

Biochemical and Pharmacological Characterization of Laticifer Proteins from *Calotropis procera* in Acute Model of *Salmonella* Infection

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Calotropis procera has been extensively used in folk medicine. Many studies described interesting properties on immune responses displayed by latex molecules as anti-inflammatory, healing and anti-cancer activities. In this study the laticifer proteins (LP) from *C. procera* were extracted and evaluated for immunomodulation during a lethal experimental infection in the murine model caused by *Salmonella enterica* Subsp. *enterica* Sor. Typhimurium. LP-treated mice at 10, 30 and 60 mg/Kg survived the bacterial infection whereas almost all the control animals succumbed until day seven ($p < 0.05$). LP prevented the neutrophil migration failure into peritoneal cavity at 4h (all tested doses) and 24h (30, 60 mg/Kg) ($p < 0.05$) compared to control group. Protection was not due to clearance of bacteria in the spleen and liver, but histopathological damage was less evident in LP-treated mice. Serum TNF- α measured 24 h and 5 days was similar among the groups whereas IL-12 was decreased in the LP-treated mice at day 5 post-infection ($p < 0.05$). LP was fractionated by ion exchange chromatography (pH 5.0) to give three distinct protein fractions (PI, PII and PIII). These sub-fractions exhibited distinct electrophoresis pattern. PI and PII retained the protective effect observed in LP. These data suggest that LP prevents the neutrophil migration failure provoked by the infectious focus and down-regulates the pro-inflammatory cytokine IL-12 level in serum. Furthermore LP possesses at least two distinct proteins implicated in the protective effect observed.

Keywords: *Calotropis procera*, *Salmonella*, laticifers, proteins.
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