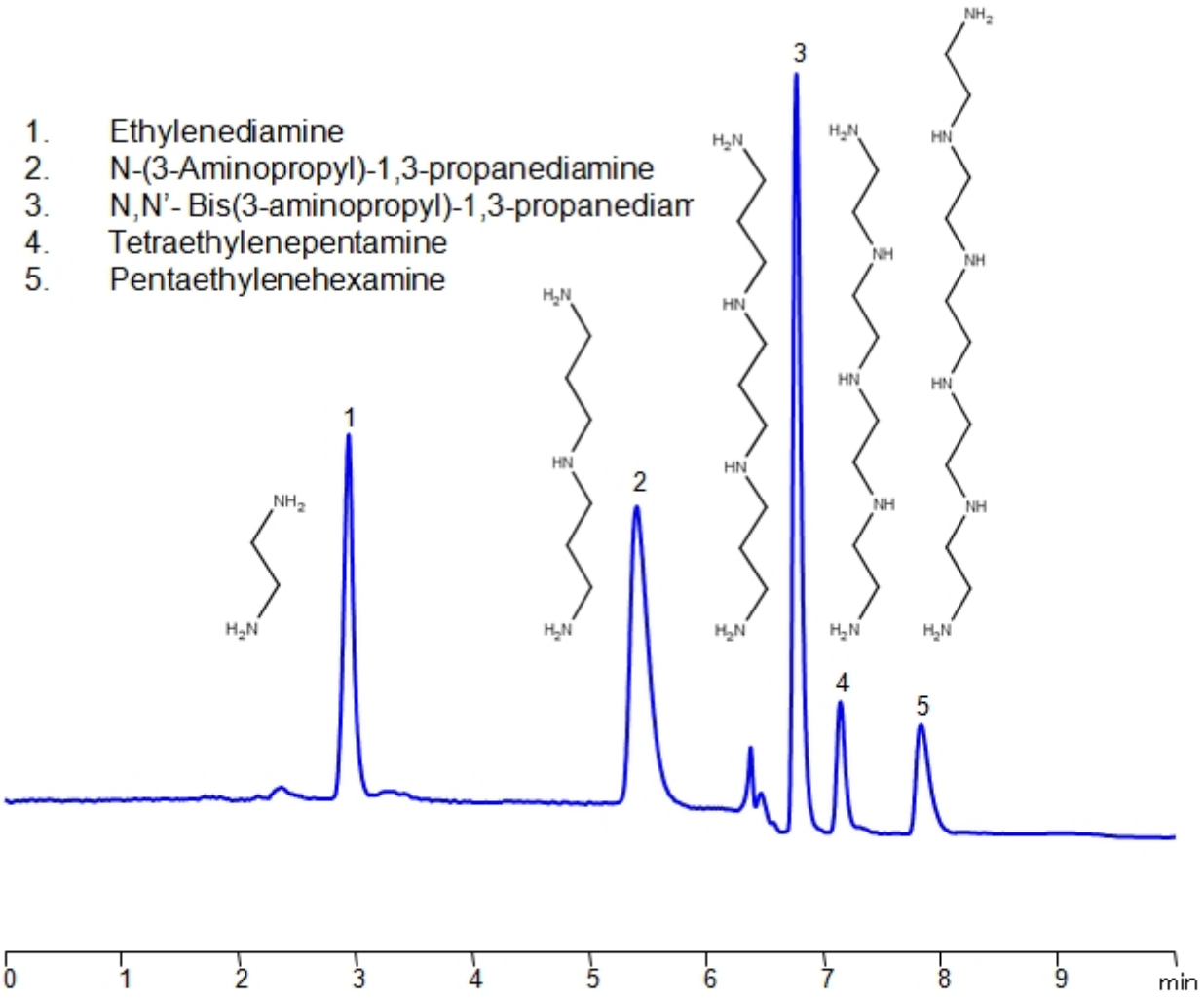
HPLC Separation of Polyamines on Primesep 500 Column

https://sielc.com/hplc-separation-of-polyamines-on-primesep-500-column

Chromatogram



Column:	Primesep 500
Column size:	4.6 x 150 mm, 5 µm
Mobile phase:	A: AmFm pH 3.5 - 20 mM B: AmFm pH 3.0 - 20 mM A 100% for 3 min hold then step gradient to 100% B
Flow rate:	1.0 ml/min
Injection volume:	1 µl
Detection:	CAD

Description

High Performance Liquid Chromatography (HPLC) Method for Analysis of N-(3-Aminopropyl)-1,3-propanediamine (Norspermidine) , Tetraethylenepentamine , Pentaethylenehexamine , N,N'-Bis(3-aminopropyl)-1,3-propanediamine , Ethylenediamine , Polyamines .

Polyamines are both naturally occurring and synthetic. The naturally occurring polyamines have a variety of functions including ion channel modulation and biosynthesis of cells. The synthetic polyamines are used in motor oil and epoxy resins. Because of

their strong ionic characteristics, they are not retained on reverse-phase columns and strongly retained on anion-exchange columns. In order to separate polyamines with varying numbers of ionic groups, we used a Primesep 500 HPLC mixed-mode column with embedded carboxylic groups of pKa around 5. By lowering the pH of the mobile phase, we can suppress the carboxylic groups on the column making it less retentive to polyamines. We separate the double and triple charged polyamines at one pH, then do a step gradient to lower pH to reduce the retention time and separate higher charged polyamines. The detection can be achieved with CAD or MS.

Method Parameters

Mobile Phase	H2O
Buffer	AmFm pH 3.0 – 20 mM, AmFm pH 3.5 – 20 mM
Flow Rate	1.0 ml/min
Detection	CAD
Class of Compounds	Hydrophilic, Amines
Analyzing Compounds	N-(3-Aminopropyl)-1,3-propanediamine (Norspermidine),Tetraethylenepentamine,Pentaethylenehexamine,N,N'-Bis(3-aminopropyl)-1

HPLC Column Used

Primesep 500, 4.6 x 150 mm, 5 µm, 100 A, dual ended

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