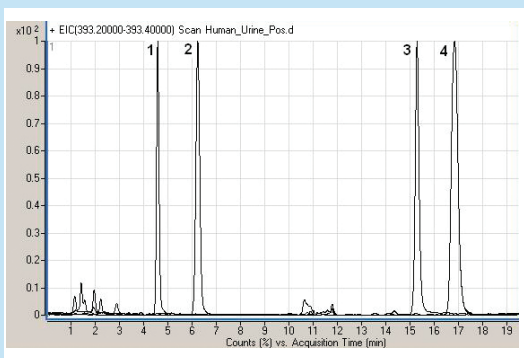
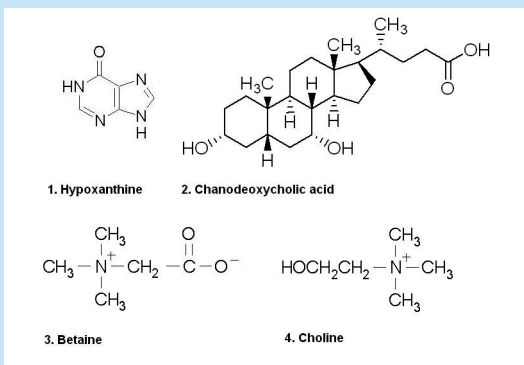


Metabolites in Human Urine

Simple LCMS friendly method that is reproducible using (ANP) Aqueous Normal Phase LCMS.



Notes:

For the screening of “enzyme defects” in humans, measuring the excretion of purines in urine is considered a good diagnostic tool. High or low excretion levels of hypoxanthine was seen in cases of different types of leukemia. Betaine is an important nutrient and due to its many metabolic roles there is an increasing demand for its measurement. Choline appears to be a good tracer for the detection of a prostate lesion, however, further well-organized studies are needed before it can be used clinically.

The use of Cogent Diamond Hydride™ columns in ANP combined with the powerful MS Agilent system prove useful for carrying out these studies as well as for the routine screening and monitoring of metabolites in patients.

Method Conditions

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

Catalog No.: 70000-15P-2

Dimensions: 2.1 x150 mm

Solvents: A: DI water + 0.1% formic acid
B: Acetonitrile + 0.1% formic acid

Mobile phase: Gradient

Time	%B	Time	%B
0.0	95	35.0	50
0.2	95	35.1	95
30.0	50	40.0	95

Flow rate: 0.4 mL/min.

- Peaks:**
- Hypoxanthine; 137.04580 m/z (M+H)⁺, RT = 4.98 min
 - Chenodeoxycholic acid; 393.29990 m/z (M+H)⁺, RT = 6.23 min
 - Betaine; 118.08680 m/z (M+H)⁺, RT = 15.27 min
 - Choline; 104.10754 m/z (M+H)⁺, RT = 16.82 min

Figure: EIC – extracted ion chromatogram of selected compounds (1,2,3,4)

Sample: Human Urine – after simple extraction
Detection: ESI – pos - Agilent 6210 MSD TOF mass spectrometer.

Discussion

This method can be used for routine assays of urinary purines (hypoxanthine), bile acids (chenodeoxycholic acid) and nutrients (betaine, choline) in biological fluids. The method is very sensitive (due to the high content of organic component (acetonitrile) in the MP and the use of “MS friendly” (formic acid), reproducible (% RSD for gradient analysis is below 0.5%) and accurate (MW to 3-4 decimal points).

For more information visit www.MTC-USA.com

Cat. No.	Description
70000-15P-2	Cogent Diamond Hydride™ HPLC Column, 100Å, 4µm, 2.1 x 150 mm