

Analysis of circulating hemocytes in *Biomphalaria glabrata* infected with *Schistosoma mansoni* and exposed to Roundup™.

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Pesticides are chemical agents that cause a number of harmful effects on human and environmental health. The widespread use of agrochemicals in agricultural processes has led to a series of transformations in the environment in which they were used, contaminating biotic communities and even accumulating in soil, sediments, water and air. Environmental factors may have a significant impact on the dynamics of the parasite-host relationship (*Biomphalaria glabrata* vs. *Schistosoma mansoni*) impacting the transmission of schistosomiasis mansoni. The mollusk *Biomphalaria glabrata* has been used as a good bioindicator model, because it has a known biology, easy handling in the laboratory and is sensitive to chemical and physical agents. The cells of defense of the internal mechanism of these mollusks are the hemocytes that are present inside the hemolymph, contributing to the defense, with phagocytic functions, acting on the parasite and also on several external factors. This work aims to evaluate the hemocytes in *B. glabrata* exposed to the original herbicide Roundup™ and infected with *S. mansoni*. The snails were raised under laboratory conditions and were descended from snails collected in Sumidouro, Rio de Janeiro, RJ, Brazil, were submitted to roundup treatment, *S. mansoni* infection or both. After 35 Days, hemocytes from a pool of 15 mollusks, in each cohort, were acquired in the CytoFlex flow cytometer (Beckman Coulter) and Kaluza software (Beckman Coulter) was used to determine the viability and carbohydrate-expression profiles, using PI, 7AAD and PNA lectin. The hemocyte counting by Neubauer chamber was also performed to determine analyzing cell death and characterize differentiation of hemocyte types present in hemolymph. Roundup™ herbicide was used in the liquid commercial form produced by Monsanto Agricultural Company, USA. Preliminary results of flow cytometry demonstrated that the treated group and the control group presented similar results. All groups studied when labeled with PNA lectin presented similar results. Comparing the control group and the infected/ treated group it was observed a tendency in the increase of the hemocytes death in the infected/treated group in all the populations, this data corroborates with the data of the Neubauer s-

chamber viability counting. When analyzed different types of hemocytes, all four groups presented the hyalinocyte as the most common, followed by the blast cells, except in the treated group that presented the granulocytes as the second largest in quantity. Flow Cytometry has been shown to be more refined technique defining morphologically the populations present in the hemolymph and the capacity of evaluate a high number of cells in a more accurate way.