels	6142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200345/GCST90200345_buildGRCh38.tsv.gz
GCST90200345	Weighted median	23	0.327539691	0.119539797	0.006143817	0.093241689	0.561837694	1.387550124	1.097727011	1.753892658	Chen Y	S-adenosylhomocysteine (SAH) levels	6142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200345/GCST90200345_buildGRCh38.tsv.gz
GCST90200345	Inverse variance weighted	23	0.196245173	0.07851953	0.012443219	0.042347045	0.350143301	1.216825202	1.043256473	1.419270918	Chen Y	S-adenosylhomocysteine (SAH) levels	6142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200345/GCST90200345_buildGRCh38.tsv.gz

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GCST90200345	Simple mode	23	0.305992621	0.216088996	0.170764268	-0.11754181	0.729527053	1.357972286	0.889103337	2.074099436	Chen Y	S-adenosylhomocysteine (SAH) levels	6142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200345/GCST90200345_buildGRCh38.tsv.gz
GCST90200345	Weighted mode	23	0.352970888	0.167789534	0.047066395	0.0241034	0.681838375	1.423289708	1.024396235	1.977509798	Chen Y	S-adenosylhomocysteine (SAH) levels	6142 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200345/GCST90200345_buildGRCh38.tsv.gz
GCST90200360	MR Egger	15	-0.417975568	0.265419033	0.139321759	-0.9381 96873	0.102245737	0.658378314	0.391332822	1.10765563	Chen Y	Cortisone levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200360/GCST90200360_buildGRCh38.tsv.gz
GCST90200360	Weighted median	15	-0.213428304	0.177682394	0.229681896	-0.5616 85796	0.134829188	0.807810075	0.570246933	1.1443413	Chen Y	Cortisone levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200360/GCST90200360_buildGRCh38.tsv.gz
GCST90200360	Inverse variance weighted	15	-0.312428622	0.128190764	0.014800823	-0.56368252	-0.06114723	0.731667852	0.569109443	0.940658871	Chen Y	Cortisone levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200360/GCST90200360_buildGRCh38.tsv.gz
GCST90200360	Simple mode	15	-0.200145879	0.286680231	0.496516508	-0.7620 39131	0.361747373	0.818611326	0.466713766	1.435836166	Chen Y	Cortisone levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200360/GCST90200360_buildGRCh38.tsv.gz
GCST90200360	Weighted mode	15	-0.149645425	0.286741268	0.60991	-0.7116 58309	0.41236746	0.861013216	0.490829575	1.510389342	Chen Y	Cortisone levels	8153 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200360/GCST90200360_buildGRCh38.tsv.gz
GCST90200365	MR Egger	22	-0.141428838	0.262928616	0.596582873	-0.6567 68925	0.37391125	0.868116951	0.518524021	1.453408155	Chen Y	Phenylpyruvate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200365/GCST90200365_buildGRCh38.tsv.gz
GCST90200365	Weighted median	22	-0.208136811	0.143511011	0.146969458	-0.4894 18393	0.073144772	0.812095926	0.612982806	1.075886283	Chen Y	Phenylpyruvate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200365/GCST90200365_buildGRCh38.tsv.gz
GCST90200365	Inverse variance weighted	22	-0.229859388	0.104052043	0.027169009	-0.433801392	-0.02591738 4	0.794645331	0.648040949	0.974415589	Chen Y	Phenylpyruvate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200365/GCST90200365_buildGRCh38.tsv.gz
GCST90200365	Simple mode	22	-0.227696876	0.238957622	0.351493152	-0.6960 53816	0.240660064	0.796365621	0.498548792	1.272088532	Chen Y	Phenylpyruvate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200365/GCST90200365_buildGRCh38.tsv.gz
GCST90200365	Weighted mode	22	-0.232808479	0.207639307	0.274854151	-0.63978152	0.174164563	0.792305302	0.527407639	1.190251422	Chen Y	Phenylpyruvate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200365/GCST90200365_buildGRCh38.tsv.gz
GCST90200366	MR Egger	23	-0.182980479	0.142176236	0.212170102	-0.4616459	0.095684943	0.832784413	0.630244547	1.100412317	Chen Y	Creatinine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200366/GCST90200366_buildGRCh38.tsv.gz
GCST90200366	Weighted median	23	-0.185426675	0.133630403	0.16525631	-0.44734226 4	0.076488915	0.830749748	0.639325053	1.079490224	Chen Y	Creatinine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200366/GCST90200366_buildGRCh38.tsv.gz
GCST90200366	Inverse variance weighted	23	-0.228553084	0.087563853	0.009050769	-0.4001 78237	-0.05692793 2	0.795684058	0.670200581	0.944662147	Chen Y	Creatinine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200366/GCST90200366_buildGRCh38.tsv.gz
GCST90200366	Simple mode	23	-0.361174873	0.200557585	0.085451641	-0.754 26774	0.031917995	0.696857126	0.470354911	1.032432837	Chen Y	Creatinine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200366/GCST90200366_buildGRCh38.tsv.gz
GCST90200366	Weighted mode	23	-0.259629036	0.153880724	0.105692455	-0.5612 35255	0.041977183	0.771337671	0.570500391	1.042870683	Chen Y	Creatinine levels	8239 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200366/GCST90200366_buildGRCh38.tsv.gz
GCST90200407	MR Egger	13	-0.124337216	0.262614823	0.645143147	-0.6390 62269	0.390387838	0.883082002	0.527787114	1.477553734	Chen Y	Uridine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200407/GCST90200407_buildGRCh38.tsv.gz
GCST90200407	Weighted median	13	-0.280756286	0.162373400	0.083795123	-0.5990 08151	0.037495578	0.755212369	0.549356245	1.038207406	Chen Y	Uridine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200407/GCST90200407_buildGRCh38.tsv.gz
GCST90200407	Inverse variance weighted	13	-0.287673929	0.117485344	0.014341493	-0.5179 45203	-0.05740265 5	0.750006108	0.595743423	0.9442138	Chen Y	Uridine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200407/GCST90200407_buildGRCh38.tsv.gz
GCST90200407	Simple mode	13	-0.073987321	0.266760746	0.786228026	-0.5968 38383	0.448863741	0.928683469	0.550549514	1.566531188	Chen Y	Uridine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200407/GCST90200407_buildGRCh38.tsv.gz
GCST90200407	Weighted mode	13	-0.05340507	0.277335468	0.850520213	-0.5969 82586	0.490172447	0.947989593	0.550470129	1.632597732	Chen Y	Uridine levels	8253 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200407/GCST90200407_buildGRCh38.tsv.gz
GCST90200425	MR Egger	20	-0.285562927	0.182142211	0.134338778	-0.6425 61661	0.071435807	0.751591044	0.525943408	1.074049202	Chen Y	Betaine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200425/GCST90200425_buildGRCh38.tsv.gz
GCST90200425	Weighted median	20	-0.100180793	0.107155904	0.349836283	-0.3102 06364	0.109844778	0.904673844	0.733295615	1.116104813	Chen Y	Betaine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200425/GCST90200425_buildGRCh38.tsv.gz
GCST90200425	Inverse variance weighted	20	-0.172455634	0.078496857	0.028022231	-0.3263 09475	-0.01860179 4	0.841595626	0.721581841	0.981570152	Chen Y	Betaine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200425/GCST90200425_buildGRCh38.tsv.gz

GCST90200425	Simple mode	20	-0.282414064	0.15273272	0.0800 68653	-0.5817 70194	0.0169 42067	0.7539 61432	0.5589 08114	1.0170 86397	Chen Y	Betaine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200425/GCST90200425_buildGRCh38.tsv.gz
GCST90200425	Weighted mode	20	-0.105781851	0.107035978	0.3354 33462	-0.3155 72369	0.1040 08666	0.8996 20878	0.7293 71286	1.1096 10071	Chen Y	Betaine levels	8232 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200425/GCST90200425_buildGRCh38.tsv.gz
GCST90200454	MR Egger	28	0.338320395	0.139219591	0.0223 01321	0.0654 49997	0.6111 90792	1.4025 89814	1.0676 39351	1.8426 24276	Chen Y	Kynurenate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200454/GCST90200454_buildGRCh38.tsv.gz
GCST90200454	Weighted median	28	0.26338404	0.105099832	0.0122 09293	0.0573 8837	0.4693 7971	1.3013 26384	1.0590 6704	1.5990 0204	Chen Y	Kynurenate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200454/GCST90200454_buildGRCh38.tsv.gz
GCST90200454	Inverse variance weighted	28	0.181846473	0.073081528	0.0128 36673	0.0386 06679	0.3250 86268	1.1994 30035	1.0393 61601	1.3841 50048	Chen Y	Kynurenate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200454/GCST90200454_buildGRCh38.tsv.gz
GCST90200454	Simple mode	28	0.117272093	0.190153301	0.5425 82633	-0.2554 28376	0.4899 72562	1.1244 25336	0.7745 84613	1.6322 71433	Chen Y	Kynurenate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200454/GCST90200454_buildGRCh38.tsv.gz
GCST90200454	Weighted mode	28	0.248270909	0.107298476	0.0285 26787	0.0379 65896	0.4585 75923	1.2818 07139	1.0386 95809	1.5818 19747	Chen Y	Kynurenate levels	8241 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200454/GCST90200454_buildGRCh38.tsv.gz
GCST90200468	MR Egger	15	0.270944168	0.219021902	0.2379 44286	-0.1583 38759	0.7002 27096	1.3112 01862	0.8535 60582	2.0142 10074	Chen Y	X-11847 levels	7193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200468/GCST90200468_buildGRCh38.tsv.gz
GCST90200468	Weighted median	15	0.21829851	0.137064254	0.1112 33612	-0.0503 47429	0.4869 44448	1.2439 58346	0.9508 98998	1.6273 36206	Chen Y	X-11847 levels	7193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200468/GCST90200468_buildGRCh38.tsv.gz
GCST90200468	Inverse variance weighted	15	0.250076865	0.107428244	0.0199 20056	0.0395 17507	0.4606 36223	1.2841 24117	1.0403 08712	1.5850 8213	Chen Y	X-11847 levels	7193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200468/GCST90200468_buildGRCh38.tsv.gz
GCST90200468	Simple mode	15	0.380450207	0.208357	0.0892 57225	-0.0279 29513	0.7888 29928	1.4629 43069	0.9724 5691	2.2008 19802	Chen Y	X-11847 levels	7193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200468/GCST90200468_buildGRCh38.tsv.gz
GCST90200468	Weighted mode	15	0.272729058	0.182675502	0.1576 35888	-0.0853 14927	0.6307 73042	1.3135 44302	0.9182 23066	1.8790 62612	Chen Y	X-11847 levels	7193 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200468/GCST90200468_buildGRCh38.tsv.gz
GCST90200483	MR Egger	20	0.376835119	0.296873488	0.2204 85223	-0.2050 36918	0.9587 07156	1.4576 63948	0.8146 17242	2.6083 22138	Chen Y	X-12216 levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200483/GCST90200483_buildGRCh38.tsv.gz
GCST90200483	Weighted median	20	0.323803963	0.142311905	0.0228 8723	0.0448 72629	0.6027 35297	1.3823 76284	1.0458 94635	1.8271 09659	Chen Y	X-12216 levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200483/GCST90200483_buildGRCh38.tsv.gz
GCST90200483	Inverse variance weighted	20	0.265067889	0.102622636	0.0097 96297	0.0639 27523	0.4662 08256	1.3035 19468	1.0660 15134	1.5939 38911	Chen Y	X-12216 levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200483/GCST90200483_buildGRCh38.tsv.gz
GCST90200483	Simple mode	20	0.385059849	0.236041306	0.1192 86662	-0.0775 81111	0.8477 00808	1.4697 02278	0.9253 51965	2.3342 73735	Chen Y	X-12216 levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200483/GCST90200483_buildGRCh38.tsv.gz
GCST90200483	Weighted mode	20	0.405310396	0.223941319	0.0861 59404	-0.0336 14589	0.8442 35381	1.4997 6795	0.9669 44104	2.3261 98479	Chen Y	X-12216 levels	8181 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200483/GCST90200483_buildGRCh38.tsv.gz
GCST90200527	MR Egger	19	-0.087015929	0.262838401	0.7446 43079	-0.6021 79195	0.4281 47337	0.9166 62494	0.5476 16971	1.5344 1214	Chen Y	X-13866 levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200527/GCST90200527_buildGRCh38.tsv.gz
GCST90200527	Weighted median	19	-0.273639792	0.165618901	0.0984 88565	-0.5982 52838	0.0509 73255	0.7606 06003	0.5497 71337	1.0522 94749	Chen Y	X-13866 levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200527/GCST90200527_buildGRCh38.tsv.gz
GCST90200527	Inverse variance weighted	19	-0.220280215	0.112011614	0.0492 31223	-0.4398 22979	-0.0007 37452	0.8022 93951	0.6441 50439	0.9992 6282	Chen Y	X-13866 levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200527/GCST90200527_buildGRCh38.tsv.gz
GCST90200527	Simple mode	19	-0.443217091	0.282561176	0.1341 5967	-0.9970 36996	0.1106 02815	0.6419 67827	0.3689 71086	1.1169 51183	Chen Y	X-13866 levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200527/GCST90200527_buildGRCh38.tsv.gz
GCST90200527	Weighted mode	19	-0.435981704	0.230741442	0.0750 4517	-0.8882 34931	0.0162 71523	0.6466 29557	0.4113 81229	1.0164 04625	Chen Y	X-13866 levels	8252 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200527/GCST90200527_buildGRCh38.tsv.gz
GCST90200546	MR Egger	14	-0.219634654	0.288699265	0.4614 80573	-0.7854 85212	0.3462 15905	0.8028 12049	0.4558 98441	1.4137 0781	Chen Y	X-17354 levels	5375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200546/GCST90200546_buildGRCh38.tsv.gz
GCST90200546	Weighted median	14	-0.318952281	0.145799606	0.0286 9822	-0.6047 19509	-0.0331 85053	0.7269 10236	0.5462 27617	0.9673 5953	Chen Y	X-17354 levels	5375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200546/GCST90200546_buildGRCh38.tsv.gz
GCST90200546	Inverse variance weighted	14	-0.273280299	0.108812817	0.0120 22896	-0.4865 53421	-0.0600 07178	0.7608 79484	0.6147 41502	0.9417 57774	Chen Y	X-17354 levels	5375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200546/GCST90200546_buildGRCh38.tsv.gz

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GCST90200546	Simple mode	14	-0.319609551	0.247610023	0.219264429	-0.804925196	0.165706093	0.726432617	0.447121372	1.180226175	Chen Y	X-17354 levels	5375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200546/GCST90200546_buildGRCh38.tsv.gz
GCST90200546	Weighted mode	14	-0.324575709	0.237320565	0.194595493	-0.789724017	0.140572599	0.722833981	0.453970066	1.150932634	Chen Y	X-17354 levels	5375 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200546/GCST90200546_buildGRCh38.tsv.gz
GCST90200552	MR Egger	13	0.406374236	0.367583928	0.292524192	-0.314090263	1.126838734	1.501364311	0.730453093	3.085885759	Chen Y	X-18887 levels	6790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200552/GCST90200552_buildGRCh38.tsv.gz
GCST90200552	Weighted median	13	0.398414075	0.181892077	0.028496169	0.041905603	0.754922547	1.489460651	1.042796038	2.127446739	Chen Y	X-18887 levels	6790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200552/GCST90200552_buildGRCh38.tsv.gz
GCST90200552	Inverse variance weighted	13	0.325052533	0.141979989	0.022054673	0.046771754	0.603333312	1.384103355	1.047882807	1.828202625	Chen Y	X-18887 levels	6790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200552/GCST90200552_buildGRCh38.tsv.gz
GCST90200552	Simple mode	13	0.530951054	0.335133457	0.139111316	-0.125910522	1.18781263	1.700548853	0.881693735	3.279899001	Chen Y	X-18887 levels	6790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200552/GCST90200552_buildGRCh38.tsv.gz
GCST90200552	Weighted mode	13	0.565027402	0.312477822	0.095683402	-0.047429128	1.177483933	1.759495996	0.953678059	3.246196272	Chen Y	X-18887 levels	6790 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200552/GCST90200552_buildGRCh38.tsv.gz
GCST90200556	MR Egger	27	0.312703833	0.120728506	0.015775859	0.076075961	0.549331704	1.367116576	1.079044537	1.732095079	Chen Y	X-18345 levels	5476 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200556/GCST90200556_buildGRCh38.tsv.gz
GCST90200556	Weighted median	27	0.257044081	0.097677161	0.008499188	0.065596846	0.448491316	1.293102127	1.067796144	1.565947882	Chen Y	X-18345 levels	5476 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200556/GCST90200556_buildGRCh38.tsv.gz
GCST90200556	Inverse variance weighted	27	0.1412866	0.070163132	0.044042387	0.003766861	0.27880634	1.151754694	1.003773964	1.321551387	Chen Y	X-18345 levels	5476 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200556/GCST90200556_buildGRCh38.tsv.gz
GCST90200556	Simple mode	27	0.189537637	0.178838669	0.298971184	-0.160986153	0.540061428	1.208690615	0.851303859	1.716112277	Chen Y	X-18345 levels	5476 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200556/GCST90200556_buildGRCh38.tsv.gz
GCST90200556	Weighted mode	27	0.287327436	0.143267732	0.055418436	0.006522681	0.568132191	1.332860569	1.006544	1.764967349	Chen Y	X-18345 levels	5476 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200556/GCST90200556_buildGRCh38.tsv.gz
GCST90200597	MR Egger	17	-0.335699767	0.266959672	0.227801563	-0.858940724	0.187514119	0.714837691	0.423610565	1.206279935	Chen Y	X-22834 levels	6531 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200597/GCST90200597_buildGRCh38.tsv.gz
GCST90200597	Weighted median	17	-0.245196962	0.147848418	0.097229736	-0.534979862	0.044585937	0.782555039	0.585681085	1.045594828	Chen Y	X-22834 levels	6531 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200597/GCST90200597_buildGRCh38.tsv.gz
GCST90200597	Inverse variance weighted	17	-0.247299104	0.102321236	0.015653776	-0.447848726	-0.046749481	0.780907086	0.639001341	0.954326444	Chen Y	X-22834 levels	6531 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200597/GCST90200597_buildGRCh38.tsv.gz
GCST90200597	Simple mode	17	-0.244315123	0.281420913	0.398147903	-0.795900113	0.307269867	0.783240778	0.451174944	1.359707858	Chen Y	X-22834 levels	6531 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200597/GCST90200597_buildGRCh38.tsv.gz
GCST90200597	Weighted mode	17	-0.305589508	0.275957455	0.284500879	-0.846466121	0.235287105	0.736688962	0.428928037	1.265271982	Chen Y	X-22834 levels	6531 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200597/GCST90200597_buildGRCh38.tsv.gz
GCST90200620	MR Egger	20	-0.531107709	0.216638672	0.024662664	-0.955719506	-0.106495912	0.587953328	0.384503537	0.898978723	Chen Y	X-24243 levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200620/GCST90200620_buildGRCh38.tsv.gz
GCST90200620	Weighted median	20	-0.306018287	0.143803688	0.033334755	-0.587873514	-0.024163059	0.736373153	0.555507308	0.976102653	Chen Y	X-24243 levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200620/GCST90200620_buildGRCh38.tsv.gz
GCST90200620	Inverse variance weighted	20	-0.252424134	0.099529254	0.011206902	-0.447501472	-0.057346796	0.776915152	0.639223275	0.944266545	Chen Y	X-24243 levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200620/GCST90200620_buildGRCh38.tsv.gz
GCST90200620	Simple mode	20	-0.406098399	0.250951724	0.122045139	-0.897809619	0.085699391	0.666244606	0.407425905	1.089478772	Chen Y	X-24243 levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200620/GCST90200620_buildGRCh38.tsv.gz
GCST90200620	Weighted mode	20	-0.406098399	0.204722263	0.061923418	-0.807354035	-0.004842764	0.666244606	0.446036704	0.995168943	Chen Y	X-24243 levels	7540 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200620/GCST90200620_buildGRCh38.tsv.gz
GCST90200639	MR Egger	15	0.32752406	0.328188735	0.336505836	-0.31572586	0.97077398	1.387528435	0.729259342	2.639986965	Chen Y	X-24757 levels	6251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200639/GCST90200639_buildGRCh38.tsv.gz
GCST90200639	Weighted median	15	0.266633859	0.145699614	0.06724628	-0.018937385	0.552205103	1.305562339	0.981240801	1.737079236	Chen Y	X-24757 levels	6251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200639/GCST90200639_buildGRCh38.tsv.gz
GCST90200639	Inverse variance weighted	15	0.23043566	0.108095515	0.03302508 7	0.018566845	0.442300287	1.259104845	1.018741915	1.556287021	Chen Y	X-24757 levels	6251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200639/GCST90200639_buildGRCh38.tsv.gz

GCST90200639	Simple mode	15	0.317795175	0.276574949	0.26979312	-0.2242 91725	0.8598 82074	1.3740 94783	0.7990 81988	2.3628 82032	Chen Y	X-24757 levels	6251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200639/GCST90200639_buildGRCh38.tsv.gz
GCST90200639	Weighted mode	15	0.287839126	0.255094831	0.278133214	-0.2121 46743	0.7878 24996	1.3335 42755	0.8088 45996	2.1986 09237	Chen Y	X-24757 levels	6251 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200639/GCST90200639_buildGRCh38.tsv.gz
GCST90200644	MR Egger	29	0.267305324	0.189948838	0.170761823	-0.1049 94399	0.6396 05047	1.3064 39273	0.9003 29566	1.8957 32007	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Weighted median	29	0.276278517	0.126081611	0.028432452	0.0291 58559	0.5233 98476	1.3182 14959	1.0295 87832	1.6877 53704	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Inverse variance weighted	29	0.276270658	0.090853853	0.00235931	0.0981 97106	0.4543 44209	1.3182 04598	1.1031 80208	1.5751 40082	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Simple mode	29	0.2008395	0.210727102	0.348706107	-0.212 18562	0.6138 6462	1.2224 28556	0.8088 14551	1.8475 57729	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Weighted mode	29	0.2008395	0.178752436	0.270739998	-0.1495 15275	0.5511 94275	1.2224 28556	0.8611 25284	1.7353 24235	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200669	MR Egger	17	-0.299735571	0.221474743	0.195984547	-0.7338 26068	0.1343 54926	0.7410 1414	0.4800 68696	1.1437 98711	Chen Y	X-25519 levels	8080 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200669/GCST90200669_buildGRCh38.tsv.gz
GCST90200669	Weighted median	17	-0.291388613	0.155106103	0.060293591	-0.5953 96574	0.0126 19348	0.7472 2524	0.5513 43874	1.0126 99308	Chen Y	X-25519 levels	8080 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200669/GCST90200669_buildGRCh38.tsv.gz
GCST90200669	Inverse variance weighted	17	-0.294257826	0.112279455	0.008773326	-0.5143 25557	-0.0741 90095	0.7450 84364	0.5979 0371	0.9284 95175	Chen Y	X-25519 levels	8080 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200669/GCST90200669_buildGRCh38.tsv.gz
GCST90200669	Simple mode	17	-0.347758458	0.222762734	0.13805612	-0.7843 73416	0.0888 565	0.7062 69449	0.4564 05589	1.0929 2381	Chen Y	X-25519 levels	8080 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200669/GCST90200669_buildGRCh38.tsv.gz
GCST90200669	Weighted mode	17	-0.273474059	0.189693267	0.168683848	-0.6452 72862	0.0983 24745	0.7607 32071	0.5245 19401	1.1033 21025	Chen Y	X-25519 levels	8080 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200669/GCST90200669_buildGRCh38.tsv.gz
GCST90200670	MR Egger	17	-0.031753471	0.176269221	0.859452286	-0.3772 41144	0.3137 34201	0.9687 45376	0.6857 5069	1.3685 25936	Chen Y	X-26111 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200670/GCST90200670_buildGRCh38.tsv.gz
GCST90200670	Weighted median	17	-0.121981329	0.125845345	0.332397766	-0.3686 38205	0.1246 75548	0.8851 64896	0.6916 7561	1.1327 8086	Chen Y	X-26111 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200670/GCST90200670_buildGRCh38.tsv.gz
GCST90200670	Inverse variance weighted	17	-0.198328886	0.090725332	0.028812936	-0.3761 50536	-0.0205 07235	0.8201 0009	0.6864 98983	0.9797 01608	Chen Y	X-26111 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200670/GCST90200670_buildGRCh38.tsv.gz
GCST90200670	Simple mode	17	-0.219872094	0.220813622	0.334199895	-0.6526 66794	0.2129 22605	0.8026 21451	0.5206 55443	1.2372 88888	Chen Y	X-26111 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200670/GCST90200670_buildGRCh38.tsv.gz
GCST90200670	Weighted mode	17	-0.111259795	0.131863452	0.411246883	-0.3697 1216	0.1471 9257	0.8947 06279	0.6909 3318	1.1585 77049	Chen Y	X-26111 levels	8002 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200670/GCST90200670_buildGRCh38.tsv.gz
GCST90200737	MR Egger	20	0.262149588	0.193033053	0.191226543	-0.1161 95195	0.6404 94372	1.2997 20951	0.8903 01424	1.8974 18678	Chen Y	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	4391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200737/GCST90200737_buildGRCh38.tsv.gz
GCST90200737	Weighted median	20	0.192672369	0.110597859	0.081491202	-0.0240 99435	0.4094 44173	1.2124 85481	0.9761 88638	1.5059 80488	Chen Y	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	4391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200737/GCST90200737_buildGRCh38.tsv.gz
GCST90200737	Inverse variance weighted	20	0.172385677	0.080754709	0.032786939	0.0141 06448	0.3306 64906	1.1881 35982	1.0142 06414	1.3918 933	Chen Y	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	4391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200737/GCST90200737_buildGRCh38.tsv.gz
GCST90200737	Simple mode	20	0.311630175	0.198742638	0.133383096	-0.0779 05395	0.7011 65746	1.3656 49549	0.9250 51937	2.0161 016	Chen Y	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	4391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200737/GCST90200737_buildGRCh38.tsv.gz
GCST90200737	Weighted mode	20	0.240304215	0.174410331	0.184274974	-0.1015 40034	0.5821 48464	1.2716 35942	0.903 44501	1.7898 79794	Chen Y	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	4391 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200737/GCST90200737_buildGRCh38.tsv.gz
GCST90200752	MR Egger	13	0.146750457	0.190682762	0.457742402	-0.2269 87756	0.5204 8867	1.1580 6494	0.7969 3054	1.6828 49807	Chen Y	Succinate to acetoacetate ratio	6829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200752/GCST90200752_buildGRCh38.tsv.gz
GCST90200752	Weighted median	13	0.135223015	0.140222862	0.334873705	-0.1396 13794	0.4100 59824	1.1447 92062	0.8696 94051	1.5069 07932	Chen Y	Succinate to acetoacetate ratio	6829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200752/GCST90200752_buildGRCh38.tsv.gz

GCST90200752	Inverse variance weighted	13	0.205315036	0.103370239	0.047009974	0.0027 09368	0.4079 20705	1.2279 11841	1.0027 13042	1.5036 87921	Chen Y	Succinate to acetoacetate ratio	6829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200752/GCST90200752_buildGRCh38.tsv.gz
GCST90200752	Simple mode	13	0.156913486	0.204064782	0.456797141	-0.2430 53487	0.5568 80458	1.1698 94397	0.7842 29567	1.7452 19714	Chen Y	Succinate to acetoacetate ratio	6829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200752/GCST90200752_buildGRCh38.tsv.gz
GCST90200752	Weighted mode	13	0.144196646	0.17994142	0.438507238	-0.2084 88538	0.4968 81829	1.1551 11234	0.8118 1034	1.6435 88283	Chen Y	Succinate to acetoacetate ratio	6829 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200752/GCST90200752_buildGRCh38.tsv.gz
GCST90200775	MR Egger	14	0.337011766	0.39638389	0.411848243	-0.4399 00658	1.1139 24189	1.4007 55544	0.6441 00404	3.0462 89186	Chen Y	Serine to pyruvate ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200775/GCST90200775_buildGRCh38.tsv.gz
GCST90200775	Weighted median	14	0.386889383	0.164393051	0.018600548	0.0646 79004	0.7090 99763	1.4723 93611	1.0668 16525	2.0321 61008	Chen Y	Serine to pyruvate ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200775/GCST90200775_buildGRCh38.tsv.gz
GCST90200775	Inverse variance weighted	14	0.442474532	0.141357655	0.001747008	0.1654 13528	0.7195 35537	1.5565 542	1.1798 80931	2.0534 79223	Chen Y	Serine to pyruvate ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200775/GCST90200775_buildGRCh38.tsv.gz
GCST90200775	Simple mode	14	0.403091776	0.249999808	0.130882961	-0.0869 07848	0.8930 914	1.4964 44223	0.9167 61573	2.4426 6926	Chen Y	Serine to pyruvate ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200775/GCST90200775_buildGRCh38.tsv.gz
GCST90200775	Weighted mode	14	0.425459645	0.221821153	0.077339052	-0.0093 09816	0.8602 29105	1.5302 93649	0.9907 33387	2.3637 02168	Chen Y	Serine to pyruvate ratio	8235 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200775/GCST90200775_buildGRCh38.tsv.gz
GCST90200794	MR Egger	21	-0.117191215	0.076773995	0.143374535	-0.2676 68245	0.0332 85815	0.8894 15107	0.7651 61586	1.0338 45985	Chen Y	Oleoyl-linoleoylglycerol (18:1 to 18:2) [2] to linoleoyl-arachidonoylglycerol (18:2 to 20:4) [1] ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200794/GCST90200794_buildGRCh38.tsv.gz
GCST90200794	Weighted median	21	-0.124071463	0.065100116	0.056668859	-0.2516 6769	0.0035 24765	0.8833 16714	0.7775 03067	1.0035 30984	Chen Y	Oleoyl-linoleoylglycerol (18:1 to 18:2) [2] to linoleoylarachidonoylglycerol (18:2 to 20:4) [1] ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200794/GCST90200794_buildGRCh38.tsv.gz
GCST90200794	Inverse variance weighted	21	-0.106847317	0.051727045	0.038866387	-0.2082 32325	-0.0054 62309	0.8986 62873	0.8120 18362	0.9945 52583	Chen Y	Oleoyl-linoleoylglycerol (18:1 to 18:2) [2] to linoleoylarachidonoyl-glycerol (18:2 to 20:4) [1] ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200794/GCST90200794_buildGRCh38.tsv.gz
GCST90200794	Simple mode	21	-0.255655506	0.135548163	0.073890996	-0.5213 29905	0.0100 18893	0.7744 08702	0.5937 30418	1.0100 6925	Chen Y	Oleoyl-linoleoylglycerol (18:1 to 18:2) [2] to linoleoylarachidonoylglycerol (18:2 to 20:4) [1] ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200794/GCST90200794_buildGRCh38.tsv.gz
GCST90200794	Weighted mode	21	-0.129213568	0.06335665	0.0548336283	-0.2533 92603	-0.0050 34533	0.8787 86265	0.7761 63098	0.9949 78119	Chen Y	Oleoyl-linoleoylglycerol (18:1 to 18:2) [2] to linoleoyl-arachidonoylglycerol (18:2 to 20:4) [1] ratio	7620 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200794/GCST90200794_buildGRCh38.tsv.gz
GCST90200801	MR Egger	22	-0.099352786	0.242607139	0.6865099966	-0.5748 62779	0.3761 57206	0.9054 23231	0.5627 82089	1.4566 76114	Chen Y	5-methylthioadenosine (MTA) to phosphate ratio	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200801/GCST90200801_buildGRCh38.tsv.gz
GCST90200801	Weighted median	22	-0.231706823	0.132953887	0.081375406	-0.4922 96441	0.0288 82796	0.7931 78631	0.6112 21148	1.0293 03949	Chen Y	5-methylthioadenosine (MTA) to phosphate ratio	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200801/GCST90200801_buildGRCh38.tsv.gz
GCST90200801	Inverse variance eighted	22	-0.285049745	0.106316359	0.007337037	-0.4934 29809	-0.0766 69681	0.7519 76847	0.6105 28802	0.9261 95743	Chen Y	5-methylthioadenosine (MTA) to phosphate ratio	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200801/GCST90200801_buildGRCh38.tsv.gz
GCST90200801	Simple mode	22	-0.187918954	0.206170296	0.372390319	-0.5920 12734	0.2161 74827	0.8286 81866	0.5532 12693	1.2413 19376	Chen Y	5-methylthioadenosine (MTA) to phosphate ratio	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200801/GCST90200801_buildGRCh38.tsv.gz
GCST90200801	Weighted mode	22	-0.223859945	0.188701998	0.248746817	-0.5937 15861	0.1459 95972	0.7994 27091	0.5522 71304	1.1571 91527	Chen Y	5-methylthioadenosine (MTA) to phosphate ratio	8261 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200801/GCST90200801_buildGRCh38.tsv.gz
GCST90200849	MR Egger	23	-0.192856504	0.132968915	0.16172352	-0.4534 75577	0.0677 6257	0.8246 00293	0.6354 15872	1.0701 11202	Chen Y	Adenosine 5'-monophosphate (AMP) to threonine ratio	8173 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200849/GCST90200849_buildGRCh38.tsv.gz

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GCST90200849	Weighted median	23	-0.238140939	0.123386846	0.053602494	-0.479979157	0.003697279	0.788091611	0.618796289	1.003704123	Chen Y	Adenosine 5'-monophosphate (AMP) to threonine ratio	8173	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200849/GCST90200849_buildGRCh38.tsv.gz
GCST90200849	Inverse variance weighted	23	-0.223927033	0.08128717	0.005873435	-0.383249887	-0.064604179	0.79937346	0.681642544	0.937438448	Chen Y	Adenosine 5'-monophosphate (AMP) to threonine ratio	8173	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200849/GCST90200849_buildGRCh38.tsv.gz
GCST90200849	Simple mode	23	-0.1967268	0.208163269	0.354892832	-0.604726807	0.211273207	0.821415013	0.546223631	1.235249788	Chen Y	Adenosine 5'-monophosphate (AMP) to threonine ratio	8173	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200849/GCST90200849_buildGRCh38.tsv.gz
GCST90200849	Weighted mode	23	-0.232673852	0.115185868	0.055727255	-0.458438154	-0.00690955	0.792411975	0.632270384	0.993114266	Chen Y	Adenosine 5'-monophosphate (AMP) to threonine ratio	8173	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200849/GCST90200849_buildGRCh38.tsv.gz
GCST90200909	MR Egger	23	0.29806194	0.235399829	0.219309682	-0.163321724	0.759445604	1.347245234	0.849317899	2.137091098	Chen Y	Uridine to 2'-deoxyuridine ratio	7873	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200909/GCST90200909_buildGRCh38.tsv.gz
GCST90200909	Weighted median	23	0.114746918	0.13402007	0.391891559	-0.147932418	0.377426255	1.121589548	0.862489402	1.458582588	Chen Y	Uridine to 2'-deoxyuridine ratio	7873	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200909/GCST90200909_buildGRCh38.tsv.gz
GCST90200909	Inverse variance eighted	23	0.192905196	0.094592518	0.041417276	0.007503861	0.378306531	1.212767813	1.007532085	1.459810351	Chen Y	Uridine to 2'-deoxyuridine ratio	7873	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200909/GCST90200909_buildGRCh38.tsv.gz
GCST90200909	Simple mode	23	0.008719223	0.250497861	0.97254707	-0.482256584	0.49969503	1.008757346	0.617388629	1.648218538	Chen Y	Uridine to 2'-deoxyuridine ratio	7873	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200909/GCST90200909_buildGRCh38.tsv.gz
GCST90200909	Weighted mode	23	0.028208173	0.227904821	0.902619893	-0.418485278	0.474901623	1.028660979	0.658042818	1.607856013	Chen Y	Uridine to 2'-deoxyuridine ratio	7873	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200909/GCST90200909_buildGRCh38.tsv.gz
GCST90200913	MR Egger	17	-0.163062992	0.068998273	0.032038969	-0.298299606	-0.027826378	0.849537673	0.742078975	0.972555721	Chen Y	Glucose to sucrose ratio	7695	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200913/GCST90200913_buildGRCh38.tsv.gz
GCST90200913	Weighted median	17	-0.123790397	0.07594413	0.103097421	-0.272640892	0.025060098	0.883556502	0.761366151	1.025376742	Chen Y	Glucose to sucrose ratio	7695	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200913/GCST90200913_buildGRCh38.tsv.gz
GCST90200913	Inverse variance weighted	17	-0.112115341	0.056563315	0.047465687	-0.22297944	-0.001251243	0.893941143	0.80013313	0.998749539	Chen Y	Glucose to sucrose ratio	7695	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200913/GCST90200913_buildGRCh38.tsv.gz
GCST90200913	Simple mode	17	-0.005589163	0.212369769	0.9793291	-0.421833909	0.410655584	0.994426428	0.655844296	1.507805955	Chen Y	Glucose to sucrose ratio	7695	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200913/GCST90200913_buildGRCh38.tsv.gz
GCST90200913	Weighted mode	17	-0.116781929	0.066262831	0.097090045	-0.246657078	0.013099322	0.889779207	0.781480861	1.013179311	Chen Y	Glucose to sucrose ratio	7695	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200913/GCST90200913_buildGRCh38.tsv.gz
GCST90200945	MR Egger	11	-0.078423391	0.297209777	0.797826	-0.660954555	0.504107772	0.924572888	0.516358207	1.655507772	Chen Y	Adenosine 5'-monophosphate (AMP) to EDTA ratio	8179	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200945/GCST90200945_buildGRCh38.tsv.gz
GCST90200945	Weighted median	11	-0.179859507	0.21285556	0.398119866	-0.597056405	0.237337391	0.835387569	0.550429495	1.267868814	Chen Y	Adenosine 5'-monophosphate (AMP) to EDTA ratio	8179	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200945/GCST90200945_buildGRCh38.tsv.gz
GCST90200945	Inverse variance weighted	11	-0.4027113	0.152442782	0.008248597	-0.701499152	-0.103923448	0.668505069	0.495841405	0.901294291	Chen Y	Adenosine 5'-monophosphate (AMP) to EDTA ratio	8179	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200945/GCST90200945_buildGRCh38.tsv.gz
GCST90200945	Simple mode	11	-0.307439595	0.357099765	0.409441791	-1.007355134	0.392475945	0.735327284	0.365183565	1.480642248	Chen Y	Adenosine 5'-monophosphate (AMP) to EDTA ratio	8179	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200945/GCST90200945_buildGRCh38.tsv.gz
GCST90200945	Weighted mode	11	-0.244260162	0.275100984	0.395452407	-0.78345809	0.294937767	0.783283827	0.456802354	1.343042774	Chen Y	Adenosine 5'-monophosphate (AMP) to EDTA ratio	8179	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200945/GCST90200945_buildGRCh38.tsv.gz
GCST90200987	MR Egger	23	0.058443378	0.337104828	0.864021967	-0.602282085	0.719168841	1.060184954	0.547560629	2.052726359	Chen Y	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7162	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200987/GCST90200987_buildGRCh38.tsv.gz
GCST90200987	Weighted median	23	0.27638152	0.14305905 2	0.0533669	-0.004014223	0.556777262	1.318350745	0.995993823	1.745039624	Chen Y	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7162	European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200987/GCST90200987_buildGRCh38.tsv.gz

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GCST90200987	Inverse variance weighted	23	0.277091916	0.1158 14353	0.0167 31636	0.0500 95784	0.5040 88048	1.3192 87629	1.0513 71796	1.6554 75118	Chen Y	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7162 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200987/GCST90200987_buildGRCh38.tsv.gz
GCST90200987	Simple mode	23	0.296577721	0.2813 99196	0.3033 48792	-0.2549 64703	0.8481 20144	1.3452 47109	0.7749 43851	2.3352 52785	Chen Y	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7162 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200987/GCST90200987_buildGRCh38.tsv.gz
GCST90200987	Weighted mode	23	0.318958134	0.2775 38432	0.2627 98559	-0.2250 17193	0.8629 3346	1.3756 93728	0.7985 0249	2.3701 03108	Chen Y	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	7162 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200987/GCST90200987_buildGRCh38.tsv.gz
GCST90200997	MR Egger	26	-0.258161015	0.2345 70533	0.2820 0089	-0.7179 19261	0.2015 9723	0.7724 70843	0.4877 66115	1.2233 55178	Chen Y	Histidine to glutamine ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200997/GCST90200997_buildGRCh38.tsv.gz
GCST90200997	Weighted median	26	-0.148351229	0.1409 42637	0.2925 40593	-0.4245 98797	0.1278 96339	0.8621 28258	0.6540 32132	1.1364 35193	Chen Y	Histidine to glutamine ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200997/GCST90200997_buildGRCh38.tsv.gz
GCST90200997	Inverse variance weighted	26	-0.226360156	0.1103 63329	0.0402 62563	-0.4426 72281	-0.0100 48031	0.7974 30851	0.6423 17673	0.9900 02282	Chen Y	Histidine to glutamine ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200997/GCST90200997_buildGRCh38.tsv.gz
GCST90200997	Simple mode	26	-0.374716931	0.2694 91251	0.1766 44546	-0.9029 19782	0.1534 8592	0.6874 83856	0.4053 84296	1.1658 91371	Chen Y	Histidine to glutamine ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200997/GCST90200997_buildGRCh38.tsv.gz
GCST90200997	Weighted mode	26	-0.163748155	0.1519 95971	0.2916 23968	-0.4616 60257	0.1341 63947	0.8489 558	0.6302 36422	1.1435 80291	Chen Y	Histidine to glutamine ratio	8223 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200997/GCST90200997_buildGRCh38.tsv.gz
GCST90201008	MR Egger	20	0.167573237	0.3547 93077	0.6423 79417	-0.5278 21194	0.8629 67668	1.1824 31885	0.5898 88824	2.3701 84187	Chen Y	Threonine to alpha-ketobutyrate ratio	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201008/GCST90201008_buildGRCh38.tsv.gz
GCST90201008	Weighted median	20	0.424276372	0.1587 01323	0.0075 08066	0.1132 21778	0.7353 30965	1.5284 83965	1.1198 8027	2.0861 72329	Chen Y	Threonine to alpha-ketobutyrate ratio	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201008/GCST90201008_buildGRCh38.tsv.gz
GCST90201008	Inverse variance eighted	20	0.312724063	0.1347 35202	0.0202 85378	0.0486 43068	0.5768 05058	1.3671 44233	1.0498 4556	1.7803 41247	Chen Y	Threonine to alpha-ketobutyrate ratio	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201008/GCST90201008_buildGRCh38.tsv.gz
GCST90201008	Simple mode	20	0.501922936	0.2894 68838	0.0991 24619	-0.0654 35986	1.0692 81858	1.6518 94706	0.9366 59004	2.9132 86596	Chen Y	Threonine to alpha-ketobutyrate ratio	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201008/GCST90201008_buildGRCh38.tsv.gz
GCST90201008	Weighted mode	20	0.422499939	0.2456 45483	0.1016 87551	-0.0589 65208	0.9039 65086	1.5257 71127	0.9427 39569	2.4693 75009	Chen Y	Threonine to alpha-ketobutyrate ratio	8099 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90201001-GCST90202000/GCST90201008/GCST90201008_buildGRCh38.tsv.gz

Casual effect of CD on metabolites

id	method	nsnp	b	se	pval	lo_ci	up_ci	or	or_lci95	or_uci95	first Author	reported Trait	discovery Sample Ancestry	summaryStatistics
GCST90200644	MR Egger	31	-0.081662956	0.0484 85372	0.1028 6245	-0.1766 94285	0.0133 68373	0.9215 8252	0.8380 35946	1.0134 58129	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Weighted median	31	-0.062870988	0.0314 36442	0.0455 06774	-0.1244 86413	-0.0012 55562	0.9390 64617	0.8829 50258	0.9987 45225	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Inverse variance weighted	31	-0.051525965	0.0220 65619	0.0195 36924	-0.0947 74579	-0.0082 77352	0.9497 78988	0.9095 7795	0.9917 56811	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Simple mode	31	-0.088226964	0.0607 26636	0.1566 44755	-0.2072 51171	0.0307 97244	0.9155 53056	0.8128 15469	1.0312 76385	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Weighted mode	31	-0.080934062	0.0535 27666	0.1409 9644	-0.1858 48288	0.0239 80164	0.9222 54501	0.8303 99567	1.024 27	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	MR Egger	31	-0.081662956	0.0484 85372	0.1028 6245	-0.1766 94285	0.0133 68373	0.9215 8252	0.8380 35946	1.0134 58129	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Weighted median	31	-0.062870988	0.0314 36442	0.0455 06774	-0.1244 86413	-0.0012 55562	0.9390 64617	0.8829 50258	0.9987 45225	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Inverse variance weighted	31	-0.051525965	0.0220 65619	0.0195 36924	-0.0947 74579	-0.0082 77352	0.9497 78988	0.9095 7795	0.9917 56811	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Simple mode	31	-0.088226964	0.0607 26636	0.1566 44755	-0.2072 51171	0.0307 97244	0.9155 53056	0.8128 15469	1.0312 76385	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz
GCST90200644	Weighted mode	31	-0.080934062	0.0535 27666	0.1409 9644	-0.1858 48288	0.0239 80164	0.9222 54501	0.8303 99567	1.02 427	Chen Y	X-24728 levels	8160 European	http://ftp.ebi.ac.uk/pub/databases/gwas/summary_statistics/GCST90200001-GCST90201000/GCST90200644/GCST90200644_buildGRCh38.tsv.gz

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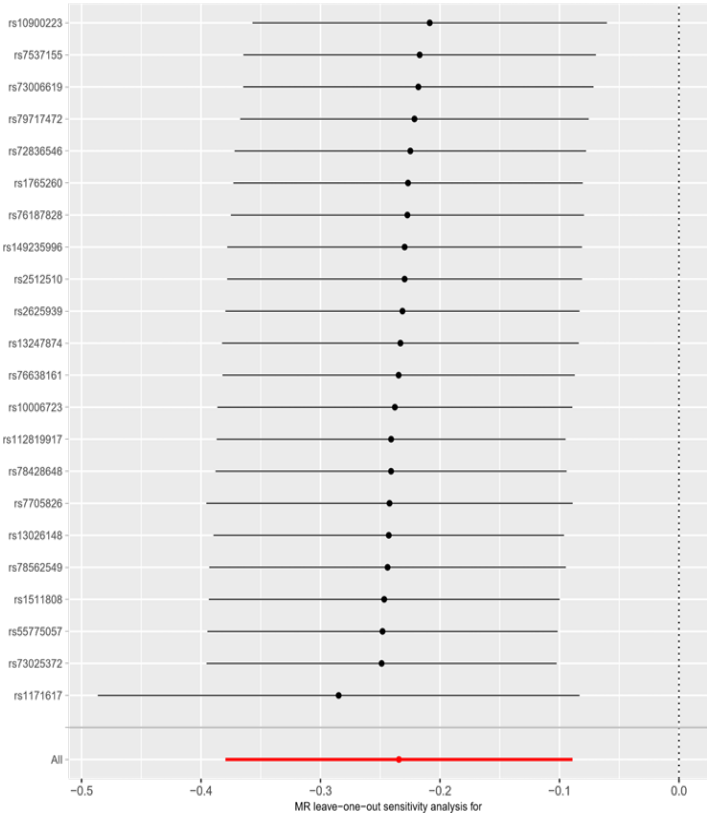
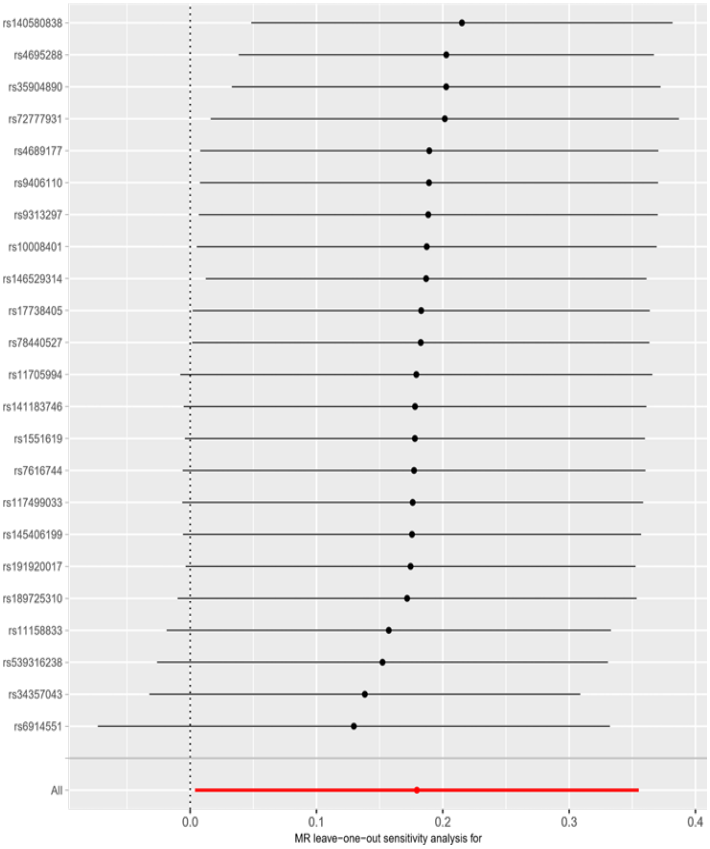
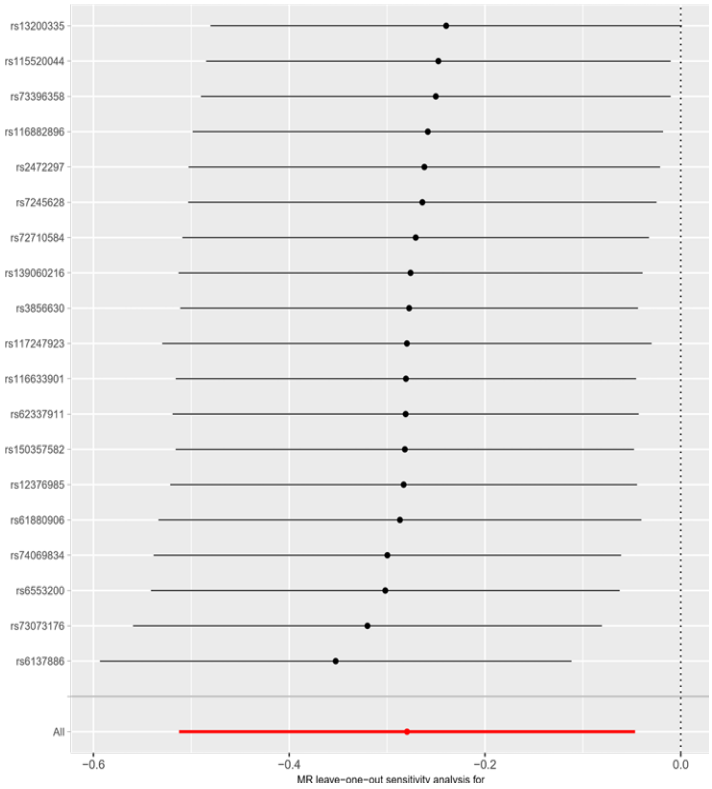
Supplementary File 4:



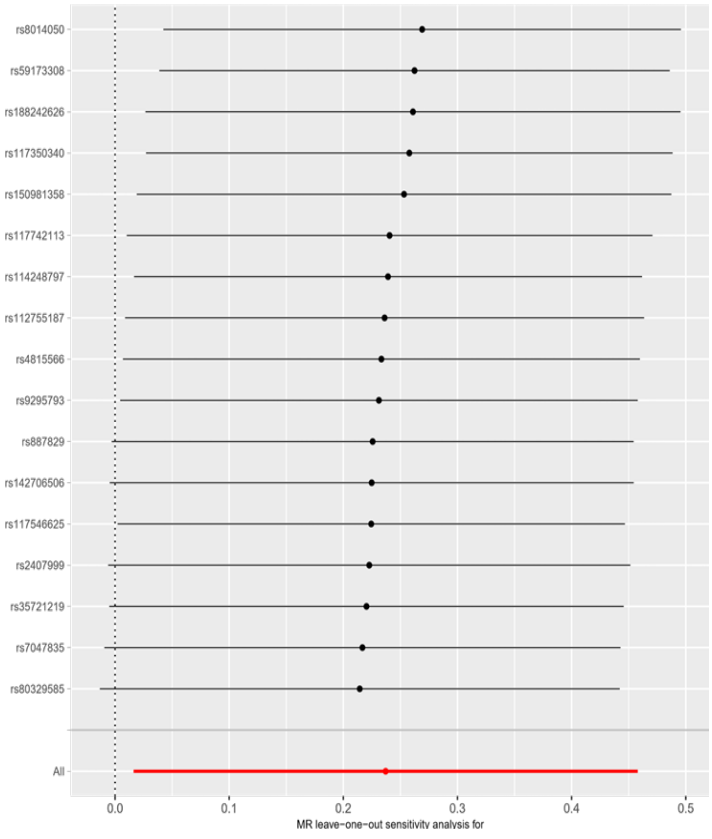
Leave-one-out sensitivity analysis for Carnitine levels on CD



