

DATA SHEET

Rev.ver: 01

1. Identification

Product name **Dulbecco's Modified Eagle Medium / Nutrient Mixture F-12 Ham (DMEM / F12, 3:1 Mixture) High glucose w/ L-Glutamine w/o Calcium chloride, HEPES buffer and Sodium bicarbonate**

Catalog.no **CCMP038**

2. Description

Dulbecco's Modified Eagle Medium/Nutrient Mixture F-12 (DMEM/F12, 3:1 mixture) is a modified basal medium designed to provide a nutrient-rich environment that supports the growth and maintenance of a wide variety of mammalian cells. This formulation combines three parts DMEM with one part Ham's F-12, resulting in a medium with higher concentrations of amino acids, vitamins, and glucose compared to standard DMEM/F12 (1:1).

The DMEM/F12 (3:1) formulation supports the robust proliferation of epithelial, fibroblast, endothelial, and certain hybridoma and transformed cell lines. It is particularly useful for cells requiring the enhanced nutrient density of DMEM, while retaining the trace elements and select nutrients from F-12 that promote balanced cell metabolism and differentiation.

3. Product Specifications

Appearance	White to light pink, homogenous powder
Solubility	Clear solution at 12.5 g/l
Storage and shelf life	Store at +2°C to +8°C protected from light.
Shipping conditions	+2°C to +8°C

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4. Formulation

Components	Concentration mg/L
Amino Acids:	
Glycine	24.380
L-Alanine	2.227
L-Arginine hydrochloride	115.520
L-Asparagine monohydrate	3.752
L-Aspartic acid	3.325
L-Cysteine hydrochloride monohydrate	8.780
L-Cystine dihydrochloride	46.927
L-Glutamic acid	3.675
L-Glutamine	474.500
L-Histidine hydrochloride monohydrate	36.740
L-Isoleucine	79.735
L-Leucine	82.025
L-Lysine hydrochloride	118.625
L-Methionine	23.625
L-Phenylalanine	50.740
L-Proline	8.625
L-Serine	34.125
L-Threonine	74.225
L-Tryptophan	12.510
L-Tyrosine disodium salt	79.795
L-Valine	73.425
Inorganic Salts	
Copper sulphate pentahydrate	0.000625
Disodium hydrogen phosphate	35.510
Ferric nitrate nonahydrate	0.075
Ferrous sulphate heptahydrate	0.209

Components	Concentration mg/L
Magnesium chloride hexahydrate	14.412
Magnesium sulphate anhydrous	73.290
Potassium chloride	356.000
Sodium chloride	6699.750
Sodium dihydrogen phosphate	81.750
Zinc sulphate heptahydrate	0.215
Vitamins	
Choline chloride	6.490
D-Biotin	0.001825
D-Ca-Pantothenate	3.120
Folic acid	3.330
Niacinamide	3.000
Pyridoxine hydrochloride	3.015
Riboflavin	0.309
Thiamine hydrochloride	3.085
Vitamin B12	0.340
myo-Inositol	9.900
Others	
D-Glucose	3825.500
DL-Thioctic acid	0.053
Hypoxanthine sodium salt	1.200
Linoleic acid	0.021
Phenol red sodium salt	12.235
Putrescine hydrochloride	0.040
Sodium pyruvate	27.525
Thymidine	0.183

Directions:

1. Suspend 12.5 gms in 900ml tissue culture-grade water with constant, gentle stirring until the powder is completely dissolved. Do not heat the water.
2. Add 3.07 gms of Sodium bicarbonate powder or 40.8 ml of 7.5% Sodium bicarbonate solution for 1 liter of medium and stir until dissolved.
3. Adjust the pH to 0.2 - 0.3 pH units below the desired pH using 1N HCl or 1N NaOH since the pH tends to rise during filtration.
4. Make up the final volume to 1000ml with tissue culture grade water.
5. Sterilize the medium immediately by filtering through a sterile membrane filter with a 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 2-8°C and in dark till 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.