J. Pharm. Pharmacol. 1998, 50 (Supplement): 222

Preliminary investigation of *Cyathostemma argenteum*, a plant species used in traditional medicine for the treatment of breast cancer

S. B. KHAMIS, J. E. BROWN*, H. E. KIRKPATRICK, R. KNOX, A. WALKER AND C. W. WRIGHT

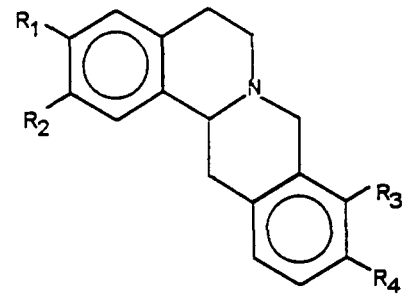
*Postgraduate Studies in Pharmaceutical Technology and *Postgraduate Studies in Pharmaceutical Chemistry, The School of Pharmacy, University of Bradford, Bradford BD7 1DP*

The roots of *Cyathostemma argenteum* (Bl.) Sinclair are used in Malay traditional medicine for the treatment of breast cancer. In order to evaluate the cytotoxicity of crude extract and compound isolated from these species, toxicity against the brine shrimp (*Artemia salina*) was determined using a 96-well microplate method (Solis et al., 1993). This method has been previously shown to be a good model for the detection of cytotoxic compounds.

The crude methanol extracts of both the root and stembark of this species were found to be active against the brine shrimp with LC50 values of <35 and <125 μg/ml respectively while the LC50 of emetine as a control drug was 30μg/ml.

The stembark methanolic extract was concentrated, mixed with water, basified and extracted with chloroform. Column chromatography of this alkaloidal fraction over silica gel yielded the tetrahydroprotoberberine alkaloid discretamine which was identified by spectroscopic techniques. Comparison of the mass and ^{1}H-NMR spectra with literature values (Leboeuf *et al.*, 1982; Ohiri et al., 1983; Richter, 1975) confirmed that the alkaloid was discretamine rather than the isomeric stepholidine, scoulerine or isoscoulerine.

This is the first report of the occurence of discretamine in *C. argenteum.* a species which has not previously been investigated. Interestingly, (-)-discretamine has been shown to be a selective α-(1D)-adrenoceptor antagonist in vascular smooth muscle (Ko *et al.*, 1994).



	R_1	R_2	R_3	R_4
Discretamine	OH	OCH_3	OCH_3	OH
Stepholidine	OCH_3	OH	OCH_3	OH
Scoulerine	OCH_3	OH	OH	OCH_3
Isoscoulerine	OH	OCH_3	OH	OCH_3

The toxicity of discretamine against the brine shrimp was, however, found to be low (LC50 >125μg/ml). This suggests that the toxicity of *C. argenteum* is due to other constituents. Further work aimed at isolating the active compound(s) is in progress.

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