A PLASMODIUM VIVAX ANTIGEN SHARED BETWEEN GAMETES AND ASEXUAL BLOOD STAGES IS A TARGET OF TRANSMISSION BLOCKING IMMUNITY

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A monoclonal antibody against P. vivax, GAM1, suppresses development of the parasite in the mosquito in membrance feeding experiments. On western blots, GAM1 reacts with two polypeptides of Mr 57 000 and 23 000, both in asexual blood stages and gametes when parasites are extracted under reducing conditions. Immunofluorescence and immunoelectron microscopy indicate that the antigen(s) is located within the parasitophorous vacuole of asexual blood stages and gametocytes and on the surface of the extracellular female gametes. The antigen (s) is conserved in different parasite isolates from patients. The screening of a P. vivax DNA library with GAM1 led to the isolation of a clone expressing a strongly reactive fusion protein. Mouse immune serum raised against the purified recombinant protein and the monoclonal antibody GAM1 produce identical recognition patterns on western blots. The DNA insert coding for the recombinant protein has been sequenced. These results suggest that a suitable candidate for a transmission blocking vaccine against P. vivax has been characterizd and cloned.

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