Prenylated indole alkaloids and benzoate derivatives in antibacterial extracts of *Friesodielsia obovata* Verdc. and *Hexalobus monopetalus* Engl. & Diels

P. Fyhrquist[1], R. Julkunen-Tiitto[2], H. Vuorela[1], E.Y.A. Salih[1], S. Hämäläinen[1]

[1]Division of Pharmaceutical Biosciences, Faculty of Pharmacy, Viikinkaari 5 E, P.O. Box 56, FIN-00014 University of Helsinki, Finland
[2] Natural Product Research Laboratory, Department of Environmental and Biological Sciences, University of Eastern Finland, 80101 Joensuu, Finland

Introduction: *F. obovata* and *H. monopetalus* (Annonaceae) occur in Miombo woodlands and riverine forests in tropical Africa [1]. Both species are used to treat infections [1]. Benzyl benzoates and indole alkaloids have been reported from these plants [2,3]. However, rather few phytochemical and antibacterial studies have been performed on these important traditional medicinal plants.

Aim of study: The aim of our study was to test the antibacterial effects of extracts of various polarities, made from the stem bark, roots and leaves of *F. obovata* and *H. monopetalus* on two significant causative bacteria of food poisoning. Moreover, the phytochemical constituents of antibacterial extracts were investigated.

Applied methods: Crude extracts and solvent partition fractions were tested against *Bacillus cereus* ATCC 10987 and *Salmonella enterica* ATCC 43845, using agar diffusion and microdilution methods. HPLC-DAD was used to make fingerprints of the extracts and fractions, and for the preliminary identification of compounds in the extracts. UHPLC/QTOF-MS was used to identify compounds of interest in the active extracts.

Results and discussion: Most of the extracts were active against *B. cereus* and the largest zones of inhibition were obtained with the $CHCl_3$:EtOH fractions. Only a leaf methanol extract of *F. obovata* inhibited the growth of *S. enterica.* The smallest MIC of 156 µg/ml was observed for a water insoluble fraction of *Friesodielsia obovata* leaves against *B. cereus*. (-)-Crotepoxide ($M+Na^+$ 385.0986) was present in leaves and stem bark of *F. obovata* in accordance with [2]. Many di-hydrogenated crotepoxide and de-acetylated crotepoxide derivatives, which have not been reported before, were observed in *F. obovata*. 6,8-dimethyl-monohydroxy-pinocembrin ($M+Na^+$ 323.0900) was the main compound in the stem bark extract of *F. obovata*. A number

of prenylated indole alkaloids, including hexalobine C and D were found in the roots of *H. monopetalus.*

Conclusions: $CHCl_3$:EtOH extracts of the studied plants showed good antibacterial effects against *B. cereus*. The extracts of *F. obovata* contained predominantly benzoates, whereas prenylated indole alkaloids are the main constituents in *H. monopetalus*. Further research should be performed on the antibacterial activities of isolated compounds.

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