Leave-one-out sensitivity analysis for Suberate (C8-DC) levels on CD



Leave-one-out sensitivity analysis for Maleate levels on CD



Leave-one-out sensitivity analysis for Isovalerate (i5:0) levels on CD

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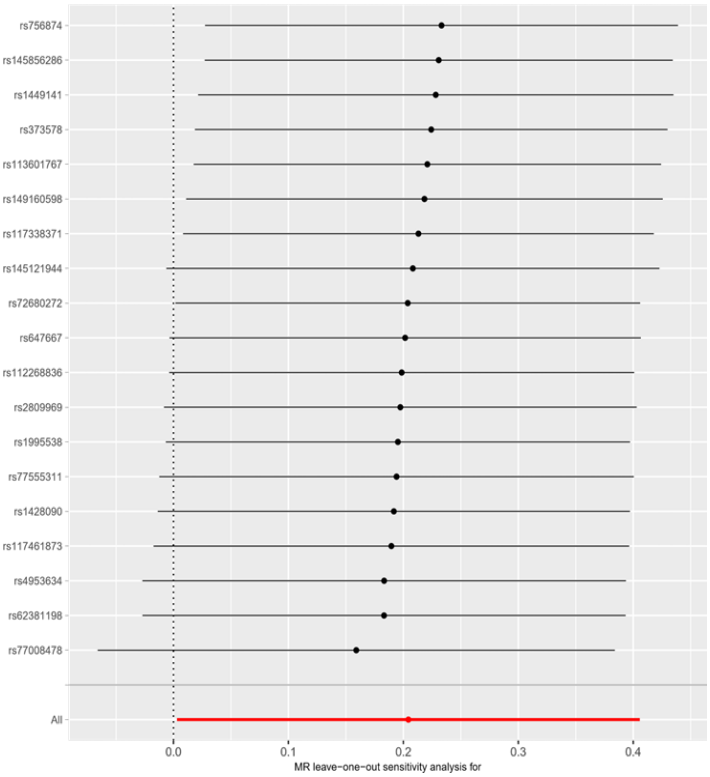
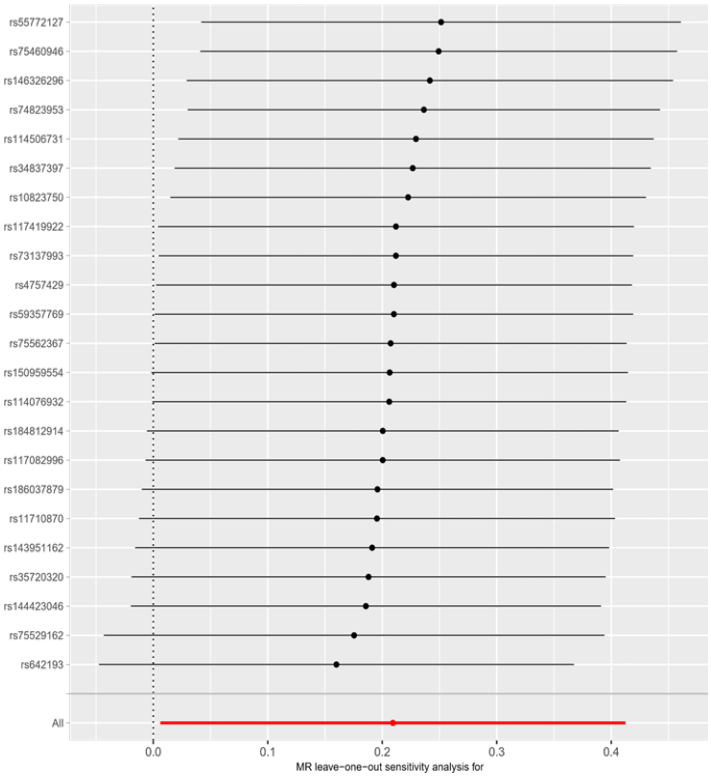
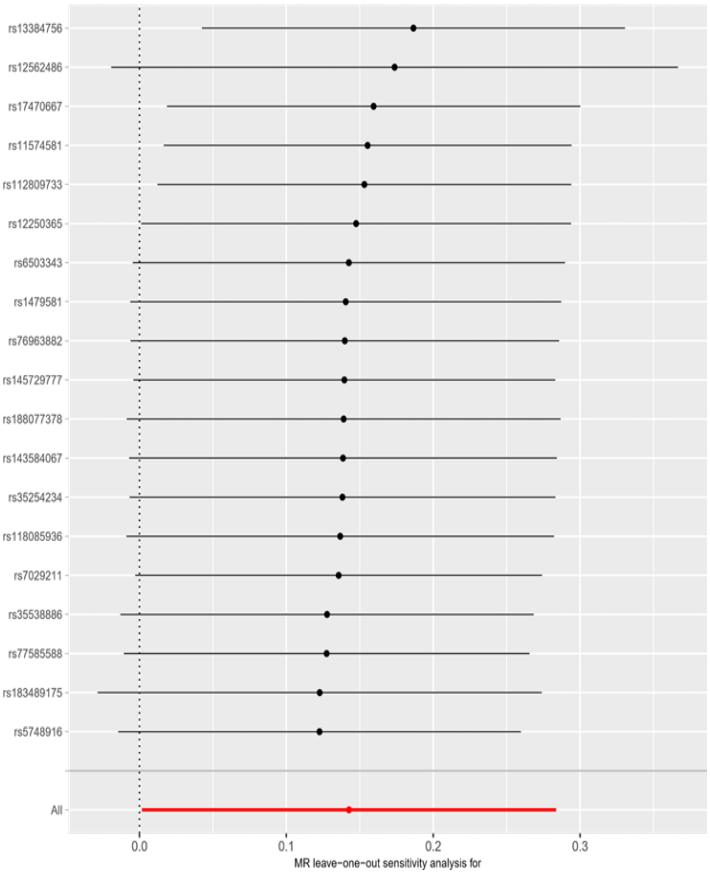


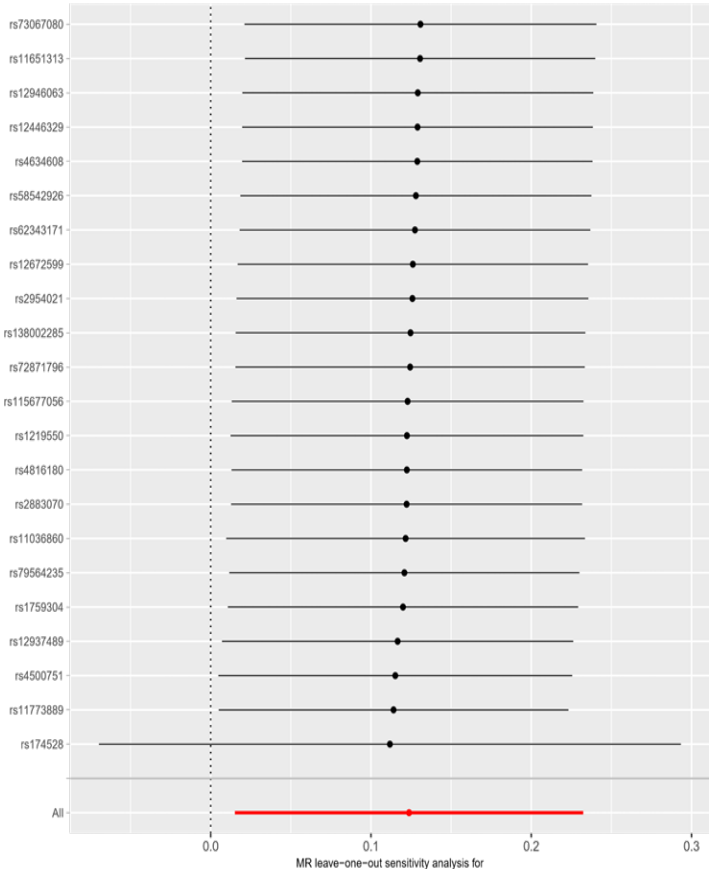
Leave-one-out sensitivity analysis for Oxalate (ethanedioate) levels on CD



Leave-one-out sensitivity analysis for Homostachydrine levels on CD



Leave-one-out sensitivity analysis for 2-hydroxyoctanoate levels on CD



Leave-one-out sensitivity analysis for 1-arachidonoyl-gpc (20:4n6) levels on CD

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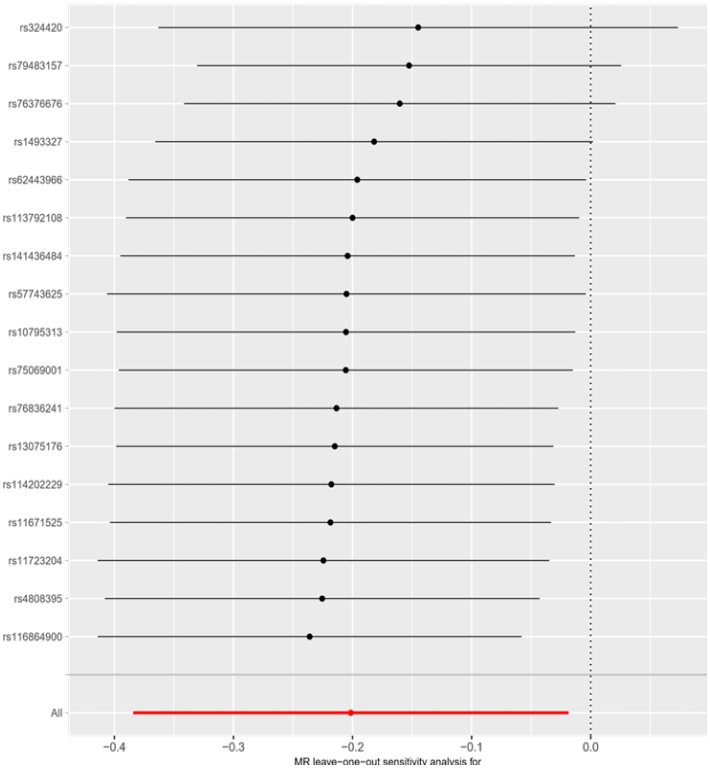
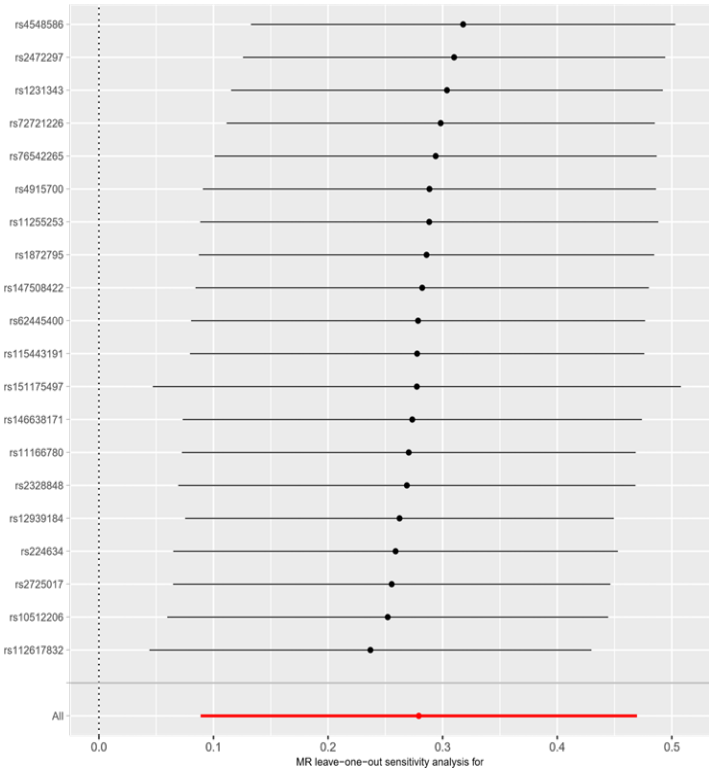
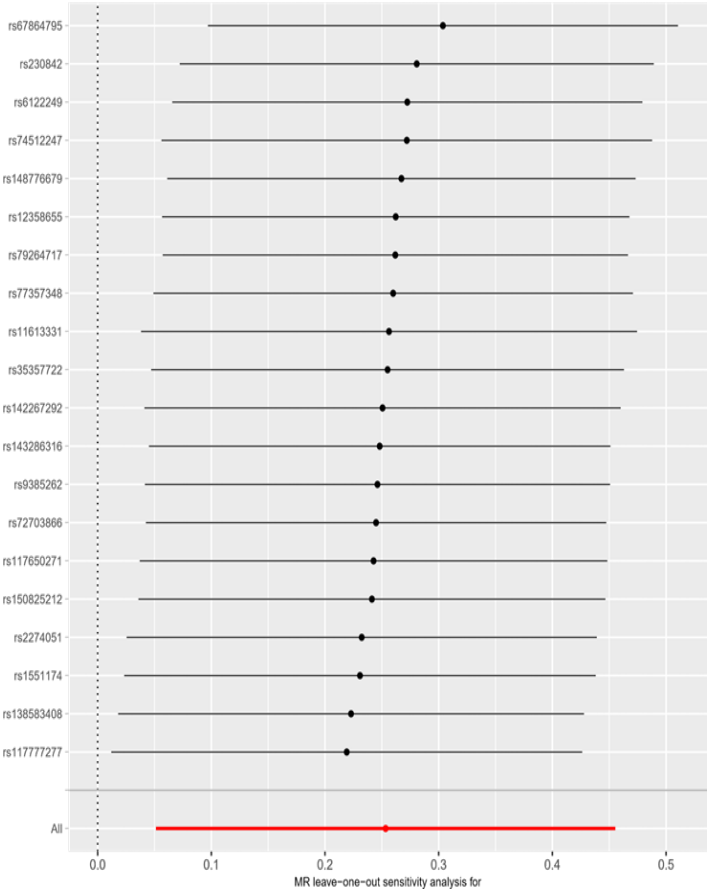


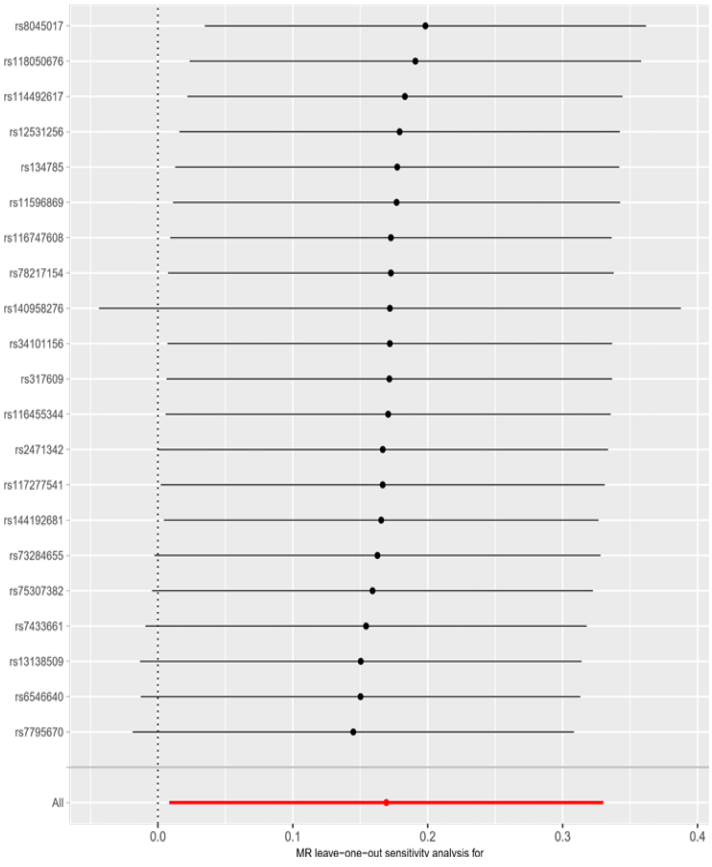
Leave-one-out sensitivity analysis for N-oleoyltaurine levels on CD



Leave-one-out sensitivity analysis for N-carbamoylalanine levels on CD



Leave-one-out sensitivity analysis for Imidazole propionate levels on CD



Leave-one-out sensitivity analysis for 3-methoxycatechol sulfate (1) levels on CD

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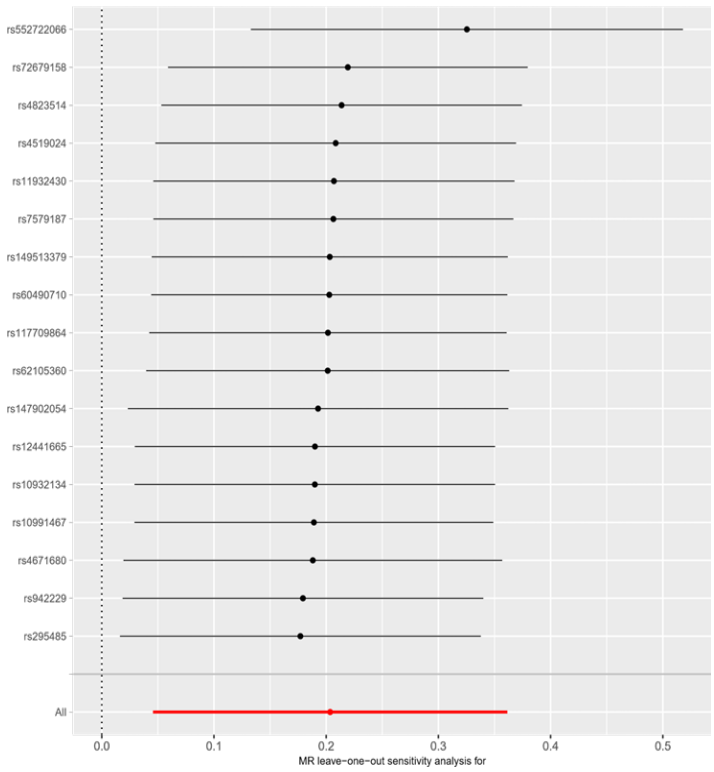
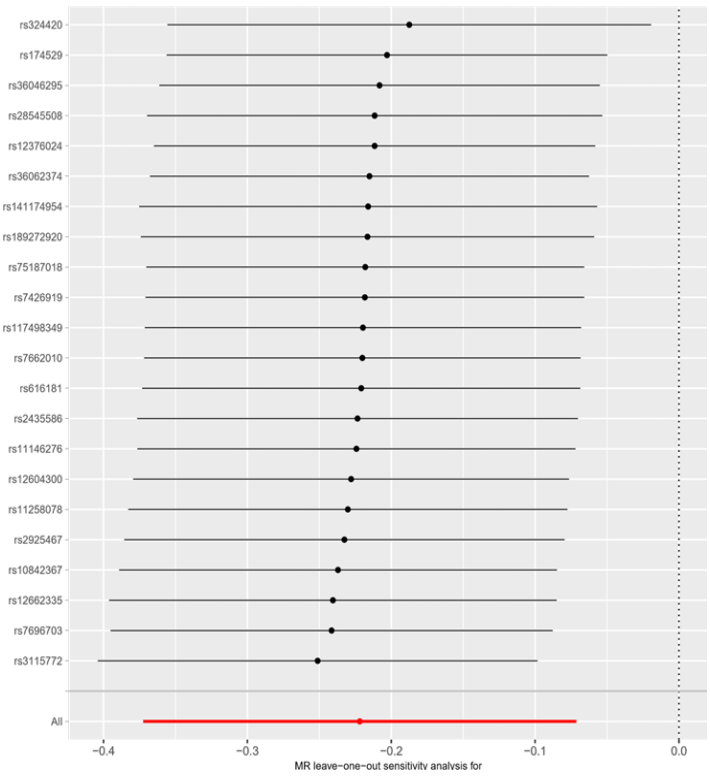
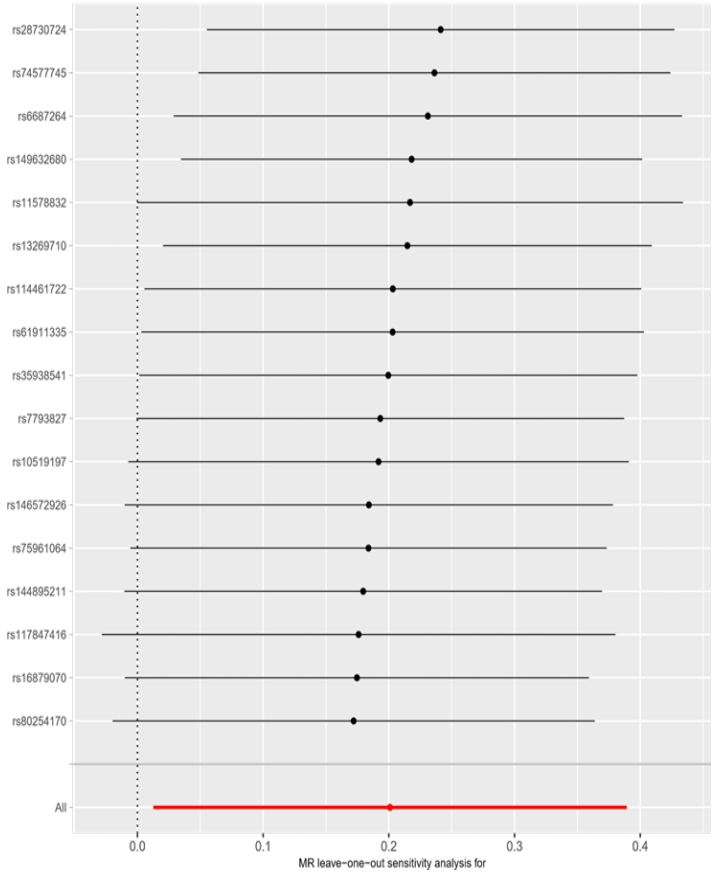


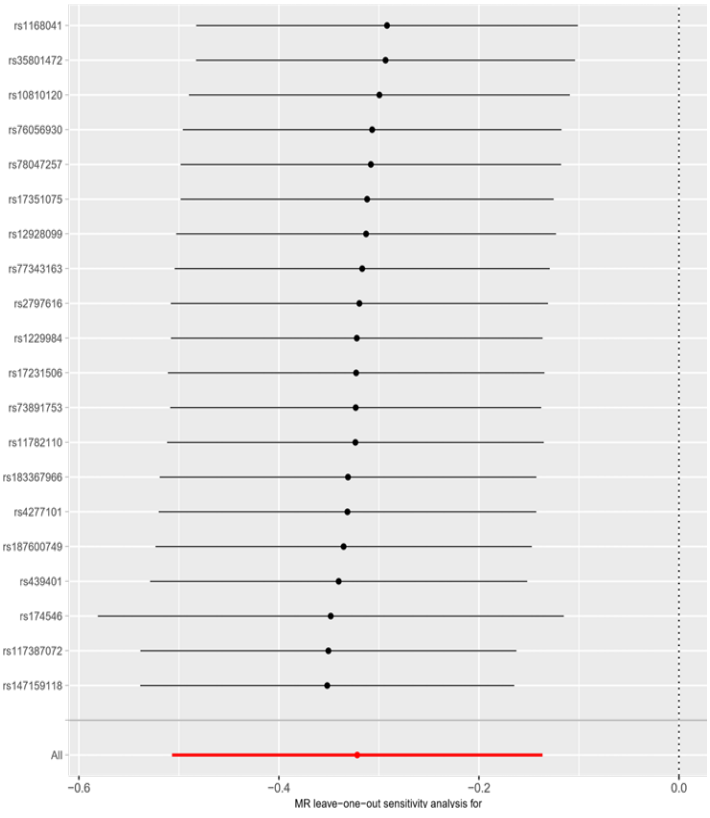
Leave-one-out sensitivity analysis for Dopamine 4-sulfate levels on CD



Leave-one-out sensitivity analysis for Linoleoyl ethanolamide levels on CD



Leave-one-out sensitivity analysis for Adipoylcarnitine (C6-DC) levels on CD



Leave-one-out sensitivity analysis for 1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels on CD

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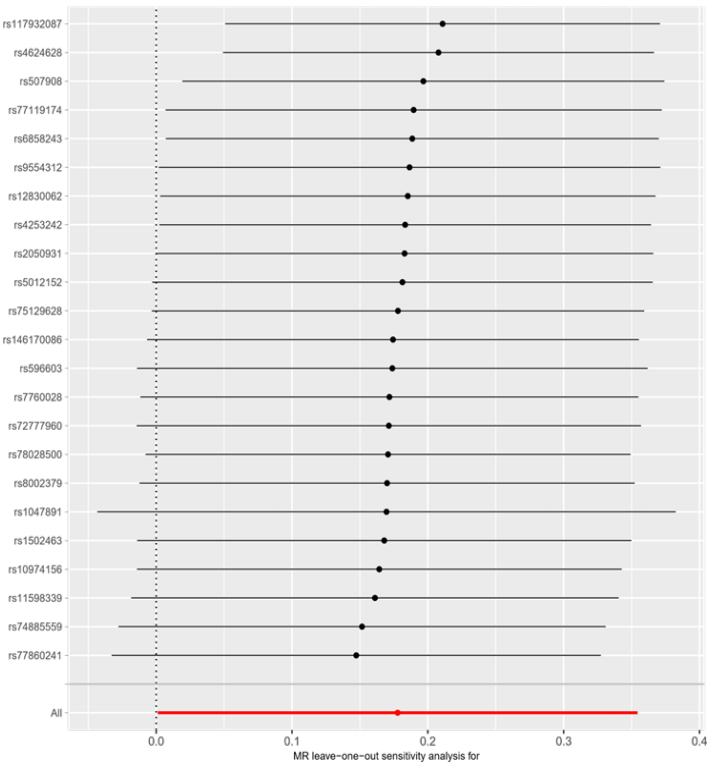
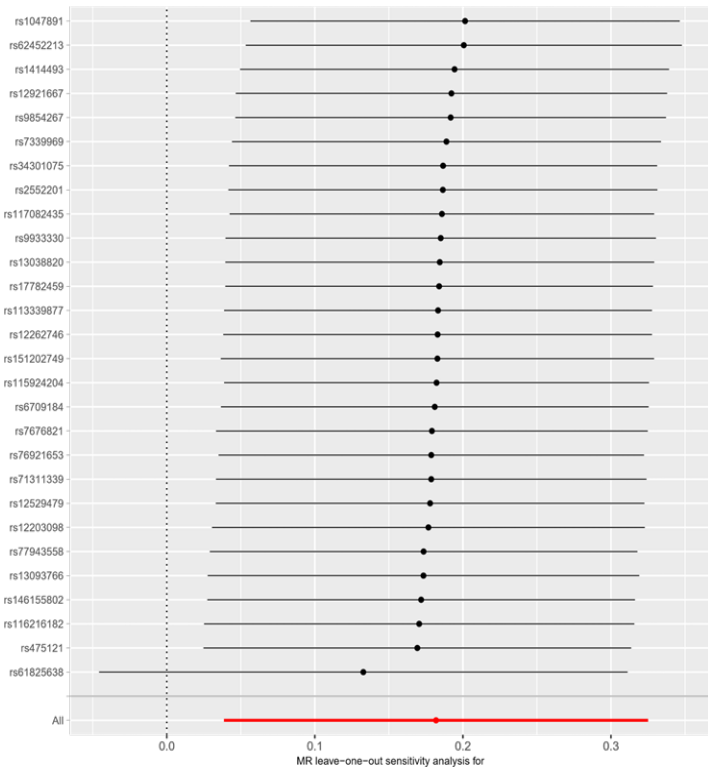
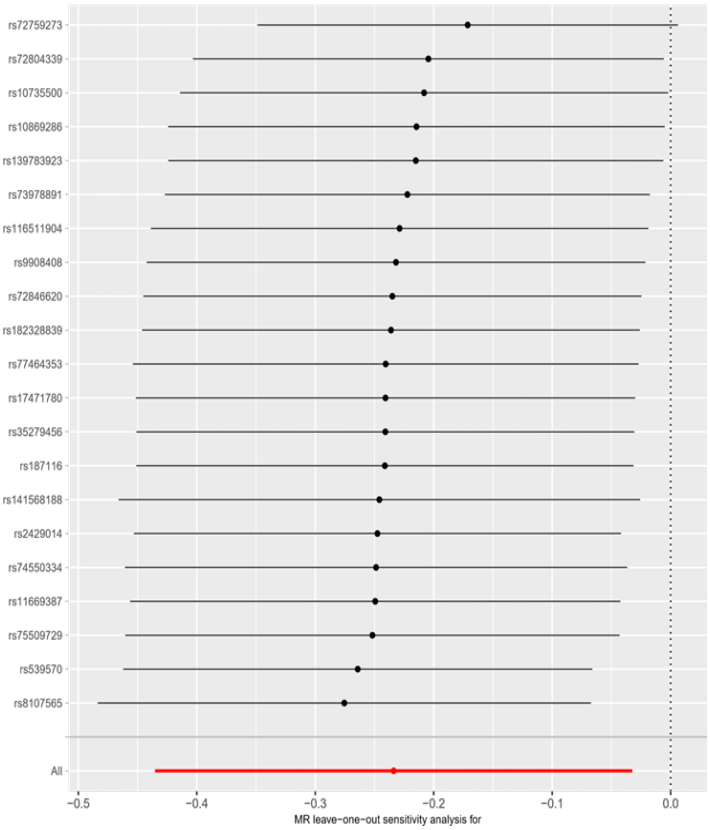


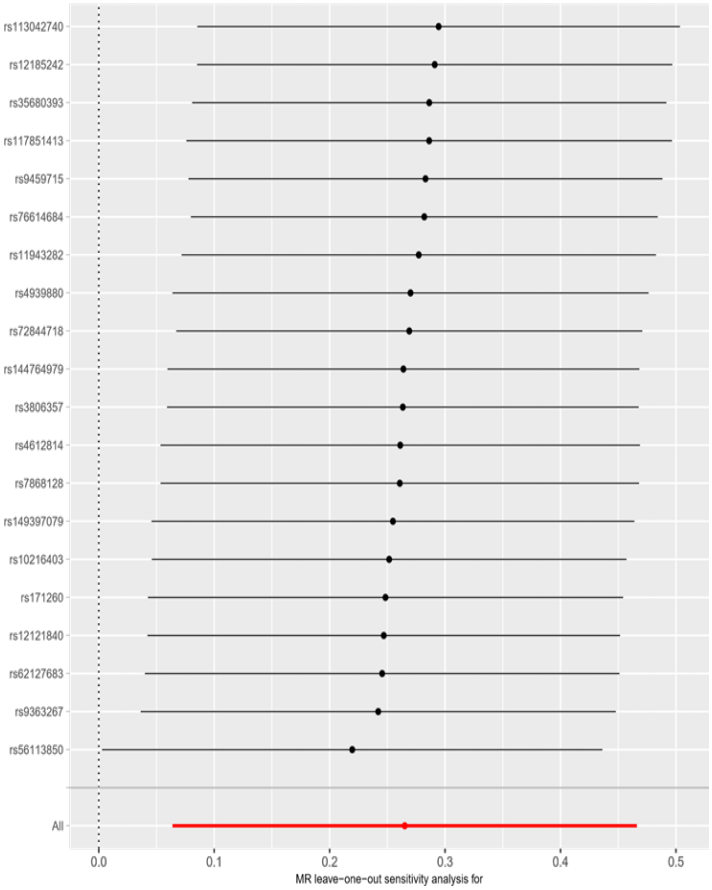
Leave-one-out sensitivity analysis for Trans-2-hexenoylglycine levels on CD



Leave-one-out sensitivity analysis for Kynurenate levels on CD



Leave-one-out sensitivity analysis for N-lactoyl tyrosine levels on CD



Leave-one-out sensitivity analysis for X-12216 levels on CD

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Supplementary File 5:

Egger intercept analysis of metabolites on CD				
id	**reportedTrait**	**egger_intercept**	**se**	**pval**
GCST90199621	Carnitine levels	-0.014213962	0.019556809	0.475767874
GCST90199633	Suberate (C8-DC) levels	-0.010348796	0.028390021	0.719112967
GCST90199661	Maleate levels	-0.02154786	0.035114251	0.547570666
GCST90199662	Isovalerate (i5:0) levels	-0.01338286	0.036203526	0.716805349
GCST90199672	Oxalate (ethanedioate) levels	-0.026137331	0.025733413	0.324012589
GCST90199681	2-hydroxyoctanoate levels	0.009323664	0.021965572	0.676548369
GCST90199787	Homostachydrine levels	0.013410531	0.025640616	0.606436108
GCST90199788	1-arachidonoyl-gpc (20:4n6) levels	-0.000284256	0.014828342	0.984895623
GCST90199795	2-hydroxypalmitate levels	0.000885955	0.039264943	0.982341116
GCST90199894	4-oxo-retinoic acid levels	0.03323809	0.033001328	0.337599593
GCST90199912	N-oleoyltaurine levels	0.039181984	0.033986465	0.26700528
GCST90199915	Imidazole propionate levels	-0.017871682	0.026927076	0.515289743
GCST90200002	6-hydroxyindole sulfate levels	0.047662213	0.041999791	0.282919543
GCST90200004	N-carbamoylalanine levels	-0.006344983	0.022280544	0.779065645
GCST90200009	3-methoxycatechol sulfate (1) levels	0.007898716	0.018562844	0.675244171
GCST90200016	Dopamine 4-sulfate levels	0.0361277	0.02007438	0.092052703
GCST90200018	Adipoylcarnitine (C6-DC) levels	0.014021472	0.035290687	0.696732477
GCST90200029	Linoleoyl ethanolamide levels	-0.000588427	0.020894825	0.977812542
GCST90200037	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	-0.02012502	0.025141659	0.433879974
GCST90200120	Sphingadienine levels	-0.018408867	0.03837814	0.640856939
GCST90200130	Linoleoylcholine levels	0.005801496	0.034758353	0.869670576
GCST90200160	Trans-2-hexenoylglycine levels	-0.003040144	0.028918953	0.917273222
GCST90200163	Heptenedioate (C7:1-DC) levels	-0.006619838	0.05059783	0.898075618
GCST90200191	N-lactoyl tyrosine levels	-0.007690325	0.029682151	0.798352691
GCST90200223	4-methylhexanoylglutamine levels	0.003921083	0.032243988	0.904557865
GCST90200257	Metabolonic lactone sulfate levels	0.008782864	0.015233316	0.569607773
GCST90200281	Phosphoethanolamine levels	-0.009360246	0.019639881	0.639719759
GCST90200294	Pipecolate levels	0.000415242	0.012138994	0.973020348
GCST90200299	Oleoyl ethanolamide levels	0.006404131	0.020476426	0.757167364
GCST90200345	S-adenosylhomocysteine (SAH) levels	-0.022442131	0.020032057	0.275230754
GCST90200360	Cortisone levels	0.014673066	0.032309478	0.65721666
GCST90200365	Phenylpyruvate levels	-0.010969219	0.029951935	0.71804091
GCST90200366	Creatinine levels	-0.008031488	0.019740407	0.688231262
GCST90200407	Uridine levels	-0.025478671	0.036509865	0.49975227
GCST90200425	Betaine levels	0.018936017	0.027427438	0.498746579
GCST90200454	Kynurenate levels	-0.0270699	0.020499655	0.198173149
GCST90200468	X-11847 levels	-0.003565303	0.032610563	0.914610616
GCST90200483	X-12216 levels	-0.013209365	0.032923441	0.692985101
GCST90200527	X-13866 levels	-0.016846453	0.030058181	0.582476401
GCST90200546	X-17354 levels	-0.007678708	0.038276134	0.844360726
GCST90200552	X-18887 levels	-0.009640903	0.039894891	0.813491292
GCST90200556	X-18345 levels	-0.034576437	0.019817361	0.09331093
GCST90200597	X-22834 levels	0.011403441	0.031754872	0.72451886

GCST90200620	X-24243 levels	0.043392846	0.029961364	0.164730844
GCST90200639	X-24757 levels	-0.011028952	0.035200999	0.759012607
GCST90200644	X-24728 levels	0.001240332	0.023077991	0.957533845
GCST90200669	X-25519 levels	0.000878579	0.030619248	0.977487171
GCST90200670	X-26111 levels	-0.025606921	0.023232298	0.287740836
GCST90200737	Adenosine 5'-diphosphate (ADP) to 2'-deoxyuridine ratio	-0.0146768	0.028667157	0.61489431
GCST90200752	Succinate to acetoacetate ratio	0.012714671	0.034222527	0.717300367
GCST90200775	Serine to pyruvate ratio	0.012606672	0.044021326	0.779473893
GCST90200794	Oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] to linoleoyl-arachido noyl-glycerol (18:2 to 20:4) [1] ratio	0.003267106	0.017918832	0.857256577
GCST90200801	5-methylthioadenosine (MTA) to phosphate ratio	-0.023620257	0.027694805	0.40382628
GCST90200849	Adenosine 5'-monophosphate (AMP) to threonine ratio	-0.006200692	0.020728078	0.76777017
GCST90200909	Uridine to 2'-deoxyuridine ratio	-0.01381848	0.028316585	0.630606539
GCST90200913	Glucose to sucrose ratio	0.021021711	0.01630401	0.216801607
GCST90200945	Adenosine 5'-monophosphate (AMP) to EDTA ratio	-0.044532807	0.035380223	0.239810098
GCST90200987	Benzoate to oleoyl-linoleoyl-glycerol (18:1 to 18:2) [2] ratio	0.024605564	0.035569012	0.496659766
GCST90200997	Histidine to glutamine ratio	0.004039134	0.026137729	0.878481919
GCST90201008	Threonine to alpha-ketobutyrate ratio	0.016569275	0.037326788	0.662406683

Egger intercept analysis of CD on metabolites

id	reportedTrait	egger_intercept	se	pval
GCST90200644	X-24728 levels	0.005580862	0.007994979	0.490708259

Egger intercept analysis of metabolites on UC

id	reportedTrait	egger_intercept	se	pval
GCST90199646	Gentisate levels	-0.01419672	0.012343826	0.26098306
GCST90199672	Oxalate (ethanedioate) levels	-0.007840029	0.013302704	0.562947298
GCST90199676	1-oleoylglycerol (18:1) levels	0.009156848	0.015600567	0.562951002
GCST90199726	N-acetylthreonine levels	-0.006240861	0.014637231	0.674894454
GCST90199739	Salicyluric glucuronide levels	0.019791161	0.017261462	0.27223278
GCST90199744	Eicosenoate (20:1) levels	0.010433825	0.022758073	0.653653102
GCST90199785	Isovalerylglycine levels	0.011206053	0.012610884	0.385329111
GCST90199788	1-arachidonoyl-gpc (20:4n6) levels	-0.015024684	0.008898707	0.106864647
GCST90199791	1-arachidonoyl-GPE (20:4n6) levels	-0.008273691	0.010926074	0.455462515
GCST90199829	3-methyladipate levels	-0.009127077	0.019208405	0.642000368
GCST90199843	Chiro-inositol levels	-0.002942817	0.02416633	0.905490749
GCST90199849	21-hydroxypregnenolone disulfate levels	0.005339465	0.011981434	0.659280603
GCST90199894	4-oxo-retinoic acid levels	0.01805366	0.018899925	0.361985511
GCST90199907	S-methylcysteine sulfoxide levels	-0.016864611	0.013479081	0.227817781
GCST90199942	Dimethyl sulfone levels	0.01461328	0.015507468	0.358496201
GCST90199957	3-(3-hydroxyphenyl)propionate sulfate levels	-0.038119748	0.019035991	0.063648502
GCST90199964	Etiocholanolone glucuronide levels	0.008977751	0.010932861	0.422915624
GCST90199988	Tyramine O-sulfate levels	-0.017008787	0.015268696	0.280796917
GCST90200007	3-methoxycatechol sulfate (2) levels	0.017622431	0.014301181	0.236827609
GCST90200031	Nonanoylcarnitine (C9) levels	-0.021927329	0.011511402	0.072906841
GCST90200037	1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels	0.024014929	0.015765781	0.14507658
GCST90200039	1-stearoyl-2-linoleoyl-GPE (18:0/18:2) levels	0.010443322	0.01396951	0.462630279
GCST90200046	1-stearoyl-2-docosahexaenoyl-gpc (18:0/22:6) levels	-0.014416595	0.013033413	0.280108001

GCST90200048	1-(1-enyl-palmitoyl)-2-arachidonoyl-GPE (p-16:0/20:4) levels	0.006216876	0.019436104	0.753211615
GCST90200058	1-(1-enyl-stearoyl)-2-arachidonoyl-GPE (p-18:0/20:4) levels	-0.023578889	0.015163863	0.136460134
GCST90200061	1-(1-enyl-palmitoyl)-2-oleoyl-GPE (p-16:0/18:1) levels	-0.004478508	0.012274817	0.718416289
GCST90200082	1-oleoyl-2-linoleoyl-GPE (18:1/18:2) levels	0.017239324	0.009556384	0.082007152
GCST90200086	Arachidonoylcholine levels	-0.020114156	0.016443945	0.240125535
GCST90200144	Dihomo-linoleoylcarnitine (C20:2) levels	0.015303512	0.015471978	0.332476447
GCST90200156	Cortolone glucuronide (1) levels	0.004689405	0.012118701	0.702682214
GCST90200179	Glyco-beta-muricholate levels	0.00830629	0.010005712	0.416251072
GCST90200187	Tetradecadienoate (14:2) levels	-0.038537513	0.019782866	0.08323029
GCST90200253	Vanillic acid glycine levels	-0.006819131	0.008648497	0.440679947
GCST90200283	3-ureidopropionate levels	0.001926663	0.012174445	0.875925993
GCST90200310	3-aminoisobutyrate levels	-0.006510657	0.008084266	0.428211915
GCST90200317	Homovanillate (hva) levels	-0.012001027	0.015275531	0.441767876
GCST90200446	Arachidate (20:0) levels	-0.011020979	0.013573742	0.427437215
GCST90200501	X-12731 levels	0.00596695	0.015470503	0.703424356
GCST90200510	X-12680 levels	-0.014684358	0.024571662	0.562198575
GCST90200540	X-15461 levels	0.004944033	0.011453601	0.670389664
GCST90200560	X-17351 levels	0.022155765	0.022029815	0.336162569
GCST90200568	X-19438 levels	0.008479855	0.012603713	0.508770528
GCST90200635	X-24494 levels	-0.014754083	0.016348027	0.380177986
GCST90200644	X-24728 levels	0.008156311	0.011999799	0.502273082
GCST90200652	X-24949 levels	0.010915882	0.011277909	0.345920825
GCST90200666	X-25343 levels	-0.002416827	0.017828491	0.89386012
GCST90200694	2'-o-methylcytidine levels	0.004167306	0.009133465	0.653972533
GCST90200700	Decadienedioic acid (C10:2-DC) levels	-0.008193341	0.01012407	0.429528703
GCST90200733	Adenosine 5'-diphosphate (ADP) to N-acetylglucosamine to N-acetylga lactosamine ratio	-0.00223171	0.018927946	0.907318588
GCST90200740	Arachidonate (20:4n6) to oleate to vaccenate (18:1) ratio	-0.023120597	0.013886528	0.114239884
GCST90200766	Phosphate to phosphoethanolamine ratio	0.020828049	0.021771751	0.359294599
GCST90200781	Glucose to maltose ratio	0.018760374	0.024528596	0.462036337
GCST90200818	Adenosine 5'-diphosphate (ADP) to glycerate ratio	0.031858326	0.022273727	0.180414031
GCST90200820	Adenosine 5'-diphosphate (ADP) to valine ratio	0.006514193	0.014808694	0.664979982
GCST90200846	Phenylalanine to phosphate ratio	0.012415765	0.012851461	0.346797209
GCST90200855	Phosphate to threonine ratio	-0.017193303	0.011688104	0.153764748
GCST90200887	Cholesterol to cortisol ratio	-0.005423526	0.017760467	0.764280507
GCST90200907	Retinol (Vitamin A) to linoleoyl-arachidonoyl-glycerol (18:2 to 20:4) [1] ratio	0.0014711	0.016052458	0.927940796
GCST90200909	Uridine to 2'-deoxyuridine ratio	0.008698129	0.015071542	0.569992538
GCST90200920	Mannose to glycerol ratio	0.018047558	0.011686379	0.143342439
GCST90200946	Glutamate to alanine ratio	-0.032022675	0.016624136	0.073235915
GCST90200958	Adenosine 5'-diphosphate (ADP) to choline ratio	0.00930112	0.021981217	0.677826218
GCST90200981	Caffeine to linoleate (18:2n6) ratio	-0.025578616	0.015631014	0.127694555

Egger intercept analysis of UC on metabolites

id	reportedTrait	egger_intercept	se	pval
GCST90200187	Tetradecadienoate (14:2) levels	0.002711486	0.005501608	0.623417508

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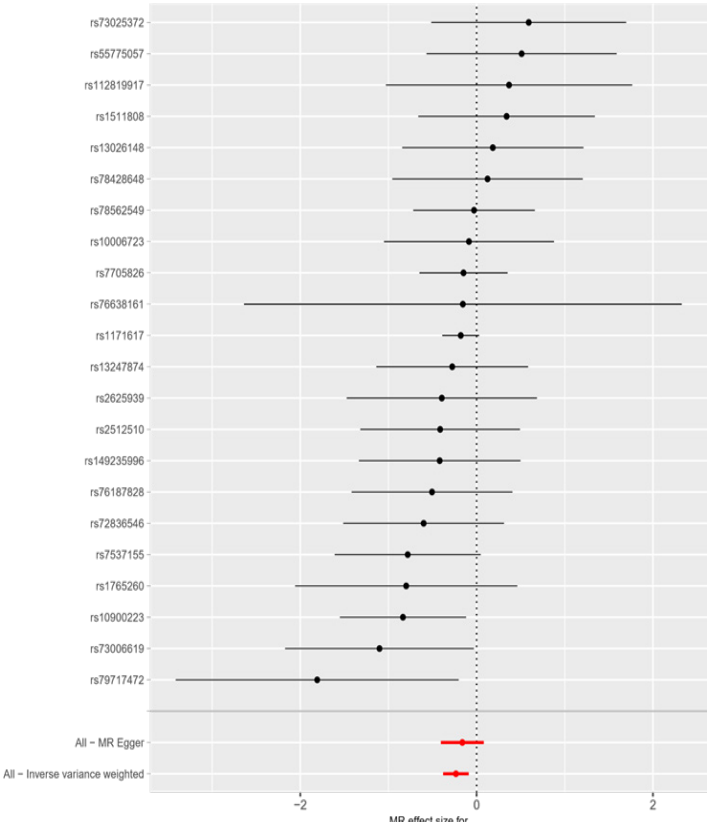
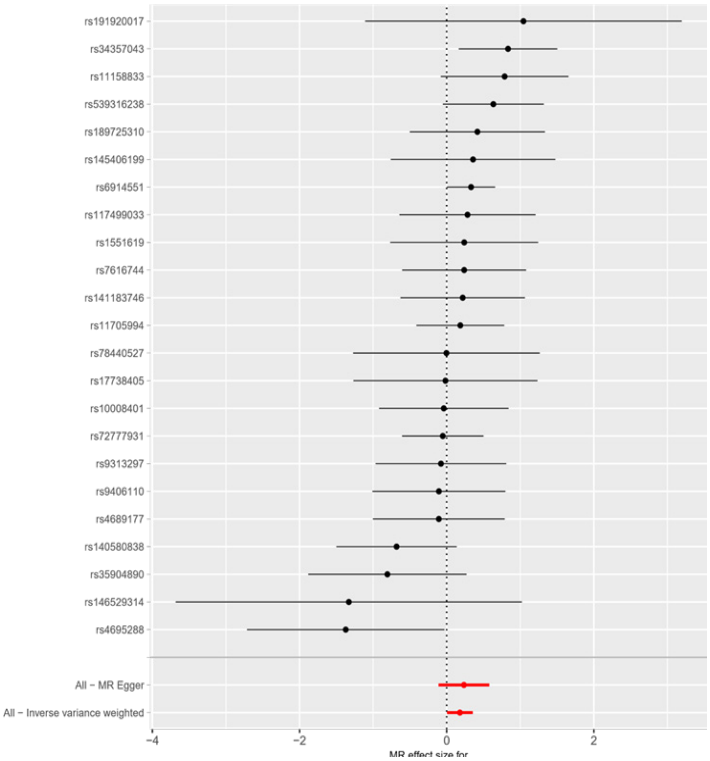
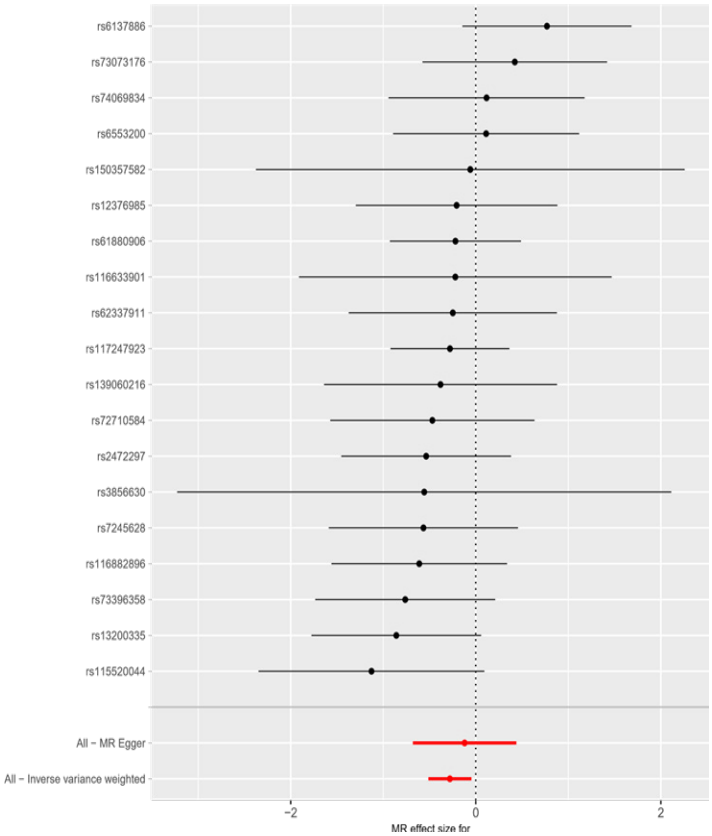
Supplementary File 6:



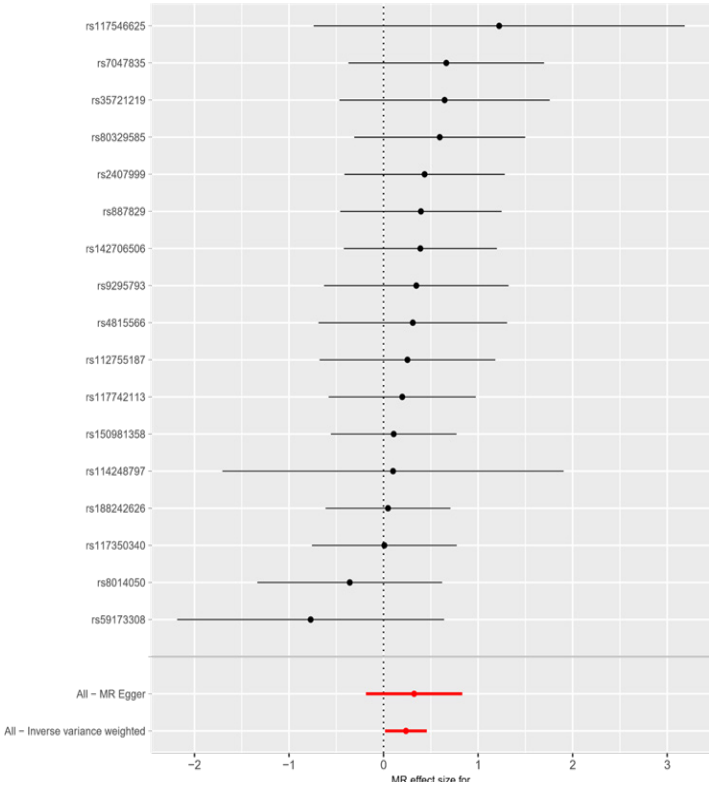
Forest plot for the effect of Carnitine levels on CD



Forest plot for the effect of Suberate (C8-DC) levels on CD



Forest plot for the effect of Maleate levels on CD



Forest plot for the effect of Isovalerate (i5:0) levels on CD

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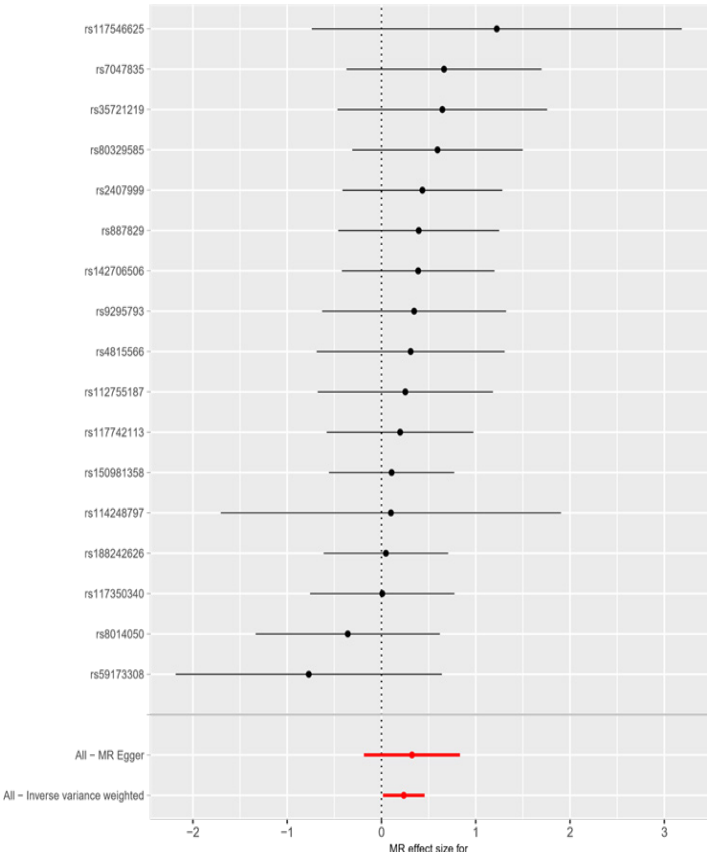
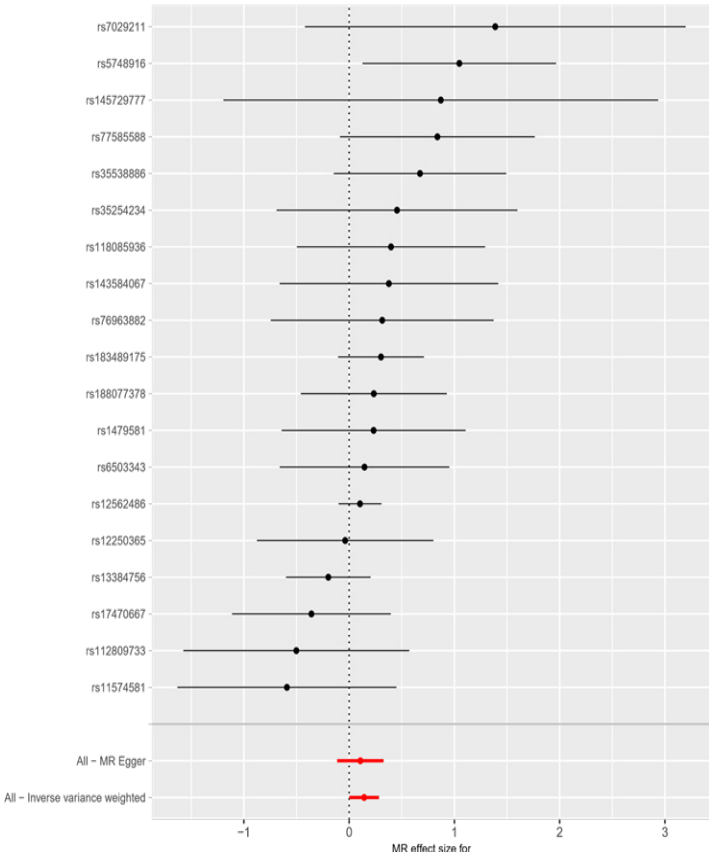
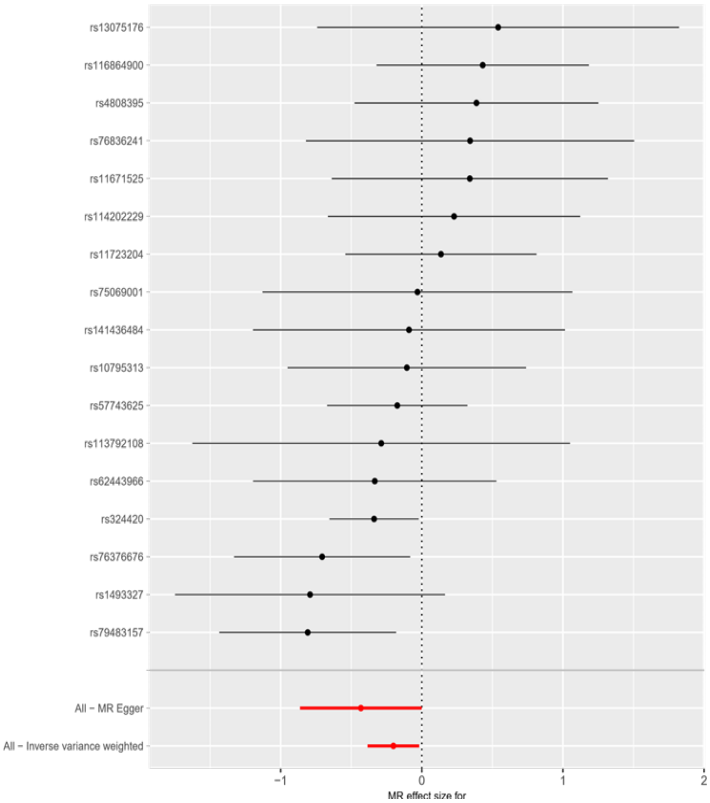


