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 ic50 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 ic50 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±2.50 % and 77.5±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.