

Technical Data Sheet

Mannitol Salt Phenol-Red Agar

acc. harm. EP/USP/JP

Ordering number: 1.05404.0500

Mannitol salt phenol-red agar is a modified version of the selective agar proposed by Chapman (1945) for the isolation and presumptive identification of *Staphylococcus aureus* in non-sterile pharmaceuticals and food.

This medium complies with the specifications given by the harmonized methods of EP, USP, JP for Microbial Examination of Non-sterile Products: Tests for Specified Microorganisms.

Mode of Action

The composition of Mannitol Salt Agar supports the growth of *Staphylococcus aureus* whereas many other microorganisms are inhibited by the high salt content of 7.5 %. Some halophilic Enterococci and Vibriones are able to grow on Mannitol Salt Agar.

In contrast to the most other staphylococci *S. aureus* is able to build acids from mannitol. Therefore, they build up yellow colonies with yellow zones. *S. capitis*, *S. simulans*, *S. carnosus*, *S. scuri*, *S. lentus*, *S. gallinarum* are also mannitol positive.

Typical Composition

Peptone from Casein	5 g/l
Enzymatic Digest of Animal Tissue	5 g/l
Beef Extract	1 g/l
NaCl	75 g/l
D(-)-Mannitol	10 g/l
Phenol Red	0.025 g/l
Agar-Agar	12 g/l

Preparation

Suspend 108 g/l. Autoclave (15 min at 121 °C). Pour plates.

The appearance of the plates is clear and red.

The pH value at 25 °C is in the range of 7.2-7.6.

Storage

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at +15 °C to +25 °C.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 °C to +25 °C.

Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 °C, disinfect, incinerate etc.).

Experimental Procedure

Inoculate by spreading the sample on the surface of the medium. Inoculation should be massive because of the strong inhibitory effect of the medium.

Incubation: up to 3 days at 30-35 °C aerobically.

Further tests should be performed to confirm the diagnosis.

Appearance of Colonies	Microorganisms
Surrounded by bright yellow zones, abundant growth	Mannitol-positive: <i>Staphylococcus aureus</i>
No colour change, growth is usually poorer	Mannitol-negative: <i>Staphylococcus epidermis</i> and others

Quality Control

Control Strains	ATCC #	Inoculum CFU	Incubation	Expected Results
<i>Staphylococcus aureus</i>	25923	10-100	≤ 18 h at 30-35 °C	Recovery ≥ 50 %
			24 h at 30-35 °C	Color change to yellow
<i>Staphylococcus aureus</i>	6538	10-100	≤ 18 h at 30-35 °C	Recovery ≥ 50 %
			24 h at 30-35 °C	Color change to yellow
<i>Staphylococcus epidermidis</i>	12228	10-100	18-72 h at 30-35 °C	No color change to yellow
<i>Staphylococcus epidermidis</i>	14990	10-100	18-72 h at 30-35 °C	No color change to yellow
<i>Proteus mirabilis</i>	12453	10-100	18-72 h at 30-35 °C	No color change to yellow
<i>Escherichia coli</i>	8739	≥ 100	≥ 72 h at 30-35 °C	Growth inhibited

Please refer to the actual batch related Certificate of Analysis.



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Literature

Chapman, G.H. (1945): The significance of sodium chloride in studies of *Staphylococci*. J. Bact. **50**: 201-203.

EN ISO 6888-2 (1999) + A1 (2003): Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) – Part 2: Technique using rabbit plasma fibrinogen agar medium.

European Directorate for the Quality of Medicines and Healthcare. (2014): The European Pharmacopoeia. 8th Ed. Chapter 2.6.13 Microbiological examination of non-sterile products: Test for specified products. Strasbourg, France.

Japanese Ministry of Health, Labour and Welfare. (2011): The Japanese Pharmacopoeia. 16th Ed. Chapter 4.05 Microbial Limit Test II. Microbiological examination of non-sterile products: Test for specified products. Japanese Ministry of Health, Labour and Welfare. Tokyo, Japan.

United States Pharmacopoeia 38 NF 33 (2015): <62> Microbiological examination of non-sterile products: Tests for specified microorganisms.

Ordering Information

Product	Cat. No.	Pack size	Other pack sizes available
Mannitol Salt Phenol-red Agar for microbiology	1.05404.0500	500 g	
Tryptic Soy Broth	1.05459.0500	500 g	5 kg, 25 kg
DNase Test Agar for microbiology	1.10449.0500	500 g	

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