

DATA SHEET

Rev.ver: 01

1. Identification

Product name	Minimum Essential Medium Eagle (MEM) (Alpha Modification) With L-Glutamine, Ribonucleosides and Deoxyribonucleosides Without Sodium Bicarbonate and Phenol red
Catalog.no	CCMP083

2. Description

Minimum Essential Medium Eagle Alpha Modification (α -MEM) is an improved version of Eagle's Minimum Essential Medium (MEM), developed to support the growth and maintenance of a broader range of mammalian cell types. α -MEM was formulated by Clifford P. Stanners and colleagues as a modification of MEM to better support the proliferation of fastidious cells with higher nutritional requirements, including certain subtypes of fibroblasts, bone marrow cells, and primary cells.

This medium contains non-essential amino acids, sodium pyruvate, vitamins, and additional components such as nucleosides, which enhance cell growth and viability compared to standard MEM. The inclusion of these supplements provides a more balanced and complete nutrient profile, promoting robust growth, higher cell density, and extended viability in culture.

α -MEM supports the cultivation of a wide variety of adherent and suspension cells and is particularly suitable for bone-derived cells, mesenchymal stem cells, fibroblasts, and hybridoma cells. It can be supplemented with fetal bovine serum (FBS), glutamine, and antibiotics as required by specific cell types.

3. Product Specifications

Appearance	Off white powder
CO ₂ concentration, optimum	5.0 %
Storage and shelf life	Store at +2°C to +8°C protected from light.
Shipping conditions	Ambient

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4. Formulation

Components	Concentration mg/L
Amino Acids:	
Glycine	50.0
L-Alanine	25.0
L-Arginine HCl	126.0
L-Asparagine monohydrate	50.0
L-Aspartic acid	30.0
L-Cysteine hydrochloride	100.0
L-Cystine 2HCl	31.3
L-Glutamic acid	75.0
L-Glutamine	292.0
L-Histidine HCl H ₂ O	42.0
L-Isoleucine	52.0
L-Leucine	52.0
L-Lysine HCl	72.50
L-Methionine	15.0
L-Phenylalanine	32.0
L-Proline	40.0
L-Serine	25.0
L-Threonine	48.0
L-Tryptophan	10
L-Tyrosine 2Na 2H ₂ O	51.9
L-Valine	46.0
Vitamins:	
Choline chloride	1.0
D-Pantothenic acid • ½Ca	1.0
D-Biotin	0.10

Components	Concentration mg/L
Folic Acid	1.0
L-Ascorbic acid	50.0
myo-Inositol	2.0
Nicotinamide	1.0
Pyridoxal HCl	1.0
Riboflavin	0.10
Thiamine HCl	1.0
Vitamin B12	1.360
Inorganic Salts	
CaCl ₂ 2H ₂ O	265
MgSO ₄ (anhydrous)	97.72
KCl	400
NaCl	6800
NaH ₂ PO ₄ (anhydrous)	122
Other Components:	
D-Glucose	1000.0
2' Deoxyadenosine	10.0
2' Deoxycytidine hydrochloride	11.0
2' Deoxyguanosine	10.0
Adenosine	10.0
Cytidine	10.0
Guanosine	10.0
Lipoic acid	0.20
Thymidine	10.0
Uridine	10.0
Sodium pyruvate	110.0

Preparation of 1-liter liquid medium:

1. Suspend 10.2 g in 900 ml cell culture grade water with constant, gentle stirring until the powder is completely dissolved. Do not heat the water.
2. Add 2.2 g of sodium bicarbonate powder or 29.3 ml of 7.5 % sodium bicarbonate solution for 1 liter of medium and stir until dissolved.
3. Adjust the pH to 0.2 to 0.3 pH units below the desired pH using 1 N HCl or 1 N NaOH since the pH tends to rise during filtration.
4. Add cell culture grade water up to the final volume of 1000 ml
5. Sterilize the medium immediately by filtering through a sterile membrane filter with porosity of 0.22 micron or less, using positive pressure rather than vacuum to minimize the loss of carbon dioxide.
6. Aseptically add sterile supplements as required and dispense the desired amount of sterile medium into sterile containers.
7. Store liquid medium at +2°C to +8°C and in dark until use.

5. Precautions and Disclaimer

This product is for research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.