and benzyl benzoate was used as the intermal standard. The separation of the six phthalates and internal standard was optimized, and the optimal analytical conditions were as follows : column, DB-1701 (I.D. 0.25mm); mobile phase, helium; oven temperature 200℃(10 min) → 10℃/min → 260℃(30min), injector temperature 230℃, detector temperature 280℃. The linearity of the method was investigated for the range 10-100㎍/mL for the six phthalates and correlation coefficients were between 0.9950 and 0.9992. The limit of detection (LODs) of the six phthalates were between 0.27 and 0.95 ㎍/mL. Methanol, acetonitrile and hexane was used as extraction solvents. The recoveries of DEP and DEHP were about 96.5-105.7% when analyzed DEP and DEHP in cosmetics using hexane as a solvent. Hexane was proved to be the best solvent to extract phthalates in the lotions. Commercial lotions were analyzed by the above analytical method, and no phthalates was detected in them.

[PD4-29] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Simultaneous determination of seven major human cytochrome P450 activities using LC/MS/MS

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A LC/MS/MS method for the simultaneous determination of the activities of seven major human drug-metabolizing cytochrome P450s (CYP3A4, CYP2D6, CYP2C9, CYP1A2, CYP2C19, CYP2A6, and CYP2C8) was developed. This method used an in vitro cocktail of specific substrates (midazolam, bufuralol, diclofenac, ethoxyresorufin, S-mephenytoin, coumarin, and paclitaxel) and LC/MS/MS. The assay incubation time is 20 min and the analysis time is 8 min/sample. The seven metabolites were quantified by multiple reaction monitoring (MRM) method. Potent specific inhibitors of the seven enzymes (ketoconazole, quinidine, sulfaphenazole, tranylcypromine, quercetin, furafylline, and 8-methoxypsoralen) were evaluated in cocktail and individual substrate incubations. This cocktail method offers an efficient, robust way to determine the cytochrome P450 inhibition profile of large numbers of compounds. The enhanced throughput of this method greatly facilitates its use to assess CYP inhibition as a drug candidate selection criteria. This method was successfully applied to the screening of new drug screening.

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

Studies on the evaluation of efficacy of functional cosmetics(I) -Studies on the in vitro SPF test method of sunscreen products

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The present study was undertaken to develop the in vitro sun protection factor(SPF) test method having good correlation with in vivo method using human. 8% homomentyl salicylate, P3 reference standard and commercially available sunscreen products were measured by the in vitro method using SPF 290S analyzer, and the SPFs were compared with the SPFs measured by in vivo test method. In vitro SPFs of 8% HMS and P3 reference standard were 4.59 ±0.12 and 14.94 ±0.83. There are good correspondence, correlation coefficients were 0.9506 and 0.9769 respectively, between the in vitro and in vivo SPFs for the sunscreen creams and lotions. Correlation coefficients of makeup base/liquid foundation, lotion labled with "shake before use" and compact powder were 0.8812, 0.8632 and 0.5984 respectively. The optimum mixture ratio of compact powder and cream base represents 1:0.8. These results suggest that the in vitro SPF test method will be able to be used as an alternative method for in vivo SPF in case of lotion and cream.

[PD4-31] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Comparison of CE and HPLC as analytical methods of (-)-yatein enantiomer from Cupressaceae plants

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