

참죽나무 잎으로부터 분리한 항산화 물질

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Antioxidant constituents from the leaves of *Cedrela sinensis*

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Objectives

As a part of our search for antioxidant agents from natural source, we have found that the MeOH extract of *C. sinensis* exhibited a considerable antioxidant activity, by DPPH assay. This prompted us to carry out phytochemical investigation on this plant.

Materials and Methods

○ Materials

The leaves of *C. sinensis* were collected in Daejeon, Korea, in October 2005.

○ Methods

Repeated column chromatography of EtOAc fraction led to the isolation of five compounds. The antioxidant activities of these compounds were tested using DPPH and superoxide radical scavenging assays.

Results and Discussion

Five flavonoids were isolated from the EtOAc fraction of *C. sinensis*. Their structures were identified as (+)-catechin (1), afzelin (2), quercetin (3), quercitrin (4), isoquercitrin (5) by comparing their spectral data with those previously reported. Most compounds, except for 2, exhibited considerable radical scavenging activities against both DPPH and superoxide radicals with IC₅₀ values ranging from 21.3±1.4 to 38.1±3.2 μM and from 9.4±0.7 to 19.2±2.9 μM, respectively. These activities were stronger than those of positive control, caffeic acid (IC₅₀: 41.2±2.8 μM and 34.6±3.7 μM, respectively). These results indicated that flavonoids are the major constituents of *C. sinensis* and considered to be main antioxidant constituents of this plant.

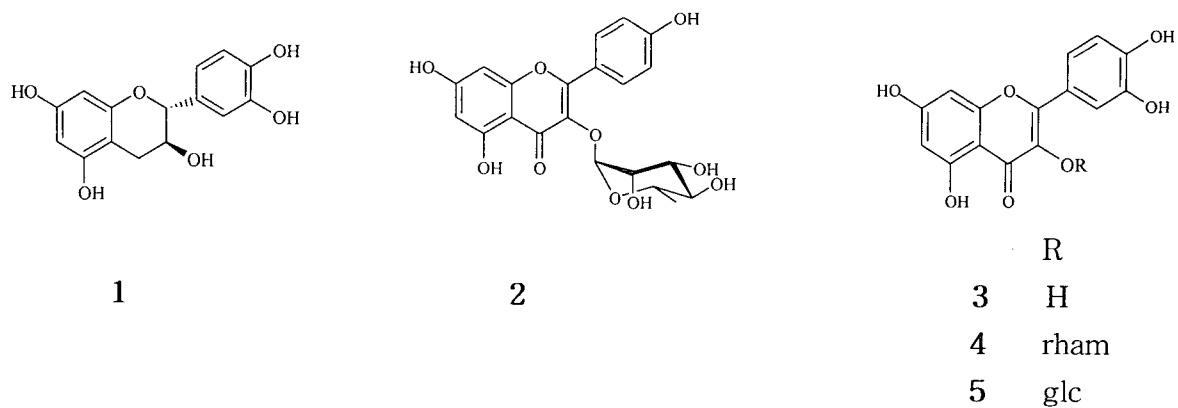


Fig. 1. Chemical structures of compounds 1-5 isolated from the EtOAc fraction of *C. sinensis*

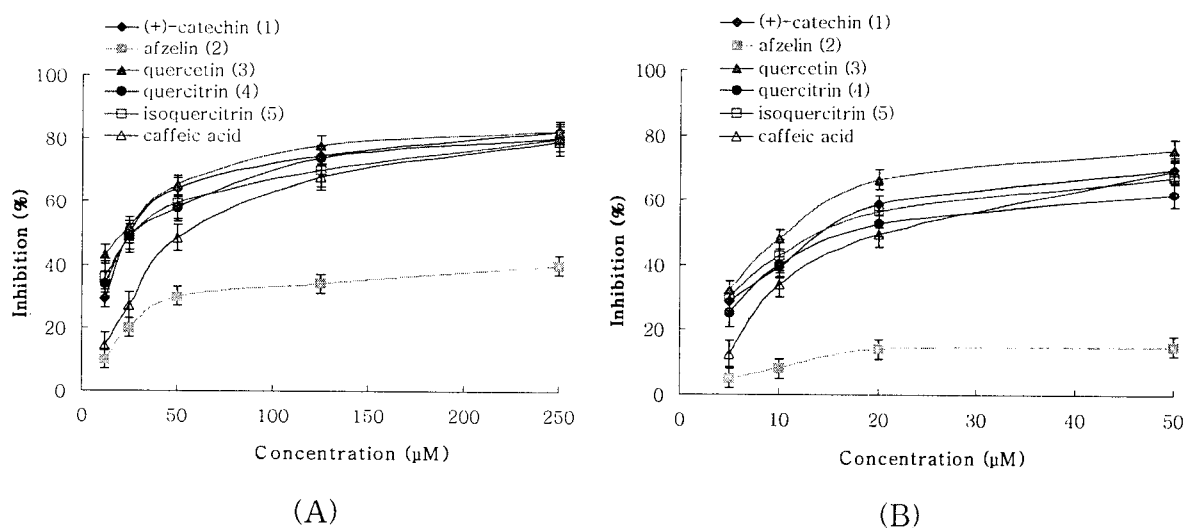


Fig. 2. Free radical scavenging activities of compounds 1-5 isolated from EtOAc fraction of *C. sinensis*. (A) DPPH radical scavenging activities of 1-5, (B) Superoxide radical scavenging activities of 1-5