

Supplementary Table 9. met-QTL for the Boston, United States, cohort based on False Discovery Rate (q-value < 0.05) – Controls only

Gene	rsID	CHRPOS (major/ minor)	Effect Allele	MAF	Super Pathway	Sub Pathway	Metabolite	Beta US	P-value US	Q-value US
<i>APOC1</i>	rs438811	19:45416741:C:T	T	0.241533333	Amino Acid	Methionine; Cysteine; SAM and Taurine Metabolism	S-methylcysteine	-0.180725017	2.79x10-5	0.880365098
<i>C3</i>	rs116727573	19:6710153:G:A	A	0.318733333	Amino Acid	Urea cycle; Arginine and Proline Metabolism	N-methylproline	-0.461792683	3.85x10-5	0.880365098
<i>C3</i>	rs2230204	19:6709848:C:T	T	0.321011111	Amino Acid	Urea cycle; Arginine and Proline Metabolism	N-methylproline	-0.462285677	4.18x10-5	0.880365098
<i>B3GALTL</i>	rs7989761	13:31819384:A:C	C	0.330366667	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs7981280	13:31819391:C:T	T	0.330866667	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs9564692	13:31821240:C:T	T	0.332522222	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs148420384	13:31826394:C:G	G	0.332655556	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs147567958	13:31826541:G:A	A	0.332711111	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs2313818	13:31828509:T:C	C	0.332233333	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs9572689	13:31829126:A:G	G	0.3321	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs2137075	13:31821505:A:G	G	0.3334	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs58738734	13:31823555:CTT:C	C	0.333255556	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs9805270	13:31824374:A:G	G	0.333166667	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs9805284	13:31824650:C:T	T	0.333066667	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>B3GALTL</i>	rs9572561	13:31825401:T:C	C	0.332866667	Amino Acid	Urea cycle; Arginine and Proline Metabolism	dimethylarginine (SDMA + ADMA)	-0.030726197	2.75x10-5	0.880365098
<i>BTBD16</i>	rs78200813	10:124106025:C:G	G	0.052955556	Carbohydrate	Pentose Metabolism	arabitol/xylitol	-0.088438367	3.38x10-5	0.880365098
<i>CFH</i>	rs2786107	1:197310777:G:T	G	0.166977778	Carbohydrate	Glycolysis; Gluconeogenesis; and Pyruvate Metabolism	glycerate	-0.06218031	5.69x10-5	0.880365098
<i>ASPM</i>	rs7549171	1:197177632:A:G	G	0.224055556	Lipid	Androgenic Steroids	etiocholanolone glucuronide	0.155249296	1.18x10-5	0.880365098
<i>HLA-B</i>	rs147782068	6:31329466:A:G	G	0.091311111	Lipid	Phosphatidylcholine (PC)	1-palmitoyl-2-arachidonoyl-GPC (16:0/20:4n6)	0.024964264	5.15x10-5	0.880365098
<i>BTBD16</i>	rs11200571	10:124110966:A:G	G	0.265688889	Lipid	Lysophospholipid	2-palmitoleoyl-GPC (16:1)*	0.136482776	1.00x10-5	0.880365098
<i>ASPM</i>	rs115155369	1:197174647:T:C	C	0.223088889	Lipid	Androgenic Steroids	etiocholanolone glucuronide	0.155249296	1.18x10-5	0.880365098
<i>C3</i>	rs2241392	19:6685983:G:C	C	0.377688889	Lipid	Fatty Acid; Dicarboxylate	maleate	0.06625639	2.06x10-5	0.880365098
<i>BTBD16</i>	rs1973974	10:123998027:A:G	G	0.407388889	Lipid	Lysophospholipid	1-palmitoleoyl-GPC (16:1)*	0.044628679	5.56x10-5	0.880365098
<i>BTBD16</i>	rs7074542	10:124112799:C:T	T	0.253655556	Lipid	Lysophospholipid	2-palmitoleoyl-GPC (16:1)*	0.148011592	7.58x10-6	0.880365098
<i>BTBD16</i>	rs1973975	10:123998263:A:G	G	0.400611111	Lipid	Lysophospholipid	1-palmitoleoyl-GPC (16:1)*	0.045339804	4.77x10-5	0.880365098
<i>CFH</i>	rs73078968	1:196071201:G:T	T	0.130711111	Lipid	Hexosylceramides (HCER)	glycosyl-N-nervonoyl-sphingosine (d18:1/24:1)*	-0.141276831	2.86x10-5	0.880365098
<i>ASPM</i>	rs1332667	1:196995848:G:T	T	0.4993	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs1332668	1:197005736:C:T	T	0.4997667	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs2298882	1:197034826:T:G	T	0.499966667	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs4915304	1:197047459:A:G	G	0.4999778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs4915311	1:197048937:C:T	T	0.4998889	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs7530902	1:197044716:T:A	T	0.499855556	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs6428382	1:197044758:A:C	A	0.499855556	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs3737111	1:197101621:T:C	C	0.4991778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs10712322	1:197004103:AC:A	A	0.477377778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs10737685	1:197004484:A:G	G	0.477377778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs6702252	1:197005212:G:A	A	0.477455556	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs5990	1:197008597:A:C	C	0.477744444	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs5998	1:197009798:A:G	G	0.477777778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs10484502	1:197010475:G:A	A	0.477777778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs10754209	1:197011577:T:A	A	0.477788889	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs7518773	1:197011636:A:G	G	0.477788889	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs857018	1:197018398:T:C	C	0.477722222	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs1611982	1:197022768:G:A	A	0.476977778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098

