

NAPHTOQUINONES-DERIVATES EFFECTS ON PROTEINASES OF THE *TRYPANOSOMA CRUZI* EPIMASTIGOTE FORMS

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Proteases represent a class of enzymes with important role in several physiological processes. In Trypanosomatidae these enzymes are involved with nutrition, cycle of life and the morphological differentiation. Naftoquinones obtained from the heartwood of Bignoniaceae and Verbanaceae trees are known by their huge biological activity, such as microbicidal, anti-*Trypanosoma cruzi* and others. This study focuses on three derivates from this compound, β -Lapachone, α -Lapachone and Epoxi- α -Lapachone. The aim of this study is to analyze the activity of these naftoquinone derivatives in proteases and cell. The enzyme activity was observed with a spectrophotometer. A stock solution of β -Lapachone, α -Lapachone and Epoxi- α -Lapachone was prepared in DMSO, and used in the assays in concentrations of 50 μ M. The proteases used were Cystein and Serine-proteases, using E64 and PMSF respectively (50 μ M) as control. In previous studies β -Lapachone showed good results killing *Trypanosoma cruzi* epi and trypomastigote forms, with high cytotoxicity in Vero Cells whereas Epoxi- α -Lapachone acted against *T. cruzi* but with no cytotoxicity pattern. Our results suggested that β -Lapachone and Epoxi- α -Lapachone may act by different mechanisms upon Serine and Cysteine-proteases respectively. Study with other proteases is being performed, so further results will allow us to identify more clearly the activity profile of these kinds of naftoquinones.