



PRODUCT SPECIFICATION SHEET

Casein Yeast Magnesium Broth (NZYM Broth) (DM1052)

Intended Use

Casein Yeast Magnesium Broth (NZYM Broth) (DM1052) is recommended for cultivation of recombinant strains of *Escherichia coli*.

Product Summary and Explanation

Transformation is the genetic alteration of a cell resulting from the direct uptake and incorporation of exogenous DNA. Bacterial transformation is the process by which bacterial cells take up naked DNA molecules.⁽¹⁾ Bacteria which are able to uptake DNA are called "competent" and are made so by treatment with calcium chloride in the early log phase of growth. Bacterial cells to be transformed are rendered competent by their growth and preparation in selected media usually containing Mg²⁺ and/or Ca²⁺ ions.⁽²⁾ Casein Yeast Magnesium Broth is a modification of the formula described by Blattner et al⁽³⁾ recommended for cultivating recombinant strains of *Escherichia coli*.

Principles of the Procedure

Casein Yeast Magnesium Broth (NZYM Broth) contains casein enzymic hydrolysate and yeast extract which provides essential nutrients and cofactors required for excellent growth of recombinant strains of *Escherichia coli*. Sodium chloride helps to maintain the osmotic balance of the medium. Magnesium sulphate is added as a source of magnesium ion required in a many enzymatic reactions as well as DNA replication.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	10.00
Yeast extract	5.00
Sodium chloride	5.00
Magnesium sulphate	0.98
Final pH: 7.0 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 20.98 grams of the medium in one litre of distilled water.
2. Heat gently to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

Dehydrated Appearance	Light yellow to beige homogeneous free flowing powder
Prepared Medium	Amber coloured, clear solution without any precipitate in tubes
Reaction of 2.1% Solution	pH : 7.0 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

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

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Escherichia coli</i> ATCC 23724	50 -100	good-luxuriant
2.	<i>Escherichia coli</i> ATCC 53868	50 -100	good-luxuriant



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The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer appropriate references for standard test procedures.

Results

Refer appropriate references and test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10- 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Casein Yeast Magnesium Broth (NZYM Broth)

Product Code : DM1052

Available Pack sizes : 500gm

References

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.

Further Information

For further information please contact your local MICROMASTER Representative.



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DM1052PSS, QAD/FR/024,Rev.00

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