Abstract

Leishmania amazonensis is the main agent of diffuse cutaneous leishmaniasis, a disease associated with anergic immune responses. In this study we show that the crude antigen of Leishmania amazonensis (LaAg) but not L. braziliensis promastigotes (LbAg) contains substances that suppress mitogenic and spontaneous proliferative responses of T cells. The suppressive substances in LaAg are thermoresistant (100ºC/1h) and partially dependent on protease activity. T cell anergy was not due to a decreased production of growth factors as it was not reverted by addition of exogenous IL-2, IL-4, IFN-γ or IL-12. LaAg did not inhibit anti-CD3-induced T cell activation, suggesting that anergy was due to a defect in antigen presentation. It was also not due to cell necrosis, but was accompanied by expressive DNA fragmentation in lymph node cells, indicative of apoptosis. Although pre-incubation of macrophages with LaAg prevented their capacity to present antigens, this effect was not due to apoptosis of the former. These results suggest that the T cell anergy found in diffuse leishmaniasis may be the result of parasite antigen-driven apoptosis of those cells following defective antigen presentation.

Keywords
Leishmania; anergy; apoptosis.