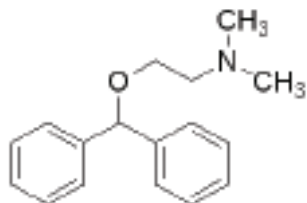
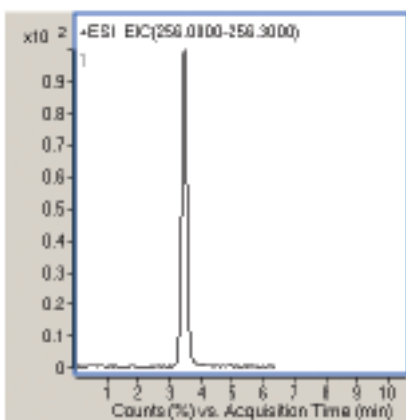


Diphenhydramine HCl

Online SPE with a Simple RP Mobile Phase



Diphenhydramine



Notes:

Diphenhydramine (DPH) is an antihistaminic drug mainly used as a sedative, hypnotic and antiemetic most know by the trade name, Benadryl®. It is available over-the-counter in many countries and is very common. Generally regarded as a harmless drug, there have been sixty-eight non-fatal and 55 fatal poisonings with DPH or in combination with other drugs were investigated in the last 10 years.

Method Conditions

Column: Cogent Diamond Hydride™ 4µm, 100Å.
Catalog No.: 70000-15P
Dimensions: 4.6 x150 mm
Solvents: A: DI water + 10 mM pyridine
 B: acetonitrile + 10 mM pyridine
Mobile phase: Isocratic 25%B
Flow rate: 0.4 mL/min.
Peaks: diphenhydramine 256 m/z (M - H)-
 RT = 3.49 min
 50 ng/mL prepared in 50%A/50%B
Detection: ESI – neg - Agilent 6210 MSD TOF mass spectrometer.

Discussion

When a mobile phase containing 80%B (with 10 mM pyridine in solvent A and B) was used diphenhydramine hydrochloride (DPH) was fully retained on the column. After the mobile phase was changed to the one described above, the DPH peak eluted at 3.5 minutes. This wide range of retention time can give analysts many possibilities of developing methods for quantitative analysis of formulations, drugs and also on column SPE methods for isolation of DPH from complex matrices.

The method above is very reproducible and sensitive with a lower limit of quantitation (LLOQ) of 5 ng/mL for DPH, with good linearity in the range 1- 500 ng/mL ($r^2 > 0.9990$).

For more information visit www.MTC-USA.com

Cat. No.	Description
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70000-15P	Cogent Diamond Hydride™ HPLC Column, 100Å, 4µm, 4.6 x 150mm
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