MEM Non-Essential AA Solution product information

Product Name

Name: MEM Non-Essential Amino Acids Solution,100X Conc.

Cat. No.: C3240-0100

Size: 100 mL

Product Description

Living organisms differ considerably with respect to their ability to synthesize amino acids (AAs) and the forms of nitrogen which they may utilize for such a purpose. The higher vertebrates do not possess the ability to synthesize all the common amino acids like some of the more versatile higher plants or microorganisms like *E. coli*. Humans and the albino rat can make only ten (10) of twenty (20) AAs required for protein synthesis. These collectively are known as the non-essential amino acids (NEAA's), the remainder being the essential amino acids (EAAs). Amino acids are the building blocks (i.e., linear chains of amino acids) of proteins, and proteins have a variety of functions such as metabolism, precursors for biosynthesis of other biological molecules, and acting as coenzymes. Proteins are critical to life and are therefore needed by every living organism. An amino acid is a molecule containing both an amine group and a carboxyl group. Proteins are chains of amino acids linked together by peptide bonds. Next to water, proteins make up the largest portion of our body weight as they are contained in the muscles, organs, hair, nails and other body systems. Unlike fat and complex carbohydrates, the human body does not store excess amino acids as a reserve; they must be supplied in the diet every day. Concentrated supplements like MEM NEAAs 100X provide the cells with the amino acids that are made by themselves thereby reducing the overall biosynthetic burden to cell cultures *in vitro*.

Amino acids are incorporated into proteins. At a minimum, basal medium must contain those essential amino acids (EAA's) that cannot be synthesized by the cells including L-cysteine and L-tyrosine at a rate to meet the metabolic requirements of the cells in culture. Individual requirements vary for the cell type being cultured. Some more specialized media often have non-essential amino acids (NEAAs) added to ensure that amino acids do not limit the maximum cell concentration attainable.

As the selection of a nutrient medium or supplementation thereof is strongly influenced, among others, by many factors, are three major considerations:

- cell type
- type of culture (e.g., clonal, monolayer, or suspension)
- degree of chemical definition

It is recommended to review the extensive literature concerning cell culture media and its supplementation and the physiological parameters required for each specific cell line as per their essential niche requirements.

Predominant Characteristics

- Liquid 100X Concentrate
- Stimulates Growth and Prolongs Cell Viability
- Commonly Used in Cell Culture System Applications and Formulations

- Relatively Long-term Storage When Handled Properly Under Defined Conditions

Storage and Stability

The product should be kept at **2 - 8°C**.
The product is **light-sensitive** and therefore should not be left in the light.
Shelf life: 12 months from date of manufacture

Procedure

1. Take a bottle of MEM Non-Essential Amino Acids Solution 100X Conc. from refrigerator and read the label. Warm to room temperature (15 - 30°C) prior to use.
2. Ensure that the cap of the bottle is tight.
3. Gently swirl the solution in the bottle to ensure homogeneity.
4. Wipe the outside of the bottle with a disinfectant solution such as 70% ethanol.
5. Pipette the solution using aseptic/sterile technique under a laminar-flow culture hood.
6. MEM Non-Essential Amino Acids Solution, 100X Conc. should be diluted to the working concentration (1X) before use.

Manufacturer

Shanghai Dr. Cell Co., Ltd.

Issue Date

April 2023

Precaution and Disclaimer

For research use only, not for clinical diagnosis, and treatment.