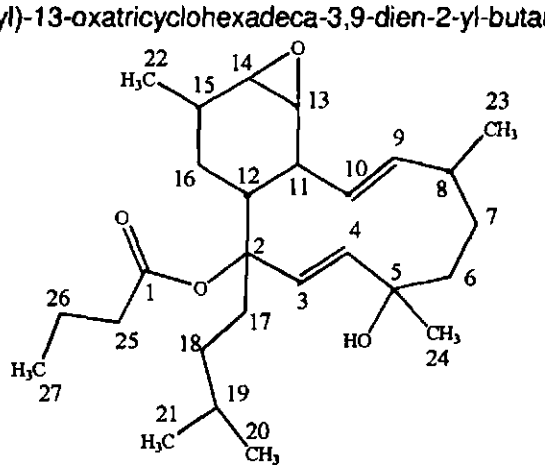
617/E2

## A new cytochalasin type fungal metabolite from a Sri Lankan isolate of *Hirsutella thompsonii*

R Samarasekera*[1], D A S Siriwardena[1] and M H N Arrunashantha[2]
[1] *Industrial Technology Institute (ITI), Herbal Technology Section, Colombo 07.*
[2] *Department of Botany, University of Ruhuna, Kamburupitiya.*

*Hirsutella thompsonii* (Fisher) is a fungal pathogen of eriophyoid and tetranychid mites that is reported to have insecticidal activity. The objective of this study was to isolate and characterize bio-active fungal metabolites from a Sri Lankan strain of *H. thompsonii*. The Sri Lankan strain of *H. thompsonii* isolated from dead coconut mites was grown on beer-waste and sugar medium for 11 days at 26° C. The mycelium was sequentially extracted with hexane, ethyl acetate and ethanol. Ethyl acetate extract was subject to column chromatography on silica gel using a gradient mixture of ethyl acetate and hexane followed by recrystalization of fraction $F_{25}$ afforded the compound as white crystalline solid (71.0 mg). The structure was elucidated using $^1$H NMR, $^{13}$C NMR, $^1$H-$^1$H COSY, HMQC and HMBC spectral data.

The presence of 27 carbons which include 6 methyl, 7 methylene, 11 methine and 3 quaternary carbons were supported by $^{13}$C and DEPT NMR spectra. The $^1$H NMR spectrum indicated 4 olefinic non conjugated protons at $\delta_H$ 6.2 (d), 6.4 (d), 5.1 and 5.2 (dd). The $^{13}$C and DEPT spectrums assigned signals at $\delta_C$ 79.0 and 82.1 as quaternary carbons at C-2 and C-5, respectively and HMBC spectral data supported the connectivity of these two carbons with olefinic carbons at C-3 and C-4. Down filed $^{13}$C NMR chemical shift of C-2 and C-5 indicated that these carbons are oxygenated. Broad singlet at $\delta_H$ 3.5 was assigned to hydroxyl group attached to C-5. HMBC, HMQC and COSY correlations strongly revealed the presence of isopentyl, propionate and epoxy groups in the molecule and were placed at C-2, C-5, C-8 and C-15 positions. Based on the coupling network established by HMBC spectral data and comparison of the NMR spectral data with those of known fungal metabolites of cytochalasin type from *Daldinia* species, established the structure to be 5-hydroxy-5,8,15-trimethyl-2-(3-methylbutyl)-13-oxatricyclohexadeca-3,9-dien-2-yl-butanoate.




**Acknowledgement**: We gratefully appreciate Prof. Iqbal Choudhary (Director, HEJ Research Institute) for NMR facilities and NSF grant No. RG/2004/C/05 for financial assistance.

radhika@iti.lk Tel: 071 4433815