

Genetic Variants that Confer Resistance to Malaria Are Associated with Red Blood Cell Traits in African Americans: An Electronic Medical Record-based Genome Wide Association Study

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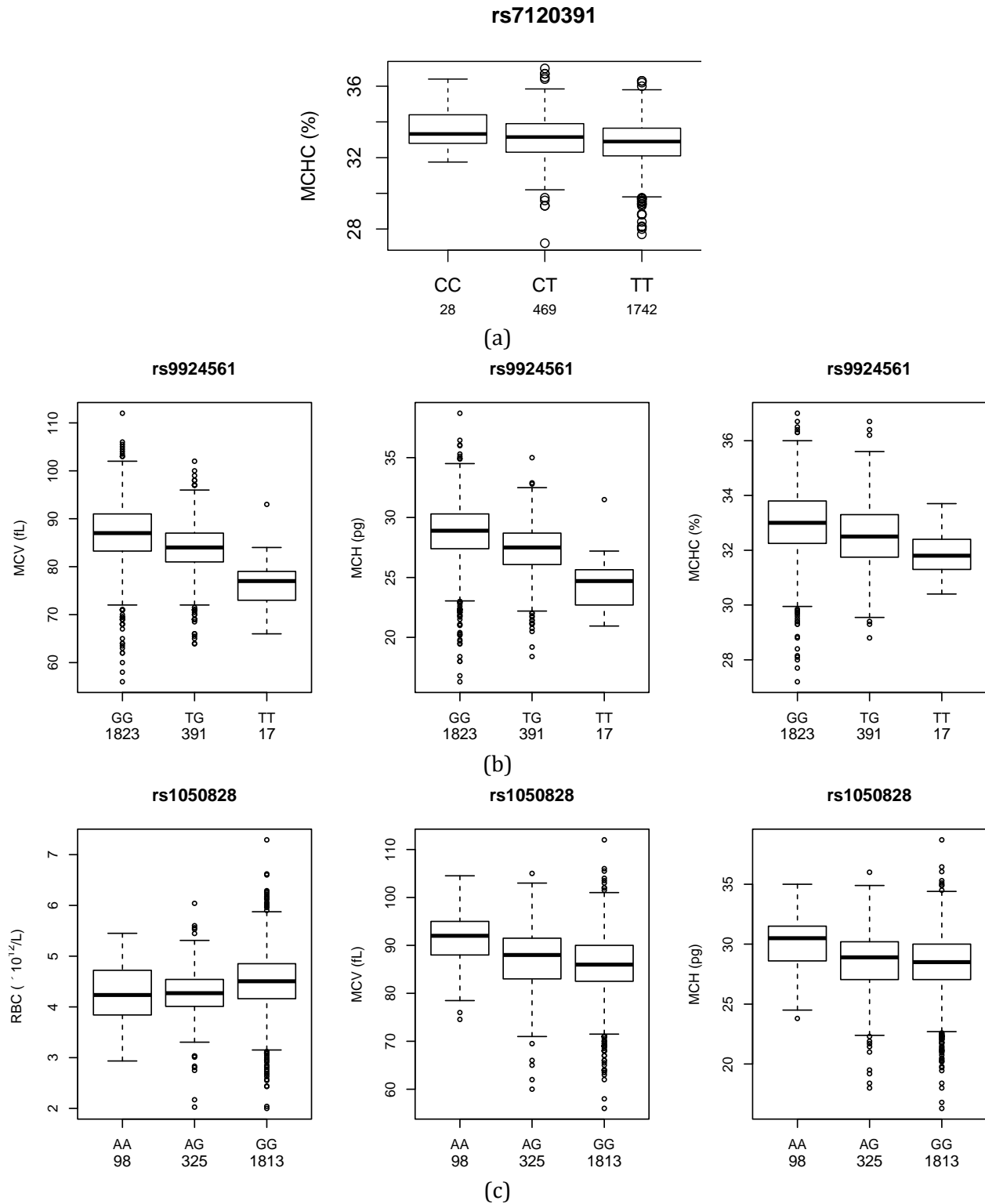


Figure S1 Boxplot of the RBC traits for the genotypes of significant SNPs. The number of genotype counts was shown below the genotype. The total number of genotypes for the three SNPs are 2239, 2231, and 2236, respectively (instead of 2243 phenotype data shown in Table S2 due to missing genotype data). For rs1050828, genotype 'A' and 'G' in male was included in 'AA' and 'GG'.

