

Figure S1. Histograms of AED-MS Alda total score, A score, and B score. Y-axes represent the frequency of subjects.

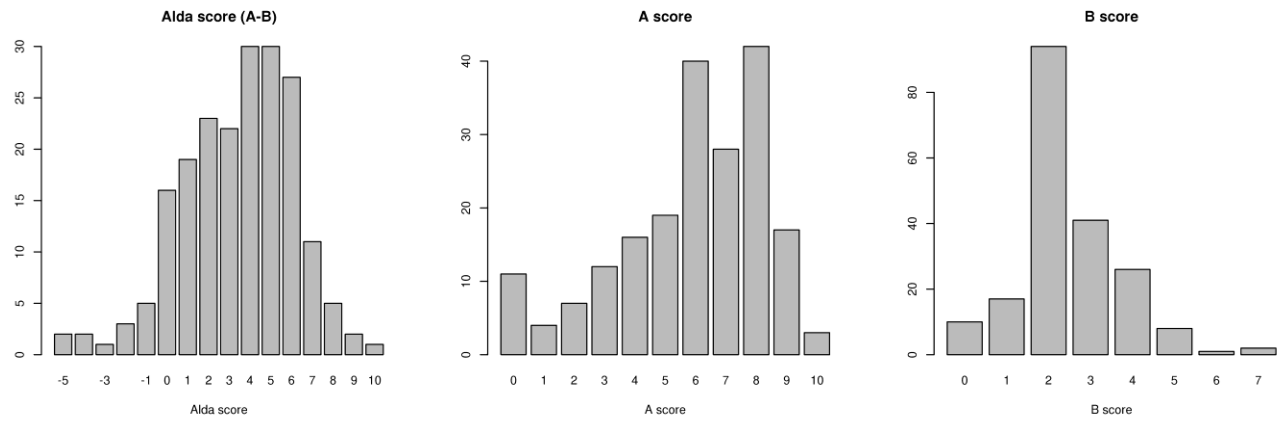


Figure S2. Q-Q plots for (a) SNP-level and (b) gene-level analysis.

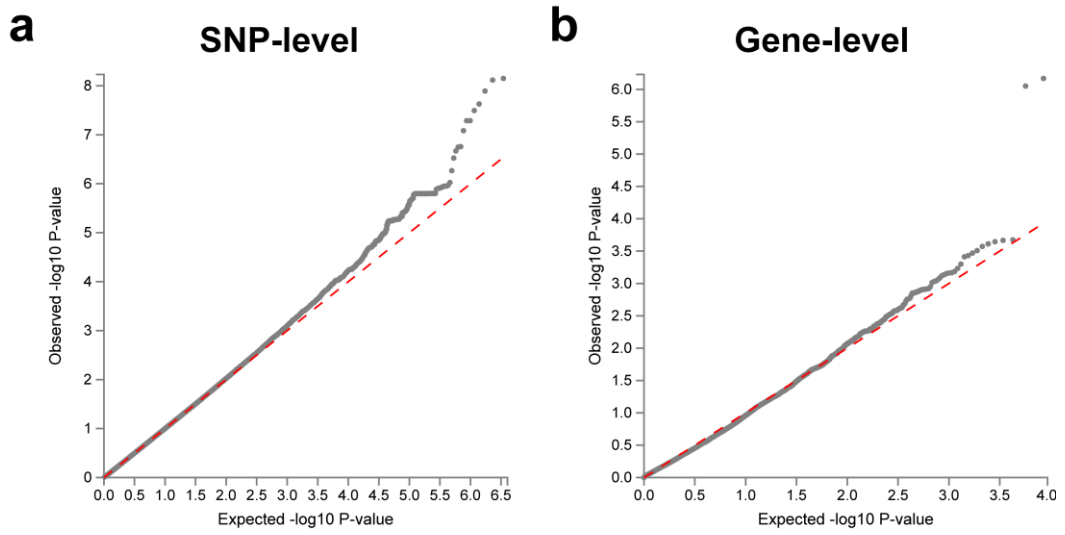


Figure S3. (a) Gene expressions of *THSD7A* across multiple human tissues and (b) notable eQTL analysis results of rs78835388 on *THSD7A* gene expression in human tissues. Graphics were obtained from GTEx Portal.

