

Pharmaceutically Important Compounds from Endemic Annonaceae species

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Annonaceae is a large family of tropical and subtropical trees and shrubs comprising 130 genera and some 2300 species. In Sri Lanka, the family Annonaceae is represented by 46 species distributed in 17 genera. This family is known for its edible fruits and medicinal species and are recognized as a source of terpenoids (mainly diterpenes), alkaloids (a large number derived from the isoquinoline nucleus), essential oils (especially monoterpenes), steroids, polyphenols, flavonoids, fatty acids and acetogenins. Plants of the family Annonaceae are known as a rich source of natural products with interesting biological activities. Recently, members of the family Annonaceae have been investigated as potential sources of biologically active Annonaceous acetogenins, some of which exhibited powerful anti-tumour activity. Most of the Sri Lankan endemic species of the family Annonaceae have not previously been analysed for their chemical constituents and biological properties.

The present work describes the isolation and characterization of three biologically active acetogenins including two new acetogenins from the endemic species *Goniothalamus gardneri* and their biological activities against the second instar mosquito larvae of *Aedes aegyptii* and the fungus *Cladosporium cladosporioides*. Among the three acetogenins, one compound showed potent biological activity against the second instar larvae of *A. aegyptii*. Interestingly, none of them showed activity against the fungus *C. cladosporioides*. The flowers of *G. gardneri* also yielded a styryl lactone, goniotalamin, sterol poriferasterol, the sitgmasta-4, 22-dien-3-one and a new unsaturated fatty acid.

Nine alkaloids were isolated from endemic *Xylopi*a species. Two alkaloids, (+)-laudanine and (-)-discretine, at a concentration of 0.5 mg/mL, exhibited exceptionally high antioxidant activity, whereas two alkaloids, nordicentrine and dehydrocorytenchine, showed moderate activity as compared with the standard antioxidant DL- α -tocopherol in the DPPH assay. One alkaloid, nordicentrine, showed potent antifungal activity at 6 μ g/spot and another, (-)-discretine, showed moderate activity at 30.0 μ g/spot.

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