

MANNITOL MOTILITY NITRATE MEDIUM
TM 531

For determining motility and mannitol fermentation

Composition

Ingredients	Gms/Ltr.
Casein enzymatic digest	10.00
Mannitol	7.50
Agar	3.50
Potassium nitrate	1.00
Phenol red	0.04

* Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 22.04gms in 1000ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool the medium tubes in an upright position to make slants.

Appearance: Red colour, clear to slightly gel

pH (at 25°C): 7.6 ± 0.2

Principle

MANNITOL MOTILITY TEST MEDIUM is used to differentiate bacteria on the basis of their motility and ability to ferment mannitol. 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.

Interpretation

Cultural characteristics observed after inoculating (10³CFU/ml), on incubation at 35 ± 37°C for 18 - 48 hours.

Microorganisms	ATCC	Growth	Mannitol fermentation	Motility
<i>Escherichia coli</i>	35218	Luxuriant	+ reaction, yellow in colour	+, growth away from stabline causing turbidity
<i>Proteus mirabilis</i>	25923	Luxuriant	- reaction, colourless change or red	+, growth away from stabline causing turbidity
<i>Proteus vulgaris</i>	13315	Luxuriant	- reaction, colourless change or red	+, growth away from stabline causing turbidity
<i>Salmonella Typhi</i>	6539	Luxuriant	+ reaction, yellow in colour	+, growth away from stabline causing turbidity
<i>Staphylococcus aureus</i>	25923	Luxuriant	+ reaction, yellow in colour	-, growth along the stabline, surrounding medium remains clear

References

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