

P3-32

딸기(*Fragaria ananassa*) 꽃받침으로부터 트리터펜 배당체의 분리

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Isolation of Triterpene glycosides from Strawberry (*Fragaria ananassa*) Calyx

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Objectives

Strawberry (*Fragaria ananassa* Duch.) is one of the popular fruits belonging to the Rosaceae family. *Fragaria ananassa* is well known to have antioxidant activity because they have a lot of anthocyanins. In our preliminary experiment, the calyx of *F. ananassa* also showed high antioxidant activity which is almost same as that of green tea. This study was initiated for isolation and identification of secondary metabolites responsible for antioxidant activity from the *Fragaria ananassa* calyx.

Materials and Methods

○ Materials

The calyx of *F. ananassa* were offered by GFC Co. (Suwon). ¹H-NMR (400 MHz) and ¹³C-NMR (100 MHz) spectra were recorded on Varian Unity Inova AS-400 FT-NMR spectrometer (California, USA).

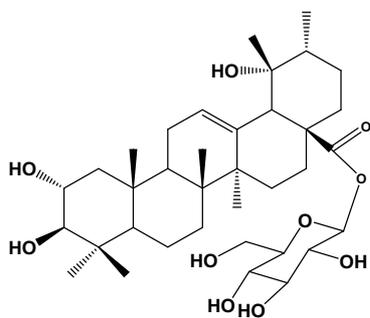
○ Methods

The calyxies of *Fragaria ananassa* (8.5 kg) were extracted with 80% aqueous MeOH and the concentrated extract was partitioned with EtOAc, *n*-BuOH and H₂O, successively. Silica gel, octadecyl silica gel (ODS) and Sephadex LH-20 column chromatographies were used for the isolation of the triterpenes.

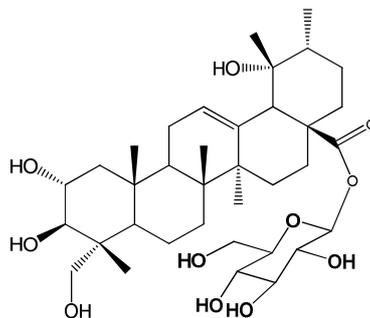
Results

From the EtOAc fraction, three triterpene glycosides were isolated. On the basis of spectroscopic methods, such as ¹H-NMR, ¹³C-NMR, DEPT and 2D-NMR (gCOSY, gHSQC, gHMBC), the chemical structures of the compounds were determined to be rosamultin (**1**), niga-ichigoside F1 (**2**) and niga-ichigoside F2 (**3**). These compounds have been first isolated from the calyx of *Fragaria ananassa* and are expected to be tested their antioxidant activities.

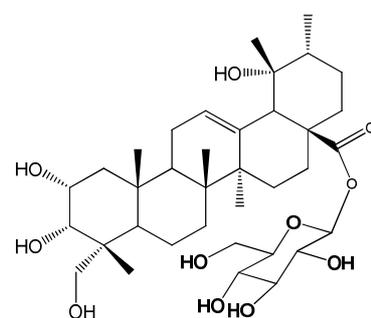
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compound 1



compound 2



compound 3

Fig.1. The structures of three compounds isolated from the calyx of *Fragaria ananassa*.