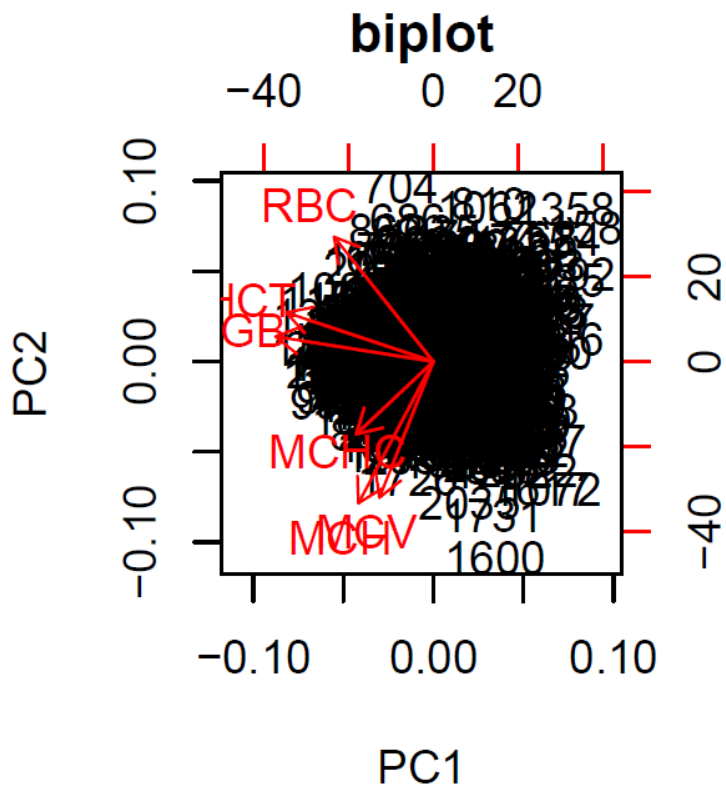


Figure S2 Plot of the first two principal components of the RBC traits (PC1: HCT,HGB, and RBC count; PC2: MCV, MCH, and RBC count).

