Original Paper
Pharmacology

Anthranoid Compounds with Antiprotozoal Activity from *Vismia orientalis*

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Receaved:January 5,2004

Accepted:May15,2004

Publication Date:24 August 2004(online)

DOI: 10.1055/s-2004-827199

Abstract

A phytochemical investigation of the 80% ethanolic extract of stem bark of *Vismia orientalis* Engl. (Guttiferae or Clusiaceae), a plant used in traditional medicine in Tanzania, resulted in the isolation and spectroscopic characterisation of 3-geranyloxy-6-methyl-1,8-dihydroxyanthraquinone, emodin, vismione D and bianthrone A_1. Vismione D exhibited a broad range of antiprotozoal activities against *Trypanosoma brucei rhodesiense* and *T. cruzi* (IC_{50} < 10 µg/mL), *Leishmania donovani* (IC_{50} 0.37 µg/mL) and *Plasmodium falciparum* strain K1 (IC_{50} 1.0 µg/mL). However, it was also slightly cytotoxic against human L6 cells (IC_{50} 4.1 µg/mL). Emodin showed antileishmanial activity (IC_{50} 2.0 µg/mL), while its IC_{50} against L6 cells was 20.3 µg/mL. Other antiprotozoal activities observed for emodin against both *Trypanosoma* species and *P. falciparum*, for bianthrone A_1 against *T. b. rhodesiense* and *P. falciparum*, and for 3-geranyloxy-6-methyl-1,8-dihydroxyanthraquinone against *T. b. rhodesiense*, *L. donovani* and *P. falciparum* were in the range of 10 to 50 µg/mL. None of the compounds showed antibacterial or antiviral (including also HIV) activity.

Key words

Vismia orientalis - Guttiferae - Clusiaceae - 3-geranyloxy-6-methyl-1,8-dihydroxyanthraquinone - bianthrone A_1 - emodin - vismione D - *Plasmodium falciparum* - *Leishmania* - *Trypanosoma*