

## 병솔꽃나무 유래 신규 triterpenoid

고려대학교 : 정원식, 홍성수, 김나현, 이동호\*

충북대학교 : 황방연

제주도 농업기술원 : 양영택

### A new triterpenoid of *Callistemon lanceolatus*

College of Life Sciences and Biotechnology, Korea University  
Wonsik Jeong, Seong Su Hong, Nahyun Kim, and Dongho Lee\*

College of Pharmacy, Chungbuk National University

Bang Yeon Hwang

Jeju-do Agricultural Research and Extension Services

Young Taek Yang

### Objectives

*Callistemon lanceolatus* DC (syn. *C. cirtinus* DC) known as a bottle brush tree, is in family Myrtaceae. As part of our ongoing research program for the discovery of plant-derived inhibitory of nitric oxide (NO) production, we found that EtOAc-soluble layer of the aerial parts of this plant inhibited NO production. Literature survey revealed that some triterpenoids were isolated from *Callistemon* genus, and among them, betulinic acid was reported as NO production inhibitor. However, any triterpenoid with NO production inhibitory activity has been reported from *C. lanceolatus*. Therefore, phytochemical studies were performed to isolate new betulinic acid derivatives from *C. lanceolatus*.

### Materials and Methods

○ Plant material : The aerial part of *C. lanceolatus* were collected from the Jeju-do in September of 2005.

○ Reagents and Instruments : TLC was carried out on Kieselgel 60 F<sub>254</sub> plate (0.2 mm, Merck, Germany) and RP-18F F<sub>254s</sub> Plate (1.0 mm, Merck, Germany). Silicagel 60 (230 ~ 400 mesh, Merck, Germany) Sephadex LH-20 (18 ~ 111 μm, GE Healthcare) ODS-A (12nm S-75 μm, YMC GEL) were used for the column chromatography. ESI-MS spectrum were got from Q-TOF micro (Waters). <sup>1</sup>H and <sup>13</sup>C NMR spectra were determined on Varian system 500 MHz spectrometer.

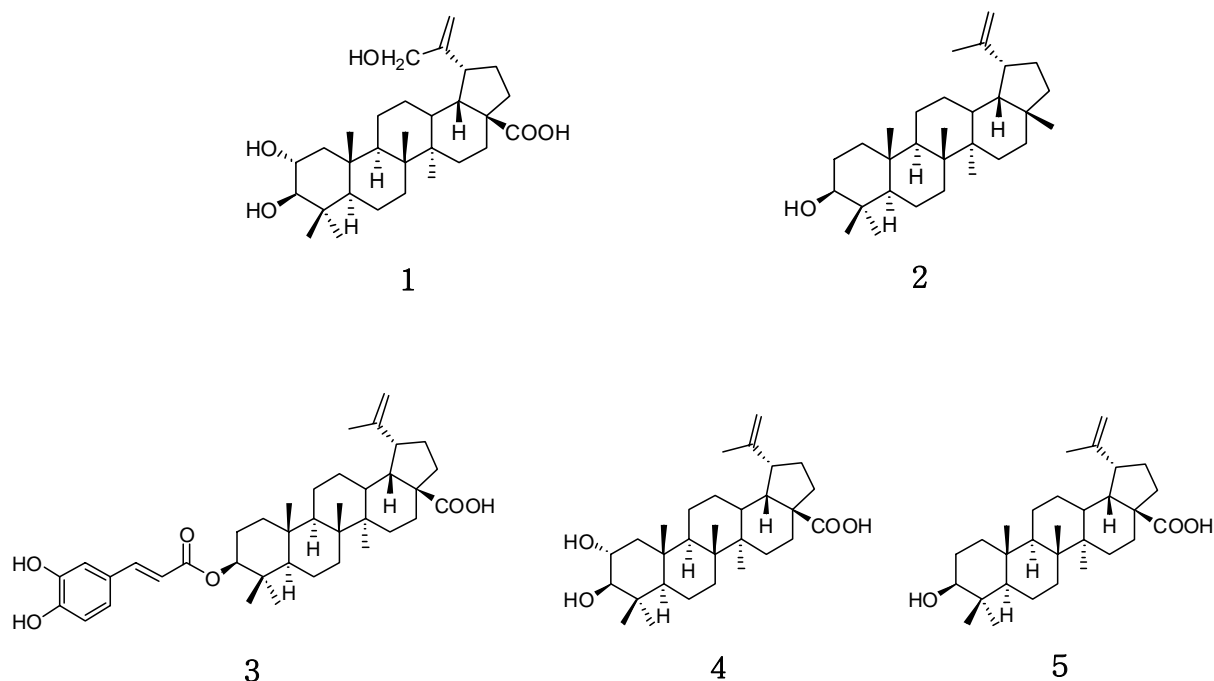
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Corresponding author : Dongho Lee E-mail : dongholee@korea.ac.kr Tel : 02-3290-3017

○ Extraction and Isolation : The aerial parts of *C. lanceolatus* was extracted with methanol and it was suspended in aqueous and then partitioned with hexane. Then the aqueous layer partitioned with EtOAc. Silica gel, sephadex LH-20, RP-18 column chromatography and semi-preparative HPLC led to the isolation of the triterpenoids from the EtOAc-soluble layer.

## Results

The aerial parts of *C. lanceolatus* were extracted with methanol, and successively partitioned with *n*-hexane, EtOAc, and water. The EtOAc-soluble layer was repeated column chromatographic separation, to give a new triterpenoid, 30-hydroxy-alphitolic acid (**1**), and four known triterpenoids, lupenol (**2**), betulinic acid 3-*O*-caffeate (**3**), alphitolic acid (**4**), and betulinic acid (**5**). The structures of these compounds were determined using MS, 1D and 2D NMR techniques, including HMQC, HMBC and ROESY experiments.



The Chemical Structures of Compounds 1-5