

## Legends to supplementary figures

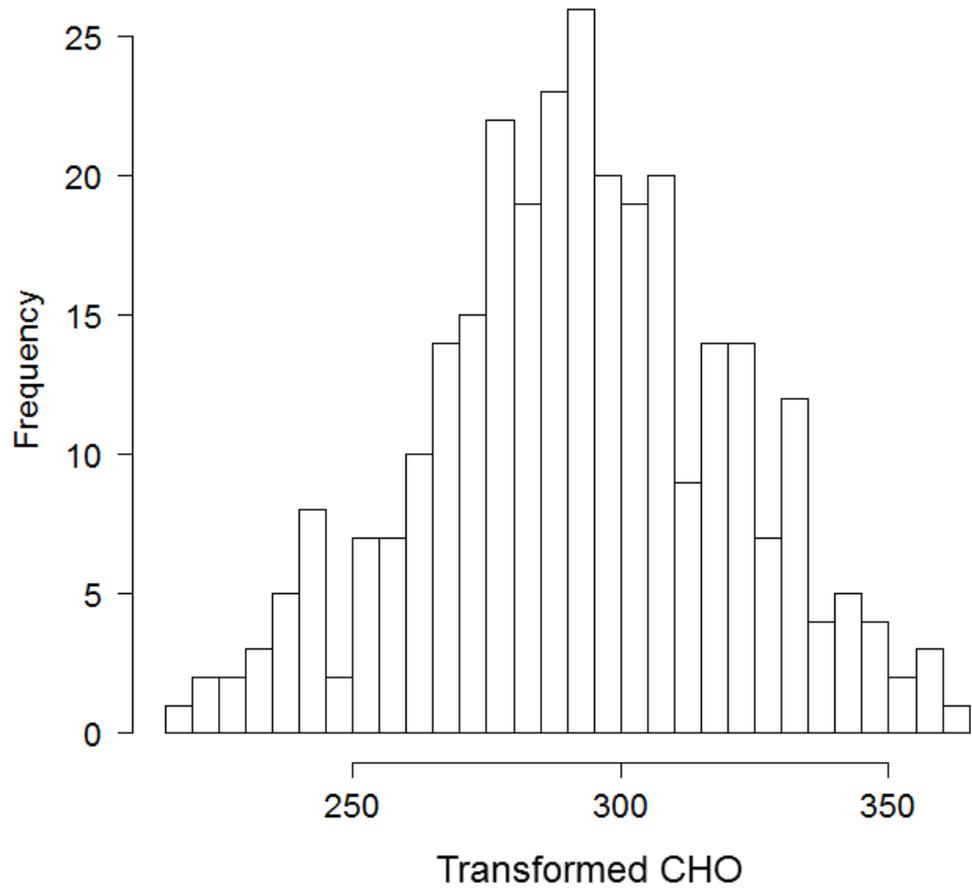
**Supplementary Figure 1.** (A) A histogram showing the distribution of transformed plasma CHO concentrations. (B) A histogram showing the distribution of transformed plasma TG concentrations.

**Supplementary Figure 2.** Allelic contributions of *Choldq8*, which interacts with cross direction. The X-axis shows the genotypes of F<sub>2</sub> mice partitioned according to the nearest marker locus genotypes: homozygous DDD alleles are represented by DDD/DDD, homozygous B6 alleles are represented by B6/B6, and heterozygous alleles are represented by DDD/B6. The Y-axis shows the transformed average CHO concentrations, and the error bars are SEM.

