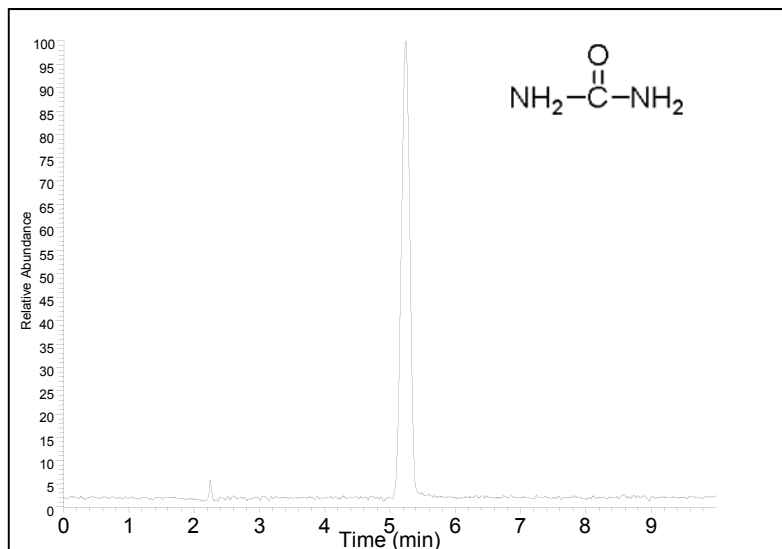




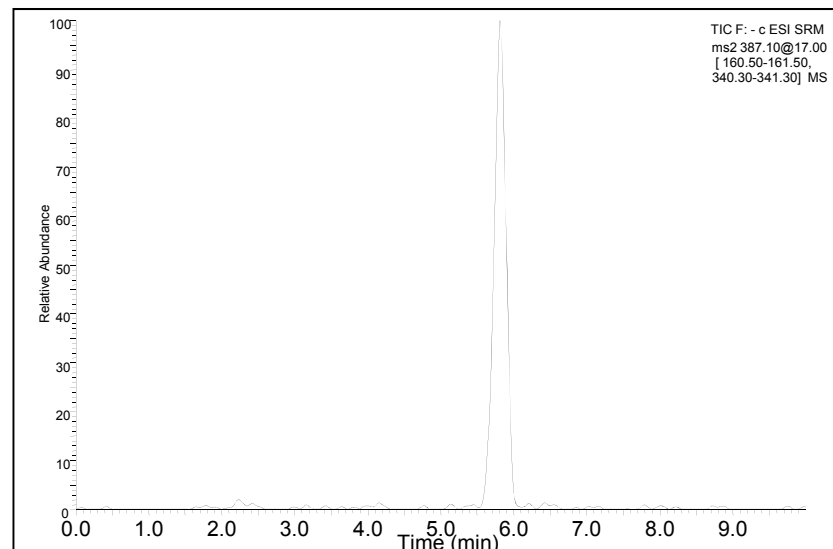
The right tools, separation after separation

