The antileishmanial effects of Lowsonia inermis and Cedrus libani on 
Leishmania major promastigotes: an in vitro study

Motazedian, M.H., Mikaeili, F., Mohebali, M., Miri, R., Habibi, P., Kamarloie, S.

Journal of Parasitic Diseases, 22 July 2016, Pages 1-5

Abstract

Leishmaniasis is a parasitic disease caused by different species of protozoan parasites 
belonging to the genus Leishmania. In this study, Leishmania major (MRHO/IR/75/ER) 
promastigotes were cultured at 23–25 °C in brain heart infusion (BHI) medium 
supplemented with 10 % heat-inactivated fetal bovine serum (FBS) and penicillin and 
streptomycin. Antileishmanial effects of Lowsonia inermis and Cedrus libani methanolic 
extracts (0.07, 0.15, 0.31, 0.62, 1.25, 2.5, 5, 10 mg/mL) on Leishmania major 
promastigotes were evaluated using the MTT (3-(4,5-Dimethylthiazol-2-yl)-2,5-
diphenyltetrazolium bromide) assay. All experiments were repeated at least three times. 
Cedrus libani methanolic extract did not show any activity while Lowsonia inermis 
methanolic extract inhibited the growth of promastigote forms of L. major in vitro after 72 h 
of incubation and had a 50 % inhibitory concentration (IC50) of 1.25 mg/mL. The 
methanolic extract of Lawsonia inermis (henna) can be a promising antileishmanial agent 
in the future. Further experiments are needed for isolation of active fractions and 
identification of the active components of methanolic extract. © 2016 Indian Society for 
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