

Abstract

Leishmania major is a protozoan parasite that causes cutaneous leishmaniasis and the standard drugs are expensive and toxic. Cheaper and safer natural drugs are therefore needed. In this study, the **in vitro** efficacy of crude extracts of **Callistemon citrinus** were tested against **L. Major**. Controls were anti leishmanial drugs pentostam and liposomal amphotericin b. The minimum inhibitory concentrations of **C. Citrinus** crude aqueous and methanolic extracts were 5mg/ml and 1mg/ml respectively compared to 12.5µg/ml and 6.25µg/ml for pentostam and liposomal amphotericin b respectively. The ic_{50} for **C. Citrinus** extracts against promastigotes ranged from 297.75 to 572.69µg/ml compared to 0.26 and 0.82µg/ml for pentostam and liposomal amphotericin b. The ic_{50} for **C. Citrinus** extracts against vero cells ranged from 467µg/ml to 1314.65µg/ml. The promastigotes' viability after treatment with aqueous and methanolic extracts was 69.58% and 75.74% respectively. At 125µg/ml, the aqueous and methanolic **C. Citrinus** extracts had **in vitro** amastigotes' infection rates (irs) of $77.0 \pm 2.50\%$ and $77.5 \pm 3.50\%$ respectively. The multiplication indices (mis) and irs of amastigotes treated with **C. Citrinus** crude aqueous extracts and those treated with crude methanolic extracts differed insignificantly ($p > 0.05$). **C. Citrinus** methanolic extracts stimulated production of about 20µm nitric oxide in balb/c mice peritoneal macrophages suggesting immuno-modulatory role of the extracts. The crude aqueous and methanolic extracts of **C. Citrinus** were therefore concluded to be relatively less toxic and possessed **in vitro** anti-leishmanial activity against **L. Major** promastigotes and amastigotes.