<i>ASPM</i>	rs1412635	1:197023048:G:A	A	0.477677778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs1332661	1:197029345:G:A	A	0.477777778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs1615413	1:197030317:A:G	G	0.4778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs7525490	1:197043922:A:G	G	0.478233333	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs6674141	1:197044907:A:G	G	0.477511111	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs4915308	1:197048609:G:A	A	0.477477778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs7514071	1:197049661:T:A	A	0.4776	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs6700180	1:197064496:G:A	A	0.477411111	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs11330621	1:197064584:TA:T	T	0.477422222	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs10801589	1:197076194:C:T	T	0.477322222	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs10922163	1:197077391:T:C	C	0.477388889	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs10754216	1:197095840:G:A	A	0.477	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs4244139	1:197131374:G:A	A	0.479155556	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057774214	4.86x10-5	0.880365098
<i>ASPM</i>	rs6677930	1:197135466:C:A	A	0.480655556	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.057728946	4.89x10-5	0.880365098
<i>ASPM</i>	rs35258876	1:197151626:C:CA	C	0.491155556	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.064108698	5.21x10-5	0.880365098
<i>C3</i>	rs11569393	19:6721640:A:C	C	0.400266667	Lipid	Hexosylceramides (HCER)	glycosyl ceramide (d18:2/24:1; d18:1/24:2)*	-0.12081556	4.77x10-5	0.880365098
<i>ASPM</i>	rs10737688	1:197156055:C:T	T	0.4906778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.062940725	4.17x10-5	0.880365098
<i>ASPM</i>	rs10754217	1:197160338:C:T	T	0.4924667	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.062940725	4.17x10-5	0.880365098
<i>ASPM</i>	rs2336596	1:196995092:G:A	A	0.498277778	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	-0.060251603	3.82x10-5	0.880365098
<i>ASPM</i>	rs7410943	1:197155021:A:G	A	0.487422222	Lipid	Fatty Acid Metabolism(Acyl Carnitine)	docosahexaenoylcarnitine (C22:6)*	0.063779384	5.74x10-5	0.880365098
<i>BTBD16</i>	rs78200813	10:124106025:C:G	G	0.052955556	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotidine	0.681594409	4.16x10-5	0.880365098
<i>ABHD16A</i>	rs114407294	6:31672268:A:G	G	0.077777778	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotidine	0.412422208	1.04x10-5	0.880365098
<i>ABHD16A</i>	rs28745897	6:31717066:C:T	T	0.0889	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotidine	0.399600659	1.90x10-5	0.880365098
<i>ABHD16A</i>	rs17201144	6:31730568:A:G	G	0.088988889	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotidine	0.399600659	1.90x10-5	0.880365098
<i>ABHD16A</i>	rs114407294	6:31672268:A:G	G	0.077777778	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotate	0.275397412	4.49x10-6	0.880365098
<i>ABHD16A</i>	rs28745897	6:31717066:C:T	T	0.0889	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotate	0.26691464	8.77x10-6	0.880365098
<i>ABHD16A</i>	rs17201144	6:31730568:A:G	G	0.088988889	Nucleotide	Pyrimidine Metabolism; Orotate containing	orotate	0.26691464	8.77x10-6	0.880365098
<i>ARL16</i>	rs62075722	17:79611271:A:G	A	0.348555556	Nucleotide	Purine Metabolism; Adenine containing	N6-succinyladenosine	-0.035794731	2.41x10-5	0.880365098
<i>ARL16</i>	rs62075723	17:79611326:G:A	G	0.348633333	Nucleotide	Purine Metabolism; Adenine containing	N6-succinyladenosine	-0.035794731	2.41x10-5	0.880365098
<i>ARL16</i>	rs6420484	17:79612397:A:G	A	0.349555556	Nucleotide	Purine Metabolism; Adenine containing	N6-succinyladenosine	-0.035794731	2.41x10-5	0.880365098
<i>ADAMTS9</i>	rs9311910	3:64707269:G:A	G	0.490166667	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.045751772	2.72x10-5	0.880365098
<i>ADAMTS9</i>	rs9870517	3:64708600:A:C	A	0.4897	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.045751772	2.72x10-5	0.880365098
<i>ADAMTS9</i>	rs918466	3:64710253:G:A	G	0.488888889	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.044322007	5.84x10-5	0.880365098
<i>ADAMTS9</i>	rs6795735	3:64705365:C:T	C	0.479788889	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.043519845	5.46x10-5	0.880365098
<i>ADAMTS9</i>	rs12108088	3:64722045:G:A	G	0.488055556	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.044322007	5.84x10-5	0.880365098
<i>ADAMTS9</i>	rs4611812	3:64699445:C:T	C	0.482544444	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.043519845	5.46x10-5	0.880365098
<i>ADAMTS9</i>	rs7638565	3:64723072:A:G	G	0.485744444	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.049133694	4.53x10-5	0.880365098
<i>C3</i>	rs199713383	19:6720074:A:AT	A	0.496155556	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylisoleucine*	-0.062870057	4.30x10-5	0.880365098
<i>ADAMTS9</i>	rs4688508	3:64720023:T:C	T	0.4876	Peptide	Gamma-glutamyl Amino Acid	gamma-glutamylphenylalanine	-0.044322007	5.84x10-5	0.880365098

rsID: reference single nucleotide polymorphism (SNP) cluster ID; CHRPOS - chromosome position; GPE - glycerophosphatidylethanolamine; US - United States; Meta - results from meta-analysis