L-Histidine
(From non-animal source)
Cell Culture Tested

Product Code: TC076

Product Description:
Molecular Weight: 155.2
Molecular Formula: C₆H₈N₃O₂
CAS No.: 71-00-1
Synonym: (S)-α-amino-1H-imidazole-4-propanoic acid, glyoxaline-5-alanine, His, H

L-Histidine is positively charged hydrophilic, essential α-amino acid coded by codons CAU and CAC. It is chemically basic in nature. It carries positively charged imidazole functional group.

It is used as a major component in wide range of cell culture media including classical and serum-free media. It plays many important roles in cell culture. Some of them are mentioned below:

1. Protein synthesis and protein folding:
Like all other amino acids, L-Histidine also acts as a substrate for protein synthesis during translation process. Histidine’s side chain allows it to act as both a base and an acid, both donating and accepting protons, which can be of considerable importance in its role as part of proteins. Hence it is a proteinogenic amino acid.

2. Nucleic acid synthesis:
Biosynthesis of Histidine is inherently linked to the pathways of nucleotide formation. Thus it participates in synthesis of nucleic acids also.

3. As a catalyst:
Because of presence of imidazole ring, Histidine is a nucleophile and a good acid/base catalyst. Histidine residues are found in enzyme active sites.

4. Precursor for synthesis of carnosine:
Histidine acts as a precursor for synthesis of carnosine, a dipeptide of amino acids beta-alanine and histidine. Carnosine exerts anti-oxidant effect and protects cellular proteins by preventing oxidation of sugars. It also binds with potentially harmful carbonyl groups that attack and bind with proteins imbedded in cell membrane.

Directions:
Preparation instructions:
L-Histidine is soluble in water (100mg/ml) and 0.5M HCl (50mg/ml)

Quality Control:
Appearance
White to offwhite crystalline powder.
Solubility
Clear colorless solution at 1gm in 100ml of water.

pH of 2% solution water
7.00 - 8.50

Specific rotation α<sub>d</sub> +11.8° to +12.8°

Chloride (Cl)<br>NMT 0.02%
Ammonium (NH₄)<br>NMT 0.1%
Sulphate (SO₄)<br>NMT 0.02%
Iron (Fe)<br>NMT 0.001%
Heavy metals<br>NMT 0.001%
Arsenic (As)<br>NMT 0.0001%
Other amino acids<br>NMT 0.5%
Assay<br>NLT 98.5%
Cell Culture Test<br>Passes

Please refer disclaimer overleaf
Storage and Shelf Life:
Store at 10-30°C away from bright light
Shelf life is 36 months.
Use before expiry date given on the product label.