# Retention of very polar compounds

## Urea



## Lactulose

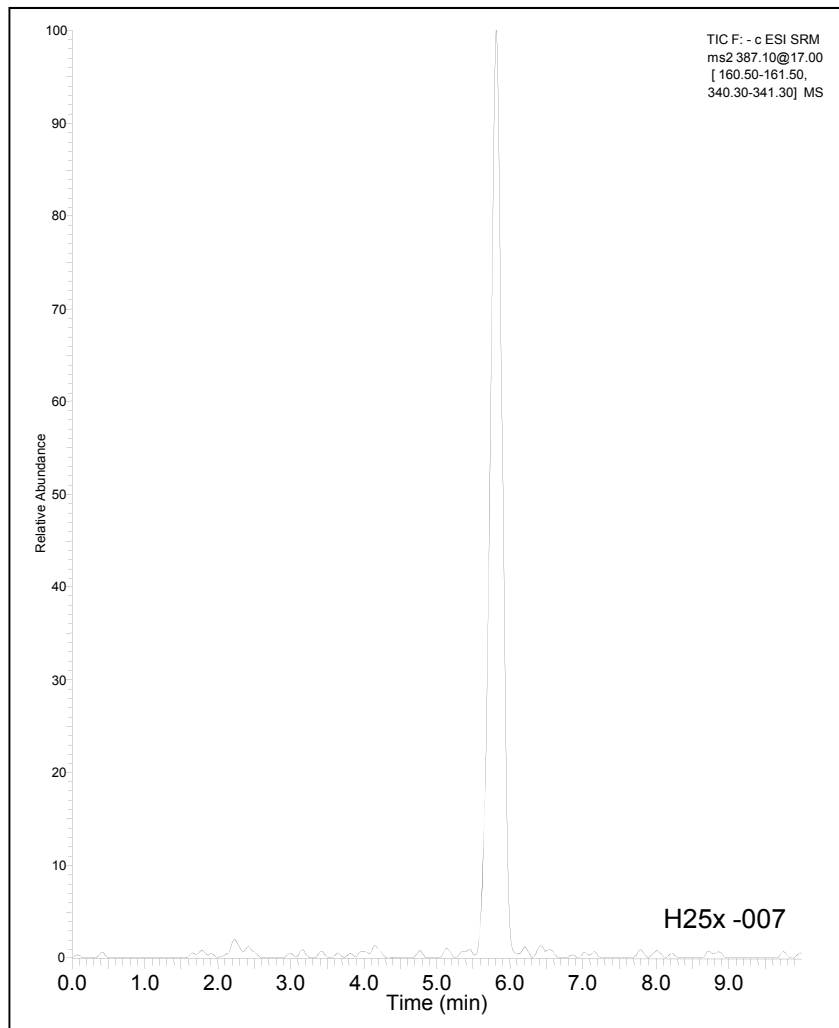


Column: Hypersil GOLD HILIC 5  $\mu\text{m}$ , 150 x 2.1 mm

Mobile phase:  $\text{H}_2\text{O}$  / MeCN (10:90) + 0.1% FA  
Flow rate: 0.6 mL/min; Temperature: 30  $^\circ\text{C}$   
Detection: +ESI

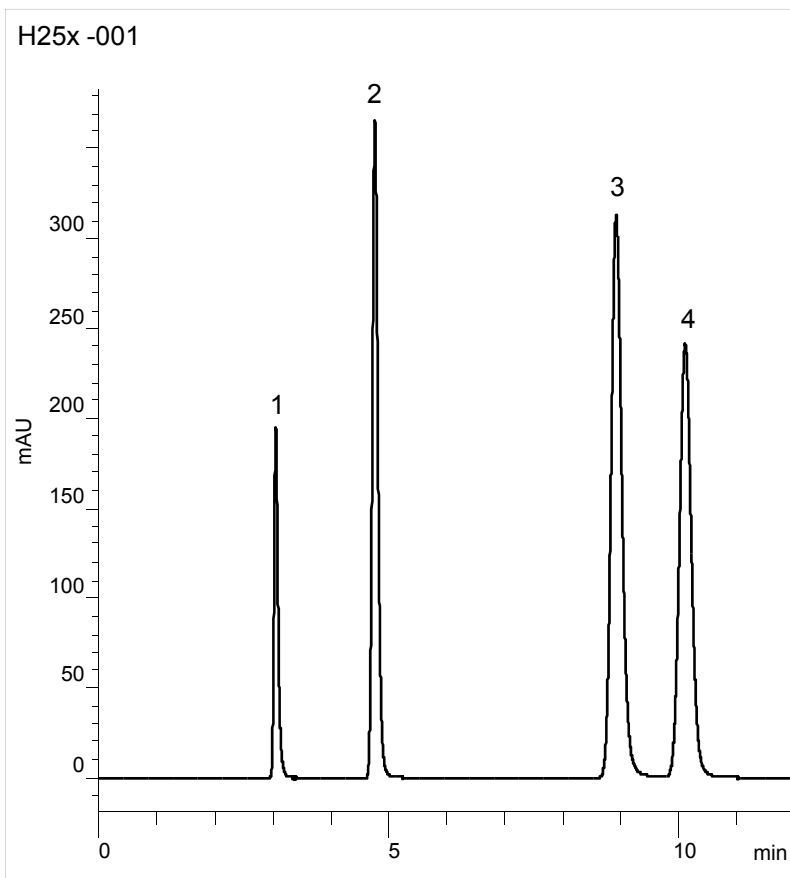
Mobile phase:  $\text{H}_2\text{O}$  / MeCN (20:80)  
Flow rate: 0.2 mL/min; Temperature: 30  $^\circ\text{C}$   
Detection: - ESI SRM (transitions 387.1 to 340.8 and 387.1 to 161.0)

