

***In vitro* Cytotoxic Effect of *Morus nigra* Leaf Extract on *Leishmania infantum* Promastigotes and Murine Macrophages**

OLIVEIRA, L.L.¹; Andrade, M.L.L.²; Moreira, P.V.S.Q.²; Vieira, L.Q.³; Goes, G.R.³; Silva, M.D.C.¹

¹Depto. de Ciências Animais, UFRSA, RN, Brazil; ²Faculdade de Ciências da Saúde, UERN, RN, Brazil; ³Depto. de Bioquímica e Imunologia, ICB-UFMG, MG, Brazil.

INTRODUCTION: Leishmaniasis is a zoonotic disease caused by protozoa of the genus *Leishmania*. The visceral leishmaniasis is the most invasive and promotes the highest mortality rates, especially in underdeveloped countries. In Latin America, 90% of cases occur in Brazil. Since drugs for treatment are expensive and toxic, bioproducts leishmanicidal are an alternative to develop a more effective treatment. **OBJECTIVE:** To evaluate the potential cytotoxicity of *Morus nigra* leaf extract on *Leishmania infantum* promastigotes and murine macrophages. **MATERIAL AND METHODS:** *M. nigra* leaf powder was submitted to extraction in 0.15M NaCl (10%, w/v) under constant agitation (16h). The material was centrifuged (at 4 °C) and obtained extract was evaluated for protein concentration and hemagglutinating activity. The cytotoxicity was analyzed by MTT test, using *L. infantum* promastigotes and murine macrophages in culture plates, which were incubated with extract (500-0.485 µg mL⁻¹ and 500-31.25 µg mL⁻¹, respectively) for 72h; subsequently plates were washed, complete RPMI medium and MTT were added. After 3h, DMSO was added, plates were shaken and the absorbance was measured at 540nm. Data were analyzed by ANOVA followed by Tukey's post-test (program SPSS 13.0). **RESULTS AND DISCUSSION:** *M. nigra* leaf extract showed 9.06 mg mL⁻¹ protein concentration and hemagglutinating activity with human erythrocytes (between 128⁻¹ and 2,048⁻¹). Cytotoxic effect of extract was observed only on macrophages at protein concentrations of 250 and 500 µg mL⁻¹ (p<0.05). *M. nigra* is widely used as medicinal, so this cytotoxicity should be investigated. Lectins are reported to be toxic for many species of organisms; thus, results suggest the presence of active lectins potentially responsible for toxicity on macrophages. However, further studies are required to elucidate the toxically active molecule in the extract. **CONCLUSION:** *M. nigra* leaf extract has lectin activity and cytotoxic effect on murine macrophages but not on viability of *L. infantum* promastigotes.

Keywords: Blackberry, Hemagglutinin, Kala-azar,

Sponsor: CNPq and CAPES