

TECHNICAL DATA SHEET

MANNITOL SALT AGAR PLATES

P90/MSA 3G- 20

Intended use

Mannitol Agar is enriched medium for the selective isolation of pathogenic Staphylococci.

Type of Sample

- Pharmaceutical

Principle

Mannitol Salt Agar (MSA) is a selective and differential medium used primarily for the isolation and identification of Staphylococcus species. It contains:

- Beef extract and proteose peptone: Provide essential nutrients including nitrogen, amino acids, vitamins, and minerals to support bacterial growth.
- 7.5% sodium chloride: Selectively inhibits the growth of most bacteria other than Staphylococci, making the medium highly selective.
- Mannitol: A fermentable carbohydrate that differentiates Staphylococcus aureus from other species based on fermentation.
- Phenol red: A pH indicator that turns yellow at acidic pH (≤ 6.8) and remains red at alkaline pH (≥ 8.4). Fermentation of mannitol by *S. aureus* produces acid, resulting in yellow colonies and medium.
- Agar: Solidifying agent.

Most coagulase-negative Staphylococci and Micrococci do not ferment mannitol and form red colonies.

Optional Additive:

- 5% v/v Egg Yolk Emulsion: Enables detection of lipase activity. Lipase-producing colonies exhibit a yellow opaque zone due to the clearing of the emulsion by salt and enzymatic activity.

Ingredients

Approximate Formula Per Liter	
Proteose peptone	10.00
Beef Extract	1.00
Sodium chloride	75.00
D - Mannitol	10.00

Phenol red	0.025
Agar	15.00

Physical Parameters of Prepared Plates

- Appearance: 90 mm petri plates with a smooth surface and absence of any particles, cracks, or bubbles.
- Colour: Clear Red
- Clarity: Slightly Opalescent

Sterility Check

Sterility of the plates is checked by incubating the plates at 30°C - 35°C for 48 hours.

Microbial Performance Data

Culture characteristics observed after inoculating 50-100 CFU and incubate at 30°C - 35°C for 48 hours.

Test Strains	ATCC No.	Growth	Colour of the colony
<i>Staphylococcus aureus</i>	ATC 6538	Luxuriant	Yellow colonies surrounded by Yellow zone
<i>Escherichia coli</i>	ATCC 8739	Inhibited	-
<i>Staphylococcus aureus</i>	ATCC 25923	Luxuriant	Yellow colonies surrounded by Yellow zone

LIMITATIONS & COMPLEMENTARY TESTS

- Several Staphylococcus species other than aureus are mannitol positive and produce yellow colonies surrounded by yellow zones on this medium (e.g. *S. capitis*, *S. xylosus*, *S. cohnii*, *S. sciuri*, *S. simulans*, and other species). Therefore, further biochemical tests are necessary for the identification of *S. aureus* or other species.

Precautions

- Read the label details and storage before opening the pack.
- Wear protective gloves / protective clothing / eye protection / face protection.
- Follow good microbiological lab practices while handling specimens and culture.

Pack Size and packaging

20 plates per kit packed with gamma irradiated packing material.

Storage & Shelf life

- Store at 10 - 30°C
- Use before the expiry date mentioned on the label.
- Product is temperature sensitive; protect from direct sunlight, excessive heat, moisture, and freezing.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Materials that have come in contact with infectious / clinical samples must be decontaminated and disposed of in accordance with current laboratory techniques and regulations.