

ABSTRACT

The main aim of this thesis was to prove the hypothesis that the intake of blood with specific antibodies against sand fly saliva affects sand fly fecundity and mortality. *Phlebotomus argentipes* and *Mesocricetus auratus* were used for most experiments. ELISA revealed high levels of specific antibodies in repeatedly exposed hosts. However, a five-day study of mortality and fecundity of bloodfed females demonstrated that feeding on repeatedly bitten hamsters has no effect on number of eggs or survival of females.

Salivary antigens of *P. argentipes* recognized by sera of repeatedly bitten hamsters were characterized by immunoblotting and mass spectrometry. Immunoblotting showed that antibodies in the hamster sera recognize salivary proteins with molecular weight from 25 to 60 kDa. Mass spectrometry revealed that the antigens correspond to D7, apyrases, antigen 5-related proteins and yellow-related proteins.

In addition, *Phlebotomus* females were fed through a chicken membrane on rabbit blood with high concentrations of histamine, serotonin or prostaglandin E₂ to find out if they influence fecundity or mortality of sandfly females. While the approximate number of eggs layed by one female did not significantly differ from controls in any experimental group studied, the total mortality of females was lower in the group fed on blood with serotonin and the mortality of nulliparous females was increased in group fed on blood with histamine.

Key words: *Phlebotomus argentipes*, *Mesocricetus auratus*, repeated feeding on host, mortality and fecundity of a sandfly, biogenic amines, prostaglandine.