

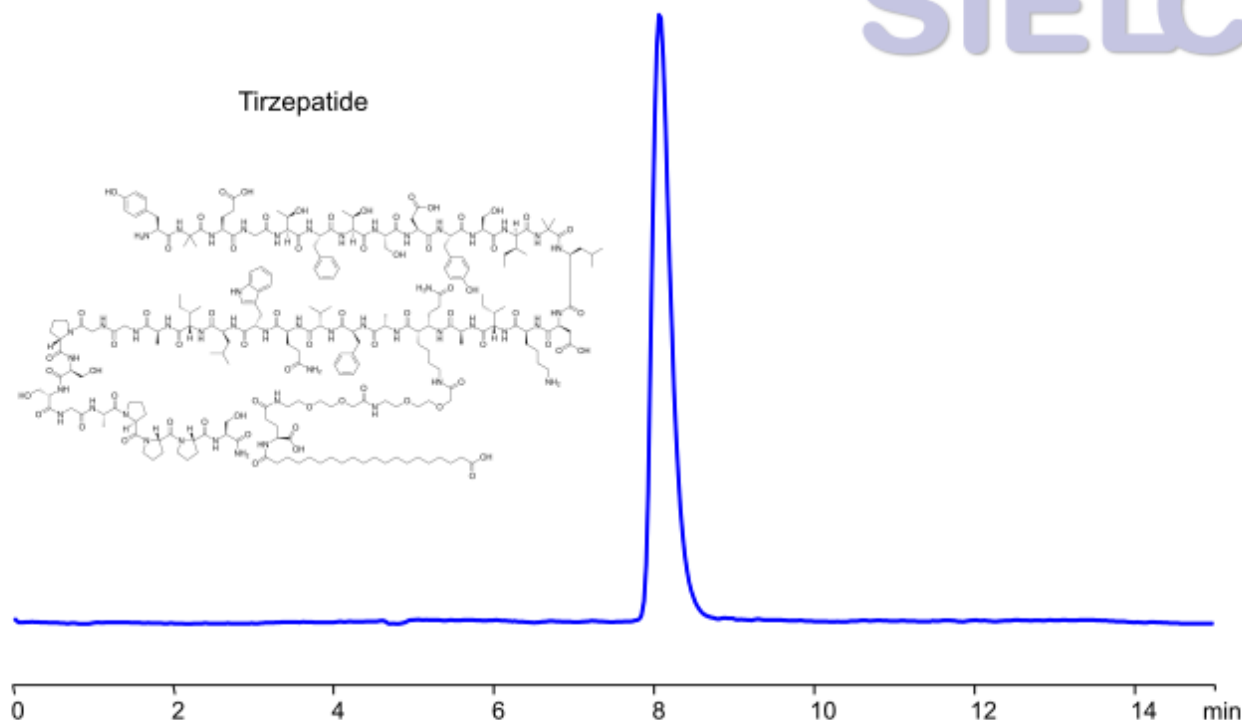
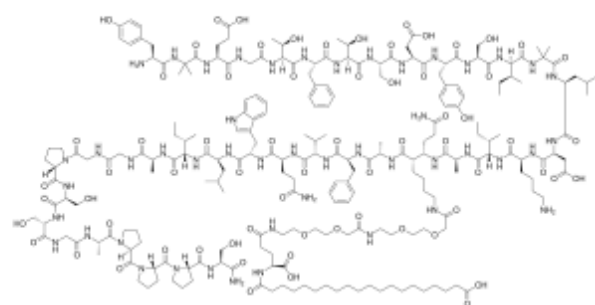
HPLC-MS Method for the Analysis of Tirzepatide in Pharmaceutical Formulation Mounjaro on Solid-Core Primesep SB Column

<https://sielc.com/hplc-ms-method-for-analysis-tirzepatide-primesep-sb>

Chromatogram

siELC

Tirzepatide



Column:	Solid-Core Primesep SB
Column size:	3.2 × 100 mm, 2.7 µm
Column part number:	SB-32.100.0209
Mobile phase:	Gradient MeCN 40 - 80% in 10 min
Buffer:	Ammonium Formate pH 3.0 – 40 mM
Flow rate	0.5 mL/min
Detection:	UV 280 nm, ESI-SIM: [M+3H] ³⁺ 1606
Concentration:	1.0 mg/mL
Injection Volume:	1 µL
Diluent:	MeCN/H ₂ O – 50/50%
Limit of Detection:	8 ppb

Description

· High Performance Liquid Chromatography (HPLC) Method for Analysis of Tirzepatide

Tirzepatide is a synthetic peptide that functions as a dual agonist of the GLP-1 and GIP receptors. It is used in the treatment of type 2 diabetes and obesity. By mimicking the actions of both glucagon-like peptide-1 (GLP-1) and gastric inhibitory polypeptide (GIP), tirzepatide enhances insulin secretion, reduces blood sugar levels, promotes satiety, and aids in weight loss.

Tirzepatide can be retained and analyzed using the Solid-Core Primesep SB stationary phase column. The analysis utilizes a gradient method with a simple mobile phase consisting of water, acetonitrile (MeCN), and Ammonium formate. Detection was performed using UV absorption at 280 nm. Mass spectrometric detection was carried out in ESI-SIM mode, monitoring the ions $[M+3H]^3+$ at m/z 1606

Method Parameters

Mobile Phase	Gradient MeCN 40-80%, 10 min
Buffer	Ammonium Formate pH 3.0 – 40 mM
Flow Rate	0.5 ml/min
Detection	UV 280 nm, ESI-SIM: $[M+3H]^3+$ -1606
LOD	8 ppb
Class of Compounds	GLP-1 Receptor Agonist
Analyzing Compounds	Tirzepatide

HPLC Column Used

Solid-Core Primesep S, 3.2 x 100 mm, 2.7 μ m, 90 A, dual ended