# Hypersil GOLD HILIC – Lactulose



Run	Rt (min)
1	5.83
2	5.81
3	5.80
4	5.82
5	5.81
6	5.81
7	5.79
8	5.78
9	5.76
10	5.76
Ave	5.80
SD	0.02
%RSD	0.4%

# Hypersil GOLD HILIC – Purines



**Column: Hypersil GOLD HILIC**

**5 $\mu$ m, 150x4.6mm**

Mobile phase: 10 mM NH<sub>4</sub> acetate pH 5 / MeCN (10:90)

Flow rate: 0.6 mL/min

Temperature: 30°C

Detection: 254 nm

Injection volume: 20  $\mu$ L (made up in mobile phase)

Elution order:

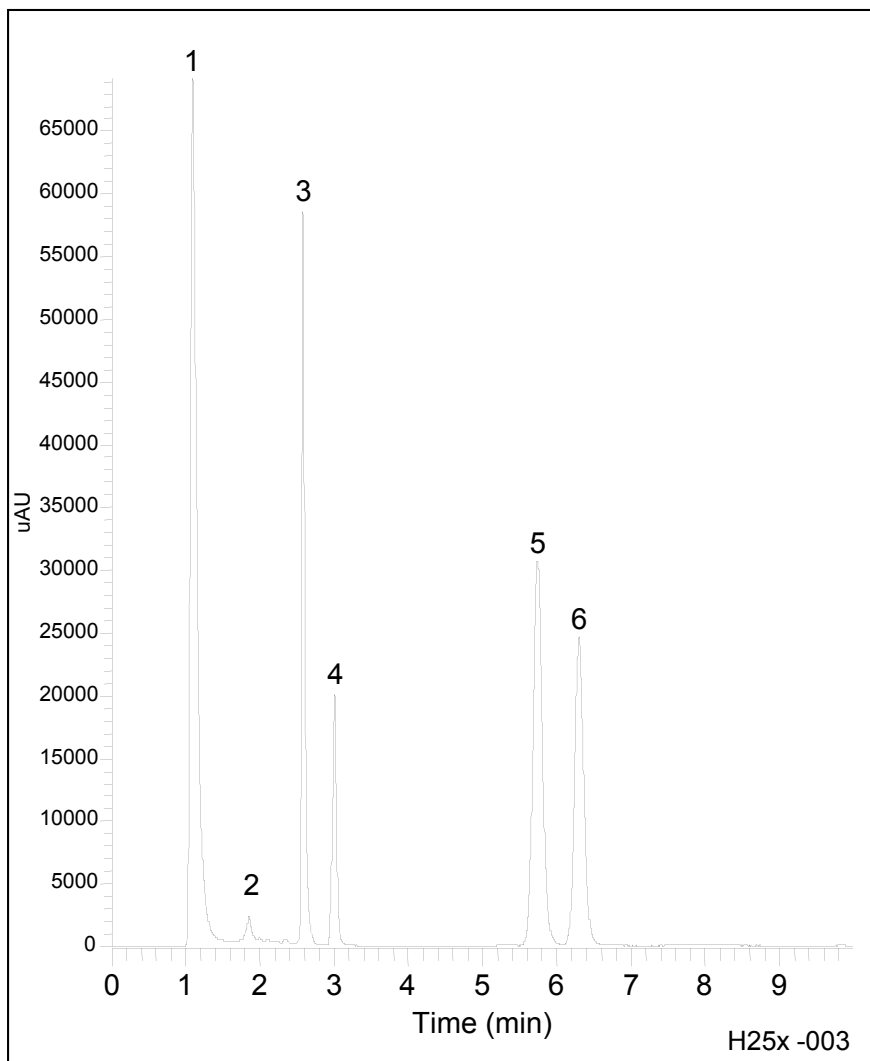
1. Benzophenone

2. Uracil

3. Cytosine

4. Acyclovir

# Hypersil GOLD HILIC - Water-soluble vitamins



**Column: Hypersil GOLD HILIC**

**5  $\mu$ m, 150 x 4.6 mm**

Mobile phase: Water / MeCN (10:90) + 0.1 % formic acid

Flow rate: 1.0 mL/min.

