Mannitol Motility Test Medium

M770

Intended Use:

Recommended for studying mannitol fermentation and motility of bacteria.

Composition**

Ingredients	g / L
Peptone	20.000
Mannitol	2.000
Potassium nitrate	1.000
Phenol red	0.040
Agar	3.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 26.04 grams in 1000 ml of purified/distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubes to cool in an upright position.

Principle And Interpretation

Mannitol Motility Test Medium is designed to differentiate bacteria on the basis of their motility and ability to ferment mannitol (1). The highly nutritious peptone supports luxuriant growth of fastidious bacteria like Staphylococci. Semisolid nature of the medium due to 0.3% agar helps to detect motility. Motile bacteria produce diffused growth throughout the medium while non-motile bacteria grow only along the line of inoculation. Fermentation of mannitol produces acidity in the medium. Phenol red is the pH indicator, which detects acidity by exhibiting a visible colour change from red to yellow.

Type of specimen

Isolated organism from clinical and non clinical sample

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (2,3).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (4). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic use. For professional use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. It is not a confirmatory test hence complete identification should include the morphology, gram reaction, biochemical and serological tests.

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

Light yellow to pink homogeneous free flowing powder

Gelling

Semisolid, comparable with 0.3% Agar gel.

Colour and Clarity of prepared medium

Red coloured clear to slightly opalescent gel forms in tube as butts

Reaction

Reaction of 2.6% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH

7.40-7.80

Cultural Response

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

Organism	Growth	Mannitol fermentation	Motility
Escherichia coli ATCC 35218	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Proteus mirabilis ATCC 25933	luxuriant	negative reaction,no colour change or red	positive, growth away from stabline causing turbidity
## *Proteus hauseri* ATCC 13315	luxuriant	negative reaction,no colour change or red	positive, growth away from stabline causing turbidity
Salmonella Typhi ATCC 6539	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
Shigella sonnei ATCC 25931	luxuriant	positive reaction,yellow colour	negative,growth along the stabline, surrounding medium remains clear
Staphylococcus aureus subsp. *aureus* ATCC 25923 (00034*)	luxuriant	positive reaction, yellow colour	negative,growth along the stabline, surrounding medium remains clear
Staphylococcus epidermidis ATCC 12228 (00036*)	luxuriant	negative reaction,no colour change or red	negative,growth along the stabline, surrounding medium remains clear

Key : *Corresponding WDCM numbers. ## Formerly known as *Proteus vulgaris*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1.MacFaddin J. F., 2000, (Ed.), Biochemical Tests for the Identification of Medical Bacteria, 3rd Ed., Williams and Wilkins, New York.
2.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition
3.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.
4.Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.

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IVD *In vitro* diagnostic medical device

30°C 10°C Storage temperature

CE CE Marking

Do not use if package is damaged