Ⅱ-102

A new indole glucoside and two phenolinc compounds from the roots of *Brassica campestris* ssp *rapa*

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Objectives

Brassica rapa is a common deep-purple and toy top-shaped edible root vegetable in Korea. It is well known for its ability to alleviate jaundice, to combat liver illnesses, to relieve hangover, and to improve chronic constipation and kidney functions. In order to know the principal compounds to cause the above functinons. We tried to isolate and identify the major active compounds from the roots of *Brassica rapa.*

Materials and Methods

○ Materials

The roots of *Brassica rapa* were offered by Ganghwa Agricultural R&D Center (Incheon). ^{1}H-NMR (400 MHz) and ^{13}C-NMR (100 MHz) spectra were recorded on a Varian Unity Inova AS-400 FT-NMR spectrometer (California, USA).

○ Methods

The roots of *Brassica rapa* (77.1 kg) were extracted with 95% aqueous EtOH. and the concentrated extract was partitioned with EtOAc, *n*-BuOH and H_2O, successively. This time three compounds were isolated through the repeated silica gel, octadecyl silica gel (ODS), and Sephadex LH-20 column chromatographies.

Results

From the results of spectroscopic datas including NMR, MS and IR, the chemical structures of the compounds were determined as licochalcone A, indole glycoside and triandrin. The indole glycoside is a new compound, and the glucose is not linked with aglycone through oxygen but through carbon in the chemical structure. It is not a common linking structure. Licochalcone A and triandrin are the first time to be isolated from the roots of the *Brassica rapa.* Licochalcone A, a chalcone, has promising anti-inflammatory, preventing or treating bone diseases, and exhibits synergistic antiplasmodial activities. Triandrin, a phenylethanoid, has antioxidant activity, free radical scavenging activity and nootropic activity.

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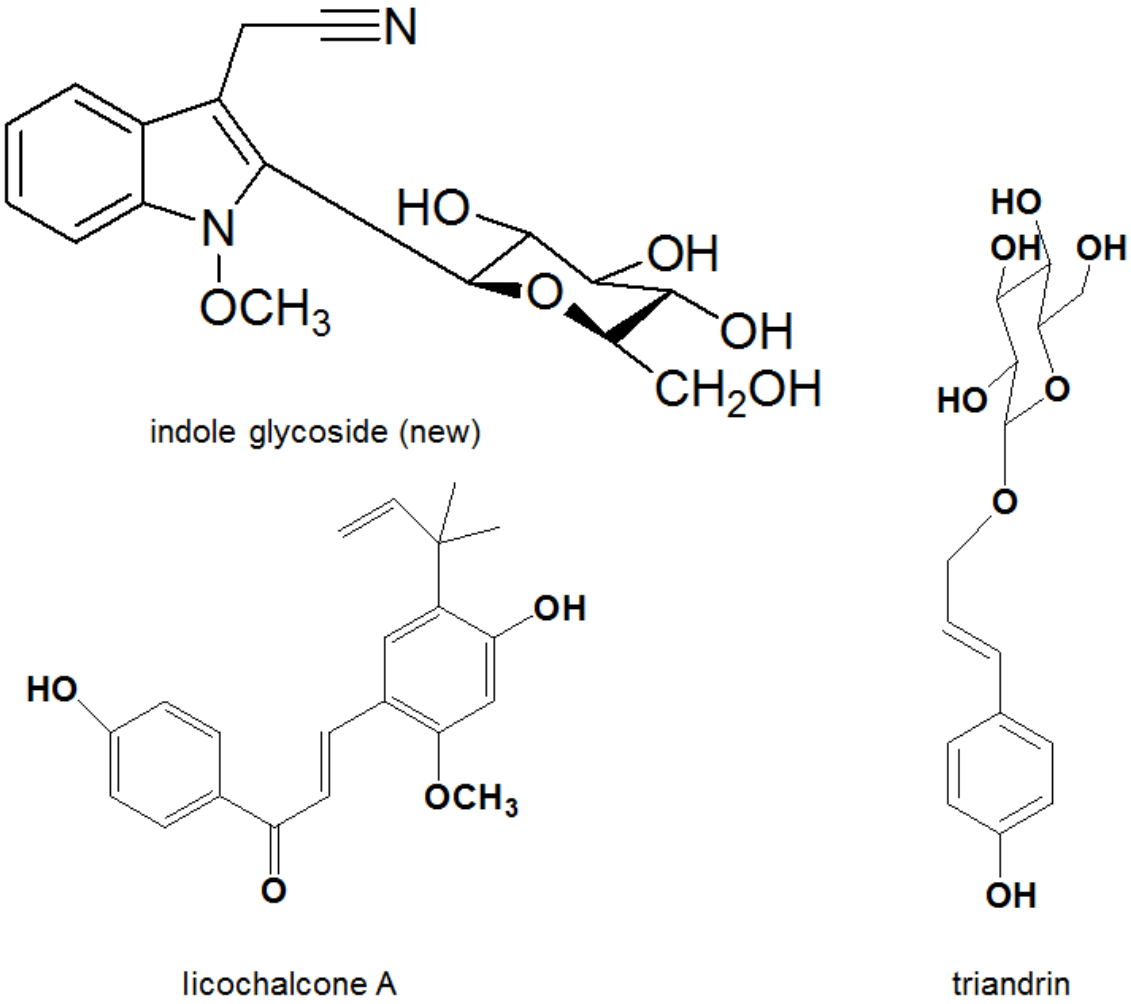

Fig. 1. Indole glucoside and two phenolic compounds from the roots of *Brassica rapa*.