Phenols

Analysis of urinary phenols as acetate esters

Application Note

BioPharma

Authors

Agilent Technologies, Inc.

Introduction

Gas chromatography with an Agilent CP-Sil 8 CB column separates 11 urinary phenols as acetate esters in 15 minutes.

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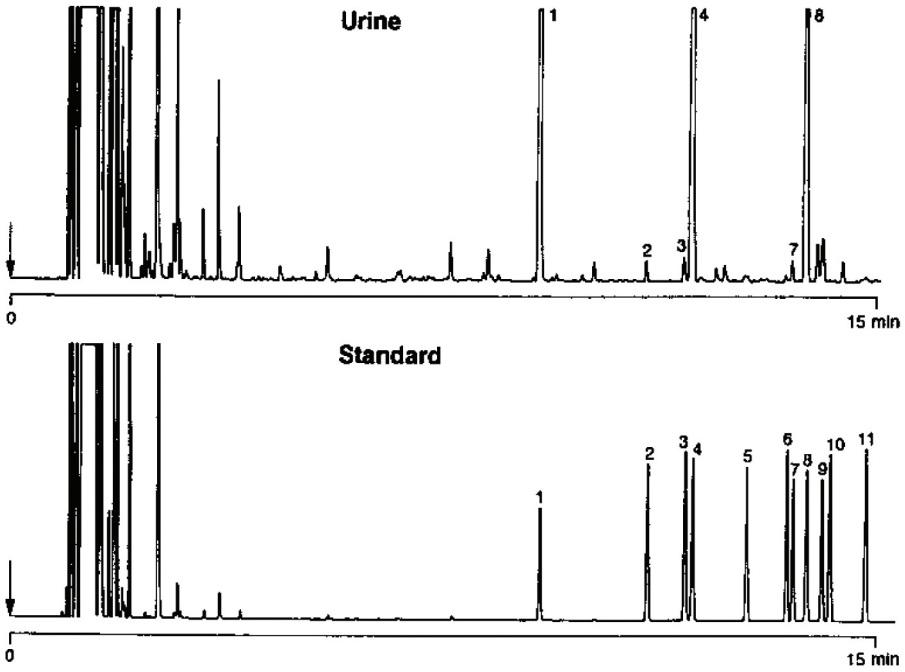
Conditions

Technique	:	GC-capillary
Column	:	Agilent CP-Sil 8 CB, 0.32 mm x 25 m fused silica WCOT CP-Sil 8 CB (df = 0.4 µm) (Part no. CP7779)
Temperature	:	50 °C - 140 °C, 6 °C/min
Carrier Gas	:	H_2, 45 kPa (0.45 bar, 6.4 psi)
Injector	:	Splitter, 50 mL/min T = 250 °C
Detector	:	FID T = 300 °C
Sample Size	:	2 µL
Concentration Range	:	50 ppm each component
Solvent Sample	:	hexane
Courtesy	:	Dr. C. Weber, National Institute of Occupational Health, Budapest, Hungary



Peak identification as acetate esters

1. phenol
2. o-cresol
3. m-cresol
4. p-cresol
5. 2,6-dimethylphenol (2,6 Xylenol)
6. 2,5-dimethylphenol (2,5 Xylenol)
7. 2,4-dimethylphenol (2,4 Xylenol)
8. 3-ethyl phenol (I.S.)
9. 3,5-dimethylphenol (3,5 Xylenol)
10. 2,3-dimethylphenol (2,3 Xylenol)
11. 3,4-dimettlylphenol (3,4 Xylenol)

Sample preparation

The urinary phenols are conjugated, thus they were first hydrolysed enzymatically, steam-distilled, buffered with H_3BO_3/NaOH and acetylated with acetic acid anhydride The calibration standard contains the following phenols at the 50 ppm concentration level each.

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