

A Novel Chaetomugilin from *Cullen corylifolium* (L.) Medik

Yu HAN¹, Bao Li XU² & Yan Hua GUO^{1*}

¹ Pharmacy College, Liaoning University of Traditional Chinese Medicine,
Dalian, People's Republic of China

² Pharmacy Department, Affiliated Zhongshan Hospital of Dalian University,
Dalian, People's Republic of China

SUMMARY. *Cullen corylifolium* (L.) Medik has been used in China as a herb medicine for thousands of years to treat osteoporosis. In this study, we investigated the chemical constituents from the seeds of the herb. A novel chaetomugilin, chaetoviridin PC, and 15 known compounds were isolated by the various chromatographic techniques including column chromatography, Sephadex LH-20 and reversed-phase HPLC. And the structures were established by analyses of spectroscopic methods, including 1D, 2D-NMR experiments (COSY, NOESY, HMQC, and HMBC), HR-ESI-MS and spectral analysis. Chaetoviridin PC (1) was a novel natural product from *Cullen corylifolium*. The other 15 compounds were identified as citroside A (2), isololiolide (3), grasshopper ketone (4), pubinernoid A (5), robinin (6), puerarin (7), isolariciresinol 4-*O*- β -D-glucopyranoside (8), lyoniresinol (9), 5-methoxyisolariciresinol (10), massonianoside D (11), lariciresinol-9-*O*- β -D-glucopyranoside (12), Lariciresinol-4-*O*- β -D-glucopyranoside (13), tanegool (14), tanegool-7'-methyl ether (15), and (*e*)-4-hydroxy-3,3,5-trimethyl-4-(3-oxobu-1-en-1-yl)-cyclohexan-1-one (16). All these known compounds were isolated from the genus for the first time.

RESUMEN. *Cullen corylifolium* (L.) Medik se ha usado en China como medicina herbaria durante miles de años para tratar la osteoporosis. En este estudio investigamos los componentes químicos de las semillas de esta hierba. Se aislaron una nueva chaetomugilina, chaetoviridina PC y 15 compuestos conocidos mediante diversas técnicas cromatográficas que incluyen cromatografía en columna, Sephadex LH-20 y HPLC de fase inversa. Las estructuras se establecieron mediante análisis de métodos espectroscópicos, que incluyen experimentos 1D, 2D-RMN (COSY, NOESY, HMQC y HMBC), HR-ESI-MS y análisis espectral. Chaetoviridina PC (1) fue un producto natural novedoso de *Cullen corylifolium*. Los otros 15 compuestos se identificaron como citósido A (2), isololiolido (3), cetona de saltamontes (4), pubinernoide A (5), robinina (6), puerarina (7), isolariciresinol 4-*O*- β -D-glucopiranosido (8), lyoniresinol (9), 5-metoxiisolariciresinol (10), massonianósido D (11), lariciresinol-9-*O*- β -D-glucopiranosido (12), Lariciresinol-4-*O*- β -D-glucopiranosido (13), tanegool (14), tanegool-7'-metil éter (15) y (*e*)-4-hidroxi-3,3,5-trimetil 1-4-(3-oxobu-1-en-1-il)-ciclohexan-1-ona (16). Todos estos compuestos conocidos fueron aislados del género por primera vez.

KEY WORDS: chaetomugilin, chemical constituent, column chromatography, *Cullen corylifolium* (L.) Medik, nuclear magnetic resonance.

* Author to whom correspondence should be addressed. E-mail: 16978816@qq.com