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**AMBEWELAMIDES A AND B, NOVEL ANTINEOPLASTIC COMPOUNDS FROM A SRI LANKAN *USNEA* SP.**

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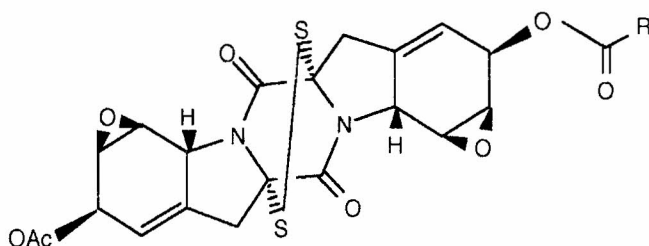
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Lichens produce a wide range of natural products and many are unique to lichens and an appreciable number have been shown to have antimicrobial, and other biological activities of potential medicinal value.

The present study describes the isolation of two novel endodisulphides from an *Usnea* species. Specimens of the *Usnea* sp. were collected from the surface of a decaying tree, identified as *Acacia deccurens* in Ambewala, Central Province, Sri Lanka. The air-dried lichen (950 g) was exhaustively extracted with  $\text{CH}_2\text{Cl}_2$  at room temperature to give a crude gum (5.1 g) that was fractionated *via* silica gel medium pressure liquid chromatography (eluent: step gradient from hexane to  $\text{MeOH}/\text{CH}_2\text{Cl}_2$ , 4:96), silica gel preparative chromatography (eluent  $\text{CH}_2\text{Cl}_2$ ) and Sephadex LH-20 chromatography (eluent:  $\text{CH}_2\text{Cl}_2/\text{MeOH}$ , 2:8) to give a crystalline fraction that contained the mixture of ambewelamides A and B. Final purification was accomplished using normal phase HPLC (Waters Radical PAK cartridge; eluent:  $\text{CH}_2\text{Cl}_2/\text{MeOH}$ , 20:1) to give 13.4 mg of ambewelamide A and 1.4 mg of ambewelamide B, both as optically active, clear crystalline plates.

The structure of the compounds were elucidated by a combination of high resolution FAB mass spectroscopy, and 1D and 2D NMR (COSY & HMBC) spectroscopy. The final confirmation was arrived at by single crystal X-ray diffraction techniques. Ambewelamide A exhibited potent *in vitro* cytotoxicity (murine leukemia P388:  $\text{IC}_{50} = 8.6 \text{ ng/mL}$ ) and it also showed significant *in vivo* antineoplastic activity (P388: % C/T 140 @ 160  $\mu\text{g/Kg}$ ). To the best of our knowledge, this is the most potent and most promising anticancer compound to be discovered from a Sri Lankan source (both terrestrial and marine).



Ambewelamide A:  $\text{R} = (\text{CH}_2)_2\text{CH}_3$

Ambewelamide B:  $\text{R} = (\text{CH}_2)_4\text{CH}_3$

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