L-Glutamic Acid monosodium, monohydrate

(From non-animal source)
Cell Culture Tested

Product Code: TC064

Product Description :

Molecular Weight: 187.13
Molecular Formula:
$NaOOCCH_2CH_2CH(NH_2)COOH \cdot H_2O$
CAS No.: 6106-04-3
Synonym: L-2-Aminopentanedioic acid, MSG, Sodium L-glutamate

L-Glutamic acid monosodium monohydrate is hydrated sodium salt of L-Glutamic acid. It is also called monosodium glutamate (MSG). L-Glutamic acid is negatively charged hydrophilic, non-essential α-amino acid coded by codons GAA and GAG. It is chemically acidic in nature.

Although it is a non-essential amino acid, it is used as a major component in wide range of cell culture media including classical and serum-free media. It resembles L-Glutamic acid in its functions with respect to cell culture systems. Some of the functions are mentioned below:

· Precursor for synthesis of L-Glutamine:
Like Glutamatic acid, monosodium glutamate is also converted to L-Glutamine with the help of enzyme Glutamine sythatase. This process is essential for normal maintenance of cells in culture. L-Glutamine produced by this process plays a very crucial role in cell culture systems as it is an essential amino acid. It participates in protein synthesis, nucleic acid synthesis, energy generation etc.

· Protein synthesis:
Similar to L-Glutamic acid, it is also one of the major building blocks of the protein synthesis.

· Nucleic acid synthesis:
It plays major role in biosynthesis of purine and pyrimidine bases of DNA and RNA.

Directions :

Preparation instructions:
L-Glutamic acid monosodium monohydrate is soluble in water. Solutions of L-Glutamic acid monosodium monohydrate cannot be autoclaved. They should be sterilized by filtering through a sterile membrane with porosity 0.22 microns.

Quality Control:

Appearance
White crystalline powder.

Solubility
Clear colorless solution at 5gm in 100ml of water .

pH of 10% solution in water
6.00 -8.00

Specific rotation [alpha]20/D
+24.8° to +25.3°

Chloride (Cl)
NMT 0.1%

Iron (Fe)
NMT 0.5%

Arsenic (As)
NMT 0.05%

Assay
NLT 99%

Cell Culture Test
Passes

Storage and Shelf Life:

Store at 10-30°C away from bright light.
Shelf life is 48 months.
Use before expiry date given on the product label.

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