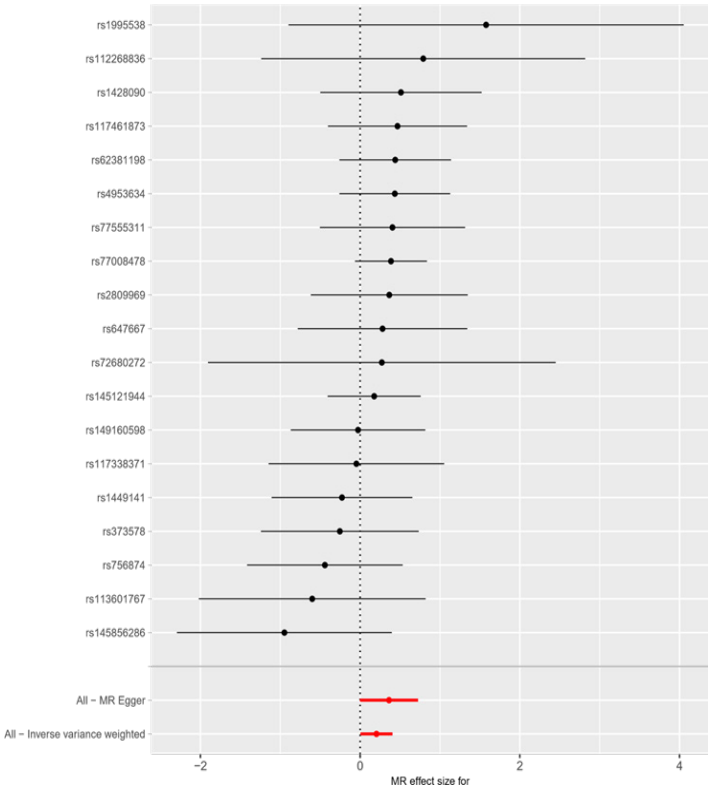
Forest plot for the effect of Oxalate (ethanedioate) levels on CD



Forest plot for the effect of Homostachydrine levels on CD



Forest plot for the effect of N-oleoyltaurine levels on CD



Forest plot for the effect of 2-hydroxyoctanoate levels on CD

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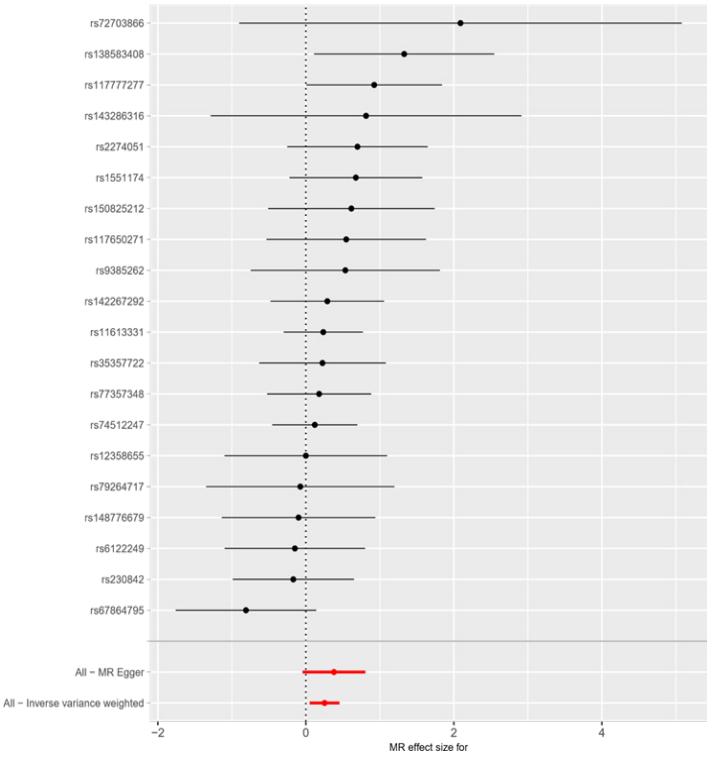
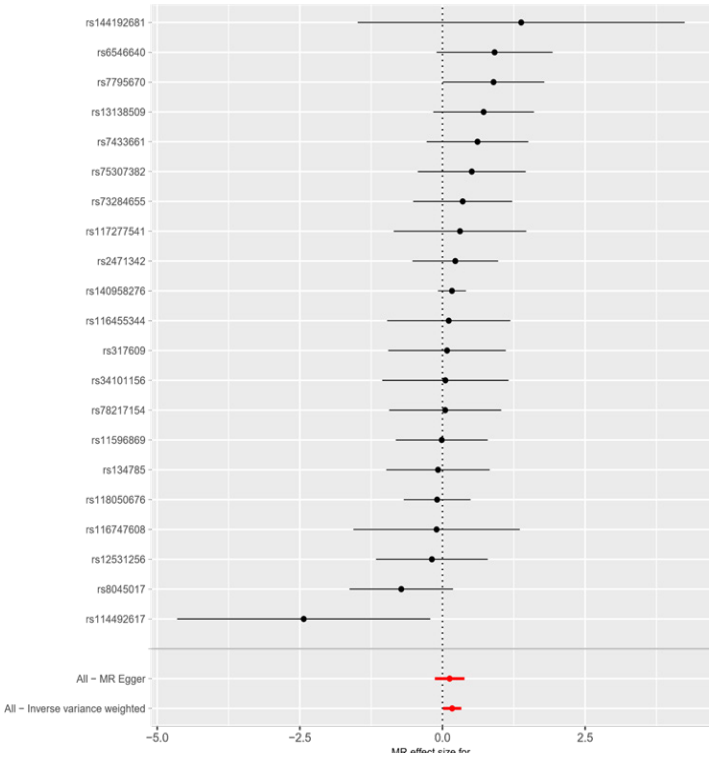
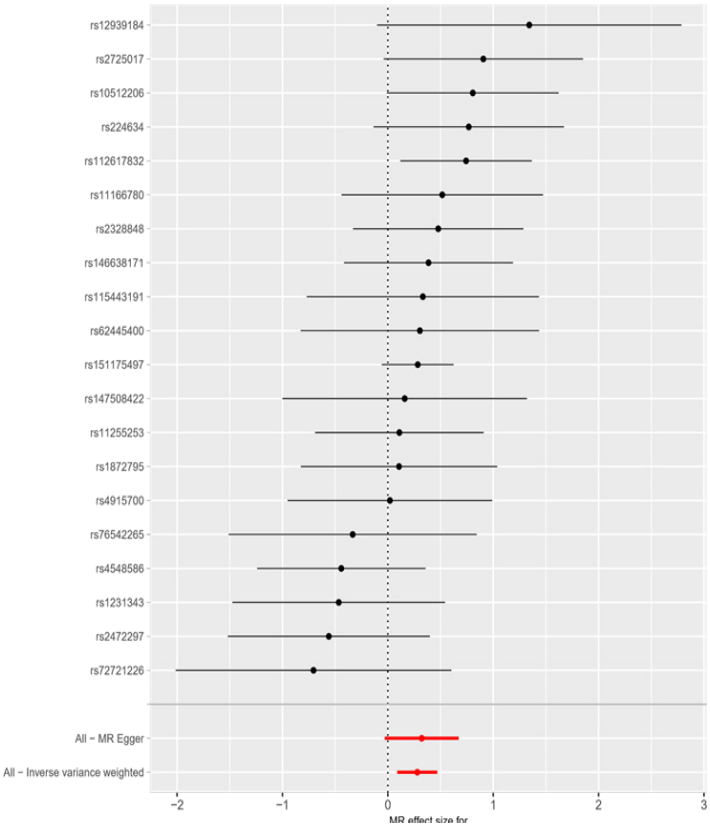


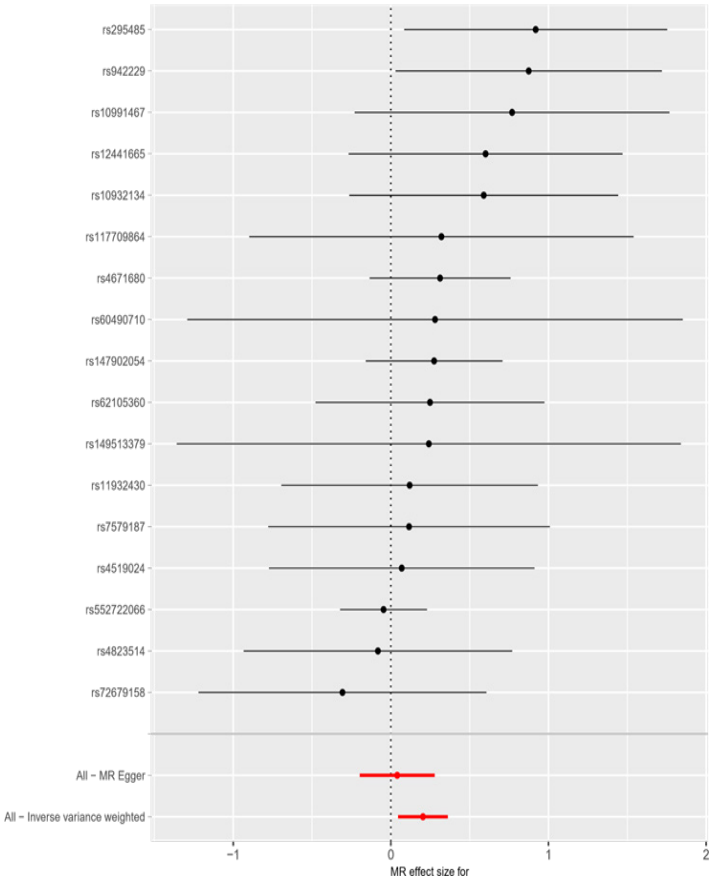
Forest plot for the effect of Imidazole propionate levels on CD



Forest plot for the effect of 3-methoxycatechol sulfate (1) levels on CD



Forest plot for the effect of N-carbamoylalanine levels on CD



Forest plot for the effect of Dopamine 4-sulfate levels on CD

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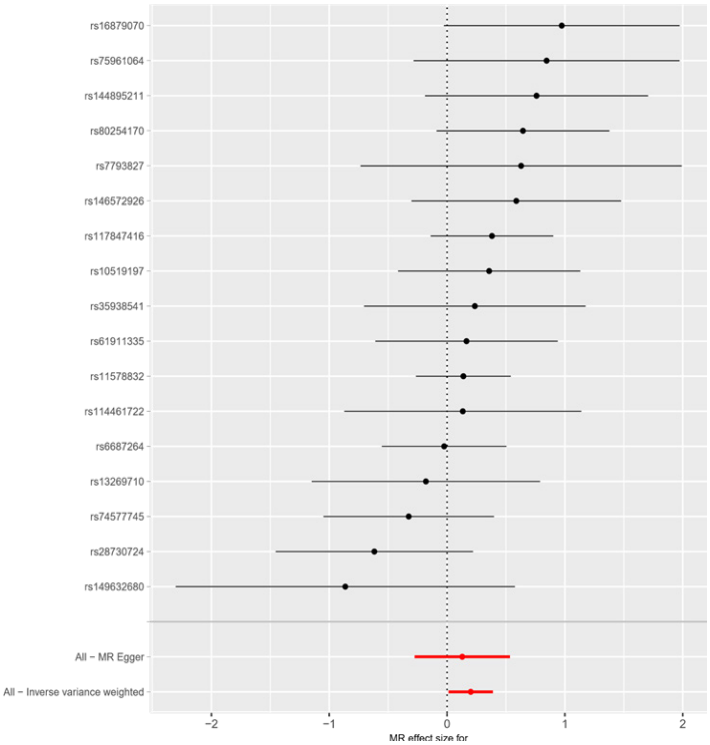
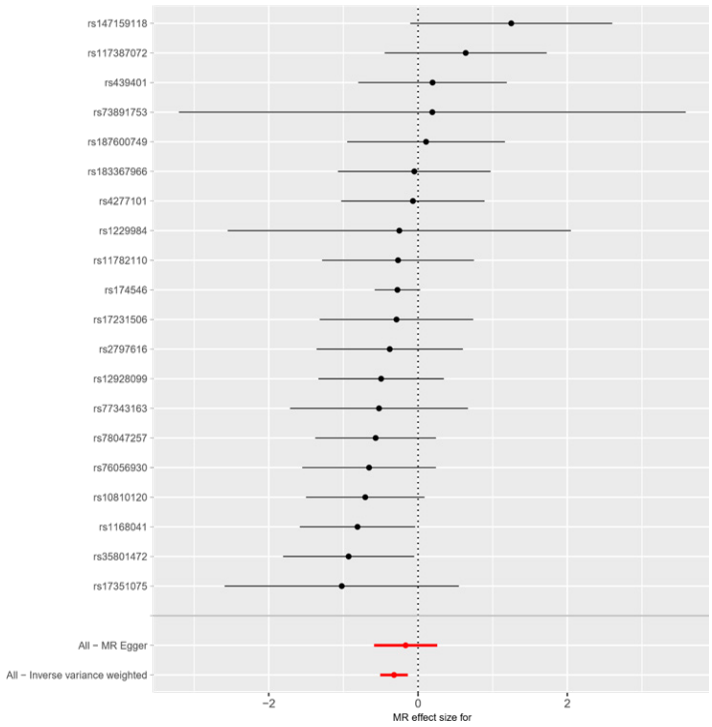
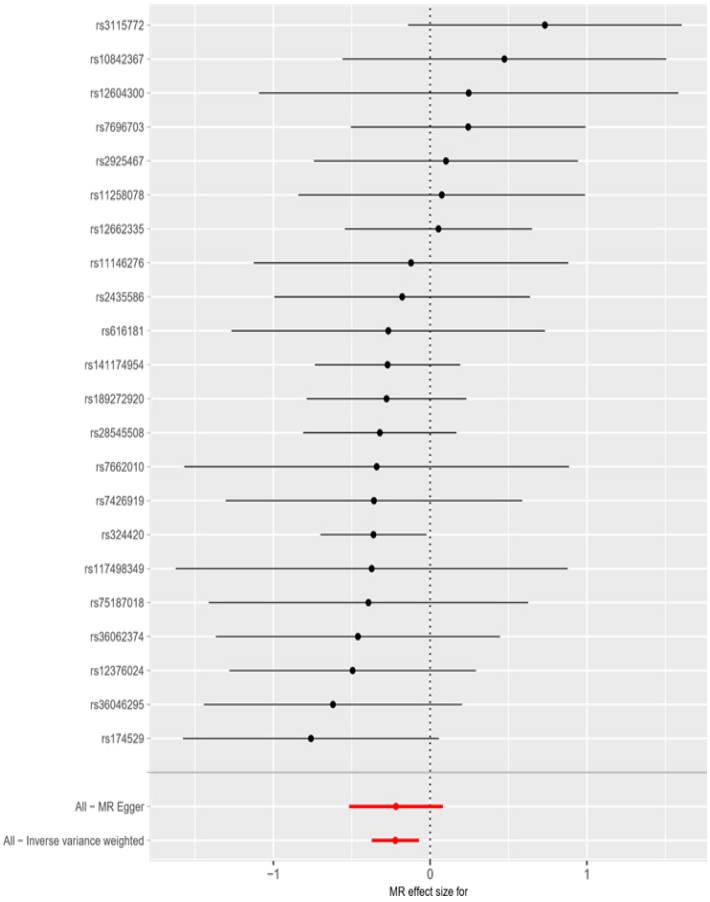


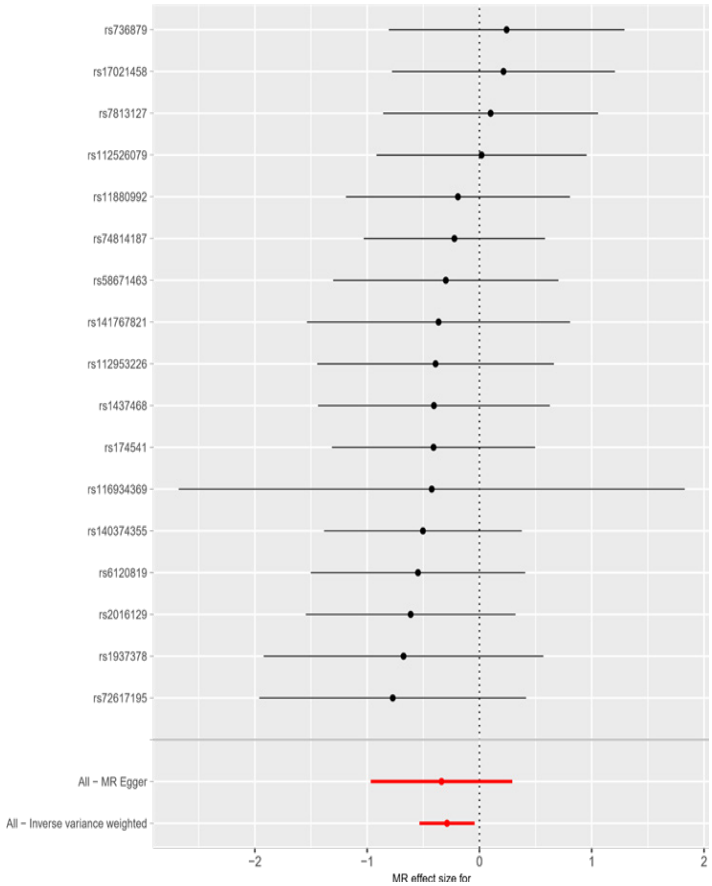
Forest plot for the effect of Adipoylcarnitine (C6-DC) levels on CD



Forest plot for the effect of 1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels on CD



Forest plot for the effect of Linoleoyl ethanolamide levels on CD



Forest plot for the effect of Linoleoylcholine levels on CD

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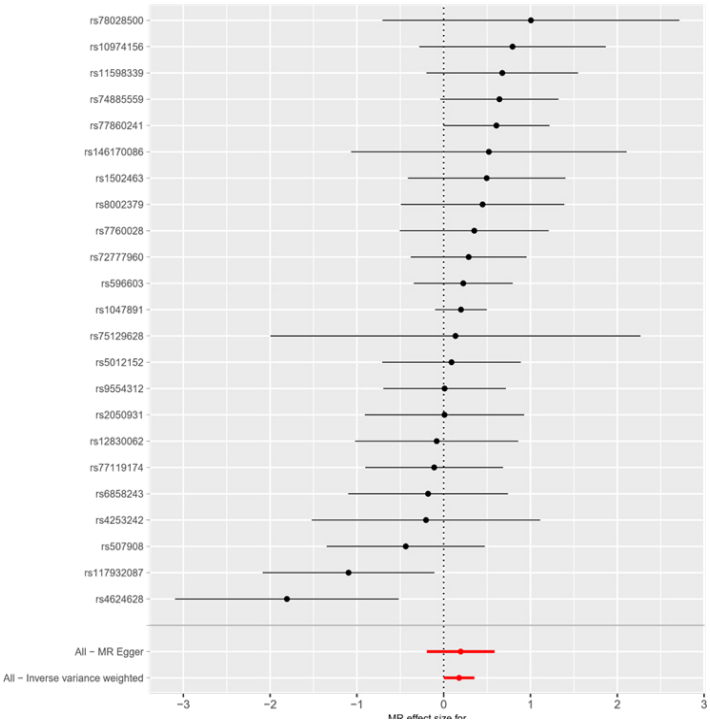
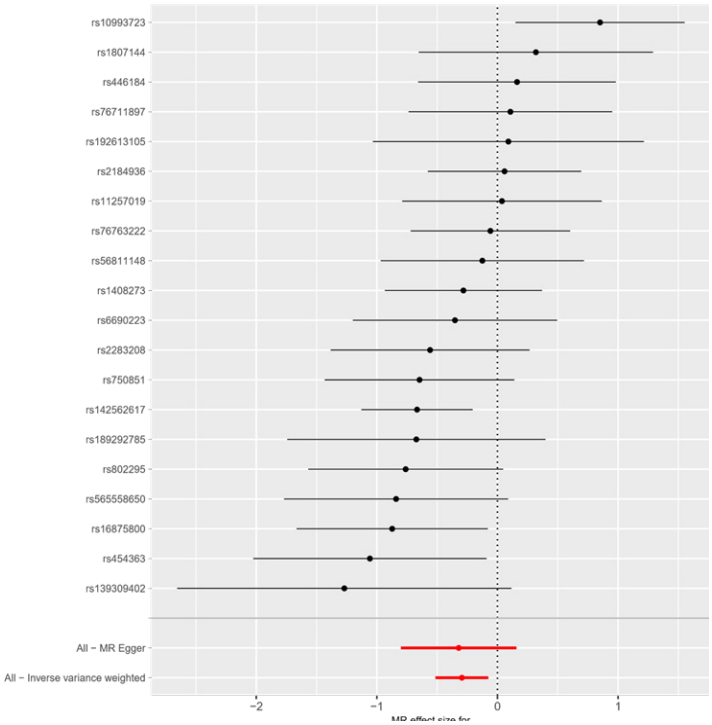
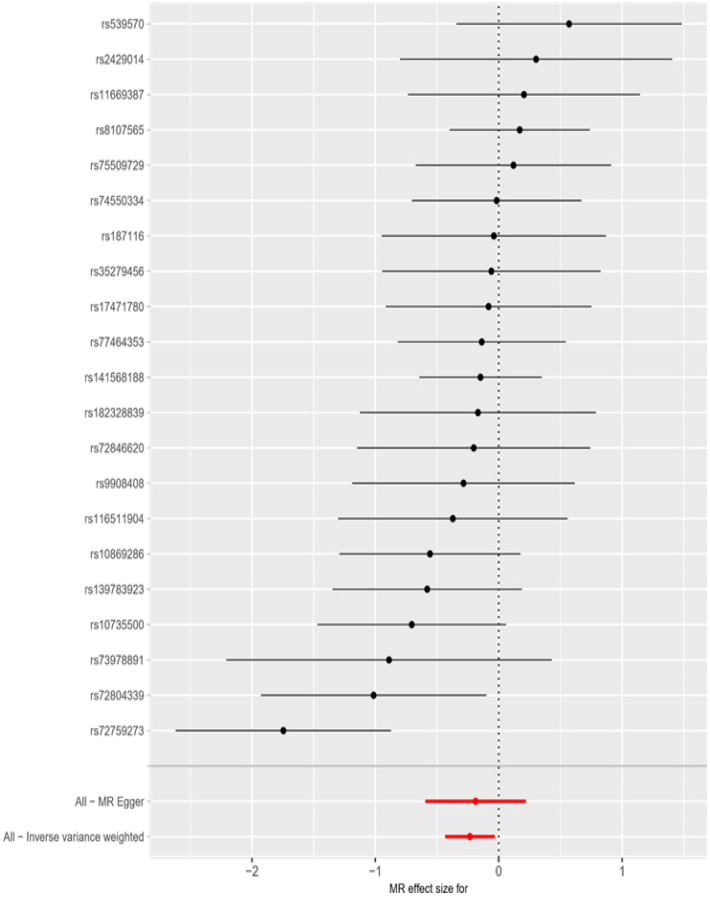


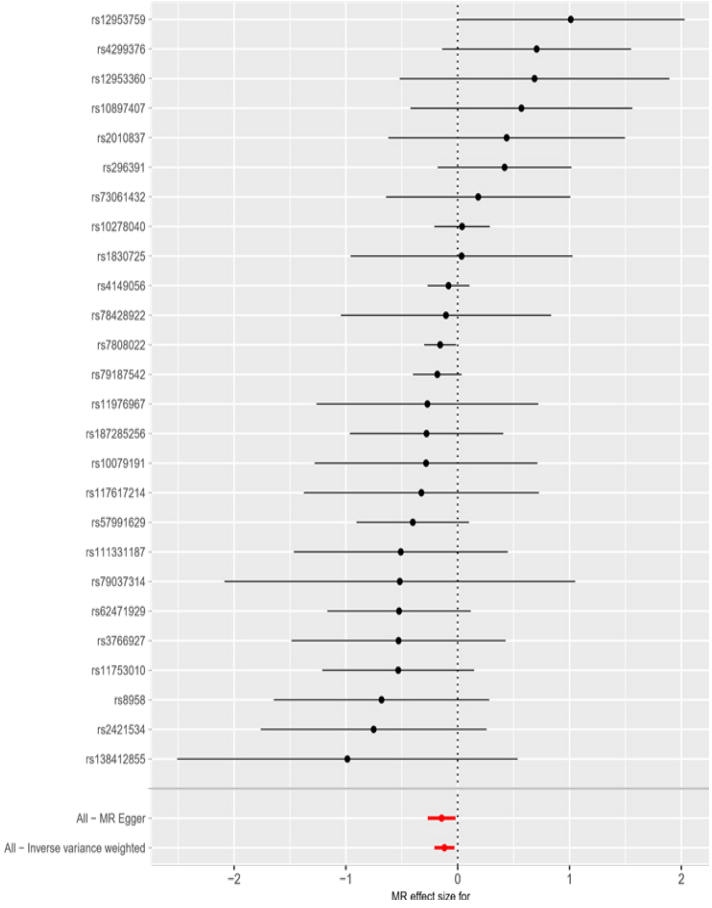
Forest plot for the effect of Trans-2-hexenoylglycine levels on CD



Forest plot for the effect of 4-methylhexanoylglutamine levels on CD



Forest plot for the effect of N-lactoyl tyrosine levels on CD



Forest plot for the effect of Metabolonic lactone sulfate levels on CD

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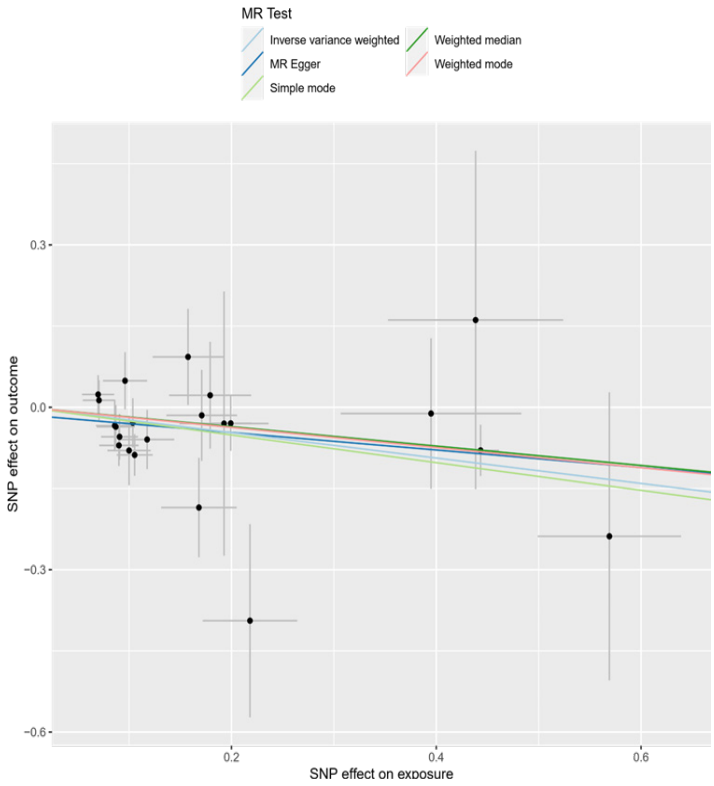
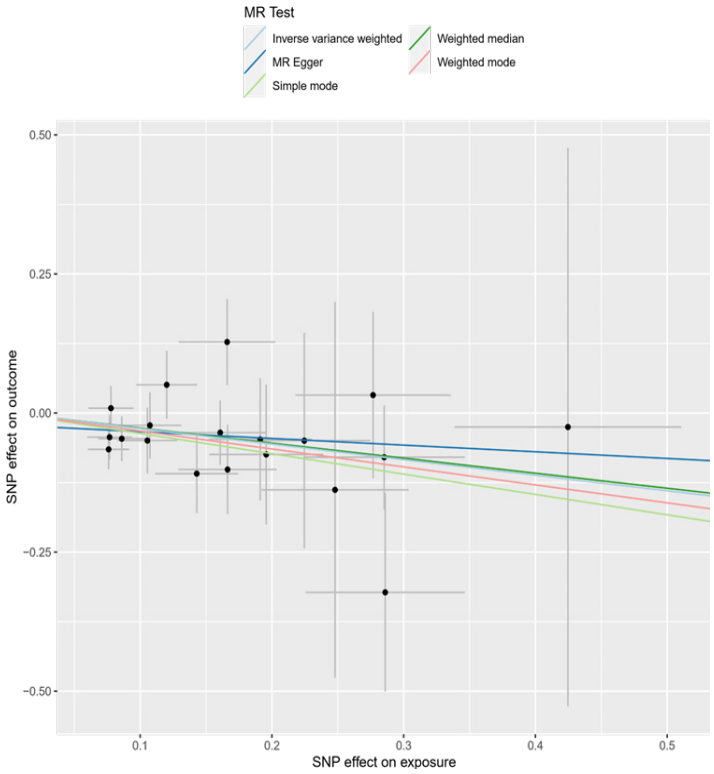
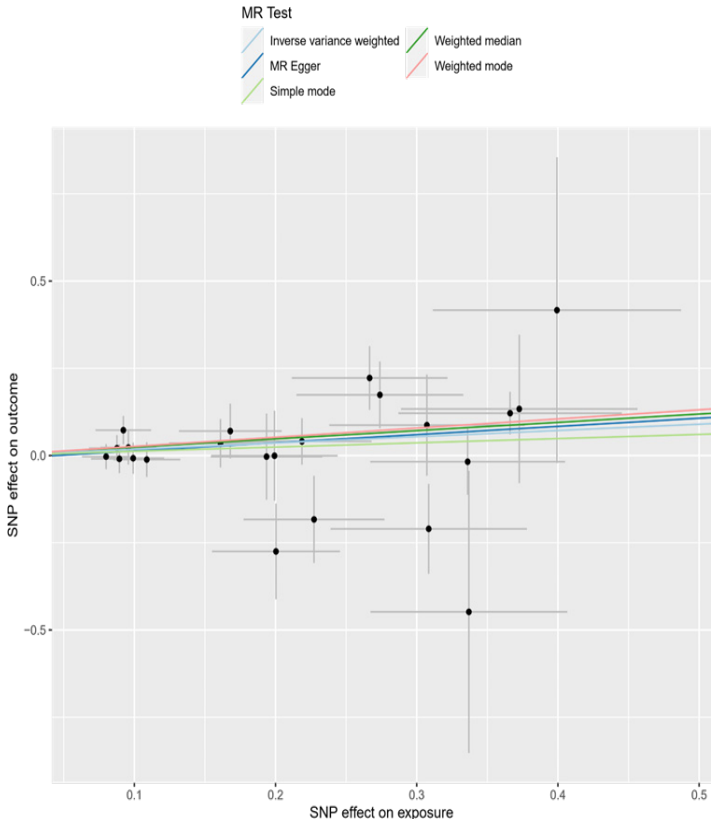
Supplementary File 7:



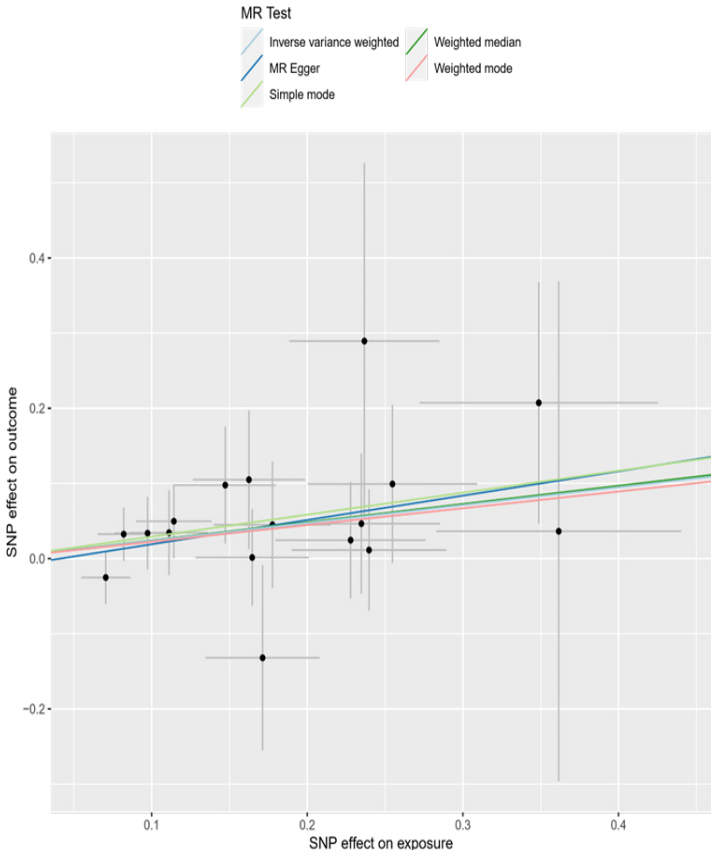
Scatter plot for the effect of Carnitine levels on CD



Scatter plot for the effect of Maleate levels on CD



Scatter plot for the effect of Suberate (C8-DC) levels on CD



Scatter plot for the effect of Isovalerate (i5:0) levels on CD

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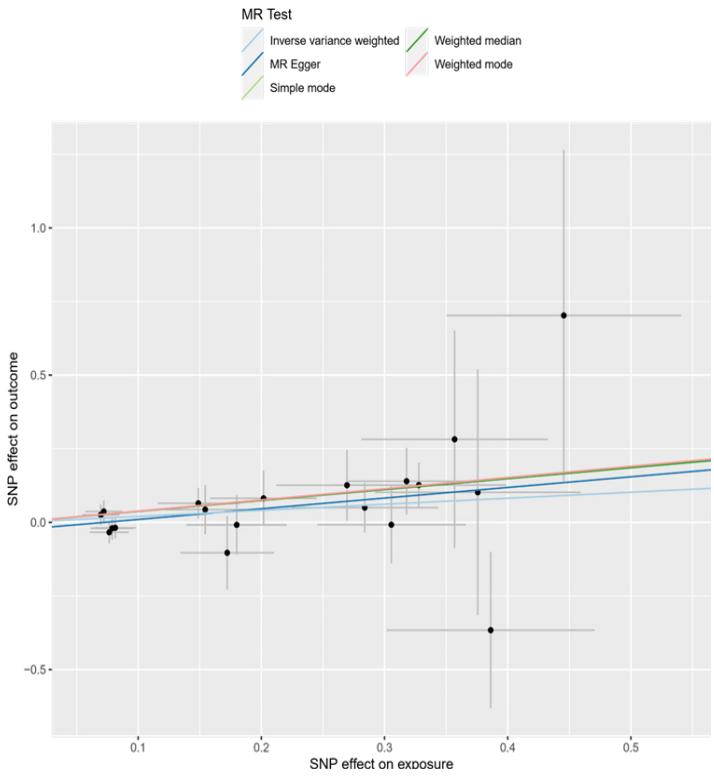
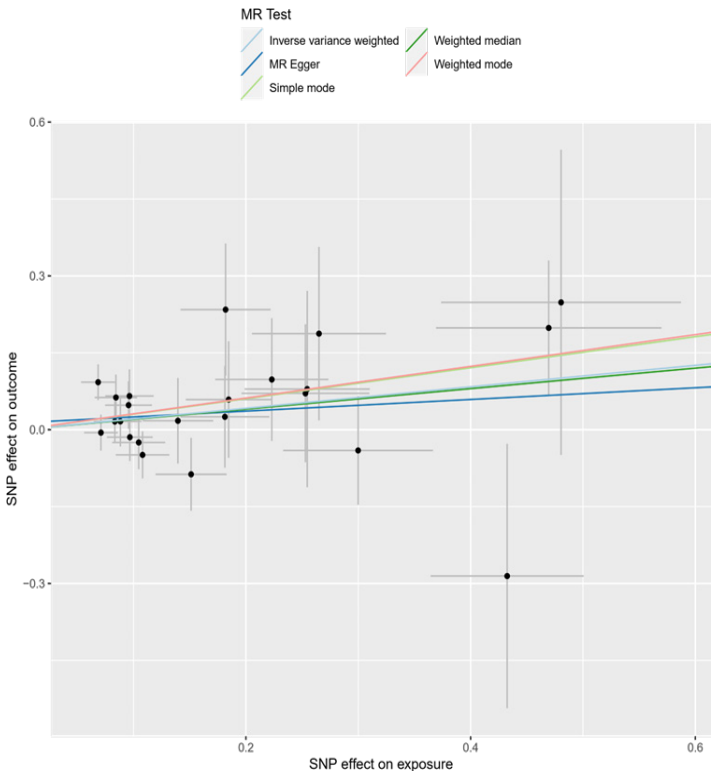
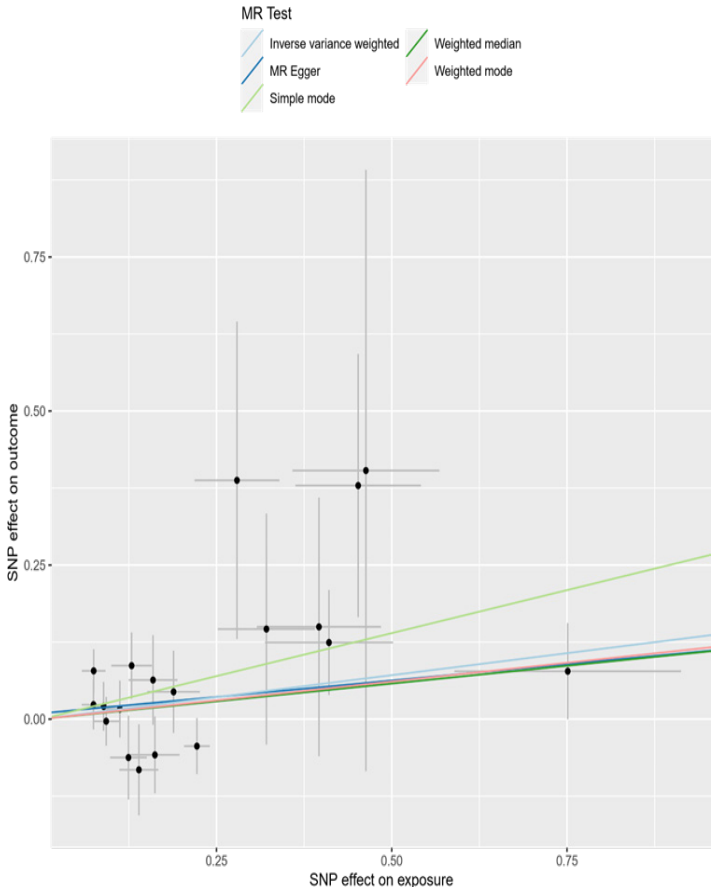


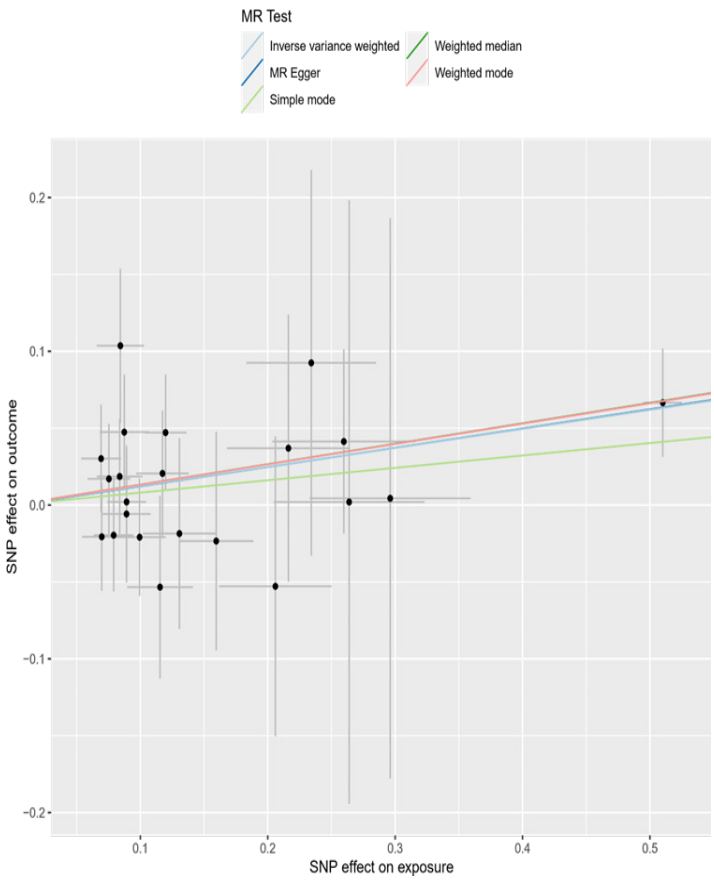
Scatter plot for the effect of Oxalate (ethanedioate) levels on CD



Scatter plot for the effect of Homostachydrine levels on CD



Scatter plot for the effect of 2-hydroxyoctanoate levels on CD



Scatter plot for the effect of 1-arachidonoyl-gpc (20:4n6) levels on CD

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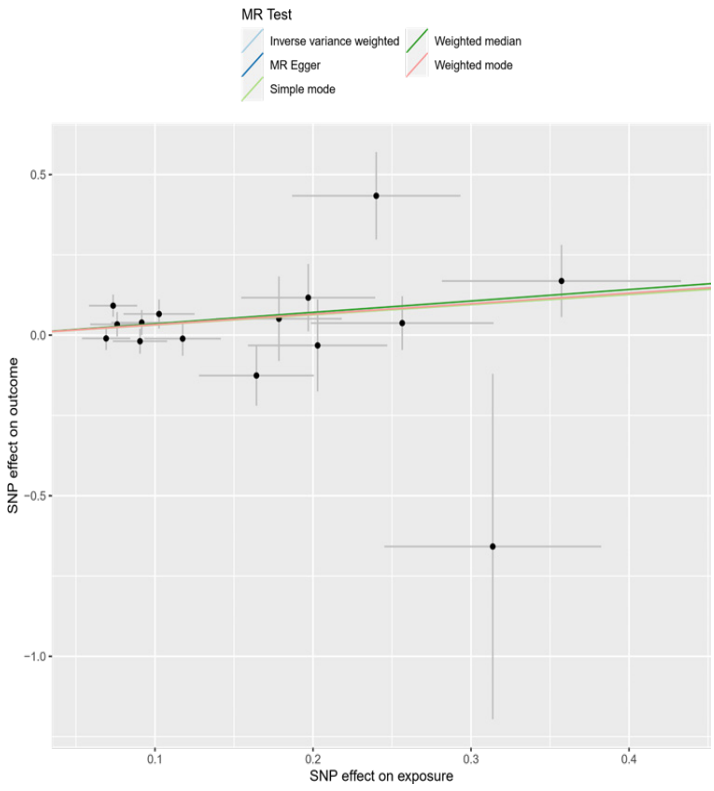
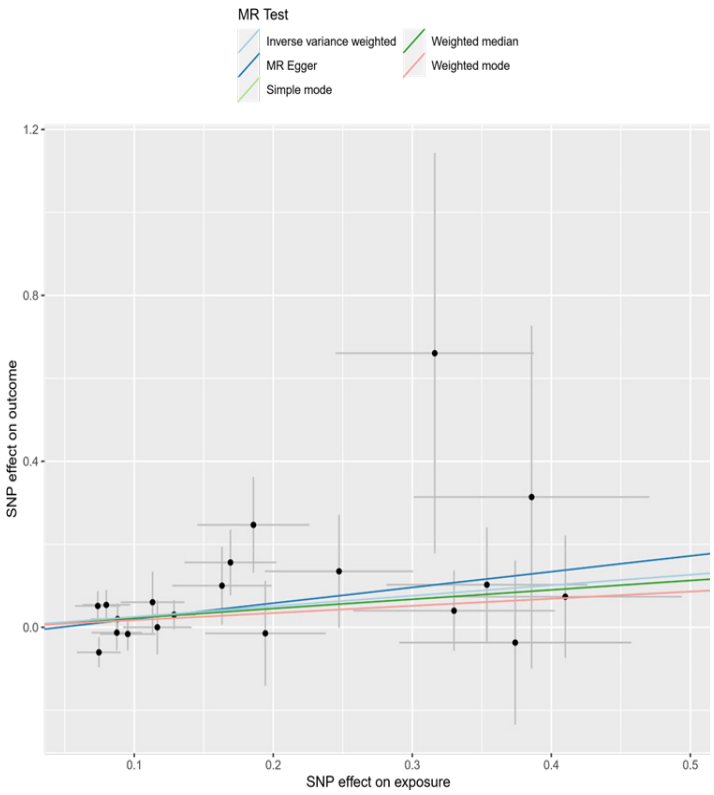
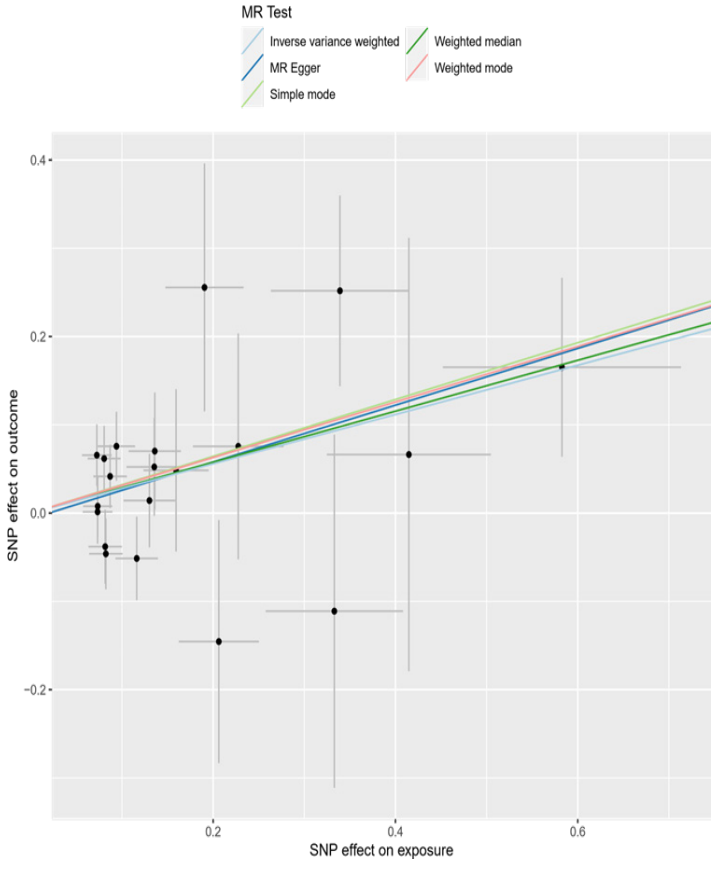


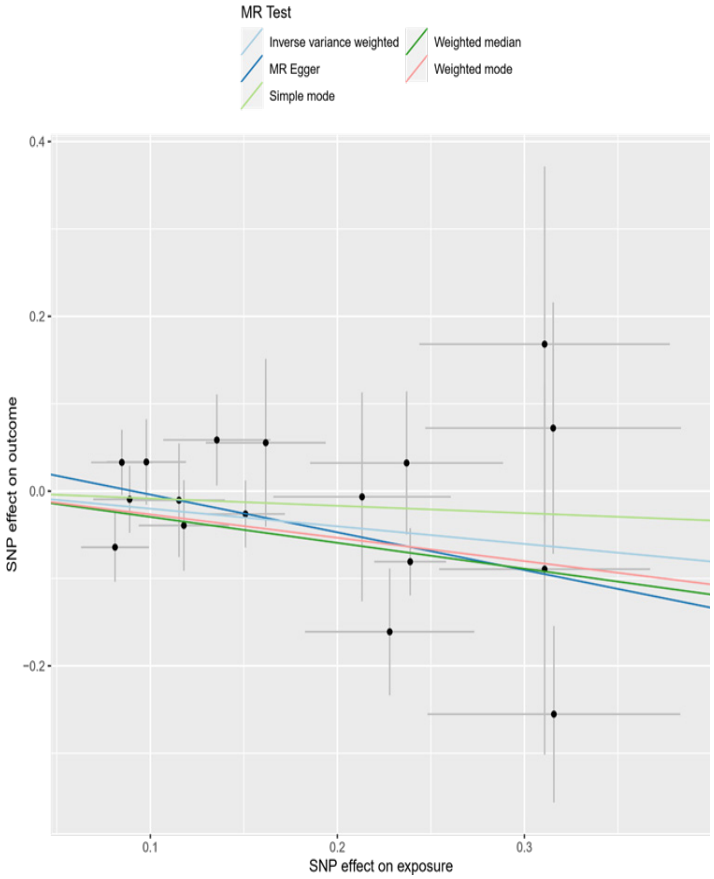
Scatter plot for the effect of 2-hydroxypalmitate levels on CD



Scatter plot for the effect of Imidazole propionate levels on CD



Scatter plot for the effect of N-carbamoylalanine levels on CD



Scatter plot for the effect of N-oleoyltaurine levels on CD

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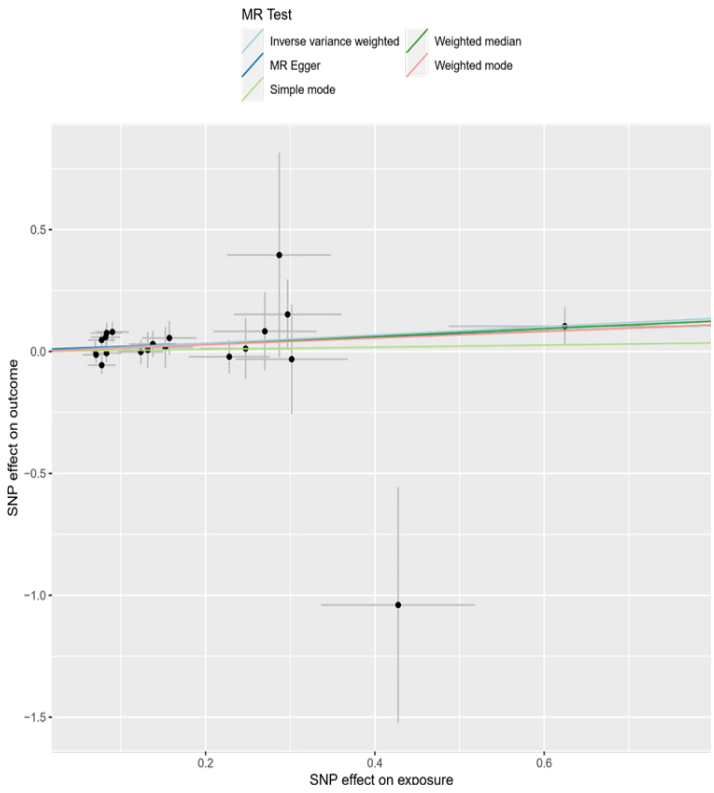
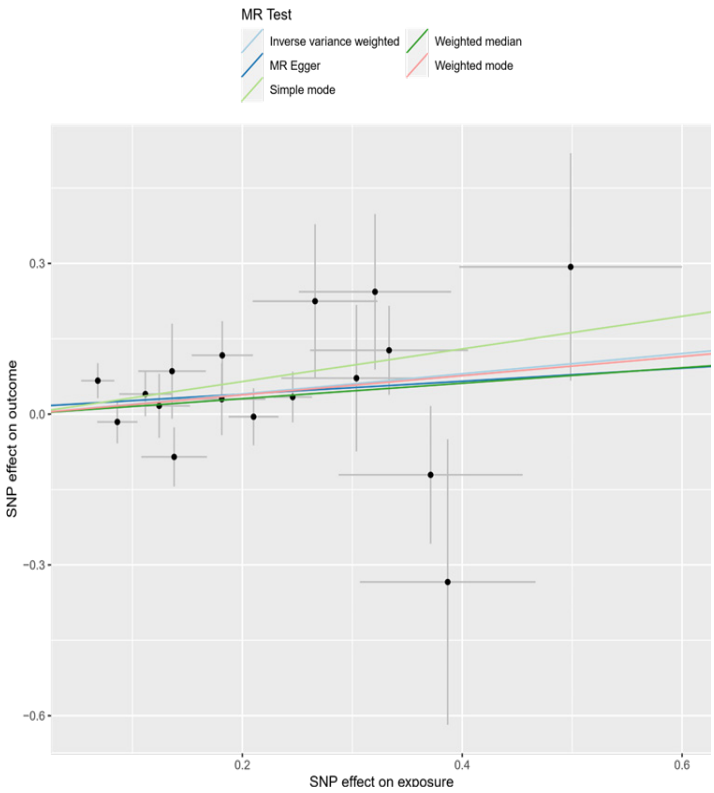
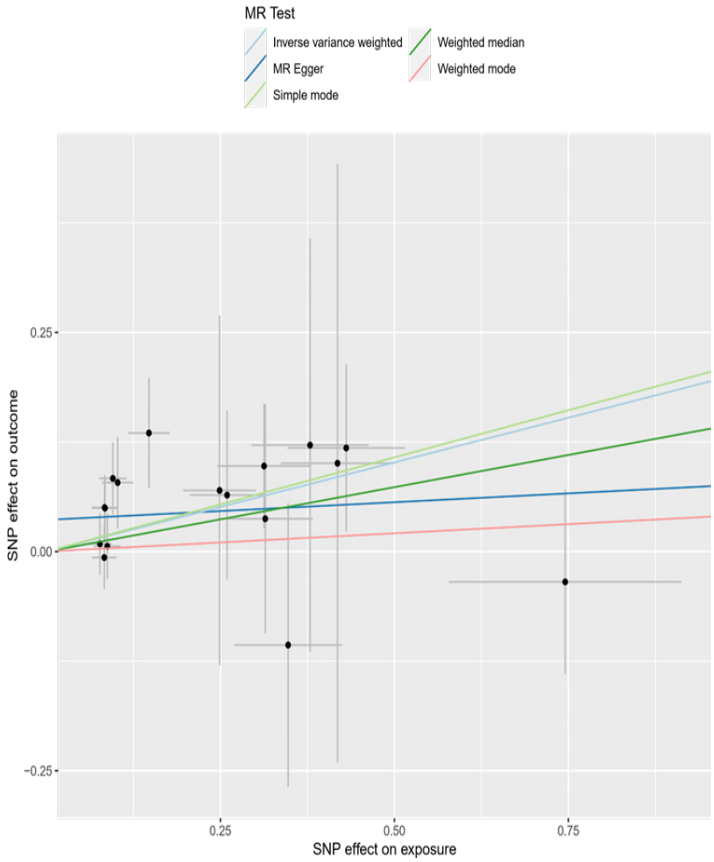


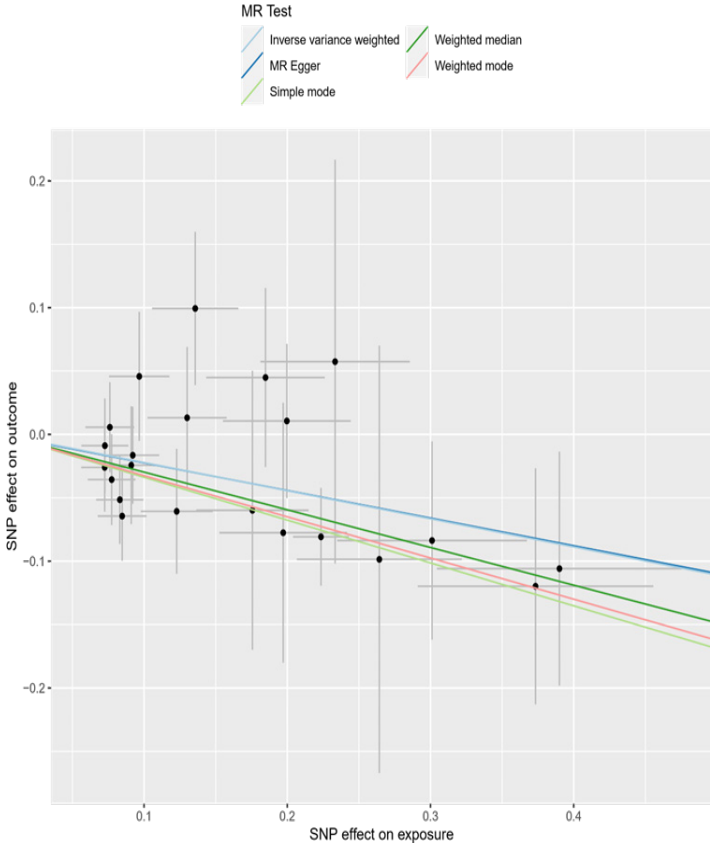
Scatter plot for the effect of 3-methoxycatechol sulfate (1) levels on CD



