

DMEM High Glucose (4.5 g/L) with L-Glutamine#GTC41.0500 (500ml)
(FOR RESEARCH ONLY)

Product:	Filter sterilized DMEM (Dulbecco's Modified Eagle Medium) with increased glucose concentration (4.5g/L) and supplemented with L-Glutamine. This formulation is with Phenol Red and without sodium pyruvate and HEPES. Detailed formulation can be found on page 2.								
Quantity:	#GTC41.0500 comprises 500ml of DMEM High Glucose (4.5 g/L) with L-Glutamine.								
Applications:	Cell Culture.								
Appearance:	Clear red/orange solution.								
Specifications:	<table><tr><td>pH:</td><td>7.0-7.6</td></tr><tr><td>Osmolality:</td><td>320-360 mOsm/kg</td></tr><tr><td>Sterility:</td><td>sterile</td></tr><tr><td>Endotoxin:</td><td><1.0 EU/ml</td></tr></table>	pH:	7.0-7.6	Osmolality:	320-360 mOsm/kg	Sterility:	sterile	Endotoxin:	<1.0 EU/ml
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Osmolality:	320-360 mOsm/kg								
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Endotoxin:	<1.0 EU/ml								
Storage:	Store at +4°C, protected from light, for up to 12 months. Once the product has been opened, store at +4°C and use within 1 or 2 months.								
Shipment:	Shipment is typically carried out at room temperature as this product can be kept at room temperature for up to 2 weeks without any problem.								

Usage: DMEM (Dulbecco's Modified Eagle Medium) is widely used in cell culture as a basal medium. It provides basic nutrients for growth of various mammalian cell lines. DMEM is based on Eagle's Minimal Essential Medium (EMEM) but has a much higher concentration of amino acids and vitamins. There are several variations of DMEM commercially available that slightly differ in composition. The original formulation of DMEM contains 1 g/L of glucose and sodium pyruvate, whereas this particular product contains a higher glucose content (4.5 g/L) and no sodium pyruvate. Moreover, it is supplemented with L-Glutamine. This particular formulation has been used successfully for the cultivation of primary cell (fibroblasts, neurons, HUVECs, smooth muscle cells) and cell lines such as HEK-293, HeLa, Cos-7, and PC-12.

DMEM does not contain protein, lipids or growth factors, essential for cell proliferation, long-term viability and robust cell attachment.. Hence, DMEM requires supplementation, typically 10% FBS (Fetal Bovine Serum). To maintain physiological pH, DMEM contains sodium bicarbonate and therefore must be kept in a controlled CO₂-environment (5-10%). The pH indicator (phenol red) allows for monitoring pH changes from 6.2 (yellow) to 8.2 (red).

Detailed Formulation:

Table 1. Composition of #GTC41 DMEM High Glucose (4.5 g/L) with L-Glutamine.

Amino Acids	(mg/L)
Glycine	30.00
L-Arginine HCl	84.00
L-Cystine 2HCl	62.57
L-Glutamine	584.00
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 2Na 2H ₂ O	103.79
L_Valine	94.00
Others	(mg/L)
D-Glucose	4500.00
Phenol Red (Na)	15.90

Vitamins	(mg/L)
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
Salts	(mg/L)
CaCl ₂ .2H ₂ O	265.00
Fe(NO ₃) ₃ .9H ₂ O	0.10
KCl	400.00
MgSO ₄ .7H ₂ O	200.00
NaCl	6400.00
NaHCO ₃	3700.00
NaH ₂ PO ₄ . 2H ₂ O	141.73