



## Casein Magnesium Broth

M1249

Casein Magnesium Broth is recommended for use in the cultivation of recombinant strains of *Escherichia coli*.

### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Sodium chloride	5.000
Magnesium sulphate	0.940
Final pH ( at 25°C)	7.0±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 15.94 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

### Principle And Interpretation

Bacterial transformation is the process by which bacterial cells take up naked DNA molecules (1). Bacterial cells to be transformed are rendered competent by their growth and preparation in selected media usually containing Mg<sup>2+</sup> and/or Ca<sup>2+</sup> ions (2). Casein Magnesium Broth, developed by Blattner et al is used for the cultivation of recombinant strains of *Escherichia coli* (3).

Casein enzymic hydrolysate supplies the essential nitrogenous nutrients for the growth of recombinant *Escherichia coli*. Sodium chloride maintains the osmotic balance of the medium. Magnesium sulphate is incorporated in the medium as magnesium ion, which is necessary for a variety of enzymatic reactions including DNA replication.

### Quality Control

#### Appearance

Light yellow to beige homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Amber coloured, clear solution without any precipitate in tubes

#### Reaction

Reaction of 1.6% w/v aqueous solution at 25°C. pH : 7.0±0.2

#### pH

6.80-7.20

#### Cultural Response

M1249: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth
<b>Cultural Response</b>		
<i>Escherichia coli</i> ATCC 23724	50-100	good-luxuriant
<i>Escherichia coli</i> ATCC 53868	50-100	good-luxuriant

### Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

### Reference

1. Alcamo E. I., 2001, Fundamentals of Microbiology, 6th Ed., Jones and Bartlett Publishers.
2. Williams A. S., Slatko E. B., McCarrey R. J., 2007, Laboratory Investigations in Molecular Biology, Jones and Bartlett Publishers.

3. Blattner F. R., Williams B. G., Blechl A. E., et al, 1977, Science, 196:161.

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