[PD4-16] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

HPLC/ELSD Analysis of ginseng saponins with PGC column

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Saponins are known to be the major constituent of Panax ginseng. More than 30 kinds of ginseng saponins are reported so far. The major saponins in white ginseng (WG) or red ginseng (RG) are ginsenosides Rb1, Rb2, Rc, Rd, Rg1, and Re. HPLC method with ELSD or UV detection was used to analyze ginsenosides. Recently, a new processed ginseng with fortified activity, named as Sun Ginseng□ (SG), was reported. The major ginsenosides of SG are totally different from that of WG or RG, i.e., ginsenoside Rg3, Rk1, and Rg5 are the major constituents of SG. Consequently analytical condition for the WG or RG is not adequate for the SG. We developed HPLC/ELSD method using PGC (porous graphitic carbon) column for the analysis of ginsenosides in SG. The gradient elution of H_2O. CH_3CN, and THF made the best separation for major ginsenosides of SG. 20-(S) and 20-(R) epimers and geometric isomers at the C-20 position of ginsenosides, which are not generally separated by amino columns, were clearly separated in PGC column. Detection limits of major ginsenosides in SG were in the range of 19~42 ng.

[PD4-17] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Chiral separation of amino acids in urine specimens from patients with inherited metabolic disorders by achiral gas chromatography

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An efficient method is described for the enantioseparation of urinary amino acids to determine their absolute configurations. It involves two-phase extractive ethoxycarbonylation in alkaline aqueous solution with subsequent extraction after acidification. The resulting derivatives of amino acids are converted to volatile diastereomeric esters or amides for the direct analysis by gas chromatography (GC) on achiral dual-columns with different polarities. The present method was applied to urine specimens from patients with inherited metabolic disorders. In this study, the usefulness for the chiral separation of diagnostic amino acids will be discussed.

[PD4-18] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]

Measurement of skin moisture using a FT-NIR spectrometer

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In this study, a FT-NIR spectroscopy was used to determine skin moisture. NIR diffuse reflectance spectra were collected from separated dorsal and abdominal hairless mouse skin. Partial least squares regression (PLSR) was applied to develop calibration models that determine the water content. The seven spectra regions, such as 833-2500, 1100-2250, 1100-1750, 1750-2250, 1200-1600, 1800-2200, and 1200-2200 except 1600-1800 nm, were investigated for the best model by PLSR. The developed model predicted skin moisture for validation set with a standard errors of prediction (SEP) of 4.43%, when used 833-2500 nm. The result indicated good correlation between absolute water content of separated hairless mouse skin and near infrared predicted values. This study showed the possibility of skin moisture measurement using a FT-NIR spectrometer.

[PD4-19] [2003-10-10 14:00 - 17:30 / Grand Ballroom Pre-function]