A-21: An essential role for white blood cells in malarial gametocyte inactivation *in vitro*

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In both infection crisis and paroxysms due to malarial infections, soluble mediators including cytokins present in serum are associated with loss of infectivity of malarial gametocytes to mosquitoes. Similar soluble mediators of gametocyte inactivation can be induced in vitro in culture supernatants of human peripheral blood mononuclear cells (PBMC) exposed to malarial antigens. *P. falciparum* gametocytes were incubated for 3 hours in culture in the presence of human PBMC culture supernatants previously stimulated with extracts of freeze-thawed *P. falciparum* or *P. vivax* schizont-infected erythrocytes or uninfected erythrocytes. The 3 hour incubations of the gametocytes were carried out either in the presence or absence of human white blood cells (WBC) and following the incubation, they were resuspended in normal human serum and fed to mosquitoes which were examined 10 days later for malarial oocysts. In the presence of WBC, supernatants from PBMC stimulated with extracts of *P. falciparum* or *P. vivax* almost completely suppressed infectivity of the gametocytes to mosquitoes. In the absence of WBC, the malaria extract-stimulated PBMC supernatants had little effect on gametocyte infectivity compared to controls. These results prove that the presence of WBC was essential for the malaria extract-stimulated supernatants to suppress malarial gametocyte infectivity to mosquitoes. The malarial gamotocyte-inactivating effects of malaria extract-stimulated PBMC supernatants could be partially abrogated by the L-arginine analogue L-NMMA which competitively inhibits the L-arginine dependent pathway of synthesis of reactive nitrogen intermediates thus indicating their involvement.