Determination of nucleosides in human urine by high-performance liquid chromatography with electrospray ionization mass spectrometry(LC/ESI-MS)

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Oxidative DNA damage has been associated with many disease. Quantation of DNA adducts is considered to be a useful biomarker of oxidative DNA damage because its formation can also be induced by oxidative stress. Extensive efforts have been taken to identify the analytical methods for minimizing the artifactual formation of oxidative DNA damage. We have done direct analysis of DNA adducts using LC/ESI-MS without urine sample extraction. The method is simple and selective at urinary nucleosides. Fifteen nucleosides were evaluated on the concentration range from 1 nmol/ml to 300 nmol/ml and their coefficients variation(%) were from 1.05% to 16.38%. The mean value level of urinary pseudouridine in osteoporosis patients was 3.352 nmol/μmol creatinine and that benign prostatic hyperplasia patients was 2.463 nmol/μmol creatinine, respectively. The levels were significantly lower than those of controls. The mean value level of N^2,N^2-Dimethylguanosine in urine of Alzheimer patients was 0.857 nmol/μmol creatinine. It were significantly higher than those of controls. The mean level of other nucleosides was not significantly different between the patients and controls. Those results indicate that the developed method was reliable and reproducible for the detection of nucleosides and those nucleosides could be the biomarkers of osteoporosis, benign prostatic hyperplasia, Alzheimer diseases.

Measurement of human skin moisture in the near infrared region from 1100 nm to 2200 nm by using a portable system

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Skin Moisture is an important factor in skin health. Measurement of moisture content can provide diagnostic information on the condition of skin. In this study, a photo diode array type near infrared spectroscopy was used to determine skin moisture. Diffuse reflectance spectra were collected and transformed to absorbance using 1-nm stepsize over the wavelength range of 1100 nm to 2200 nm. Partial least squares regression (PLSR) was applied to develop a calibration model. The developed model predicted skin moisture for validation set with a standard errors of prediction (SEP) of 3.54. The result indicated good correlation between electrical and near infrared spectroscopic methods. This study showed the possibility of skin moisture measurement using near infrared spectroscopy.

An effective immunoaffinity clean-up method for multi-DDT residue analysis

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To increase detection sensitivity for multi-DDT residues (o,p-/p,p-DDT, o,p-/p,p-DDE, o,o-/o,p-DDD) analysis, a highly selective sample clean-up method was introduced prior to GC/MS analysis using immunoaffinity column. The immunoaffinity matrix was prepared by coupling IgG fraction of DDT antiserum to cyanogens bromide activated Sepharose 4B. Three DDT antisera (DDA-1, DDHP-2, DDCP-3) were test for affinity column ligand that obtained by immunizing respective DDT immunogen to rabbits, and IgG was purified using protein A affinity purification. A suitable eluent (30% methanol, 15% DMSO, 15% acetone in PBS) and DDCP-3 antibody were selected to elute multi-DDT residues from immunoaffinity column. When a sample that contained ten organic pesticides and multi-DDT residues was applied for the immunoaffity clean-up step, 95% multi-DDT residues and two pesticides (a-BHC, cis-chlordane) were recovered in eluent leaving off most of pesticides in washing step (20% methanol in PBS). Therefore, the immunoaffinity method as a sample clean-up step using DDCP-3 antibody is highly efficient for selective analysis of multi-DDT residues by GC/MS.

[PD4-39] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Guidance for the Evaluation Method of Drugs of Abused *in vitro* Diagnostic Devices

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The purpose of this study is to provide KFDA's guidance for premarket notification submission and labeling for prescription use drugs of abuse in vitro diagnostic devices. To evaluate in vitro diagnostic devices the following performance characteristics should be described in detail within the submission; analytical sensitivity or minimum detection limit, cutoff concentration, specificity and cross reactivity, interference, precision, method comparison and stability. In this study, each of the evaluation settings for the device's characteristic performances is described in terms of its definition, content, study design and the experiments data are included for the sake of the manufacturers' guideline.

Poster Presentations - Field E1. Pharmaceutics

[PE1-1] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Transport of anti-allergic drugs across the passage cultured human nasal epithelial cell monolayer

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The purpose of this study was to investigate the transport characteristics of passage cultured human nasal epithelial cell monolayers grown on Transwell® inserts using liquid-covered culture