

Ninhydrin staining and detergent use for the optimization of *Schistosoma mansoni* egg detection with Helmintex

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A reliable and sensitive diagnostic test is important as a reference test to evaluate other methods, in epidemiological surveys in low endemic areas and as a control of cure in schistosomiasis. Helmintex is a very sensitive method but also a laborious diagnostic technique for schistosomiasis. We here report the use of the 5% Tween-20 detergent in 70% ethanol in an attempt to decrease the final pellet volume produced by the method, and the application of 3% ninhydrin for 15 minutes at 24°C to stain the final sediment in order to optimize the screening step of the Helmintex. The use of the detergent led to a reduction of 64.6% of the final volume of the sediment, while the time spent to deplete the sample through microscope examination decreased from 6 hours to 10 minutes per sample. The average recovery of *S. mansoni* eggs seeded in feces samples was 27.2%, which is higher than the data showed previously, 20%, in the Helmintex proof of concept paper. The data presented in this study demonstrate that the modifications added to the Helmintex method, the addition of detergent and the staining with ninhydrin, improve the global performance of the method by reducing the time spent to screen the sample and improving the recovery of eggs, which ultimately justify the incorporation of these steps in the Helmintex method.

Key-Words: Helmintex, Ninhydrin, *Schistosoma mansoni*.

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