CYTOTOXIC AND AMOEBICIDAL COMPOUNDS FROM PICRASMA EXCELSA (JAMAICAN QUASSIA)

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Picrasma excelsa Planch. (Simaroubaceae), Jamaican Quassia, is used in the form of a decoction in the Caribbean for the treatment of threadworms, amoebic dysentery and malaria, as a febrifuge, tonic and appetite stimulant (Morton 1981). A series of degraded triterpenes known as quassinoids (Nestler et al 1980), β carboline and canthinone alkaloids (Wagner et al 1979) have been isolated from this species, but none of these compounds has been shown conclusively to be responsible for the reported biological activities. Quassin is said to be inactive against P388 leukaemia and 9KB test systems (Cassady and Douros 1980) and also inactive against Entamoeba histolytica (Casinovi et al 1981). Canthin-6-one is reported to have antibacterial and antifungal activities (Mitscher et al 1972) but no significant activity in the 9KB test system (Cordell et al 1978).

Commercial Jamaican Quassia wood was extracted with water and partitioned into The organic extract yielded the quassinoids, quassin (1) and chloroform. neoquassin (2) and the indole alkaloids canthin-6-one (3, R = H) and 5methoxycanthin-6-one (3, R = OMe). The four compounds were identified by means of co-chromatography (TLC) with authentic samples and by means of their UV, MS and PMR spectra. Cytotoxicity was assessed using guinea-pig keratinocytes and the ED50 values determined as, quassin 66 $\mu g/ml$, canthin-6-one 1.1 $\mu g/ml$ and 5methoxycanthin-6-one 5.4 μ g/ml. The amoebicidal activity of quassin and canthin-6-one was assessed against axenic Entamoeba histolytica (NIH 200 strain) and the ED50 values determined as, quassin 0.5 µg/ml, canthin-6-one 23 µg/ml.

These results show that canthin-6-one is a more active cytotoxic agent than quassin whereas the reverse is the case for amoebicidal action. extracts prepared for medicinal use will contain quassinoids and canthinone alkaloids and therefore are likely to possess cytotoxic and amoebicidal Some of the reported medicinal uses of Jamaican Quassia may be explained on the basis of these combined activities but it remains to be established whether these compounds are responsible for the anthelmintic and antimalarial uses of the plant.

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