Scatter plot for the effect of Adipoylcarnitine (C6-DC) levels on CD



Scatter plot for the effect of Dopamine 4-sulfate levels on CD



Scatter plot for the effect of Linoleoyl ethanolamide levels on CD

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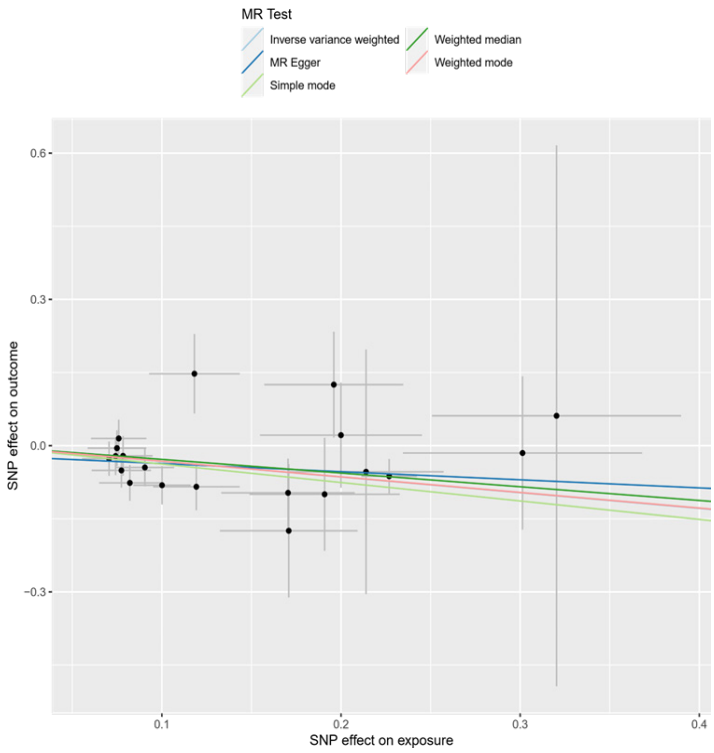
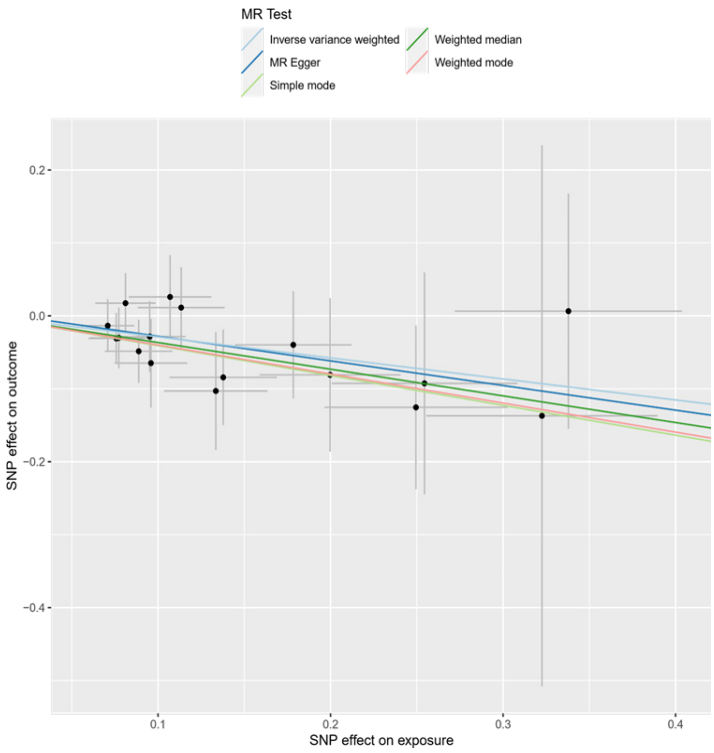
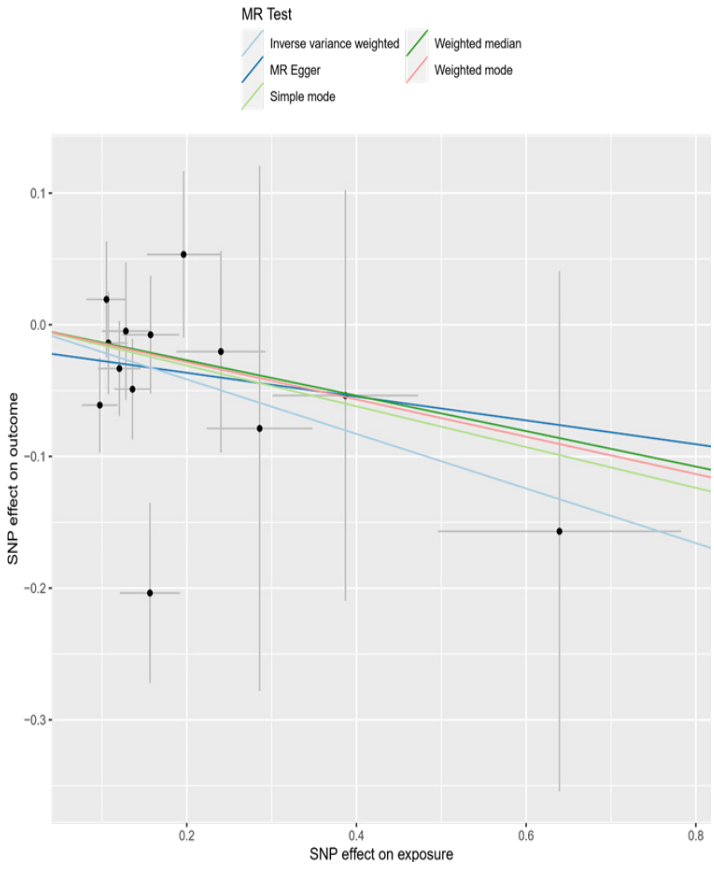


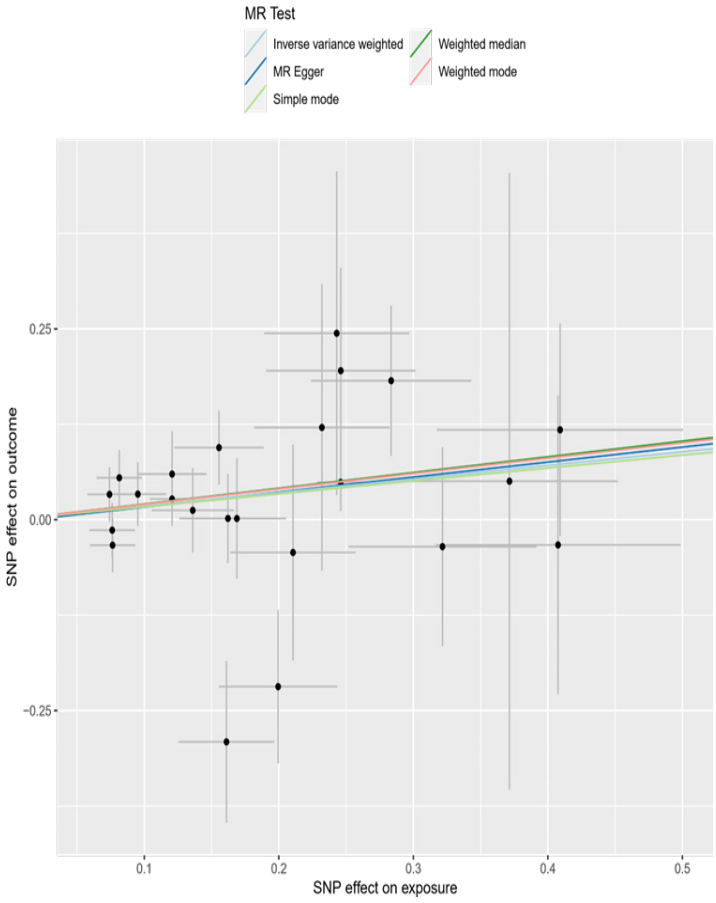
Scatter plot for the effect of 1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels on CD



Scatter plot for the effect of Linoleoylcholine levels on CD



Scatter plot for the effect of Sphingadienine levels on CD



Scatter plot for the effect of Trans-2-hexenoylglycine levels on CD

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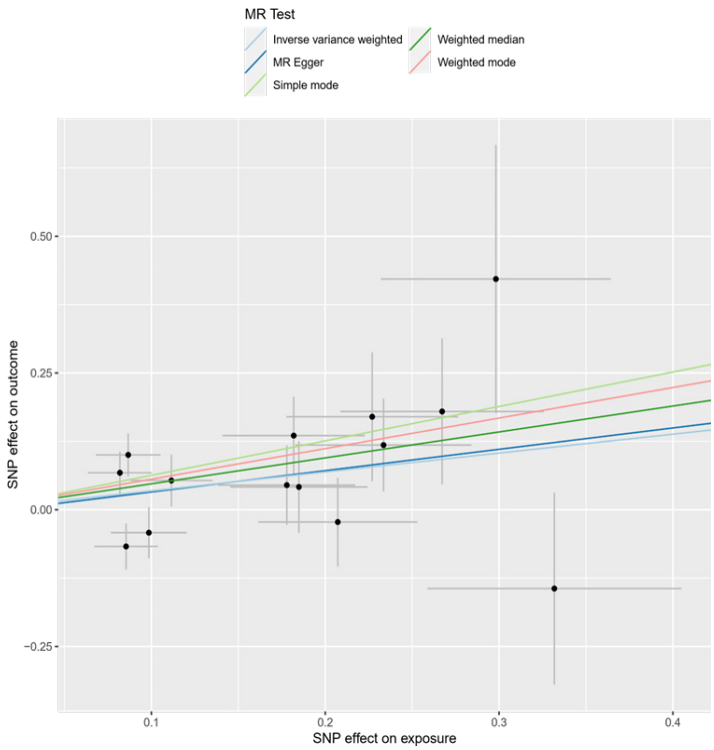
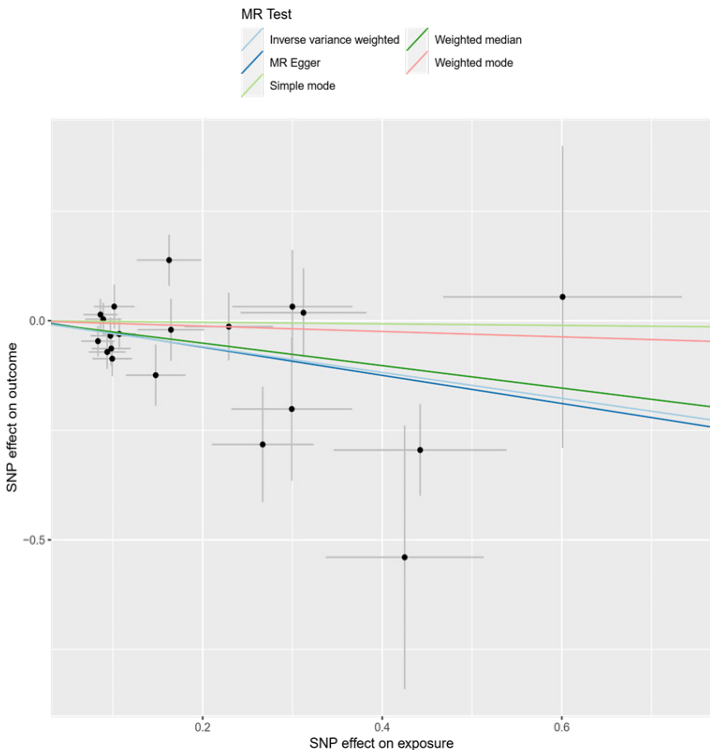
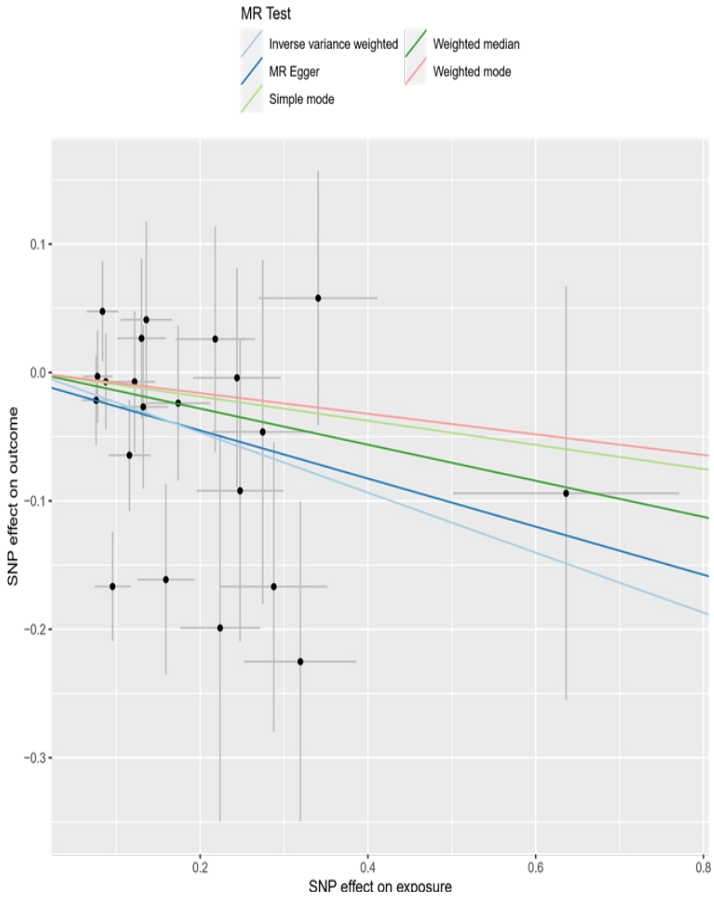


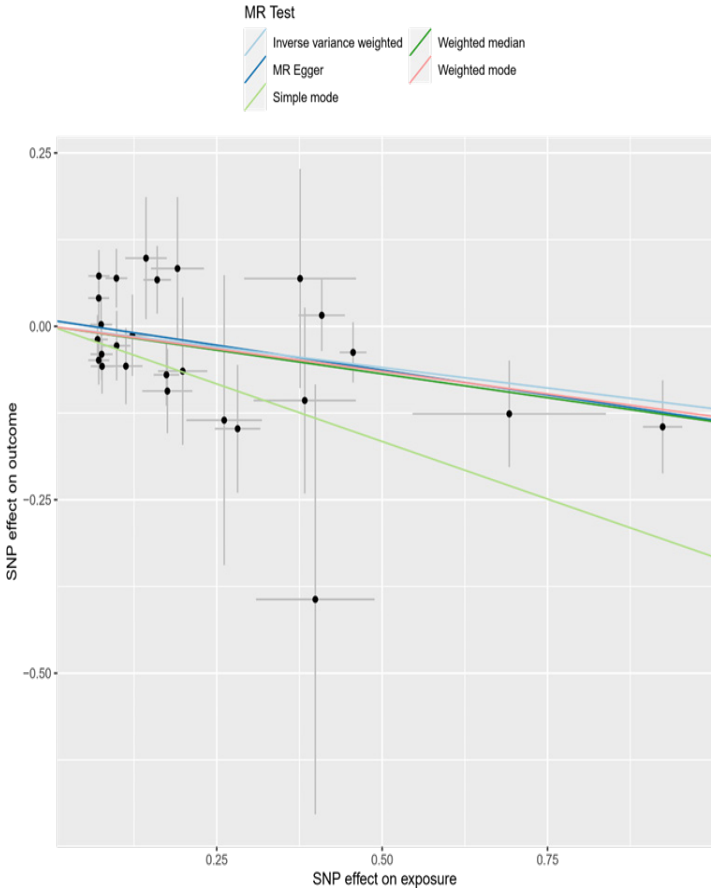
Scatter plot for the effect of Heptenedioate (C7:1-DC) levels on CD



Scatter plot for the effect of 4-methylhexanoylglutamine levels on CD



Scatter plot for the effect of N-lactoyl tyrosine levels on CD



Scatter plot for the effect of Metabolonic lactone sulfate levels on CD

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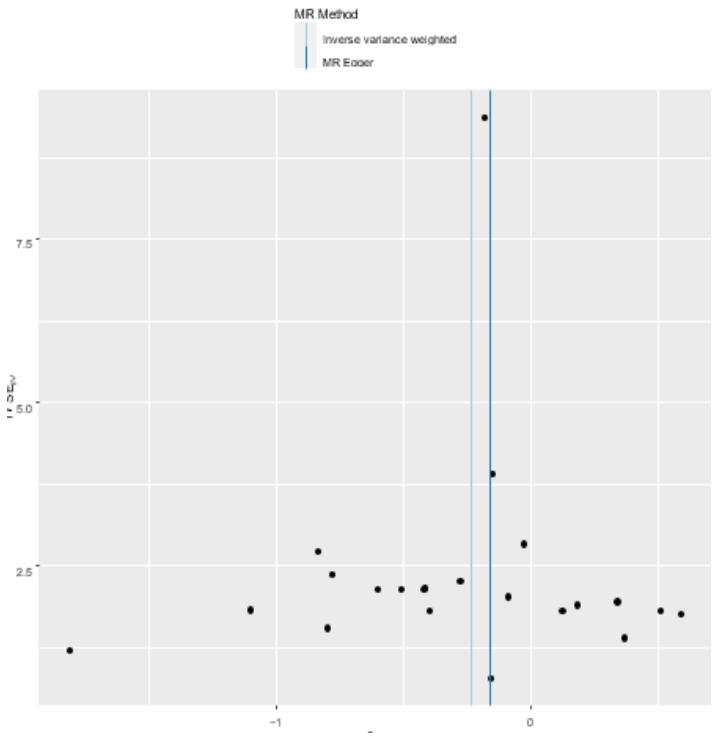
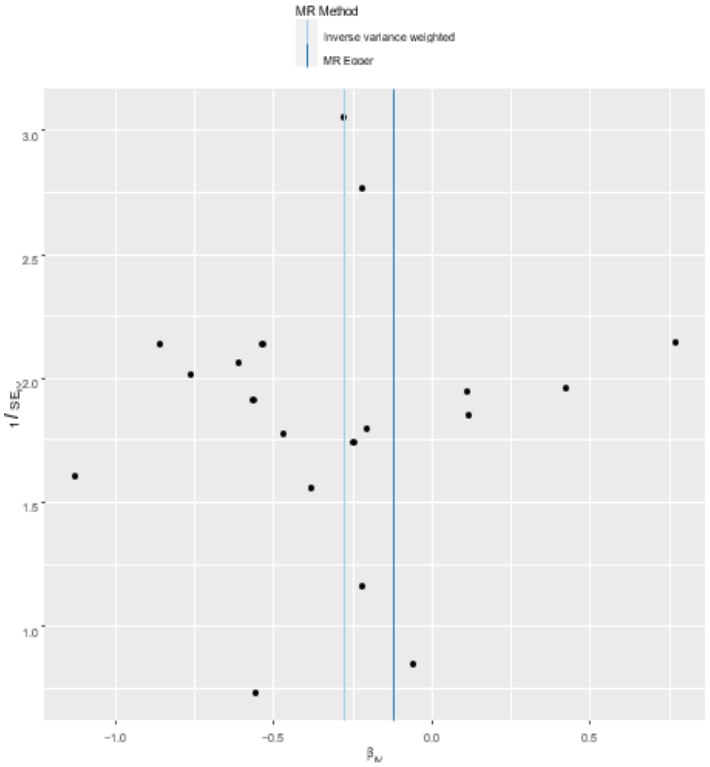
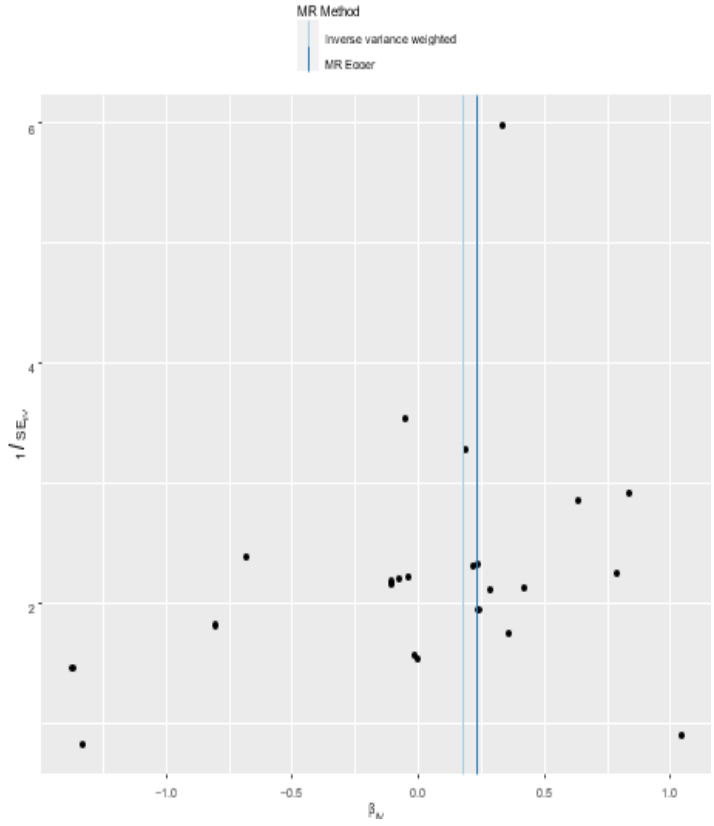
Supplementary File 8:



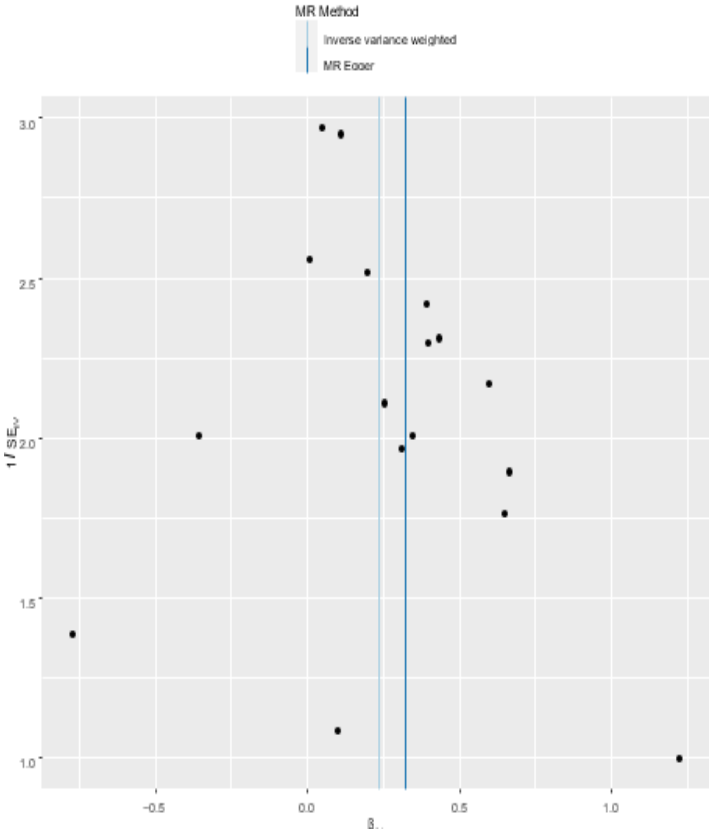
Funnel plot for Carnitine levels on CD



Funnel plot for Maleate levels on CD



Funnel plot for Suberate (C8-DC) levels on CD



Funnel plot for Isovalerate (i5:0) levels on CD

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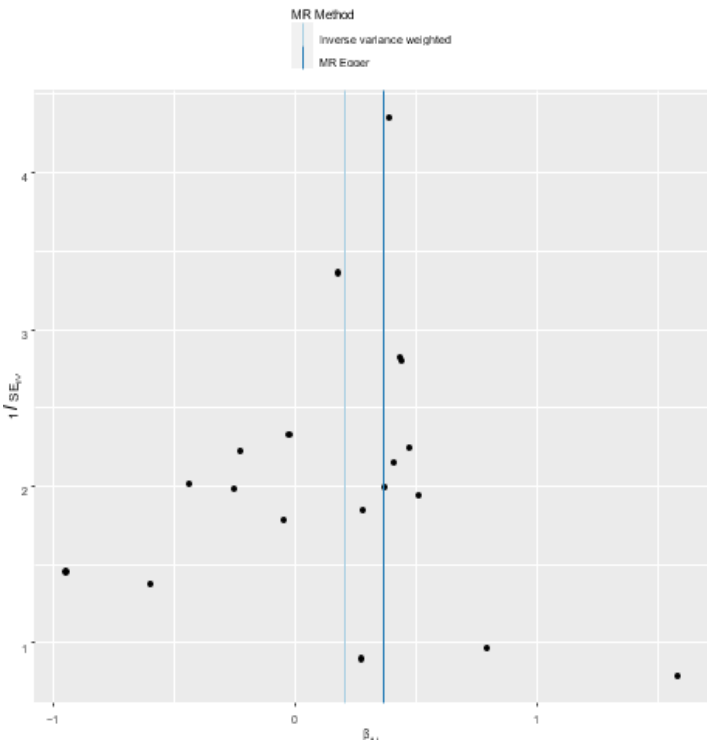
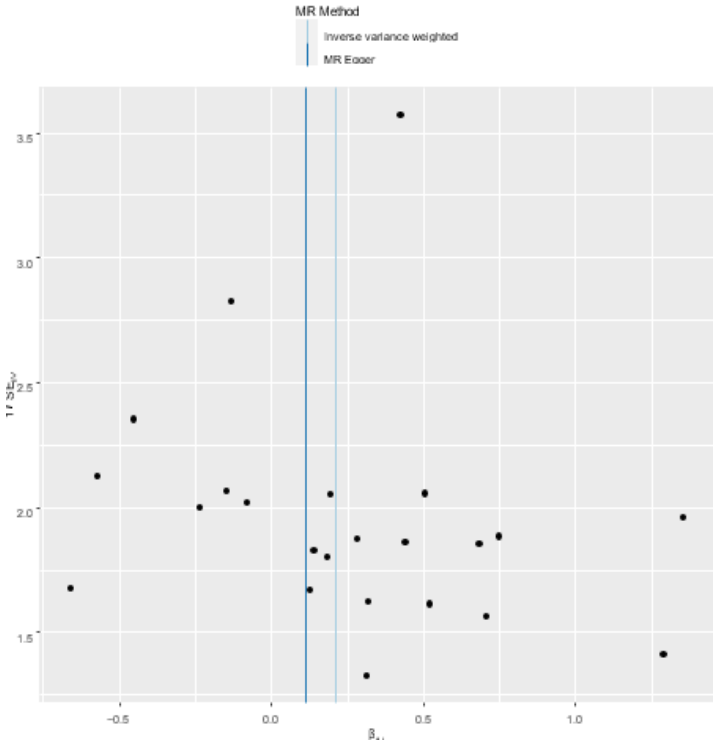
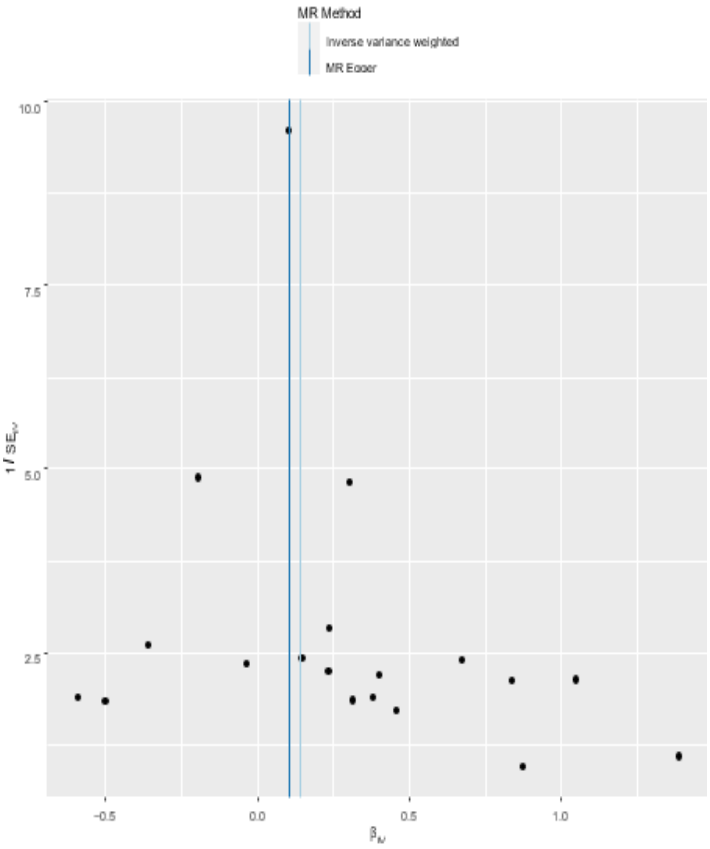


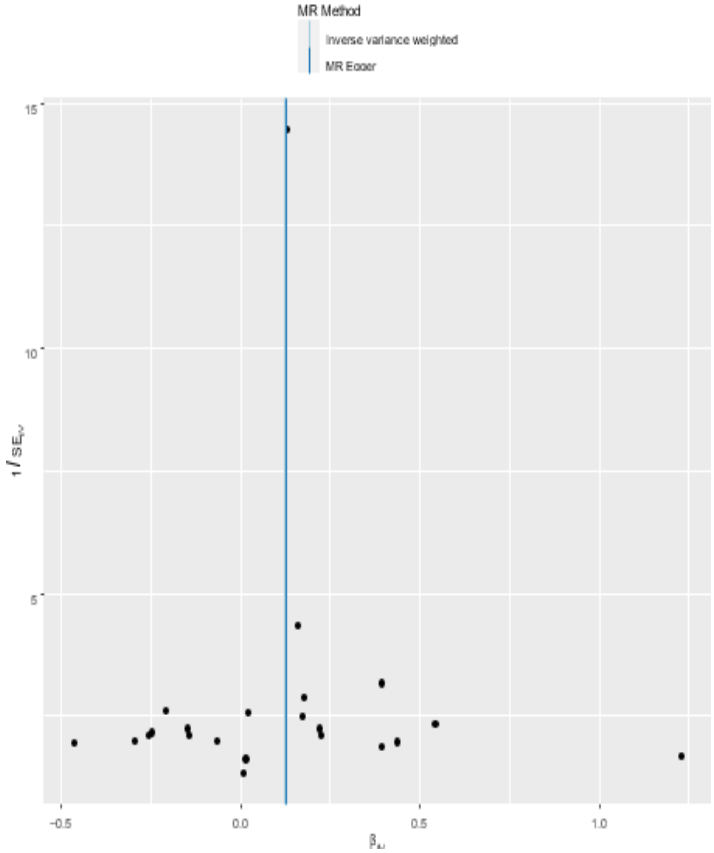
Funnel plot for Oxalate (ethanedioate) levels on CD



Funnel plot for Homostachydrine levels on CD



Funnel plot for 2-hydroxyoctanoate levels on CD



Funnel plot for 1-arachidonoyl-gpc (20:4n6) levels on CD

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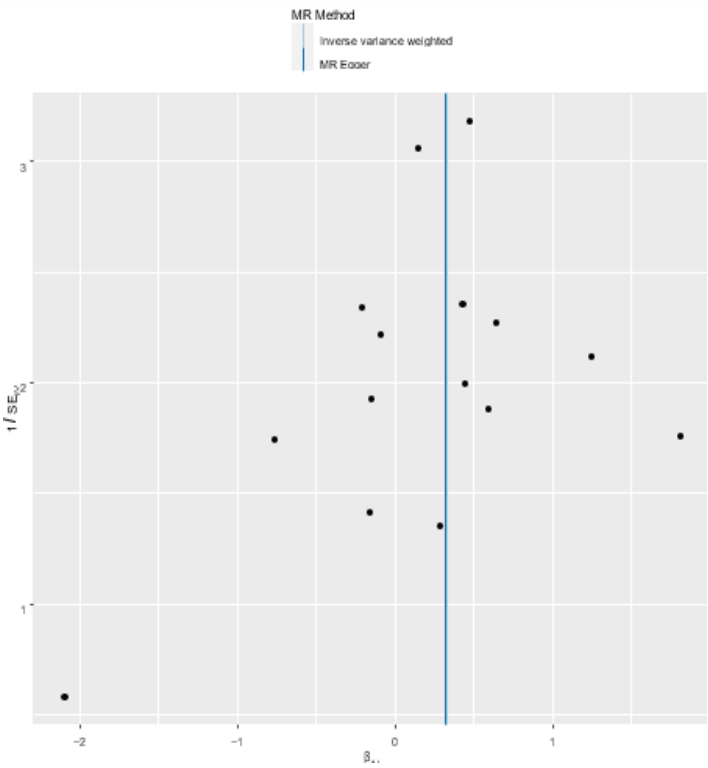
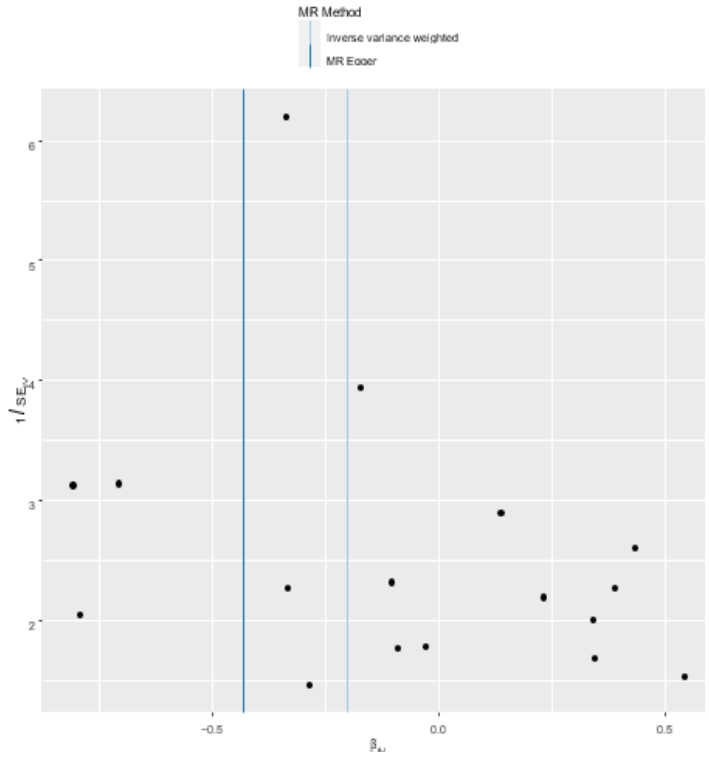
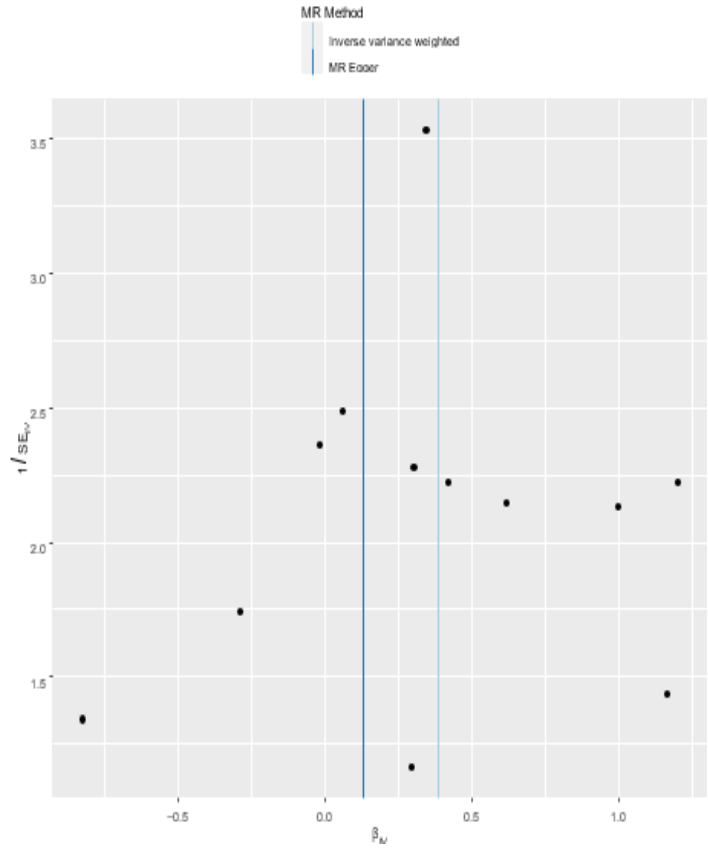


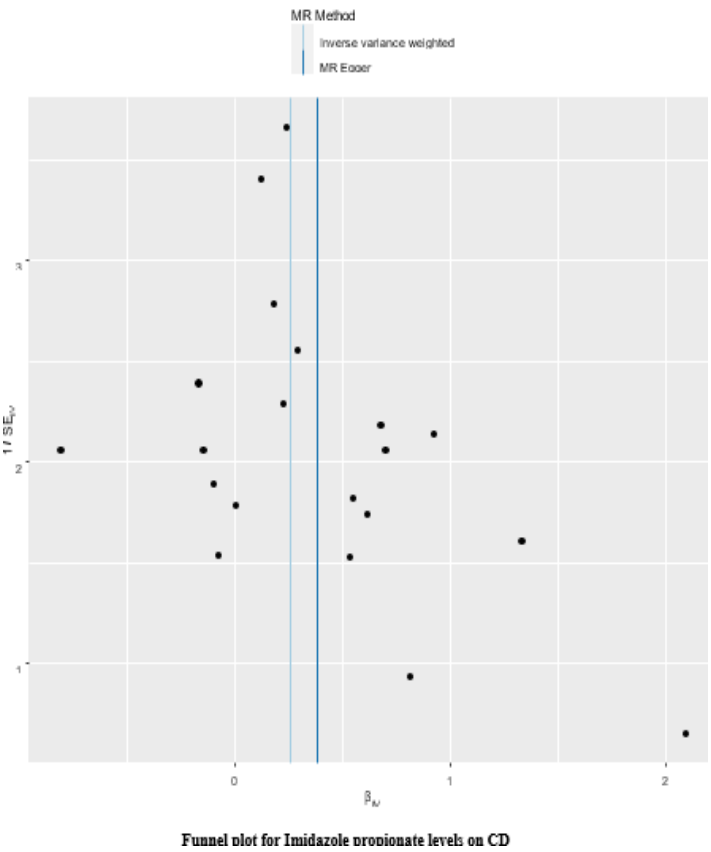
Funnel plot for 2-hydroxypalmitate levels on CD



Funnel plot for N-oleoyltaurine levels on CD



Funnel plot for 4-oxo-retinoic acid levels on CD



Funnel plot for Imidazole propionate levels on CD

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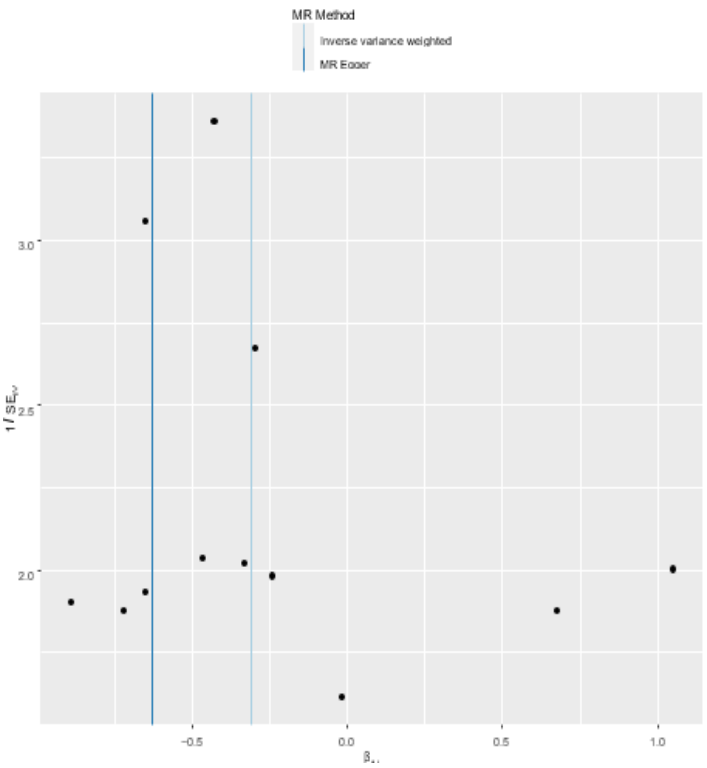
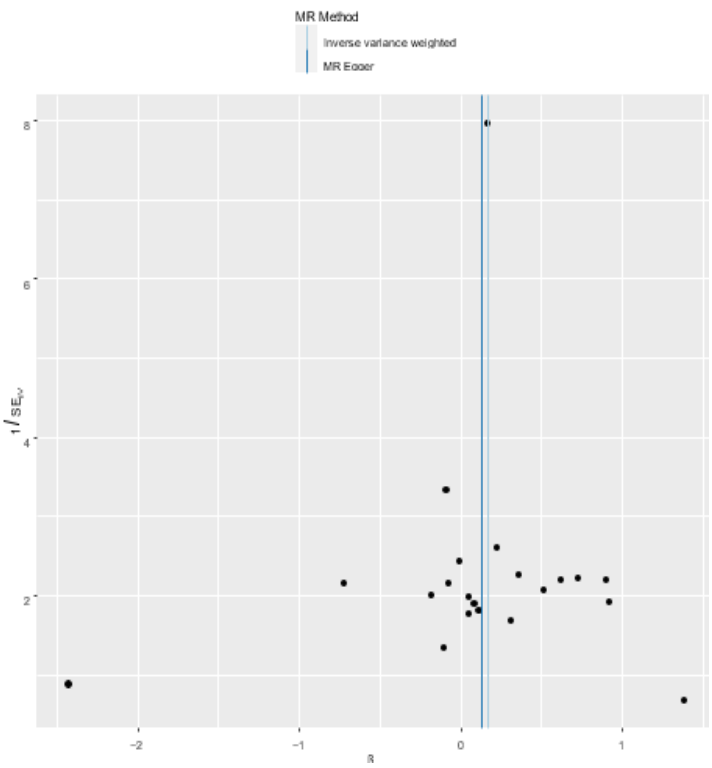
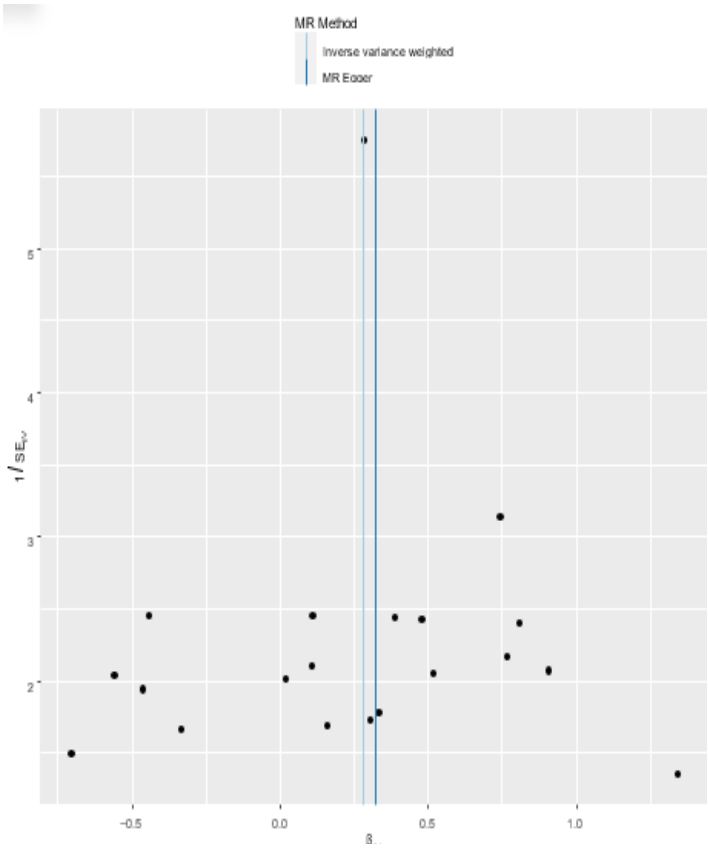


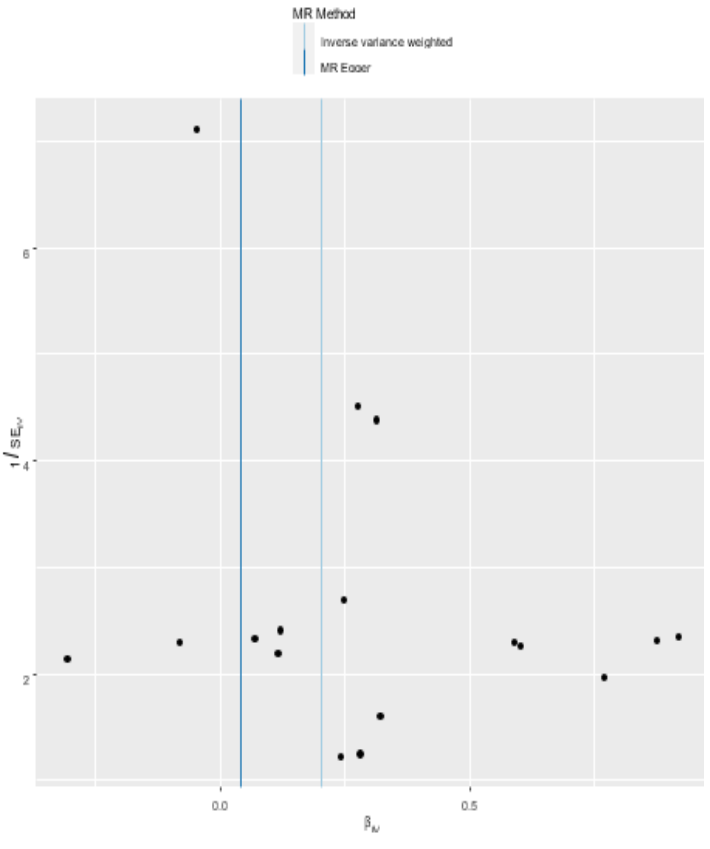
Funnel plot for 6-hydroxyindole sulfate on CD



Funnel plot for 3-methoxycatechol sulfate (1) levels on CD



Funnel plot for N-carbamoylalanine levels on CD



Funnel plot for Dopamine 4-sulfate levels on CD

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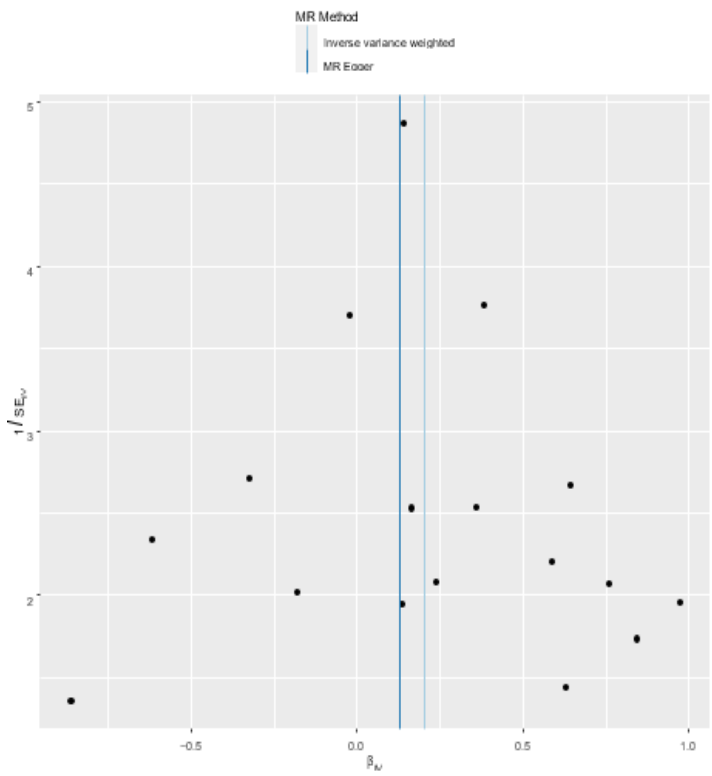
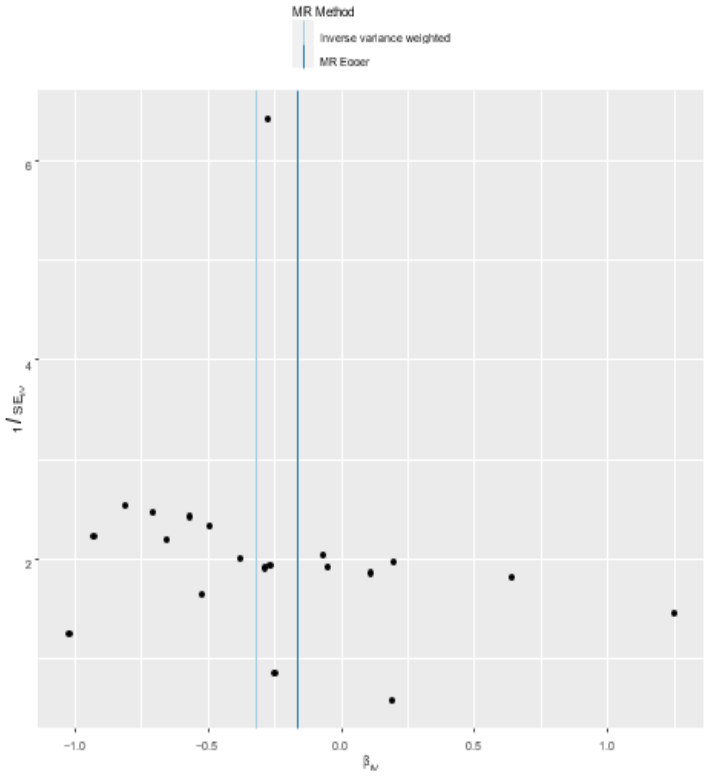
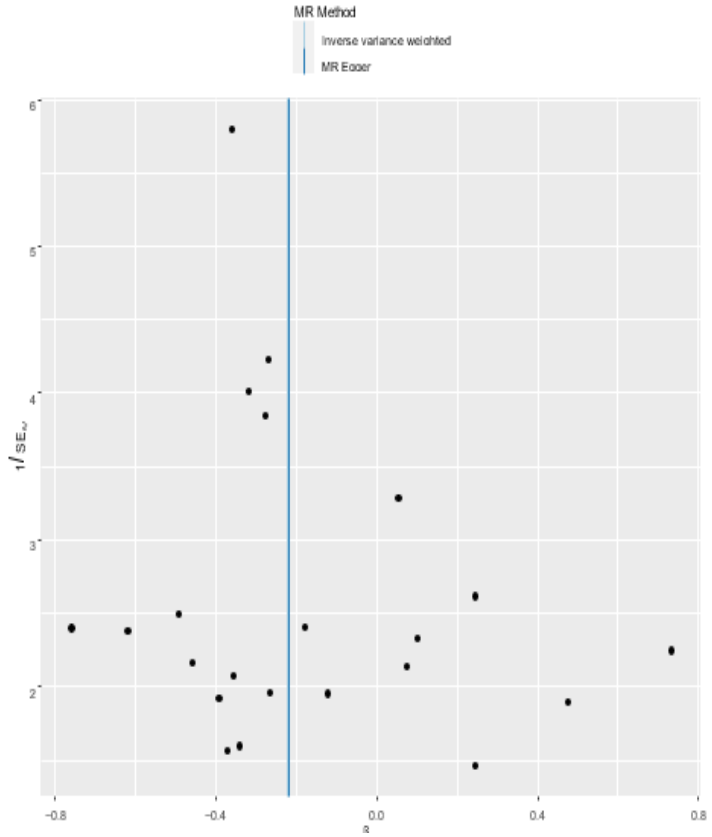


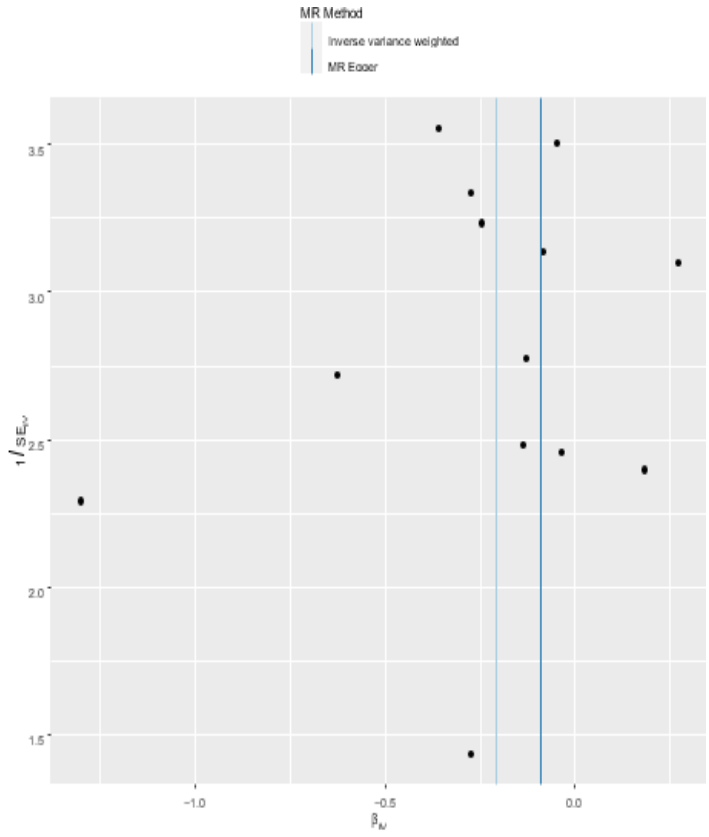
Funnel plot for Adipoylcarnitine (C6-DC) levels on CD



Funnel plot for 1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels on CD



Funnel plot for Linoleoyl ethanolamide levels on CD



Funnel plot for Sphingadienine levels on CD

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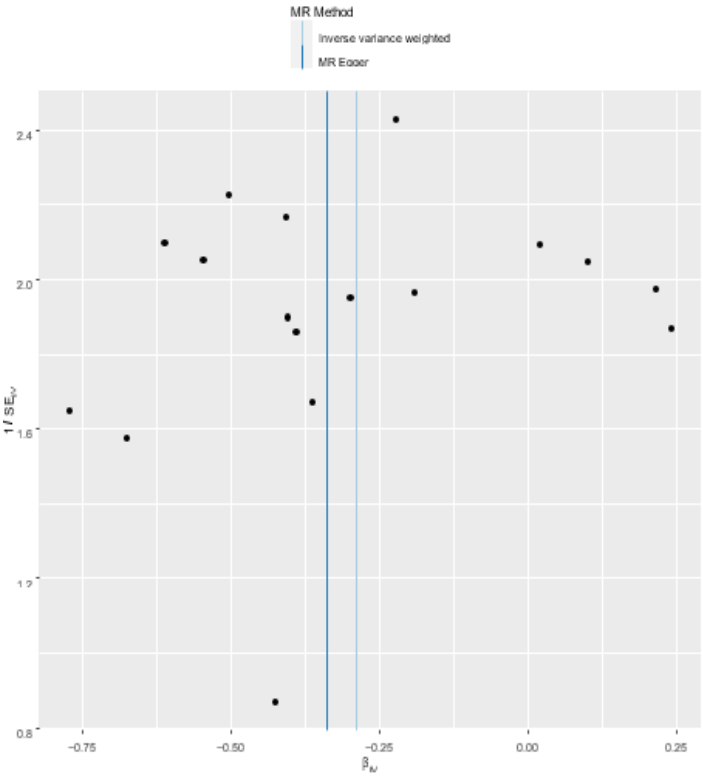
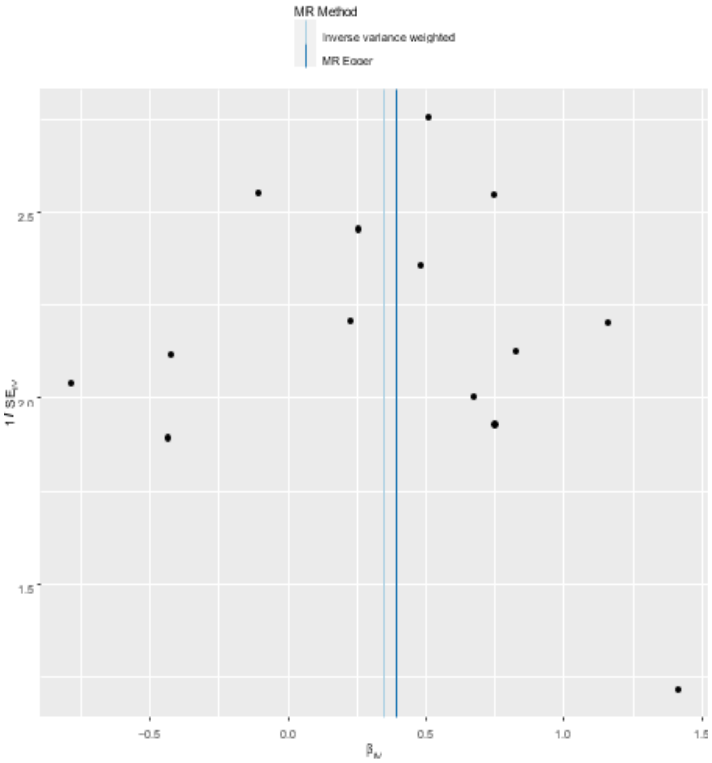
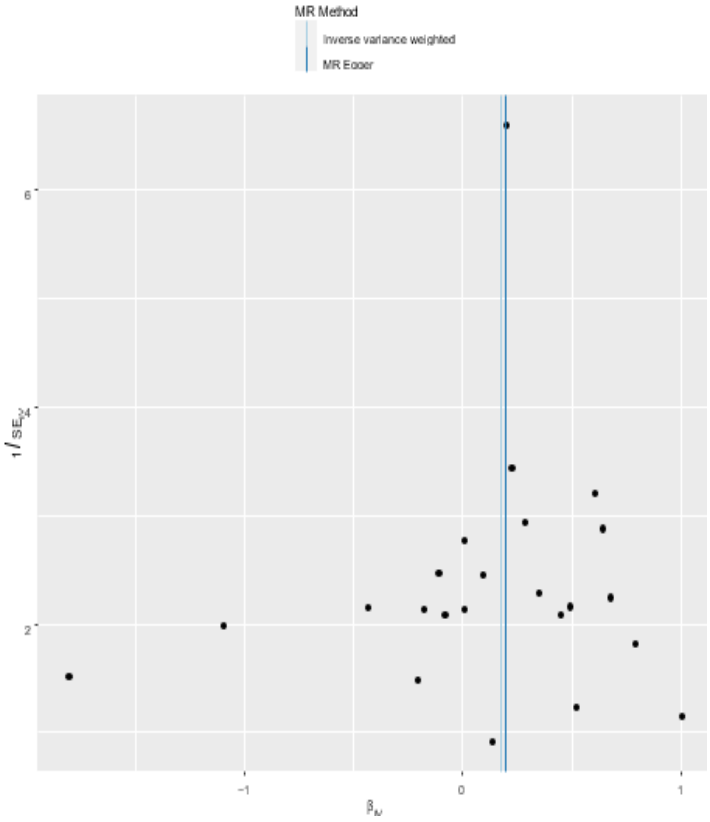


