

Separation Of Sovateltide Using Nanopak-C HPLC Columns Under Acidic And Alkaline Conditions

Background. Sovateltide (also known as IRL-1620, a synthetic analog of endothelin-1 (ET-1) is being developed as a "first-in-class" drug for neurological and neurovascular disorders, particularly acute ischemic stroke [1]. Sovateltide is typically purified using reverse-phase HPLC under basic conditions, while its characterisation is usually performed under acidic conditions. This dual approach allows scientists to exploit the best chromatographic conditions for isolating the pure compound and then the best analytical conditions for confirming its identity, purity, and structure.

NanoPak-C HPLC columns' unique carbon-based chemistry offers distinct selectivity, robustness, and pH stability, making them well-suited for the challenging purification and characterisation of peptides like Sovateltide under both basic and acidic conditions. NanoPak-C columns are available in various formats, including analytical and semi-preparative sizes. A method developed on an analytical NanoPak-C column for Sovateltide can be easily scaled up for purification purposes.

This application note presents separation methods for Sovateltide using both acidic and alkaline (basic) pH conditions. This dual-method approach provides a robust and scalable solution for both the purification and comprehensive characterization of complex peptides like Sovateltide and similar ET-1 analogs.

Probe Analytes

Sovateltide solution: 1 mg/ml purified Sovateltide in Water: Acetonitrile (85:15) pH 9.5

Instrumentation

HPLC Conditions		
Methods		
Column	Nanopak-C All Carbon 250 x 4.6 mm, 5 μ m	
Mobile phase (Basic)	Mobile Phase A: 20 mM HCOONH ₄ -NH ₃ (pH 8.5)	
	Mobile Phase B: Acetonitrile	
	Gradient:	Time %B
		0 18
		5 25
		10 33
Mobile phase (Acidic)	Mobile Phase A: 0.1% TFA in water	
	Mobile Phase B: 0.1% TFA in ACN	
	Gradient:	Time %B
		0 25
		10 65
		15 20
Injection Volume	10 μ l	
UV detection	214 nm	
Oven	30 deg C	

Reference.

1. Ajit. H. Chandgude, Ravindra R. Patlolla, Jayvant Harlikar, Linga Banoth, Total solid Phase synthesis and structural elucidation Of Sovateltide, Tetrahedron, 180, 124650, 2025.

Results

Figures 1 and 2 illustrate representative chromatograms of the Sovateltide standard under acidic and basic conditions, respectively. These results indicate that the dual methods together could be employed for the purification and analytical characterization of Sovateltide and similar ET-1 analogs.

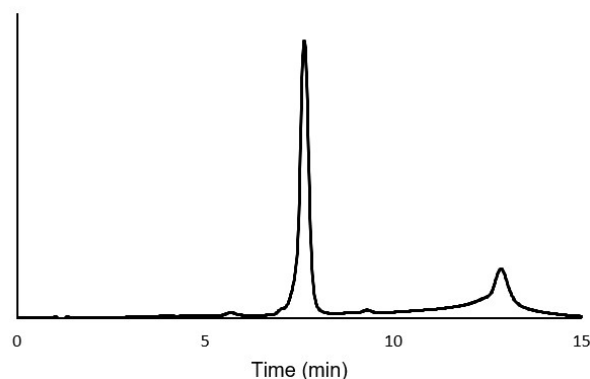


Figure 1. Representative chromatogram of Sovateltide standard under acidic conditions.

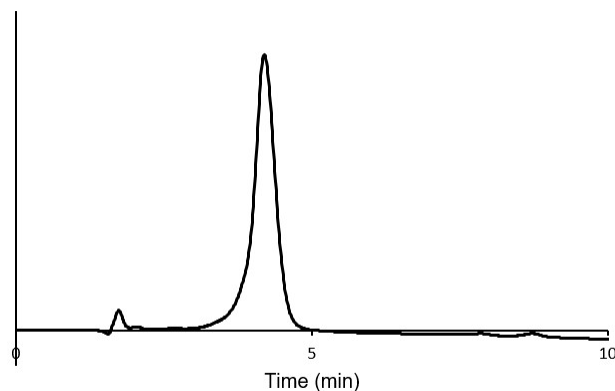


Figure 2. Representative chromatogram of Sovateltide standard under basic conditions.