A8 ANTI-MALARIAL IMMUNITY MEDIATED BY SURFACE ANTIGENS ON *PLASMODIUM FRAGILE* INFECTED ERYTHROCYTES

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Plasmodium fragile is a natural malaria parasite of the toque monkey *(Macaca sinica)* in which mature asexual erythrocytic stages of the parasite are sequestered in post-capillary venules. This host-parasite system was used as a model to simulate *P.falciparum* in man for studies on cytoadherence. Previous studies[1] showed that mature asexual erythrocytic parasites express antigen(s) on the surface of host erythrocytes in the spleen intact (S+) host; these antigen(s) were not detectable on parasitised erythrocytes (PE) in the splenectomised (S-) host. These surface antigen(s) are subjected to variation[2] during the course of an infection and have been characterised using variant specific immune serum.

This study shows that these surface antigen(s) may be involved in specific anti-parasite immune mechanism(s) of the host. Parasites from S+ and S- animals, and in the S+ of known antigenic types were maintained in *in vitro* cultures in the presence of hyperimmune serum from S+ and S- animals and variant specific immune serum. Growth of intra-erythrocytic parasites was assessed by examining Giemsa stained blood films at the end of an erythrocytic cycle before re-invasion. Hyperimmune sera from S+ animals inhibited growth of intra-erythrocytic parasites (arresting growth at late trophozoite stage) but not of S- parasites. Hyperimmune sera from S- animals had no effect on either S+ or S- parasites. Growth inhibition was also found to be variant specific in that, immune serum and the IgG fraction of serum inhibit

the growth of intra-erythrocytic parasites of the variant against which the serum was raised but not of other variants. These findings indicate that antigens(s) on the surface of infected eryhtrocytes mediate anti-parasite immunity that inhibits intra-erythrocytic development of the parasite.

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References

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