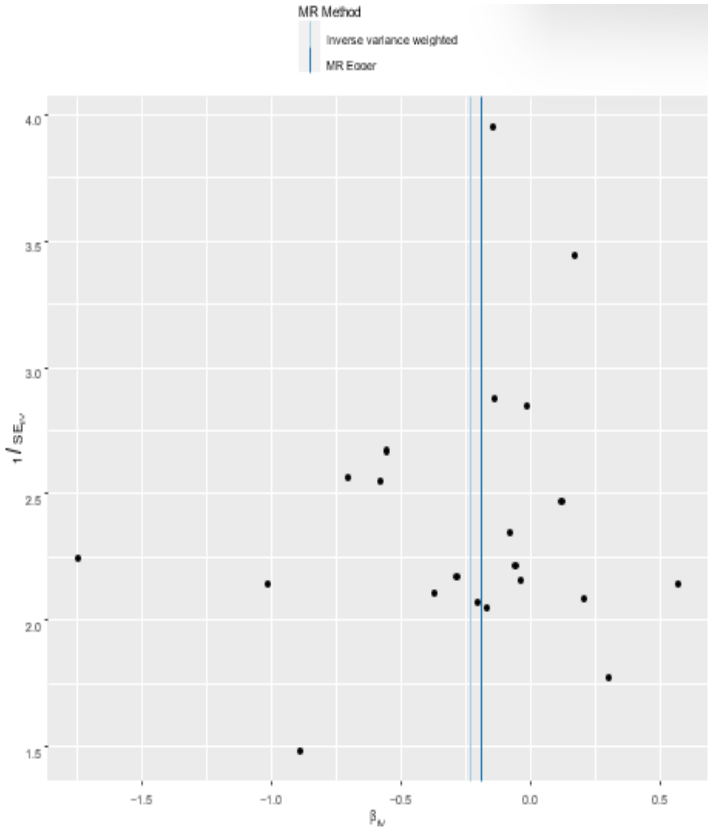
Funnel plot for Linoleoylcholine levels on CD



Funnel plot for Heptenedioate (C7:1-DC) levels on CD



Funnel plot for Trans-2-hexenoylglycine levels on CD



Funnel plot for N-lactoyl tyrosine levels on CD

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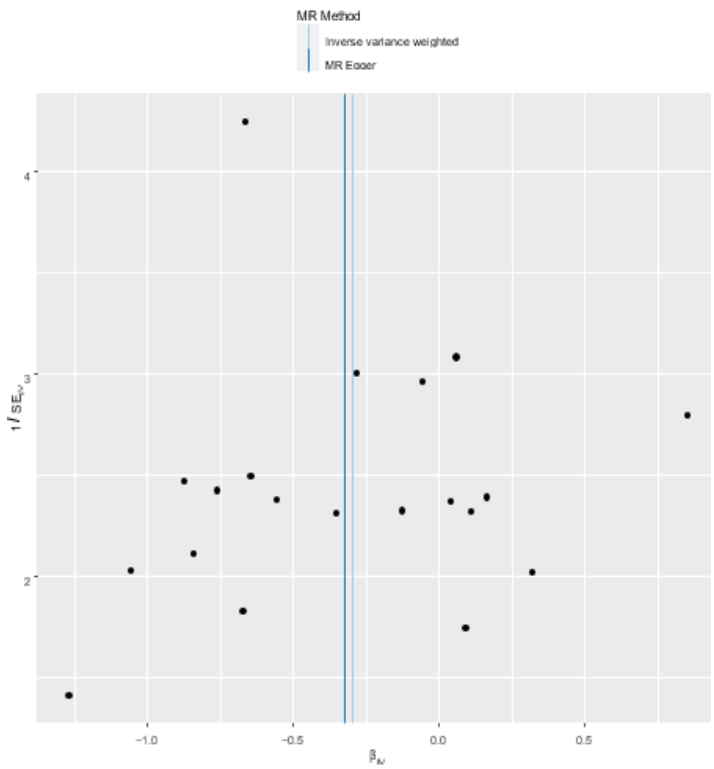
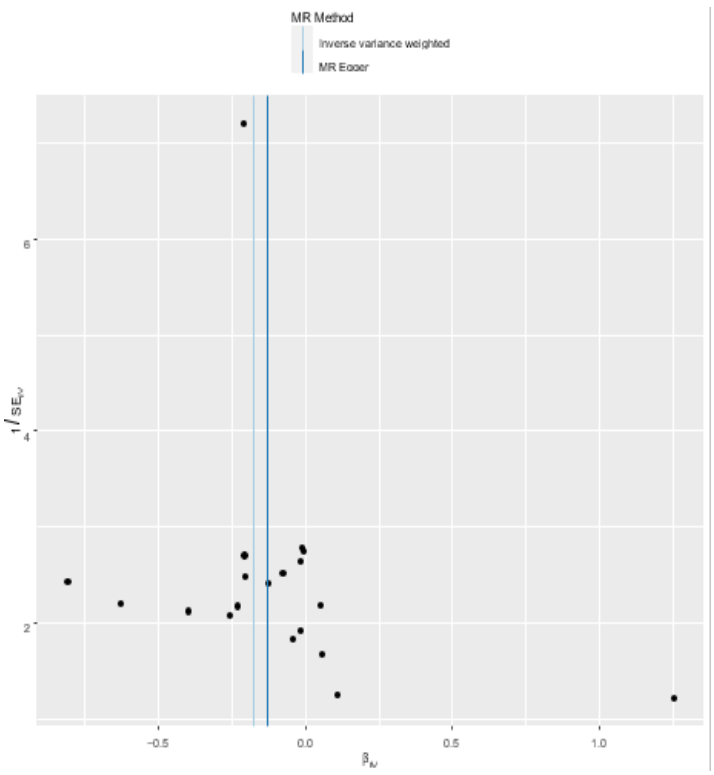
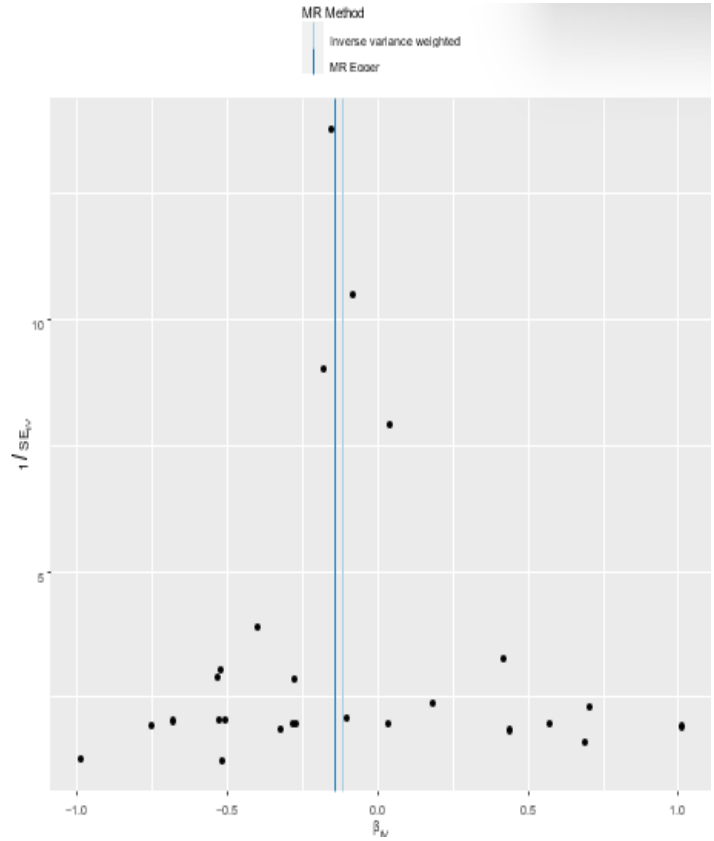


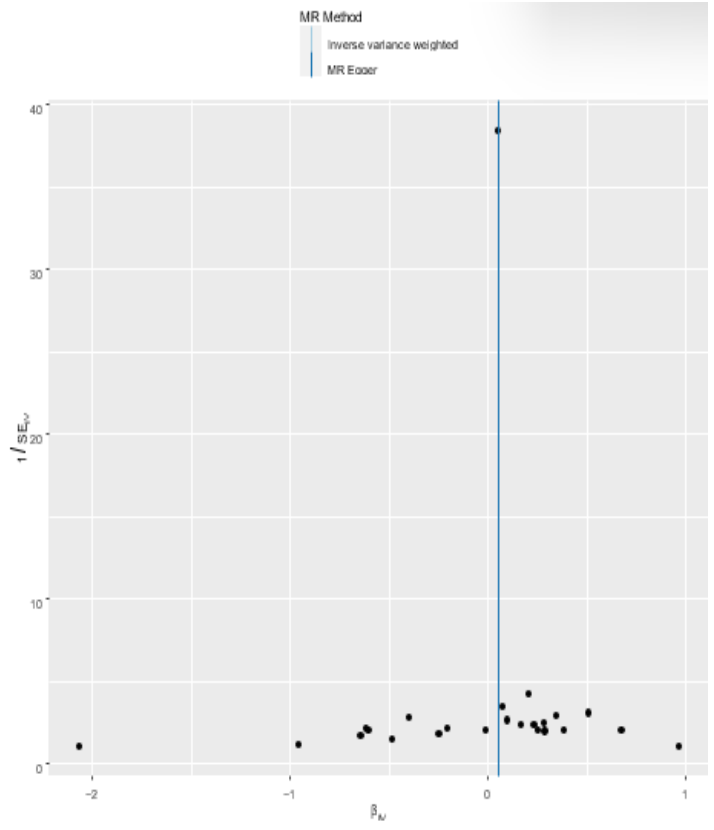
Funnel plot for 4-methylhexanoylglutamine levels on CD



Funnel plot for Phosphoethanolamine levels on CD



Funnel plot for Metabolonic lactone sulfate levels on CD



Funnel plot for Pipecolate levels on CD

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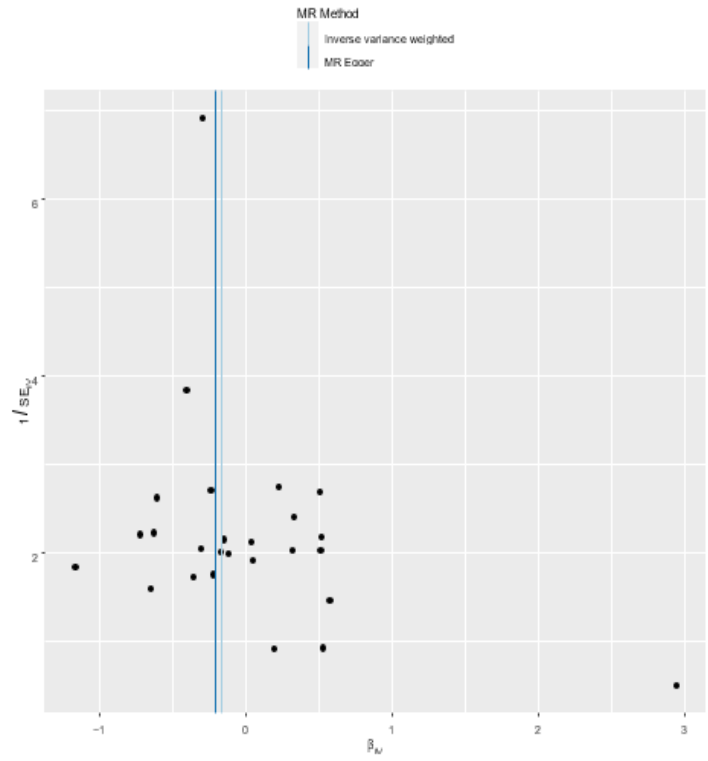
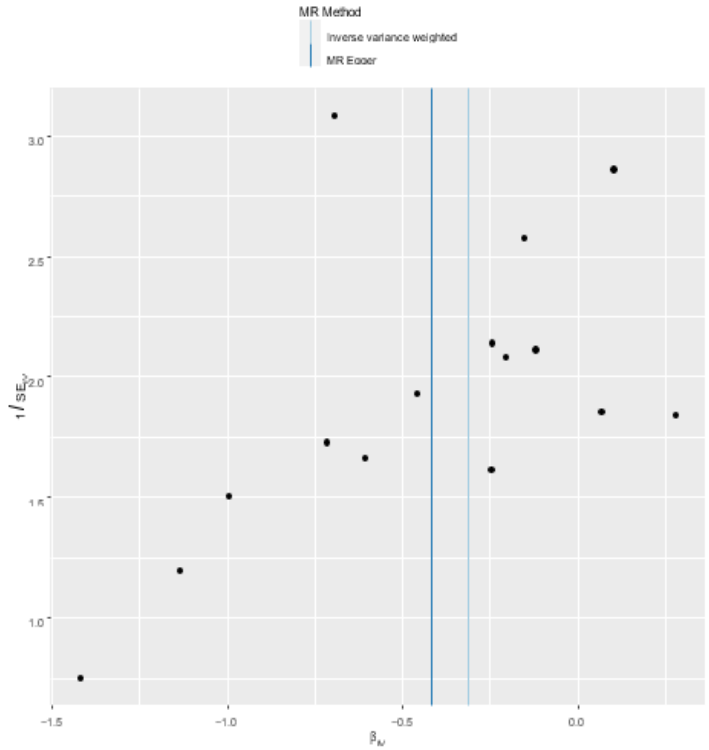
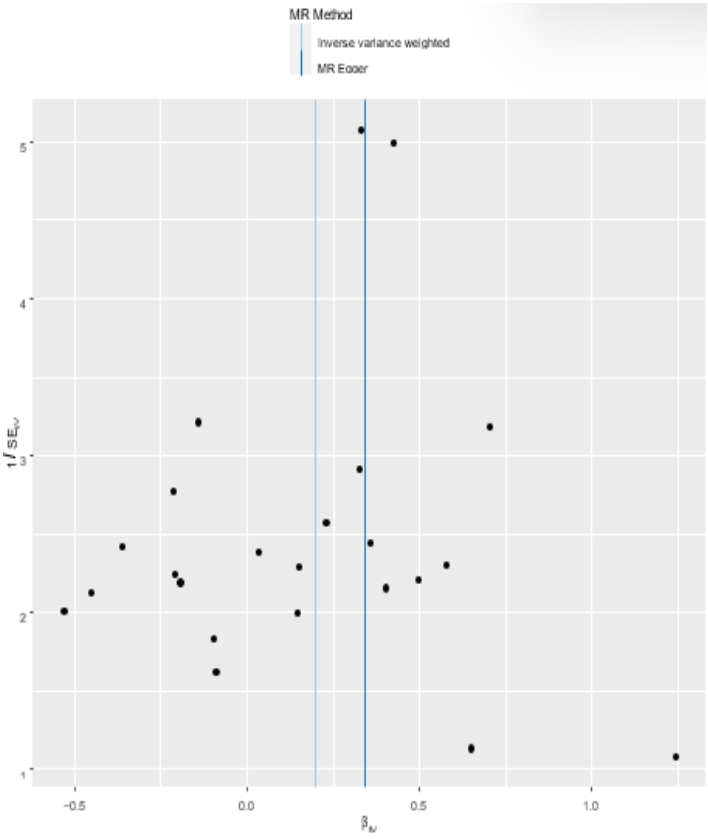


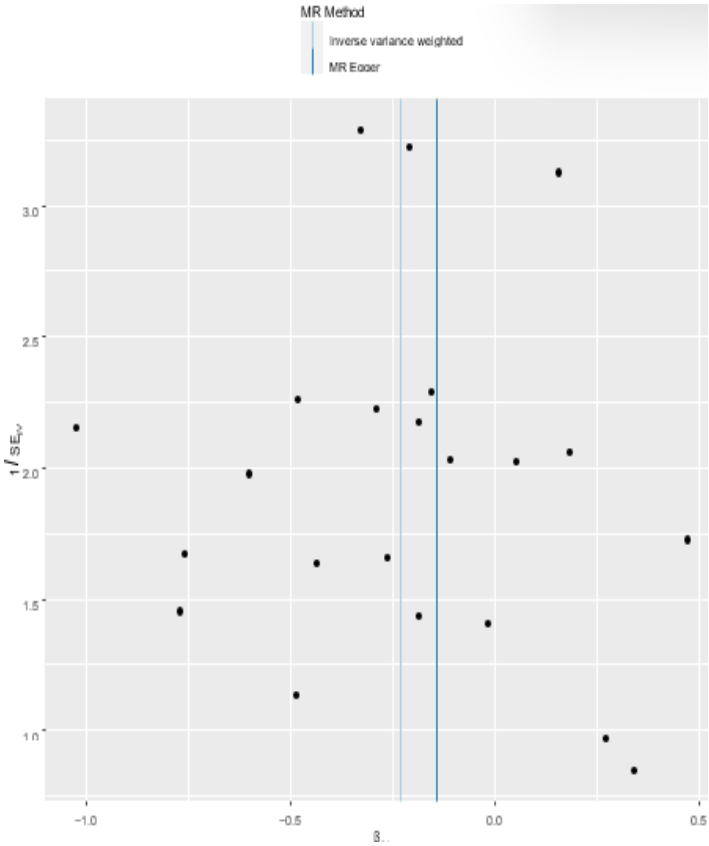
Funnel plot for Oleoyl ethanolamide levels on CD



Funnel plot for Cortisone levels on CD



Funnel plot for S-adenosylhomocysteine (SAH) levels on CD

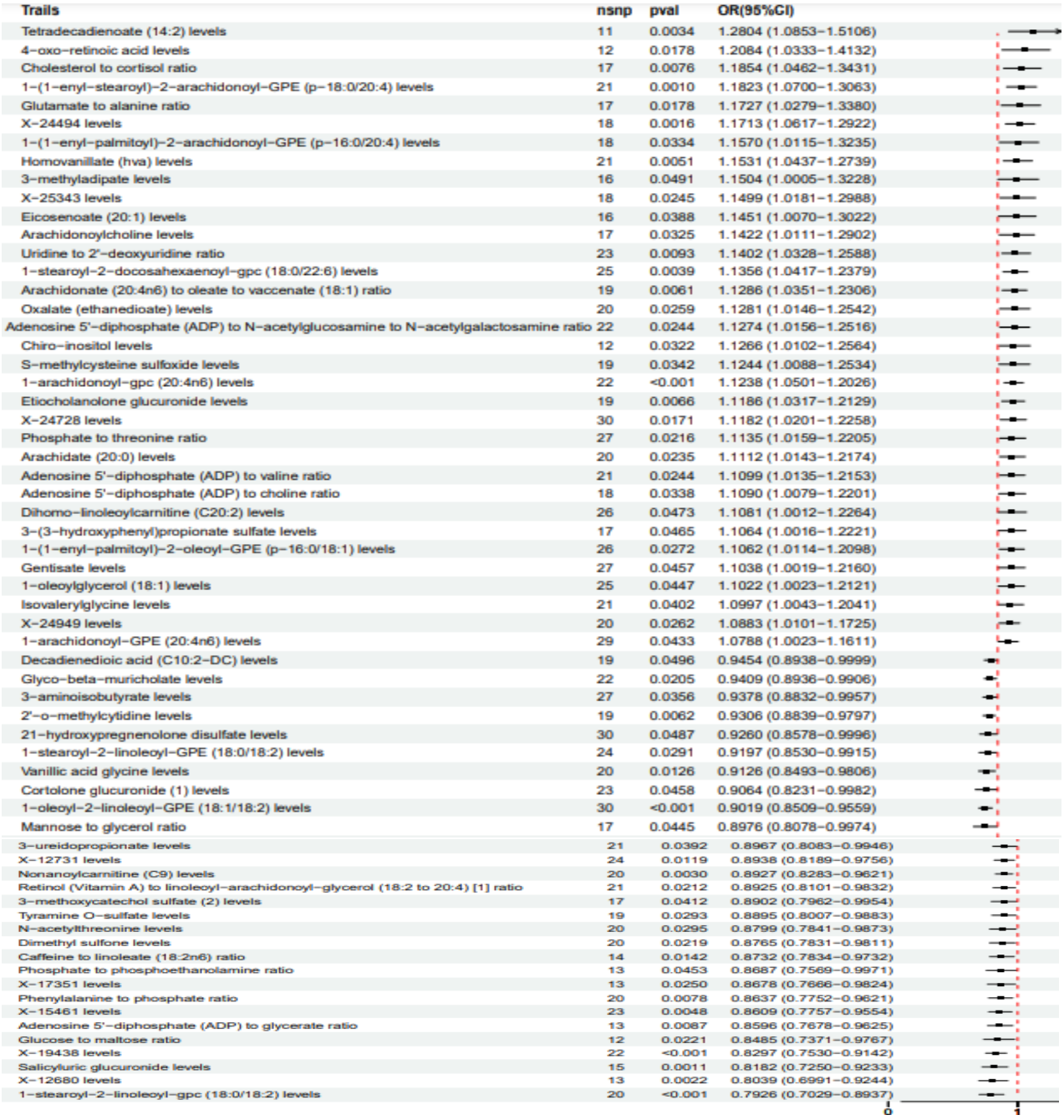


Funnel plot for Phenylpyruvate levels on CD

5.2. The causal effect of metabolites on UC

Results of the IVW method demonstrated significant protective effects of twenty-nine metabolites on CD described as follows (Figure 2 and Supplementary File 3): 1−stearoyl−2−linoleoyl−gpc (18:0/18:2) levels (OR: 0.7926, 95% CI: 0.7029−0.8937, P-value: 0.0001), X−12680 levels (OR: 0.8039, 95% CI: 0.6991−0.9244, P-value: 0.0022), Salicyluric glucuronide levels (OR: 0.8182, 95% CI: 0.7250−0.9233, P-value: 0.0011), X−19438 levels (OR: 0.8297, 95% CI: 0.7530−0.9142, P-value: 0.0001), Glucose to maltose ratio (OR: 0.8485, 95% CI: 0.7371−0.9767, P-value: 0.0221), Adenosine 5'−diphosphate (ADP) to glycerate ratio (OR: 0.8596, 95% CI: 0.7678−0.9625, P-value: 0.0087), X−15461 levels (OR: 0.8609, 95% CI: 0.7757−0.9554, P-value: 0.0048), Phenylalanine to phosphate ratio (OR: 0.8637, 95% CI: 0.7752−0.9621, P-value: 0.0078), X−17351 levels (OR: 0.8678, 95% CI: 0.7666−0.9824, P-value: 0.0250), Phosphate to phosphoethanolamine ratio (OR: 0.8687, 95% CI: 0.7569−0.9971, P-value: 0.0453), Caffeine to linoleate (18:2n6) ratio (OR: 0.8732, 95% CI: 0.7834−0.9732, P-value: 0.0142), Dimethyl sulfone levels (OR: 0.8765, 95% CI: 0.7831−0.9811, P-value: 0.0219), N−acetylthreonine levels (OR: 0.8799, 95% CI: 0.7841−0.9873, P-value: 0.0295), Tyramine O−sulfate levels (OR: 0.8895, 95% CI: 0.8007−0.9883, P-value: 0.0293), 3−methoxycatechol sulfate (2) levels (OR: 0.8902, 95% CI: 0.7962−0.9954, P-value: 0.0412),

Figure 2: Forest plots showed the causal associations between UC and metabolite traits.



Retinol (Vitamin A) to linoleoyl−arachidonoyl−glycerol (18:2 to 20:4) [1] ratio (OR: 0.8925, 95% CI: 0.8101−0.9832, P-value: 0.0212), Nonanoylcarnitine (C9) levels (OR: 0.8927, 95% CI: 0.8283−0.9621, P-value: 0.0030), X−12731 levels (OR: 0.8938, 95% CI: 0.8189−0.9756, P-value: 0.0119), 3−ureidopropionate levels (OR: 0.8967, 95% CI: 0.8083−0.9946, P-value: 0.0392), Mannose to glycerol ratio (OR: 0.8976, 95% CI: 0.8078−0.9974, P-value: 0.0445), 1−oleoyl−2−linoleoyl−GPE (18:1/18:2) levels (OR: 0.9019, 95% CI: 0.8509−0.9559, P-value: 0.0005), Cortolone glucuronide (1) levels (OR: 0.9064, 95% CI: 0.8231−0.9982, P-value: 0.0458), Vanillic acid glycine levels (OR: 0.9126, 95% CI: 0.8493−0.9806, P-value: 0.0126), 1−stearoyl−2−linoleoyl−GPE (18:0/18:2) levels (OR: 0.9197, 95% CI: 0.8530−0.9915, P-value: 0.0291), 21−hydroxypregnenolone disulfate levels (OR: 0.9260, 95% CI: 0.8578−0.9996, P-value: 0.0487), 2'−o−methylcytidine levels (OR: 0.9306, 95% CI: 0.8839−0.9797, P-value: 0.0062), 3−aminoisobutyrate levels (OR: 0.9378, 95% CI: 0.8832−0.9957, P-value: 0.0356), Glyco−beta−muricholate levels (OR: 0.9409, 95% CI: 0.8936−0.9906, P-value: 0.0205), Decadienedioic acid (C10:2−DC) levels (OR: 0.9454, 95% CI: 0.8938−0.9999, P-value: 0.0496). In addition, significant risk effects of thirty-four metabolites on UC were observed as follows: 1−arachidonoyl−GPE (20:4n6) levels (OR: 1.0788, 95% CI: 1.0023−1.1611, P-value: 0.0433), X−24949 levels (OR: 1.0883, 95% CI: 1.0101−1.1725, P-value: 0.0262), Isovalerylglycine levels (OR: 1.0997, 95% CI: 1.0043−1.2041, P-value: 0.0402), 1−oleoylglycerol (18:1) levels (OR: 1.1022, 95% CI: 1.0023−1.2121, P-value: 0.0447), Gentisate levels (OR: 1.1038, 95% CI: 1.0019−1.2160, P-value: 0.0457), 1−(1−enyl−palmitoyl)−2−oleoyl−GPE (p−16:0/18:1) levels (OR: 1.1062, 95% CI: 1.0114−1.2098, P-value: 0.0272), 3−(3−hydroxyphenyl)propionate sulfate levels (OR: 1.1064, 95% CI: 1.0016−1.2221, P-value: 0.0465), Dihomo−linoleoylcarnitine (C20:2) levels (OR: 1.1081, 95% CI: 1.0012−1.2264, P-value: 0.0473), Adenosine 5'−diphosphate (ADP) to choline ratio (OR: 1.1090, 95% CI: 1.0079−1.2201, P-value: 0.0338), Adenosine 5'−diphosphate (ADP) to valine ratio (OR: 1.1099, 95% CI: 1.0135−1.2153, P-value: 0.0244), Arachidate (20:0) levels (OR: 1.1112, 95% CI: 1.0143−1.2174, P-value: 0.0235), Phosphate to threonine ratio (OR: 1.1135, 95% CI: 1.0159−1.2205, P-value: 0.0216), X−24728 levels (OR: 1.1182, 95% CI: 1.0201−1.2258, P-value: 0.0171), Etiocholanolone glucuronide levels (OR: 1.1186, 95% CI: 1.0317−1.2129, P-value: 0.0066), 1−arachidonoyl−gpc (20:4n6) levels (OR: 1.1238, 95% CI: 1.0501−1.2026, P-value: 0.0007), S−methylcysteine sulfoxide levels (OR: 1.1244, 95% CI: 1.0088−1.2534, P-value: 0.0342), Chiro−inositol levels (OR: 1.1266, 95% CI: 1.0102−1.2564, P-value: 0.0322), Adenosine 5'−diphosphate (ADP) to N−acetylglucosamine to N−acetylgalactosamine ratio (OR: 1.1274, 95% CI: 1.0156−1.2516, P-value: 0.0244), Oxalate (ethanedioate) levels (OR: 1.1281, 95% CI: 1.0146−1.2542, P-value: 0.0259), Arachidonate (20:4n6) to oleate to vaccenate (18:1) ratio (OR: 1.1286, 95% CI: 1.0351−1.2306, P-value: 0.0061), 1−stearoyl−2−docosahexaenoyl−gpc (18:0/22:6) levels (OR: 1.1356, 95% CI: 1.0417−1.2379, P-value: 0.0039), Uridine to 2'−deoxyuridine ratio (OR: 1.1402, 95% CI: 1.0328−1.2588, P-value: 0.0093), Arachidonoylcholine levels (OR: 1.1422, 95% CI: 1.0111−1.2902, P-value: 0.0325), Eicosenoate (20:1) levels (OR: 1.1451, 95% CI: 1.0070−1.3022, P-value: 0.0388), X−25343 levels (OR: 1.1499, 95% CI: 1.0181−1.2988, P-value: 0.0245), 3−methyladipate levels (OR: 1.1504, 95% CI: 1.0005−1.3228, P-value: 0.0491), Homovanillate (hva) levels (OR: 1.1531, 95% CI: 1.0437−1.2739, P-value: 0.0051), 1−(1−enyl−palmitoyl)−2−arachidonoyl−GPE (p−16:0/20:4) levels (OR: 1.1570, 95% CI: 1.0115−1.3235, P-value: 0.0334), X−24494 levels (OR: 1.1713, 95% CI: 1.0617−1.2922, P-value: 0.0016), Glutamate to alanine ratio (OR: 1.1727, 95% CI: 1.0279−1.3380, P-value: 0.0178), 1−(1−enyl−stearoyl)−2−arachidonoyl−GPE (p−18:0/20:4) levels (OR: 1.1823, 95% CI: 1.0700−1.3063, P-value: 0.0010), Cholesterol to cortisol ratio (OR: 1.1854, 95% CI: 1.0462−1.3431, P-value: 0.0076), 4−oxo−retinoic acid levels (OR: 1.2084, 95% CI: 1.0333−1.4132, P-value: 0.0178), Tetradecadienoate (14:2) levels (OR: 1.2804, 95% CI: 1.0853−1.5106, P-value: 0.0034).

The causal relationships identified have been validated through three different methods: the weighted median, MR Egger, and simple mode (Supplementary Figure 2 and Supplementary File 3), along with a leave-one-out sensitivity analysis (Supplementary File 9). The absence of horizontal pleiotropy has been ensured by analyzing the intercept of MR-Egger (Supplementary File 5). The forest plots are shown in Supplementary File 10. The stability of the results has been indicated by scatter plots (Supplementary File 11) and funnel plots (Supplementary File 12). Therefore, the reliability and validity of the identified causal relationships have been further supported.

Supplementary Figure 2: Forest plots showed the causal associations between UC and metabolite traits using MR Egger, weighted median, inverse variance weighted, and simple mode methods.

Trails	method	nsnp	pval	OR(95%CI)
Gentisate levels	MR Egger	27	0.0518	1.2071 (1.0076−1.4461)
	Weighted median	27	0.0533	1.1396 (0.9981−1.3011)
	Inverse variance weighted	27	0.0457	1.1038 (1.0019−1.2160)
	Simple mode	27	0.2025	1.1844 (0.9190−1.5263)
	Weighted mode	27	0.0892	1.2100 (0.9793−1.4952)
Oxalate (ethanedioate) levels	MR Egger	20	0.1036	1.1842 (0.9761−1.4368)
	Weighted median	20	0.1395	1.1249 (0.9623−1.3148)
	Inverse variance weighted	20	0.0259	1.1281 (1.0146−1.2542)
	Simple mode	20	0.7625	1.0427 (0.7981−1.3624)
	Weighted mode	20	0.0868	1.2037 (0.9843−1.4720)
1−oleoylglycerol (18:1) levels	MR Egger	25	0.7165	1.0409 (0.8407−1.2886)
	Weighted median	25	0.1060	1.1222 (0.9758−1.2905)
	Inverse variance weighted	25	0.0447	1.1022 (1.0023−1.2121)
	Simple mode	25	0.4459	1.0942 (0.8714−1.3741)
	Weighted mode	25	0.2105	1.1209 (0.9420−1.3337)
N−acetylthreonine levels	MR Egger	20	0.6430	0.9324 (0.6969−1.2474)
	Weighted median	20	0.0540	0.8467 (0.7149−1.0028)
	Inverse variance weighted	20	0.0295	0.8799 (0.7841−0.9873)
	Simple mode	20	0.1728	0.7604 (0.5205−1.1109)

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	Weighted mode	20	0.1309	0.7724 (0.5605–1.0644)
Salicyluric glucuronide levels	MR Egger	15	0.0240	0.7177 (0.5564–0.9257)
	Weighted median	15	0.3392	0.9221 (0.7808–1.0890)
	Inverse variance weighted	15	0.0011	0.8182 (0.7250–0.9233)
	Simple mode	15	0.7116	0.9513 (0.7340–1.2330)
	Weighted mode	15	0.6788	0.9513 (0.7548–1.1990)
Eicosenoate (20:1) levels	MR Egger	16	0.7954	1.0528 (0.7188–1.5421)
	Weighted median	16	0.2959	1.0989 (0.9208–1.3114)
	Inverse variance weighted	16	0.0388	1.1451 (1.0070–1.3022)
	Simple mode	16	0.4471	1.1263 (0.8355–1.5183)
	Weighted mode	16	0.4928	1.1081 (0.8324–1.4751)
Isovalerylglycine levels	MR Egger	21	0.6327	1.0391 (0.8901–1.2130)
	Weighted median	21	0.0237	1.1289 (1.0163–1.2539)
	Inverse variance weighted	21	0.0402	1.0997 (1.0043–1.2041)
	Simple mode	21	0.1978	1.1262 (0.9455–1.3414)
	Weighted mode	21	0.0512	1.1167 (1.0061–1.2394)
1–arachidonoyl–gpc (20:4n6) levels	MR Egger	22	0.0018	1.1978 (1.0854–1.3218)
	Weighted median	22	<0.001	1.1659 (1.0875–1.2500)
	Inverse variance weighted	22	<0.001	1.1238 (1.0501–1.2026)
	Simple mode	22	0.9640	1.0064 (0.7650–1.3239)
	Weighted mode	22	<0.001	1.1653 (1.0880–1.2482)
1–arachidonoyl–GPE (20:4n6) levels	MR Egger	29	0.0909	1.1252 (0.9862–1.2838)
	Weighted median	29	<0.001	1.1731 (1.0683–1.2881)
	Inverse variance weighted	29	0.0433	1.0788 (1.0023–1.1611)
	Simple mode	29	0.3864	1.0960 (0.8936–1.3444)
	Weighted mode	29	0.0122	1.1264 (1.0325–1.2289)
3–methyladipate levels	MR Egger	16	0.2151	1.2309 (0.8996–1.6844)
	Weighted median	16	0.1285	1.1428 (0.9621–1.3574)
	Inverse variance weighted	16	0.0491	1.1504 (1.0005–1.3228)
	Simple mode	16	0.3634	1.1490 (0.8595–1.5360)
	Weighted mode	16	0.2717	1.1439 (0.9081–1.4409)
Chiro–inositol levels	MR Egger	12	0.4179	1.1479 (0.8336–1.5805)
	Weighted median	12	0.0452	1.1590 (1.0031–1.3391)
	Inverse variance weighted	12	0.0322	1.1266 (1.0102–1.2564)
	Simple mode	12	0.1329	1.1975 (0.9632–1.4888)
	Weighted mode	12	0.1327	1.2059 (0.9620–1.5117)
21–hydroxypregnenolone disulfate levels	MR Egger	30	0.2144	0.8939 (0.7518–1.0628)
	Weighted median	30	0.2786	0.9376 (0.8345–1.0535)
	Inverse variance weighted	30	0.0487	0.9260 (0.8578–0.9996)
	Simple mode	30	0.6060	0.9503 (0.7846–1.1510)
	Weighted mode	30	0.6910	0.9691 (0.8313–1.1297)
4–oxo–retinoic acid levels	MR Egger	12	0.7727	1.0508 (0.7576–1.4573)
	Weighted median	12	0.2136	1.1288 (0.9326–1.3664)
	Simple mode	12	0.2764	1.1710 (0.8938–1.5342)
	Weighted mode	12	0.2662	1.1419 (0.9146–1.4257)
S–methylcysteine sulfoxide levels	MR Egger	19	0.0433	1.2564 (1.0236–1.5422)
	Weighted median	19	0.0213	1.1869 (1.0258–1.3733)
	Inverse variance weighted	19	0.0342	1.1244 (1.0088–1.2534)
	Simple mode	19	0.0921	1.2247 (0.9796–1.5311)
	Weighted mode	19	0.0604	1.2029 (1.0040–1.4412)
Dimethyl sulfone levels	MR Egger	20	0.0556	0.8074 (0.6578–0.9910)
	Weighted median	20	0.0444	0.8532 (0.7309–0.9961)
	Inverse variance weighted	20	0.0219	0.8765 (0.7831–0.9811)
	Simple mode	20	0.1474	0.8077 (0.6121–1.0656)
	Weighted mode	20	0.2151	0.8183 (0.6024–1.1117)
3–(3–hydroxyphenyl)propionate sulfate levels	MR Egger	17	0.0164	1.3409 (1.0838–1.6590)
	Weighted median	17	0.1848	1.0948 (0.9576–1.2516)
	Inverse variance weighted	17	0.0465	1.1064 (1.0016–1.2221)
	Simple mode	17	0.4486	1.0936 (0.8726–1.3706)
	Weighted mode	17	0.3376	1.0990 (0.9114–1.3251)
Etiocholanolone glucuronide levels	MR Egger	19	0.2287	1.0786 (0.9578–1.2146)
	Weighted median	19	0.0875	1.1002 (0.9861–1.2276)
	Inverse variance weighted	19	0.0066	1.1186 (1.0317–1.2129)
	Simple mode	19	0.2006	1.1317 (0.9429–1.3583)
	Weighted mode	19	0.0970	1.1041 (0.9882–1.2335)
Tyramine O–sulfate levels	MR Egger	19	0.8893	0.9851 (0.8000–1.2130)
	Weighted median	19	0.1002	0.8810 (0.7574–1.0246)
	Inverse variance weighted	19	0.0293	0.8895 (0.8007–0.9883)
	Simple mode	19	0.3642	0.8935 (0.7048–1.1326)
	Weighted mode	19	0.2096	0.8792 (0.7242–1.0673)
3–methoxycatechol sulfate (2) levels	MR Egger	17	0.0482	0.8000 (0.6528–0.9804)
	Weighted median	17	0.0106	0.8138 (0.6949–0.9531)
	Inverse variance weighted	17	0.0412	0.8902 (0.7962–0.9954)
	Simple mode	17	0.0774	0.7818 (0.6055–1.0095)
	Weighted mode	17	0.0661	0.7940 (0.6314–0.9986)
Nonanoylcarnitine (C9) levels	MR Egger	20	0.9446	0.9952 (0.8699–1.1385)
	Weighted median	20	0.1407	0.9295 (0.8434–1.0244)
	Inverse variance weighted	20	0.0030	0.8927 (0.8283–0.9621)
	Simple mode	20	0.3046	0.9074 (0.7576–1.0869)
	Weighted mode	20	0.1447	0.9287 (0.8442–1.0216)
1–stearoyl–2–linoleoyl–gpc (18:0/18:2) levels	MR Egger	20	0.0064	0.6584 (0.5049–0.8585)
	Weighted median	20	<0.001	0.7061 (0.6150–0.8108)
	Inverse variance weighted	20	<0.001	0.7926 (0.7029–0.8937)
	Simple mode	20	0.0695	0.7337 (0.5352–1.0058)
	Weighted mode	20	<0.001	0.7105 (0.6124–0.8242)

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1−stearoyl−2−linoleoyl−GPE (18:0/18:2) levels	MR Egger	24	0.1016	0.8733 (0.7476−1.0202)
	Weighted median	24	0.2277	0.9332 (0.8340−1.0442)
	Inverse variance weighted	24	0.0291	0.9197 (0.8530−0.9915)
	Simple mode	24	0.1592	0.8576 (0.6973−1.0548)
	Weighted mode	24	0.3409	0.9344 (0.8150−1.0713)
1−stearoyl−2−docosahexaenoyl−gpc (18:0/22:6) levels	MR Egger	25	0.0263	1.2392 (1.0382−1.4791)
	Weighted median	25	0.0802	1.1198 (0.9865−1.2712)
	Inverse variance weighted	25	0.0039	1.1356 (1.0417−1.2379)
	Simple mode	25	0.9342	1.0101 (0.7982−1.2782)
	Weighted mode	25	<0.001	1.3775 (1.1700−1.6218)
1−(1−enyl−palmitoyl)−2−arachidonoyl−GPE (p−16:0/20:4) levels	MR Egger	18	0.5234	1.1068 (0.8159−1.5015)
	Weighted median	18	0.2729	1.0959 (0.9304−1.2909)
	Inverse variance weighted	18	0.0334	1.1570 (1.0115−1.3235)
	Simple mode	18	0.9240	1.0135 (0.7724−1.3299)
	Weighted mode	18	0.5094	1.0845 (0.8566−1.3729)
1−(1−enyl−stearoyl)−2−arachidonoyl−GPE (p−18:0/20:4) levels	MR Egger	21	0.0063	1.3462 (1.1133−1.6279)
	Weighted median	21	<0.001	1.2689 (1.1266−1.4291)
	Inverse variance weighted	21	0.0010	1.1823 (1.0700−1.3063)
	Simple mode	21	0.6158	1.0793 (0.8049−1.4471)
	Weighted mode	21	<0.001	1.2874 (1.1436−1.4492)
1−(1−enyl−palmitoyl)−2−oleoyl−GPE (p−16:0/18:1) levels	MR Egger	26	0.1776	1.1400 (0.9476−1.3715)
	Weighted median	26	0.0921	1.1205 (0.9815−1.2792)
	Inverse variance weighted	26	0.0272	1.1062 (1.0114−1.2098)
	Simple mode	26	0.3010	1.1369 (0.8960−1.4426)
	Weighted mode	26	0.2427	1.1369 (0.9214−1.4028)
1−oleoyl−2−linoleoyl−GPE (18:1/18:2) levels	MR Egger	30	0.0019	0.8327 (0.7501−0.9244)
	Weighted median	30	0.0193	0.9007 (0.8251−0.9832)
	Inverse variance weighted	30	<0.001	0.9019 (0.8509−0.9559)
	Simple mode	30	0.3743	0.9318 (0.7993−1.0863)
	Weighted mode	30	0.0015	0.8627 (0.7943−0.9369)
Arachidonoylcholine levels	MR Egger	17	0.0555	1.3227 (1.0158−1.7224)
	Weighted median	17	0.1928	1.1208 (0.9440−1.3306)
	Inverse variance weighted	17	0.0325	1.1422 (1.0111−1.2902)
	Simple mode	17	0.9660	1.0076 (0.7169−1.4160)
	Weighted mode	17	0.9167	1.0139 (0.7855−1.3089)
Dihomo−linoleoylcarnitine (C20:2) levels	MR Egger	26	0.9104	1.0120 (0.8233−1.2440)
	Weighted median	26	0.1538	1.0844 (0.9701−1.2120)
	Inverse variance weighted	26	0.0473	1.1081 (1.0012−1.2264)
	Simple mode	26	0.5721	1.0614 (0.8655−1.3015)
	Weighted mode	26	0.3033	1.0759 (0.9387−1.2331)
Cortolone glucuronide (1) levels	MR Egger	23	0.1775	0.8796 (0.7345−1.0533)
	Weighted median	23	0.0513	0.8693 (0.7551−1.0008)
	Inverse variance weighted	23	0.0458	0.9064 (0.8231−0.9982)
	Simple mode	23	0.2167	0.8543 (0.6701−1.0890)
	Weighted mode	23	0.1693	0.8435 (0.6669−1.0667)
Glyco−beta−muricholate levels	MR Egger	22	0.0358	0.9215 (0.8581−0.9895)
	Weighted median	22	0.3398	0.9684 (0.9067−1.0344)
	Inverse variance weighted	22	0.0205	0.9409 (0.8936−0.9906)
	Simple mode	22	0.2606	0.9264 (0.8137−1.0546)
	Weighted mode	22	0.0933	0.9432 (0.8836−1.0067)
Tetradecadienoate (14:2) levels	MR Egger	11	0.0090	1.6633 (1.2309−2.2475)
	Weighted median	11	0.0018	1.3794 (1.1276−1.6876)
	Inverse variance weighted	11	0.0034	1.2804 (1.0853−1.5106)
	Simple mode	11	0.0365	1.4590 (1.0735−1.9830)
	Weighted mode	11	0.0136	1.4221 (1.1288−1.7914)
Vanillic acid glycine levels	MR Egger	20	0.2556	0.9401 (0.8480−1.0422)
	Weighted median	20	0.4714	0.9620 (0.8656−1.0690)
	Inverse variance weighted	20	0.0126	0.9126 (0.8493−0.9806)
	Simple mode	20	0.4810	0.9193 (0.7309−1.1563)
	Weighted mode	20	0.6061	0.9708 (0.8691−1.0845)
3−ureidopropionate levels	MR Egger	21	0.2505	0.8841 (0.7211−1.0839)
	Weighted median	21	0.4136	0.9358 (0.7983−1.0971)
	Inverse variance weighted	21	0.0392	0.8967 (0.8083−0.9946)
	Simple mode	21	0.7349	0.9535 (0.7267−1.2511)
	Weighted mode	21	0.5982	0.9424 (0.7584−1.1710)
3−aminoisobutyrate levels	MR Egger	27	0.3031	0.9581 (0.8846−1.0377)
	Weighted median	27	0.1326	0.9548 (0.8989−1.0141)
	Inverse variance weighted	27	0.0356	0.9378 (0.8832−0.9957)
	Simple mode	27	0.2980	0.9139 (0.7740−1.0791)
	Weighted mode	27	0.1189	0.9511 (0.8949−1.0109)
Homovanillate (hva) levels	MR Egger	21	0.0802	1.2625 (0.9860−1.6166)
	Weighted median	21	0.2377	1.0835 (0.9485−1.2378)
	Inverse variance weighted	21	0.0051	1.1531 (1.0437−1.2739)
	Simple mode	21	0.6160	1.0627 (0.8410−1.3430)
	Weighted mode	21	0.5536	1.0717 (0.8555−1.3426)
Arachidate (20:0) levels	MR Egger	20	0.0722	1.1783 (0.9957−1.3943)
	Weighted median	20	0.2293	1.0838 (0.9505−1.2358)
	Inverse variance weighted	20	0.0235	1.1112 (1.0143−1.2174)
	Simple mode	20	0.8545	1.0196 (0.8309−1.2512)
	Weighted mode	20	0.4677	1.0550 (0.9156−1.2157)
X−12731 levels	MR Egger	24	0.1798	0.8603 (0.6954−1.0644)
	Weighted median	24	0.3024	0.9362 (0.8260−1.0611)
	Inverse variance weighted	24	0.0119	0.8938 (0.8189−0.9756)
	Simple mode	24	0.8146	0.9721 (0.7698−1.2277)
	Weighted mode	24	0.8366	0.9789 (0.8011−1.1961)

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X−12680 levels	MR Egger	13	0.7684	0.9273 (0.5682−1.5134)
	Weighted median	13	0.0798	0.8396 (0.6904−1.0210)
	Inverse variance weighted	13	0.0022	0.8039 (0.6991−0.9244)
	Simple mode	13	0.3405	0.8631 (0.6453−1.1543)
	Weighted mode	13	0.3551	0.8718 (0.6593−1.1530)
X−15461 levels	MR Egger	23	0.0939	0.8264 (0.6679−1.0226)
	Weighted median	23	0.0187	0.8401 (0.7265−0.9714)
	Inverse variance weighted	23	0.0048	0.8609 (0.7757−0.9554)
	Simple mode	23	0.1713	0.8380 (0.6559−1.0706)
	Weighted mode	23	0.0997	0.8346 (0.6790−1.0257)
X−17351 levels	MR Egger	13	0.1166	0.7267 (0.5034−1.0493)
	Weighted median	13	0.1811	0.8917 (0.7538−1.0548)
	Inverse variance weighted	13	0.0250	0.8678 (0.7666−0.9824)
	Simple mode	13	0.2957	0.8748 (0.6884−1.1118)
	Weighted mode	13	0.2875	0.8774 (0.6969−1.1047)
X−19438 levels	MR Egger	22	0.0315	0.7772 (0.6277−0.9623)
	Weighted median	22	<0.001	0.7791 (0.6826−0.8894)
	Inverse variance weighted	22	<0.001	0.8297 (0.7530−0.9142)
	Simple mode	22	0.0508	0.7621 (0.5893−0.9855)
	Weighted mode	22	0.0293	0.7571 (0.5996−0.9559)
X−24494 levels	MR Egger	18	0.0244	1.2546 (1.0491−1.5005)
	Weighted median	18	0.0996	1.1134 (0.9798−1.2652)
	Inverse variance weighted	18	0.0016	1.1713 (1.0617−1.2922)
	Simple mode	18	0.3452	1.1027 (0.9052−1.3431)
	Weighted mode	18	0.1985	1.1165 (0.9501−1.3120)
X−24728 levels	MR Egger	30	0.5730	1.0563 (0.8751−1.2751)
	Weighted median	30	0.2119	1.0856 (0.9543−1.2349)
	Inverse variance weighted	30	0.0171	1.1182 (1.0201−1.2258)
	Simple mode	30	0.4735	1.0896 (0.8643−1.3736)
	Weighted mode	30	0.3950	1.0896 (0.8967−1.3240)
X−24949 levels	MR Egger	20	0.7316	1.0255 (0.8901−1.1815)
	Weighted median	20	0.4243	1.0451 (0.9379−1.1645)
	Inverse variance weighted	20	0.0262	1.0883 (1.0101−1.1725)
	Simple mode	20	0.4664	1.0773 (0.8852−1.3112)
	Weighted mode	20	0.8353	1.0129 (0.8992−1.1410)
X−25343 levels	MR Egger	18	0.3408	1.1735 (0.8527−1.6152)
	Weighted median	18	0.1884	1.1192 (0.9463−1.3238)
	Inverse variance weighted	18	0.0245	1.1499 (1.0181−1.2988)
	Simple mode	18	0.4954	1.0960 (0.8468−1.4185)
	Weighted mode	18	0.3933	1.1040 (0.8847−1.3778)
2'−o−methylcytidine levels	MR Egger	19	0.0383	0.9197 (0.8549−0.9894)
	Weighted median	19	0.0471	0.9416 (0.8873−0.9992)
	Inverse variance weighted	19	0.0062	0.9306 (0.8839−0.9797)
	Simple mode	19	0.1657	0.8797 (0.7393−1.0468)
	Weighted mode	19	0.0760	0.9397 (0.8808−1.0026)
Decadienedioic acid (C10:2−DC) levels	MR Egger	19	0.5352	0.9721 (0.8905−1.0612)
	Weighted median	19	0.1827	0.9564 (0.8956−1.0212)
	Inverse variance weighted	19	0.0496	0.9454 (0.8938−0.9999)
	Simple mode	19	0.3172	0.9172 (0.7780−1.0813)
	Weighted mode	19	0.2048	0.9608 (0.9052−1.0198)
Adenosine 5'−diphosphate (ADP) to N−acetylglucosamine to N−acetylgalactosamine ratio	MR Egger	22	0.3279	1.1438 (0.8797−1.4873)
	Weighted median	22	0.1608	1.0954 (0.9644−1.2442)
	Inverse variance weighted	22	0.0244	1.1274 (1.0156−1.2516)
	Simple mode	22	0.4067	1.1350 (0.8466−1.5216)
	Weighted mode	22	0.3422	1.1388 (0.8762−1.4800)
Arachidonate (20:4n6) to oleate to vaccenate (18:1) ratio	MR Egger	19	0.0067	1.2343 (1.0797−1.4110)
	Weighted median	19	<0.001	1.1821 (1.0892−1.2828)
	Inverse variance weighted	19	0.0061	1.1286 (1.0351−1.2306)
	Simple mode	19	0.6305	1.0650 (0.8276−1.3705)
	Weighted mode	19	<0.001	1.1862 (1.0968−1.2828)
Phosphate to phosphoethanolamine ratio	MR Egger	13	0.1184	0.7481 (0.5346−1.0467)
	Weighted median	13	0.0225	0.8103 (0.6762−0.9708)
	Inverse variance weighted	13	0.0453	0.8687 (0.7569−0.9971)
	Simple mode	13	0.1015	0.7367 (0.5256−1.0327)
	Weighted mode	13	0.0854	0.7503 (0.5557−1.0132)
Glucose to maltose ratio	MR Egger	12	0.1643	0.7302 (0.4843−1.1010)
	Weighted median	12	0.1857	0.8831 (0.7347−1.0616)
	Inverse variance weighted	12	0.0221	0.8485 (0.7371−0.9767)
	Simple mode	12	0.3803	0.8779 (0.6639−1.1608)
	Weighted mode	12	0.2481	0.8520 (0.6587−1.1021)
Adenosine 5'−diphosphate (ADP) to glycerate ratio	MR Egger	13	0.0480	0.6810 (0.4854−0.9554)
	Weighted median	13	0.2046	0.9025 (0.7702−1.0575)
	Inverse variance weighted	13	0.0087	0.8596 (0.7678−0.9625)
	Simple mode	13	0.5598	0.9259 (0.7200−1.1908)
	Weighted mode	13	0.7710	0.9640 (0.7575−1.2269)
Adenosine 5'−diphosphate (ADP) to valine ratio	MR Egger	21	0.5014	1.0690 (0.8832−1.2940)
	Weighted median	21	0.2533	1.0727 (0.9510−1.2101)
	Inverse variance weighted	21	0.0244	1.1099 (1.0135−1.2153)
	Simple mode	21	0.3774	1.0942 (0.9000−1.3302)
	Weighted mode	21	0.3120	1.0764 (0.9366−1.2371)
Phenylalanine to phosphate ratio	MR Egger	20	0.0490	0.7824 (0.6229−0.9826)
	Weighted median	20	0.0318	0.8320 (0.7035−0.9841)
	Inverse variance weighted	20	0.0078	0.8637 (0.7752−0.9621)
	Simple mode	20	0.1232	0.8229 (0.6494−1.0428)
	Weighted mode	20	0.0667	0.8263 (0.6818−1.0014)

