

ROSETTING: A NEW CYTOADHERENCE PROPERTY OF
FALCIPARUM TYPE MALARIA PARASITES

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Like in *P.falciparum*, in *P.fragile*, a primate malaria parasite causing a natural infection in the toque monkey *Macaca sinica*, parasitised erythrocytes containing mature development stages are sequestered in post-capillary venules of internal organs. As we have previously reported, phase contrast microscopy of *P.fragile* infected blood showed that parasitised erythrocytes containing trophozoite/schizont stages are found in "rosettes": agglutinates of uninfected erythrocytes surrounding an infected erythrocyte¹. In *P.fragile* rosetting of parasitised erythrocytes occur both in vivo and in vitro.

In the present study, three species of primate malaras, another sequestering malaria parasite *P.falciparum* and two other non-sequestering malaria parasites *P.vivax* and *P.cynomolgi* were investigated for rosetting. *P.falciparum* and *P.vivax* infected erythrocytes were obtained from patients admitted to the General Hospital, Colombo and *P.cynomolgi* infected erythrocytes were obtained from infected toque monkeys, *P.falciparum* ring infected erythrocytes were allowed to develop in vitro² to the schizont stage, and *P.vivax* and *P.cynomolgi* trophozoite/schizont infected erythrocytes were obtained from their respective hosts, and assessed for rosetting. While rosetting of parasitised erythrocytes was not observed in the two non-sequestering malaria parasites, *P.vivax* and *P.cynomolgi*, in *P.falciparum* more than 50% of trophozoite/schizont infected erythrocytes were found to be in rosettes. As in *P.fragile*, rosetting of *P.falciparum* infected erythrocytes was completely abolished by trypsin and chymotrypsin treatment and reappeared in culture when protease treated cells were allowed to develop further in vitro. These findings confirm that rosetting is indeed a property of cytoadherence of malaria parasites.

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References

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