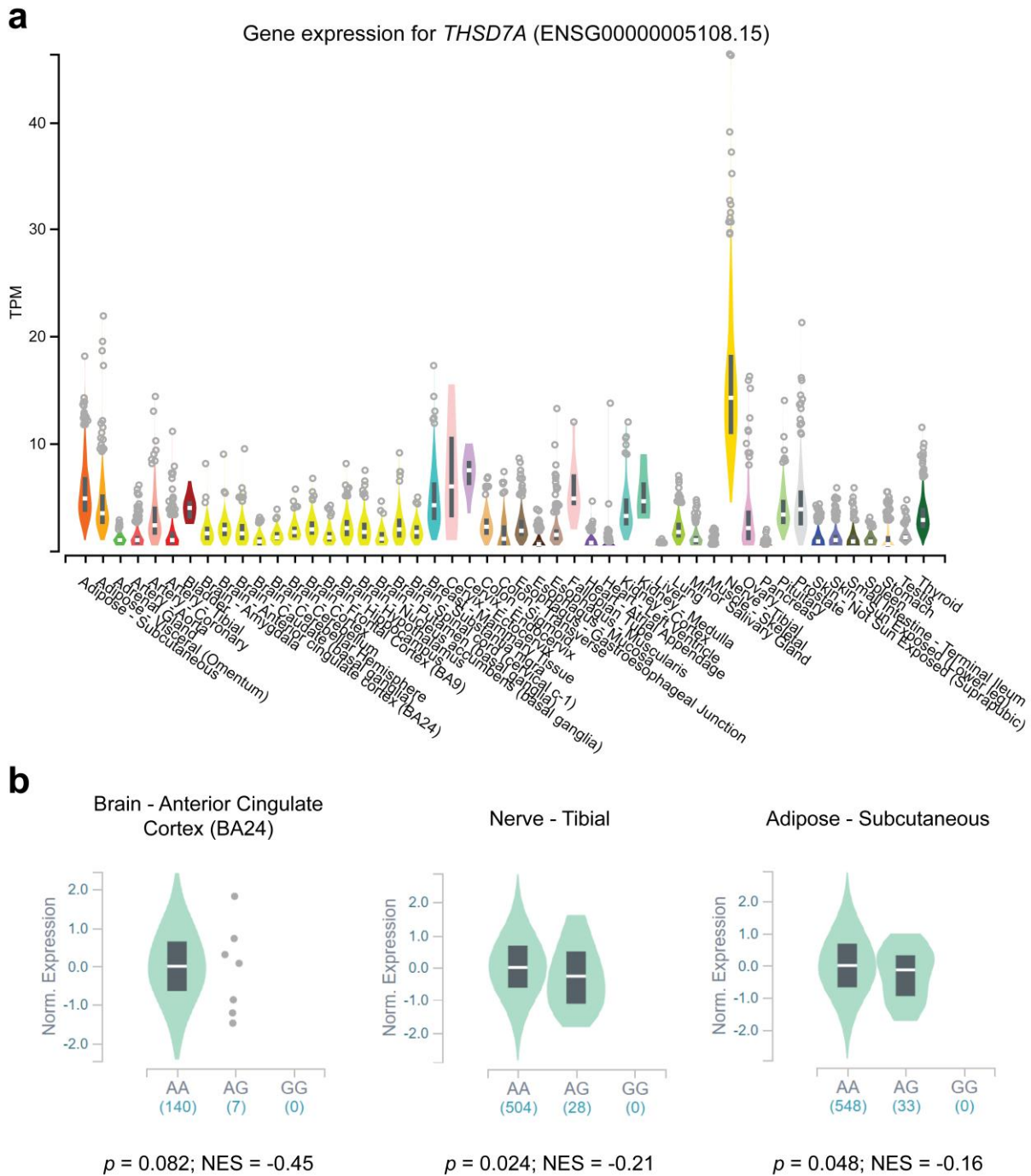


Figure S5. Splicing quantitative trait loci (sQTLs) for *ABCC1* and *DISP1/lnc-DISP1-1* in human gastrointestinal tract. The two nominally significant SNPs from the AED-MS response GWAS that mapped to *ABCC1* (rs875740, $p = 2.0E-06$) and *DISP1/lnc-DISP1-1* (rs3470716, $p = 2.0E-06$) were strong sQTLs for *ABCC1* and *DISP1/lnc-DISP1-1* in various segments of the gastrointestinal tract. No significant sQTLs were found in the human brain. Y-axis represents the intron-excision ratios and the intron where excision events occur in a SNP-dependent manner are stated in red. Graphics were obtained from GTEx Portal.

