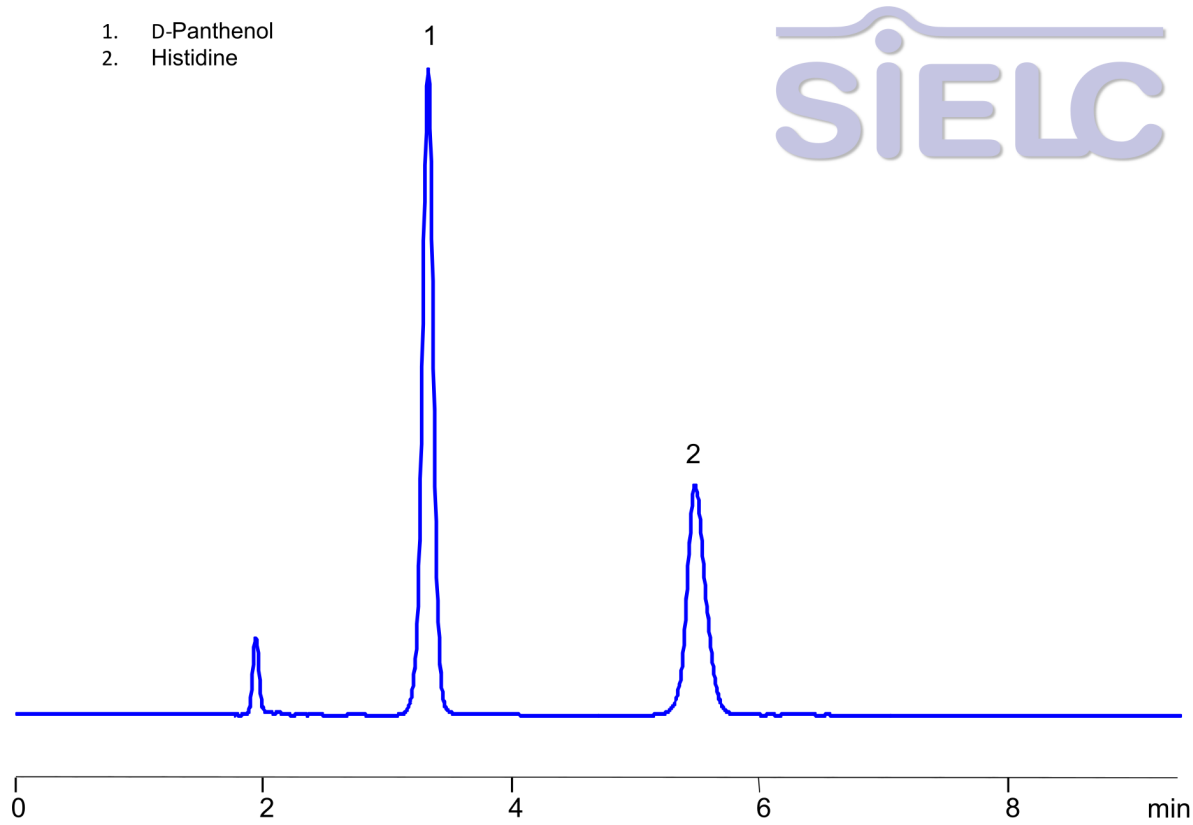
HPLC Method for Analysis of D-Panthenol and Histidine on Primesep 200 Column

https://sielc.com/hplc-method-panthenol-histidine

Chromatogram



Column:	Primesep 200
Column size:	4,6 × 150 mm, 5 µm
Column part number:	200-46.150.0510
Mobile phase:	MeCN/H_2O - 5/95%
Buffer:	H_3PO_4 - 0.1%
Flow rate	1.0 ml/min
Detection:	UV 200 nm
Concentration:	0.5 mg/ml
Injection Volume:	5 µL
Diluent:	H2O - 100%
Limit of Detection:	0.5 ppm

Description

· Separation type: Liquid Chromatography Mixed-mode SIELC Technologies · HPLC Method for Analysis of Panthenol , Histidine on Primesep 200 Column

D-Panthenol and Histidine are two different compounds that are commonly used in skincare, hair care, and other health-related products due to their beneficial properties.

D-Panthenol (Provitamin B5) Chemical structure: D-Panthenol is the alcohol form of pantothenic acid (Vitamin B5). Uses: It is widely used in cosmetics and personal care products for its moisturizing and skin-soothing properties. Benefits: Hydration: D-Panthenol is known to improve skin and hair moisture retention. Skin barrier support: It helps in repairing and strengthening the skin's barrier function, which is essential for maintaining skin health. Soothing: It has anti-inflammatory properties, making it beneficial for soothing irritation or minor skin damage. Healing: D-Panthenol supports wound healing and reduces redness or discomfort associated with sunburn, minor wounds, or rashes. Hair health: It also coats the hair, improving shine, softness, and strength while reducing the appearance of split ends. Histidine Chemical structure: Histidine is an essential amino acid involved in several metabolic processes and is a building block for proteins. Uses: In the skincare and health sectors, histidine is used for its antioxidant and soothing properties. Benefits: Anti-inflammatory: Histidine can help reduce inflammation in the skin, which can be helpful in conditions like eczema or acne. Antioxidant: It helps protect the skin from oxidative stress caused by free radicals, which can lead to premature aging and damage. pH regulation: Histidine can help balance the skin's pH levels, promoting a healthy skin environment. Skin hydration: By supporting the skin's natural processes, histidine aids in moisture retention and overall skin smoothness. Barrier function: It supports the repair and maintenance of the skin's protective barrier, helping it defend against external irritants. Both D-Panthenol and Histidine are valuable ingredients in formulations aimed at improving skin hydration, soothing irritation, and maintaining a healthy barrier.

Panthenol , Histidine can be retained, separated and analyzed using a Primesep 200 mixed-mode stationary phase column. The analysis employs an isocratic method with a simple mobile phase comprising water, acetonitrile (MeCN), and phosphoric acid as a buffer. This method allows for detection using UV 200 nm.

Method Parameters

Mobile Phase	MeCN – 5%
Buffer	H3PO4 – 0.1%
Flow Rate	1.0 ml/min
Detection	UV 200
Sample	0.5 mg/mL
Diluent	H2O- 100%
LOD*	0.5 ppm
Class of Compounds	Amino acid, Vitamine
Analyzing Compounds	Panthenol,Histidine

HPLC Column Used

Primesep 200, 4.6 x 150 mm, 5 µm, 100 A, dual ended

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