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1-1-2010

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Recommended Citation

Chaiyong, Sukanda; Jatisatienr, Araya; Mungkornasawakul, Pitchaya; Sastraruji, Thanapat; Pyne, Stephen G.; Ung, Alison T.; Urathamakul, Thitima; and Lie, Wilford: Phytochemical investigations of *Stemona curtisii* and synthetic studies on stemocurtisine alkaloids 2010, 1833-1838.
<https://ro.uow.edu.au/scipapers/628>

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Phytochemical investigations of *Stemona curtisii* and synthetic studies on stemocurtisine alkaloids

Abstract

The isolation of two new *Stemona* alkaloids, 1-hydroxyprotostemonine and stemocurtisine N-oxide, and a new benzofuran, stemofuran L, from the root extracts of *Stemona curtisii* is reported. The major known alkaloids from this plant extract, stemocurtisine, stemocurtisinol, and oxyprotostemonine, were also isolated along with oxystemokerrine N-oxide. The nonalkaloid components of this extract included a new benzofuran derivative, stemofuran L, the known stemofurans F, J, and K, dihydro- γ -tocopherol, and stigmasterol. Stemocurtisine and stemocurtisinol were converted to their respective N-oxides by oxidation. Stemocurtisine was converted to a tetracyclic derivative by oxidative cleavage of the γ -butyrolactone ring, while stemocurtisinol gave a novel lactam derivative by oxidative cleavage of the C-4 side chain under basic conditions. The acetylcholinesterase inhibitory activities of some known and new alkaloids and their derivatives are also reported. All were 10–20 times less active as acetylcholinesterase inhibitors than the pyrrolo[1,2-a]azepine *Stemona* alkaloids stemofoline and 1',2'-didehydrostemofoline. None of the stemofuran compounds showed significant antibacterial or antifungal activities.

Keywords

stemona, phytochemical, curtisii, investigations, synthetic, studies, stemocurtisine, alkaloids, CMMB

Disciplines

Life Sciences | Physical Sciences and Mathematics | Social and Behavioral Sciences

Publication Details

Chaiyong, S., Jatisatienr, A., Mungkornasawakul, P., Sastraruji, T., Pyne, S. G., Ung, A. T., Urathamakul, T. & Lie, W. (2010). Phytochemical investigations of *Stemona curtisii* and synthetic studies on stemocurtisine alkaloids. *Journal of Natural Products*, 73 (11), 1833-1838.

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