

## NZM Growth Agar

G024

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

### Composition\*\* :

Ingredients	Grams/Litre
Casein enzymic hydrolysate	10.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	2.00
Sodium chloride	5.00
Agar	13.00

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. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

### Principle and Interpretation :

NZM Growth Agar is used for incubating *Escherichia coli* competent cells immediately after transformation to allow expression of transferred resistance genes before exposing cells to selective conditions. This 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 it provides all the amino acids, vitamins and other metabolites required for cell growth (2). Casein enzymic hydrolysate provides nitrogen, amino acids, and carbon sources for the cells. 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). NZM broth allows the cells to grow more rapidly as they do not have to synthesize nucleotide precursors and other factors required for growth. This medium contains agar as the solidifying agent for the growth of cells on plate.

**Quality Control :**

**Appearance of Powder :**

Cream to yellow coloured, homogeneous, free flowing powder.

**Gelling :**

Firm, comparable with 1.3% Agar gel.

**Colour and Clarity :**

Light yellow coloured, clear to slightly opalescent gel forms in Petri plates.

**Reaction :**

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

**Cultural Response :**

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

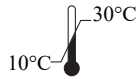
<b>Organisms (ATCC)</b>	<b>Growth</b>
<i>Escherichia coli</i> ATCC 23724	good-luxuriant
<i>Escherichia coli</i> ATCC 25922	good-luxuriant
<i>Escherichia coli</i> MTCC1652	good-luxuriant

**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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