Temperature: ambient.

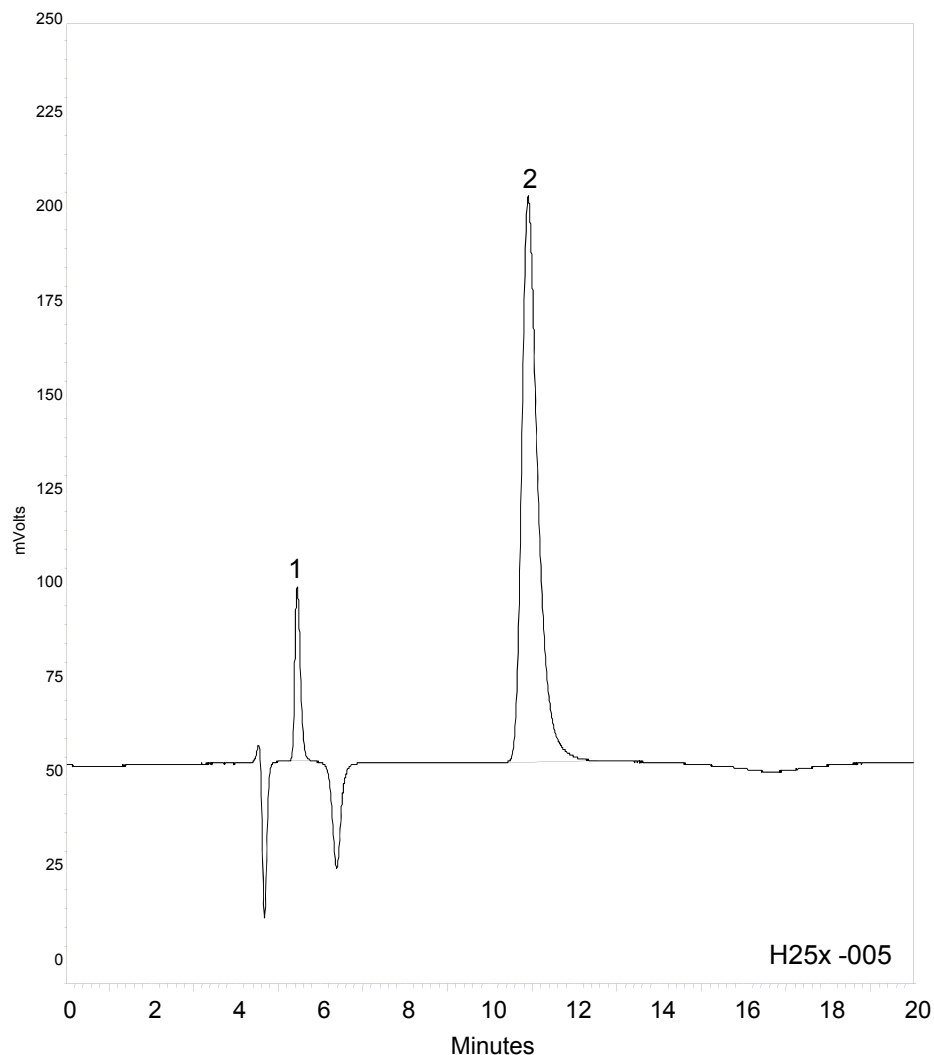
Detection: UV @205, 230 + 260 nm.

Injection volume: 10  $\mu$ L

Elution order:

- 1) Thiamine
- 2) Nicotinic acid
- 3) Nicotinamide
- 4) Pyridoxine
- 5) Riboflavin
- 6) PABA.

# Hypersil GOLD HILIC - Melamine and Cyanuric Acid



**Column: Hypersil GOLD HILIC**  
**5  $\mu$ m, 150 x 4.6 mm**

Mobile phase: 50 mM Ammonium acetate pH 5 /  
MeCN (10:90)

Flow rate: 0.4 mL/min.

