Casitose Yeast Magnesium Agar (NZYM Agar)

M1248

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
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35.98 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. 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_2 and/or Ca_{2+} ions (5). Casein Yeast Magnesium Agar is a modification of the formula described by Blattner et al (2) 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

Isolated Microorganism from recombinant strains samples.

Specimen Collection and Handling:

For isolated microorganism samples follow appropriate techniques for handling specimens as per established guidelines (1,2,5). 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
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 3.59% 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	Recovery
Escherichia coli ATCC 23724	50-100	good-luxuriant	>=70%
Escherichia coli ATCC 53868	50-100	good-luxuriant	>=70%

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°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. 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 2nd 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, 11th 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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