

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Characteristics of the study populations.

File Name: Supplementary Data 2

Description: Genes associated in mice with abnormal thyroid physiology or morphology and which are significant in the TSH and FT4 GWAS after multiple testing correction.

File Name: Supplementary Data 3

Description: eQTL lookup results.

File Name: Supplementary Data 4

Description: Co-localization results for all gene-tissue-phenotype combinations assessed.

File Name: Supplementary Data 5

Description: Pleiotropic effects of the genome-wide significant index SNPs or their proxies.

File Name: Supplementary Data 6

Description: : Description of new loci.