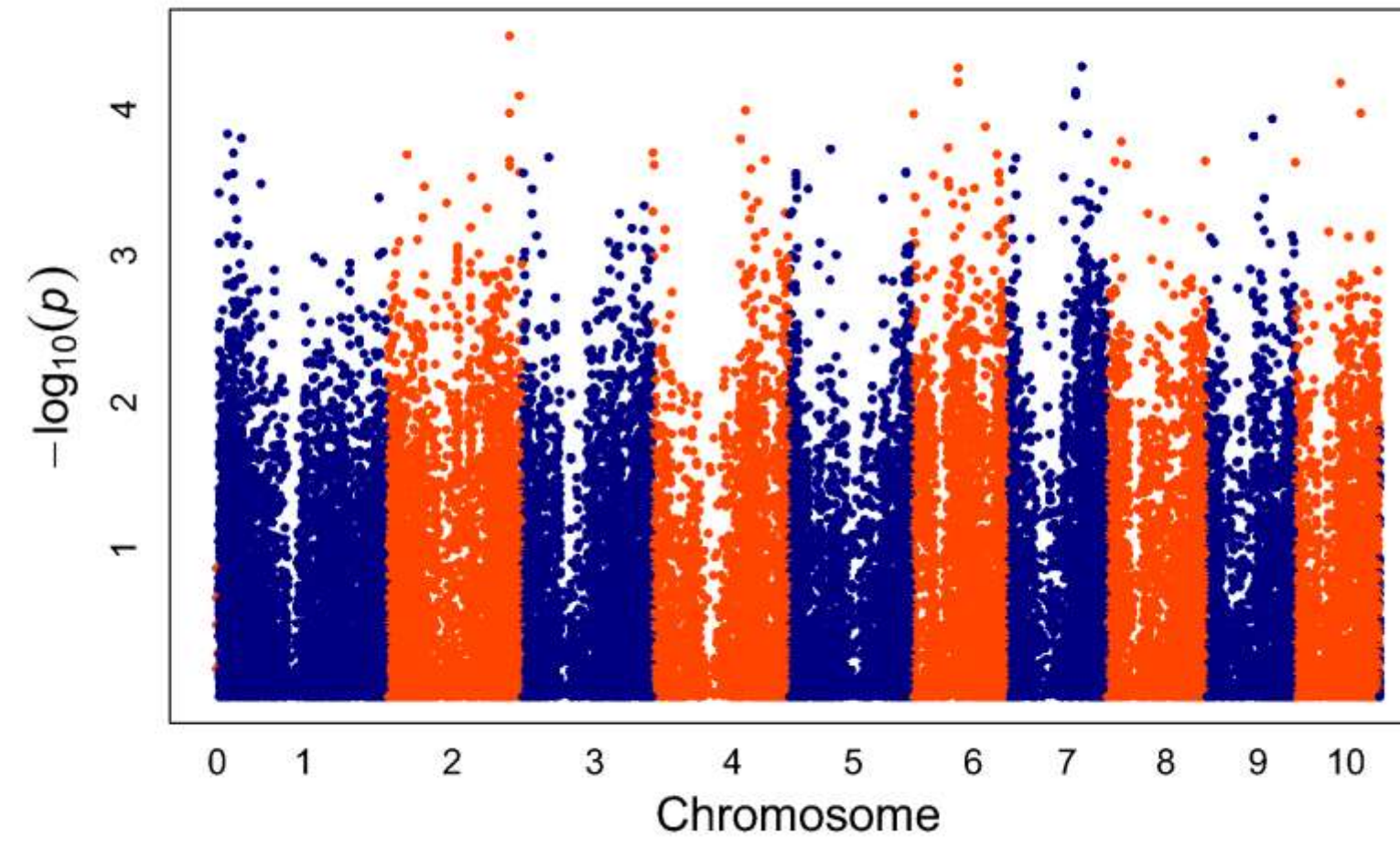
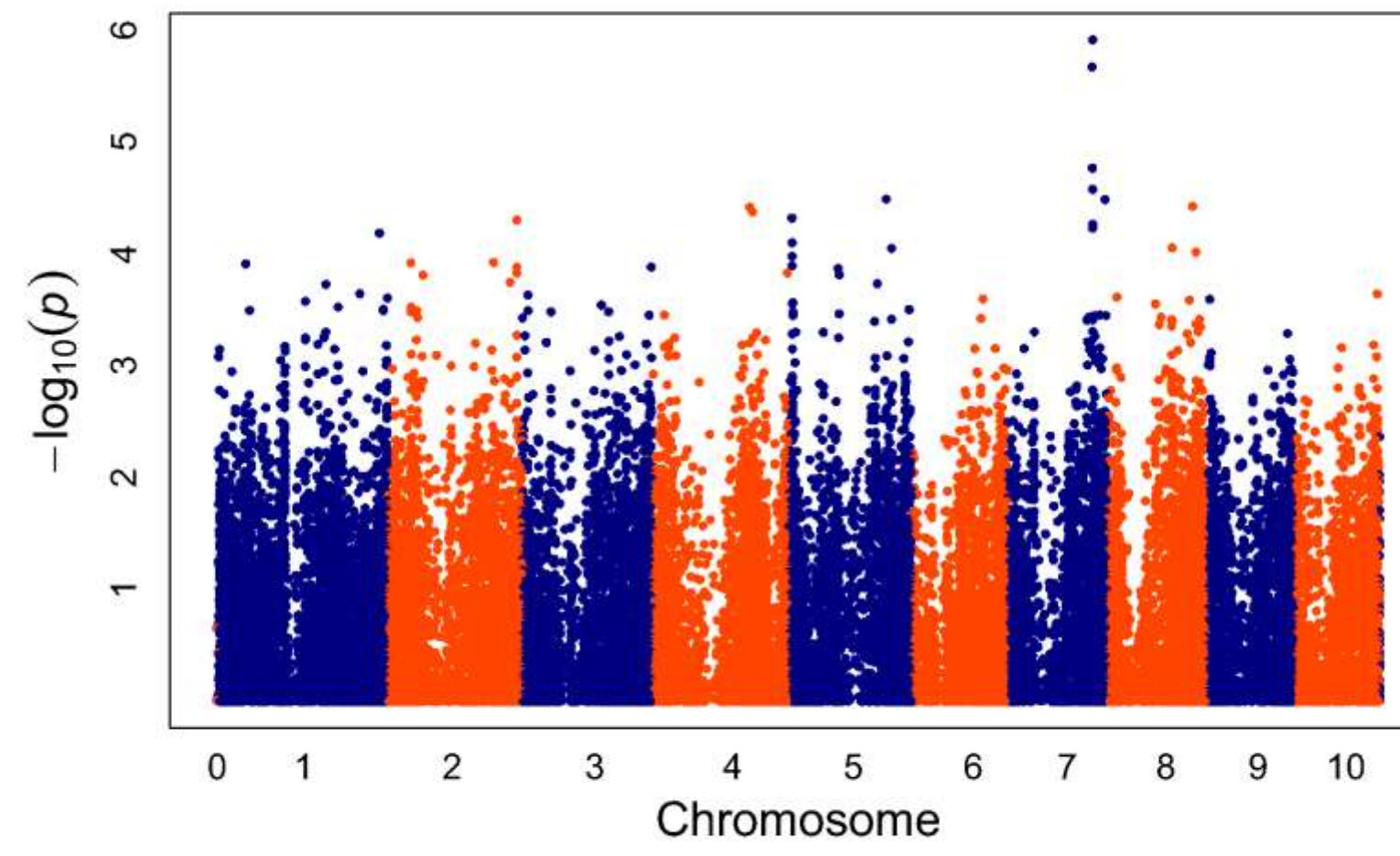


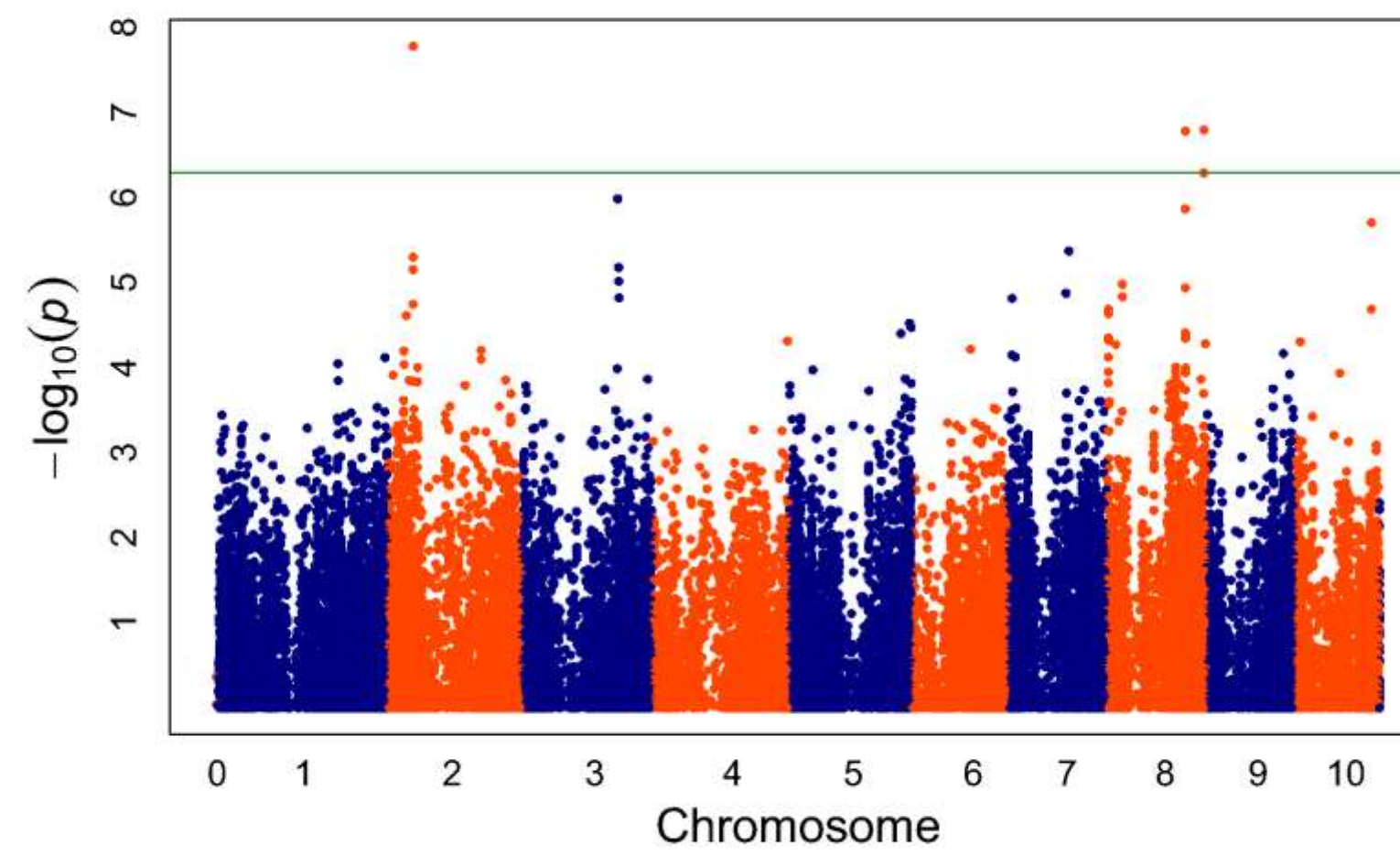
ζ-Carotene