Temperature: 30°C

Detection: UV @ 205 nm.

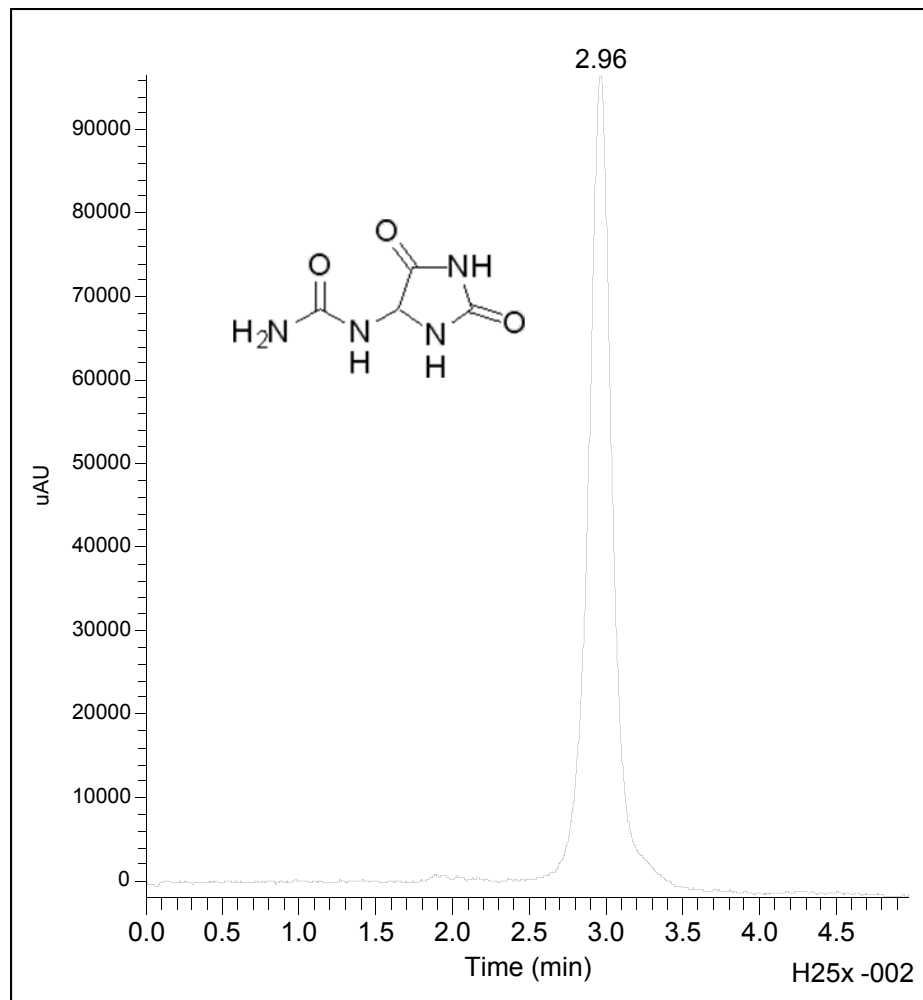
Injection volume: 10  $\mu$ L

Elution order:

1. Cyanuric acid

2. Melamine

# Hypersil GOLD HILIC – Allantoin



**Column: Hypersil GOLD HILIC**  
**5 $\mu$ m, 150 x 4.6mm**

Mobile phase: 100 mM Ammonium formate pH 3 /  
MeCN (5:95)

Flow rate: 1.0 mL/min.

