

잔대 뿌리 유래 신규 digalactosyldiacylglycerol
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Structure of new digalactosyldiacylglycerol from the roots of *Adenophora triphylla* var.
japonica

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Objectives

Adenophorae radix, the roots of *Adenophora triphylla* var. *japonica* Hara (Campanulaceae) has been used as analgesic, antiinflammatory and antitussive in traditional medicine. We studied on anti-allergic effects of roots of *A. triphylla* var. *japonica*. As a part of our ongoing program on finding biologically active components from the roots of *A. triphylla* var. *japonica*.

Materials and Methods

- Plant material : The dried roots of roots of *A. triphylla* var. *japonica* purchased from Kyungdong Oriental Herbal Store, Seoul, South Korea, on August 2009.
- Extraction and isolation : The EtOH extract of the *Adenophorae Radix* was successively partitioned with CH₂Cl₂, EtOAc, and H₂O. The CH₂Cl₂-soluble fraction was subjected to repeated column chromatography (CC) to afford a new compound and nine known compounds. The structure and relative stereochemistry were determined from HRMS, 1D and extensive 2D NMR techniques as well as by comparison of their data with the published values.

Results

As a part of our ongoing program on finding biologically active components from natural source we found a previously unknown digalactosyldiacylglycerol (1), besides nine known constituents from the ethanol extract of the roots of *A. triphylla* var. *japonica*. The new compound was identified as 1-*O*-(9*Z*, 12*Z*-octadecadienoyl)-2-*O*-lignocerate-3-*O*-[α-D-galactopyranosyl(1→6)-β-D-galactopyranosyl]-glycerol(1), along with the known compounds: lupenone (2), 1-*O*-(9*Z*,12*Z*,15*Z*-octadecatrienoate)glycerol (3), 2-linoleoyl-glycerol (4), 1-*O*-(9*Z*,12*Z*-octadecadienoate)glycerol (5), linoleic acid (6), 1-*O*-(9*Z*, 12*Z*-octa-decadi enoyl)-2-*O*-palmitate-3-*O*-[α-D-galactopyranosyl(1→6)-β-D-galactopyranosyl]-glycerol (7), schisandrin (8), decursin (9), and decursinol

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angelate (**10**). The structure and relative stereochemistry were determined from HRMS, 1D and extensive 2D NMR techniques as well as by comparison of their data with the published values. All isolates were evaluated for β -hexosaminidase assay and 1-*O*-(9*Z*,12*Z*,15*Z*-octadecatrienoate) glycerol (**3**) and decursin (**9**) showed the inhibitory effects with EC_{50} values of 92.9 and 83.6 μ M, respectively.

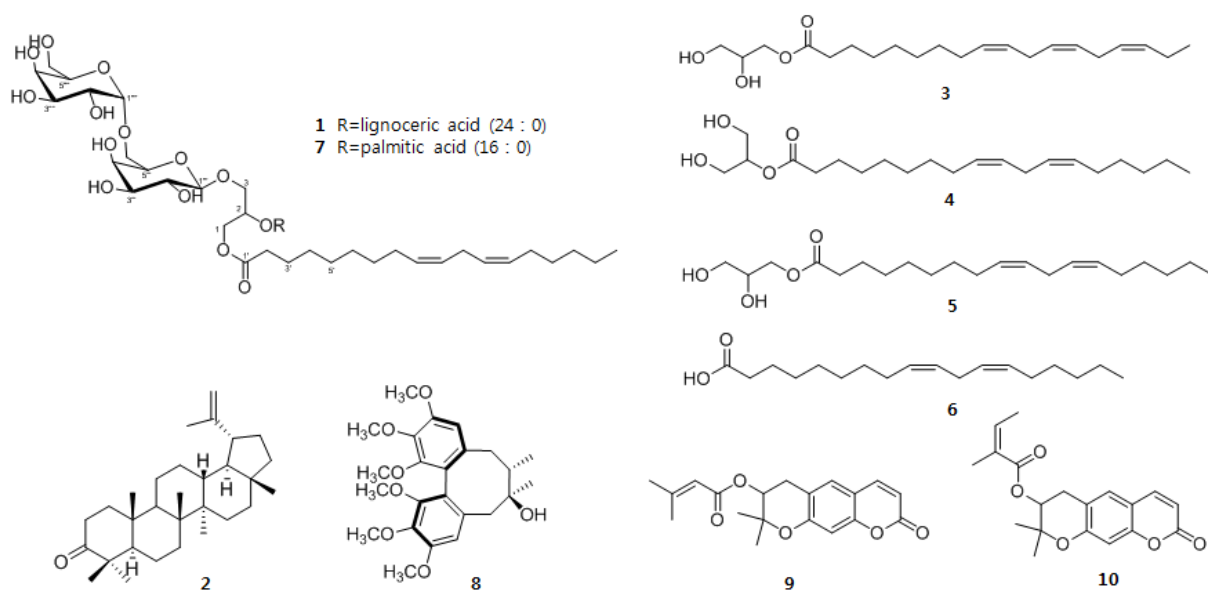


Fig. Structures of compounds 1-10