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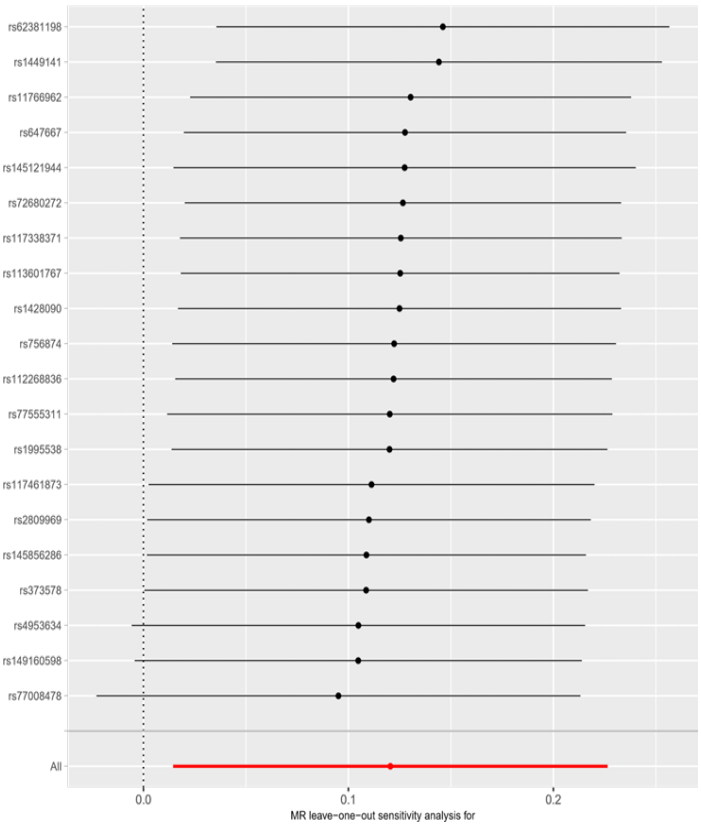
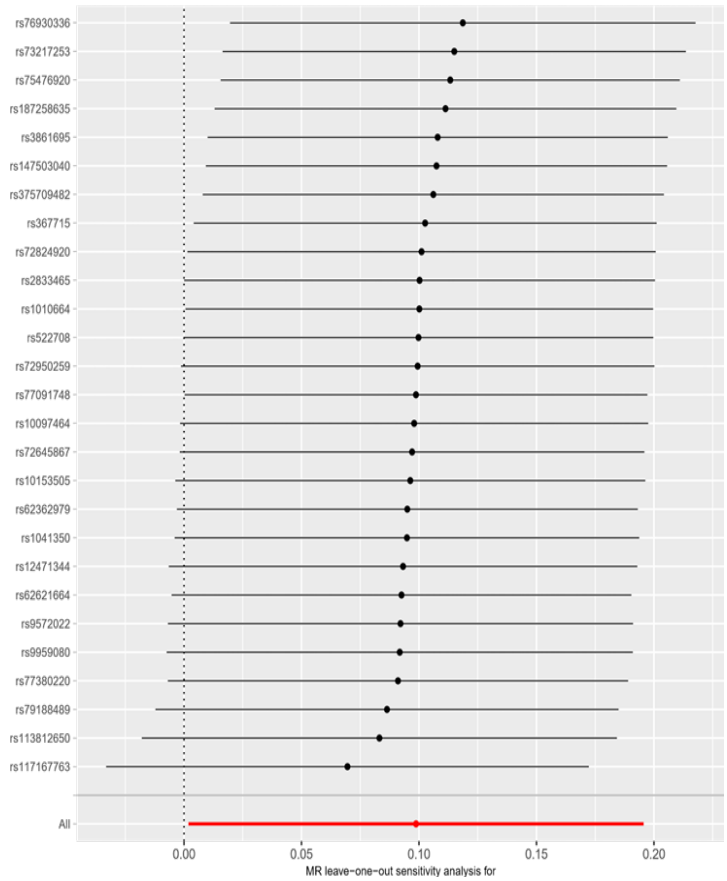
Phosphate to threonine ratio	MR Egger	27	0.0255	1.2679 (1.0424–1.5423)
	Weighted median	27	0.0364	1.1537 (1.0091–1.3189)
	Inverse variance weighted	27	0.0216	1.1135 (1.0159–1.2205)
	Simple mode	27	0.1829	1.1670 (0.9354–1.4561)
	Weighted mode	27	0.0856	1.1786 (0.9842–1.4112)
Cholesterol to cortisol ratio	MR Egger	17	0.1560	1.2307 (0.9372–1.6161)
	Weighted median	17	0.1318	1.1515 (0.9585–1.3833)
	Inverse variance weighted	17	0.0076	1.1854 (1.0462–1.3431)
	Simple mode	17	0.0969	1.3314 (0.9686–1.8301)
	Weighted mode	17	0.0622	1.3135 (1.0061–1.7149)
Retinol (Vitamin A) to linoleoyl–arachidonoyl–glycerol (18:2 to 20:4) [1] ratio	MR Egger	21	0.2471	0.8852 (0.7247–1.0813)
	Weighted median	21	0.0087	0.8507 (0.7539–0.9599)
	Inverse variance weighted	21	0.0212	0.8925 (0.8101–0.9832)
	Simple mode	21	0.4924	0.8981 (0.6646–1.2137)
	Weighted mode	21	0.0048	0.8126 (0.7149–0.9237)
Uridine to 2'–deoxyuridine ratio	MR Egger	23	0.6093	1.0672 (0.8348–1.3643)
	Weighted median	23	0.0153	1.1922 (1.0342–1.3744)
	Inverse variance weighted	23	0.0093	1.1402 (1.0328–1.2588)
	Simple mode	23	0.1613	1.2312 (0.9294–1.6310)
	Weighted mode	23	0.0438	1.2633 (1.0198–1.5650)
Mannose to glycerol ratio	MR Egger	17	0.0239	0.8119 (0.6900–0.9553)
	Weighted median	17	0.0678	0.8763 (0.7606–1.0097)
	Inverse variance weighted	17	0.0445	0.8976 (0.8078–0.9974)
	Simple mode	17	0.5322	0.9137 (0.6926–1.2053)
	Weighted mode	17	0.0886	0.8421 (0.6993–1.0140)
Glutamate to alanine ratio	MR Egger	17	0.0116	1.4876 (1.1345–1.9505)
	Weighted median	17	0.4071	1.0809 (0.8993–1.2990)
	Inverse variance weighted	17	0.0178	1.1727 (1.0279–1.3380)
	Simple mode	17	0.7169	1.0576 (0.7855–1.4240)
	Weighted mode	17	0.5925	1.0770 (0.8252–1.4057)
Adenosine 5'–diphosphate (ADP) to choline ratio	MR Egger	18	0.7085	1.0522 (0.8096–1.3677)
	Weighted median	18	0.1389	1.1024 (0.9689–1.2543)
	Inverse variance weighted	18	0.0338	1.1090 (1.0079–1.2201)
	Simple mode	18	0.1511	1.2060 (0.9447–1.5396)
	Weighted mode	18	0.2576	1.1318 (0.9201–1.3922)
Caffeine to linoleate (18:2n6) ratio	MR Egger	14	0.9691	0.9961 (0.8225–1.2064)
	Weighted median	14	0.1496	0.8923 (0.7642–1.0419)
	Inverse variance weighted	14	0.0142	0.8732 (0.7834–0.9732)
	Simple mode	14	0.3141	0.8849 (0.7039–1.1125)
	Weighted mode	14	0.2913	0.9045 (0.7564–1.0816)

Supplementary File 9:



Leave-one-out sensitivity analysis for Oxalate (ethanedioate) levels on UC



Leave-one-out sensitivity analysis for Gentisate levels on UC

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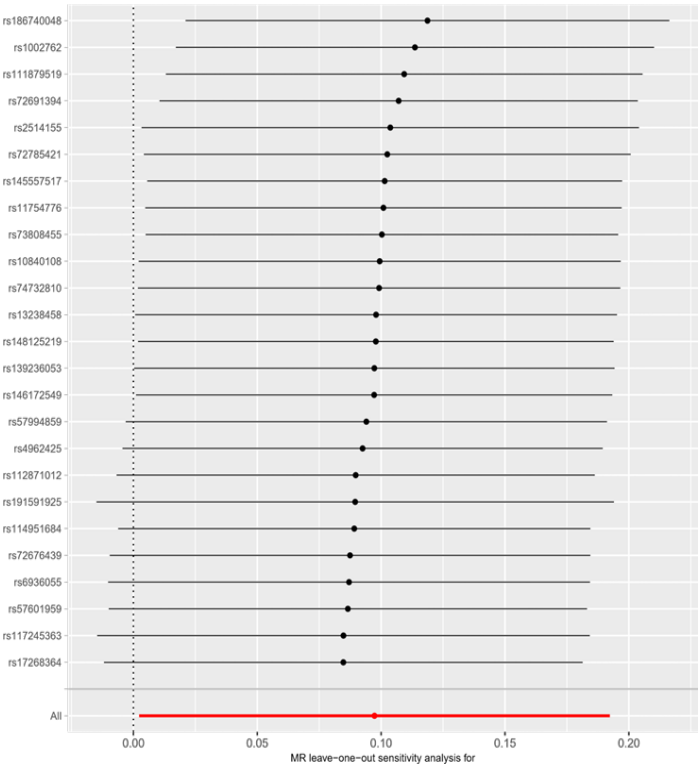
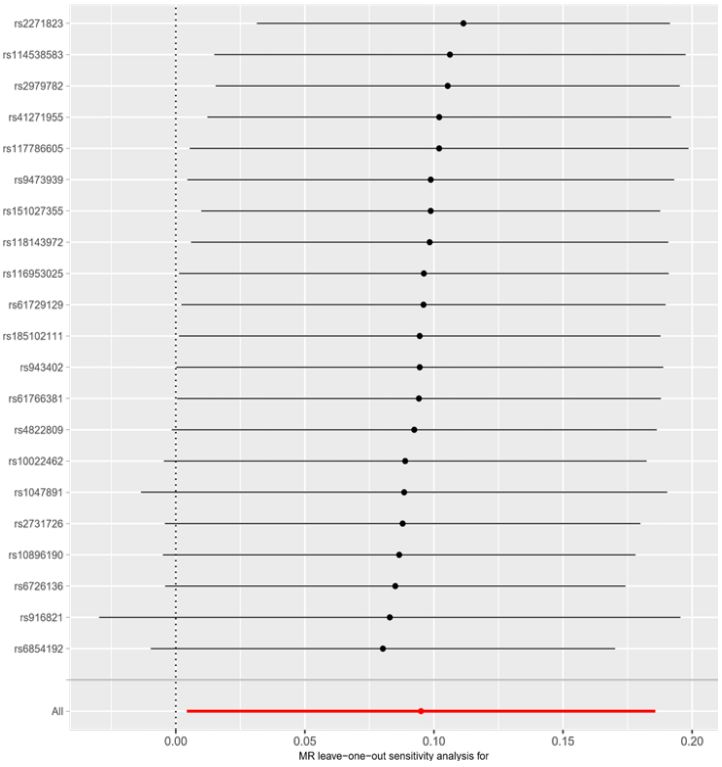
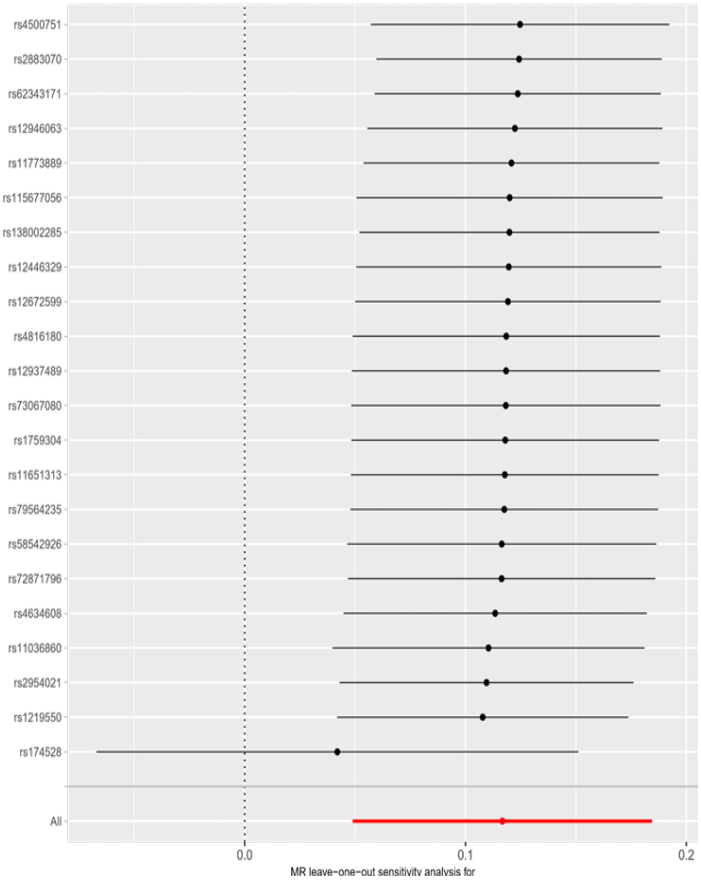


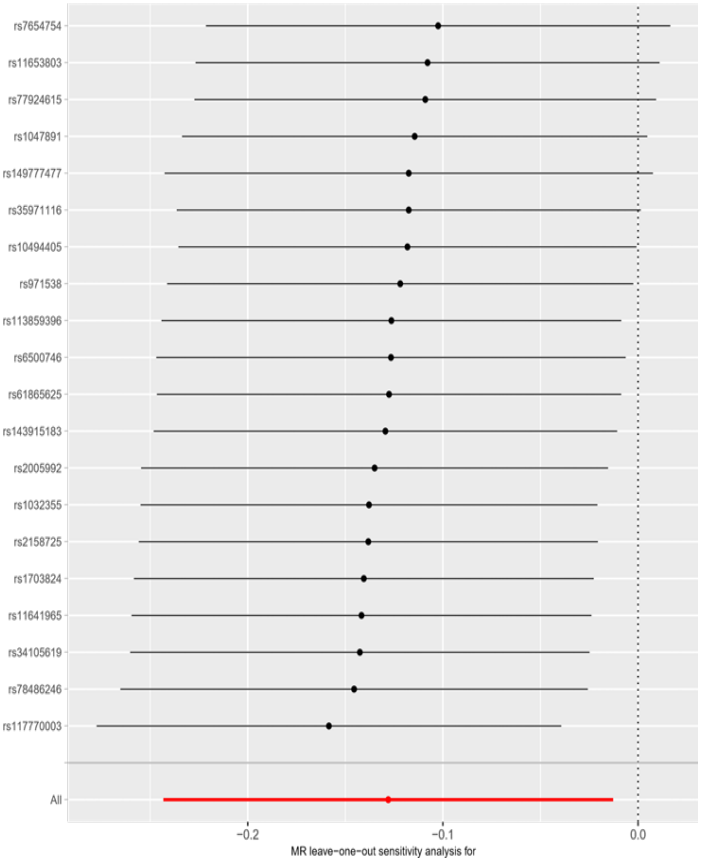
Leave-one-out sensitivity analysis for 1-oleoylglycerol (18:1) levels on UC



Leave-one-out sensitivity analysis for Isovalerylglycine levels on UC



Leave-one-out sensitivity analysis for 1-arachidonoyl-gpc (20:4n6) levels on UC



Leave-one-out sensitivity analysis for N-acetylthreonine levels on UC

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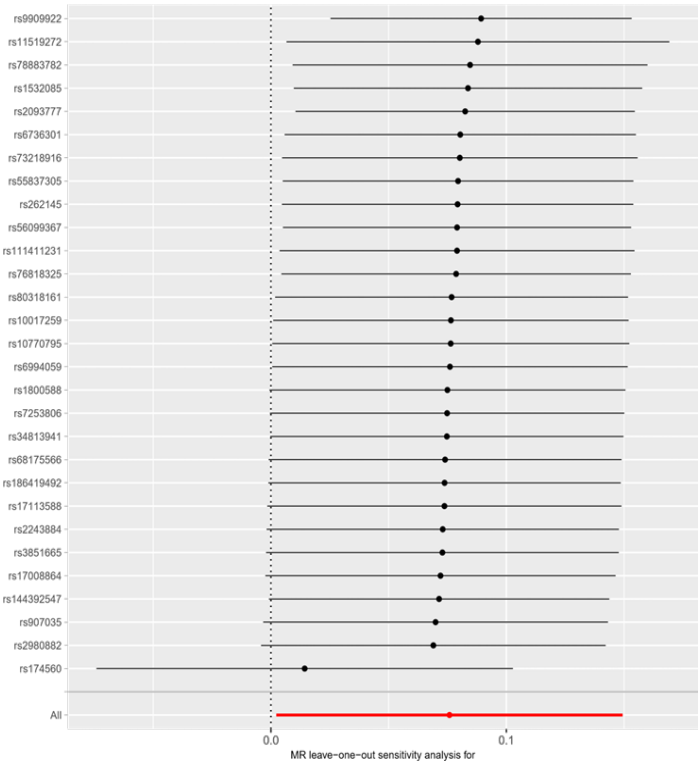
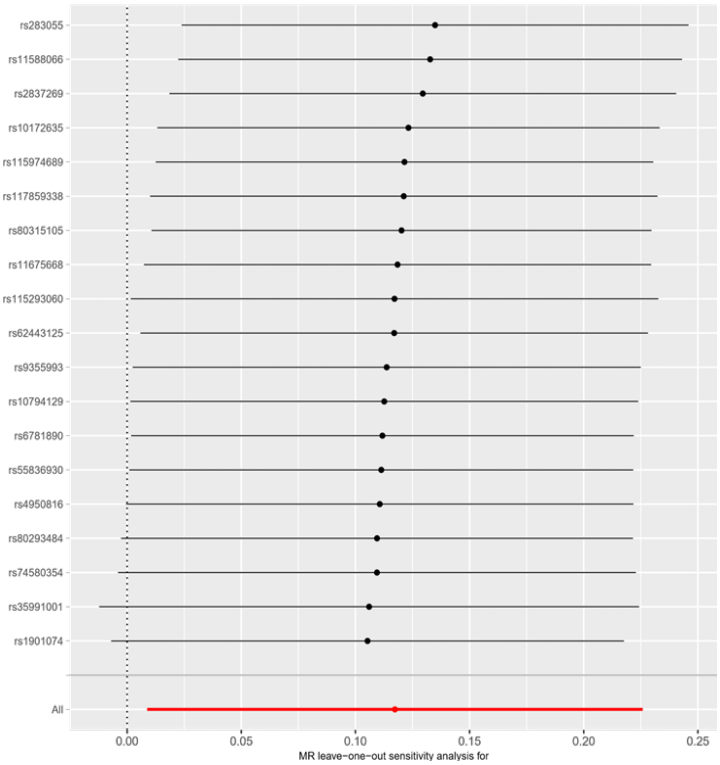
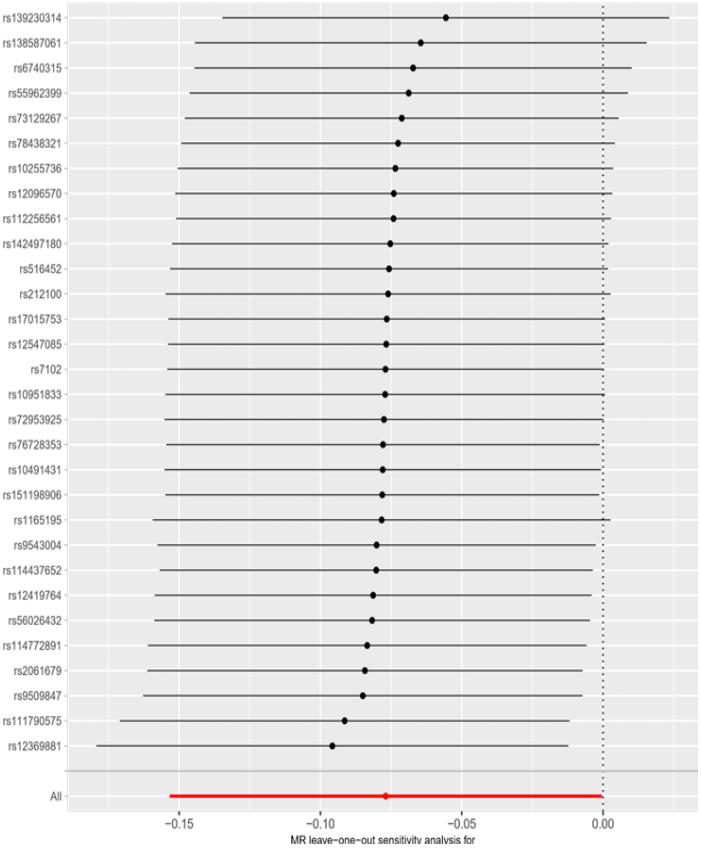


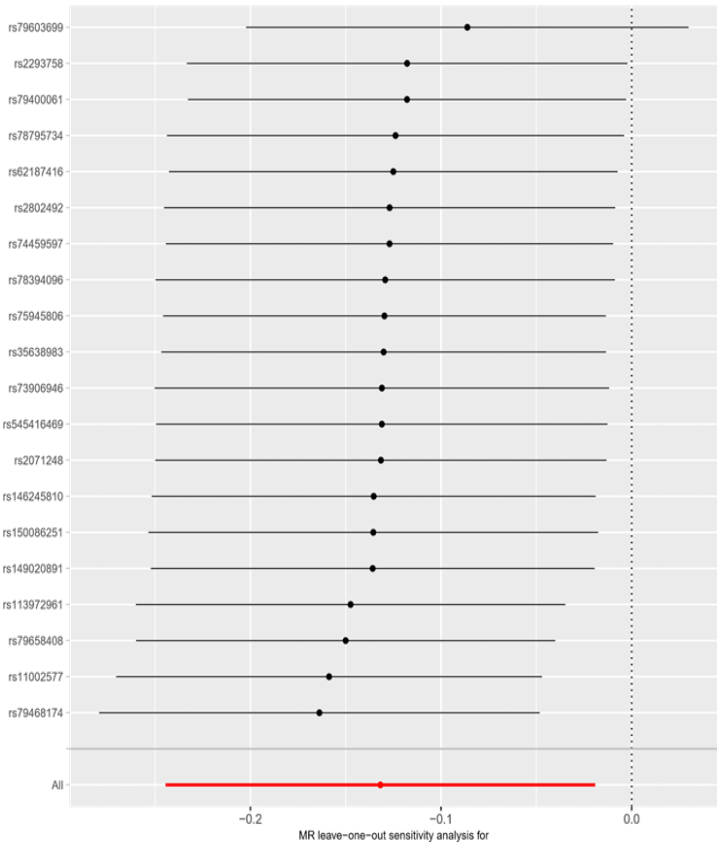
Leave-one-out sensitivity analysis for 1-arachidonoyl-GPE (20:4n6) levels on UC



Leave-one-out sensitivity analysis for S-methylcysteine sulfoxide levels on UC



Leave-one-out sensitivity analysis for 21-hydroxypregnenolone disulfate levels on UC



Leave-one-out sensitivity analysis for Dimethyl sulfone levels on UC

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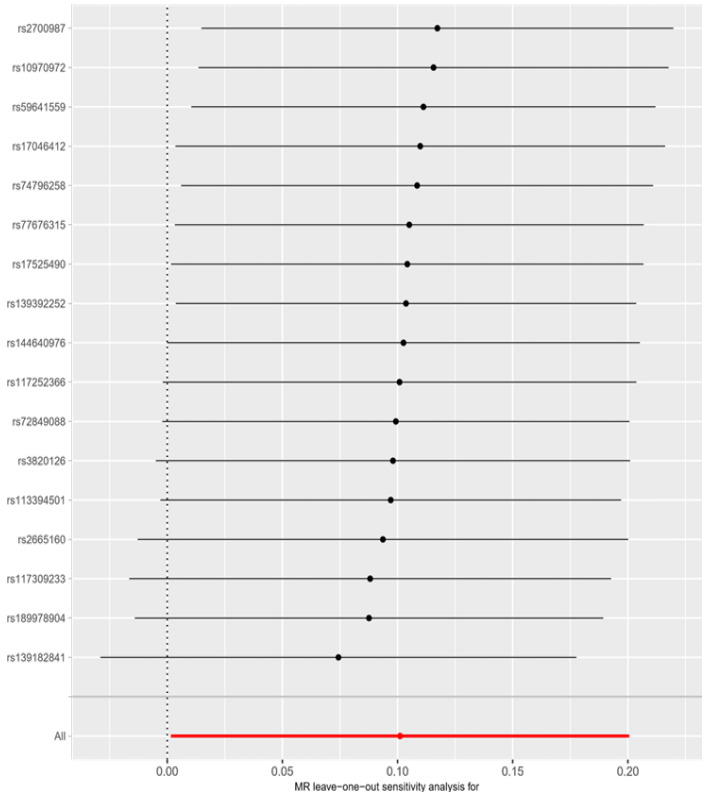
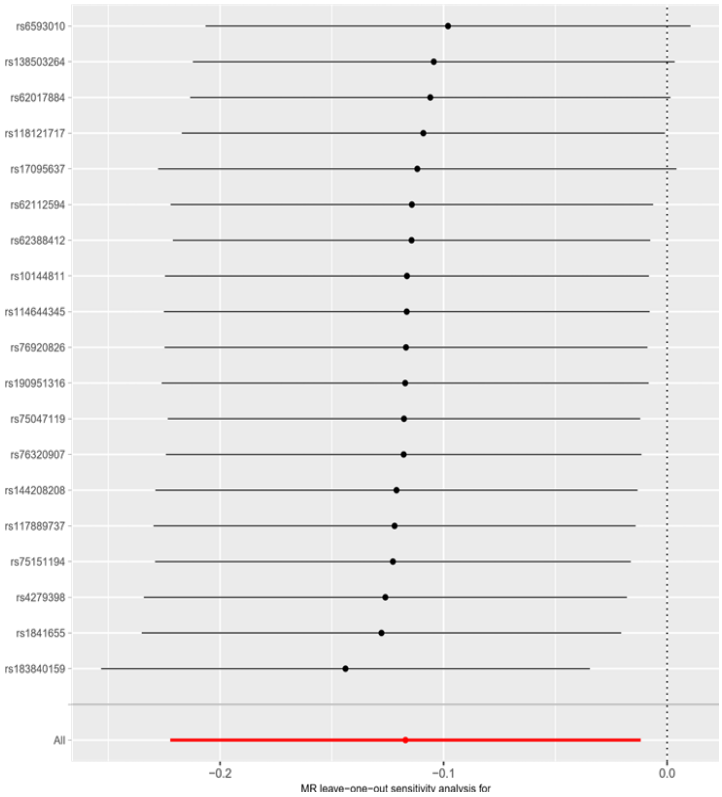
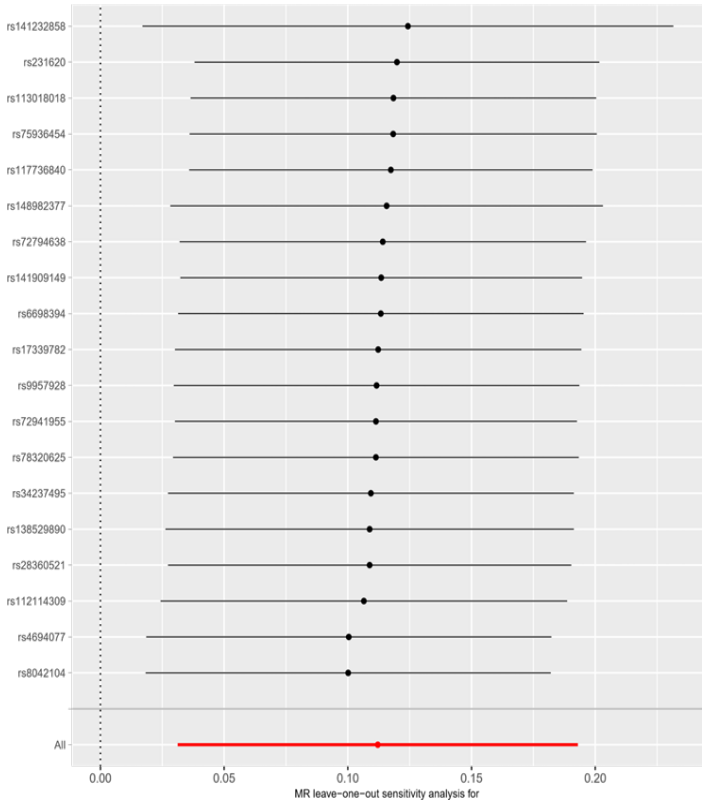


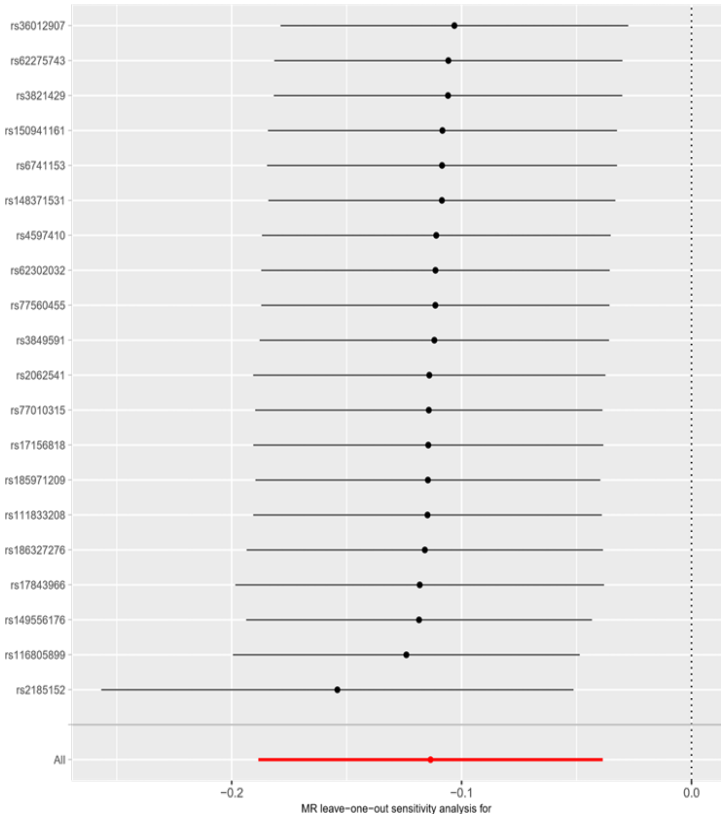
Leave-one-out sensitivity analysis for 3-(3-hydroxyphenyl)propionate sulfate levels on UC



Leave-one-out sensitivity analysis for Tyramine O-sulfate levels on UC



Leave-one-out sensitivity analysis for Etiocholanolone glucuronide levels on UC



Leave-one-out sensitivity analysis for Nonanoylcarnitine (C9) levels on UC

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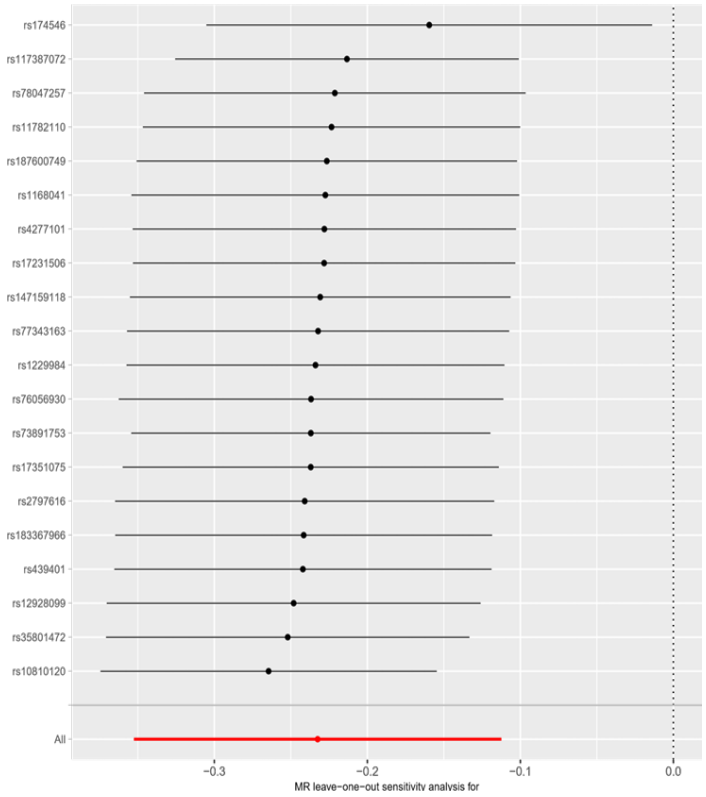
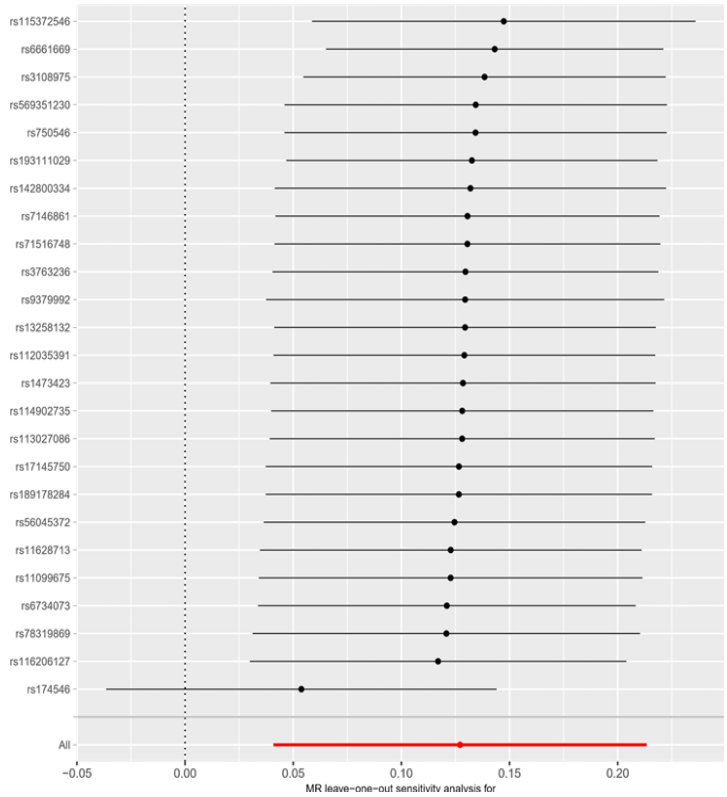
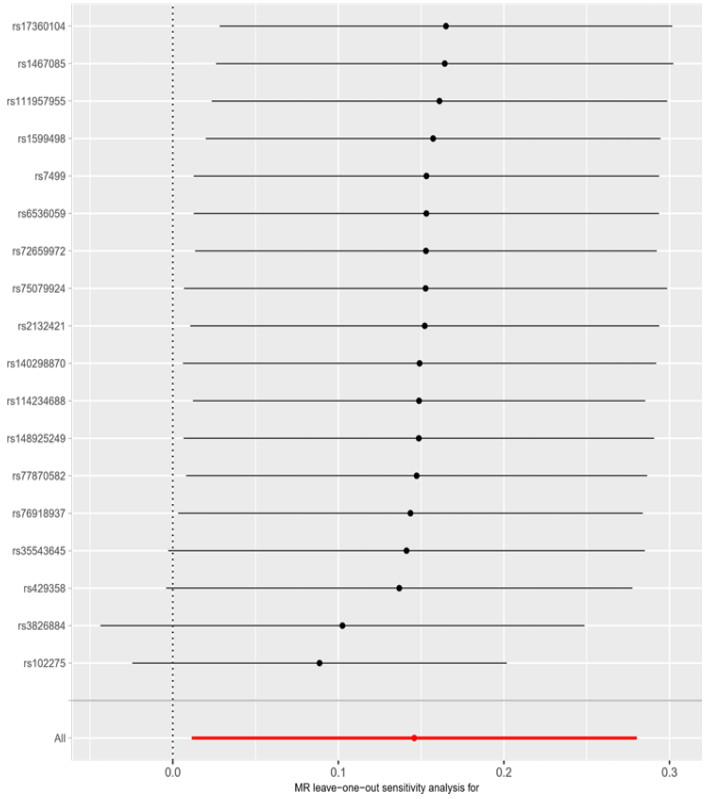


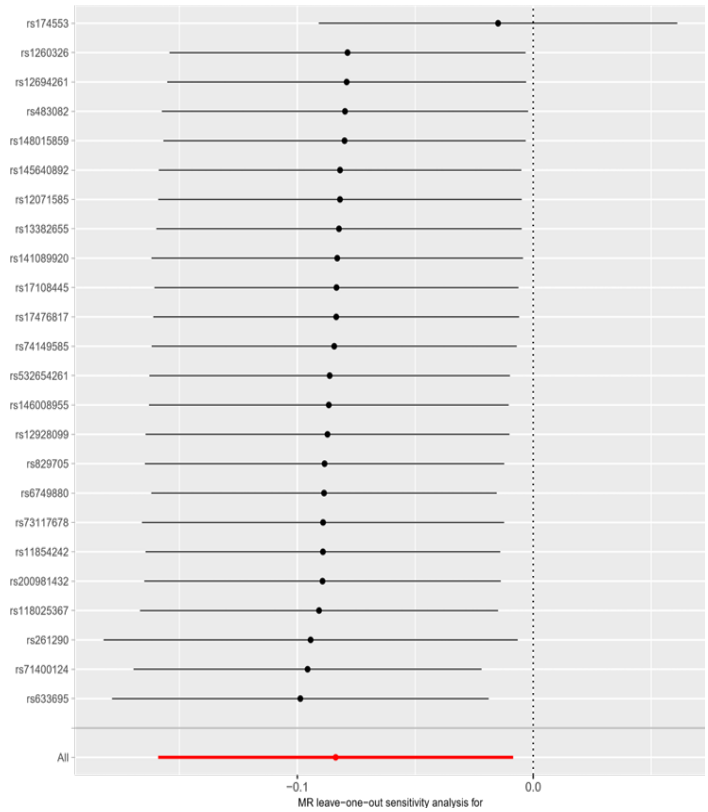
Leave-one-out sensitivity analysis for 1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels on UC



Leave-one-out sensitivity analysis for 1-stearoyl-2-docosahexaenoyl-gpc (18:0/22:6) levels on UC



Leave-one-out sensitivity analysis for 1-(1-enyl-palmitoyl)-2-arachidonoyl-GPE (p-16:0/20:4) levels on UC



Leave-one-out sensitivity analysis for 1-stearoyl-2-linoleoyl-GPE (18:0/18:2) levels on UC

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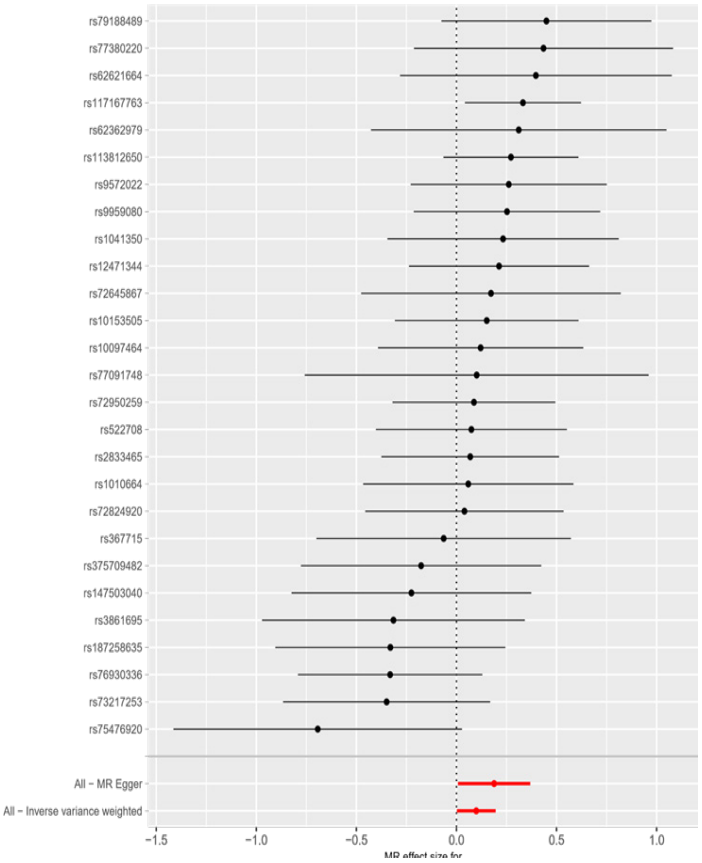
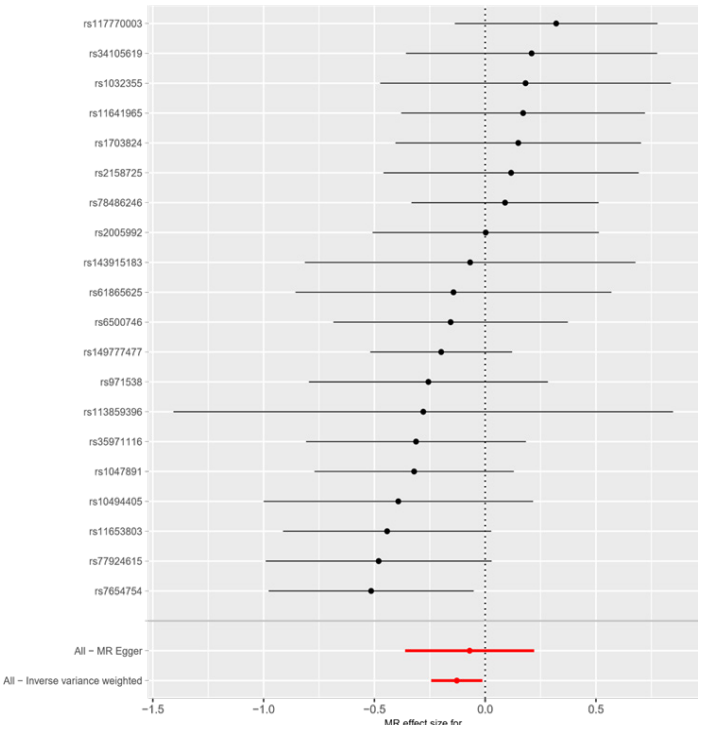
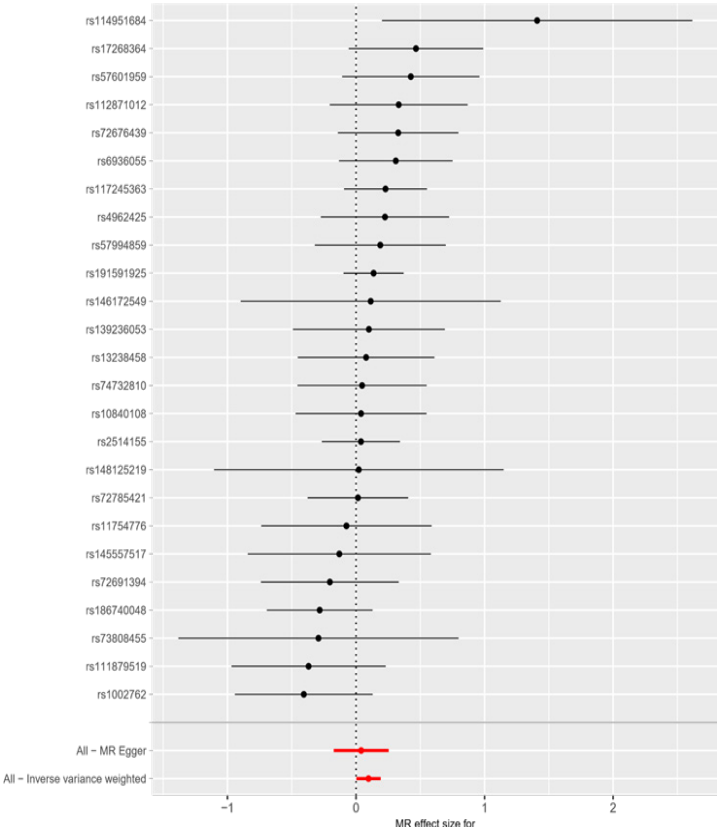
Supplementary File 10:



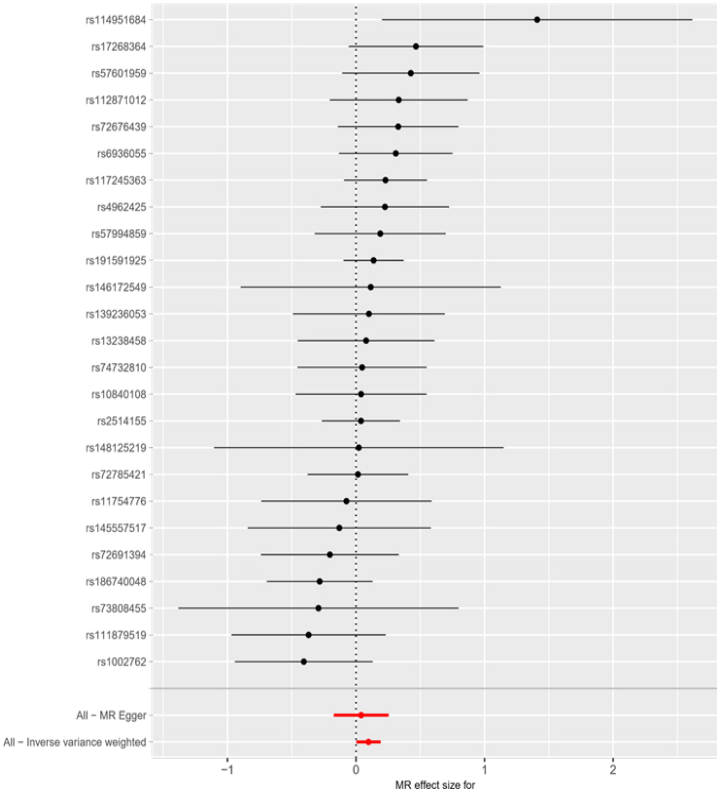
Forest plot for the effect of Gentisate levels on UC



Forest plot for the effect of N-acetylthreonine levels on UC



Forest plot for the effect of 1-oleoylglycerol (18:1) levels on UC



Forest plot for the effect of Oxalate (ethanedioate) levels on UC

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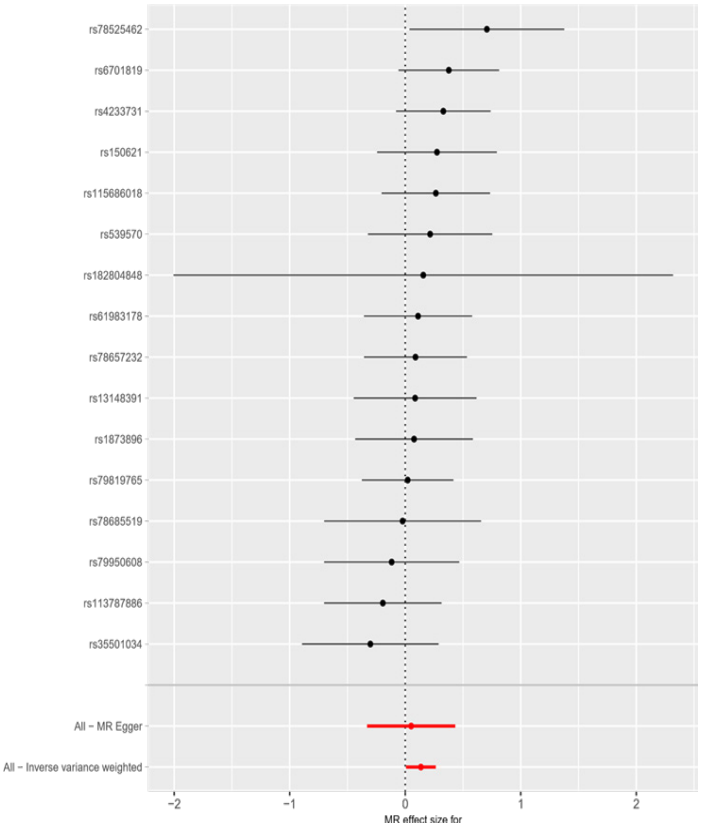
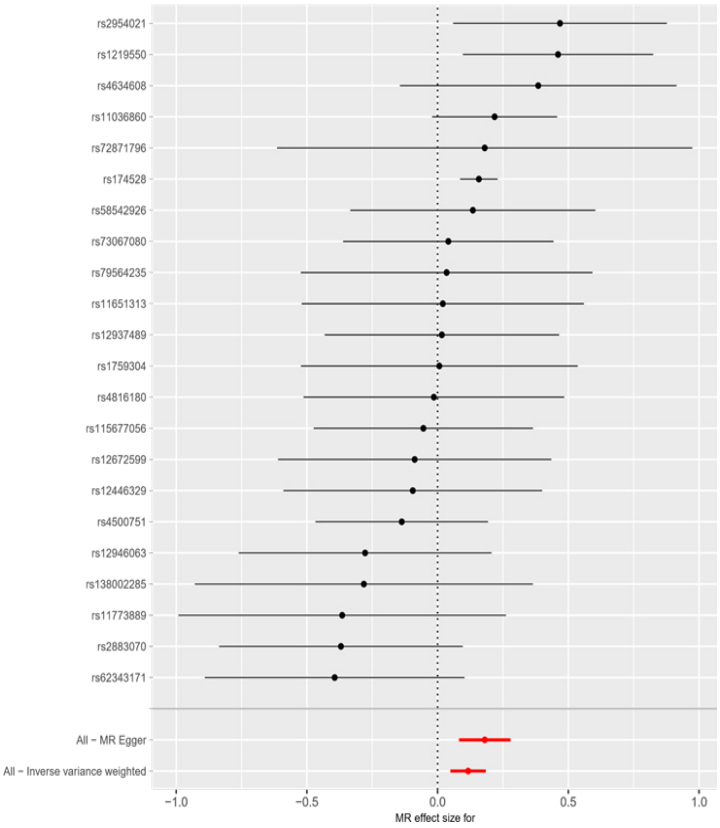
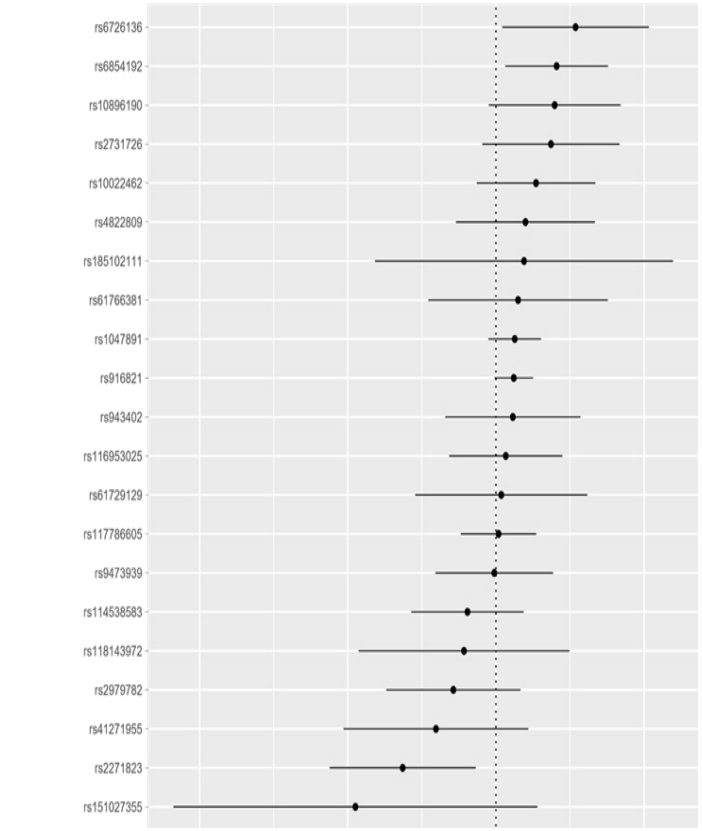


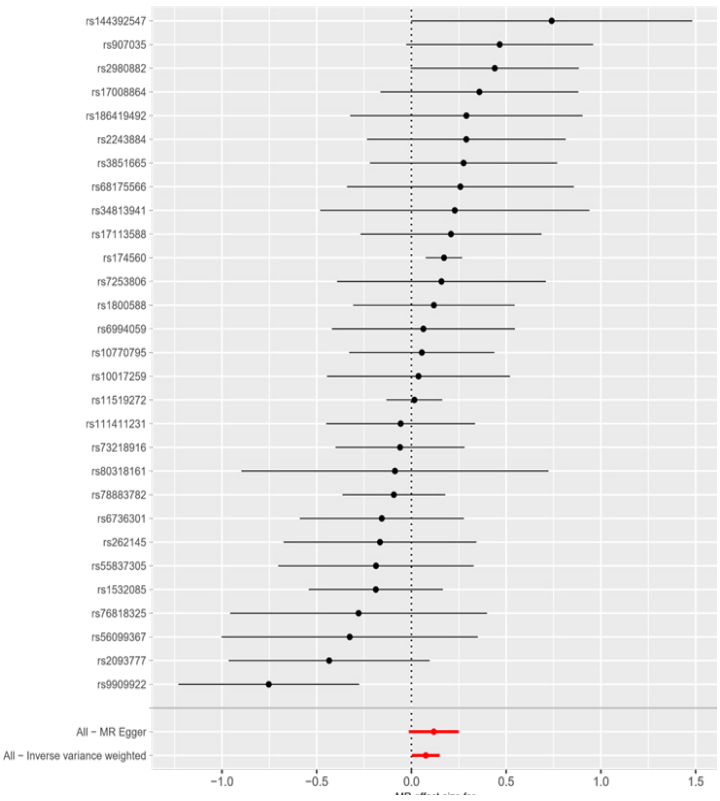
Forest plot for the effect of Eicosenoate (20:1) levels on UC



