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The *in vitro* effect of methanolic extract to the leaf of *Aloe otallensis* exudates on the *Leishmania ethiopica* and *Leishmania donovani* parasite

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Background & Objectives: Several plant products have been tested and found to possess antileishmanial activity. The present study was undertaken to evaluate antileishmanial activity of methanolic extract of *Aloe otallensis*, which is endemic plant to Ethiopia, on the promastigot stage of *Leishmania aethiopica* and *Leishmania donovani* comparing to standard drugs and also tried to screen its phytochemical constituent.

Methods: Phytochemical screening was done on methanolic extract of the exudates to the leaf of *Aloe otallensis*. The serial dilution of the extract was also evaluated for *in vitro* antileishmanial activity against *Leishmania aethiopica* and *Leishmania donovani* on the strain of *L. aethiopica* (LDC/134) and *L. donovani* (AM 563), which is found from the black lion hospital parasitology unit and the result was compared to standard drug of Sodium stibogluconate, milfostin and paramomycin.

Result: The extract has an antileishmaniacidal activity with an IC_{50} of 141 μg per ml on *L. ethiopica* (LDC/134) and 123 μg per ml on *L. donovani* (AM 563). The experimental data shows that relatively it has better activity than paramomycin and milfostin but less activity than sodium stibogluconate, which is given in Ethiopia as a first line drug. The data analyses was done by pad graph prison version 5 software after it was read by ELISA reader at the wave length of 650 nm. The phytochemical screening of the exudates of *Aloe otallensis* showed the presence of phenol, alkaloid and saponin.

Conclusion: The methanolic extract of exudates of *Aloe otallensis* has a good antileishmaniasis activity relatively to paramomycin and milfostin and this activity may be attributed to phenol, alkaloid and saponin present in the plant. But it needs further analysis for the conformation of which constituent present in much concentration and to know which one have highest role.

Biography

Nigusse Zerihun Tesfaye has completed his graduation with Chemistry Diploma from Kotebe Teaching College in 2006 and Bachelor of Pharmacy in 2011 from Addis Ababa University, Ethiopia. He was trained on the area of surveillance of insecticide resistance mosquitoes at KEMRI, Kenya Research Center. He was employed at Addis Ababa University, Akililu Lemma Institute of Pathobiology in 2007 as Technical Assistance and served for the past 5 years. After completing graduation in BPharm, he is working as a Senior Clinical Pharmacist at Addis Ababa University, College of Health Science, Black Lion specialized Teaching Hospital and serving as Drug Supply Management Coordinator, The Head of Special Pharmacy of the Hospital, the Secretary of DTC (Drug Therapeutic Committee) and mentoring under graduate pharmacy students.

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