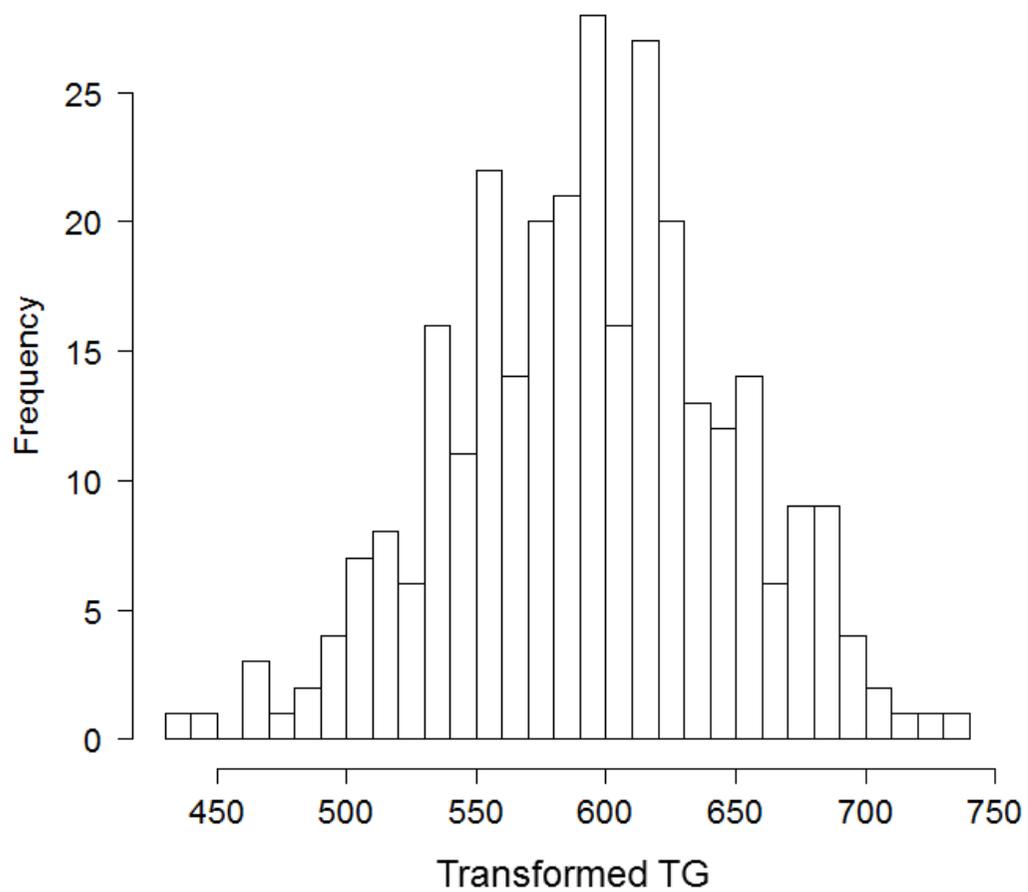
**Supplementary Figure 3.** (A) A histogram showing the distribution of standardized plasma CHO concentrations. (B) A histogram showing the distribution of standardized plasma TG concentrations.

**Supplementary Figure 4.** Allelic contributions of *Choldq7*, which interacts with sex. The X-axis shows the genotypes of F<sub>2</sub> mice partitioned according to the nearest marker locus genotypes: homozygous DDD alleles are represented by DDD/DDD, homozygous B6 alleles are represented by B6/B6, and heterozygous alleles are represented by DDD/B6. The Y-axis shows the standardized average CHO concentrations, and the error bars are SEM. In female mice, data from two kinds of F<sub>2</sub> mice; i.e., non-*A<sup>y</sup>* (lean) and *A<sup>y</sup>* (obese), according to the genotype at the *agouti* locus were merged.

