

Isolation and Structure Determination of Cytotoxic Compounds with Topoisomerase I Inhibitory Activity from the Bark of *Machilus Thunbergii*

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The bark of *Machilus Thunbergii* is used for the treatment of leg edema, abdominal pain and abdominal distension in Korean traditional medicine. The MeOH extract of *Machilus Thunbergii* was partitioned to evaluate cytotoxic effect and topoisomerase I inhibitory activity. By activity-guided isolation, we isolated several compounds from methylene chloride fraction. Among these compounds, meso-dihydrogualaric acid showed the most cytotoxicity on HT-29, HP-G2 cell line and DNA topoisomerase I inhibitory activity.

[PD2-12] [10/19/2001 (Fri) 14:00 - 17:00 / Hall D]

Isolation of a New Cerebroside and a New Sterol from the *Astragali Radix*

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Astragali Radix, the dry roots of *Astragalus membranaceus* Bge. (Leguminosae), known as Huangqi in Korea, is very important tonic following Ginseng radix in Korean folk medicine to reinforce "qi" (vital energy), to strengthen the superficial resistance, and to promote the discharge of pus and the growth of new tissue. It is also an antiperspirant, a diuretic and is used for treatment of nephritis and diabetes.

The dried and pulverized roots of *Astragalus membranaceus* (5kg) was extracted with 80% EtOH four times at room temperature. The resultant EtOH extract (796.27g) was suspended in H₂O and then successively partitioned to give n-Hexane (42g), EtOAc (9.46g) and n-BuOH (16.4g) soluble fractions. From n-hexane (40g) extract, four compounds were isolated. By the NMR, FAB(+)-MS and collision-induced dissociation (CID) spectrum of FAB(+)-MS, the structures of compound 1, 2 were determined as (2S, 3S, 4R)-2-[(2'R)-2 β -hydroxy-8'E-tetracosenylamino]-1,3,4-trihydroxy-octadecane (compound 1) and 3 β -galactopyranosyl-5-ene-17- (2''-ethyl-1'', 1'', 24''-trimethyl-tetracosane)-androstane (compound 2) and they are first isolated from nature. The two known compounds, 7,2'-dihydroxy-3',4'-dimethoxyisoflavan (compound 3), (6aR, 11aR)-3-hydroxy-9,10-dimethoxypterocarpan (compound 4) were also identified on the basis of detailed spectra data.

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Cytotoxic Pyrrolo- and Furano-esterterpenes from the Sponge *Sarcotragus* species

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Ten new compounds, including seven pyrroloesterterpenes and three furanoesterterpenes, were isolated from the marine sponge *Sarcotragus* sp. by bioactivity-guided fractionation. The gross structures were established based on NMR and MS analyses. And the stereochemistry of the tetroneic