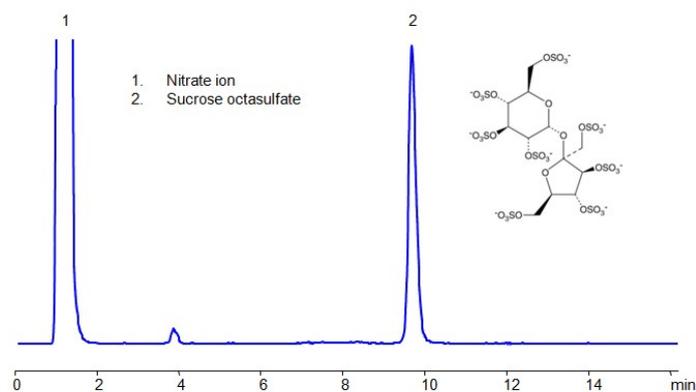


HPLC Method for Analysis of Sucrose Octasulfate in Sucrose Octasulfate-aluminum Complex on BIST A+ Column



Column:	BIST A+
Column size:	2.1 x 100 mm, 5 µm
Column part number:	TAP-21.100.0510
Mobile phase:	Gradient MeCN– 70-40% 15 min
Buffer:	N,N'-Dimethylpiperazine acetate - 5 mM pH 4.0
Flow rate:	0.4 mL/min
Sample:	Sucrose octasulfate-aluminum complex 2 mg/ml in 1% HNO ₃
Injection volume:	8 µl
Detection:	ELSD, the nebulizer and evaporator temperatures 70 °C, with a gas flow rate of 1.6 Standard Liters per Minute (SLM)

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

The Sucrose octasulfate-aluminum complex is a chemical compound where sucrose octasulfate, a derivative of sucrose with eight sulfate groups, forms a complex with aluminum ions. This complex exhibits unique properties due to the interaction between the sulfated sugar and aluminum.

Structure and Composition: In this complex, aluminum ions interact with the sulfate groups of sucrose octasulfate. The exact structure depends on the ratio of sucrose octasulfate to aluminum and the conditions under which the complex is formed.

Properties: The combination of a large, organic, sulfated molecule with a metal ion like aluminum can result in changes in solubility, stability, and reactivity compared to the individual components. The properties of such complexes can be quite different from those of either sucrose octasulfate or aluminum alone.

Biological Interactions: The presence of both organic (sucrose octasulfate) and inorganic (aluminum) components can influence how this compound interacts with biological systems. For example, it might have specific binding properties or biological activity that are leveraged in therapeutic contexts.

Environmental and Health Considerations: As with any compound containing metal ions, there are considerations regarding environmental impact and human health, especially regarding the bioavailability and toxicity of aluminum.

Using SIELC's newly introduced BIST™ method, sucrose octasulfate can be retained 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 Dimethyl piperazine acetate, which acts as a bridge, linking the negatively charged dye 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. Using this new and unique analysis method, oligonucleotide can be separated, retained, and detected at ELSD

Please read more on oligonucleotides analysis by HPLC in our April's 2023 newsletter .

Method Parameters

Column	BIST A+, 2.1 x 100 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN – 70-40%, 15 min
Buffer	DMP acetate pH 4.0 – 5 mM
Flow Rate	0.4 mL/min
Detection	ELSD, the nebulizer and evaporator temperatures 70°C, with a gas flow rate of 1.6 Standard Liters per Minute (SLM)
Sample	2 mg/ml in 1% HNO ₃
Injection Volume	8 µl

Quelle: <https://sielc.com/hplc-method-for-analysis-of-sucrose-octasulfate-complex>