

DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO₃, w: 1.0 mM Sodium pyruvate | 820300a

DMEM (Dulbecco's Modified Eagle Medium) is a highly versatile and widely utilized basal medium designed to support the growth of a diverse range of mammalian cells in biological research. It serves as an ideal medium for culturing primary fibroblasts, neurons, glial cells, HUVECs, smooth muscle cells, as well as popular cell lines like HeLa, 293, Cos-7, and PC-12.

What sets DMEM apart from other media is its unique composition. It contains an impressive fourfold increase in amino acid and vitamin concentration compared to the original Eagle's Minimal Essential Medium. Initially developed with low glucose (1 g/L) and sodium pyruvate, DMEM is frequently employed with higher glucose levels, either with or without sodium pyruvate. Notably, DMEM does not contain proteins, lipids, or growth factors, necessitating supplementation. To achieve optimal growth, a common approach is to supplement DMEM with 10% Fetal Bovine Serum (FBS). Additionally, DMEM employs a sodium bicarbonate buffer system, requiring a 5-10% CO₂ environment to maintain a physiological pH.

Dulbecco's Modified Eagle Medium (DMEM) is highly regarded among defined media for cell and tissue culture, catering to the growth needs of various adherent cell phenotypes. It surpasses the original Eagle's Medium, developed in the 1950s for cultivating chicken cells, through the enhanced supplementary formulation known as Dulbecco's modification. This modification significantly elevates the content of select amino acids and vitamins up to fourfold compared to the original medium.

In the field of cell culture, DMEM plays a vital role as a growth medium for different cell types, including primary cells, stem cells, and transformed cells. Researchers also employ the modified version of DMEM for a wide array of research applications, such as drug discovery, tissue engineering, and the study of cell signaling pathways.

Quality Control

- Sterile-filtered

Storage and Shelf Life

- Store at +2°C to +8°C, protected from light.
- Once opened, store at 4°C and use within 6–8 weeks.

Shipping Conditions

- Ambient temperature

Maintenance

- Keep refrigerated at +2°C to +8°C in the dark. Avoid freezing and frequent warming to +37°C, as it reduces product quality.
- Do not heat the medium beyond 37°C or use uncontrolled heat sources such as microwave appliances.
- If only part of the medium is to be used, remove the required amount and warm it to room temperature before use.

Composition

Category	Components	Concentration (mg/L)
Amino Acids	Glycine	30.00
	L-Arginine HCl	84.00
	L-Cystine 2 HCl	62.57
	L-Glutamine	584.00

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	L-Histidine HCl H ₂ O	42.00
	L-Isoleucine	105.00
	L-Leucine	105.00
	L-Lysine HCl	146.00
	L-Methionine	30.00
	L-Phenylalanine	66.00
	L-Serine	42.00
	L-Threonine	95.00
	L-Tryptophan	16.00
	L-Tyrosine 2 Na 2H ₂ O	103.79
	L-Valine	94.00
Vitamins	Choline chloride	4.00
	D-Calcium Pantothenate	4.00
	Folic Acid	4.00
	myo-Inositol	7.20
	Nicotinamide	4.00
	Pyridoxal HCl	4.00
	Riboflavin	0.40
	Thiamine HCl	4.00
Inorganic Salts	CaCl ₂ 2 H ₂ O	265.00

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	$\text{Fe}(\text{NO}_3)_3 \cdot 9 \text{H}_2\text{O}$	0.10
	KCl	400.00
	$\text{MgSO}_4 \cdot 7 \text{H}_2\text{O}$	200.10
	NaCl	6400.00
	NaHCO_3	3700.00
	$\text{NaH}_2\text{PO}_4 \cdot 2 \text{H}_2\text{O}$	141.73
Other Components	D-Glucose	4500.00
	Phenol Red Sodium Salt	15.90
	Sodium Pyruvate	110.00