Kyonin (Armeniacae Semen) is the herb medicine that contains amygdalin as a major ingredient. Amygdalin in water is decomposed into benzaldehyde, HCN, and glucose by emulsin, a hydrolysis enzyme in kyonin. A useful and practical method for the optimum extraction condition of amygdalin without enzymatic hydrolysis is required. The extraction yield of amygdalin of natural formula kyonin was 0.5% from crude powders, 0.7% from small pieces, 1.2% from half pieces and 2.7% from whole pieces. The extraction yield of amygdalin of outer shell–eliminated kyonin was 1.9% from crude powders, 2.6% from small pieces, and 4.7% from half pieces and 4.9% from whole pieces respectively. The extraction yield of amygdalin was most high when using whole pieces.

Simultaneous Determination of Curcumin and Glycyrrhizin Contents by High–performance Liquid Chromatography in Two Different Oriental Herbal Preparations of Kamijadowhan

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A high–performance liquid chromatographic method was developed to determine the quantities of curcumin and glycyrrhizin in two different oriental herbal preparations of Kamijadowhan (KMD, NKMD). Two compounds were separated in less than 10 min with a Nova–Pak C18 column (3.9 x 150 mm, 5µm particle size) by linear gradient elution using 0.03% (v/v) phosphoric acid–acetonitrile (60:40, v/v% at 0 min; 40:60 v/v% at 6 min) as the mobile phase at a flow–rate of 0.8 ml min–1. A photodiode array detector was used and the wavelength was set at the range of 190–450 nm. The curcumin and glycyrrhizin were detected at 420 and 250 nm, respectively. When 0.03% (v/v) phosphoric acid in mobile phase was used, the peak area of two compounds was about 2.5–fold higher compared to 0.01% (v/v) phosphoric acid. Calibration curves showed a good linearity (r2 >0.9992). The accuracy and reproducibility (RSD) both in within–day and day–to–day of the method was 93.1–101.9% (RSD <0.9%) for curcumin, and 95.1–105.9% (RSD <3.8%) for glycyrrhizin. In KMD and NKMD preparations, curcumin was found at 4.15 ± 0.22 mg/g (0.04%) and 2.68 ±0.06 mg/g (2.7%), respectively. Glycyrrhizin contents in NKMD was 35.80 ±0.67 mg/g (3.6%). No glycyrrhizin was found in KMD. These results suggest that the method is appropriate to the simultaneous quantitation of curcumin and glycyrrhizin in the oriental herbal medicine.

Developement of Quantitative Extraction Method of Amygdalin without Enzymatic Hydrolysis from Tonin(Persicae Semen) by High Performance Liquid Chromatography

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Tonin (Persicae Semen) is the herb medicine that contains amygdalin as a major ingredient. Amygdalin in water is decomposed into benzaldehyde, HCN, and glucose by emulsin, a hydrolysis enzyme in tonin. A useful and practical method for the optimum extraction condition of amygdalin without enzymatic hydrolysis is required. The extraction yield of amygdalin of natural formula tonin was 0.1% from crude powders, 1.4% from small pieces, 3.5% from half pieces and 2.4% from whole pieces. The extraction yield of amygdalin of outer shell–eliminated tonin was 0.3% from crude powders, 1.4% from small pieces, and 3.5% from half pieces and whole pieces respectively. The extraction yield of amygdalin was most high when using the size larger than half.
Studies on the constituents of the aerial part of Gastrodia elata Blume

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Gastrodia elata Blume belongs to Orchidaceae, its steamed and dried rhizomes are very important herbal medicines used for the medical treatment of headaches, migraine, dizziness, epilepsy, rheumatism, neuralgia, paralysis and other neuralgic and nervous disorders. Although phytochemical studies of the rhizome have revealed the presence of several phenolic compounds, in which a phenolic glycoside, gastrodi (C13H16O7), is a major constituent, so far, there is no report on the studies of its aerial part. We isolated and obtained eight compounds from its methanol extracts for the first time, and determined their structures by their spectrum evidences, including NMR and Mass, in which gastrodi is also a major constituent, together with other phenolic compound, steroid and fatty acids.

[PD3-5] [ 10/18/2002 (Fri) 13:30 – 16:30 / Hall C ]

New tsaokoin isomer with antifungal activity from the plant Amomum tsao-ko

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The fruits of cardamon (family Zingiberaceae) are used in traditional medicine for the treatment of several ailments, such as stomach disorders, liver abscess, and infection of the throat, and as a common spice as well. Amomum tsao-ko Crevost et Lemarie, a Zingiberaceous plant called “초고” in Korea, is an oriental folk medicinal herb for the treatment of stomach illness. The present paper reports the isolation of the constituents of the fruits of this plant and their antifungal activity.

We examined the antifungal activity of methanol extracts of A. tsao-ko, against Trichophyton mentagrophytes, Candida albicans, Pityrosporum ovale. An ethyl acetate layer showed extremely high activity and was fractionated in detail employing the paper-disk antifungal assay method to guide the isolation and purification. The active fraction was subjected to repeated column chromatography using silica gel, Si MPLC, and C-18 HPLC to afford two compounds, D1 and D3. Characterization of the isolated compounds was based on Mass and various NMR (1H-NMR and 13C-NMR, 1D-NOESY, gCOSY, TOCSY, gHSQC, and gHMQC) spectroscopic techniques. D1 was obtained as a pale brown oil with yield of 0.01054%. Thus, the molecular formula of D1 was determined to be C10H14O2 by HRFABMS ([M+H]+ z/e 167.1072; calc. 167.0994). Based on extensive NMR experiments the compound D1 was found to be identical to tsaokoin. D3 was obtained as an oil (yield: 0.00037%). D3 was determined to be an isomer of D1, which was not reported yet.

[PD3-6] [ 10/18/2002 (Fri) 13:30 – 16:30 / Hall C ]

Isolation of inhibitors of NF-κB activation by UV stimuli in transfectant HaCaT cells from Acanthopanaxis sessiliflorum

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Nuclear-kappa B(NF-κB) plays a role in the regulation of genes responsible for inflammatory and immune responses as well as growth control of cells. A cell-based assay system for guiding NF-κB activity was developed to determine the influence of activated NF-κB in human keratinocytes. It suggested that this system could be used to determine the quantitative measurement of NF-κB activity in the human skin and allow the monitoring of anti-inflammatory agent for dermatological means from various environmental stimuli. In our study on the search for inhibitors of NF-κB activation induced by ultraviolet radiation in human skin from natural sources, methanol extract of Acanthopanaxis sessiliflorum (Araliaceae) showed potent NF-κB activity. An active compounds was isolated from the extract by repeated column chromatography. AS-1, among