

The overproduction of nitric oxide (NO) by inducible nitric oxide synthase (i-NOS) is one of the major characteristic features of inflammation and sepsis. We intended to find the i-NOS inhibitors from plants by using the macrophage cell culture system. RAW 264.7 cells were activated by lipopolysaccharide (LPS) in the presence of plant samples, and the amount of NO formed by i-NOS was determined by using Griess reagent in the form of NO_2^- . From the activity guided fractionation of the extract of *Tussilago farfara*, a new bisabolone type sesquiterpene was purified as an active principle. The structure was established to be 1,5 bisacetoxy-8-angeloyloxy-3,4-epoxy-bisabola-7(14),10-dien-2-one based on spectral analysis of NMR, IR and Mass. This compound inhibited the production of NO with IC_{50} values (the concentration required inhibiting the production of NO by 50%) of 8.9 μM , and this activity was confirmed as resulting from the inhibition of i-NOS expression in LPS-treated macrophages.

[PD2-24] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Neuroprotective constituents from the rhizomes of *Cnidium officinale*

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The present study evaluated neuroprotective effects of the constituents from the rhizomes of *Cnidium officinale* M. (Umbelliferae). The crude methanol extract of the *C. officinale* inhibited the NMDA-induced excitotoxic neuronal death in primary cultured rat cortical cells ($\text{IC}_{50} = 188.3$ $\mu\text{g/ml}$). The inhibition of the Glu-induced neurotoxicity by the extract was less potent ($\text{IC}_{50} = 446.7$ $\mu\text{g/ml}$), implying the involvement of NMDA receptors in the neuroprotective action. The methanol extract was subsequently fractionated with dichloromethane, ethylacetate, and water. The dichloromethane and ethylacetate fraction dramatically protected cultured neurons from the NMDA-induced toxicity, with the IC_{50} values of 37.7 $\mu\text{g/ml}$ and 32.9 $\mu\text{g/ml}$, respectively. Three components (CO-5-G, CO-6-A, and CO-7-B) were successfully isolated from the dichloromethane fraction and one (CO-12-A) from the ethylacetate fraction by the activity-guided fractionation. Their structures were elucidated by the physicochemical and spectral data such as UV, IR, NMR and MS. Here, we report isolation, purification, structure elucidation of isolated compounds, and their neuroprotective activities

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New diarylheptanoids from the stems of *Carpinus cordata*

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Carpinus cordata Blume (Betulaceae) is a deciduous shrub and widely distributed in Korea, Japan and China. The genus *Carpinus* is known to contain numerous diarylheptanoids as well as tannins. During our search for antiviral compounds from natural products, a crude extract of the stems of *C. cordata* was found to potently inhibit HIV-1 integrase. By means of bioassay-directed chromatographic fractionation, two new diarylheptanoids, CC5A (1) and CC3Bb (2), and the known casuarinondiol (3) together with five known tannins, (+)-catechin (4), methyl gallate (5), glucopyranosyl 3-O- β -D-methyl gallate (6), glucopyranosyl 4-O- β -D-methyl gallate (7) and methyl gallate 3-O- β -D-(6'-O-galloyl)-glucopyranoside (8) were isolated. Among isolated compounds, 8 showed strong inhibitory activity against HIV-1 integrase in our assay system. We