

# **Defence reactions of *Glossina morsitans morsitans* against different species of bacteria and *Trypanosoma brucei brucei***

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## **Abstract**

Tsetse flies, *Glossina morsitans morsitans*, fed on rats infected with *Trypanosoma brucei brucei* showed wide fluctuations in total and differential haemocyte counts. Similar fluctuations occurred in controls fed on non-infected rats and also between the two groups without showing any difference which could be attributed to the infection. Trypanosome infection of the tsetse haemocoel occurred in 16.25% of the flies, starting from the second day after feeding on the infected rats, but salivary glands and proboscis became infected only after the eleventh day. About 2% of bloodstream forms of *T. b. brucei* injected into tsetse haemocoels completed their developmental cycle successfully. Injection of tsetse homogenates into teneral *G. m. morsitans* prior to exposure to trypanosome-infected feed increased *T. b. brucei* infections in the flies significantly. Injection of live *Escherichia coli*, *Enterobacter cloacae* and *Acinetobacter calcoaceticus* into tsetse induced a remarkable increase in two pre-existing haemolymph proteins with molecular weights of about 70 and 17 kilodaltons, while live *Bacillus subtilis* and *Micrococcus luteus* induced a very weak response or sometimes none at all. *T. b. brucei* also failed to induce any increase in these proteins. Inoculation of *G. m. morsitans* with live *E. coli* and *T. b. brucei* prior to feeding on trypanosome-infected rats had no effect on the salivary gland and proboscis infection rates by *T. b. brucei*. Injection of live *T. b. brucei* into the haemocoels of tsetse caused no change in total haemocyte counts, but the trypanosomes disappeared from the haemolymph so rapidly that by 48 h post-injection, only about 1% were left