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Measurement of plasma and urine concentrations of corticosteroids is clinically significant in adrenal and pituitary dysfunctions. Apparent mineralcorticoid excess and Cushing's syndromes can be diagnosed by measuring cortisol (F), cortisone (E), tetrahydrocortisol (THF), allo-THF, and tetrahydrocortisone (THE) excretions in pathological concentration. The present study describes the accurate and reproducible GC-MS method to measure E, F, THE, THF, and allo-THF in serum and urine. After extraction by a solid-phase cartridge using Oasis HLB copolymer, the residues were derivatized with a mixture of *N*-methyl-*N*-trimethylsilyl-trifluoroacetamide, ammonium iodide, and dithioerytrithol (1000:4:5; v/w/w), and analyzed by GC-MS. The method was linear over the range of 1-1000 ng/mL and 2-1000 ng/mL for serum and urine, respectively. Analytical recoveries were 82.4-93.7% and precision (%CV) was 2.8-10.3%. The limit of detection was 1 ng/mL and 3 ng/mL for serum and urine, respectively, and limit of quantification was 2.5 ng/mL and 5.5 ng/mL for serum and urine, respectively. The GC-MS method described is sensitive, specific, and suitable for the determination of E, F, THE, THF, and allo-THF in serum and urine by bench-top GC-MS.

[PD4-18] [04/19/2001 (Thr) 13:30 - 14:40 / Hall 4]

Simultaneous determination of benzophenone and 4-nitrotoluene in ground water and soil by a gas chromatography-mass spectroscopy

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4-Nitrotoluene is used primarily as an intermediate in the production of various dyes, explosives, pharmaceuticals, and in the production of rubber and agricultural chemicals. Benzophenone derivatives are used as UV-absorbing agents which are contained in a large number of products such as hair sprays, shampoo, lipsticks, hair dyes and sunscreen lotions, photoaffinity labeling for various biological materials. Benzophenone and 4-nitrotoluene are listed in World Wildlife Fund. and are suspected to be contaminated in ground water sites and soil. However no literatures of analytical method for determining the benzophenone and 4-nitrotoluene in soil and ground water are found. Benzophenone and 4-nitrotoluene were determined by selected ion monitoring mode of GC/MSD in water, sedimint and soil samples. These two chemicals were extracted with n-hexane for water samples, and with methanol and n-hexane for sediment and soil samples. Benzophenone-d_5 and Nitrobenzene-d_5 were used as internal standards for benzophenone and 4-nitrotoluene, respectively. Recovery in water samples was 72-114% with less than 13% of RSD. Recovery in sediment and soil samples was ranged from 51 to 89%. The detection limit of benzophenone and 4-nitrotoluene in water was 10 ng/L. The mothod detection limit of benzophenone and 4-nitrotoluene was 0.1 and 0.5㎍/kg in sediment and soil , respectively. This method is suitable for the trace analysis of benzophenone and 4-nitrotoluene in environmental samples.

[PD4-19] [04/19/2001 (Thr) 13:30 - 14:40 / Hall 4]

Characterization of DDT Antibodies for Immunoassay Application

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