**Supplemental Data Information**

**Data S1:** Supplemental information contains Tables S1-S8.

**Data S2:** Supplemental information contains Figures S1-S5.

**Data S3-5:** Example default configuration files of kGWASflow.

**Data S6-10:** The configuration files, phenotype information, and HTML summary report of kGWASflow run with the *E. coli* dataset.

**Data S11-15:** The configuration files, phenotype information, and HTML summary report of kGWASflow run with the maize dataset.