



Mannitol Motility Test Medium

M770

Mannitol Motility Test Medium is a semisolid medium suitable for determining motility and mannitol fermentation.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	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 distilled water. Heat to boiling to dissolve the medium completely. Dispense into test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubed medium 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 peptic digest of animal tissue 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.

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	Inoculum (CFU)	Growth	Mannitol fermentation	Motility
Cultural Response <i>Escherichia coli</i> ATCC 35218	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
<i>Proteus mirabilis</i> ATCC 25933	50-100	luxuriant	negative reaction, no colour change or red	positive, growth away from stabline

<i>Proteus vulgaris</i> ATCC 13315	50-100	luxuriant	negative reaction, no colour change or red	causing turbidity positive, growth away from stabline causing turbidity
<i>Salmonella Typhi</i> ATCC 6539	50-100	luxuriant	positive reaction, yellow colour	positive, growth away from stabline causing turbidity
<i>Shigella sonnei</i> ATCC 25931	50-100	luxuriant	positive reaction, yellow colour	negative, growth along the stabline, surrounding medium remains clear
<i>Staphylococcus aureus</i> ATCC 25923	50-100	luxuriant	positive reaction, yellow colour	negative, growth along the stabline, surrounding medium remains clear
<i>Staphylococcus epidermidis</i> ATCC 12228	50-100	luxuriant	negative reaction, no colour change or red	negative, growth along the stabline, surrounding medium remains clear

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. MacFaddin J. F., 2000, (Ed.), Biochemical Tests for the Identification of Medical Bacteria, 3rd Ed., Williams and Wilkins, New York.

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