A-33: Induction of antibacterial activity in the haemolymph of *Anopheles tessellatus* infected with *Plasmodium vivax* and *Escherichia coli*

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Insects defend themselves against parasites and bacteria, using cellular and humoral systems that are rapidly activated due to infections. Antibacterial proteins and peptides such as insect defensins, cecropins, attacins and lysozymes are among the effector molecules that are induced.

Immune responses to malarial parasites in mosquitoes, induction of antibacterial activity due to malarial infection in mosquitoes was studied in *Anopheles tessellatus vs P. vivax* model system. The activation of antibacterial proteins was assayed by Lysozyme Enhanced Inhibition Zone Assay (LEIZA) using a cell-wall deficient K12 D31 strain of *Escherichia coli* A significant difference (increase) ($P < 0.05$) in antibacterial activity was observed in haemolymph of mosquitoes positive for salivary gland sporozoites when compared to mosquitoes with no sporozoites in their salivary glands. The above antibacterial activity in malaria - infected mosquitoes could be observed even at 23 days post - infection interval. No antibacterial activity was observed in unfed and blood-fed (uninfected) mosquitoes. In addition, rapid activation of antibacterial activity in An tessellatus was observed within 6 hours after inoculation of the *E. coli* D31.