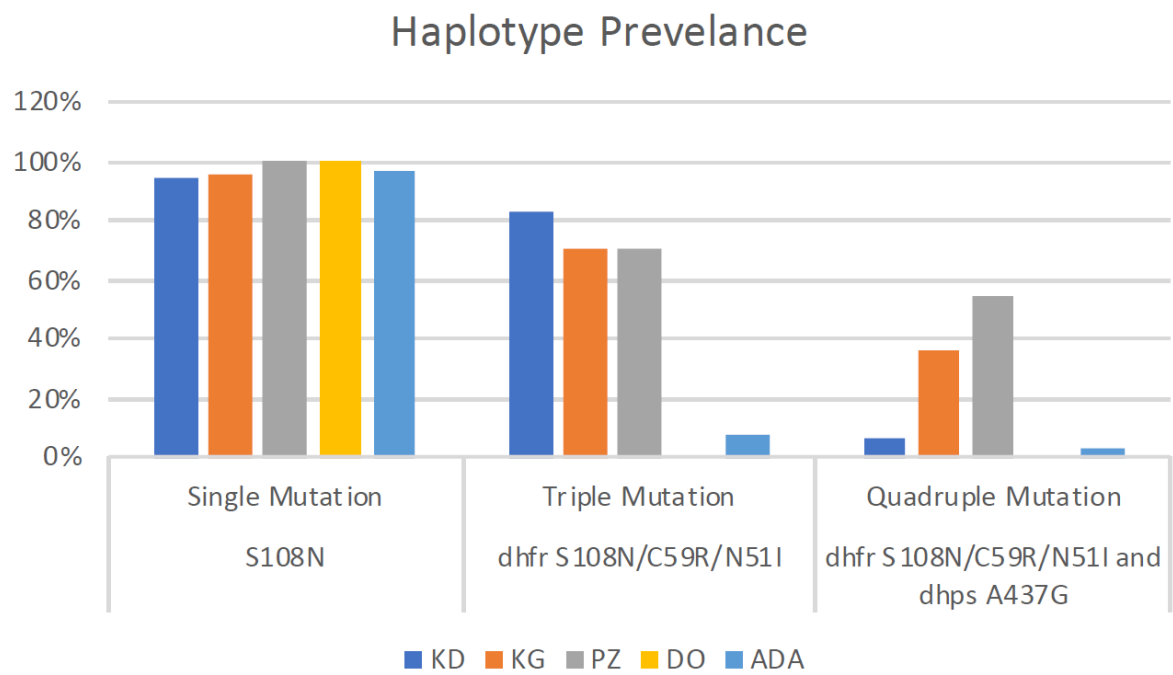
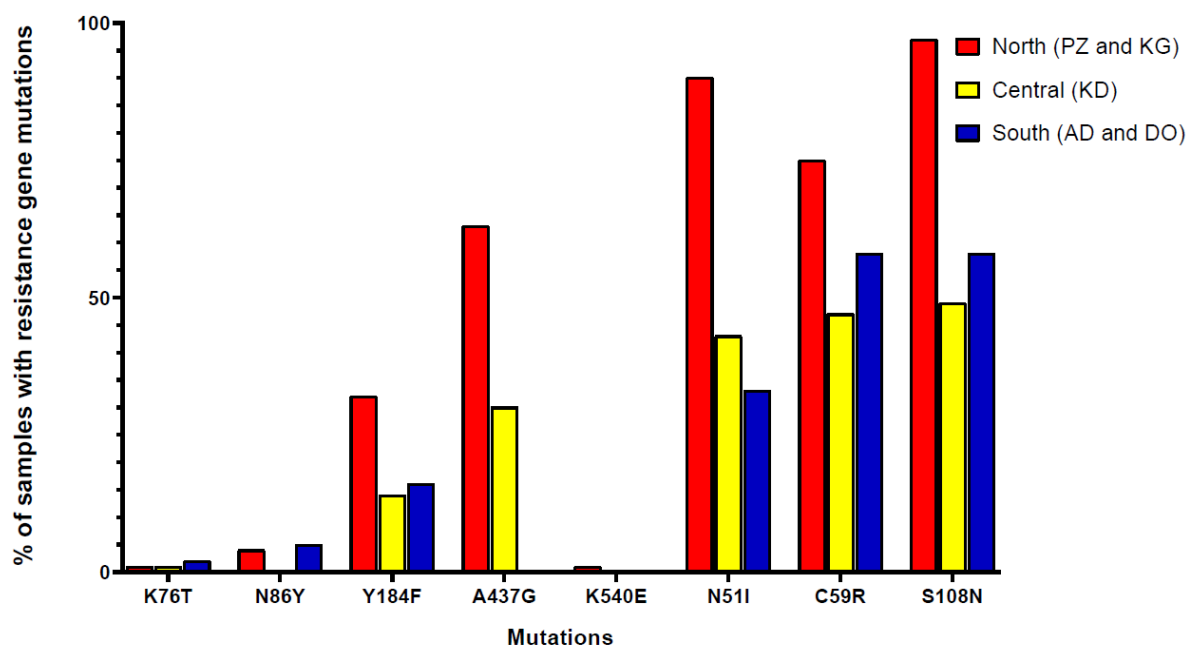


