

NATURAL ANTIBODY RESPONSES IN HUMANS TO GAM-1,  
A TARGET ANTIGEN OF TRANSMISSION BLOCKING  
IMMUNITY IN PLASMODIUM VIVAX

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The antibody responses to GAM-1, a target antigen of transmission blocking immunity in P.vivax were assessed in the sera of P.vivax patients using an Enzyme Linked Immunosorbent Assay. The assay was based on the inhibition of the reactivity of a monoclonal antibody against GAM-1 by human immune sera. The antigen was represented by a recombinant fusion protein containing a major part of GAM-1.

47 sera from acute and 15 from convalescent P.vivax patients were assayed. Not more than 28% of acute sera and 5% of convalescent sera had anti GAM-1 antibodies. In contrast to GAM-1, antibodies to another P.vivax antigen, PV200 were found in 90% of acute sera. This suggests that GAM-1 may be relatively poorly immunogenic in natural infections in humans.

Primary attack patients showed lower anti- GAM1 antibody responses than multiple attack patients suggesting that this immune response may be boosted by repeated P.vivax infections. Among P.vivax patients living in a malarial endemic region the highest antibody responses to GAM-1 were found in the 0-15 year old age group in which the incidence rate of P.vivax was also the highest.