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 μg/ml). The inhibition was more potent and selective against the toxicity induced by NMDA (IC_{50} = 175.6μg/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 28.5μg/ml and 46.3μg/ml, respectively. Further purification and structure analyses indicated that the active principles exhibiting neuroprotective action of AGR were identified as compound1 (AG-13-A, C12H16O3) present in dichloromethane fraction and compound 2 (AG-41-A, C6H6O3) 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(βAP) in human brain. In this study, to show the effect of circumferential conditions on the aggregation and deposition of a βAP, the behaviors of the βAP were simulated by cellular automata(CAs).
The aggregation and deposition of the βAP were caused by the mutation of a beta amyloid precursor protein(βAPP). Those were occurred in a lipid membrane, and circumferential conditions such as pH, concentration effected on aggregation. Usually, βAP has more quantity of monomers than that of oligomers under the critical concentration, while oligomers of βAP 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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Rhododendron yedoense Max. et Regel var. *poukhanense* Nakai (Ericaceae) is a deciduous and latifoliate shrub growing in Korea and Japan. The flower of this plant has been used as a depressant, but is very toxic. The roots of this plant have been reputed to be effective as hair-growing agents in the traditional medicine. The phytochemical research of this plant has never been reported. So, the roots of this plant were extracted with 95% MeOH. MeOH Ext. was subsequently fractionated into four parts; chloroform, ethylacetate, n-butanol and water fractions. In the present work, chromatographic separation of the chloroform fraction has yielded three triterpenoids corresponding to α- or β-amyrins. Their structures were established by chemical and spectral evidences.

[PD2-2] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Asimitrin, a new bioactive Annonaceous acetogenin possessing an unusual non-adjacent bis-THF ring from Asimina triloba seeds

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The Annonaceous acetogenins are powerful inhibitors of mitochondria NADH: ubiquinone oxidoreductase and of the ubiquinone-linked NADH oxidase that is peculiar to the plasma membranes of tumor cells. The end result of both of these mechanisms is ATP deprivation. Thus, these compounds offer excellent potential for development as new antitumor, immunosupressive, pesticidal, antiprotozoal, antifeedant, and antimicrobial agents.
Exclusive in the tropical plant family, Annonaceae, the paw paw tree (*Asimina triloba* Dunal) is a temperate representative distributed abundantly in the eastern regions of North America. From the seeds, we have recently identified twenty novel and thirteen known bioactive Annonaceous acetogenins. Extended effort in these investigations has most recently led us to the isolation of a novel acetogenin, asimitrin. Asimitrin belongs to a new type of non-adjacent bis-THF ring acetogenin (one THF ring not possessing any flanking hydroxyls and the other bearing only a flanking hydroxyl) and 1,2-diol in long hydrocarbon chain.

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

Novel Triterpenoids from Rhus javanica

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Rhus javanica L. (Anacardiaceae) is a tall and broad leaf tree and distributed in Korea, Japan and China. Barks and leaves of this plant have been used in dysentery and diarrhea remedies in Korean herbal medicines. In a recent date, the production of tannic acid by cell cultures, the prophylatic efficacy against Herpes simple virus type and the antineoplastic effect were studied from this plant. However, reports of various chemical components were rare. Thus, in the course of studies on chemical constituents, we isolated three new dammarane triterpenes from the stem bark of this plant. Also, the known triterpene, semialatic acid, and the known steroid, stigmast-4-en-3-one were first isolated from this plant. Semialatic acid and stigmast-4-en-3-one had been reported previously from Rhus semialata and Typha latifoli, respectively. Based on the chemical and various NMR techniques (HMQC, 1H-1H COSY and HMBC), the structures of three new triterpenes were eluciated as semialactone, isofouquierone peroxide and fouquierone. We report here the structural assignments of three new triterpenes and the revised 13C NMR data of semialatic acid.