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Antibodies by non-febrile, smear-negative individuals from a malaria epidemic setting in Ethiopia are reactive to *Plasmodium falciparum* blood-stage-vaccine candidate antigens

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Plasmodium falciparum malaria remains a major public health concern globally though there is some decline in the number of clinical cases and deaths due to scaling up of control efforts in recent times. Evaluation of the anti-malarial immune profile, in populations residing in epidemic-prone areas in the dry season or at the time when vector control largely reduced man-mosquito contact, would help understand the duration of immune reactivity. A cross-sectional study was designed to investigate antibody responses to four *P. falciparum* blood-stage-vaccine candidate antigens in non-febrile individuals from Shewa Robit in north central Ethiopia where malaria transmission was at a minimal level as a result of the sampling season and effective vector control. Blood samples were analyzed microscopically for *Plasmodium* detection. The enzyme-linked immunosorbent assay (ELISA) was used to measure immunoglobulin (Ig) G (IgG) antibodies to apical membrane antigen 1 (AMA1), glutamate-rich protein (GLURP) R2 region and merozoite surface protein 2 (MSP2) allelic variants (3D7 & FC27). Study participants were smear-negative for malaria. The antigens tested were well-recognized by the test sera although significant differences were observed in antibody prevalence and level between the different antigens and there was inter-individual variability. There was no serum sample that was not antibody positive against at least one antigen. IgG response to the antigens showed age-related pattern. The data suggests that individuals in an unstable and epidemic-prone malaria setting have reactive antibodies that readily recognize *P. falciparum* blood-stage vaccine candidate antigens in the absence of slide-positivity.

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