

TECHNICAL DATA SHEET

Mannitol Motility Test Medium

Principle

Mannitol mobility test medium is used to detect the mannitol fermenters and mobility of microorganisms. The media is composed of peptic digest of animal tissue, mannitol, potassium nitrate, phenol red and agar. Peptic digest of animal tissue promotes luxuriant growth of highly fastidious microorganisms and provides nitrogen and other necessary growth factors. Mannitol is carbon source. Potassium nitrate stimulate motility of microorganisms. Phenol red is pH indicator. Less concentration of agar, which make it very soft and allow the mobile bacteria to migrate. The inoculum is stabbed into the center of a semisolid agar deep using a sterile inoculating needle. The mannitol fermenters produce acid and media color changes from red to yellow. If the mannitol fermenting bacteria are motile the color of media changes throughout the medium and if non-motile the color of media changes towards the stab line and surrounding media remains pink to red in color. While the non-mannitol fermenters diffuse into the media and growth extending out from the line of inoculation without changing the color of media. The dynamic motile organisms grow throughout the entire medium, whereas sluggish organism show small areas or nodules that grow out from the line of inoculation. The non-motile bacteria only grow show the growth on stab line where they are inoculated.

Use: For studying mannitol fermentation and motility of bacteria.

Contents*

Ingredients	Gram/Litre
Peptic Digest of Animal Tissue	20.000
Mannitol	2.000
Potassium Nitrate	1.000
Phenol Red	0.040
Agar	3.000
pH at 25°C	7.6 ±0.2

*** Formula adjusted for optimum performance and parameters**

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Directions: Dissolve 26.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely and distribute aseptically in test tubes. Sterilize by autoclaving at 15 lbs pressure (121 °C) for 15 min, cool it to 42-45 °C and allow to solidify to forms semi solid butt. Ensure complete solidification and inoculate test sample stabbed into the center of a semisolid agar deep using a sterile inoculating needle aseptically.

Specimens' types analyzed

Pharmaceutical samples, clinical and non-clinical samples etc.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Reddish beige colored free flowing, homogeneous powder
Reaction of 2.6% solution	7.6 ±0.2 at 25 °C
pH	7.40- 7.80
Gelling	Semi solid comparable with 0.3% agar gel
Color and clarity of ready medium	Pink to Light red colored opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

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Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate at 35±2°C for 18-48 hours. Inoculum 50-100 CFU.

Organism	ATCC	Growth	Mannitol fermentation	Mobility
<i>Escherichia coli</i>	8739	Luxuriant	Yellow color Positive reaction	Growth away from stab line (Positive)
<i>Staphylococcus aureus</i>	25923	Luxuriant	Yellow color Positive reaction	Growth along the stab line (Negative)
<i>Proteus mirabilis</i>	12453	Luxuriant	No color change Negative reaction	Growth away from stab line (Positive)
<i>Staphylococcus epidermidis</i>	12228	Luxuriant	No color change Negative reaction	Growth along the stab line (Negative)

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

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Reference

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