

Schistosomicidal activity of the inclusion complex β -lapachone/ β -cyclodextrin on different stages of *Schistosoma mansoni*

Eliana D. Nunes¹; Risoleta N. Soares¹; Clênio S. da Cruz¹; Daniel F. P. Junior¹; Victor Hugo B. Santos¹; Romildo L. da Silva¹; Eulália C. P. A. Ximenes²; José L. de F. Neto³; Pedro J. R. Neto³; André de L. Aires^{1,4}; Mônica C. P. de A. Albuquerque^{1,4}.

¹Laboratório de Imunopatologia Keizo Asami, Universidade Federal de Pernambuco – LIKA/UFPE, 50670-901, Recife – PE. Email: elianadnunes@gmail.com.²Laboratório de Bioquímica e Fisiologia de Microorganismos – Departamento de Antibióticos, Universidade Federal de Pernambuco, 50670-901, Recife – PE. ³Laboratório de Tecnologia dos Medicamentos – Departamento de Ciências Farmacêuticas, Universidade Federal de Pernambuco, 50740-521, Recife – PE. ⁴Departamento de Medicina Tropical, Universidade Federal de Pernambuco, 50670-901 Recife – PE.

Schistosomiasis is a neglected tropical disease with global impact, being endemic in several areas. Treatment of this disease currently is done with Praziquantel (PZQ), but this drug does not prevent reinfection and is not effective against the young stages of *Schistosoma mansoni*. In this context, new schistosomicide agents is need as alternatives drugs in the treatment of this disease. The aim of this study was to evaluate the activity of β -lapachone complexed with β -cyclodextrin (β -Lap-CD) in different developmental stages of *S. mansoni*. Female Swiss mice infected percutaneously with 50 cercariae of *S. mansoni*, were treated with 50mg/kg/Lap- β -CD during five consecutive days by gavage. The animals were treated according to the developmental stages of *S. mansoni*: Skin schistosomula (1st day of infection), lung schistosomula (14th day of infection), young worms (28th day of infection) and adult worms (45th day of infection). We use an infected and untreated group as negative control and an infected group treated with PZQ as positive control. After euthanasia (60 days post-infection), the worms recovered from the hepatic portal system and mesenteric vessels were quantified, as well as the eggs in liver tissue. The oogram was performed to classify the stages of eggs in the intestinal fragment. We observed there was a significant reduction in 35.7%, 37.78%, 37.53% and 38.5% the load of worms recovered and reduction of 40.66%, 42.3%, 35 % and 50.95% the eggs in liver tissue which represents the four developmental stages of the parasite. The groups treated during the young stages of *S. mansoni* showed no changes in oviposition pattern, while those worms treated at the adult stage, there was a reduction in the percentage of immature eggs and increase of mature and dead eggs. These results suggest that β -lapachone complexed to β -cyclodextrin has schistosomicide activity.

Palavra-chave: schistosomiasis, β -lapachone/ β -cyclodextrin, praziquantel.

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