

Description of Additional Supplementary Files

Supplementary data 1: List of 310 *Plasmodium falciparum* isolates used in this study along with meta-information.

Supplementary data 2: Tajima's D values for Clade I, Clade IIa, and Clade IIb for each gene.

Supplementary data 3: Results along with annotation for each SNP used in GWAS.

Supplementary data 4: The table consists of results from the transcriptome–phenotype association study

Supplementary data 5: Results from in-vivo transcriptomic response to ACT/TACT treatment.

Supplementary data 6: Tables containing qPCR-related data for three *Plasmodium falciparum* cultures.

Supplementary data 7: Raw Signal intensity values from the Western blot data for three *Plasmodium falciparum* cultures.

Supplementary data 8: Genome-wide SNP association considering mutated K13 genotype as a binary phenotype.