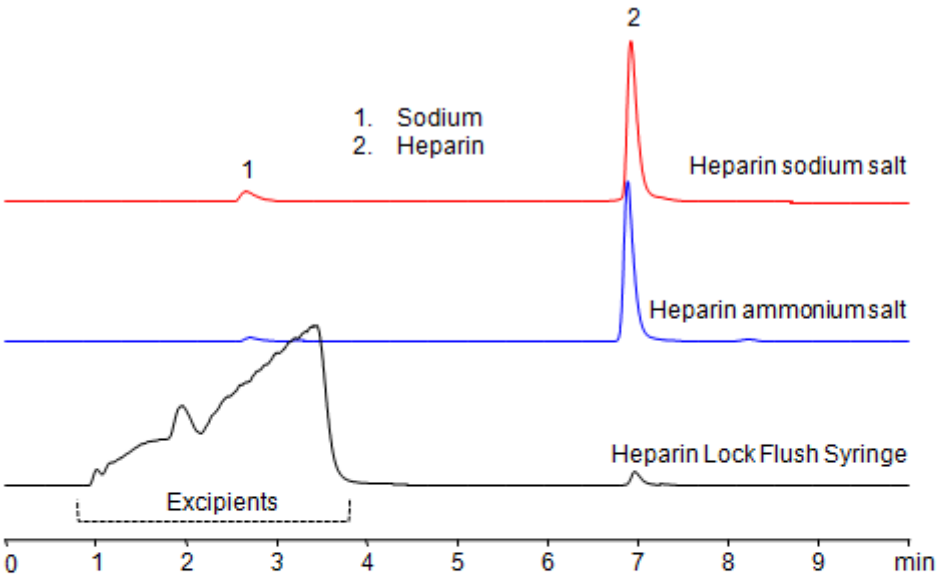
HPLC Method for Analysis of Heparin on BIST™ A Column

https://sielc.com/hplc-method-for-analysis-of-heparin-on-bist-a-column

Chromatogram



Column:	BIST™ A
Column Size:	4.6 × 50 mm, 5 µm
Column part number:	TA-46.50.0510
Mobile phase:	A: 70% MeCN with 10 mM N,N'-Dimethylpiperazine acetate pH 4.0 B: 10% MeCN with 10 mM N,N'-Dimethylpiperazine acetate pH 4.0
Gradient:	100% A for 5 min then 100% B for 5 min
Flow rate:	1.0 mL/min
Detection:	ELSD, temperature 70°C

Description

· Separation type: Bridge Ion Separation Technology, or BIST™ · BIST Ionic Modifier Preparation · High Performance Liquid Chromatography (HPLC) Method for Analysis of Heparin

Heparin is a WHO-recognized essential medicine known for its anticoagulant properties and used to treat heart attacks and angina. Due to its very polar and polymeric nature, separating and quantifying Heparin using traditional HPLC methods can be quite difficult. Using SIELC's newly introduced BIST™ method, however, Heparin and its salts can be separated easily on a negatively-charged, cation-exchange BIST™ A column. There are two keys to this retention method: 1) a multi-charged, positive buffer, such as N,N'-Dimethylpiperazine (DMP), which acts as a bridge, linking the negatively-charged anion analytes to the negatively-charged column surface and 2) a mobile phase consisting mostly of organic solvent (such as MeCN) to minimize the formation of a solvation layer around the charged analytes. Other positively-charged buffers that can generate BIST™ include TMDAP, Calcium acetate, and Magnesium acetate. Using this new and unique analysis method, Heparin and its salts can be separated and retained with high selectivity and great peak shape. This method can be detected and is compatible with ELSD, CAD, and Mass Spectrometry (LC-MS).

Method Parameters

Mobile Phase	Gradient MeCN

Buffer	N,N'-Dimethylpiperazine acetate pH 4.0
Flow Rate	1.0 ml/min
Detection	ELSD, 70C
Class of Compounds	Drug, Glycosaminoglycan
Analyzing Compounds	Heparin

HPLC Column Used

BIST™ A, 4.6×50 mm, 5 µm, 100A