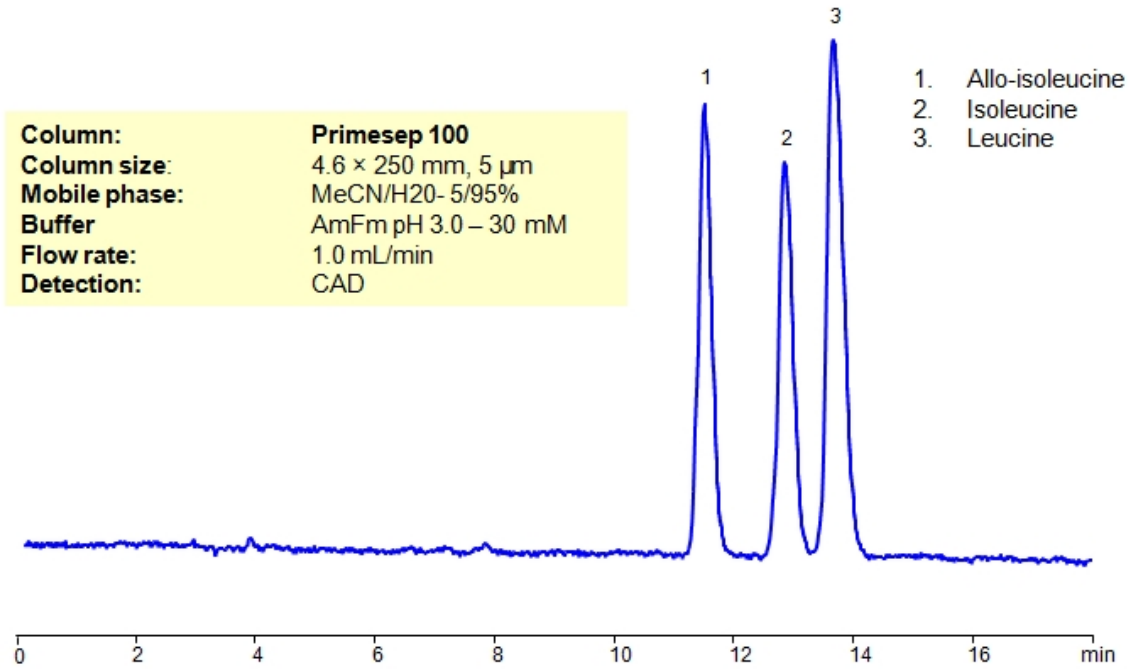
HPLC Separation of Allo-Isoleucine, Isoleucine, Leucine on Primesep 100 Column



High Performance Liquid Chromatography (HPLC) Method for Analysis of D-Isoleucine , D-Leucine , DL-Isoleucine , L-Alloisoleucine , L-Isoleucine , allo-D-isoleucine , Isoleucine , Leucine

Alloisoleucine is an amino acid with C6H13NO2chemical formula. It is a key indicator when diagnosing Maple Syrup Urine Disease, when a body cannot metabolize amino acids in specific foods. Outside of that, it is also used in peptide synthesis and drug development.

Isoleucine is an amino acid with chemical formula C6H13NO2 . It is a building block for proteins and is used in a variety of bodily functions. It helps form hemoglobin, regulating blood sugar, plays a key role in energy production, and increases the speed of muscle healing and growth. The easiest way to prevent a deficiency of it is through eating foods rich in protein, as those typically contain necessary amino acids.

Leucine is an amino acid with chemical formula C6H13NO2 . It is key for protein synthesis, metabolism, tissue repair, and certain tasks that are also done by Isoleucine. It is known to activate mTOR cell signalng pathways, which stimulate protein synthesis and prevent breakdown of protein. It is found bin animal protein, plant-based protein, and nuts.

D-Isoleucine , D-Leucine , DL-Isoleucine , L-Alloisoleucine , L-Isoleucine , allo-D-isoleucine , Isoleucine , Leucine can be retained and analyzed using the Primesep 100 stationary phase column. The analysis utilizes an isocratic method with a simple mobile phase consisting of water and acetonitrile (MeCN) with a ammonium formate buffer. Detection is performed using CAD.

Method Parameters

Column	Primesep 100, 4.6 x 250 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN/H2O – 5/95%
Buffer	AmFM pH 3.0 – 30 mM
Flow Rate	1.0 mL/min
Detection	CAD (Corona) MS- compatible mobile phase

Quelle: https://sielc.com/hplc-separation-of-allo-isoleucine-isoleucine-leucine