RBC PC1 emerge1
Adjusted for Age, Sex, Site, PC1, PC2

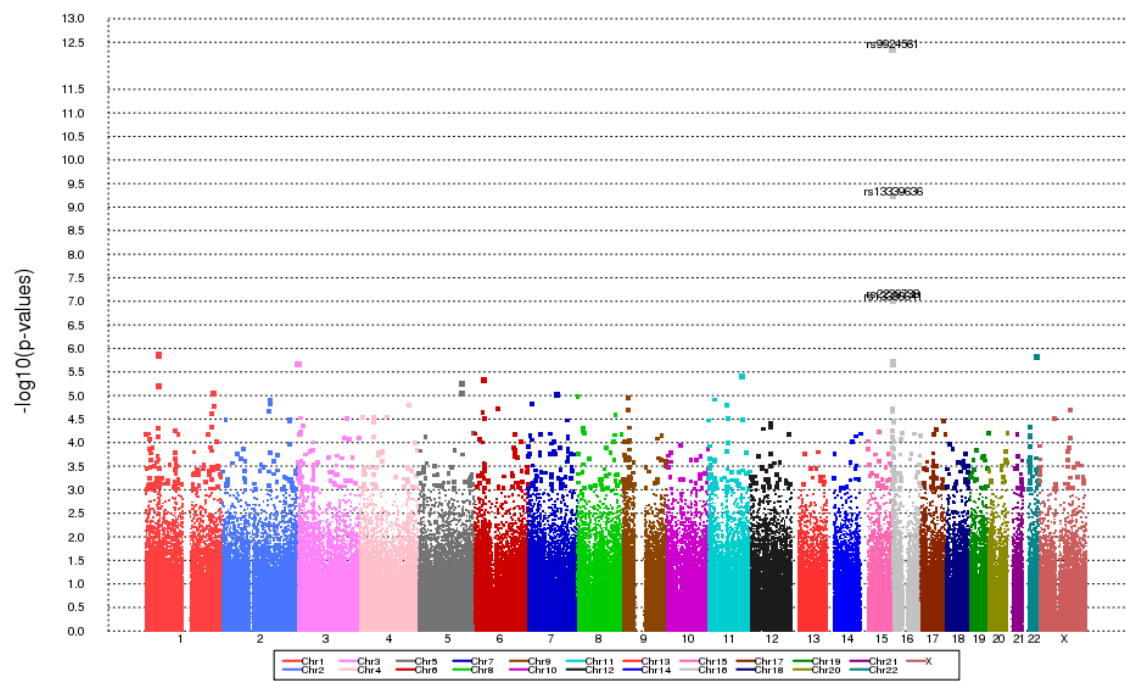


Figure S3 Manhattan plot for PC1

RBC PC2 emerge1
Adjusted for Age, Sex, Site, PC1, PC2

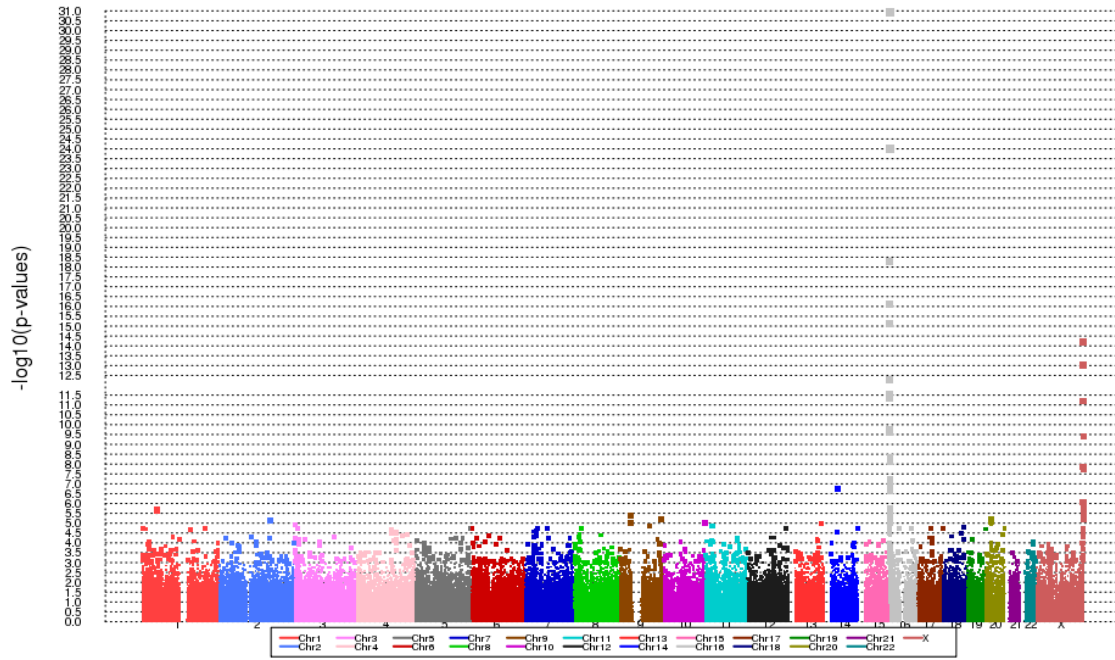


Figure S4 Manhattan plot for PC2

Table S1 The mean \pm s.d. values of RBC traits before and after implementing the phenotyping algorithm in the combined cohorts

Trait	Before exclusion	After exclusion ¹	P (Wilcox test)
HGB (g/dL)	12.59 \pm 1.58	12.77 \pm 1.49	0.0007
HCT (%)	38.26 \pm 4.43	38.76 \pm 4.12	0.001
RBC count ($\times 10^{12}$ /L)	4.45 \pm 0.57	4.51 \pm 0.52	0.006
MCV (fL)	86.38 \pm 6.37	86.41 \pm 6.29	0.979
MCH (pg)	28.43 \pm 2.5	28.46 \pm 2.49	0.715
MCHC (% or g/dL)	32.9 \pm 1.19	32.92 \pm 1.18	0.401

1. In total, 310 patients were excluded.

Table S2 Pairwise correlation of six RBC traits

	HGB	HCT	RBC count	MCV	MCH	MCHC
HGB	-					
HCT	0.95	-				
RBC count	0.73	0.79	-			
MCV	0.20	0.14	-0.46	-		
MCH	0.32	0.17	-0.39	0.92	-	
MCHC	0.40	0.13	-0.03	0.23	0.59	-