

Antiprotozoal Isoflavan Quinones from *Abrus precatorius* ssp. *africanus*

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Abstract

A library of 206 extracts from selected South African plants was screened in vitro against a panel of protozoan parasites, *Plasmodium falciparum*, *Trypanosoma brucei rhodesiense*, and *Leishmania donovani*. A CH₂Cl₂/MeOH (1:1) extract of *Abrus precatorius* L. ssp. *africanus* strongly inhibited *P.falciparum* (98%), *T. b. rhodesiense* (100%), and *L. donovani* (76%) when tested at a concentration of 10.0 µg/mL. The active constituents were tracked by HPLC-based activity profiling and isolated by preparative and semipreparative RPHPLC chromatography. Structures were established by HR-ESIMS, and 1D and 2D NMR (¹H, ¹³C, COSY, HMBC, HSQC, and NOE difference spectroscopy). Five compounds were obtained and identified as two isoflavan hydroquinones, abruquinone H (1) and abruquinone G (2), and three isoflavan quinones, abruquinone I (3), abruquinone B (4), and 7, 8, 3',5'-tetramethoxyisoflavan-1',4'-quinone (5). Compounds 1 and 3 were new natural products. The absolute configuration of compounds was determined by comparison of electronic circular dichroism spectra with calculated ECD data. Compounds 3 and 4 showed strong activity against *T. b. rhodesiense* (IC₅₀ values of 0.30 and 0.16 µM, respectively) and good selectivity (selectivity indices of 73.7 and 50.5, respectively).