**BioArtha Labs PVT LTD**
Unit 2, Plot #R-11, 1st Cross,
KSSIDC Industrial Estate Bommasandra
2nd Stage, Yarandahalli Jigani Rd
Bangalore, Karnataka -560099 (India)
info@bioarthalabs.com

# DATA SHEET

Rev.ver: 01

## 1. Identification

| | |
|---|---|
| **Product name** | **Dulbecco's Modified Eagle Medium (DMEM), High glucose w/ 4.5gms Glucose per liter and L-Glutamine w/o Sodium bicarbonate and Sodium pyruvate** |
| **Catalog.no** | **CCMP018** |

## 2. Description

**Dulbecco's Modified Eagle Medium (DMEM)** is one of the most widely utilized variants of Eagle's medium, designed to support a broad range of mammalian cell types. It is a modification of Basal Medium Eagle (BME), enriched with approximately four times the concentration of amino acids and vitamins to better meet the nutritional needs of more fastidious cells.

The DMEM formulation is further supplemented with glycine, serine, and ferric nitrate, enhancing its ability to support cellular metabolism and proliferation. The original DMEM formulation contains 1 g/L of glucose and was initially developed for the culture of embryonic mouse cells.

To accommodate a broader range of cell types and experimental requirements, a high-glucose version of DMEM was developed, containing 4.5 g/L of glucose. This increased glucose concentration has been shown to improve the growth and maintenance of various cell types, including primary cultures of mouse and chicken cells, as well as numerous normal and transformed cell lines.

## 3. Product Specifications

| | |
|---|---|
| Appearance | Off-white to Creamish white, homogenous powder. |
| Solubility | Clear solution at 13.4 gms/L. |
| Storage and shelf life | Store at +2°C to +8°C protected from light. |
| Shipping conditions | Ambient |

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## 4. Formulation

| Components | Concentration mg/L |
|---|---|
| | |
| **Amino Acids:** | |
| L-Arginine HCl | 84.0 |
| L-Cystine 2HCl | 62.570 |
| Glycine | 30.00 |
| L-Glutamine | 584.0 |
| L-Histidine HCl $H_2O$ | 42.00 |
| L-Isoleucine | 105.000 |
| L-Leucine | 105.000 |
| L-Lysine HCl | 146.000 |
| L-Methionine | 30.00 |
| L-Phenylalanine | 66.00 |
| L-Serine | 42.00 |
| L-Threonine | 95.00 |
| L-Tryptophan | 16.00 |
| L-Tyrosine 2Na $2H_2O$ | 103.790 |
| L-Valine | 94.000 |
| **Vitamins:** | |
| Choline chloride | 4.000 |
| D-Calcium Pantothenate | 4.000 |
| Folic Acid | 4.000 |
| Nicotinamide | 4.000 |
| Pyridoxal HCl | 4.000 |
| Thiamine HCl | 4.000 |
| i-Inositol | 7.200 |
| Riboflavin | 0.400 |
| **Inorganic Salts** | |
| $CaCl_2$ $2H_2O$ | 265.000 |
| Ferric nitrate nonahydrate | 0.100 |
| $MgSO_4$ | 97.720 |
| KCl | 400.000 |
| Sodium chloride | 6400.000 |
| Sodium dihydrogen phosphate anhydrous | 109.000 |
| **Other Components:** | |
| D-Glucose | 4500.00 |
| Phenol red sodium salt | 15.900 |

**Directions:**

1. Suspend 13.4 gms in 900ml tissue culture grade water with constant, gentle stirring until the powder is completely dissolved. Do not heat the water.
2. Add 3.7 gms of Sodium bicarbonate powder or 49.3 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.