Fast Analysis of Alcohol in Blood Using Headspace Injection

Application Note

Forensics & Toxicology

Introduction

The accurate analysis of alcohol in blood is required to support claims for alcohol consumption during work or in traffic. A fast, reliable, and precise method is required. The Agilent PoraPLOT Q column provides the right selectivity for this method, as the ethanol peak elutes free from other volatile compounds that may interfere in such a matrix.

Technique:	GC-capillary
Column:	Agilent PoraPLOT Q fused silica PLOT, 10 m × 0.32 mm, 10 µm (p/n CP7550)
Temperature:	100 °C
Carrier gas:	N_2, 50 kPa (0.5 bar, 7 psi)
Injector:	Split 1:5, T = 250 °C
Detector:	FID, T = 250 °C
Sample size:	250 µL headspace
Courtesy:	Christane Leslie Correa and Rosemary Custudio Pedroso Departamento de Analises Clinicas e Toxicologicas, Faculdade de Ciencias Farmaceuticas da Universidada de Sao Paulo

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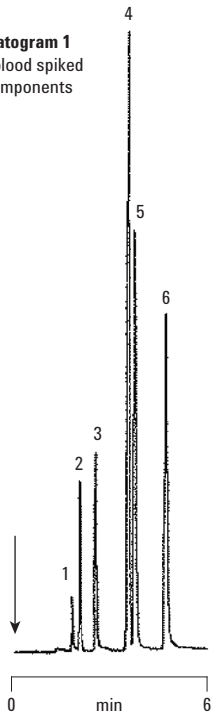
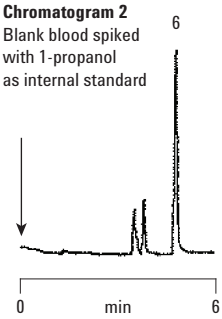
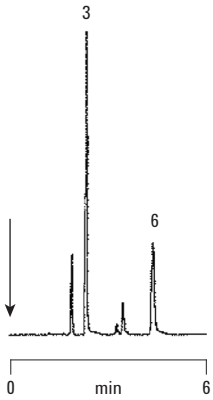
Chromatogram 1
Blank blood spiked
with components



Chromatogram 2
Blank blood spiked
with 1-propanol
as internal standard



Chromatogram 3
Blood collected 5 hours
after administration
of ethanol (0.68 g/kg bw)



Peak identification

1. Methanol	0.10 g/L
2. Acetaldehyde	0.03 g/L
3. Ethanol	0.10 g/L
4. Acetone	0.08 g/L
5. 2-propanol (isopropanol)	0.08 g/L
6. 1-propanol	0.08 g/L

For More Information

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