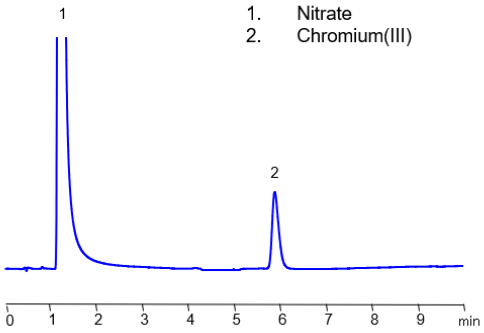
HPLC Method for Analysis of Chromium(III) on BIST B+ Column



Column:	BIST B+
Column size:	4.6 × 50 mm, 5 µm
Column part number:	TBP-46.50.0510
Mobile phase:	Gradient MeCN – 60-20%, 10 min
Buffer:	H_2SO_4 - 0.2%
Flow rate:	1.0 mL/min
Detection:	UV 200 nm
LOD:	0.4 ppm based on the analysis of the sample 7 mg/ml $Cr(NO_3)_3$ injection volume 2 µl

Separation type: Bridge Ion Separation Technology, or BIST™ by SIELC Technologies

Chromium(III) is a nutrient essential for human metabolism of insulin, sugar, and lipids. Using SIELC's newly introduced BIST™ method, Cr(III) can be retained on a positively-charged anion-exchange BIST™ B+ column. There are two keys to this retention method: 1) a multi-charged, negative buffer, such as Sulfuric acid (H2SO4), which acts as a bridge, linking the positively charged trivalent Chromium ion to the positively 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. Using this new and unique analysis method, Chromium(III) can be separated, retained, and UV detected at 200 nm.

Method Parameters

Column	BIST B+, 4.6 x 50 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN – 60-20%, 10 min
Buffer	H2SO4 – 0.2%
Flow Rate	1.0 mL/min
Detection	UV 200 nm
Limit of Detection	0.4 ppm

Quelle: https://sielc.com/hplc-method-of-chromium