Forest plot for the effect of 1-arachidonoyl-gpc (20:4n6) levels on UC



Forest plot for the effect of Isovalerylglycine levels on UC



Forest plot for the effect of 1-arachidonoyl-GPE (20:4n6) levels on UC

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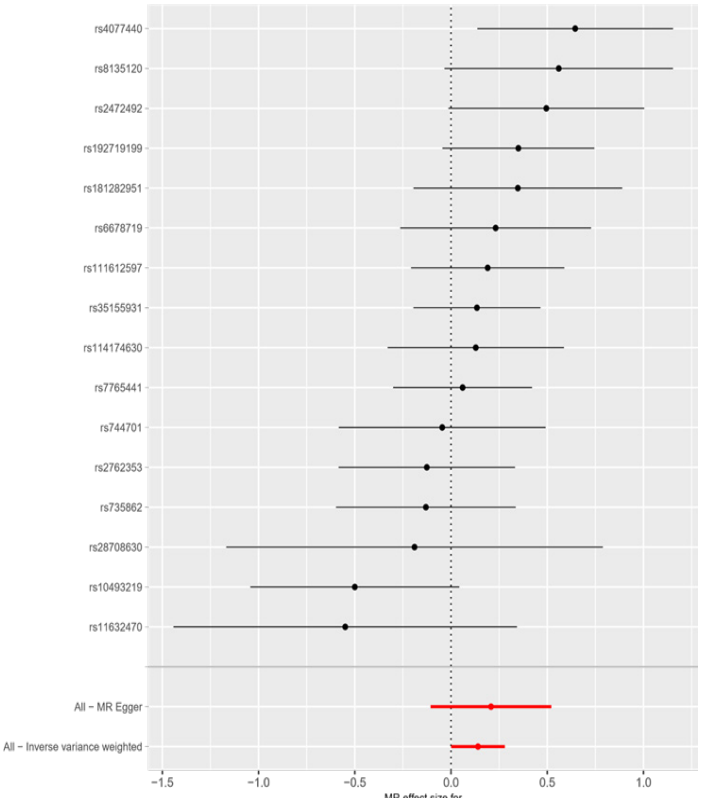
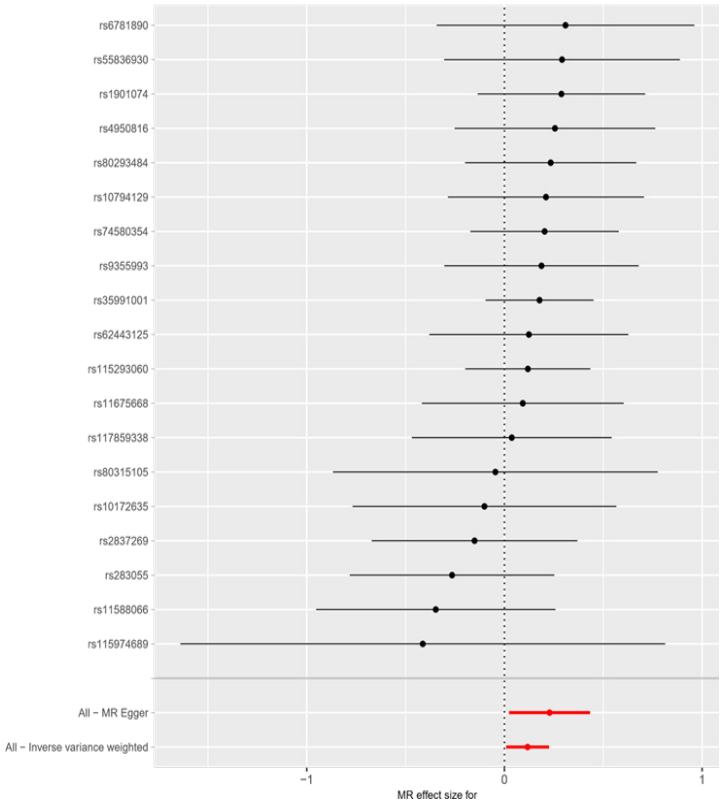
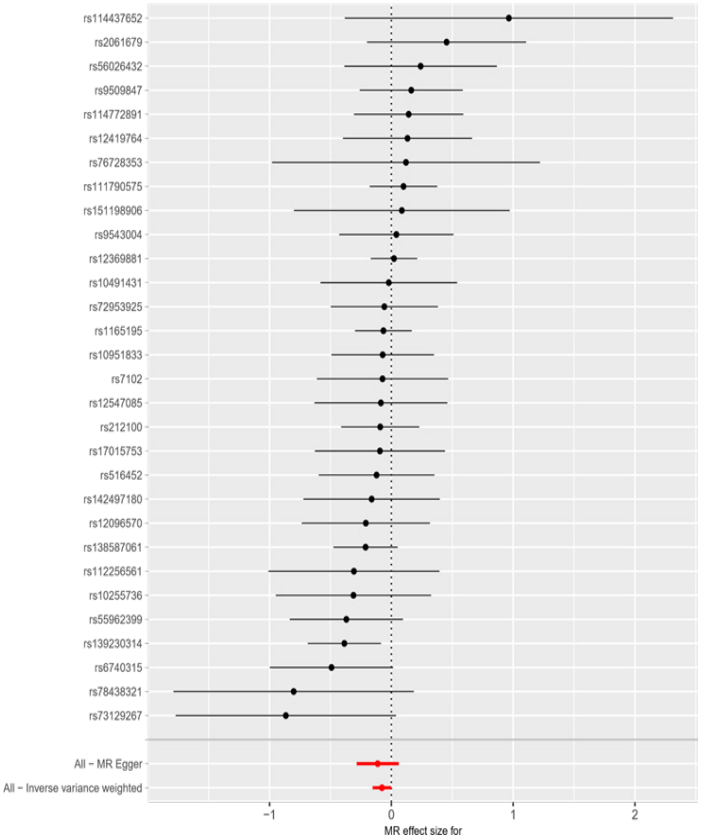


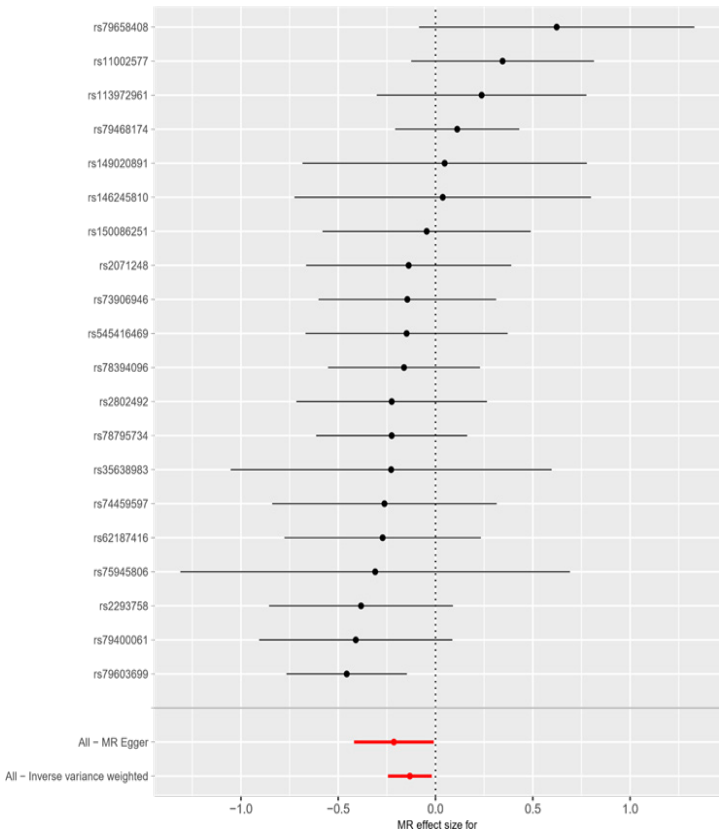
Forest plot for the effect of 3-methyladipate levels on UC



Forest plot for the effect of S-methylcysteine sulfoxide levels on UC



Forest plot for the effect of 21-hydroxypregnenolone disulfate levels on UC



Forest plot for the effect of Dimethyl sulfone levels on UC

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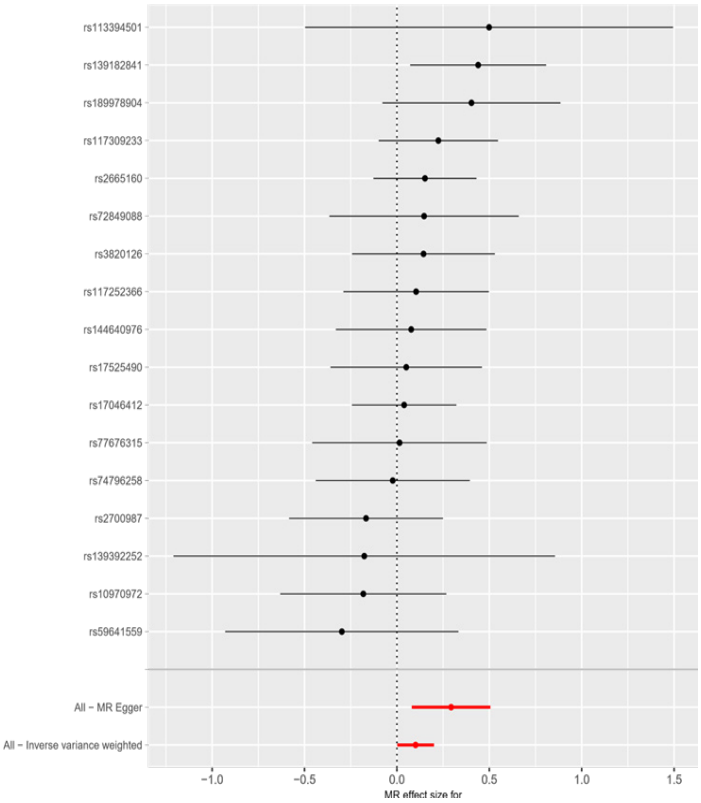
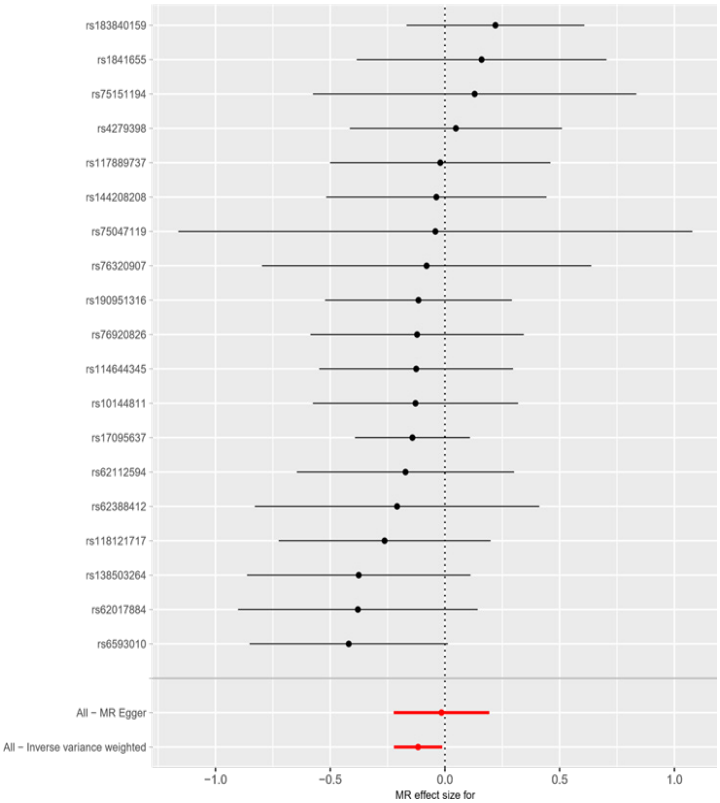
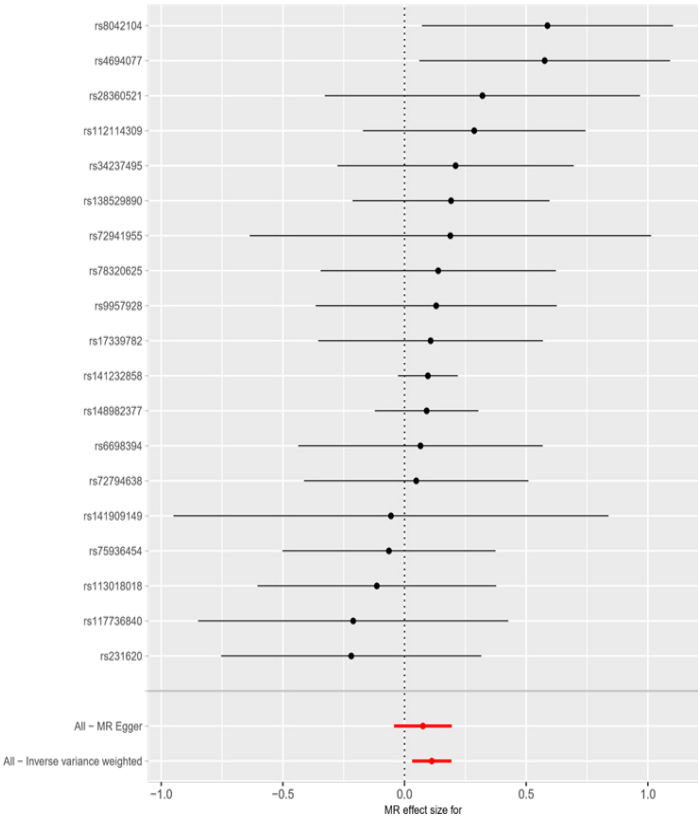


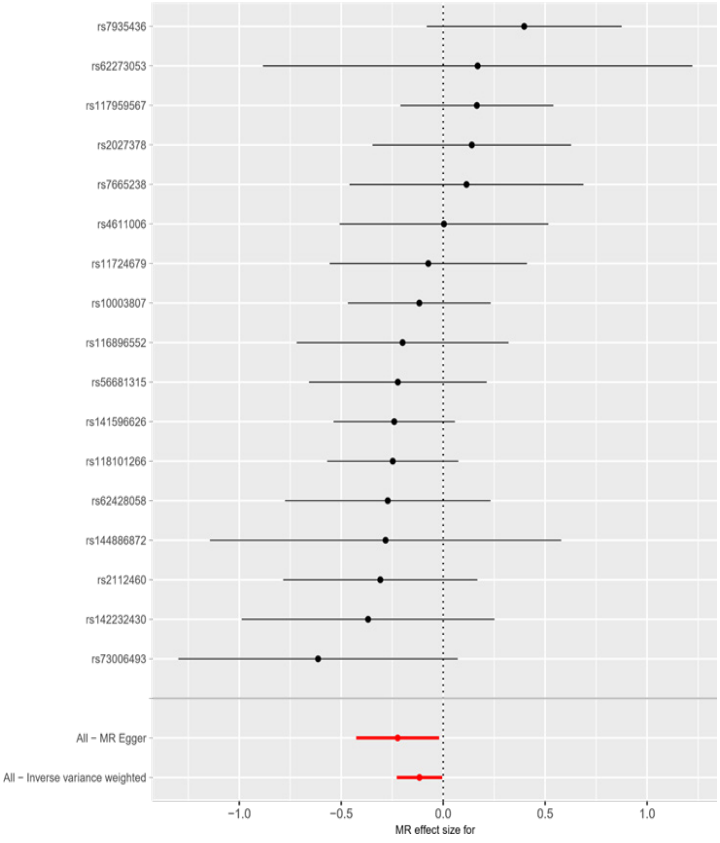
Forest plot for the effect of 3-(3-hydroxyphenyl)propionate sulfate levels on UC



Forest plot for the effect of Tyramine O-sulfate levels on UC



Forest plot for the effect of Etiocholanolone glucuronide levels on UC



Forest plot for the effect of 3-methoxycatechol sulfate (2) levels on UC

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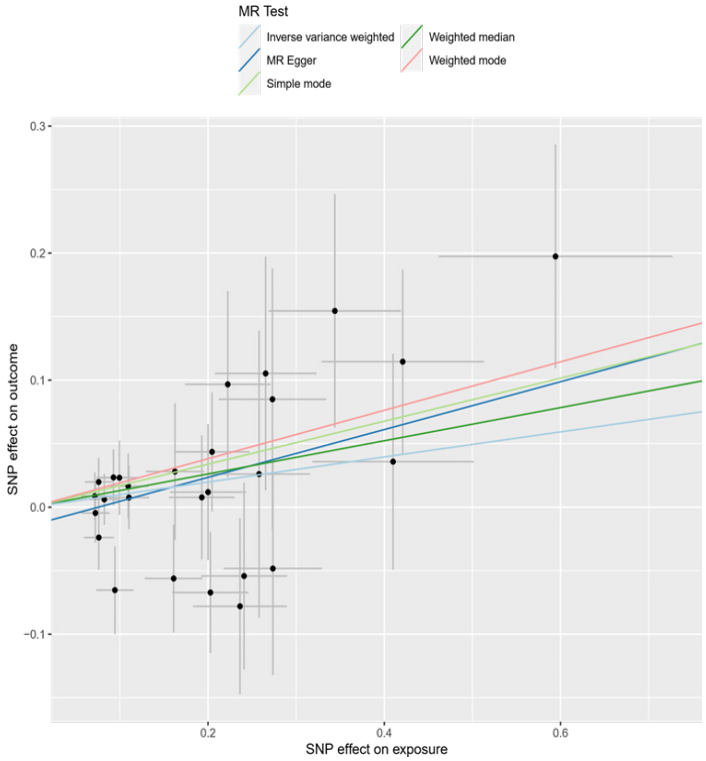
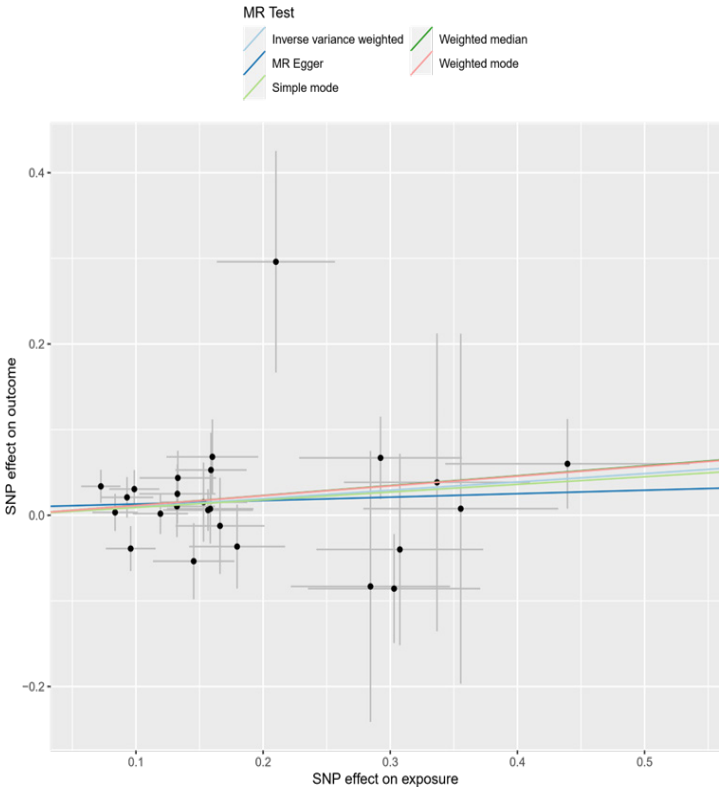
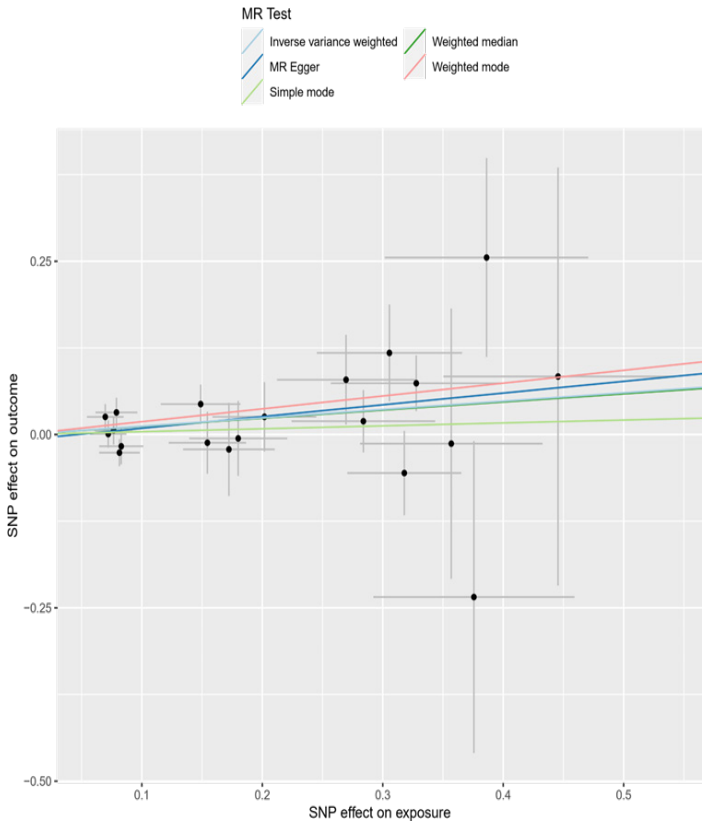
Supplementary File 11:



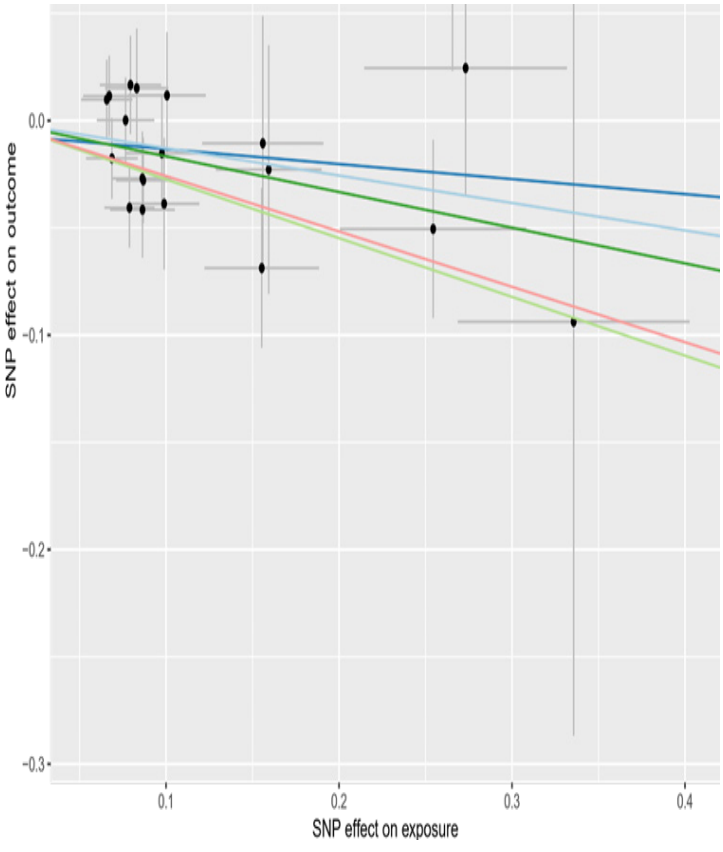
Scatter plot for the effect of Gentisate levels on UC



Scatter plot for the effect of 1-oleoylglycerol (18:1) levels on UC



Scatter plot for the effect of Oxalate (ethanedioate) levels on UC



Scatter plot for the effect of N-acetylthreonine levels on UC

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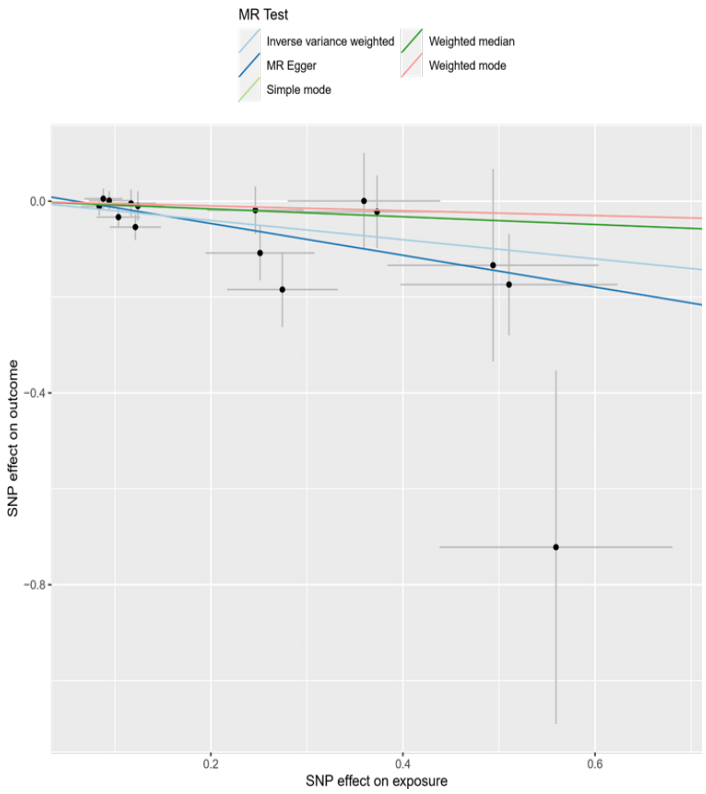
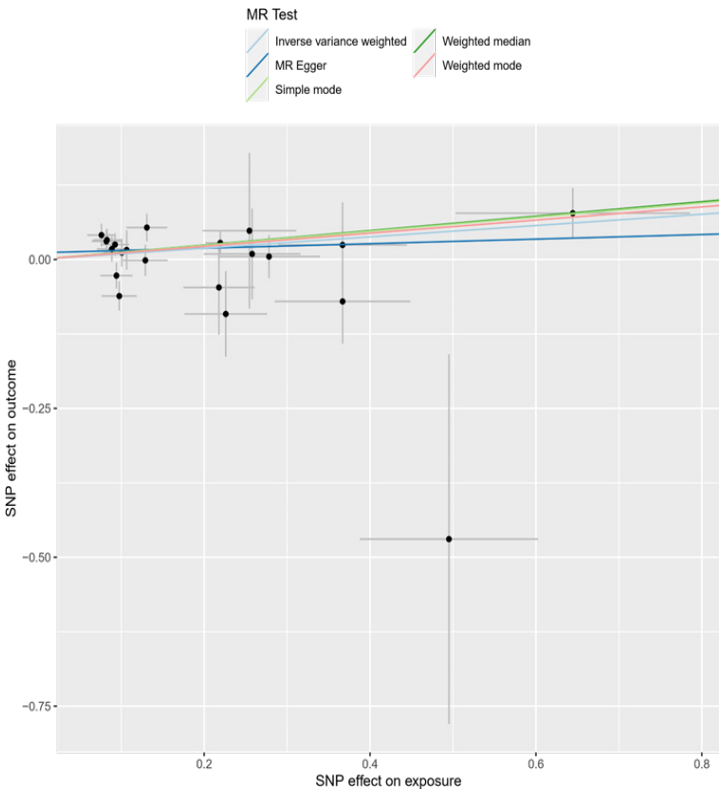
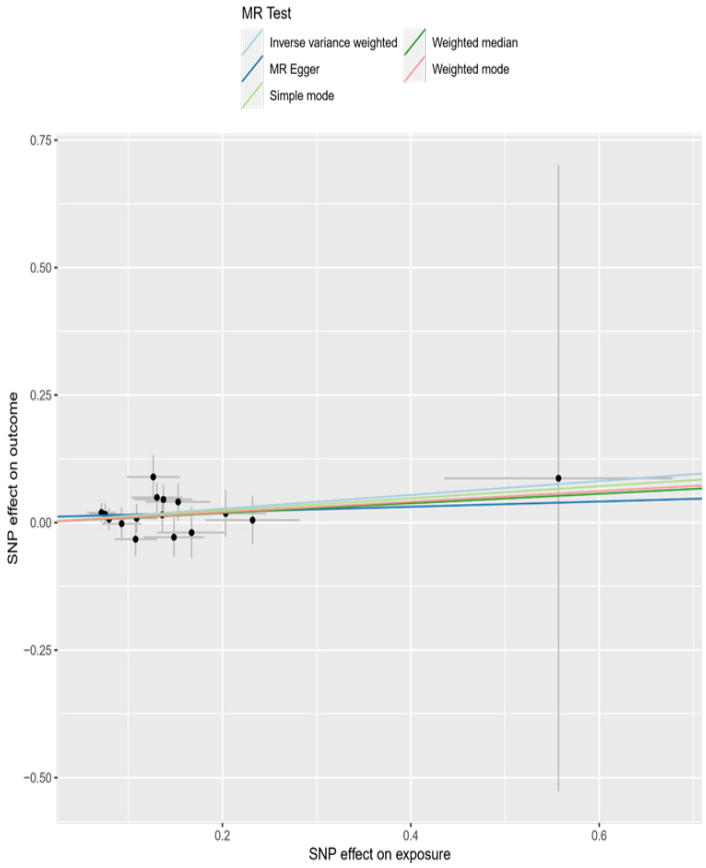


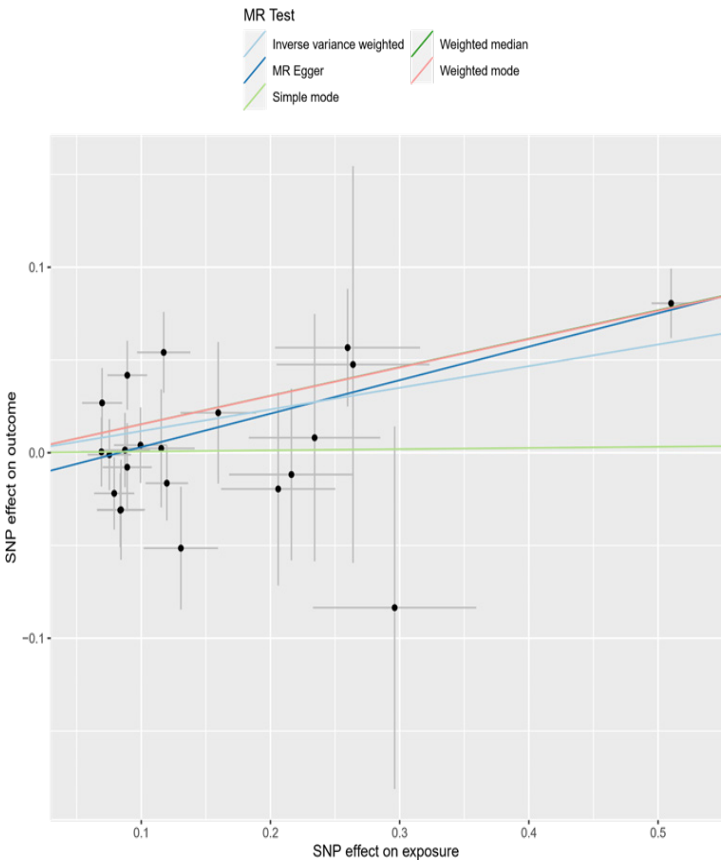
Scatter plot for the effect of Salicyluric glucuronide levels on UC



Scatter plot for the effect of Isovalerylglycine levels on UC



Scatter plot for the effect of Eicosenoate (20:1) levels on UC



Scatter plot for the effect of 1-arachidonoyl-gpc (20:4n6) levels on UC

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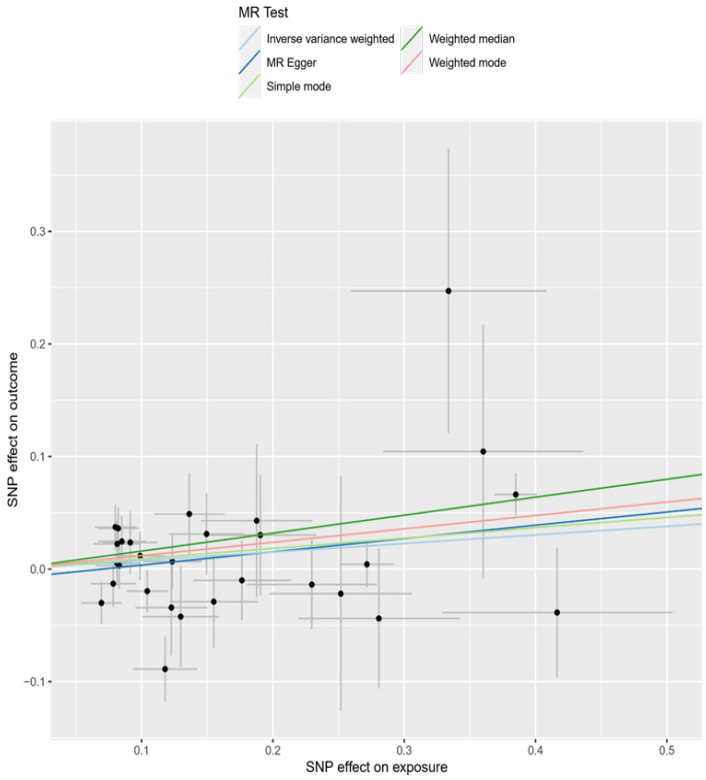
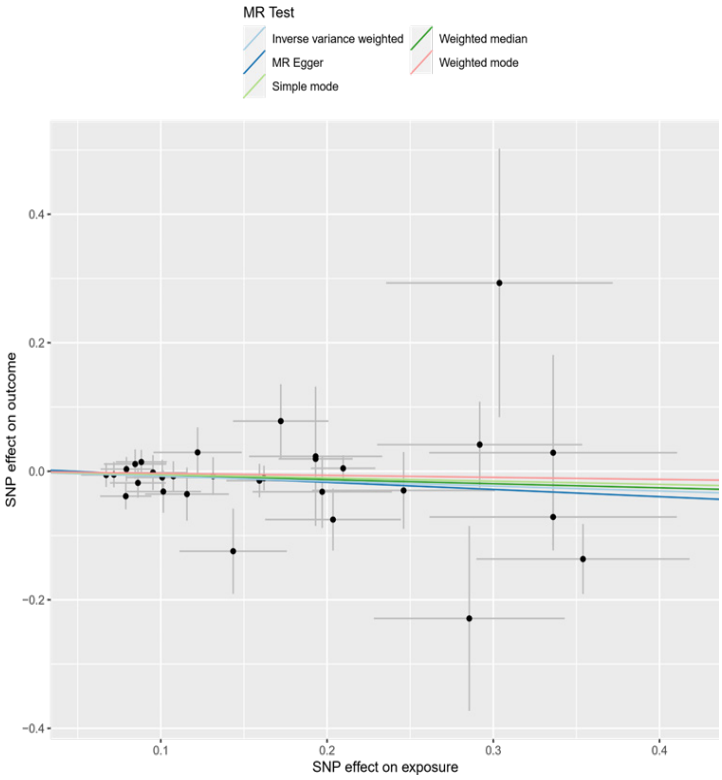
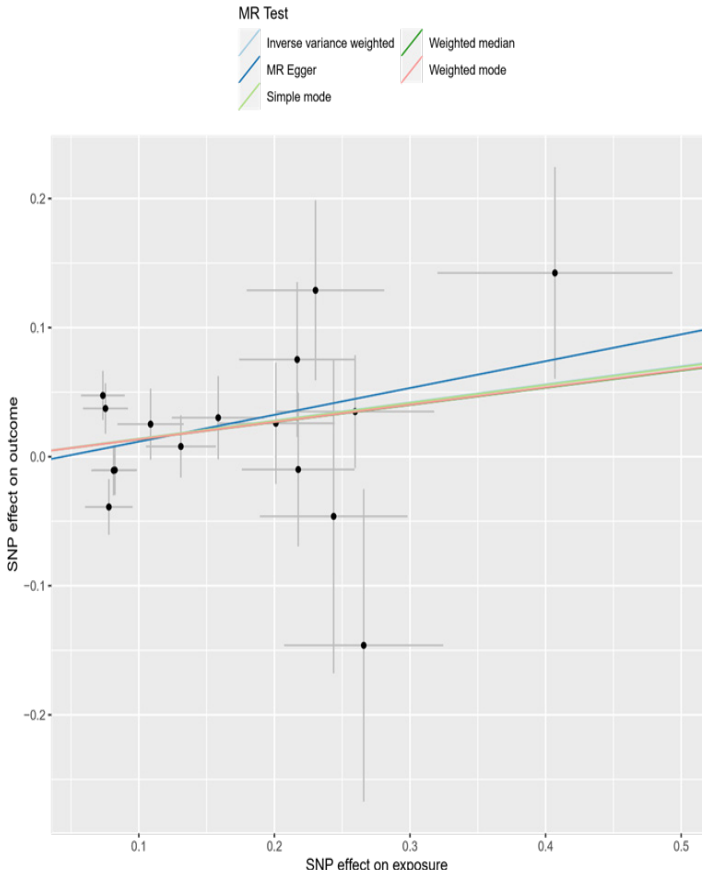


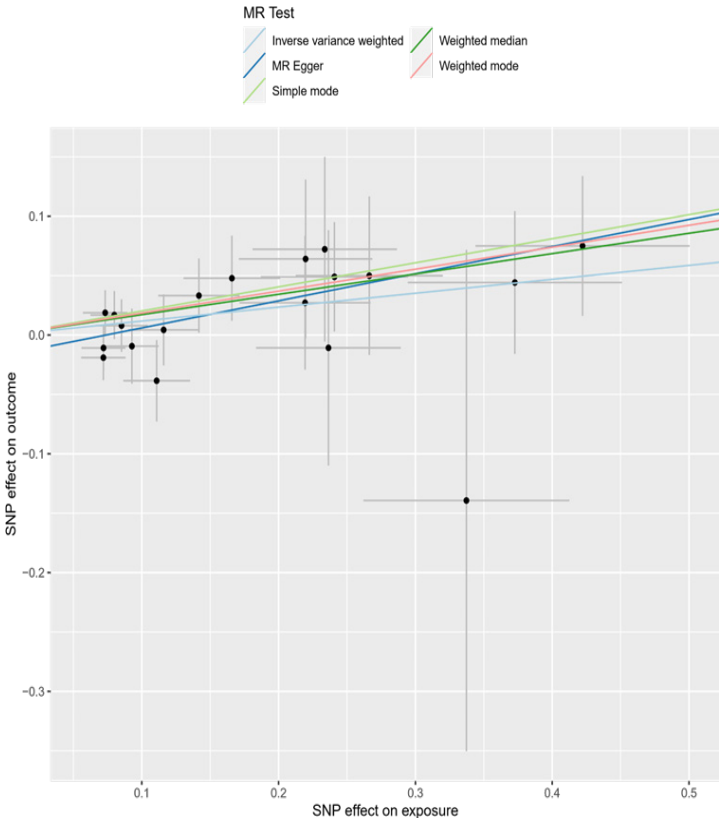
Scatter plot for the effect of 1-arachidonoyl-GPE (20:4n6) levels on UC



Scatter plot for the effect of 21-hydroxypregnenolone disulfate levels on UC



Scatter plot for the effect of 3-methyladipate levels on UC



Scatter plot for the effect of S-methylcysteine sulfoxide levels on UC

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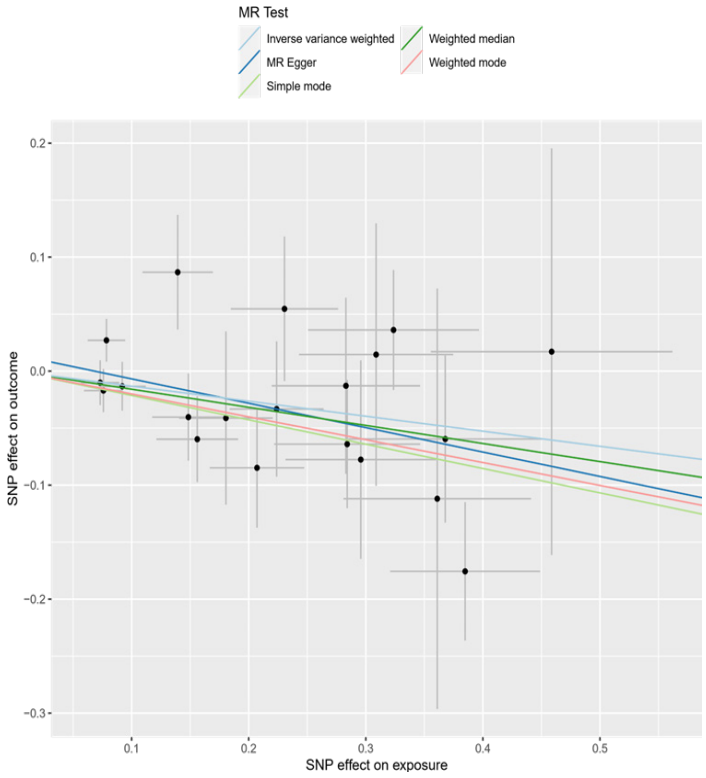
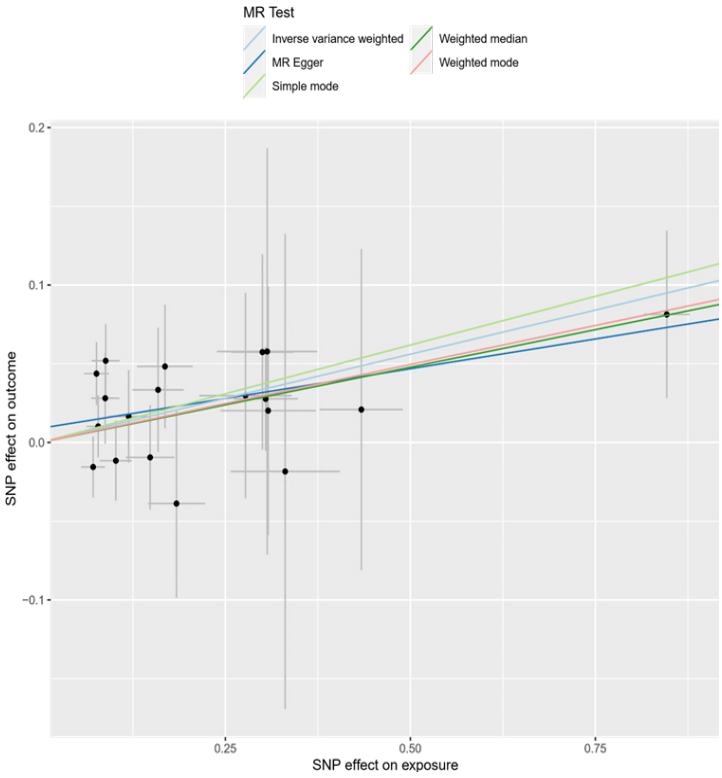
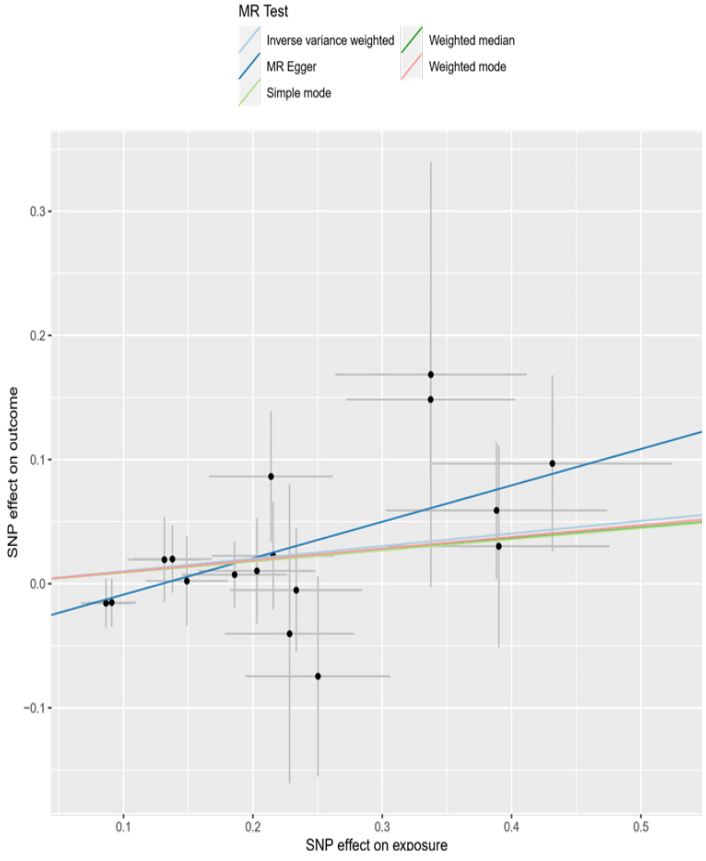


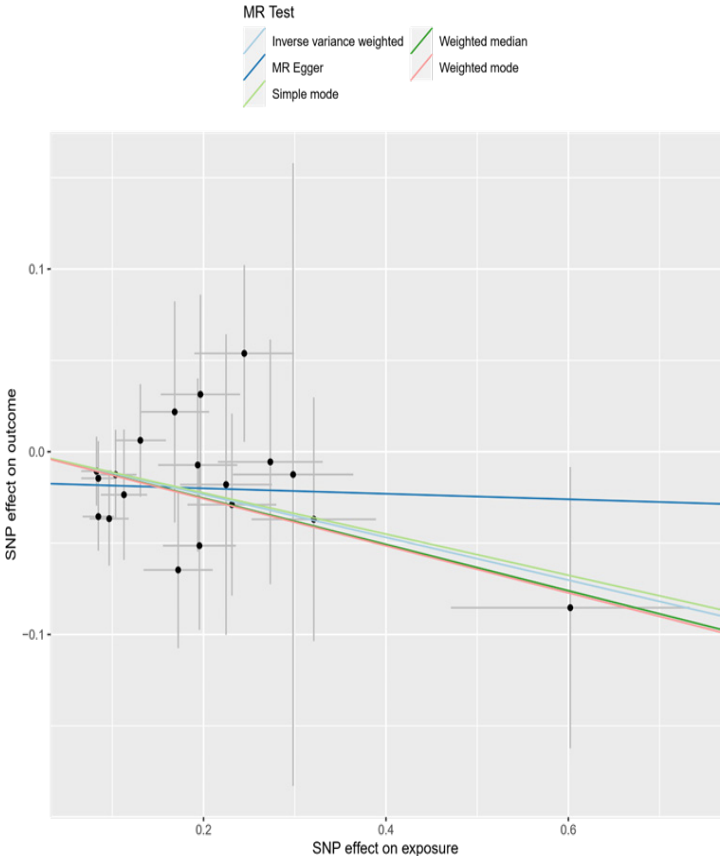
Scatter plot for the effect of Dimethyl sulfone levels on UC



Scatter plot for the effect of Etiocholanolone glucuronide levels on UC



Scatter plot for the effect of 3-(3-hydroxyphenyl)propionate sulfate levels on UC



Scatter plot for the effect of Tyramine O-sulfate levels on UC

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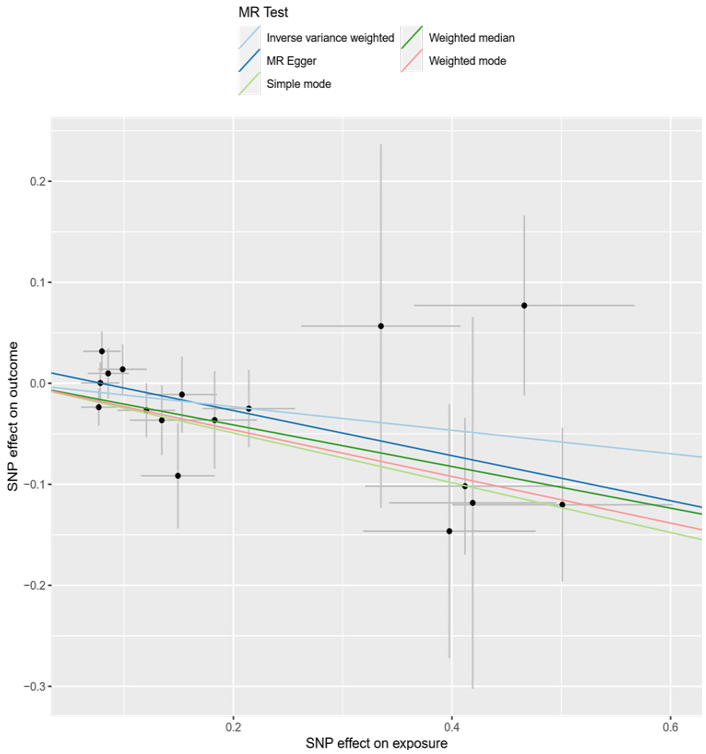
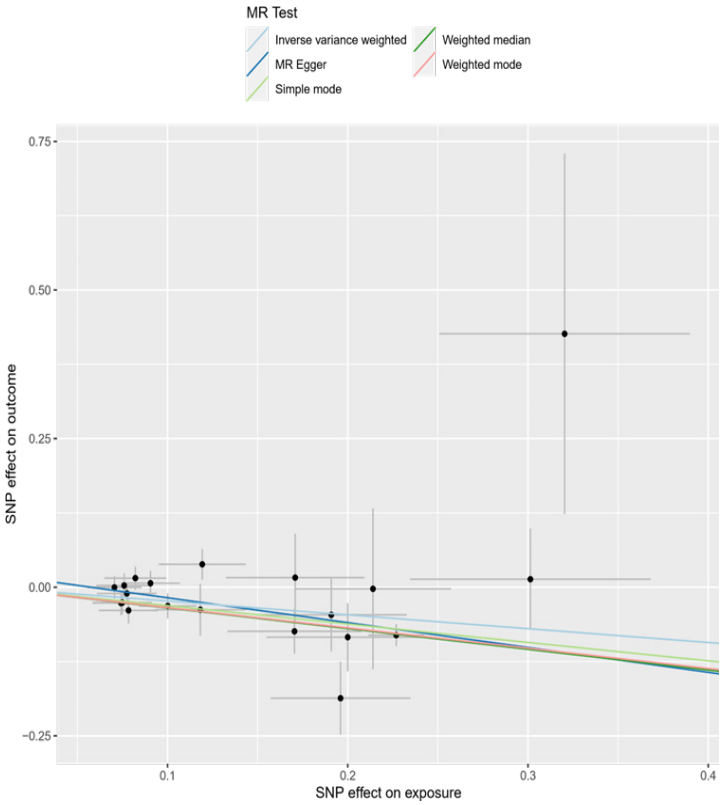
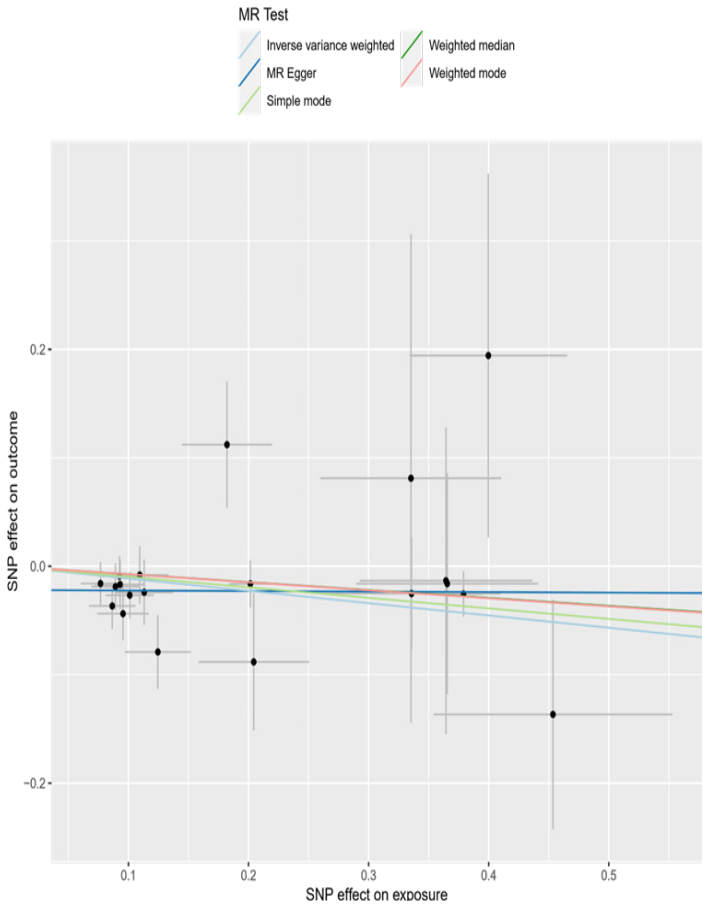


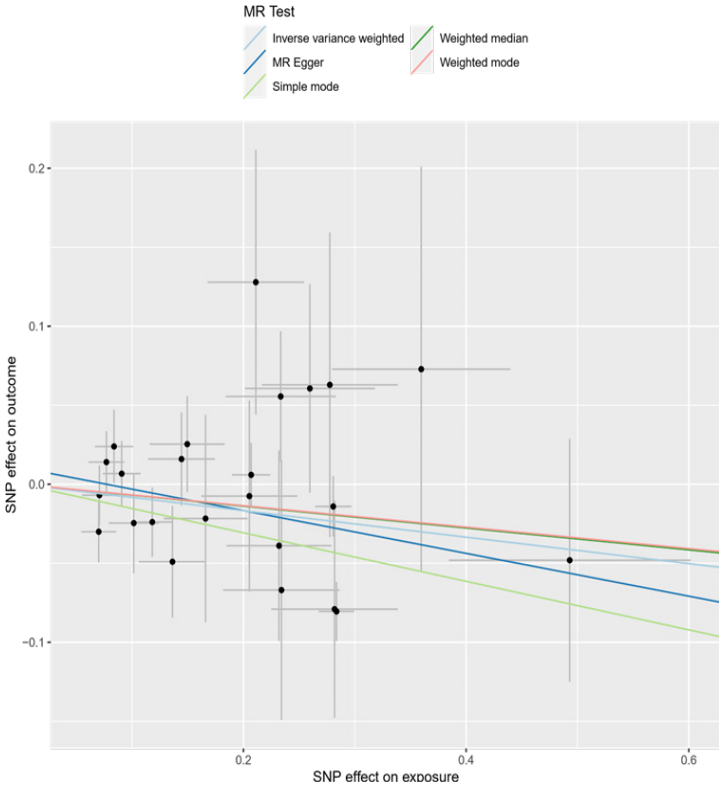
Scatter plot for the effect of 3-methoxycatechol sulfate (2) levels on UC



Scatter plot for the effect of 1-stearoyl-2-linoleoyl-gpc (18:0/18:2) levels on UC



Scatter plot for the effect of Nonanoylcarnitine (C9) levels on UC



Scatter plot for the effect of 1-stearoyl-2-linoleoyl-GPE (18:0/18:2) levels on UC

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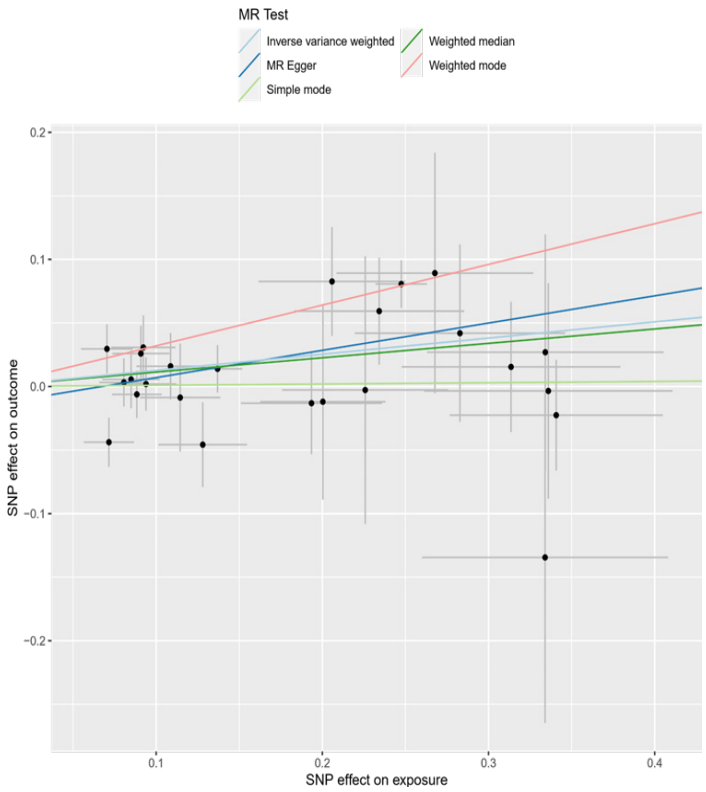
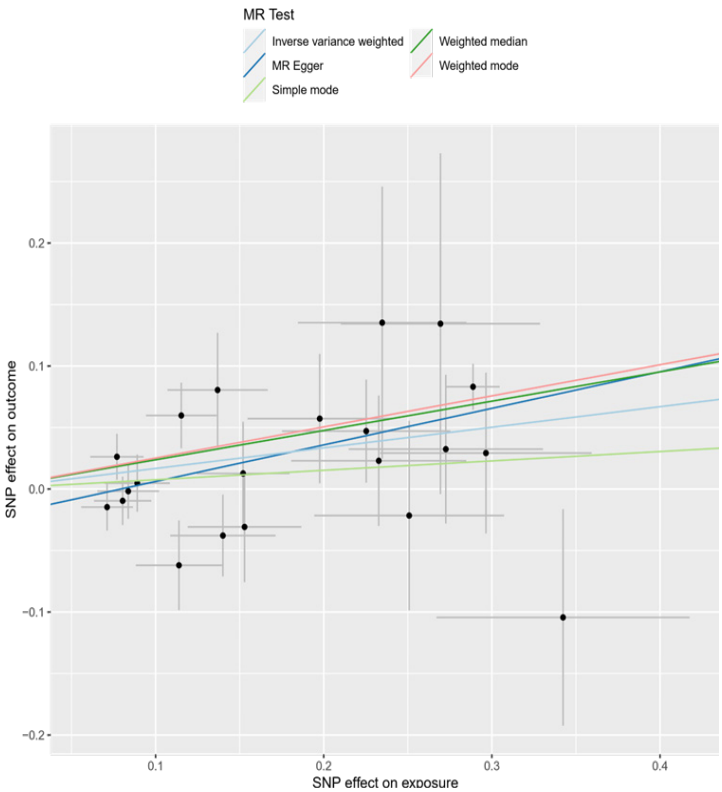
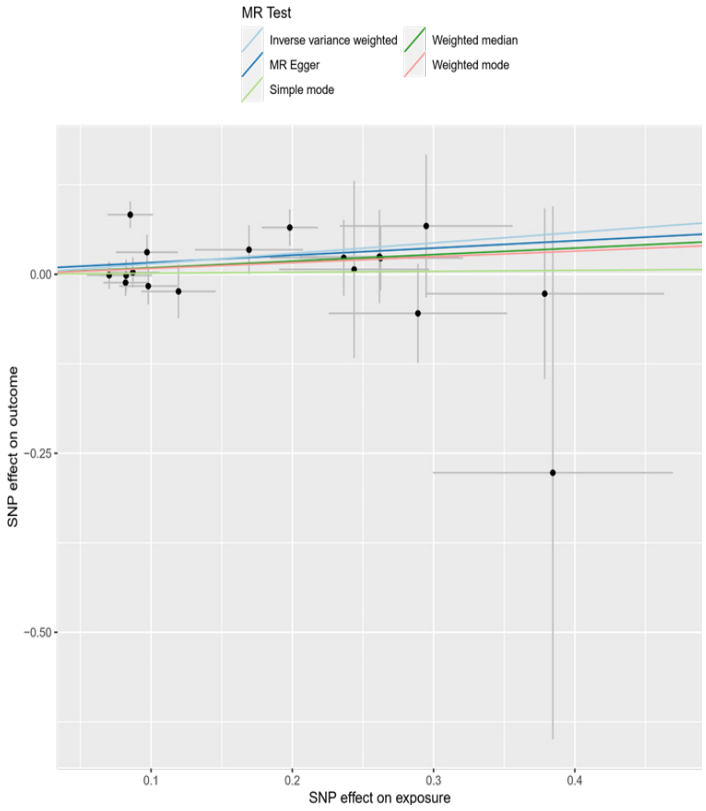


