

DMEM High Glucose Medium Instructions

1. Product overview

Catalog number	Name	Size
D1010001	DMEM High Glucose Medium	500 mL

Dulbecco's Modified Eagle's Medium—High Glucose is derived from Eagle's minimal essential medium and enriched four-fold in amino acids and vitamins. It contains 4.5 g L⁻¹ glucose (25 mM), 1 mM sodium pyruvate, and 4 mM L-glutamine, providing ample energy and biosynthetic precursors for metabolically active, rapidly proliferating adherent or suspension mammalian cells. The formulation is devoid of proteins, lipids, and growth factors; hence, supplementation with 10% (v/v) fetal bovine serum is required to establish a complete culture environment. The bicarbonate buffering system (3.7 g L⁻¹ NaHCO₃) requires a 5%–10% CO₂ atmosphere to maintain physiological pH. DMEM- High Glucose is routinely used for HEK293, HeLa, CHO-K1, A549, and related cell lines, and is well suited for viral packaging, recombinant protein production, and toxicological studies, protein expression and toxicology studies.

- **Name:** DMEM - High Glucose
- **Glucose concentration:** 4.5 g L⁻¹
- **pH range:** 7.0–7.4 (under appropriate CO₂ conditions)
- **Osmolality:** ~ 330 mOsm kg⁻¹

2. Application

- **Applicable cells:** Conventional or rapidly proliferating adherent/suspension mammalian cells, such as HEK293, HeLa, A549, MCF-7, NIH-3T3, CHO-K1, stem cells and derived differentiated cells, primary fibroblasts and neurons, etc.
- **Research Directions:** Highly metabolic/rapidly proliferating cell models, Immunity and Inflammation Research, drug development and toxicology, etc.
- **Industrial Applications:** Large-scale cell expansion, transient expression of recombinant proteins/antibodies, viral packaging, CRISPR transfection, toxicity screening, and directed differentiation of stem cells (additional growth factor supplementation).

3. Product components

Key Components:	Concentration
Glucose	4.5 g/L (5.5 mM)
L-Glutamine	4 mM
Sodium pyruvate	1 mM
Phenol red	15 mg/L
Sodium bicarbonate	3.7 g/L
HEPES	Not included
Antibiotic	Not included

4. Usage Guidelines

- **Storage:** Store at 2–8°C, protected from light; avoid repeated freeze–thaw cycles. Shelf life is 12 months from date of manufacture.
- **Preparation:** Supplement with 10% (v/v) fetal bovine serum and 1% (v/v) penicillin–streptomycin, or other additives as required by the experimental protocol
- **Operate:** This product is sterile-filtered. Swirl gently before use, open only under aseptic conditions, and aliquot any remaining medium to prevent contamination.
- **Culture conditions:**

Temperature: 37°C ± 1°C

CO₂: 5% (recommended range 4%–7%)

Humidity: 95% relative humidity

5. Precautions

- **Not applicable scenarios:** Glucose-limiting or osmo-sensitive experiments, such studies recommend the use of DMEM low-glycolysis (Cat. No. L1010001).
- **Do not mix with Low-Glucose DMEM** to avoid introducing differences in glucose concentration..
- **A high-glucose environment may lead to increased osmotic pressure**, which is a slow metabolism cells need to be pre-experimented to Confirm tolerance.