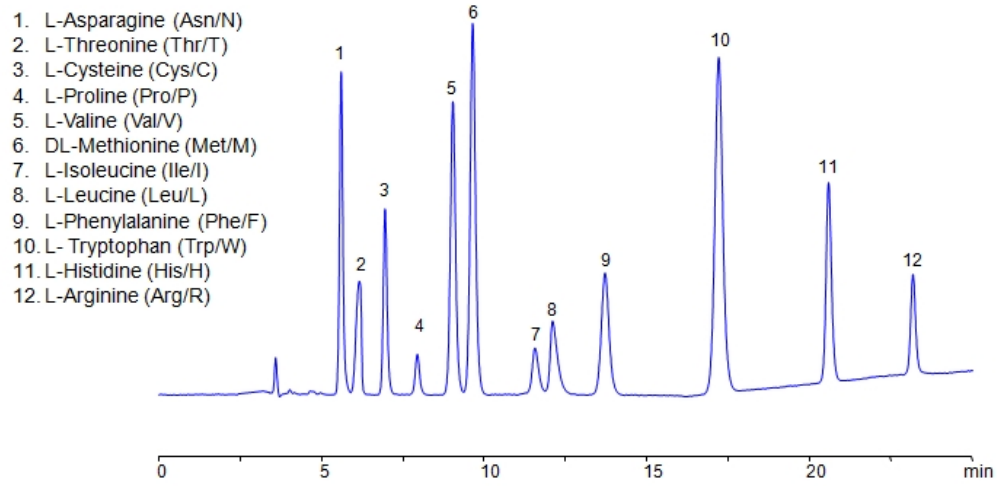
HPLC Separation of Mixture of 12 Amino Acids on Primesep 100 Column



Column:	**Primesep 100**
Column size:	4.6 × 250 mm, 5 µm
Mobile phase:	MeCN /H2O
Buffer:	H2SO4
Flow rate:	1 mL/min
UV detection:	200 nm

Time, min	%MeCN	%H2O	%H2SO4
0.00	35	65	0.05
12.00	35	65	0.05
25.00	35	65	0.20

High Performance Liquid Chromatography (HPLC) Method for Analysis of Asparagine , L-Cysteine , Cysteine , Proline , Valine , D-Valine , Methionine , L-Methionine , Isoleucine , D-Isoleucine , DL-Isoleucine , D-Leucine , Phenylalanine , Tryptophan , Histidine , Arginine , Amino Acids , Leucine , L-Threonine .

Amino acids are the building blocks of proteins. Based on their dietary requirement, they are classified into essential and non-essential amino acids. Essential amino acids cannot be synthesized by the human body in sufficient quantities and must be obtained from the diet. Non-essential amino acids, on the other hand, can be synthesized by the body and are not dependent on dietary intake.

It’s worth noting that while these amino acids are considered “non-essential” for adults under normal circumstances because the body can synthesize them, there are situations where some may become “conditionally essential.” This means that under certain conditions like illness, stress, or trauma, the body might not produce them in sufficient quantities, and dietary intake becomes necessary. Arginine, for instance, is considered conditionally essential, especially during periods of rapid growth, illness, or trauma.

Amino acids can be retained, separeted and analyzed on a Primesep 100 mixed-mode stationary phase column using an isocratic analytical method with a simple mobile phase of water, Acetonitrile (MeCN), and a sulfuric acid (H2SO4) as a buffer. This analysis method can be detected in the UV regime at 200 nm.

Method Parameters

Column	Primesep 100, 4.6 x 250 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN/H2O – 35/65%
Buffer	H2SO40.05% 12 min hold, gradient 0.05-0.20, 13 min
Flow Rate	1.0 mL/min
Detection	UV, 200 nm

Quelle: https://sielc.com/hplc-separation-of-mixture-of-12-amino-acids