

## ON THE MECHANISM OF HEMOZOIN CRYSTALLIZATION IN *RHODNIUS PROLIXUS*

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Hemozoin (Hz) is a heme crystal produced by several blood-feeding organisms as a major heme detoxification mechanism. In the Chagas' disease vector *Rhodnius prolixus*, Hz is produced by perimicrovillar membranes (PM), which cover the midgut cells. Here we investigated the mechanisms by which PM promote Hz crystallization in *R. prolixus* midgut. Our first result show that reduction in polarity of medium, by using DMSO, increased heme solubilization in acidic medium assessed by the increment of Soret/Q band absorption ratio. Interestingly, DMSO-induced heme solubilization correlates with spontaneous Hz formation *in vitro*. Fractionation of midgut contents of blood-fed *R. prolixus* adult females in a sucrose gradient resulted in five fractions which exhibited remarkably distinct spectra fractions, being the lower density ones more similar to heme, while higher density fractions have typical spectra of Hz. However, incubation of PM with heme did not contribute to its solubilization in acidic medium. Quinine and four other synthetic quinolines inhibited PM-induced Hz formation *in vitro*. These results indicate that despite spontaneous Hz formation depends on heme solubilization, PM-induced Hz crystallization in *R. prolixus* midgut may require a distinct mechanism to promote Hz formation. **Support: WHO-TDR-SSI, CNPq, FAPERJ .**