

**Chemical investigation of *Goniothalamus gardneri* (Annonaceae)**

A G A J Weerasinghe, A Wickramasinghe\* and N L V V Karunaratne

Department of Chemistry, University of Peradeniya, Peradeniya

*Goniothalamus* is known to contain cytotoxic styryl lactones which represent the future generation of anti-tumour drugs. *Goniothalamus gardneri*, an endemic species in Sri Lanka, was collected in the Gannoruwa forest. Root bark and flowers of the plant were air dried separately and subjected to sequential extraction with hexane followed by CH<sub>2</sub>Cl<sub>2</sub> and MeOH. One styryl-lactone (1) and an acetogenin (2) were isolated using column chromatography of the CH<sub>2</sub>Cl<sub>2</sub> extract of the root bark. One sterol (3) was yielded upon the column chromatographic separation of the crude hexane extract of flowers.

Strong IR absorption at 970 cm<sup>-1</sup> and doublets at  $\delta$  6.23-6.30 and 6.70-6.75 with J=16 Hz in the <sup>1</sup>H NMR spectrum of the compound 1 (molecular formula C<sub>13</sub>H<sub>12</sub>O<sub>2</sub>) indicated the presence of a trans-styryl double bond. Strong IR absorptions at 700 and 765 cm<sup>-1</sup> and a broadened five proton multiplet at  $\delta$ .7.3 in <sup>1</sup>H NMR spectrum indicated the presence of a monosubstituted benzene ring. This styryl lactone (1) has already been reported from several other *Goniothalamus* species. The molecular formula of compound 2 was determined to be C<sub>35</sub>H<sub>64</sub>O<sub>8</sub> by HREIMS. The proton resonances at  $\delta$ . 6.97, 1.66 and the carbon resonances at  $\delta$ .172.15, 150.86, 131.76, 105.16 and 24.26, altogether provided characteristic spectroscopic features for an  $\alpha,\beta$ -unsaturated- $\gamma$ -lactone ring. <sup>1</sup>H NMR and <sup>13</sup>C NMR clearly indicated the presence of a THF ring associated with two hydroxyl groups. This acetogenin (2) has been reported from *Goniothalamus donnaiensis*. The sterol (3) was identified as Poriferasterol by careful analysis of <sup>1</sup>H NMR, <sup>13</sup>C NMR including COSY spectral data combined with MS data. It was further confirmed by comparing with an authentic sample. Poriferasterol has not been reported from *Goniothalamus* species.

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