ANTIPROMASTIGOTE ACTIVITIES AND TOXICITY OF *Mormodica Foetida* SCHUMACH AND THONN AGAINST *Leishmania major* PARASITES

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Abstract: Infections due to protozoa of the genus of *Leishmania* are responsible for a significant burden of disease, especially in the developing countries. Furthermore, the incidence of leishmaniasis continues to rise due to lack of a vaccine. Drugs commonly used for the treatment of the disease show varying level of effectiveness and also have associated side effects. There is therefore, a need to develop newer drug therapies. The aim of our study was to assess antiprotozoal activity of the aqueous and methanolic extracts of *M. foetida* against *Leishmania major* promastigotes. In this study, the *in vitro* leishmanicidal effects of *M. foetida* on *L. major* were evaluated. The aqueous and methanolic extracts were prepared by maceration method. The extracts were dried and re-dissolved in dimethyl sulfoxide (DMSO) 1% solvent. *L. major* cells were then tested with serial concentrations (1 to 200 µg/ ml) of the extracts. The aqueous and methanolic extracts of aerial parts of *M. foetida* inhibited the parasite after 48 hrs incubation against *L. major* promastigotes, which gave MIC = 125±0.01 and 250 ± 0.03 mg/ ml and IC_{50} = 15.6 ± 0.05 and 23.4 ± 0.53mg/ ml, respectively. Pentostam and Amphotericin B, positive controls inhibited the growth of *L. major* promastigotes with MIC of 62.5 ± 0.02 and 31.3 ± 0.01µg/ml and IC_{50} = 11.7 ± 0.054 and 7.8±0.053 mg/ ml respectively. These data reveal that *M. foetida* aerial parts extracts contain active compounds, which could serve as an alternative agent in the control of cutaneous leishmaniasis. Further studies would therefore be needed to see its *in vivo* clinical response and associated toxicities.

Key words: *Leishmania major*, *Mormordica foetida*, promastigotes, Leishmaniasis and *In vitro*.

INTRODUCTION

Leishmaniasis is a parasitic disease caused by the hemoflagellate protozoa species of the genus *Leishmania*[1]. The reservoirs of the disease are rodents, dogs and other wild animals. The disease is transmitted by sand fly of the genera *Lutzomyia* or *Phlebotomus*[2]. Leishmaniasis is a major public health problem especially in the developing countries. According to the World Health Organization (WHO), the population of 88 countries is threatened by leishmaniasis and about 350 million people are at risk for the disease and the prevalence of leishmaniasis is 12 million with a rate of 2 million cases annually[3]. The clinical manifestations of leishmaniasis are recognized to three forms: visceral leishmaniasis or Kala-azar (VL), cutaneous leishmaniasis (CL) and mucocutaneous leishmaniasis (MCL)[4]. CL the commonest form of leishmaniasis is endemic in Kenya. More than 90% of the visceral