DMEM (Dulbecco's Modified Eagle's Medium)

Media Lab Product #: 11-500

Vender: Gibco/ Sigma-Aldrich
Catalog #: 12800-082/ D7777-50L
Package Size: 1X10L/ 1X50L

Dulbecco's Modified Eagle's Medium (DMEM), powder (4.5g/L D-glucose). Contains 4,500mg/L D-glucose, L-glutamine and 110 mg/L sodium pyruvate. Without sodium bicarbonate. Dulbecco's Modified Eagle's Media are well suited for supporting the growth of a broad spectrum of mammalian cell lines.

Description:
Contains 4,500 mg/L D-glucose, L-glutamine, and 110 mg/L sodium pyruvate, but no sodium bicarbonate.

Media Lab adds:
Sodium bicarbonate (3.7 g/L)

Molarity:
D-glucose, 25mM
L-glutamine, 4mM
Sodium pyruvate, 1mM
Sodium bicarbonate, 44mM
Phenol red, 0.04mM

Storage:
2°C to 8°C
18 months shelf life
liquid

Intended use(s):
in vitro diagnostic (IVD).

Media Formulation: attached

*Note: **Pyridoxine HCl replaces pyridoxal HCl.**

Technical Resources - Media Formulations -Gibco

12800 - DMEM, powder, high glucose, pyruvate
Catalog Number(s):
12800017 ,12800082

Components	Molecular Weight	Concentration (mg/L)	mM
Amino Acids			
Glycine	**75**	**30**	**0.4**
L-Arginine hydrochloride	**211**	**84**	**0.398**
L-Cystine 2HCl	**313**	**63**	**0.201**
L-Glutamine	**146**	**584**	**4**
L-Histidine hydrochloride-H2O	**210**	**42**	**0.2**
L-Isoleucine	**131**	**105**	**0.802**
L-Leucine	**131**	**105**	**0.802**
L-Lysine hydrochloride	**183**	**146**	**0.798**
L-Methionine	**149**	**30**	**0.201**
L-Phenylalanine	**165**	**66**	**0.4**
L-Serine	**105**	**42**	**0.4**
L-Threonine	**119**	**95**	**0.798**
L-Tryptophan	**204**	**16**	**0.0784**
L-Tyrosine disodium salt dihydrate	**261**	**104**	**0.398**
L-Valine	**117**	**94**	**0.803**
Vitamins			
Choline chloride	**140**	**4**	**0.0286**
D-Calcium pantothenate	**477**	**4**	**0.00839**
Folic Acid	**441**	**4**	**0.00907**
Niacinamide	**122**	**4**	**0.0328**
Pyridoxine hydrochloride	**204**	**4**	**0.0196**
Riboflavin	**376**	**0.4**	**0.00106**
Thiamine hydrochloride	**337**	**4**	**0.0119**
i-Inositol	**180**	**7.2**	**0.04**
Inorganic Salts			
Calcium Chloride (CaCl2) (anhyd.)	**111**	**200**	**1.8**
Ferric Nitrate (Fe(NO3)3"9H2O)	**404**	**0.1**	**0.000248**
Magnesium Sulfate (MgSO4) (anhyd.)	**120**	**97.67**	**0.814**
Potassium Chloride (KCl)	**75**	**400**	**5.33**
Sodium Chloride (NaCl)	**58**	**6400**	**110.34**
Sodium Phosphate monobasic (NaH2PO4-H2O)	**138**	**125**	**0.906**
Other Components			
D-Glucose (Dextrose)	**180**	**4500**	**25**
Phenol Red	**376.4**	**15**	**0.0399**
Sodium Pyruvate	**110**	**110**	**1**

Reference:

Dulbecco, R. and Freeman, G. (1959) Virology 8:396.

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Product Information

Dulbecco's Modified Eagle's Medium (DME)

Many modifications of Eagle's Medium have been developed since the original formulation appeared in the literature. Among the most widely used of these modifications is Dulbecco's Modified Eagle's Medium (DME).

DME is a modification of Basal Medium Eagle (BME) that contains a 4-fold higher concentration of amino acids and vitamins, as well as additional supplementary components. The original DME formula, first reported for culturing embryonic mouse cells, contained 1,000 mg/L of glucose. An alteration with 4,500 mg/L glucose is optimal in cultivating certain cell types.