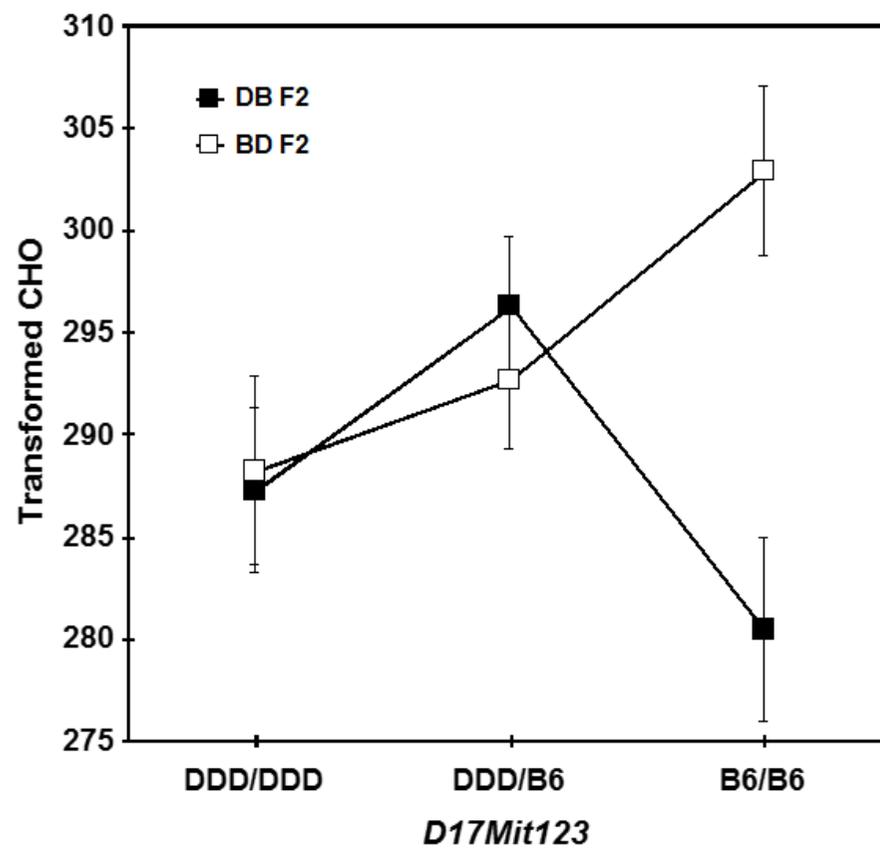
Supplementary Fig. 1A



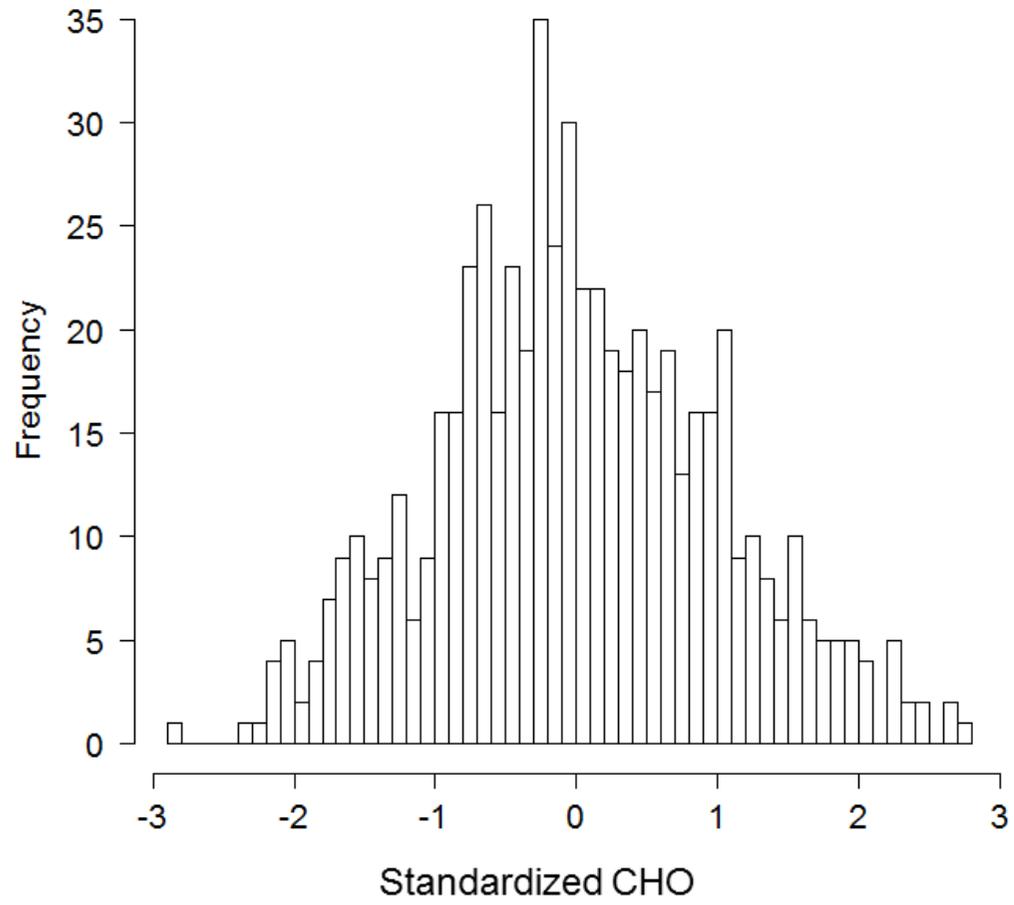
Supplementary Fig. 1B



