



Mannitol Salt Agar (Harmonized)

RDM-H-MSA-01

Principle

Mannitol salt agar is a medium used for the detection and enumeration of *Staphylococci*. It was described by Chapman and prepared in accordance with the harmonized principles of USP/IP/JP as medium for microbial limit testing of pharmaceutical products and raw material used in pharmaceutical industries. Mannitol salt agar contains pancreatic digest of casein, peptic digest of animal tissue and meat extract (equivalent to beef extract) as sources of carbon, nitrogen, vitamins and minerals. Sodium chloride, in high concentration (7.5%), act as selective agent, allow only to grow the *Staphylococci* and halophilic *Enterobacteria* and inhibit other bacteria. Phenol red is the pH indicator. D-Mannitol is the carbohydrate source. Mannitol fermentation with an accumulation of acid products, detected by the phenol red indicator which turns yellow and produces a yellow halo surrounding the presumptive pathogen colonies. Characteristic non-pathogenic *Staphylococci* do not ferment mannitol and form red colonies. Since, this medium exploits the correlation between the pathogenic and fermentative capacity of mannitol of staphylococci, for a presumptive diagnosis.

Use: Recommended for selective isolation and detection of *Staphylococci* according USP/IP/JP as medium for microbial limit testing of pharmaceutical products.

Contents*

Ingredients

	Gram/Litre
Pancreatic Digest of Casein	5.000
Peptic Digest of Animal Tissue	5.000
Meat Extract#	1.000
D-Mannitol	10.000
Sodium Chloride	75.000
Phenol Red	0.025
Agar	15.000
pH at 25°C	7.4 ±0.2

* Formula adjusted for optimum performance and parameters

#Equivalent to beef extract

Directions: Dissolve 111.02 grams in 1000 ml distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C, and distribute in sterile petri plates and allow to solidify. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical samples etc.

Precautions to be taken

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	Light pink beige colored free flowing, homogeneous powder
Reaction of 11.0% solution	7.40 ±0.2 at 25 °C
pH	7.20- 7.60
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Orange to red colored slightly 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

Different Microbial Response: Cultural characteristics observed after incubation at 30-35°C for 18-72 hours. Inoculum 50-100 CFU.

Organism	ATCC	Growth	Recovery	Colony Color
<i>Staphylococcus aureus</i>	6538	Luxuriant	≥ 60%	Yellow with yellow zone
<i>Staphylococcus aureus</i>	25923	Luxuriant	≥ 60%	Yellow with yellow zone
<i>Staphylococcus epidermidis</i>	12228	Fair to Good	≤ 40%	Red
<i>Proteus mirabilis</i>	12453	None-Poor	0-10%	Yellow
<i>Escherichia coli</i>	25922	Inhibited	-	--
<i>Escherichia coli</i>	8739	Inhibited	-	--
<i>Klebsiella aerogenes</i>	13048	Inhibited	-	--

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.

Reference

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