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Antiplasmodial and antitrypanosomal activity of plants from the Kingdom of Saudi Arabia.

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The antiplasmodial and antitrypanosomal activity of the methanol extracts of 42 plants collected from the Kingdom of Saudi Arabia and some fractions obtained thereof were evaluated. The antiplasmodial activity was tested in vitro against chloroquine-resistant strain (K1) and sensitive strain (FCR3), and the antitrypanosomal activity was tested in vitro against Trypanosoma brucei brucei GUTat 3.1 strain. For host cells, the cytotoxicity of the active extracts was also evaluated against the MRC5 human cell line. Only extracts of three samples demonstrated good antiplasmodial activity (IC(50) < 12.5 and > 1.56 microg/ml, score 2), the methanol extracts of Lycium shawii, Heliotropium zeylanicum and the petroleum ether-soluble fraction of the methanol extract of Caralluma tuberculata, while extracts of the remaining 42 plants were inactive (IC(50) > 12.5 microg/ml, score 1). As for the antitrypanosomal activity, the methanol extract of Solanum schimperianum demonstrated the highest activity (IC(50) 0.061 microg/ml), followed by the petroleum ether-soluble fraction of the methanol extract of C. tuberculata (IC(50) 0.5 microg/ml). The chloroform-soluble fraction of the methanol extract of C. tuberculata was moderately active (IC(50) 3.5 microg/ml), with low cytotoxicity (IC(50) 62.6 microg/ml) and moderate selectivity index (SI 17.9). The methanolic extracts of 34 plants showed good activity with score 2 (IC(50) < 12.5 and > 1.56 microg/ml), while the extracts of seven plants were inactive (IC(50) > 12.5 microg/ml, score 1).

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