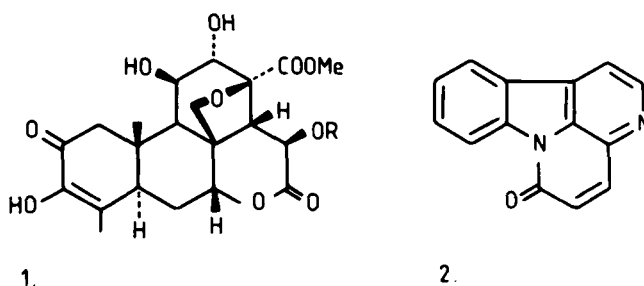


CANTHIN-6-ONE FROM BRUCEA ANTIDYSENTERICA

A. Harris, L.A. Anderson, J.D. Phillipson, Department of Pharmacognosy, The School of Pharmacy, University of London, 29-39, Brunswick Square, London, WC1N 1AX.

Brucea antidysenterica Mill. (Simaroubaceae), which is native to Upper Guinea, the Camerouns and Ethiopia, has been used in folk-medicine for treatment of numerous conditions, including dysentery, tumorous growths and asthma (Watt and Breyer-Brandwijk 1962). Several bruceolides, which are esters of the parent alcohol bruceolide (1, R = H) have been isolated from this species. One such compound, bruceantin (1, R = CO.CH = C(CH₃) CH(CH₃)₂), is currently being evaluated clinically as an anti-cancer drug (Phillipson and Darwish 1981 and references therein). The bruceolides, basically C-20 compounds biosynthesised via triterpenes, are part of a series of compounds known as the simaroubolides (or quassinoids) which are characteristic of the family Simaroubaceae. Indole alkaloids of the β -carboline type are also characteristic of the family and a number of these alkaloids have been isolated from several genera (e.g. Ailanthus, Picrasma, Simarouba) although none have been reported from Brucea species (Allen and Holmstedt 1980).

Root bark of Brucea antidysenterica, obtained from plants which are being grown currently in Kenya, has been extracted for bruceolides. Some of the extracts showed the presence of highly fluorescent UV spots when examined by TLC. One of these fluorescent compounds, which was positive to Dragendorff's reagent, has been isolated by a combination of preparative TLC and HPLC. The compound has been identified as canthin-6-one (2) by means of its UV, MS and PMR spectra and by co-chromatography (TLC, HPLC) with authentic alkaloid. Canthin-6-one possesses marked antibacterial activity (Mitscher et al 1972) and this may contribute to the overall activity of the plant extracts used in folk-medicine.



Acknowledgements: We are grateful to the Pharmaceutical Society for the award of a research scholarship to one of us (A.H.) and to Professor J.L. Beal for authentic canthin-6-one.

Allen, J.R.F., Holmstedt, B.R. (1980) *Phytochemistry* 19: 1573-1582.
 Mitscher, L.A. et al (1972) *Lloydia* 35: 177-180.
 Phillipson, J.D., Darwish, F.A. (1981) *Planta Medica* 41: 209-220.
 Watt, J.M., Breyer-Brandwijk, M.G. (1962) *The Medicinal and Poisonous Plants of S. and S.E. Africa*, E.S. Livingstone, Edinburgh and London, p.940.