

오가피 열매로부터 분리한 신규 Triterpenoid Glycoside의 세포독성 효과

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New Cytotoxic Triterpenoid Glycosides from *Acanthopanax sessiliflorus* Fruits

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Objectives

Acanthopanax sessiliflorus (Araliaceae) is a shrub present mainly in Korea, China and Japan and is known to be one of the most abundant species. *Acanthopanax* species have been used as a tonic and prophylactic in oriental herbal medication from olden times. The leaves and roots of this species have been also taken as a health drink and drug in Korea. Its fruits have been reported to have anti-tumor and immuno-stimulating activities. So, this study is focused on isolation, and identification of the single compounds from this plant and investigation of anti-cancer activity.

Materials and Methods

¹H-NMR (400 MHz), ¹³C-NMR (100 MHz) and 2D-NMR spectra were recorded on a Varian Unity Inova AS-400 FT-NMR spectrometer. Methanol-*d*₄ with TMS as an internal standard was purchased from Sigma. RPMI Medium 1640, Dulbecco's Modified Eagle Medium and Penicillin-Streptomycin were purchased from GIBCO. FBS was from Hyclone. MTT and DMSO were purchased from Sigma. The methanol extract was fractionated into an EtOAc layer, an *n*-BuOH layer and a H₂O layer through solvent fractionation. The repeated SiO₂, ODS and Sephadex LH-20 c. c. of EtOAc fractions yielded five compounds (1-5).

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Results

Our phytochemical study on the fruits of this plant led to isolation and structure determination of a new seco-triterpenoid glycoside (**1**) together with four triterpenoid glycosides (**2–5**). From the results of spectroscopic data including EIMS, FABMS, UV, IR, ^1H and ^{13}C -NMR, DEPT and 2D-NMR (COSY, HSQC, HMBC), All isolated compounds and ethanolic extract were evaluated for their cytotoxicity against human colon carcinoma (HCT-116), human breast carcinoma (MCF-7), human breast carcinoma (SK-BR-3), human ovary carcinoma (SK-OV-3), and human melanoma (SK-MEL-5) using the MTT assay.

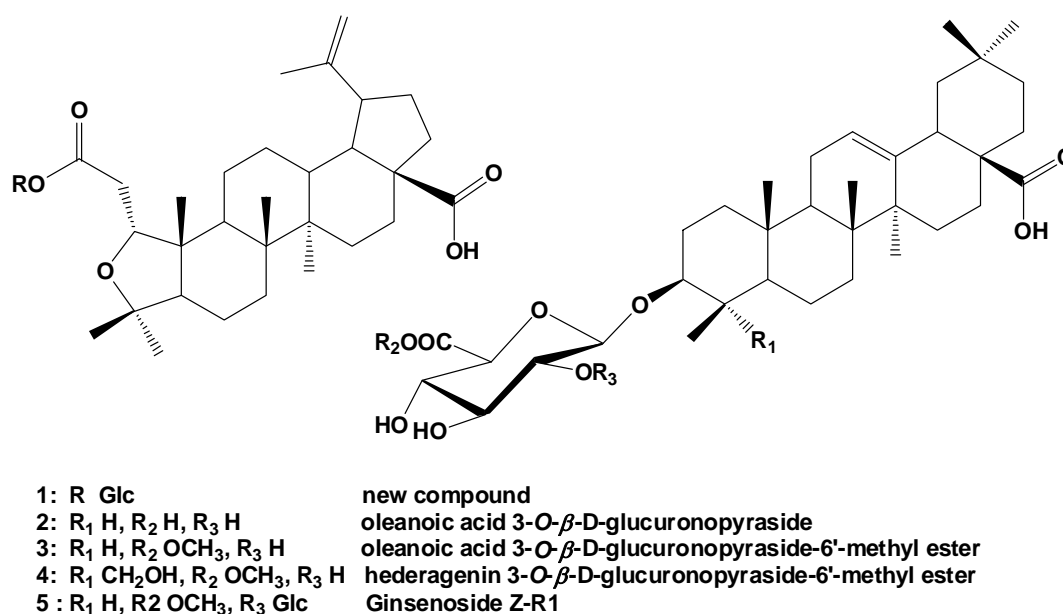


Fig. 1. Chemical structures of triterpenoid glycosides from *A. sessiliflorus* Fruits

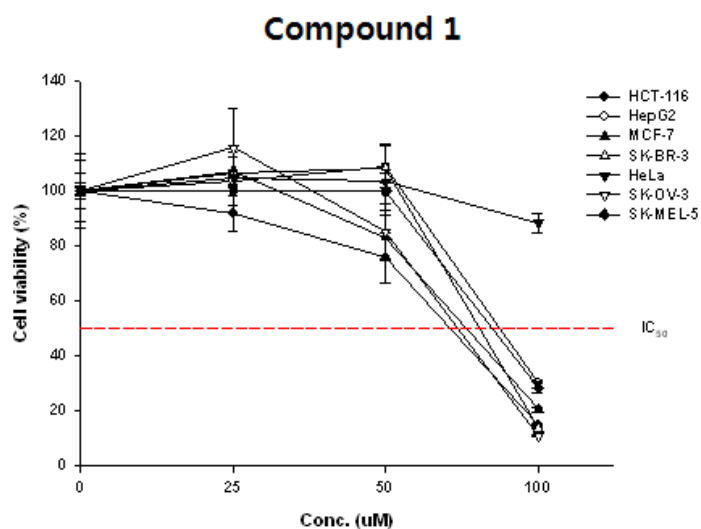


Fig. 2. Cytotoxicity of compound **1** against human cancer cell lines.