

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: List of 116 trait included in this study.

File Name: Supplementary Data 2

Description: List of studies that are removed in the quality control filtering.

File Name: Supplementary Data 3

Description: Precision and recall for identifying trait-specific variants observed in simulation studies.

File Name: Supplementary Data 4

Description: Type I error of fastASSET in simulation studies.

File Name: Supplementary Data 5

Description: Running time for fastASSET (two different pre-screening thresholds), ASSET, metaUSAT and metaMANOVA for 100 simulated SNPs.

File Name: Supplementary Data 6

Description: List of all significant loci identified by ASSET at $p < 5e-8$.

File Name: Supplementary Data 7

Description: Trait-related functions of example target eGenes for trait-specific SNPs.

File Name: Supplementary Data 8

Description: Colocalization between GWAS and eQTL signals for trait-specific loci.

File Name: Supplementary Data 9

Description: List of traits from Biobank Japan for fastASSET analysis.

File Name: Supplementary Data 10

Description: Lead SNPs of significant loci detected by fastASSET in Biobank Japan (BBJ) data.

File Name: Supplementary Data 11

Description: Number of eGenes and tissues reported by GTEx for trait-specific variants identified in BBJ analysis. Variants with NA's are not eQTLs in GTEx