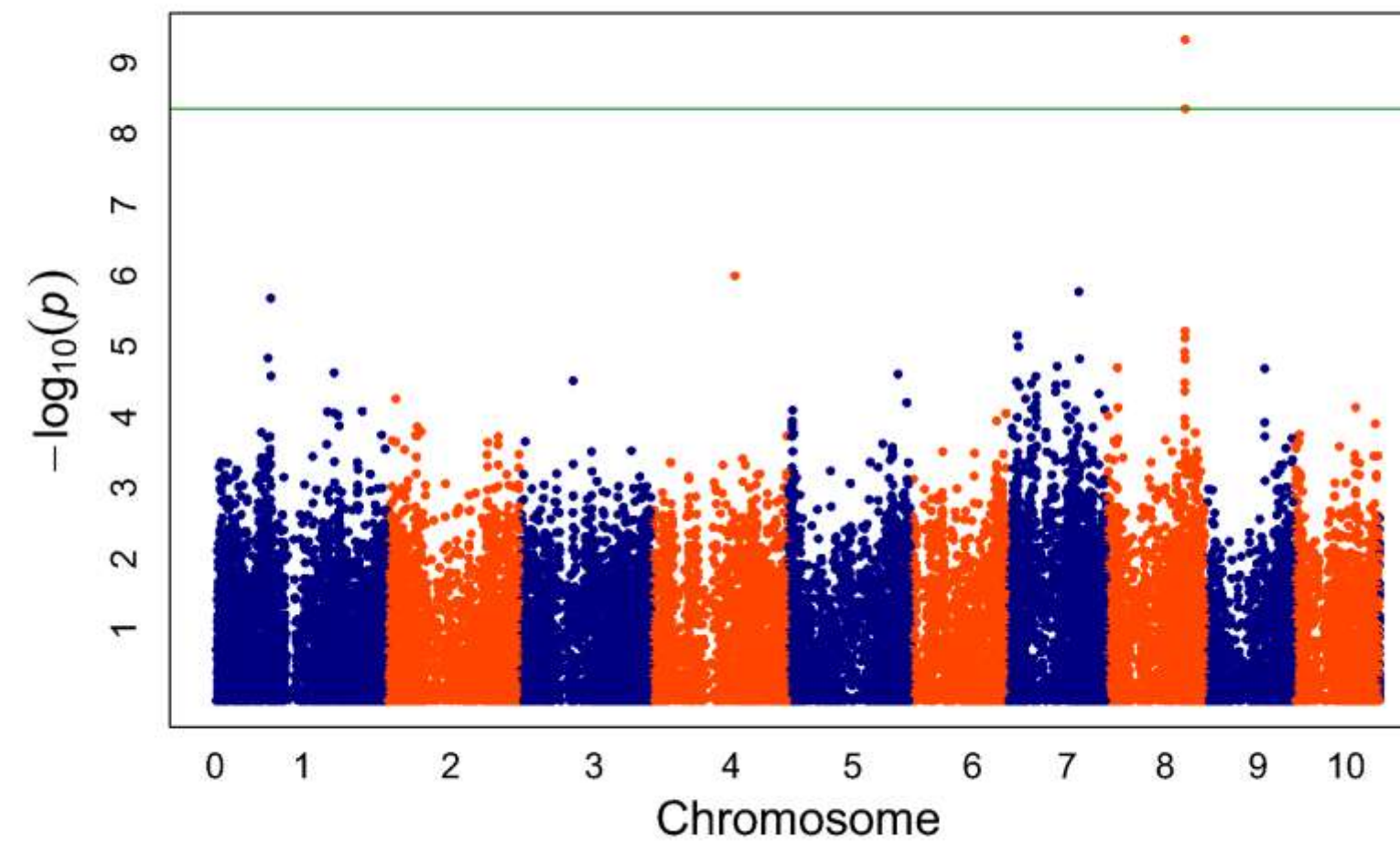
Tetrahydrocypene



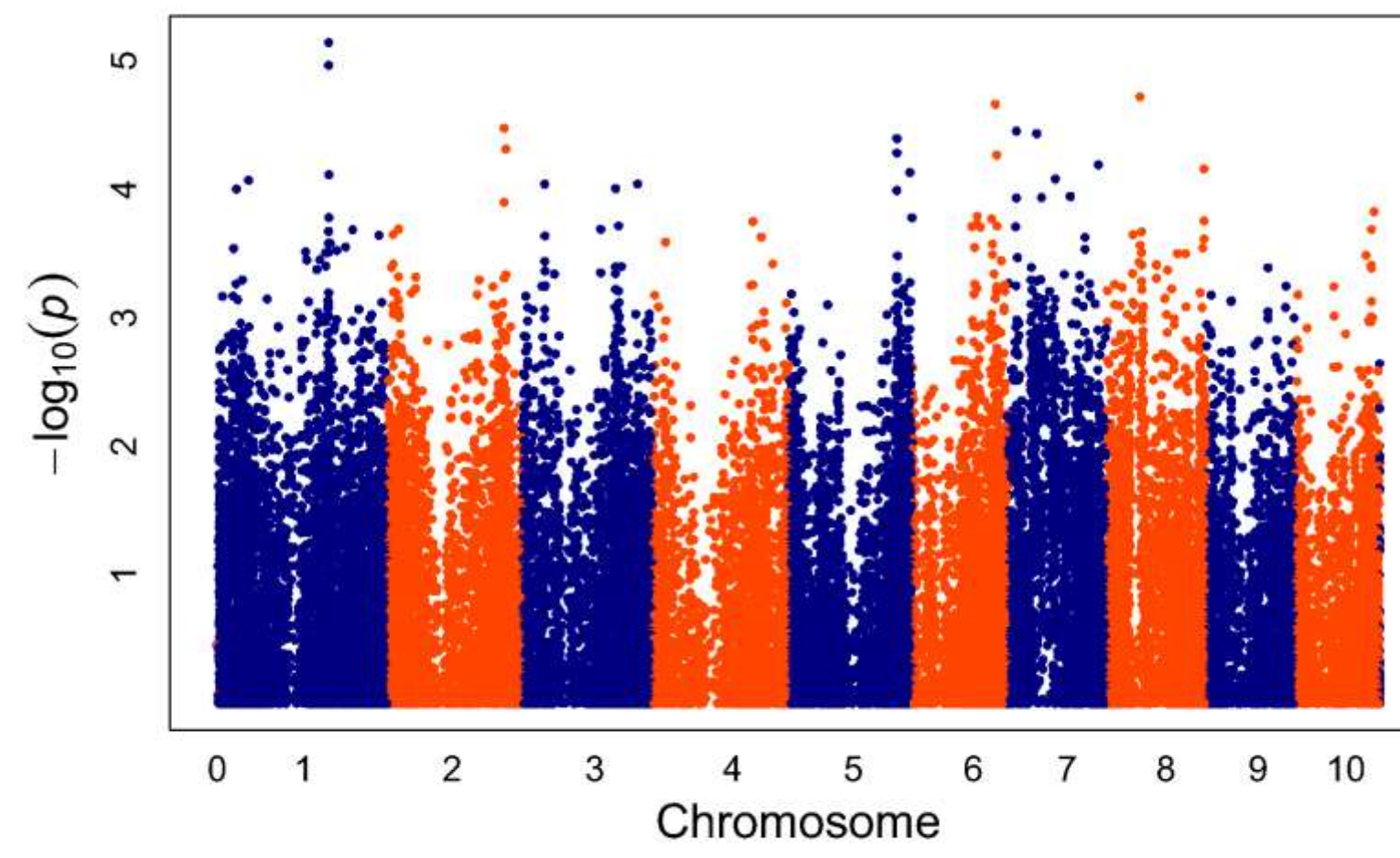
Total β-Xanthophylls



