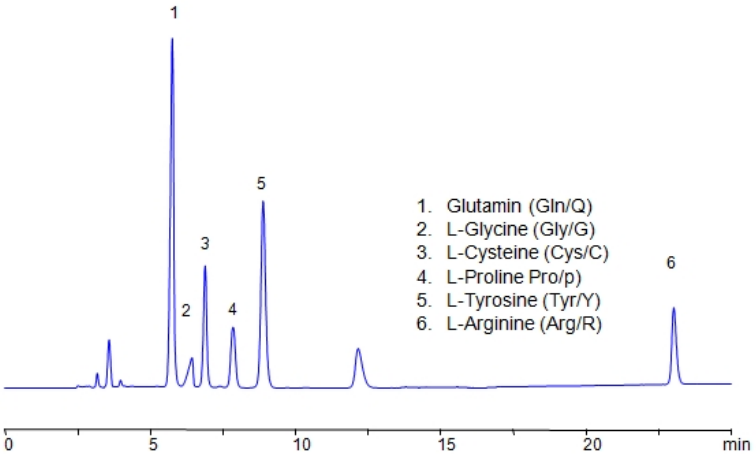
HPLC Separation of Mixture of Conditionally Essential Amino Acids on Primesep 100 Column



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 L-Glutamine , Glycine , Cysteine , L-Cysteine , Proline , Tyrosine , Arginine , Amino Acids .

Glutamine is an amino acid with the chemical formula C5H10N2O3 . It is a building block for protein, but it also supports the immune system, gut health, and detoxification. It is usually found in meat, fish, eggs, dairy, and whole grains; though some consider it the most abundant amino acid in the body. People also take glutamine as treatment for sickle cell disease, healing of burns, recovery after surgery, and injuries.

L-Glycine is an important amino acid compounds widely used in pharmaceutical, biochemical, and peptide research. It has he chemical formula C2H5NO2 . It is water-soluble and plays a critical role in protein synthesis, peptide modification, and metabolic studies. It can be found in meat., eggs. and bones.

L-Cysteine is an amino acid with the chemical formula C5H10N2O3 . It is primarily a building block for protein, but it also has antioxidant effects. On occasion, ot os used to support people dealing with cancer, diabetes, and hangover, but there is yet to be substantial evidence that it works. Poultry, egg, beef, and whole grains are rich sources of the amino acid.

L-Proline is an amino acid with the chemical formula C5H9NO2 . It is naturally produced in the body, but it is also recommended to be consumed through the diet. It can be found in meat, fish, and dairy. It is used for skin healing and treatment of other skin conditions as it is an essential component of collagen. It is important for upkeep of joints and tendons, as well as heart muscles.

L-Tyrosine is an amino acid with the chemical formula C9H11NO3 . It is naturally used in the body to create neurotransmitters like dopamine and norepinephrine. While it is produced in the body naturally, it

can also be consumed in beef, pork, fish, dairy products, and beans. As a supplement, it is also used to treat Phenylketonuria (PKU).

L-Arginine is an amino acid with the chemical formula C9H11NO3 . It is a precursor for nitric acid, making it crucial for blood flow and general cardiovascular health. It can help lower blood pressure, help with chest pain, and improve symptoms of Peripheral arterial disease (PAD).

L-Glutamine , Glycine , Cysteine , L-Cysteine , Proline , Tyrosine , Arginine , Amino Acids 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 sulfuric acid buffer. Detection is performed using UV.

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-conditionally-essential-amino-acids