

Fig. S1: Comparison of *Pf_varATS* and *Pv_mtCOX1* plasmid standards across the 3 study sites.

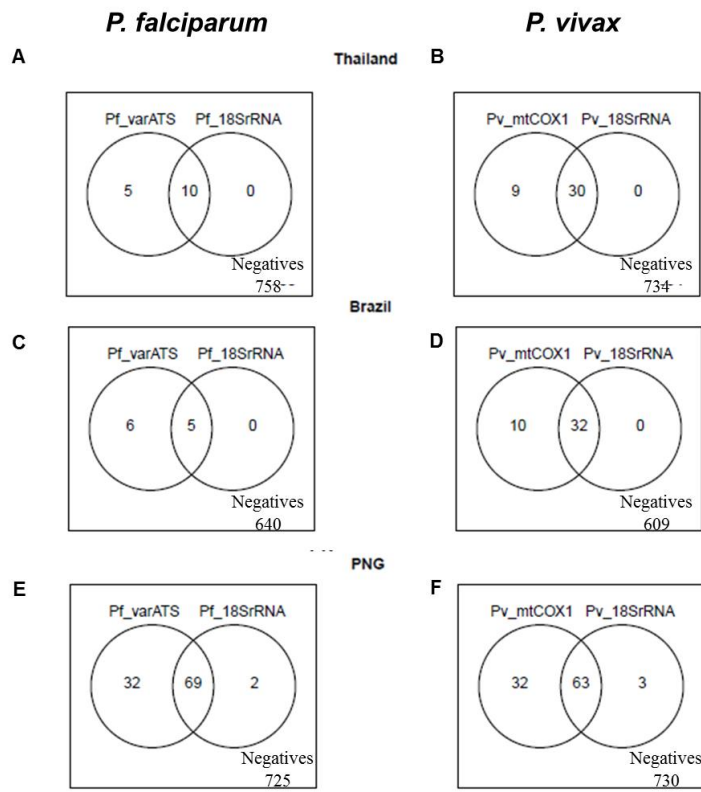


Fig. S2: Venn diagrams of *P. falciparum* and *P. vivax* positivity by ultra-sensitive and standard 18SrRNA qPCR.

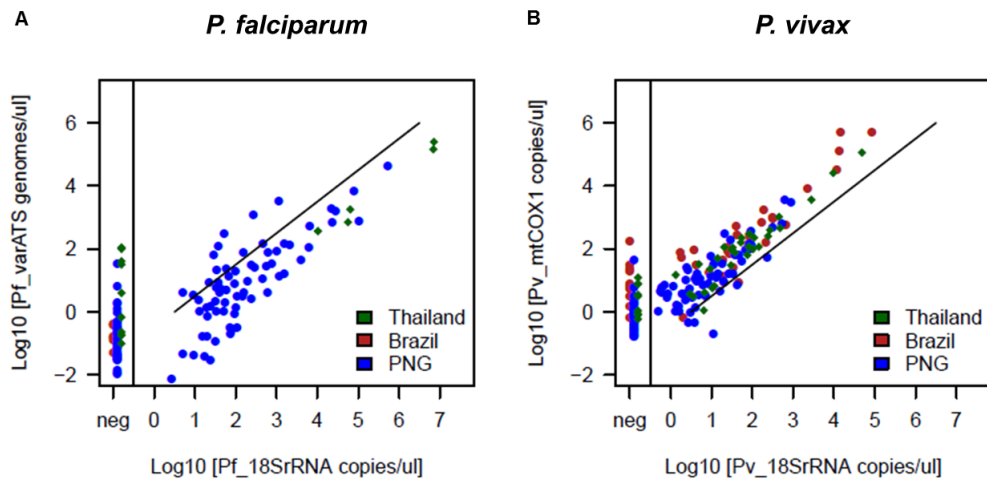


Fig. S3: Correlation of *P. falciparum* (A) and *P. vivax* (B) densities between ultra-sensitive and standard 18srRNA qPCR. Spearman's correlation coefficient was assessed on log₁₀-transformed parasite densities for *P. falciparum*: rho(PNG) = 0.74, *P. vivax*: rho (PNG) = 0.80 , rho(Brazil)=0.85, rho(Thailand)=0.94. Because of only few *Pf*-positives in the data sets from Thailand and Brazil, the correlation between assays was not assessed for these study sites. Black line denotes perfect correlation (r=1).

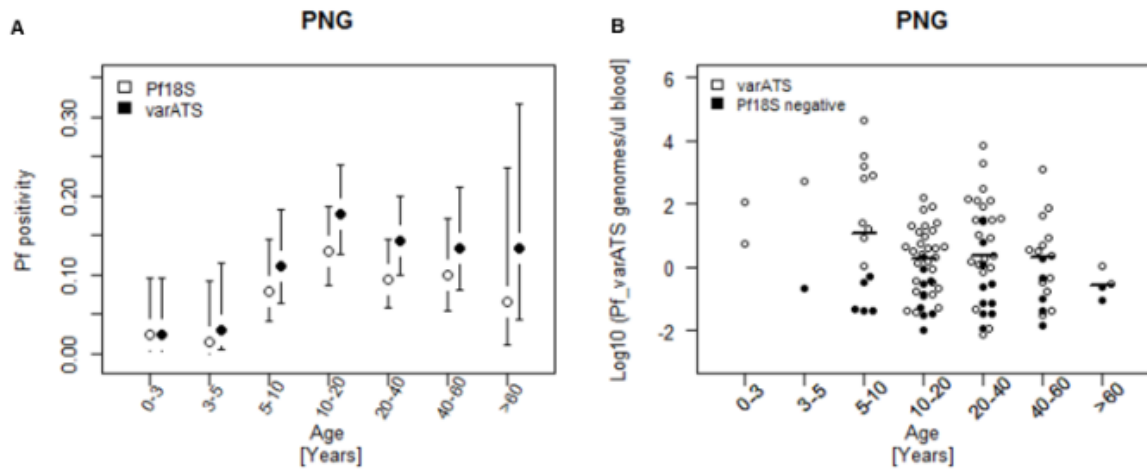


Fig. S4: Age trends in *P. falciparum* positivity rates (A) and parasite densities (B) in PNG. *Pf* positivity by *Pf*_18SrRNA qPCR (white circles) and *Pf*_varATS us-qPCR (black circles) stratified by age group. Black vertical lines in panel A denote 95% confidence interval. Panel B represents *Pf*_varATS copy numbers per age group. Median copy numbers are denoted (horizontal lines).