Bacillus Medium

M1383

Intended Use:

Recommended for cultivation of *Bacillus licheniformis.*

Composition**

Ingredients	Gms / Litre
L-Glutamic acid	4.000
Citric acid	2.000
Dipotassium hydrogen phosphate	0.500
Ferric ammonium citrate	0.500
Magnesium sulphate	0.500
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 7.5 grams in 1000 ml of purified/distilled water containing 20.0 grams of glycerol. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Bacillus licheniformis is a gram-positive, spore-forming soil bacterium that is used in the biotechnology industry to manufacture enzymes, antibiotics, biochemicals and consumer products. This species is closely related to the well-studied model organism *Bacillus subtilis*, and produces an assortment of extracellular enzymes that may contribute to nutrient cycling in nature. Bacillus Medium is recommended by ATCC as a cultivation and maintenance medium for *Bacillus licheniformis* ATCC No. 9945a (5). This medium is a slight modification of Thorne Medium (2,6), recommended for cultivation of *Bacillus licheniformis*.

Bacillus medium contains glycerol, which provides carbon and energy for the growth of bacteria. Glutamic acid and ferric ammonium citrate act as source of nitrogen. Dipotassium phosphate and citric acid provide necessary nutrients along with buffering action.

Type of specimen

Isolated Microorganism of *Bacillus licheniformis*

Specimen Collection and Handling

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. Well isolated colonies must be used.

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

White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium

Yellow coloured, clear solution may contain a slight precipitate.

Reaction

Reaction of 0.75% w/v aqueous solution containing 2% glycerol at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

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

Organism	Inoculum (CFU)	Growth
Bacillus cereus ATCC 10876	50-100	good-luxuriant
Bacillus licheniformis ATCC 9945a	50-100	good-luxuriant

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°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. Atlas R.M.. 2004, 3rd Ed., Handbook of Microbiological Media, Parks, L.C. (Ed.), CRC Press, Boca Raton.
2. Catalogue of Bacteria and Bacteriophages, 1992, 18th Edition, American Type Culture Collection.
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. Rey M. W. et al, 2004, Genome Biol., 2004, 5(10).
6. Thorne C.B., 1954, J. Bacteriol., 68:307.

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