

New anti-inflammatory natural products from *Pittosporum illicioides*
var. illicioides

Ming-Chi Hung (洪明吉)¹, Sheng-Ping Huang (黃聖評)², Tsong-Long Hwang(黃聰龍)³,
Ih-Sheng Chen (陳益昇)⁴, and Jih-Jung Chen (陳日榮)^{1*}

¹Department of Pharmacy, Tajen University, Pingtung 907, Taiwan

²Graduate Institute of Biotechnology, Tajen University, Pingtung 907, Taiwan

³Graduate Institute of Natural Products, Chang Gung University, Taoyuan 333, Taiwan

⁴School of Pharmacy, Kaohsiung Medical University, Taichung 807, Taiwan

Pittosporum illicioides var. *illicioides* is an evergreen shrub, distributed throughout China and Taiwan. Phthalides, carotenoids, triterpenoid saponins, sesquiterpene glycosides, and their derivatives are widely distributed in plants of the genus *Pittosporum*. Many of these compounds exhibit diverse biological activities, including antimicrobial and cytotoxic activities. In our studies on the anti-inflammatory constituents of Formosan plants, many species have been screened for *in vitro* anti-inflammatory activity, and *P. illicioides* var. *illicioides* has been found to be an active species. Phytochemical investigation of the stem of this plant has led to the isolation of three new phthalide derivatives, (*S*)-3-ethyl-5,7-dihydroxy-6-methoxyphthalide (**1**), (*R*)-3-ethyl-7-hydroxy-5,6-dimethoxyphthalide (**2**), and (*R*)-3-ethyl-4,7-dimethoxyphthalide (**3**), and six known compounds (**4-9**). The structures of new compounds (**1-3**) were determined through spectroscopic and MS analyses. Among the isolated compounds, (*S*)-3-ethyl-5,7-dihydroxy-6-methoxyphthalide (**1**) and (*R*)-3-ethyl-7-hydroxy-5,6-dimethoxyphthalide (**2**) inhibited fMLP/CB-induced elastase release with IC₅₀ values of 1.70±0.24 and 1.02 ± 0.36 µg/mL, respectively.