



Technical Data Sheet

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Dulbecco's Modified Eagle Medium (DMEM)

RDM-DMEM-01

Principle

Dulbecco's Modified Eagle Medium (DMEM) is widely used in cell culture, cell growth, and viability research. DMEM is a modification of Basal Medium Eagle (BME) that contains a four-fold higher concentration of amino acids and vitamins, supplemented with glycine, serine, and ferric nitrate, as well as additional supplementary components. Many composition modifications of Eagle's Medium have been developed since the original formulation, but the most widely used of these modifications is Dulbecco's Modified Eagle's Medium (DMEM).

DMEM contains 4.5 g/L of glucose concentrations instead of 1 g/L. This elevated concentration of glucose has proven precious for the cultivation of a variety of cell lines, including primary cultures of mouse and chicken cells as well as various normal and transformed cell lines. Also widely used for supporting the growth of many different mammalian cells.

Use: Recommendation for cell culture, cell growth, and viability research to support the growth.

Contents*

Ingredients

Ingredients	mg/l	Ingredients	mg/l
Inorganic salts		L-Phenylalanine	66.000
Calcium chloride dihydrate	265.000	L-Serine	42.000
Ferric nitrate nonahydrate	0.100	L-Threonine	95.000
Magnesium sulphate anhydrous	97.720	L-Tryptophan	16.000
Potassium chloride	400.000	L-Tyrosine disodium salt	103.79
Sodium chloride	6400.000	L-Valine	94.000
Sodium dihydrogen phosphate anhydrous	109.000	Vitamins	
Amino acids		Choline chloride	4.000
Glycine	30.000	D-Ca-Pantothenate	4.000
L-Arginine hydrochloride	84.000	Nicotinamide	4.000
L-Cystine dihydrochloride	62.570	Pyridoxal hydrochloride	4.000
L-Glutamine	584.000	Riboflavin	0.400
L-Histidine hydrochloride monohydrate	42.000	Thiamine hydrochloride	4.000
L-Isoleucine	105.000	i-Inositol	7.200
L-Leucine	105.000	Others	
L-Lysine hydrochloride	146.000	D-Glucose	4500.000
L-Methionine	30.000	Sodium pyruvate	110.000
		Phenol red sodium salt	15.900

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 13.5 gram in 1000 ml distilled water mix well to dissolve all the ingredients. Adjust the pH 7.40-8.00 using 1N HCl/NaOH. Filter the medium through a sterile membrane filter (0.22µm).

Aseptically dispense the medium in desired.

Precautions to be taken

These plant tissue culture media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Beige to light pink, homogenous, free flowing powder.
Solubility	13.5 g/l soluble in distilled water
pH at 25 °C	7.40-8.00
Color and clarity of ready medium	Reddish orange, clear solution.

Cultural Response: The growth promotion capacity observed by

Qualitatively: observe the cells morphology

Quantitatively: estimating the cell counts

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label.

Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Kalyan Kumar De (2008), An introduction to Plant Tissue Culture, 7th Ed., Darjeeling Govt. College, Darjeeling, India. New Central Book Agency (P) Ltd. Kolkata, India.
2. Narayanaswamy S (2005). Plant cell and tissue Culture, Tata Mc-Graw Hill publishing Co. Ltd. 6th reprint.
3. Roberta H.Smith. (2005), Plant Tissue Culture-Techniques and Experiments, 2nd Ed., Texas A&M University, College Station, Texas. Academic Press. An Imprint of Elsevier, San Diego California, U.S.A

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