

**MEM Amino Acid Solution (50X)**

Sterile-filtered  
Endotoxin tested  
Cell culture tested

Catalog Number **LS 004-01**  
Storage Temperature 2~8°C

**Product Description**

Twenty amino acids are required for cell growth and proliferation. These are divided into two groups: a) Essential amino acids: Those that are not manufactured by animal cells and need to be supplemented in culture media. b) Non essential amino acids: These can be synthesized by animal cells, and need not to be supplemented in culture media. The concentration of amino acids usually limits the maximum cell concentration attainable, and the balance may influence cell survival and growth rate.

Essential Amino Acids		Nonessential Amino Acids
L-Arginine	L-Methionine	L-Alanine
L-Cysteine	L-Phenylalanine	L-Asparagine
L-Glutamine	L-Threonine	L-Aspartic acid
L-Histidine	L-Tryptophan	L-Glutamic acid
L-Isoleucine	L-Tyrosine	Glycine
L-Leucine	L-Valine	L-Proline
L-Lysine		L-Serine

**LS 004-01** contains MEM essential amino acids in cell/tissue culture grade water (**LS 016-01**). The selection of a nutrient medium is strongly influenced by (1) type of cell, (2) type of culture (monolayer, suspension, or clonal) and (3) degree of chemical definition necessary. It is important to review the literature for recommendations concerning medium, supplementation and physiological parameters required for a specific cell line.

**Storage/Stability**

The MEM amino acid solution should be stored at 2~8°C. Deterioration of the liquid may be recognized by (1) precipitate or particulate matter throughout the solution, (2) cloudy appearance, (3) color change, and/or (4) pH change. The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

**Biological Performance Characteristics**

The growth-maintaining capacity of MEM amino acid solution is tested in MEM containing 5% FBS using an appropriate cell line(s). Growth rates are examined through three subculture generations and compared with parallel cultures grown in standardized control medium. Cells are counted and growth is plotted as a logarithmic function of time in culture, and seeding efficiency, doubling time, and the final cell density are determined. During the testing period, cultures are examined microscopically for a typical morphology and evidence of cytotoxicity.

**Precaution**

For *In Vitro* Use Only

Component	mg/L <b>LS 004-01</b>
L-Arginine·HCl	6320.00
L-Cystine·2HCl	1564.00
L-Histidine·HCl·H <sub>2</sub> O	2100.00
L-Isoleucine	2625.00
L-Leucine	2620.00
L-Lycine·HCl	3625.00
L-Methionine	755.00
L-Phenylalanine	1650.00
L-Threonine	2380.00
L-Tryptophan	510.00
L-Tyrosine·2Na·2H <sub>2</sub> O	2600.00
L-Valine	2340.00

**Product Profile**

Appearance	Clear colorless solution
Endotoxin	≤ 1.0 EU/ml
Sterility	Sterilized by 0.2 μm filtration system. Sterility tests are performed in accordance with protocols described in USP.

**References**

Eagle, H. 1959. Amino Acid Metabolism in Mammalian Cell Cultures. *Science*. 130, 432-437.  
 Freshney, R. I., Culture of Animal Cells; A Manual of Basic Technique, Freshney, R. I. 3rd ed., A John Wiley & Sons, Inc., 1994, New York, USA.  
 Lodish, H. et. al., Molecular Cell Biology, Darnell, J. E. 3rd ed., Scientific American Books, Inc., 1995, New York, USA.  
 Darling, D. C. and Morgan, S. J., Animal Cells; Culture and Media; Essential Data, Rickwood, D. and Hames, B. D. edi., John Wiley and Sons, Inc., 1994, Chichester, UK.