rapid liquid chromatography/ electrospray ion trap tandem mass spectrometry (LC/MS/MS) method combined with high-throughput solid phase extraction (SPE) has been developed and validated for the simultaneous quantitative determination of ENP and ENPT in human plasma. After addition of internal standard, samples were simultaneously extracted by 96-well C18-SPE cartridge. The organic extract was evaporated to dryness, with subsequent analyzed by LC/MS/MS using the selective reaction monitoring (SRM) mode and time segment. The product ions of ENP and ENPT were characterized by m/z 234, m/z 303 and m/z 206, m/z 303, respectively. These product ions were monitored for the quantitation of ENP and ENPT. As a results, the present method for the simultaneous determination of ENP and ENPT was accurate and reproducible.

[PD4-23] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Simultaneous determination of sildenafil and its active metabolite in human plasma using LC/MS/MS

Ji HyeYoung[O], Kim SookJin, Lee HongIl, Lee SeungSeok, Lee Hye Sook

Drug Metabolism & Bioanalysis Lab, College of Pharmacy, Wonkwang University

The LC/MS/MS method for the simultaneous determination of sildenafil and its active metabolite N-demethylsildenafil in human plasma was developed. Sildenafil, its active metabolite and the internal standard, DA-8159 were extracted from human plasma by liquid-liquid partitioning. A reverse-phase HPLC separation was performed on Luna phenylhexyl column with the mixture of acetonitrile-5 mM ammonium formate (55:45, v/v) as mobile phase. The detection was conducted by electrospray ionization tandem mass spectrometry in the multiple reaction monitoring mode. The lower limits of quantification for sildenafil and N-demethylsildenafil were 2.0 ng/ml. The method showed a satisfactory sensitivity, precision, accuracy, recovery and selectivity.

[PD4-24] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Algorithm for finding the best regression models using NIR spectra

Cho JungHwan[O], Huh YunJung, Park YoungJoo

College of Pharmacy, Sookmyung Women's University

An algorithm for finding the best regression models has been developed using NIR spectral data. In cases of regression analysis for quantitation with NIR spectral data, it is very critical to find essential features from the spectral data. This task was accessed in two ways. The first one was to use all-possible combinations of varibles (wavelengths). Correlation coeficients at each spectral points were calculated to get initial set of variables and all of the possible combinations of variable sets were tested with SEC, SEP and/or R^2. The second one was to use pricipal component(PC) analysis with PC selection by all-possible combinations. The initial set of PCs was obtained using Malinowski's IND function or PRESS and all-possible combinations of the PCs were evaluated in terms of SEC and/or SEP. These algorithms were tested with NIR spectral data of synthetic biological fluid to find concentraions of minor component.

[PD4-25] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Chromatographic Analysis of Cilostazol in Human Plasma

Park Young-Joon, Park Kyung-Mi, Ban Eunmi[O], Chun Soo-Kyung, Kim Yang-Bae, Kim Chong-Kook

College of Pharmacy, Seoul National University, Seoul, Korea

Cilostazol, a quinolinone derivative that inhibits phosphodiesterase, is used for the treatment of intermittent claudication resulting from peripheral arterial disease. In order to perform pharmacological and pharmacokinetic studies of cilostazol, specific, sensitive and reproducible analysis methods are demanded. Therefore, in the present study, an analytical method of cilostazol in human plasma was developed using semi-microbore HPLC equipped with automated column switching system. After direct injection of human plasma, deproteinization and fraction of analyte occurred on a Capcell Pak MF Ph-1 column (20 x 4 mm I.D.). The cilostazol fraction was transferred from the MF Ph-1 column to an intermediate C18 column (35 x 2 mm I.D.) using 10% acetonitrile in

water. The main separation was performed on a semi-microbore C18 column (250 x 1.5 mm I.D.) using 40% acetonitrile in water. The limit of quantification was 25 ng/ ml. The accuracy of the assay was from 96.04% to 115.54% while the intra- and inter-day coefficient of variation of the same concentration range was less than 15%. In the concentration range of 25-2000 ng/ml, and linear regression analysis revealed correlation coefficients > 0.999. Also, we applied the developed method to analyze cilostazol in human plasma.

[PD4-26] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Simultaneous determination of thirteen cosmetic preservatives in skin creams by HPLC-PDA method

Chae KabRyong, Lee SeungKyung, Lee HwaJung, Choi JungHee, Sung JunHyun, Choi YongHoon, Choi JangDuck, Kim KwangSoo, Kim II, Sho YooSub, Moon ByungWoo

Kyungin Regional Korea Food and Drug Administration

Combination of two or more preservatives are commonly used in cosmetic creams to prevent alteration and degradation of the product formulation, but preservatives are one of the main causes of allergic contact dermatitis from the use of cosmetics.
In this study, HPLC-PDA method for simultaneous determination of the most widely used 13 preservatives in cosmetic cream - benzyl alcohol, phenoxyethanol, sorbic acid, benzoic acid, salicylic acid, chlorphenesin, dehydroacetic acid and methyl-, ethyl-, propyl-, isopropyl-, butyl-, isobutyl paraben - was developed for application to cosmetic skin creams. Chromatography was performed under gradient condition using mixture of water, acetonitrile and phosphoric acid as mobile phase at a flow-rate of 1.0 ml/min and monitored at 220nm. Capcellpak C_{18}(5μm, 250*4.6mm I.D.) was used for the column. An extraction method using 50% acetonitrile with 1% H_3PO_4 was developed and validated in order to apply this chromatographic method to a commercial cosmetic creams.

[PD4-27] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Analysis of DA-6034, a New Flavonoid Derivative in Biological Fluids by Fluorescence Detector

Jang JiMyun[O], Park KyungJin, Lee JongJin, Kim DongGoo, Shim HyunJoo, Son MiWon, Kim DongSung, Kim SoonHoe, Yoo MooHi, Kim WonBae

Research Laboratories, Dong-A Pharmaceutical Co.,Ltd.

A high performance liquid chromatographic method was developed for the determination of DA-6034 in biological fluids using fluorescence detector. The method involved deproteinization of biological sample with the same volume of acetonitrile, 0.2M zinc sulphate, and 0.15M barium hydroxide. The aliquot of supernatant was injected onto Nova-pak C18 column and detected by fluorescence detector. Emission and excitation wavelength of detector were 336nm and 440nm. The detection limit of DA-6034 in plasma was 0.5 ng/ml. The method is precise, specific, accurate and reproducible. Recoveries were higher than 90% and there were no interference from endogenous substances. This method seemed suitable for the pharmacokinetic studies of DA-6034 in plasma.

[PD4-28] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Risk assessment of endocrine disruptors in cosmetics

Lee JeongPyo[O], Choi SangSook, Son KyungHun, Yang SeongJun, Kim ShinOk, Paek OckJin, Cho HyeonSeo, Kim YoungOk

Korea Food and Drug Administration, Department of Drug Evaluation

Dimethyl phthalate(DMP), diethyl phthalate(DEP), di-n-butyl phthalate (DBP), butyl benzyl phthalate(BBP), bis(2-ethylhexyl)phthalate(DEHP) and di-n-octyl phthalate(DOP) in lotions was determined by gas chromatography.