

# Analysis of Bromhexine Hydrochloride Using a Solid Core C18 Column

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## Key Words

Accucore C18, bromhexine hydrochloride, solid core, Core Enhanced Technology

## Abstract

This application note demonstrates the use of the Thermo Scientific™ Accucore™ C18 HPLC column for the analysis bromhexine hydrochloride.

## Introduction

Bromhexine is a mucolytic agent that reduces mucus viscosity and aids the cilia (small hairs) in the respiratory tract in removing excess mucus. This application note describes the analysis of bromhexine using Thermo Scientific Accucore C18 HPLC columns.

Accucore HPLC columns use Core Enhanced Technology™ to facilitate fast and highly efficient separations. The 2.6 µm diameter particles are not totally porous, but instead have a solid core and a porous outer layer. The optimized phase bonding creates a series of high-coverage, robust phases. The carbon loading of the Accucore C18 column provides high retention of non-polar analytes via a predominantly hydrophobic interaction mechanism. The tightly controlled 2.6 µm diameter of Accucore particles results in much lower backpressures than typically seen with sub-2 µm materials.



## Experimental Details

Sample Handling	Part Number
Fisher Scientific™ HPLC grade water	W/0106/17
Fisher Scientific HPLC grade methanol	M/4062/17
8 mm Standard Opening Screw Thread Vial Convenience Kit, 2 mL Clear Vial with Patch, Black Polypropylene Closure with Red PTFE/White Silicone Septa	60180-600

## Sample Preparation

A primary standard of bromhexine hydrochloride was prepared in methanol at 1 mg/mL.

The working standard contained 2 µg/mL bromhexine hydrochloride in water / methanol (90:10 v/v)

Separation Conditions	Part Number	
Instrumentation:	Thermo Scientific Dionex™ UltiMate™ 3000 RSLC HPLC System	
Column:	Accucore C18 2.6 µm, 50 x 2.1 mm	17126-052130
Mobile phase:	0.1% formic acid in water / 0.1% formic acid in methanol (90:10, v/v)	
Flow rate:	0.8 mL/min	
Column temperature:	40 °C	
Injection volume:	1 µL	
Injection wash solvent:	Water / methanol (90:10, v/v)	

## Results

Good retention and peak shape of bromhexine hydrochloride is demonstrated in Figure 1 and Table 1.

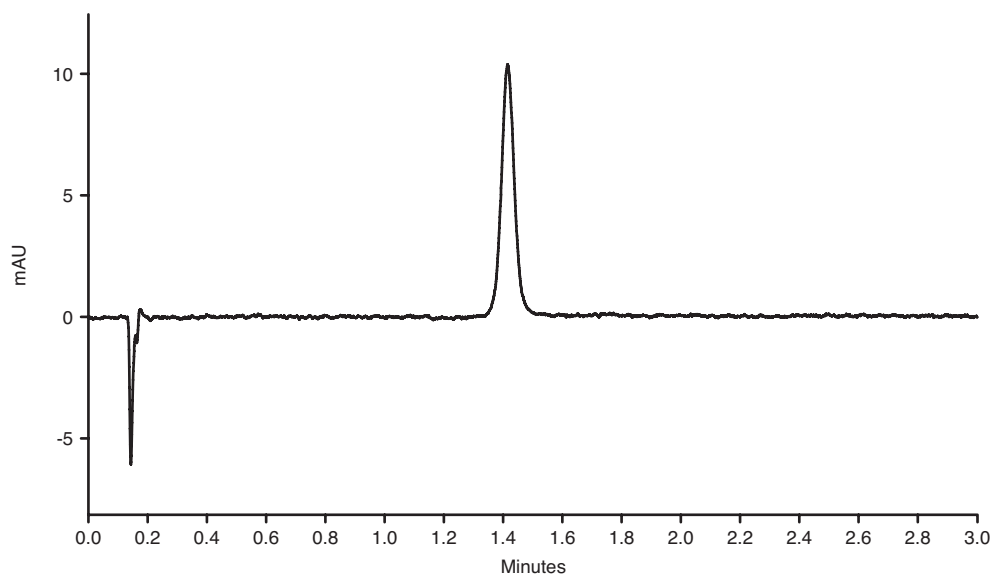


Figure 1: Chromatogram for bromhexine hydrochloride analyzed on an Accucore C18 2.6 µm, 50 x 2.1 mm column

	Bromhexine
Retention time (minutes)	1.44
%RSD on retention time	1.01
Asymmetry	1.12

Table 1: Results obtained from an Accucore C18 column, based upon 6 replicate injections

## Conclusion

Analysis of bromhexine can be achieved using an Accucore C18 column in under 2 minutes with excellent peak shape and good retention time reproducibility.

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