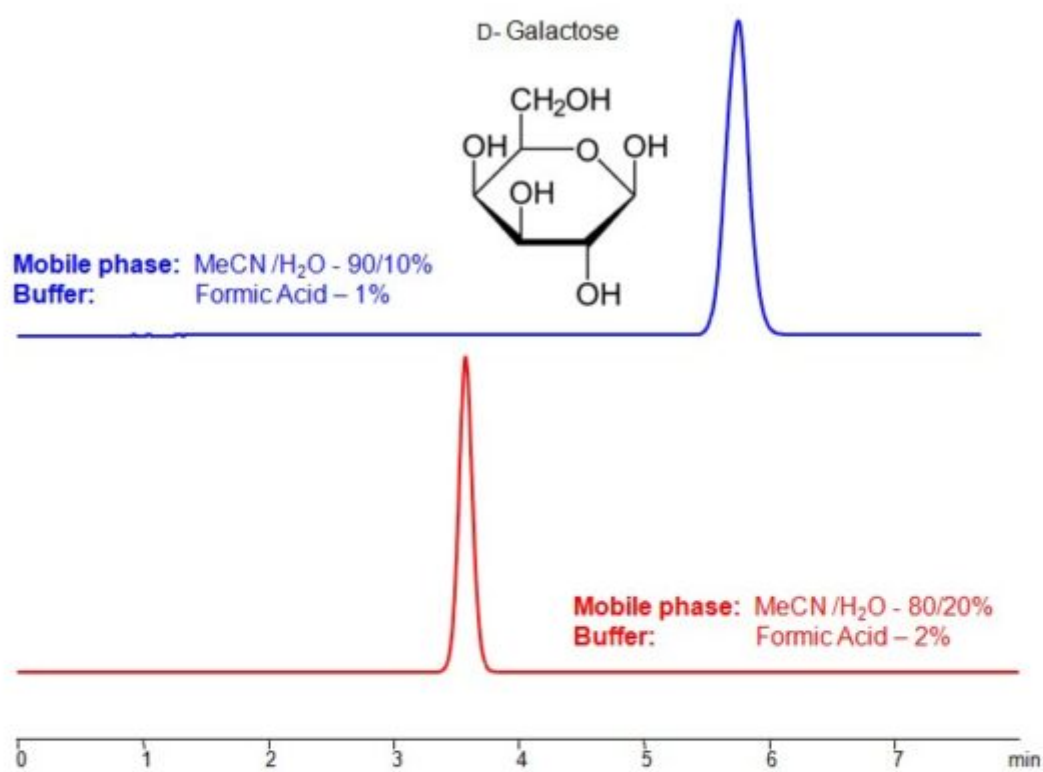


HPLC Method for Analysis of Galactose on Primesep S2 Column

<https://sielc.com/hplc-method-for-analysis-of-galactose>

Chromatogram



Column:	Primesep S2
Column size:	4.6 × 150 mm, 5 µm
Column part number:	S2-46.150.0510
Mobile phase:	MeCN/H ₂ O
Buffer:	Formic Acid
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)

Description

· HPLC Method for Analysis of D-Galactose on Primesep S2 Column by SIELC Technologies

Galactose is a monosaccharide sugar with the chemical formula C₆H₁₂O₆. It plays a crucial role in the biochemistry of living organisms. It is one of the components of lactose, the sugar found in milk, and is thus commonly ingested in a diet that includes dairy products. It has a similar structure to glucose but differs in the configuration around one carbon atom. It's a hexose, meaning it contains six carbons, and it has an aldehyde group, making it an aldose. It has an optical isomer, D-galactose, which is the most commonly found isomer in nature. Galactose is most commonly found in lactose, where it is bound to glucose. When you consume lactose, enzymes in your digestive system break it down into glucose and galactose. Galactose is a component of various glycoproteins and glycolipids, which are important for cellular recognition and communication. After absorption, galactose is transported to the liver, where it is converted into glucose and used as an energy source. As mentioned earlier, a lack of ability to metabolize galactose can lead to this genetic disorder, which requires dietary management. In certain cases, high levels of galactose can contribute to cataract formation in the eyes.

Galactose is vital in various biological processes and also presents a unique set of challenges due to its role in metabolic disorders like galactosemia. Understanding its biochemistry and metabolic pathways has implications in healthcare, dietetics, and even biotechnological applications.

You can find detailed UV spectra of D-Galactose and information about its various lambda maxima by visiting the following link.

D-Galactose can be retained, and analyzed on a Primesep S2 mixed-mode stationary phase column using an isocratic analytical method with a simple mobile phase of water, Acetonitrile (MeCN), and a formic acid as a buffer. This analytical method can be detected with high resolution and peak symmetry with many evaporative detection methods, including Evaporative Light Scattering Detection (ELSD), Charged Aerosol Detector (CAD), and Electrospray Ionization (ESI) for Mass Spectrometry (MS).

Method Parameters

Mobile Phase	MeCN/H ₂ O
Buffer	Formic Acid
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)
LOD*	0.5 ppm
Class of Compounds	Sugar
Analyzing Compounds	D-Galactose

HPLC Column Used

Primesep S2, 4.6 x 150 mm, 5 µm, 100 Å, dual ended

[Order this column at hplc-shop.de →](https://www.hplc-shop.de)