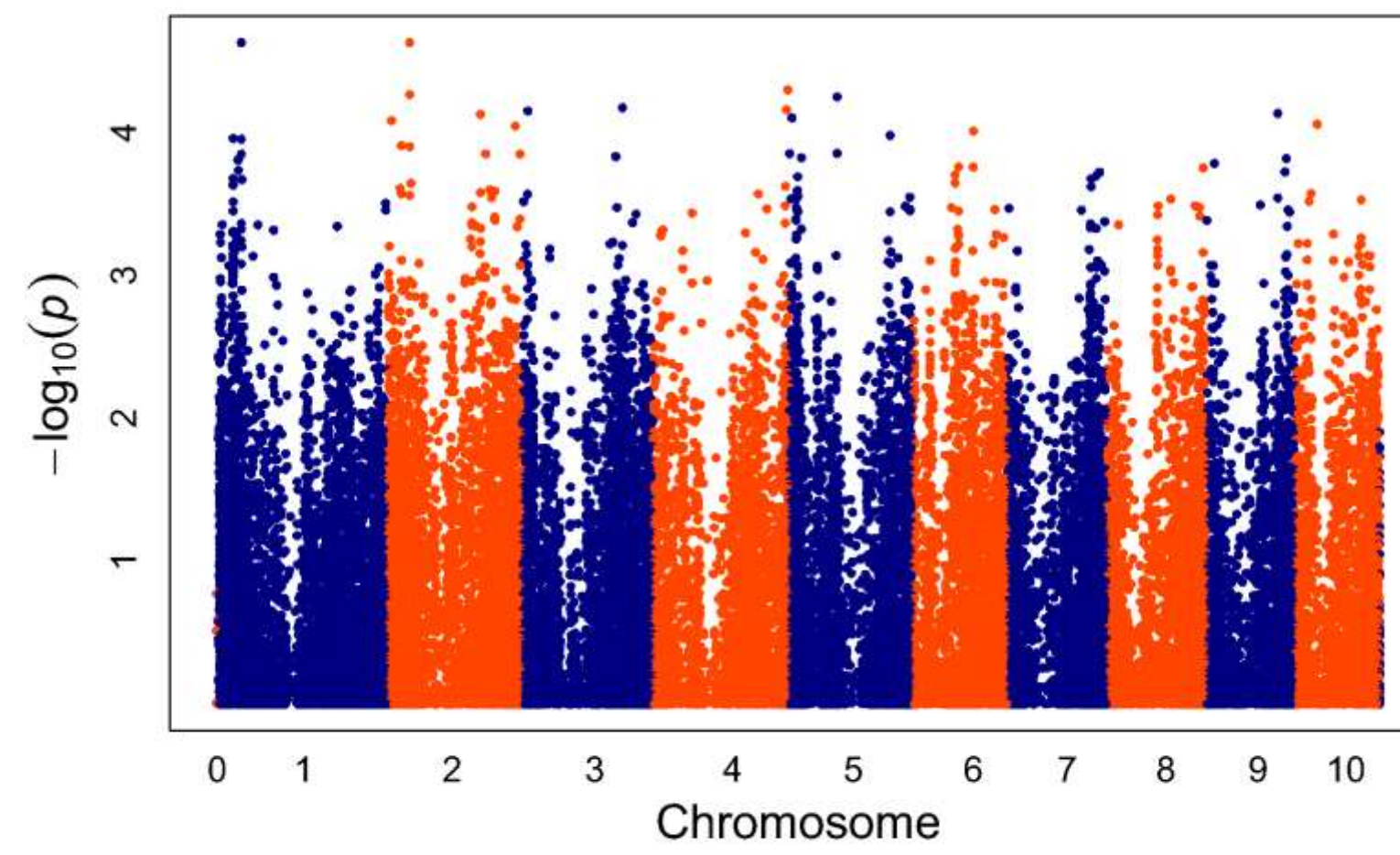
Total  $\alpha$ -Xanthophylls



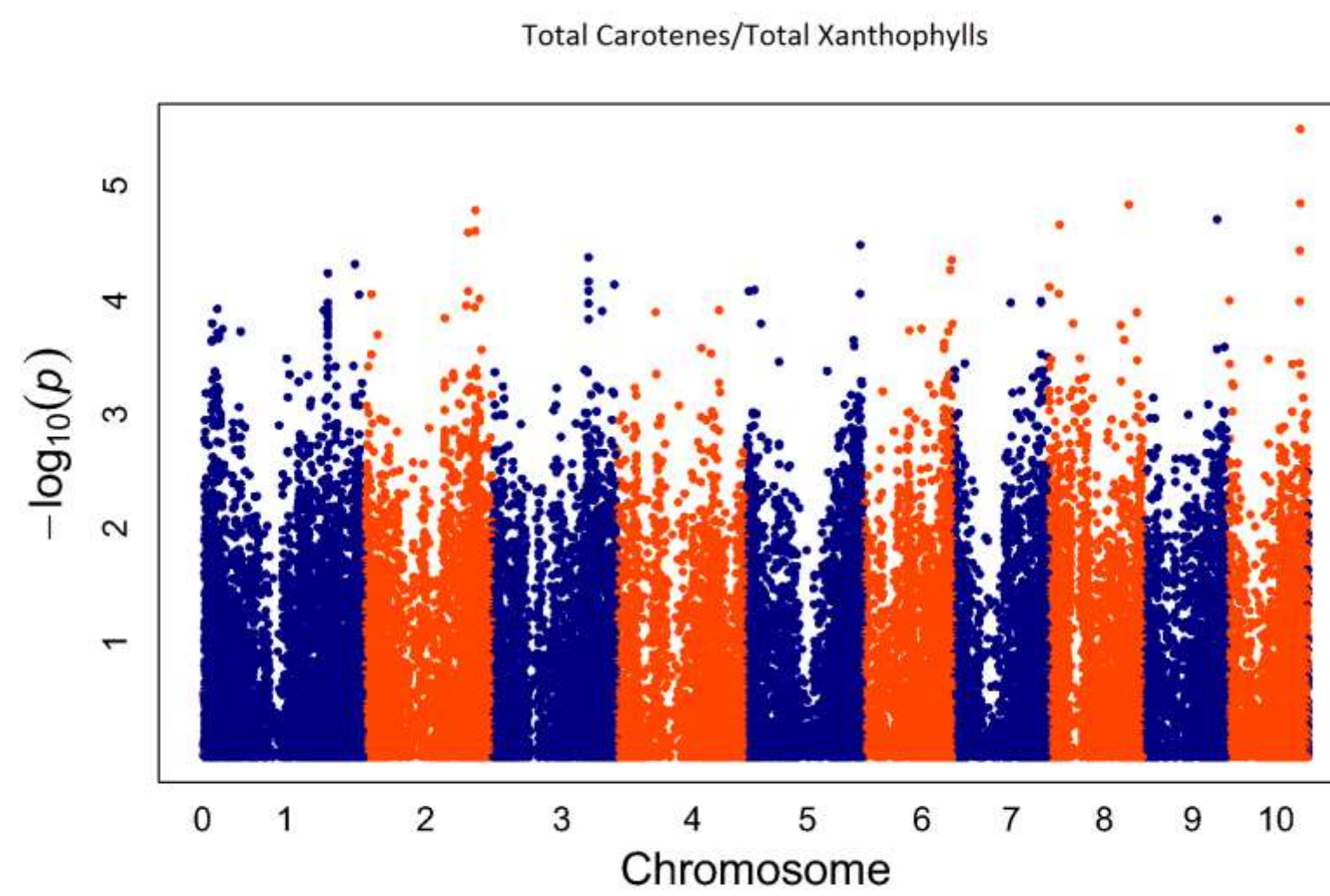
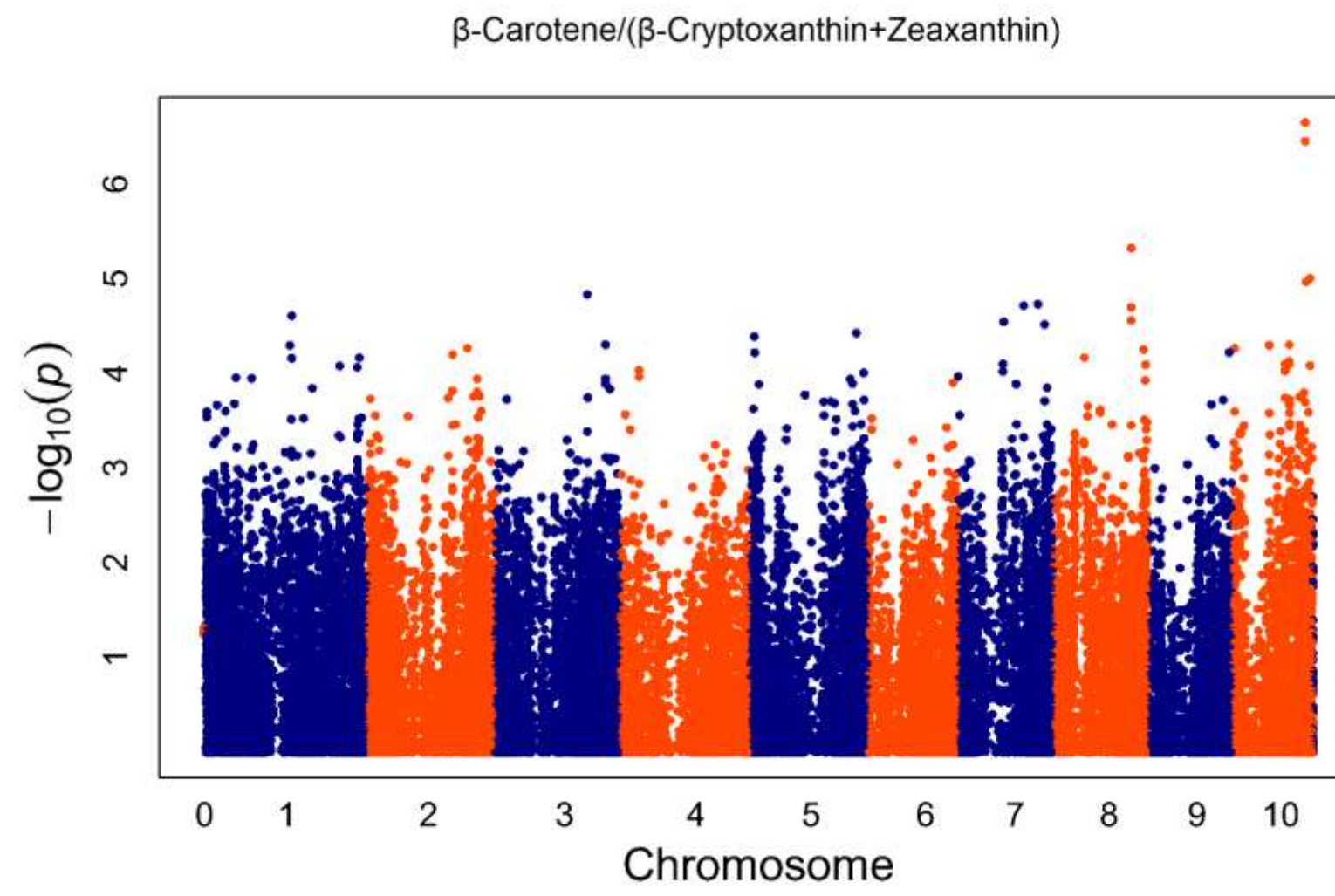
Provitamin A/Total Carotenoids



Acyclic Carotenenes/Cyclic Carotenenes







**Figure S2** Genome-wide association study (GWAS) of 24 carotenoid grain traits. Scatter plots of association results from a unified mixed model analysis of each carotenoid grain trait. Negative  $\log_{10}$ -transformed  $P$ -values (y-axis) from GWAS are plotted against physical position (B73 RefGen\_v2) on each of 10 chromosomes (x-axis). Chromosomes are alternatingly colored. The horizontal green line indicates the  $-\log_{10} P$ -value of the least statistically significant SNP at 5% false discovery rate (FDR). Additional information for all statistically significant markers at 5% and 10% FDR are provided in Table S8 (A).