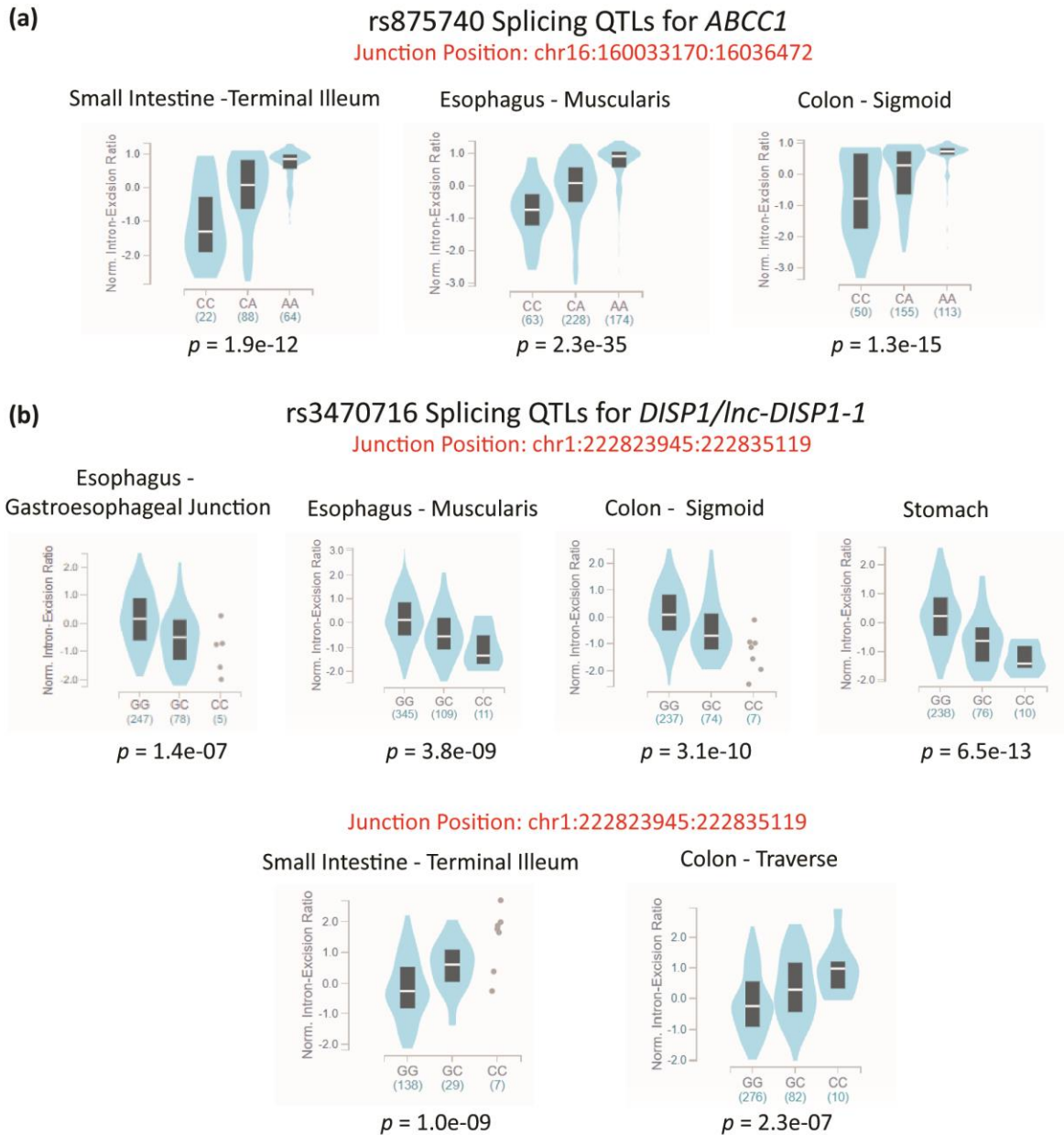


Table S1. Methylation quantitative trait loci (mQTL) information of *ABCC1* rs875740 and *DISP1* rs3470716.

Top GWAS SNPs		mQTL Information												Reference Information					
SNP	Gene	CHR	Pos	Gene	Region	Effective Allele	ProbeID on Infinium HumanMethylation450 Array	Tissue	Tissue State	Effect Size (β)	SE	p-value	FDR	PMID	Journal	Year	Platform	Population	Sample Size
rs34701716	<i>DISP1</i>	1	223959609	<i>GTF2IP20</i>	intron	NA	cg02923485	Blood-Monocytes CD14+	normal	0.430	0.152	4.55E-03	0.0175	27863251	Cell	2016	Infinium HumanMethylation450 BeadChip	MIX	197
rs34701716	<i>DISP1</i>	1	222910746	<i>DISP1</i>	intron	NA	cg22827524	Blood-Monocytes CD14+	normal	0.413	0.151	6.13E-03	0.0826	27863251	Cell	2016	Infinium HumanMethylation450 BeadChip	MIX	197
rs875740	<i>ABCC1</i>	16	16190393	<i>ABCC6</i>	intron	NA	cg01332683	Blood-Monocytes CD14+	normal	0.334	0.104	1.34E-03	0.0128	27863251	Cell	2016	Infinium HumanMethylation450 BeadChip	MIX	197
rs875740	<i>ABCC1</i>	16	16122741	<i>ABCC1</i>	intron	NA	cg09473249	Blood	normal	-0.218	0.038	1.45E-08	0.00831	27036880	Genome Biology	2016	Infinium HumanMethylation450 BeadChip	EUR	834
rs875740	<i>ABCC1</i>	16	16082095	<i>ABCC1</i>	intron	NA	cg10111352	Blood-Neutrophils CD16+	normal	-0.431	0.124	5.02E-04	0.0241	27863251	Cell	2016	Infinium HumanMethylation450 BeadChip	MIX	197