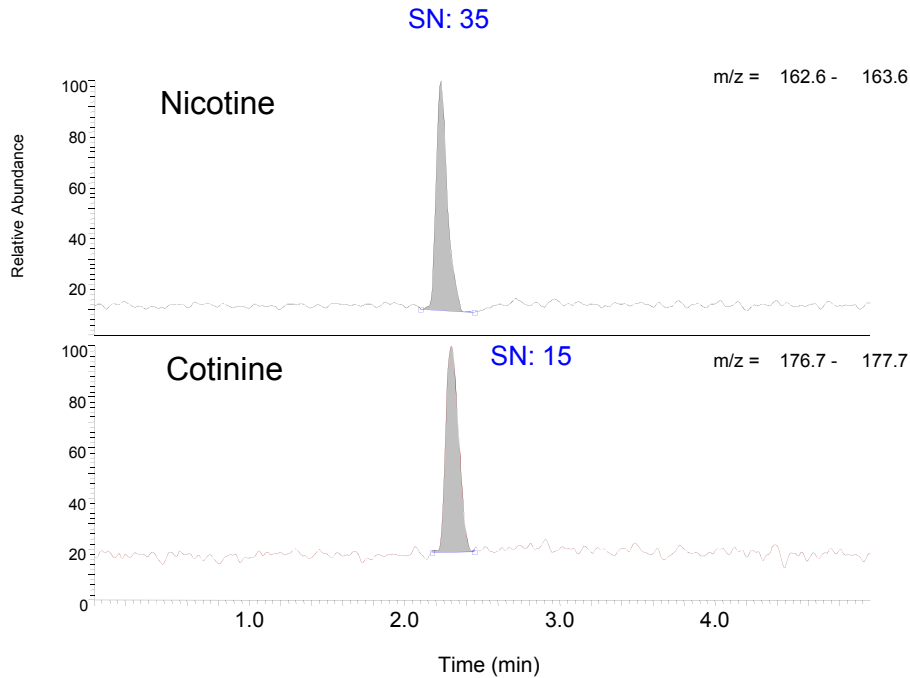
Temperature: 30°C

Detection: UV @ 205 nm.

Injection volume: 15  $\mu$ L.

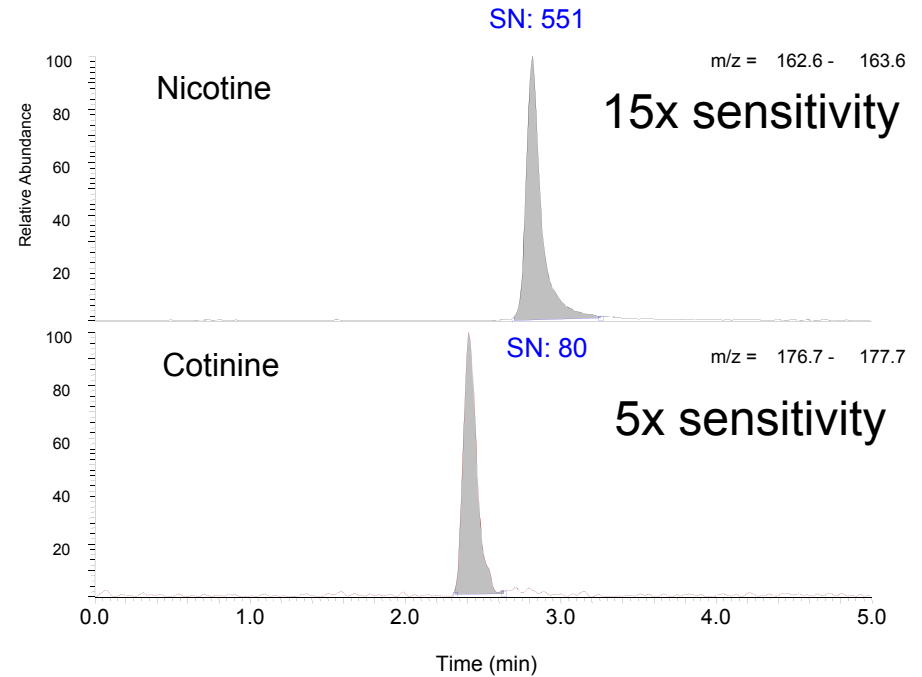
# HILIC: Improved MS sensitivity with MS detection

## Reversed-phase



Column: Hypersil GOLD 150 x 2.1 mm 5 $\mu$ m  
Mobile phase: H<sub>2</sub>O/ MeCN (98:2) + 0.1% formic acid  
Detection: +ESI (spray conditions adjusted for higher aqueous content of mobile phase)  
Injection: 1 ng on column

## HILIC



Column: Hypersil GOLD HILIC, 150 x 2.1 mm 5 $\mu$ m  
Mobile phase: Ammonium formate 50 mM pH 3.5/ MeCN (10:90)  
Detection: +ESI  
Injection: 1 ng on column