

Description

DMEM (Dulbecco's Modified Eagle Medium) is a widely used basal medium for supporting the growth of many different mammalian cells. Cells successfully cultured in DMEM include primary fibroblasts, neurons, glial cells, HUVECs, and smooth muscle cells, as well as cell lines such as HeLa, 293, Cos-7, and PC-12.

This DMEM is modified as follows:

With	Without
• High Glucose	• Sodium Pyruvate
• HEPES	
• GlutaMAX™	
• Phenol Red	



Using DMEM

DMEM is unique from other media as it contains 4 times the concentration of amino acids and vitamins than the original Eagle's Minimal Essential Medium. DMEM was originally formulated with low glucose (1 g/L) and sodium pyruvate, but is often used with higher glucose levels, with or without sodium pyruvate. DMEM with [GlutaMAX™](#) supplement minimizes toxic ammonia build-up and improves cell viability and growth in an easy-to-use format. DMEM contains no proteins, lipids, or growth factors. Therefore, DMEM requires supplementation, commonly with 10% [Fetal Bovine Serum](#) (FBS). DMEM uses a sodium bicarbonate buffer system (3.7 g/L), and therefore requires a 5–10% CO₂ environment to maintain physiological pH.

Contents and Storage

Storage conditions: 2-8° C. Protect from light

Shipping conditions: Ambient

Shelf life: 12 months from date of manufacture

Formulation

Components	Molecular Weight	Concentration (mg/L)	mM
Amino Acids			
Glycine	75.0	30.0	0.4
L-Alanyl-Glutamine	217.0	862.0	3.9723501
L-Arginine hydrochloride	211.0	84.0	0.39810428
L-Cystine	313.0	48.0	0.15335463
L-Histidine hydrochloride-H ₂ O	210.0	42.0	0.2
L-Isoleucine	131.0	105.0	0.8015267
L-Leucine	131.0	105.0	0.8015267
L-Lysine hydrochloride	183.0	146.0	0.7978142
L-Methionine	149.0	30.0	0.20134228
L-Phenylalanine	165.0	66.0	0.4
L-Serine	105.0	42.0	0.4
L-Threonine	119.0	95.0	0.79831934
L-Tryptophan	204.0	16.0	0.078431375
L-Tyrosine disodium salt dihydrate	261.0	104.0	0.39846742
L-Valine	117.0	94.0	0.8034188
Vitamins			
Choline chloride	140.0	4.0	0.028571429
D-Calcium pantothenate	477.0	4.0	0.008385744
Folic Acid	441.0	4.0	0.009070295
Niacinamide	122.0	4.0	0.032786883
Pyridoxine hydrochloride	204.0	4.0	0.019607844
Riboflavin	376.0	0.4	0.0010638298
Thiamine hydrochloride	337.0	4.0	0.011869436
i-Inositol	180.0	7.2	0.04
Inorganic Salts			
Calcium Chloride (CaCl ₂) (anhyd.)	111.0	200.0	1.8018018
Ferric Nitrate (Fe(NO ₃) ₃ ·9H ₂ O)	404.0	0.1	2.4752476E-4
Magnesium Sulfate (MgSO ₄) (anhyd.)	120.0	97.67	0.8139166
Potassium Chloride (KCl)	75.0	400.0	5.3333335
Sodium Bicarbonate (NaHCO ₃)	84.0	3700.0	44.04762
Sodium Chloride (NaCl)	58.0	4750.0	81.89655
Sodium Phosphate monobasic (NaH ₂ PO ₄ ·H ₂ O)	138.0	125.0	0.9057971
Other Components			
D-Glucose (Dextrose)	180.0	4500.0	25.0
HEPES	238.0	5958.0	25.033613
Phenol Red	376.4	15.0	0.039851222

Specifications

General Specifications

Glutamine:	GlutaMAX™-I
Phenol Red Indicator:	Phenol Red
Form:	Liquid
Glucose:	High Glucose
Serum Supplementation:	Standard Serum Supplementation
HEPES Buffer:	HEPES
Sodium Pyruvate Additive:	No Sodium Pyruvate
Volume:	500 ml
Product Size:	500 mL
Green Features:	Sustainable packaging
Shipping Condition:	Room Temperature