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A high-performance liquid chromatographic method for the simultaneous quantitative analysis of DMDM hydantoin, sorbic acid, phenoxy ethanol in cosmetics was studied by using a X-terra C18 column and 0.75mM KH2PO4 in 0.85% sulfuric acid and methanol mixture(7:3) at 214nm. Calibration curves were found to be linear in the 20-100㎍/mL range (DMDM hydantoin), 50-250 ㎍/mL range (sorbic acid) and 10-50㎍/mL range (phenoxy ethanol). The result of recovery test were 96.6% ~ 104.2%. This HPLC method can be applied quality control of cosmetics.

[PD4-16] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

DETERMINATION OF SIMVASTATIN IN HUMAN PLASMA BY COLUMN SWITCHING HPLC WITH UV DETECTION

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Purpose. The purpose of this study was to develop and validate sensitive and specific analytical method for determinination of simvastatin in human plasma by the column-switching high-performance liquid chromatography (HPLC) system with UV detection.
Methods. Simvastatin and internal standard were extracted into diethyl ether from plasma. The organic phase containing simvastatin and IS was evaporated to dryness and the residue dissolved in mobile phase of 20 mM phosphate buffer (pH 5.6): acetonitrile (55:45) and injected into the pre-column. The analytes fractionated from pre-column by valve switching step were focused in the top of intermediated column and then separated to the analytical column with a mobile phase of 20 mM phosphate buffer (pH 5.6): acetonitrile (35:65) using the UV detection wavelength of 238nm.
Results. Simvastatin and IS are baseline separated with retention times of 25.5 and 28.3 minutes without disturbance of endogeneous material in plasma. The limit of quantification is 0.5 ng/ml. The method has been validated for a linear range of 0.5-20 ng/ml (R2 = 0.999). Also, inter-and intra-day precisions of this method were less than 15%. The averaged extraction recovery was 81.9 % over the concentration. The assay has been successful in measuring plasma concentrations of simvastatin in volunteers receiving dose of simvastatin (800mg).
Conclusions. The results showed that column switching HPLC method with UV detector could be used for the quantitation of simvastatin in plasma. And this method appears suitable for the pharmacokinetic and pharmacodynamic investigation study of simvastatin.

[PD4-17] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Analysis of opiate alkaloids in seized chinese analgesics, 'bokbanggamchopyeon'

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Recently, 'bokbanggamchopyeon', chinese analgesic which is carried in korea by travelers becomes a problem when they pass customs because it contains opiate alkaloids morphine and

codeine.
At this time, opium is assigned as narcotics in korea according to the rule concerning narcotics control, and its major component morphine and codeine too.
The concentration of opiate alkaloids, morphine and codeine was measured to classify it from extra-narcotics used in medical treatment.
In this research, we confirmed and measured the content of morphine and codeine in 'bokbanggamchopyeon'
30 species of seized 'bokbanggamchopyeon' tablets were used for test and qualitative and quantitative analysis of morphine and codeine were performed by GC/MS.
As a result, all of 30 samples showed about 10 times higher concentration of morphine and codeine than extra-narcotics according to the rule concerning narcotics control.

[PD4-18] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Determination of Glimepiride in Human Plasma by LC-MS/MS

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This study established a sensitive novel quantification method for detecting glimepiride in human plasma using LC-MS/MS for pharmacokinetic studies. The mobile phase used after degassing was composed of 10 mM ammonium acetate and acetonitrile (20:80, pH 3.0), with flow rate of 200uL/min. One mL plasma were pipetted into glass tubes and spiked with 0.1mL of internal standard solution. After adding 6 mL of diethyl ether - ethyl acetate (1:1, v/v), the plasma sample was then shacked for 15 min. A centrifuged upper layer was then evaporated and reconstituted with 120 uL mobile phase and 20 uL of sample were injected into LC-MS/MS. Glimepiride produced a protonated precursor ion ([M+H]+) at m/z 491 with a major product ion at m/z 352. On the other hand, internal standard produced a protonated precursor ion ([M+H]+) at m/z 446 with a major product ion at 321. Based on a signal-to-noise level (S/N) of 9-11, the limit of quantification for glimepiride was found to be 0.1ng/mL. Validation experiments have shown that the assay has good precision and accuracy over a wide concentration range. This simple, rapid and robust assay will enable the complete processing of large sample for pharmacokinetic studies of glimepiride in human plasma.

[PD4-19] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Chiral Separation of Non-Steroidal Inflammatory Drugs as Dual Diastereomeric Derivatives with (R)-and (S)-Phenylethylamines

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The carboxylated acidic non-steroidal antiinflammatory drugs (NSAIDs) constitute the principal class of agents for controlling the pain and inflammation of the rheumatic diseases. It is mostly administered as a racemic mixture like most other drugs with asymmetric carbon atoms. However enantiomers of many racemic drug substances have been shown to posses different pharmacological toxicological properties. Therefore, production of active NSAIDs in enantiomerically pure forms and their optical purity control have become important tasks. In this study, each enantiomer of nine NSAIDs (ibuprofen, suprofen, flurbiprofen, fenoprofen, pirprofen, indoprofen, carprofen, ketoprofen and naproxen) was activated with ethyl chloroformate, followed by conversion into diastereomeric amide either with (R)-(+)-phenylethylamine or (S)-(-)-phenylethylamine. The resulting derivative extracted with ethyl acetate in acidic condition was