

## NZCYM Growth Top Agar

G019

NZCYM Growth Top Agar is used for cultivation of recombinant *Escherichia coli* strains.

### Composition\*\* :

Ingredients	Grams/Litre
Casein enzymic hydrolysate	10.00
Casein acid hydrolysate	1.00
Yeast extract	5.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	2.00
Sodium chloride	5.00
Agar	7.00

Final pH (at 25°C) 7.0 ± 0.2

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

### Directions :

Suspend 28.98 grams in 1000 ml distilled water. Heat to boiling 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 :

NZCYM Growth Top Agar is used for cultivation of recombinant *Escherichia coli* strains. NZCYM medium was developed by Blattner and colleagues as a rich medium for the propagation of bacteriophages which infects its cell host, *E. coli* for replication (1). Cells grow very fast in this medium as this medium provides all the amino acids, vitamins and other metabolites required for cell growth (2). Casein enzymic hydrolysate and casein acid hydrolysate provide nitrogen, amino acids, and carbon sources for the cells. Yeast extract functions as the source of vitamins and trace elements. Sodium chloride provides sodium ions for transport and osmotic balance and Magnesium sulfate is a source of magnesium ions required in a variety of enzymatic reactions, including DNA replication (3). NZCYM broth allows the cells to grow more rapidly as they do not have to synthesize nucleotide precursors and other factors required for growth. This media contains 0.7 % agar which functions as top agar for the propagation of lambda and filamentous phage.

**Quality Control :**

**Appearance of Powder :**

Cream to yellow coloured, homogeneous, free flowing powder.

**Gelling :**

Firm, comparable with 0.7% Agar gel.

**Colour and Clarity :**

Light yellow coloured, Clear to slight opalescent gel forms in tubes

**Reaction :**

Reaction of 3.0% w/v aqueous solution is pH  $7.0 \pm 0.2$  at 25°C.

**Cultural Response :**

Cultural characteristics observed after incubation at 35-37°C for 18 - 48 hours.

**Organisms (ATCC)**

*Escherichia coli* ATCC 23724

*Escherichia coli* ATCC 25922

*Escherichia coli* MTCC1652

**Growth**

good-luxuriant

good-luxuriant

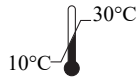
good-luxuriant

**Storage and Shelf-life :**

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

**References:**

- (1) Blattner, F. R., B. G. Williams, A. E. Blechl, K. Denniston-Thompson, H. E. Faber, L. A. Furlong, D. J. Grunwald, D. O. Kiefer, D. D. Moore, J. W. Schumm, E. L. Sheldon, and O. Smithies. 1977. Charon phages: Safer derivatives of bacteriophage for DNA cloning. *Science* 196:161.
- (2) Ausubel, F. M., R. Brent, R. E. Kingston, D. D. Moore, J. G. Seidman, J. A. Smith, and K. Struhl. 1994. *Current protocols in molecular biology*, vol. 1. Current Protocols, New York, NY.
- (3) Sambrook J., E. F. Fritsch, and T. Maniatis. 1989. *Molecular cloning: a laboratory manual*, 2<sup>nd</sup> ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.



Storage temperature



Do not use if package is damaged



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04/2027

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