

Phytochemical Constituents of *Hylomecon vernale*

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The constituents of *Hylomecon vernale* Max. (Papaveraceae) were studied phytochemically in order to investigate medicinal resources. This plant is perennial herb grown on damp shady regions in Korea. According to the ancient Chinese herbal literature, it is effective for the treatment of arthritis, edema and dysfunction of blood circulation. The chemical constituents of the genus *Hylomecon* were reported as benzophenanthridine alkaloids (chelerythrine, chelidonine, chelilutine, chelirubine, protopine, sanguinarine) and protoberberine alkaloids (coptisine, cryptopine, allocryptopine, berberine, tetrahydroberberine). However, only a few chemical investigations of *Hylomecon vernale* have been studied and its biological activities have not been reported. In the course of studies on chemical constituents, three compounds were isolated from the aerial parts of this plants by repeated silica gel column chromatography. The structure were identified on the basis of their physicochemical and spectroscopic data (UV, mass, ^{1x}H-NMR and ^{13x}C-NMR).

[PD1-36] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Benzophenanthridine Alkaloids from *Hylomecon hylomecoides*

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Hylomecon hylomecoides (Papaveraceae) is an indigeneous plant and distributed in southern part of Korea. Phytochemical studies were carried out from the alkaloid fraction of the root of *H. hylomecoides*. Four benzophenanthridine alkaloids were isolated from the repeated silicagel column chromatography. On the basis of spectral data, their structures were identified as 8-methoxydihydrosanguinaline, dihydrosanguinarine, 8-hydroxymethyldihydrosanguinarine and 8-acetonyl dihydrosanguinaline.

[PD1-37] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Aldose Reductase Inhibition of Magnesium Lithospermate B isolated from the Root of *Salvia Miltiorhiza*

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Magnesium Lithospermate B was isolated from an aq. MeOH extract of *Salvia Miltiorhiza* (Dan-Shen, 丹参), and its subsequent purification by normal silica gel column chromatography with polar-eluent (Yield: 1g from Dan-Shen 100g). The in vitro effect of magnesium lithospermate B on rat mesangial cell line was assessed by spectrophotometry. We evaluated the activity of aldose reductase, which is considered to be a major enzyme of the signal transduction in the pathogenesis of not only diabetic neuropathy but also diabetic nephropathy. There was a tendency to decreased activity of aldose reductase in accordance with the increasing dosage of magnesium lithospermate B. The magnesium lithospermate B showed significant dose dependent effect on aldose reductase activity

in rat mesangial cell.

[PD1-38] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Inhibition of excitotoxic neuronal cell death by the rhizomes of *Acorus gramineus*

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The rhizomes of *Acorus gramineus* (AGR) has been reported to show a number of pharmacological actions in the central nervous system. The present study investigated the effects of AGR extracts on excitotoxic neuronal cell death using primary cultured rat cortical neurons. The crude methanol extract inhibited the glutamate-induced neurotoxicity in a concentration-dependent manner ($IC_{50} = 263.3 \mu\text{g/ml}$). The inhibition was more potent and selective against the toxicity induced by NMDA ($IC_{50} = 175.6 \mu\text{g/ml}$). To identify the active components in AGR, the methanol extract was subsequently fractionated with dichloromethane, ethylacetate, and water. The dichloromethane and ethylacetate fractions dramatically inhibited the NMDA-induced neuronal death, with the IC_{50} values of $28.5 \mu\text{g/ml}$ and $46.3 \mu\text{g/ml}$, respectively. Further purification and structure analyses indicated that the active principles exhibiting neuroprotective action of AGR were identified as compound 1 (AG-13-A, $C_{12}H_{16}O_3$) present in dichloromethane fraction and compound 2 (AG-41-A, $C_6H_6O_3$) in the ethylacetate fraction.

[PD1-39] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Effect of Circumferential Conditions on the Behaviors of Beta Amyloid Peptide in Human Brain by Cellular Automata Simulation.

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Alzheimer's disease (AD) is an incurable neuropsychiatric condition in which progressive impairment of cognitive functions occurs, usually accompanied by affective and behavioral disturbances. This AD was caused by the aggregation and deposition of a beta amyloid peptide (β AP) in human brain. In this study, to show the effect of circumferential conditions on the aggregation and deposition of a β AP, the behaviors of the β AP were simulated by cellular automata (CAs). The aggregation and deposition of the β AP were caused by the mutation of a beta amyloid precursor protein (BAPP). Those were occurred in a lipid membrane, and circumferential conditions such as pH, concentration effected on aggregation. Usually, β AP has more quantity of monomers than that of oligomers under the critical concentration, while oligomers of β AP are more by fraction over the critical concentration. The oligomers present insoluble aggregated peptide.

[PD2-1] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Three triterpenoids from the roots of *Rhododendron yedoense* var. *poukhanense*

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