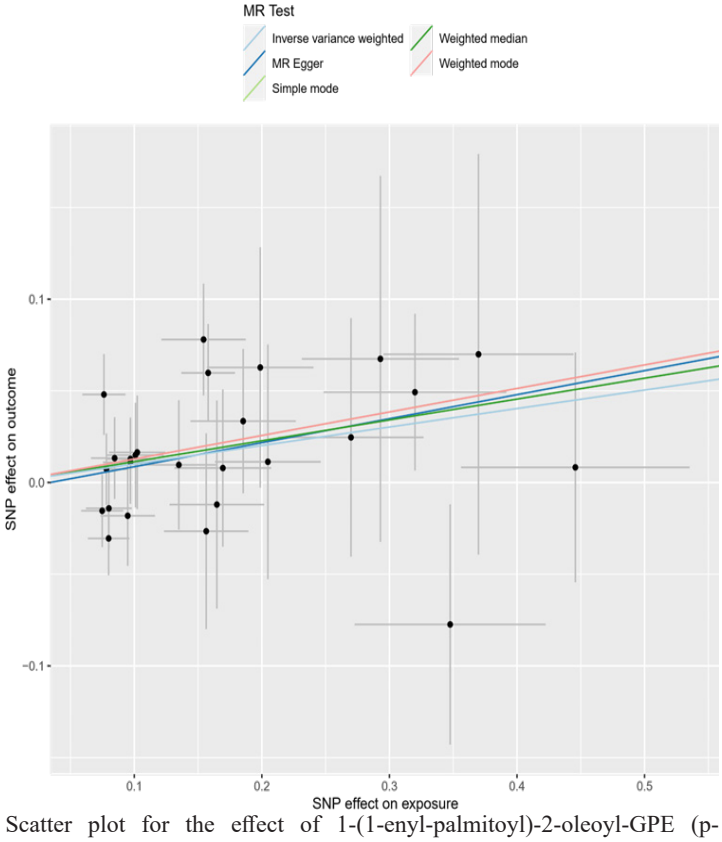
Scatter plot for the effect of 1-stearoyl-2-docosahexaenoyl-gpc (18:0/22:6) levels on UC



Scatter plot for the effect of 1-(1-enyl-stearoyl)-2-arachidonoyl-GPE (p-18:0/20:4) levels on UC



Scatter plot for the effect of 1-(1-enyl-palmitoyl)-2-arachidonoyl-GPE (p-16:0/20:4) levels on UC



Scatter plot for the effect of 1-(1-enyl-palmitoyl)-2-oleoyl-GPE (p-16:0/18:1) levels on UC

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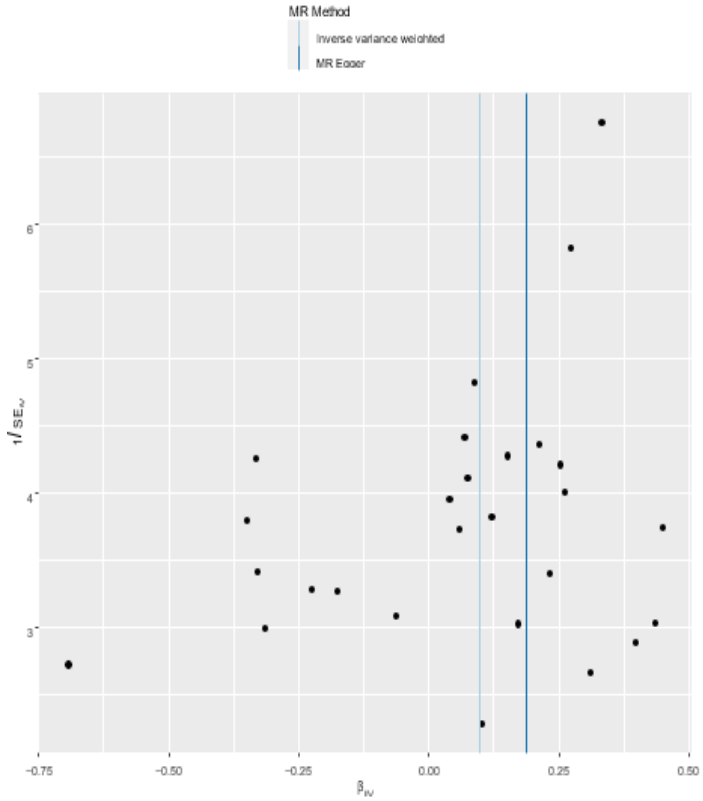
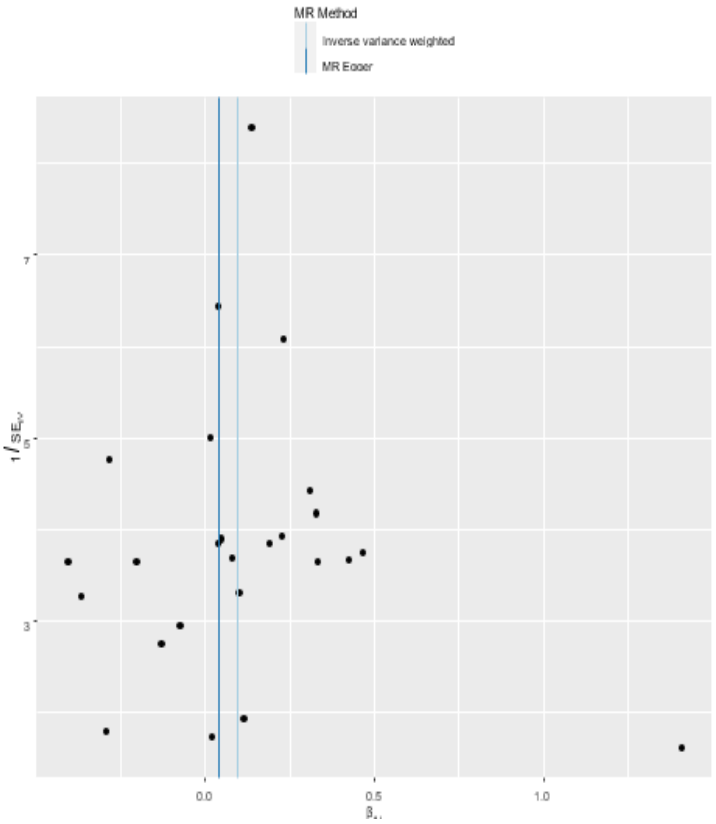
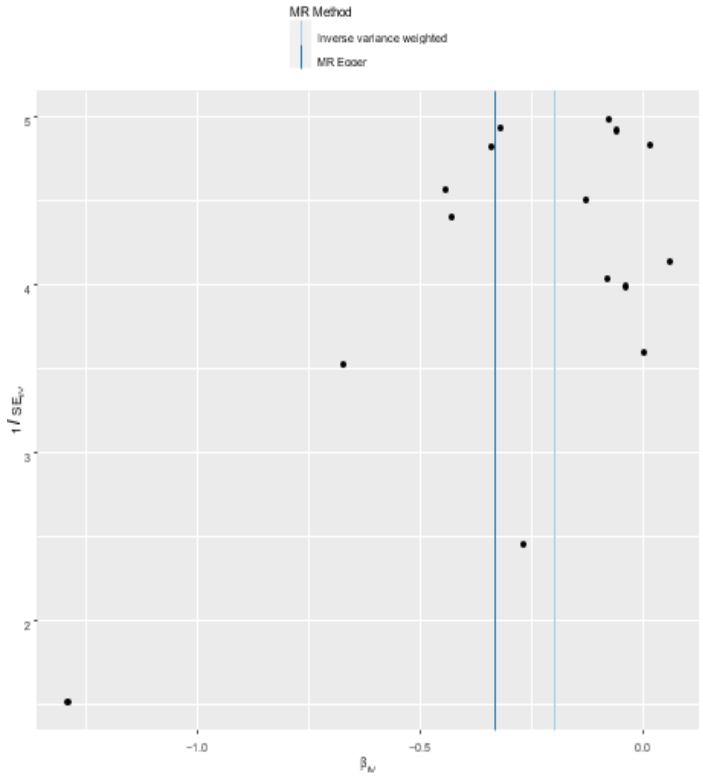
Supplementary File 12:



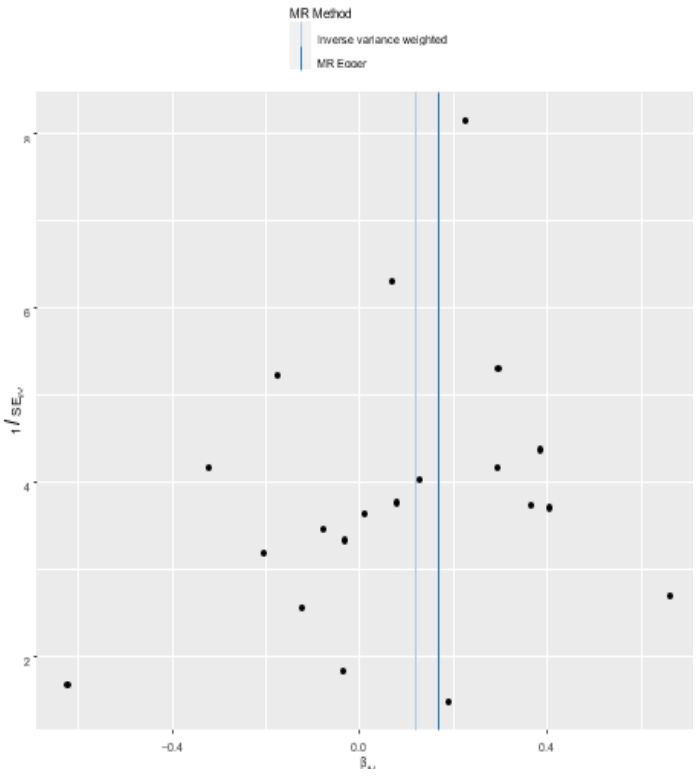
Funnel plot for Gentisate levels on UC



Funnel plot for 1-oleoylglycerol (18:1) levels on UC



Funnel plot for Salicyluric glucuronide levels on UC



Funnel plot for Oxalate (ethanedioate) levels on UC

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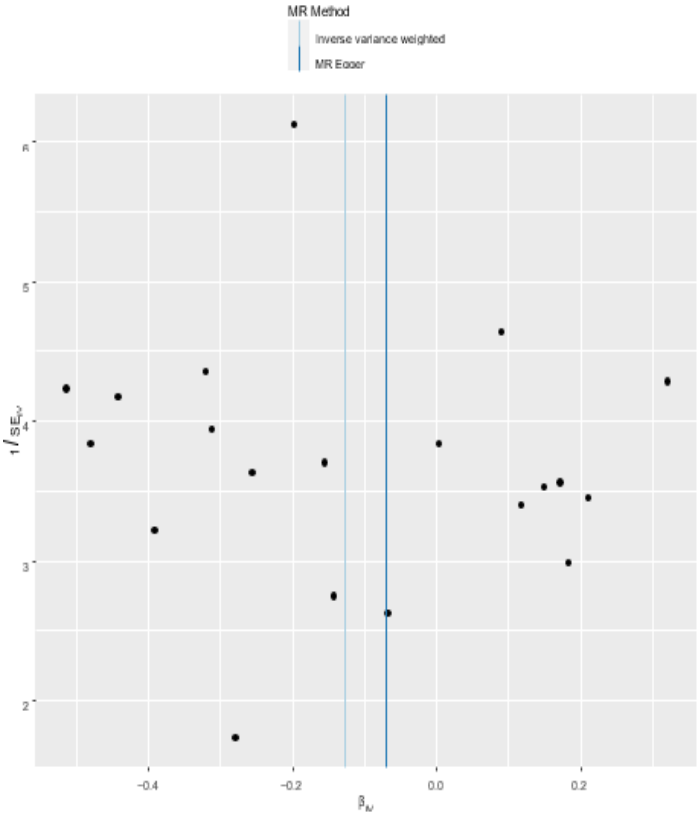
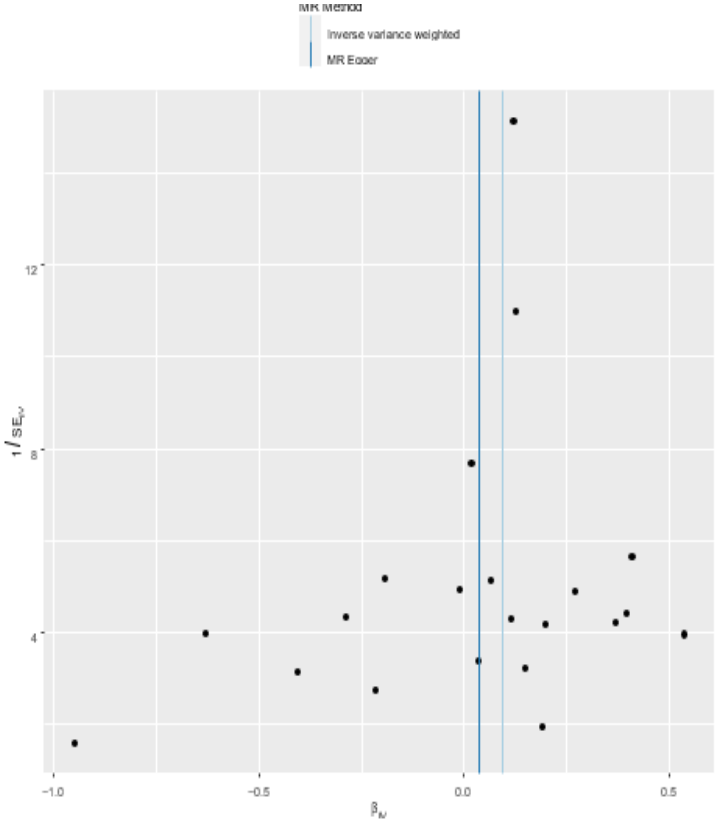
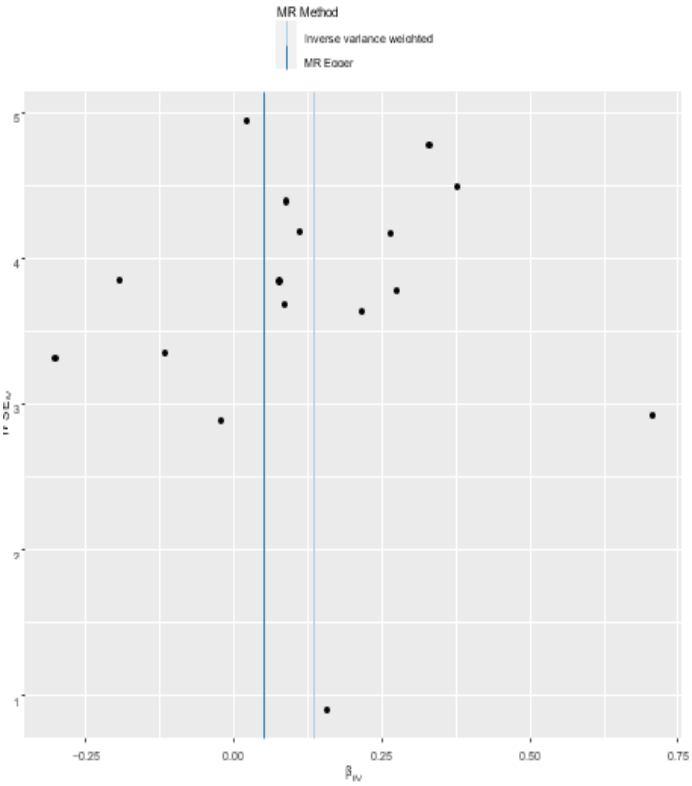


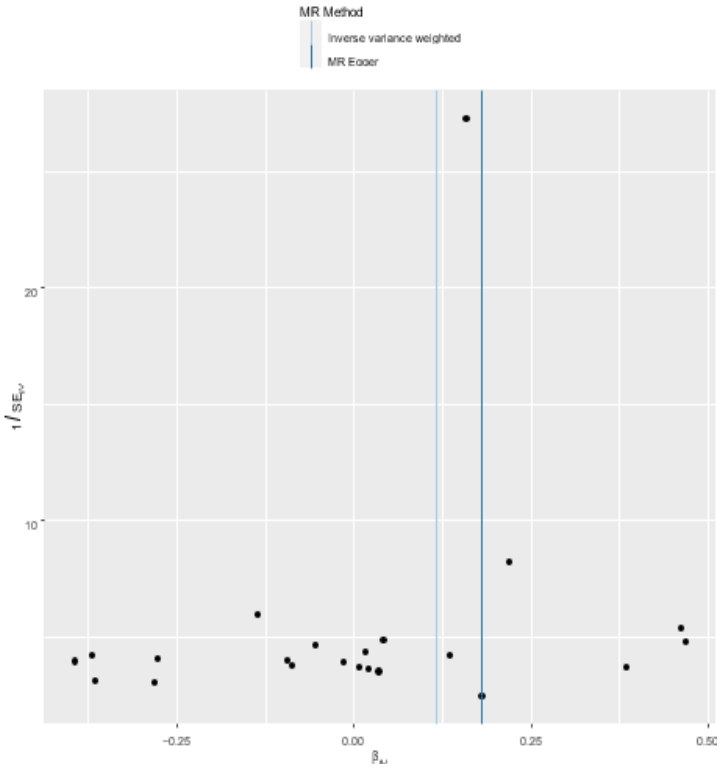
Funnel plot for N-acetylthreonine levels on UC



Funnel plot for Isovalerylglycine levels on UC



Funnel plot for Eicosenoate (20:1) levels on UC



Funnel plot for 1-arachidonoyl-gpc (20:4n6) levels on UC

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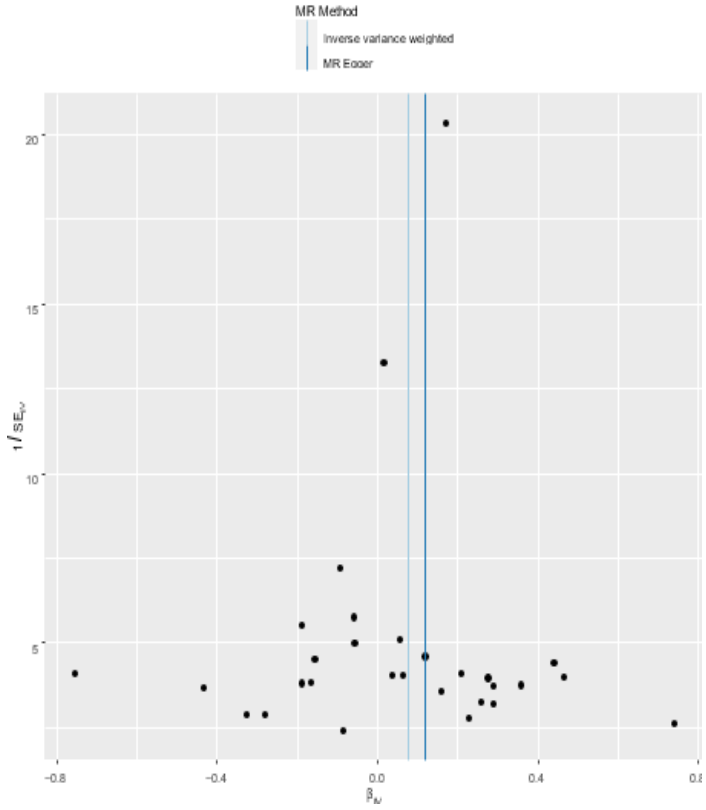
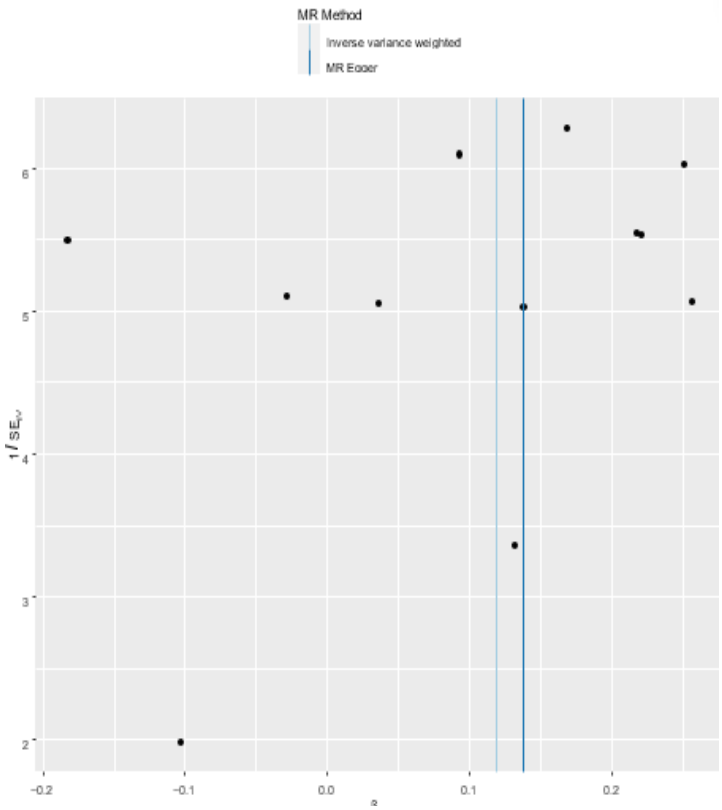
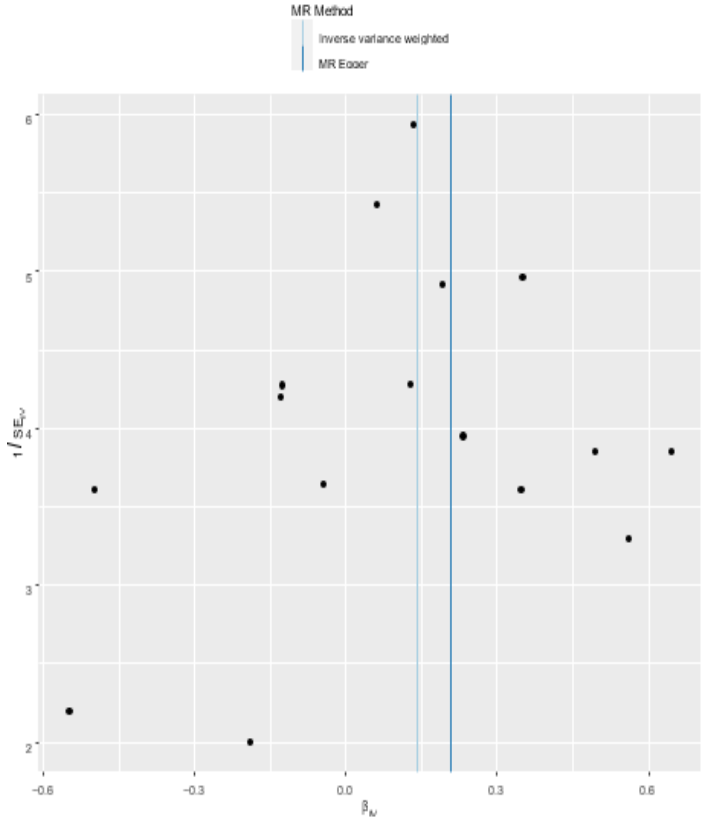


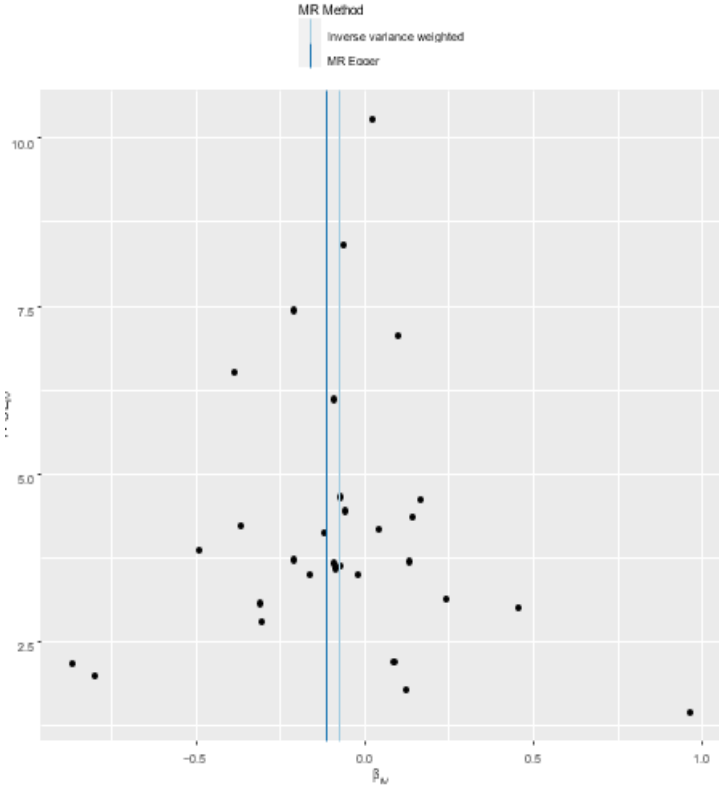
Funnel plot for 1-arachidonoyl-GPE (20:4n6) levels on UC



Funnel plot for Chiro-inositol levels on UC



Funnel plot for 3-methyladipate levels on UC



Funnel plot for 21-hydroxypregnenolone disulfate levels on UC

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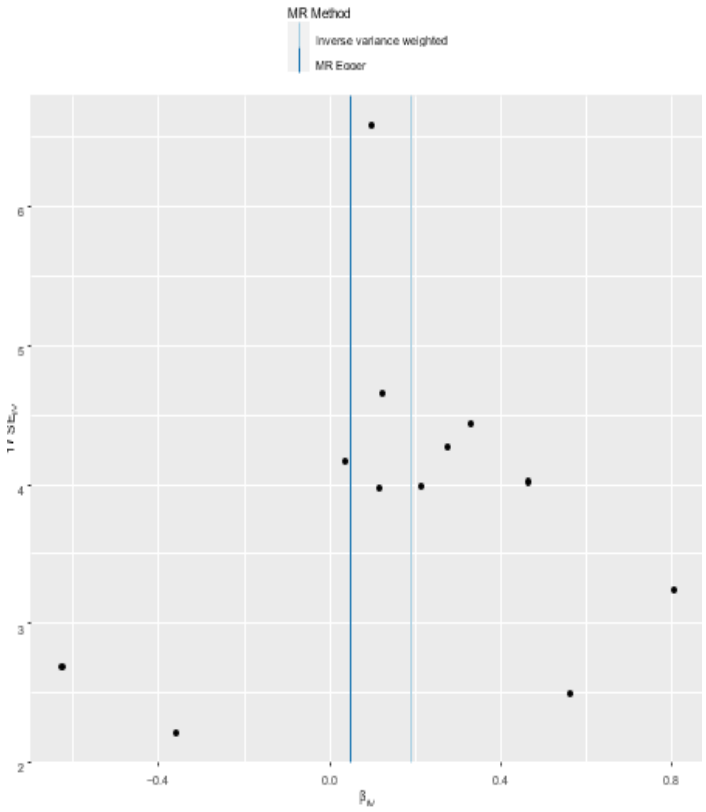
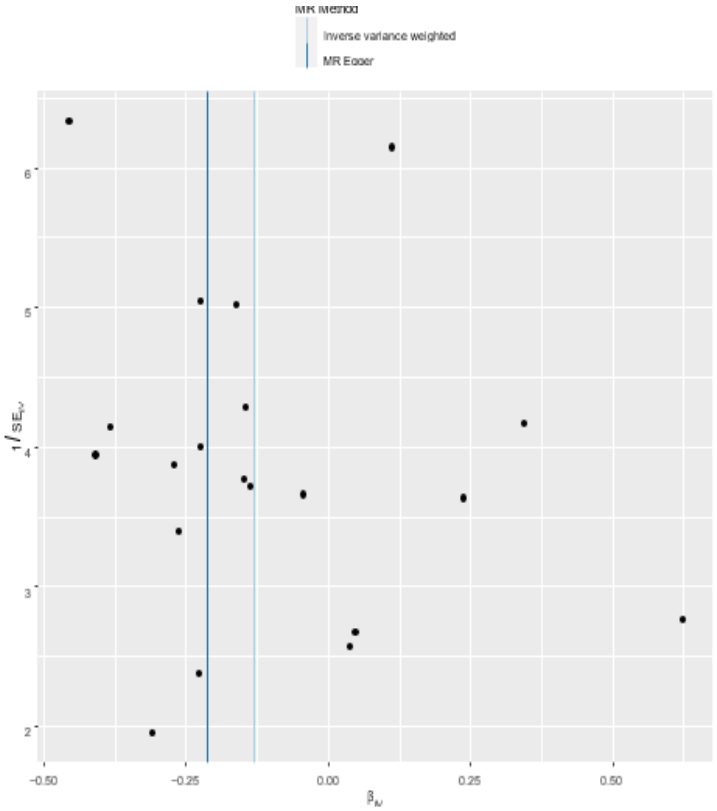
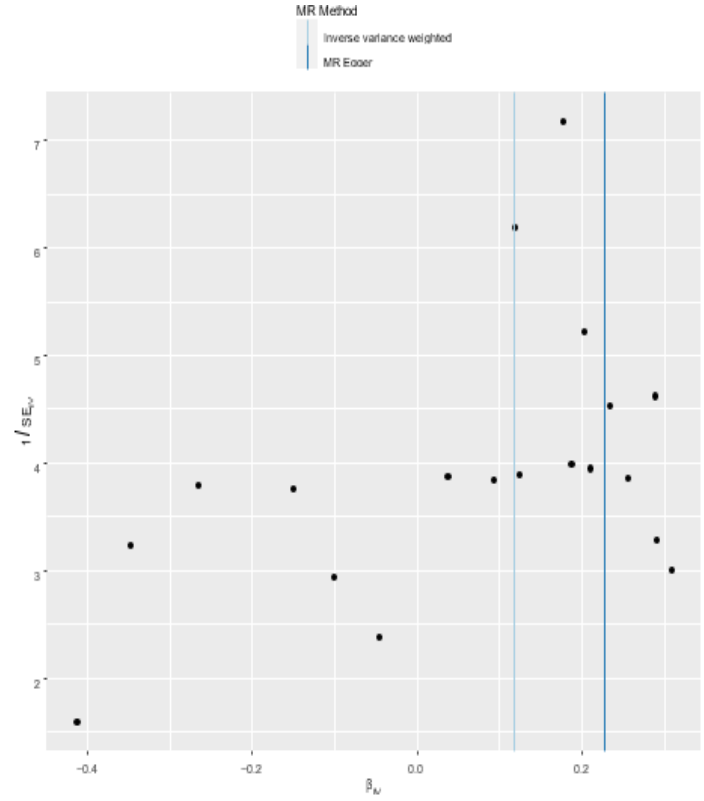


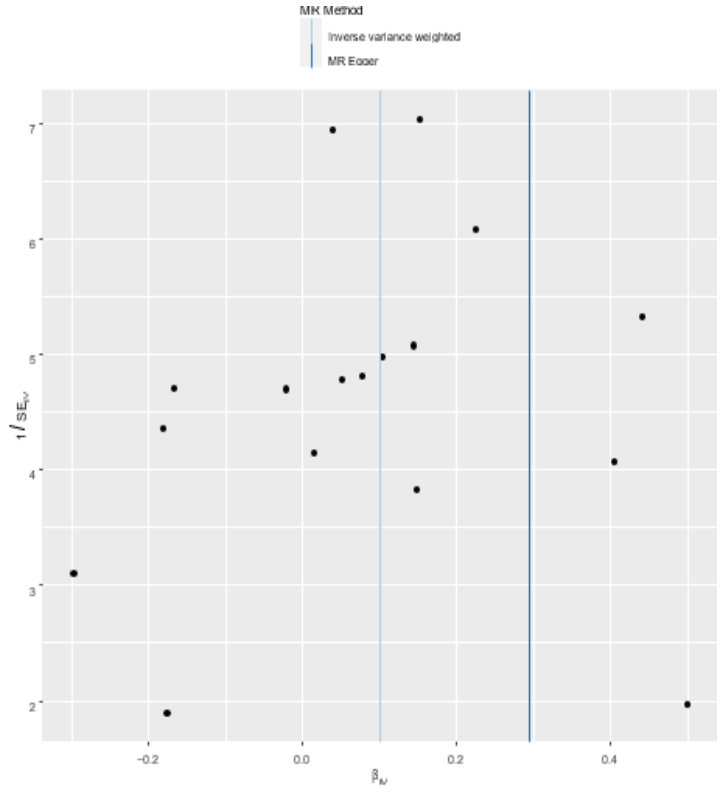
Funnel plot for 4-oxo-retinoic acid levels on UC



Funnel plot for Dimethyl sulfone levels on UC



Funnel plot for S-methylcysteine sulfoxide levels on UC



Funnel plot for 3-(3-hydroxyphenyl)propionate sulfate levels on UC

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5.3. The causal effect of UC and CD on metabolites

Subsequently, we conducted a reverse MR, using UC and CD as outcomes and metabolites with positive results found in the above analysis as exposures. We discovered that CD onset could decrease the level of X−24728 (Figure 3 and Supplementary File 3) (OR: 0.9498, 95% CI: 0.9096− 0.9918, P-value: 0.0195). We found that UC onset could decrease the level of Tetradecadienoate (14:2) (Figure 4 and Supplementary File 3) (OR: 0.9660, 95% CI: 0.9393−0.9934, P-value: 0.0155). Three different methods have been utilized to validate the causal relationships that have been identified. These methods are the weighted median, MR Egger, simple mode (Figure 3 and Figure 4), and sensitivity analysis (Supplementary File 13). The intercept of MR-Egger has been analyzed to ensure the absence of horizontal pleiotropy (Supplementary File 5). The forest plots are shown in Supplementary File 14. The stability of the results is indicated by scatter plots (Supplementary File 15) and funnel plots (Supplementary File 16). Therefore, the reliability and validity of the identified causal relationships have been further supported.

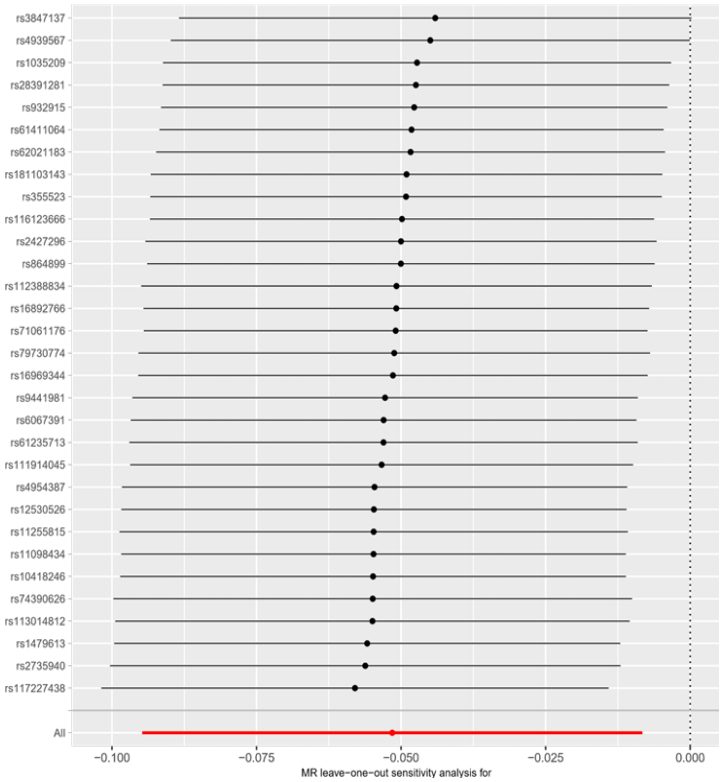
Figure 3: Forest plots showed the causal associations between metabolite traits and CD.

Trails	method	nsnp	pval	OR(95%CI)
X-24728 levels	MR Egger	31	0.1029	0.9216 (0.8380-1.0135)
	Weighted median	31	0.0455	0.9391 (0.8830-0.9987)
	Inverse variance weighted	31	0.0195	0.9498 (0.9096-0.9918)
	Simple mode	31	0.1566	0.9156 (0.8128-1.0313)
	Weighted mode	31	0.1410	0.9223 (0.8304-1.0243)

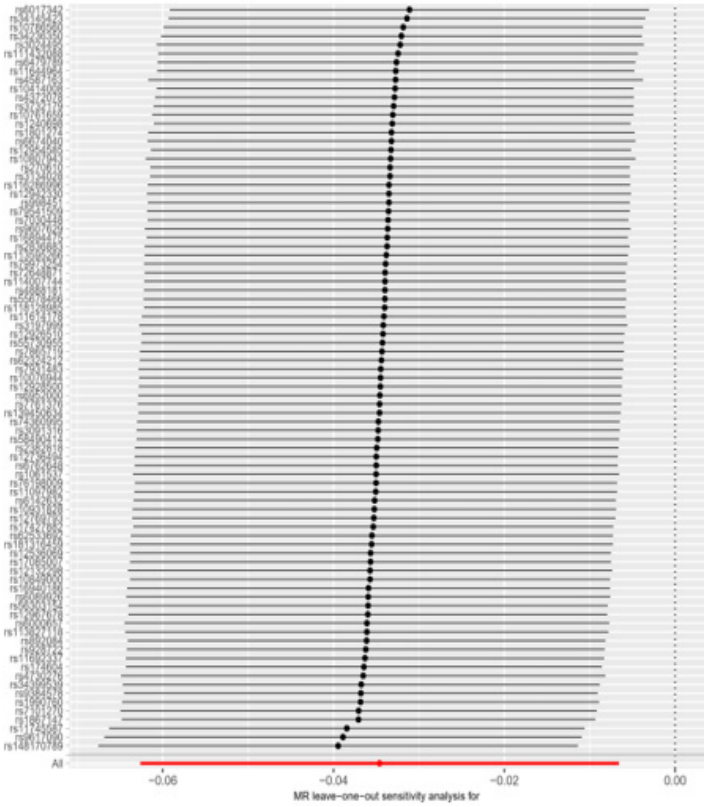
Figure 4: Forest plots showed the causal associations between metabolite traits and UC.

Trails	method	nsnp	pval	OR(95%CI)
Tetradecadienoate (14:2) levels	MR Egger	85	0.1845	0.9487 (0.8783-1.0248)
	Weighted median	85	0.0051	0.9391 (0.8988-0.9814)
	Inverse variance weighted	85	0.0155	0.9660 (0.9393-0.9934)
	Simple mode	85	0.2290	0.9392 (0.8486-1.0395)
	Weighted mode	85	0.0682	0.9317 (0.8642-1.0043)

Supplementary File 13:



Leave-one-out sensitivity analysis for CD on X-24728 levels



Leave-one-out sensitivity analysis for UC on Tetradecadienoate (14:2) levels

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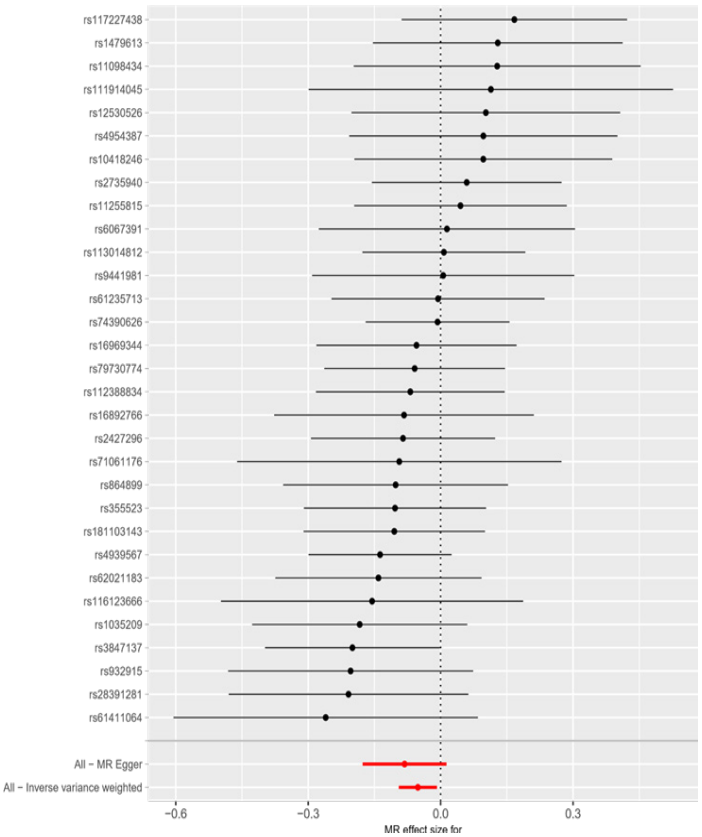
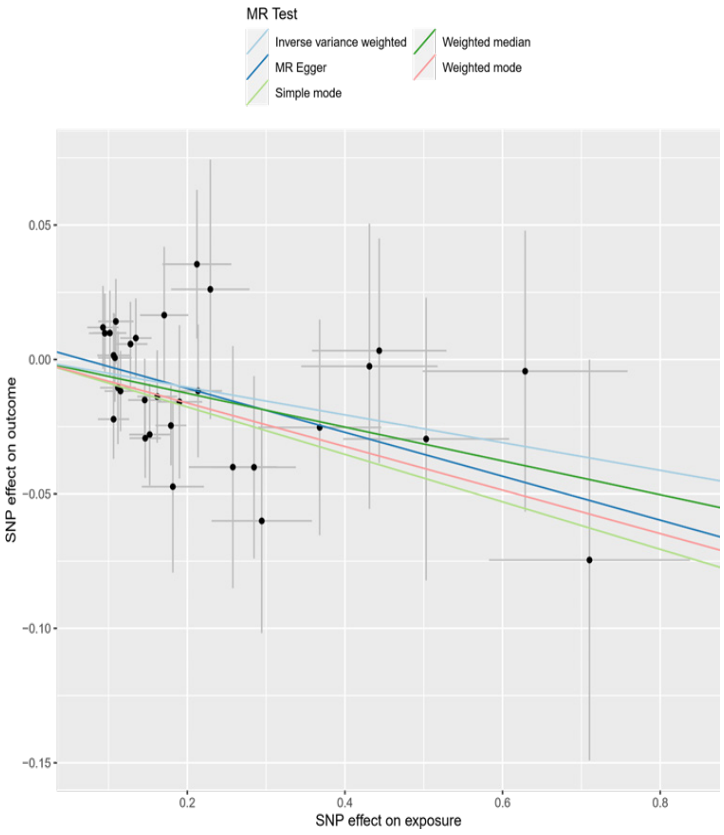
Supplementary File 14:

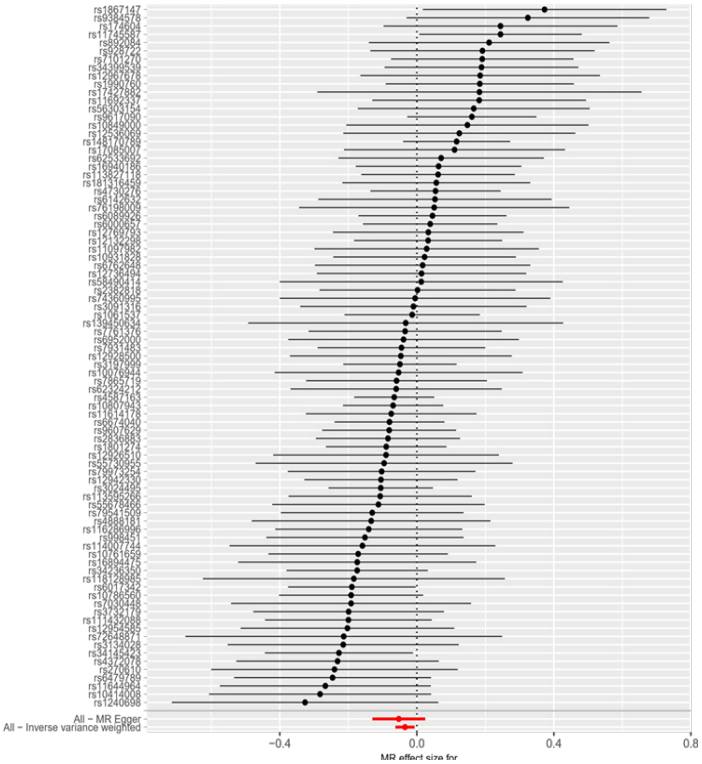


Forest plot for the effect of CD on X-24728 levels

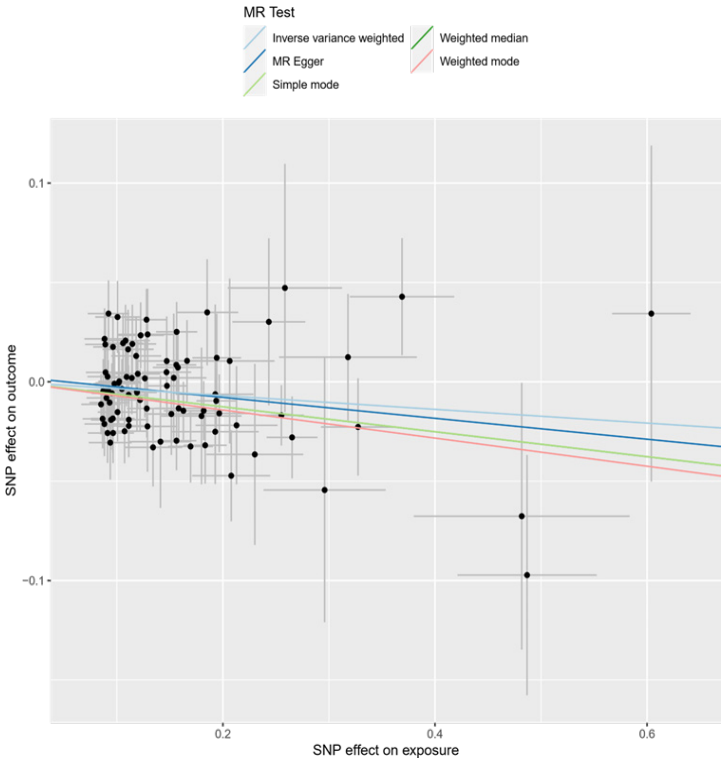
Supplementary File 15:



Scatter plot for the effect of CD on X-24728 levels



Forest plot for the effect of UC on Tetradecadienoate (14:2) levels



Scatter plot for the effect of UC on Tetradecadienoate (14:2) levels

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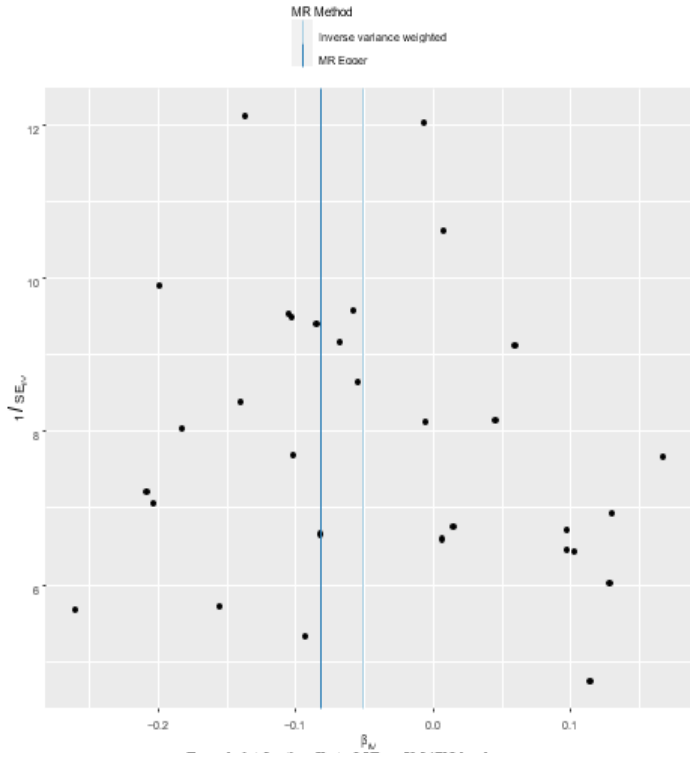
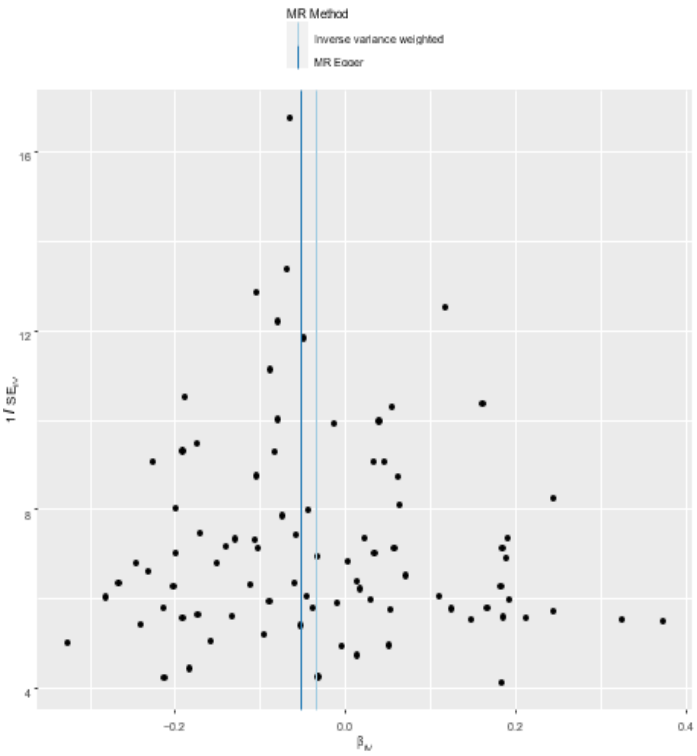
Supplementary File 16:



Funnel plot for the effect of CD on X-24728 levels



Funnel plot for the effect of UC on Tetradecadienoate (14:2) levels

6. Discussion

Our study evaluated the causal relationship between 1400 metabolites and the incidence of IBD by using the MR analysis of extensive publicly available genetic data. Results demonstrated significant causal effects of 60 and 63 metabolites on CD and UC, respectively. In addition, reverse MR results revealed that the onsets of UC and CD are each associated with one metabolite. Moreover, sensitivity analysis confirmed the relationship between identified metabolites and IBD. Amino acids (AA) have high nutritional value and are essential for intestinal growth and maintaining mucosal integrity and barrier function. AA reserves vary in different tissues and ecological niches [12]. Excessive dietary protein may produce potentially harmful bacterial metabolites in the intestine, affecting the repair of epithelial cells. Some of these bacterial metabolites can inhibit the respiration and proliferation of colonic epithelial cells, affecting barrier function [13]. Research [14] has shown that the metabolism of AA has a profound impact on cell function. Immune cells are dynamic when responding to infections and changes in the tissue environment, indicating that they heavily rely on metabolic states. Scoville et al. [15] have demonstrated that some AA and tricarboxylic acid cycle-related metabolites have undergone significant changes in CD patients. In clinical trials, Benjamin et al. [16] investigated the role of glutamine in treating active Crohn's disease, and the results showed that glutamine and whey protein have practical effects in improving intestinal mucosal permeability and mucosal structure. A study by Singh et al. [17] adding arginine (Arg) to the diet resulted in better weight loss, shorter colon length, and less histological damage. The high Arg diet also increased intestinal microbiota diversity in mice, suggesting a protective effect on colitis models. A study [18] on colitis in mice treated with 5% acetic acid found that adding glycine (Gly) to the diet did not affect survival rate or colon length-to-weight ratio. However, Gly supplementation significantly reduced the expression of interleukin-1B and I-10 in colitis mice. Li et al.'s study[19] found that injecting glutamic acid increases cell proliferation and antioxidants and reduces inflammation in the colon mucosa. Tryptophan also reduces intestinal inflammation [20].

Uric acid is a powerful antioxidant that eliminates over half of the free radicals in the circulatory system [21]. Yun et al. [22] the intestine is essential for uric acid distribution and clearance in rats. In a mouse colitis model, brewing yeast increased uric acid levels in the intestine, which worsened colitis by increasing intestinal mucosal permeability. Guo et al. [23] used a mouse model of hyperuricemia to find that it can damage intestinal barrier function, increase intestinal permeability, and elevate serum TNF-α and IL-6. LV et al. [24] uric acid damages the intestinal barrier through a molecular mechanism involving the transport protein TSPO, activated by reactive oxygen species. This triggers the NLRP3 inflammasome, reduces the expression of tight junction proteins, and leads to intestinal epithelial dysfunction. The serum uric acid/creatinine ratio is a biomarker that reflects endogenous uric acid production in the body. It can accurately measure uric acid metabolism and eliminate the effects of different renal functions and nutritional states. A study conducted by

Zhu et al. [25] the uric acid/creatinine ratio is associated with disease activity in CD patients but not in UC patients. The study also revealed that induction therapy significantly decreased the uric acid/creatinine ratio in CD patients with high uric acid/creatinine ratio and anti-brewing yeast antibody (ASCA) positivity. This suggests that uric acid may be a new indicator of CD disease activity, and elevated uric acid levels may increase the risk of CD. Additionally, studies have shown that uric acid is also a risk factor for UC. Tian et al. [26] discovered that serum uric acid levels in UC patients were significantly higher than those in healthy individuals and identified serum uric acid as an independent risk factor for UC. The above literature suggests that uric acid may be a risk factor for IBD, and its elevated levels have an impact on intestinal inflammation. We want to acknowledge a few limitations to our study. First, the study only included populations of European ancestry. This means we cannot establish genetic differences between ethnic groups, countries, and regions. Therefore, the results cannot be generalized. Second, the lack of comprehensive clinical data could have helped the feasibility of conducting subgroup analyses and impeded the determination of specific causal relationships.

7. Conclusion

Our study found causal relationships between metabolites and IBD, emphasizing their complex interactions. These insights could lead to early interventions and treatments for IBD.

Data Availability Statement

The data supporting this study's findings are openly available in the Finland database at https://www.finngen.fi/en/access_results. Further inquiries can be directed to the corresponding author.

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