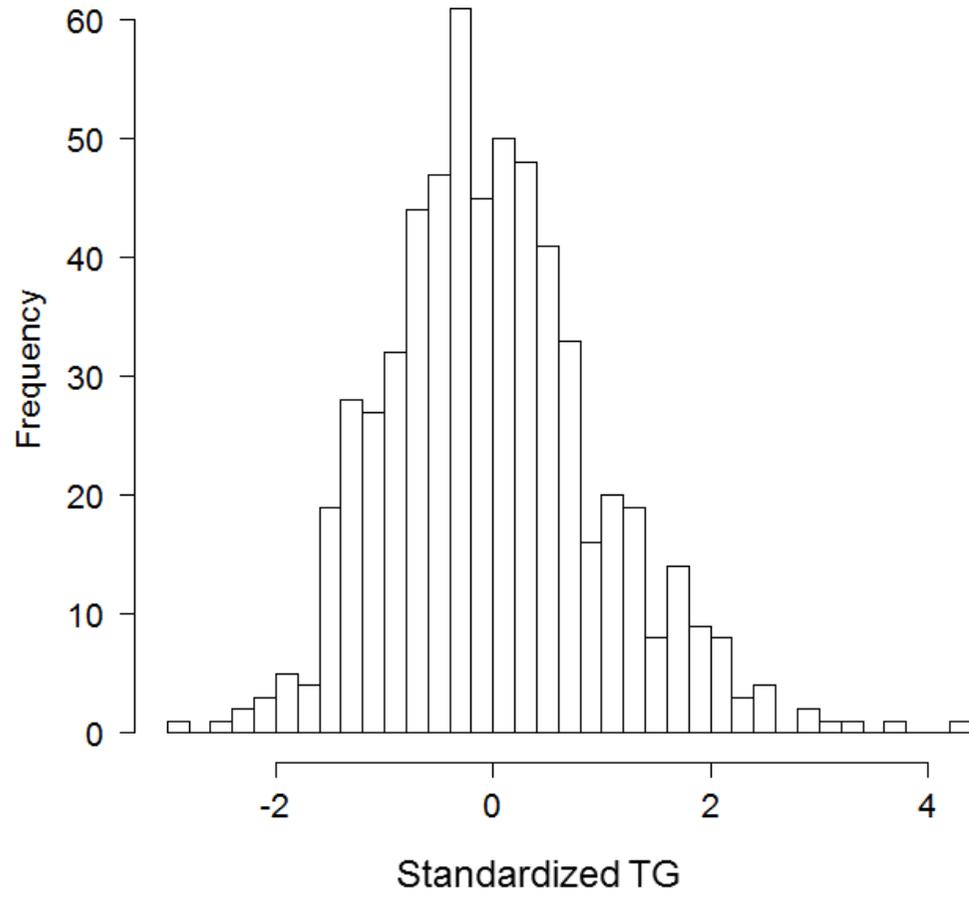
Supplementary Fig. 2



Supplementary Fig. 3A



Supplementary Fig. 3B



Supplementary Fig. 4

