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Anti-complement Activity of Constituents from the Stem-Bark of *Juglans mandshurica*

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Four known flavonoids and two galloyl glucoses isolated from the stem-bark of *Juglans mandshurica* (Juglandaceae), namely taxifolin (**1**), afzelin (**2**), quercitrin (**3**), myricitrin (**4**), 1,2,6-trigalloylglucose (**5**), and 1,2,3,6-tetragalloylglucose (**6**), were evaluated for their anti-complement activity against complement system. Afzelin (**2**) and quercitrin (**3**) showed inhibitory activity against complement system with 50% inhibitory concentrations (IC_{50}) values of 258 and 440 μM. 1,2,6-Trigalloylglucose (**5**) and 1,2,3,6-tetragalloylglucose (**6**) exhibited anti-complement activity with IC_{50} values of 136 and 34 μM. In terms of the evaluation of the structure-activity relationship of 3,5,7-trihydroxyflavone, compounds **2**, **3**, and **4** were hydrolyzed with naringinase to give kaempferol (**2a**), quercetin (**3a**), and myricetin (**4a**) as their aglycones, and these were also tested for their anti-complement activity. Of the three aglycones, kaempferol (**2a**) exhibited weak anti-complement activity with an IC_{50} value of 730 μM, while quercetin (**3a**) and myricetin (**4a**) were inactive in this assay system. Among the compounds tested, 1,2,3,6-tetragalloylglucose (**6**) showed the most potent anticomplement activity (IC_{50}, 34 μM).

[PD2-17] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Aldose Reductase Inhibitory Constituents from *Ganoderma applanatum*

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The EtOAc and CH_2Cl_2 soluble fractions from the fruit body of *Ganoderma applanatum* showed strong aldose reductase inhibitory activity. Nine compounds were isolated from both fractions. They were identified by spectral data as D-mannitol (**1**), 2-methoxyfatty acid (**2**), cerebrosides [(2S,3R,4E,8E)-1-O-β-D-glucopyranosyl-3-hydroxy-2-[(R)-2'-hydroxypalmitoyl]amino-9-methyl-4,8-octadecadiene] (**3**), daucosterol (**4**), 2,5-dihydroxybenzoic acid (**5**), protocatechualdehyde (**6**), 5-dihydroergosterol (**7**), ergosterol peroxide (**8**), and cerevisterol (**9**). Among these compounds, **3**, **6**, and **8** exhibited strong aldose reductase inhibitory activities.

[PD2-18] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

A New Antioxidant Polyphenolic Compound from Two Korean Brown Algae

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In the course of our researches for biologically active compound from Korean algae, purification of the methanolic extracts of two brown algae (*Sagassum Sagamianum* and *Ishige Okamurae*) collected off Jeju Island afforded an antioxidant polyphenolic compound (**1**). The molecular formula of **1** was established as $C_{24}H_{16}O_{13}$ on the basis of the FAB mass and ^{13}C NMR spectrum. Its structure was elucidated by detailed analysis of 2D NMR data of **1**. Compound **1** was named as hydroxylphloroeckol. Compound **1** showed potent radical scavenging effect on DPPH radicals with RC_{50} value of 7 ㎍/㎖.

[PD2-19] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

A Rapid Manufacturing Process of Crude Cordycepin Containing Adenosine (CCCA) from Cultured Fruiting Bodies of *Cordyceps Militaris* (CM) for Developing Anti-leukemic Agents.

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Anti-tumor, anti-viral and anti-leukemic activity of cordycepin are well known. Adenosine was reported to induce an apoptosis in human leukemia cells. CM has been widely used as traditional medicinal herbs in China. Previously, we reported the results relating the isolation and characterization of cordycepin and adenosine from the cultured fruiting bodies of CM. We further studied the manufacturing process of CCCA for the purpose of developing anti-leukemic agents. Water extract of cultured fruiting bodies was concentrated with a vacuum evaporator at 70℃, and it was diluted three times with water. And about 8 times of its volume of 99% ethanol was added to the water extract. The supernatant was decanted and concentrated at 55℃. The ethanol precipitate was discarded. The concentrate of ethanol-soluble supernatant was diluted with water, and its diluted solution was used to prepare CCCA. The CCCA was further purified using the strong cation exchange resin SK1B (Diaion), the strong anion exchange resin SA21A (Diaion) and synthetic adsorbents HP20. The contents of cordycepin and adenosine in CCCA analyzed by HPLC were 164 mg/g (16.4%) and 253 mg/g (25.3%), respectively. Contents of cordycepin and adenosine calculated in dried fruiting bodies resulted in 1068 mg/kg (0.11%) and 1349 mg/kg (0.14%), respectively. This method can be applied to the rapid manufacturing process of CCCA.

[PD2-20] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Cytotoxic constituents of the roots of Zingiber cassumunar Roxb.

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Two phenylbutenoids, 4-(3',4'-dimethoxyphenyl)buta-1,3-diene (1) and 4-(2',4',5'-