# Supplementary Materials: Contrasting Asymptomatic and Drug Resistance Gene Prevalence of *Plasmodium falciparum* in Ghana: Implications on Seasonal Malaria Chemoprevention



**Figure S1.** Percentage of single, triple, and quadruple mutations of *pfdhfr* and *pfdhps* among *P. falciparum* samples from respective sites in Ghana.



**Figure S2.** Percentage of *P. falciparum* samples that showed mutations in the respective resistance gene codons.

**Table S1.** Primers and PCR conditions for *P. falciparum* resistance gene amplifications.

Primers	Sequence F 5'>3' R 5'>3'	Expected Band Size	PCR Conditions	Reference
Genes related to AQ (amodiaquine) and CQ (chloroquine) resistance				
crt-K76T	GGCTCACGTTTAGGTGGA  TGAATTTCCCTTTTATTTCAAA	264 bp	95°C for 5:00 95°C for 00:30 50°C for 01:30 72°C for 01:30 Go to step2 34 times 72°C for 5:00 10°C for infinite	Vathsala et al 2004
mdr1-N86Y	ATGGGTAAAGAGCAGAAAGA  AACGCAAGTAATACATAAAGTCA	603 bp	95°C for 5:00 95°C for 00:30 52°C for 01:30 72°C for 01:30 Go to step2 34 times 72°C for 5:00 10°C for infinite	Vathsala et al 2004
Genes related to SP (sulfadoxine-pyrimethamine) resistance				
dhfr-nested2a	TTTATGATGGAACAAGTCTGCGACGTT  AAATTCTTGATAAACACGGAACCTtTA	450 bp	94°C for 3:00 94°C for 1:00 57°C for 01:00 72°C for 01:00 Go to step2 39 times 72°C for 10:00 10°C for infinite	Duraisingh et al 1998
dhps-nested1	AACCTAACGTGCTGTTCAA  AATTGTGTGATTGTCCACAA	600 bp	95°C for 5:00 95°C for 00:30 52°C for 01:30 72°C for 01:30 Go to step2 34 times 72°C for 5:00 10°C for infinite	Duraisingh et al 1998
Sensitivity and Specificity				
PCR 18s	TTAAACTGGTTTGGGAAAACCAATATATT  ACACAATGAACTCAATCATGACTACCCGTC	206	95°C for 5:00 95°C for 00:30 58°C for 01:30 72°C for 01:00 Go to Step2 35 times 72°C for 05:00	Wang et al 2014
qPCR 18s	AGTCATCTTTCGAGGTGACTTTTAGATTGCT  GCCGCAAGCTCCACGCTGGTGGTGTC	-	95°C for 03:00 94°C for 00:30 68°C for 01:00 95°C for 00:10 Got to step2 45 times **melting curve from 65°C to 95°C with 0.5°C increments for 00:05	Baum et al 2015
SYBR-TARE	ctatgttgacattacatgcayaat  tgacctaagaagtavaataatgatga	-	50°C for 2:00 95°C for 10:00 95°C for 00:15 57°C for 01:00 Go to Step2 45 times 10°C for infinite	Hofmann et al 2014

**Table S2.** Information of *P. falciparum* samples collected in each of the study sites in Ghana.

<b>SITE</b>	<b>SEASON</b>	<b>NO. OF CHILDREN SCREENED</b>	<b>Microscopy Positives (Prevalence %)</b>	<b>NESTED 18s PCR Positives (Prevalence %)</b>
KONONGO	WET	216	52 (24.07%)	60 (27.78%)
ADA	WET	148	19 (12.84%)	25 (16.89%)
KUMBUNGU,KPASOLGU, NAVRONGO	WET	65	12 (18.46%)	25 (38.46%)
PAGAZA,TAMALE	WET	47	12 (25.53%)	33 (70.21%)
DODOWA	WET	59	10 (16.95%)	10 (16.95%)
<b>Total Number of Positives</b>		535	105	153