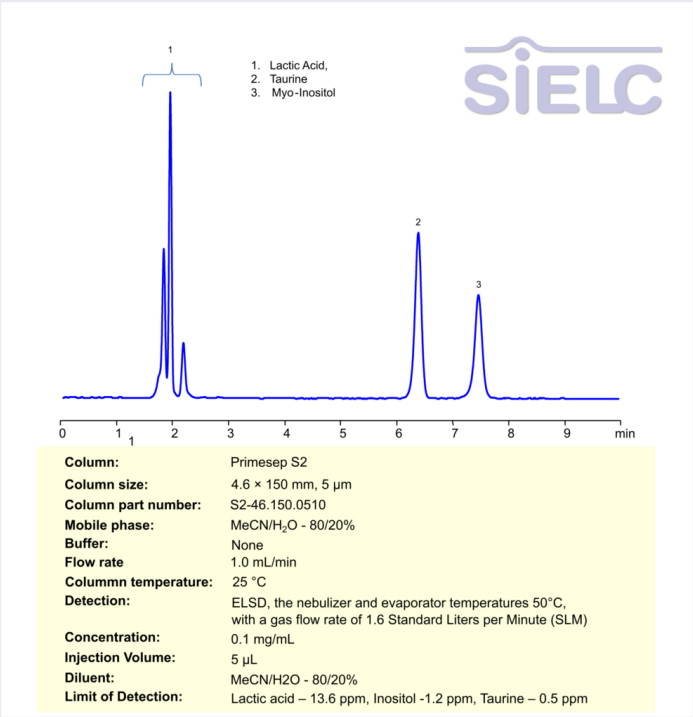
HPLC Method for Simultaneous Determination of Lactic Acid, Taurine, and Myo-Inositol on Primesep S2 Column



Column:	Primesep S2
Column size:	4.6 × 150 mm, 5 µm
Column part number:	S2-46.150.0510
Mobile phase:	MeCN/H_2O - 80/20%
Buffer:	None
Flow rate	1.0 mL/min
Columnn temperature:	25 °C
Detection:	ELSD, the nebulizer and evaporator temperatures 50°C, with a gas flow rate of 1.6 Standard Liters per Minute (SLM)
Concentration:	0.1 mg/mL
Injection Volume:	5 µL
Diluent:	MeCN/H2O - 80/20%
Limit of Detection:	Lactic acid – 13.6 ppm, Inositol -1.2 ppm, Taurine – 0.5 ppm

Separation type: Liquid Chromatography HILIC

Commonly used in food preservation, cosmetics, pharmaceuticals, and as a biomarker in physiological studies (e.g., exercise and metabolism).

Widely present in energy drinks and supplements; important in cardiovascular function, development of the nervous system, and cellular protection.

Used in the treatment of polycystic ovary syndrome (PCOS), neurological conditions, and as a dietary supplement for metabolic and reproductive health.

The mixture of lactic acid, taurine, and myo-inositol can be effectively retained and separated using a mixed-mode Primesep S2 column with a mobile phase consisting of 80% acetonitrile (MeCN) , without the need for a buffer.

The mixture consists of lactic acid, an organic α-hydroxy acid; taurine, a sulfonic acid amino acid derivative; and myo-inositol, a polyol (sugar alcohol), representing diverse chemical classes with varying polarities and functional groups. This method offers high resolution and excellent peak symmetry , enabling accurate quantification of all three analytes. Detection is performed using ELSD (Evaporative Light Scattering Detection) , which provides reliable sensitivity for non-UV-active or weakly absorbing compounds.

Method Parameters

Column	Primesep S2, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN80%
Buffer	none
Flow Rate	1.0 mL/min
Detection	ELSD, the nebulizer and evaporator temperatures 50°C, with a gas flow rate of 1.6 Standard Liters per Minute (SLM)

Quelle: https://sielc.com/hplc-method-mix-lactic-taurine-inositol