	D0422	D1145	D0819	D1152	D2429	D2902	D5030	D5523
	[1×]	[1×]	[1×]	[powder]	[10×]	[powder]	[powder]	[powder]
COMPONENT	g/L	g/L	g/L	g/L	g/L	g/L	g/L	g/L
Inorganic Salts								
$CaCl_2$	0.265	0.265	0.2	0.2	2.65	0.2	0.2	0.2
$Fe(NO_3)_3 \cdot 9H_2O$	0.0001	0.0001	0.0001	0.0001	0.001	0.0001	0.0001	0.0001
$MgSO_4$	0.09767	0.09767	0.09767	0.09767	0.9767	0.09767	0.09767	0.09767
KCl	0.4	0.4	0.4	0.4	4	0.4	0.4	0.4
$NaHCO_3$	3.7	3.7	3.7	—	—	—	—	—
NaCl	6.4	6.4	6.4	4.4	64	6.4	6.4	6.4
NaH_2PO_4	0.109	0.109	0.109	0.109	1.09	0.109	0.109	0.109
Amino Acids								
L-Alanyl-L-Glutamine	—	—	0.869	—	—	—	—	—
L-Arginine • HCl	0.084	0.084	0.084	0.084	0.84	0.084	0.084	0.084
L-Cysteine • 2HCl	—	0.0626	0.0626	0.0626	0.626	0.0626	0.0626	0.0626
L-Glutamine	—	—	—	0.584	—	0.584	—	0.584
Glycine	0.03	0.03	0.03	0.03	0.3	0.03	0.03	0.03
L-Histidine • HCl • H_2O	0.042	0.042	0.042	0.042	0.42	0.042	0.042	0.042
L-Isoleucine	0.105	0.105	0.105	0.105	1.05	0.105	0.105	0.105
L-Leucine	0.105	0.105	0.105	0.105	1.05	0.105	0.105	0.105
L-Lysine • HCl	0.146	0.146	0.146	0.146	1.46	0.146	0.146	0.146
L-Methionine	—	0.03	0.03	0.03	0.3	0.03	0.03	0.03
L-Phenylalanine	0.066	0.066	0.066	0.066	0.66	0.066	0.066	0.066
L-Serine	0.042	0.042	0.042	0.042	0.42	0.042	0.042	0.042
L-Threonine	0.095	0.095	0.095	0.095	0.95	0.095	0.095	0.095
L-Tryptophan	0.016	0.016	0.016	0.016	0.16	0.016	0.016	0.016
L-Tyrosine • 2Na • $2H_2O$	0.12037	0.12037	0.10379	0.10379	—	0.10379	0.10379	0.10379
L-Tyrosine	—	—	—	—	1.13033	—	—	—
L-Valine	0.094	0.094	0.094	0.094	0.94	0.094	0.094	0.094
Vitamins								
Choline Chloride	0.004	0.004	0.004	0.004	0.04	0.004	0.004	0.004
Folic Acid	0.004	0.004	0.004	0.004	-	0.004	0.004	0.004
myo-Inositol	0.0072	0.0072	0.0072	0.0072	0.072	0.0072	0.0072	0.0072
Niacinamide	0.004	0.004	0.004	0.004	0.04	0.004	0.004	0.004
D-Pantothenic Acid • ½Ca	0.004	0.004	0.004	0.004	0.04	0.004	0.004	0.004
Pyridoxal • HCl	—	—	—	0.004	—	0.004	0.004	0.004
Pyridoxine • HCl	0.00404	0.00404	0.00404	—	0.04	—	—	—
Riboflavin	0.0004	0.0004	0.0004	0.0004	0.004	0.0004	0.0004	0.0004
Thiamine • HCl	0.004	0.004	0.004	0.004	0.04	0.004	0.004	0.004
Other								
D-Glucose	4.5	4.5	4.5	4.5	10	1.0	—	1.0
HEPES	—	—	—	5.958	—	—	—	—
Phenol Red • Na	0.0159	—	0.0159	0.0159	0.159	—	—	0.0159
Pyruvic Acid • Na	0.11	—	0.11	—	1.1	0.11	—	0.11
ADD								
Glucose	—	—	—	—	—	—	1.0	—
L-Glutamine	0.584	0.584	—	—	0.584 at 1×	—	0.584	—
$NaHCO_3$	—	—	—	3.7	3.7 at 1×	3.7	3.7	3.7

