



Nutrient Gelatin

M060S

Nutrient Gelatin is recommended for detection of gelatin liquefaction by proteolytic microorganisms.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Meat extract	3.000
Gelatin	120.000
Sodium chloride	30.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 158 grams in 1000 ml of warm (50°C) water. Heat to 50°C to dissolve the medium completely. Dispense into test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 12 minutes.

Principle And Interpretation

Nutrient Gelatin is prepared as per the formulation recommended by BIS (1). Gelatin liquefaction is one of the essential test for the differentiation of enteric bacilli (2). This medium can also be used for the microbial plate counts of water.

Peptic digest of animal tissue and meat extract supply nutrients for the growth of nonfastidious organisms. Organisms produce gelatinase, a proteolytic enzyme active in the liquefaction of gelatin.

To test gelatin liquefaction the strains are stab inoculated in Nutrient Gelatin. Many species require prolonged incubation (3, 4) for gelatin liquefaction. Gelatin is solid at 20°C or less temperature and liquid at 35°C or higher temperature. Gelatin liquefies at about 28°C, so incubation is carried out at 35°C but kept in a refrigerator for about 2 hours before interpretation of the results (3). Liquefaction of gelatin occurs on the surface layer, so care should be taken not to shake the tubes (5). Control is run along with every testing as gelling ability of gelatin varies (3) and also the gelatin concentration should not exceed 12% as it may inhibit growth (6). For plate counts of water, the incubation is carried out at 20-22°C upto 30 days.

Quality Control

Appearance

Cream to yellow coloured homogeneous free flowing slightly coarse powder

Gelling

Semisolid, comparable with 12% Gelatin gel.

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel forms in tubes

Reaction

Reaction of 15.8% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M060S: Cultural characteristics after 1 to 7 days at 35 - 37°C.

Organism	Inoculum (CFU)	Growth	Gelatinase
Cultural Response			
<i>Clostridium perfringens</i> ATCC 12924	50-100	good-luxuriant	Positive reaction
<i>Bacillus cereus</i> ATCC 10876	50-100	good-luxuriant	Positive reaction

<i>Bacillus subtilis</i> ATCC 6633	50-100	good-luxuriant	Positive reaction
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	Negative reaction
<i>Proteus vulgaris</i> ATCC 13315	50-100	good-luxuriant	Positive reaction
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant	Positive reaction

Storage and Shelf Life

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

Reference

1. Bureau of Indian Standards IS : 5887 (Part IV) 1976.
2. Ewing, 1986, Edwards and Ewings Identification of Enterobacteriaceae, 4th ed., Elsevier Science Publishing Co., Inc. New York.
3. Cawan S. and Steel K., 1966, Manual for the Identification of Medical Bacteria, Cambridge University Press, Pg. 19, 27-28, 116 and 156.
4. Lautrop H., 1956, Acta Pathol. Microbiol. Scand., 39:357.
5. Frobisher M., 1957, Fundamentals of Microbiology, 6th ed., W.B. Saunders Co., Philadelphia, P:239.
6. Branson D., 1972, Methods in Clinical Bacteriology, Springfield, III, pg 21.

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