



## Casitose Yeast Magnesium Broth (NZYM Broth)

M1247

### Intended Use:

Recommended for use in the cultivation of recombinant strains of *Escherichia coli*.

### Composition\*\*

Ingredients	Gms / Litre
Tryptone	10.000
Yeast extract	5.000
Sodium chloride	5.000
Magnesium sulphate	0.980
Final pH ( at 25°C)	7.0±0.2

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

### Directions

Suspend 20.98 grams in 1000 ml purified / distilled water. Heat gently to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

### 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  $Mg_2$  and/or  $Ca_{2+}$  ions (2). Casitose Yeast Magnesium Broth is a modification of the formula described by Blattner et al (3) used for cultivating recombinant strains of *Escherichia coli*.

The medium constituents like tryptone and yeast extract supply the essential nutrients and cofactors required for excellent growth of recombinant strains of *Escherichia coli*. Sodium chloride maintains the osmotic balance of the medium. Magnesium sulphate is incorporated as a source of magnesium ion necessary in a variety of enzymatic reactions including DNA replication.

### Type of specimen

Pure isolate from recombinant strains samples.

### Specimen Collection and Handling:

For pure isolate samples follow appropriate techniques for handling specimens as per established guidelines (1,2,6). After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations :

- 1.This medium is general purpose medium and may not support the growth of fastidious organisms.
2. Further biochemical and serological tests must be carried out for further identification.

### Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

### 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 2.1% w/v aqueous solution at 25°C. pH : 7.0±0.2

### pH

6.80-7.20

### Cultural Response

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

Organism	Inoculum (CFU)	Growth
<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 between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

### Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

### Reference

1. Alcamo E. I., 2001, Fundamentals of Microbiology, 6th Ed., Jones and Bartlett Publishers.
2. Blattner F. R., Williams B. G., Blechl A. E., et al, 1977, Science, 196:161
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2<sup>nd</sup> Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11<sup>th</sup> Edition. Vol. 1.
5. Williams A. S., Slatko E. B., McCarrey R. J., 2007, Laboratory Investigations in Molecular Biology, Jones and Bartlett Publishers.

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### Disclaimer :

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