

**NZCYM Growth Medium****G017**

NZCYM Growth Medium is used for lambda and filamentous phage.

**Composition\*\* :**

<b>Ingredients</b>	<b>Grams/Litre</b>
Casein enzymic hydrolysate	10.00
Casein acid hydrolysate	1.00
Yeast extract	5.00
Magnesium sulphate, heptahydrate	2.00
Sodium chloride	5.00

Final pH (at 25°C) 7.0 ± 0.2

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

**Directions :**

Suspend 30.5 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 :**

NZCYM Growth Medium is used for lambda and filamentous phage. This medium was developed by Blattner and colleagues as a rich medium for the propagation of bacteriophages (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.

**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.

**NZCYM Growth Medium****G017**

(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.

**Quality Control :****Appearance of Powder :**

Light yellow coloured, homogeneous, free flowing powder.

**Colour and Clarity :**

Light amber coloured, clear solution without any precipitate.

**Reaction :**

Reaction of 3.05% 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.

**Organisms (ATCC)**

*Escherichia coli*

**Growth**

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.