

Differences in the number of hemocytes in the snail host *Biomphalaria tenagophila*, resistant and susceptible to *Schistosoma mansoni* infection

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ABSTRACT. The relationships between schistosomiasis and its intermediate host, mollusks of the genus *Biomphalaria*, have been a concern for decades. It is known that the vector mollusk shows different susceptibility against parasite infection, whose occurrence depends on the interaction between the forms of trematode larvae and the host defense cells. These cells are called amebocytes or hemocytes and are responsible for the recognition of foreign bodies and for phagocytosis and cytotoxic reactions. The defense cells mediate the modulation of the resistant and susceptible phenotypes of the mollusk. Two main types of hemocytes are found in the *Biomphalaria* hemolymph: the granulocytes and the hyalinocytes. We studied the variation in the number (kinetics) of hemocytes for 24 h after exposing the parasite to genetically selected and non-selected strains of

Biomphalaria tenagophila, susceptible or not to infection by *Schistosoma mansoni*. The differences were analyzed referred to the variations in the number of hemocytes in mollusks susceptible or not to infection by *S. mansoni*. The hemolymph of the selected and non-selected snails was collected, and hemocytes were counted using a Neubauer chamber at six designated periods: 0 h (control, non-exposed individuals), 2 h, 6 h, 12 h, 18 h and, 24 h after parasite exposure. Samples of hemolymph of five selected mollusks and five non-selected mollusks were separately used at each counting time. There was a significant variation in the number of hemocytes between the strains, which indicates that defense cells have different behaviors in resistant and susceptible mollusks.

Key words: *Biomphalaria tenagophila*; *Schistosoma mansoni*; Hemocyte behavior; Schistosomiasis; Biological control