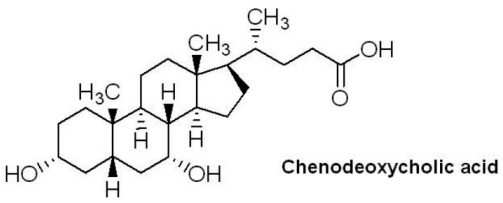
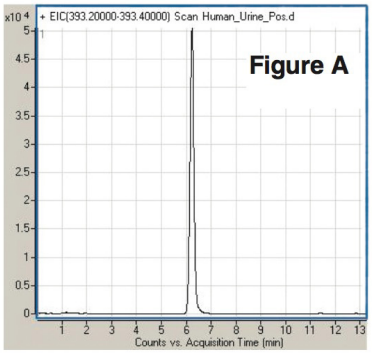
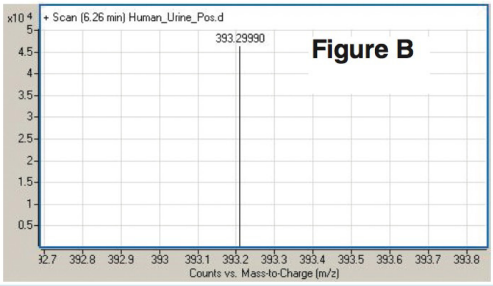
Bile Acids from Urine

Determination of Chenodeoxycholic acid (CDCA) (bile acid) in human urine using ANP (inverse gradient)



Chenodeoxycholic acid





Notes: Urinary levels of bile acids are expected to be a useful index of liver function. Also bile acid concentrations in urine obtained from patients with cerebrotendinous xanthomatosis are different from those of normal subjects and should be useful for diagnosis and may be used for routine assays of biological fluids. In addition unique biological activities have been identified for bile acids, especially chenodeoxycholic acid has an effect on human ovarian cancer cell lines A2780 and A2780-CP, the last one being cisplatin resistant. CDCA may be used in treatment of ovarian cancer especially in cisplatin resistant disease. Synthetic bile acid derivatives are lead compounds in creation of new drugs useful for prostate cancer therapy.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150 mm

Solvents: A: DI H_2O/ 0.1% formic acid
B: Acetonitrile/ 0.1% formic acid

Gradient:

time (min.)	%B
0	95
0.2	95
7	85
8	85
10	50
11	50
11.1	95
14	95

Flow rate: 0.4 mL/min

Detection: ESI - pos - Agilent 6210 MSD TOF mass spectrometer

Sample: Human urine – after simple extraction

Peak: 1. Chenodeoxycholic acid 393.29994 m/z $(M+H)^+$, RT = 6.26 min

t_0: 1.44 min

Discussion

The presence of an important bile acid (chenodeoxycholic acid-CDCA) in human urine was detected using a simple mobile phase, a Cogent Diamond Hydride HPLC column and an Agilent TOF MS instrument. The column is an excellent choice for LC-MS analysis. In addition, the special surface of the column helps to provide a fast equilibration while using a gradient.

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