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We have reported cytotoxicities based on several types of sugar linkage in saponins in addition to antitumor and antiinflammatory effects. In order to find further structure-activity relationship on the cytotoxicity of saponins, we intended to isolate oleanane disaccharides from the saponin-containing extract of *Akebia quinata* (Lardizabalaceae). Repeated column chromatography yielded guaianin N (3, oleanolic acid 3-O-[β-D-glucopyranosyl-(1→3)-α-L-arabinopyranoside), collinsonidin (4, hederagenin 3-O-[β-D-glucopyranosyl-(1→3)-α-L-arabinopyranoside]), hederoside D_2 (5, hederagenin 3-O-[β-D-glucopyranosyl-(1→2)-α-L-arabinopyranoside]), kalopanaxsaponin A (6, hederagenin 3-O-[α-L-rhamnopyranosyl (1→2)-α-L-arabinopyranoside]), as oleanane disaccharides together with patrinia glycoside B-II (7, oleanolic acid 3-O-{α-L-rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1?3)]-α-L-arabinopyranoside}) as a trisaccharide. Complete hydrolysis on the saponin extract and further chromatographic separation afforded oleanolic acid (1) and hederagenin (2). Identification of the seven compounds was done by the measurement of mp, $[\alpha]_D$ and NMR spectra. On SRB assay, kalopanaxsaponin A with α-L-rha*p*-(1→2)-α-L-ara*p* moiety exhibited distinctly higher cytotoxicity (IC_{50} 1.8-2.7 μM) against all the tested cell lines (A549, SK-OV-3, SK-MEL-2, XF498 and HCT15) than other saponins (IC_{50}, 4-8 μM). The cytotoxicity of hederagenin (IC_{50} 20-40 μM) was more potent that oleanolic acid (IC_{50} 60-100 μM). These results suggested that α-L-rha*p*-(1→2)-α-L-ara*p* moiety in kalopanaxsaponin A occupies a very unique structural significance among sugar linkages of the oleanane glycosides on the aspects of cell biology. On the other hand, kalopanaxsaponin A exhibited the inhibitory effect on nitric oxide production by LPS-activated macrophage 264.7 whereas other saponins show very weak activities.

[PD2-17] [10/17/2002 (Thr) 09:30 - 12:30 / Hall C]

Anti-complement Activity of Flavonoids from *Litsea japonica*

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Afzelin (1) and quercitrin (2) isolated from the EtOAc-soluble fraction of the leaves of *Litsea japonica* Jussieu (Lauraceae) showed inhibitory activity against classical pathway complement system with 50% inhibitory concentration (IC_{50}) values of 112.2 and 198.2 μg/ml, respectively. For the structure-activity relationship of flavonoids on anti-complement system, myricitrin (3) from *Juglans mandshurica* Maximowicz (Juglandaceae) also tested anti-complement activity, while this was devoid of any significant activity. To obtain the aglycones of 1-3, these compounds were hydrolyzed with naingenase to give kaempferol (4), quercetin (5), and myricetin (6), which tested for their anti-complement activity. Of three aglycones, kaempferol (4) exhibited anti-complement activity with IC_{50} value of 208.2 μg/ml. These data demonstrated the role which the number of hydroxyl groups on B-ring and rhamnose of 5,7-dihydroxyflavone might play an important role in this assay system. The inhibitory potencies of 1 (4), 2 (5), and 3 (6) against anti-complement activity increased accompanies by a decrease in the number of free hydroxyls on the B-ring of 5,7-dihydroxyflavone.

[PD2-18] [10/17/2002 (Thr) 09:30 - 12:30 / Hall C]

A novel triterpene saponin from the roots of Platycodon grandoflorum

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A novel triterpene saponin (1), deapioplatycoside E [3-O-β-D-glucopyranosyl-(1→6)-β-D-gluco- pyranosyl-(1→6)-β-D-glucopyranosyl-2β,3β,16α,23,24-pentahydroxyolean-12-ene-28-oic acid 28-O-β-D-xylopyranosyl-(4→1)-α-L-rhamnopyranosyl-(1→2)-α-L-arabinopyranoside] including seven known saponins (2-7) was

isolated from the water extract of the roots of Platycodon grandoflorum (Campanulaceae). The chemical structure of 1 was determined based on the spectral and chemical evidence.

[PD2-19] [10/17/2002 (Thr) 09:30 - 12:30 / Hall C]

Terpenoids from *Artemisia rubripes* Nakai

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Twenty *Artemisia* species are distributed in South Korea and rich in terpenoids. *Artemisia* rubripes (Compositae) has been used as a Korean traditional medicine for stomachache, vomiting, diarrhea and hemostatic agent[1]. The antimutagenic effect[2] and essential oils[3] of *Artemisia rubripes* were reported, but phytochemical study has not been fully investigated. As part of our systematic study on the terpene constituents of *Artemisia* species, we have investigated A. rubripes (1㎏) collected at Dae-Kwan ryung, Gangwon Province on Aug. 1997. The aerial parts of this plant were extracted with methylene chloride at room temperature. The repeated column chromatographic separation of the extract (60g) resulted in the isolation of five terpenes and one coumarin. Their structures were determined on the basis of spectroscopic data. In this poster, we demonstrate the isolation and the structure determination of the isolated compounds from *Artemisia rubripes*.

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3)Khanina, M. A., Serykh, E. A., Berezovskaya, T. P., Khan, V. A., *Khim. Prir.Soedin.* 6, 859-860 (1991)

[PD2-20] [10/17/2002 (Thr) 09:30 - 12:30 / Hall C]

Cytotoxic Constituents from Amanita pantherina(DC. ex Fr.) Krombh

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In search for plant-derived cytotoxic compounds, it was found that the MeOH extracts obtained from Amanita pantherina(DC. ex Fr.) Krombh exhibited significant cytotoxic activity against human tumor cell line.
The classical fractionation on the basis of the inhibitory activity upon the growth human tumor cell line, in vitro, and repeated column chromatography afforded several cytotoxic compounds from Amanita pantherina (DC. ex Fr.) Krombh.The structures of these compounds were established on the basis of analysis of spectra data,element analysis and some chemical transformations as follows: 5,7-dihydroxy-8-methoxyflavone, acacetin-7-O-β-rutinoside, pectolinarigenin-7-O-β-rutinoside.bishydroxymethyl-carbamyl acetic acid dimer, bishydroxymethyl-carbamyl acetic acid dimer sodium), and all compounds were isolated for the first time in this mushroom. Cytotoxic activity of compounds obtained from Amanita pantherina on five tumor cells line was evaluated by procedure of SRB methods.

[PD2-21] [10/17/2002 (Thr) 09:30 - 12:30 / Hall C]

Prostane-type Triterpenes from Alismatis Rhizoma and Their Anti-complement Activity

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