

Kyonin(Armeniaca 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 powers, 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.

[PD3-2] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

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

Kim EunYoung⁰, Choi SeungHun¹, Kwon OhSeung

Toxicology Lab., Korea Institute of Science and Technology, Seoul 136, ¹Department of Pathology, College of Oriental Medicine, Kyung Hee University, Seoul 130-701

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, 5 μ m 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 ($r^2 > 0.9992$). 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 \pm 0.22 mg/g (0.04%) and 2.68 \pm 0.06 mg/g (2.7%), respectively. Glycyrrhizin contents in NKMD was 35.80 \pm 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.

[PD3-3] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

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

Lee Sang So⁰¹, Hwang Eun Young¹, Koh Jung A¹, Kim Dong Min¹, Lee Je Hyun¹, Lee Yong Moon², Hong Seon Pyo¹

¹Department of Oriental Pharmaceutical Sciences, Kyung Hee University; ²College of Pharmacy, Chungbuk National University

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 powers, 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.

[PD3-4] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]