	D6546	D7777	D9443	D0572	D0822
	[1×]	[powder]	[1×]	[1×]	[1×]
COMPONENT	g/L	g/L	g/L	g/L	g/L
Inorganic Salts					
$CaCl_2$	0.2	0.2	0.2	0.265	0.2
$Fe(NO_3)_3 \cdot 9H_2O$	0.0001	0.0001	0.0001	0.0001	0.0001
$MgSO_4$	0.09767	0.09767	0.09767	0.09767	0.09767
KCl	0.4	0.4	0.4	0.4	0.4
$NaHCO_3$	3.7	—	3.7	3.7	3.7
NaCl	6.4	6.4	6.4	4.4	6.4
NaH_2PO_4	0.109	0.109	0.109	0.109	0.109
Amino Acids					
L-Alanyl-L-Glutamine	—	—	—	0.869	0.868
L-Arginine • HCl	0.084	0.084	—	0.084	0.084
L-Cysteine • 2HCl	0.0626	0.0626	0.0626	0.0626	0.0626
L-Glutamine	—	0.584	0.584	—	—
Glycine	0.03	0.03	0.03	0.03	0.03
L-Histidine • HCl • H_2O	0.042	0.042	0.042	0.042	0.042
L-Isoleucine	0.105	0.105	0.105	0.105	0.105
L-Leucine	0.105	0.105	—	0.105	0.105
L-Lysine • HCl	0.146	0.146	—	0.146	0.146
L-Methionine	0.03	0.03	0.03	0.03	0.03
L-Phenylalanine	0.066	0.066	0.066	0.066	0.066
L-Serine	0.042	0.042	0.042	0.042	0.042
L-Threonine	0.095	0.095	0.095	0.095	0.095
L-Tryptophan	0.016	0.016	0.016	0.016	0.016
L-Tyrosine • 2Na • $2H_2O$	0.10379	0.10379	—	0.10379	0.10379
L-Tyrosine	—	—	0.10379	—	—
L-Valine	0.094	0.094	0.094	0.094	0.094
Vitamins					
Choline Chloride	0.004	0.004	0.004	0.004	0.004
Folic Acid	0.004	0.004	0.004	0.004	0.004
myo-Inositol	0.0072	0.0072	0.0072	0.0072	0.0072
Niacinamide	0.004	0.004	0.004	0.004	0.004
D-Pantothenic Acid • ½Ca	0.004	0.004	0.004	0.004	0.004
Pyridoxal • HCl	—	0.004	—	—	—
Pyridoxine • HCl	0.004	—	0.004	0.004	0.004
Riboflavin	0.0004	0.0004	0.0004	0.0004	0.0004
Thiamine • HCl	0.004	0.004	0.004	0.004	0.004
Other					
D-Glucose	4.5	4.5	1.0	4.5	4.5
HEPES	—	—	—	5.958	—
Phenol Red • Na	0.0159	0.0159	—	0.0159	0.0159
Pyruvic Acid • Na	0.11	0.11	—	—	0.11
ADD					
$NaHCO_3$	—	3.7	—	—	—
L-Glutamine	0.584	—	—	0.584	—
Glucose	—	—	—	—	—

References

1. Dulbecco, R., and Freeman, G., Plaque Production by the Polyoma Virus. Virology, **8**, 396-397 (1959).
2. Smith, J.D., Freeman, G., Vogt, M., and Dulbecco, R., The Nucleic Acid of Polyoma. Virus, **12**, 185-196 (1960).
3. Morton, H.J., A Survey of Commercially Available Tissue Culture Media. In Vitro, **6**, 89 (1970).
4. Rutzky, L.P., and Pumper, R.W., Supplement to a Survey of Commercially Available Tissue Culture Media (1970). In Vitro, **9**, 468 (1974).

JG,GS,PD,JF,MAM 08/13-1