

# Mannitol Salt Phenol-red Agar

A modified version of the selective agar proposed by CHAPMAN (1945) for detecting pathogenic staphylococci in food-stuffs and other materials.

The medium complies with the recommendations of the harmonised Method in the Ph.Eur. 5.6 and the USP 29.

## Mode of Action

Only salt-tolerant microorganisms, including staphylococci, can grow on this medium, because of its high salt concentration. Degradation of mannitol to acid correlates, more or less, with the pathogenicity of *Staph. aureus* and thus serves as an indicator for this species.

## Typical Composition (g/litre)

Peptone from casein 5.0; enzymatic digest of animal tissue 5.0; meat extract 1.0; sodium chloride 75.0; D(-)-mannitol 10.0; phenol red 0.025; agar-agar 12.0.

## Preparation

Suspend 108 g/litre, autoclave (15 min at 121 °C), pour plates. pH: 7.4 ± 0.2 at 25 °C.

The plates are clear and red.

## Experimental Procedure and Evaluation

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

Incubation: up to 3 days at 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

## Literature

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

United States Pharmacopeia 29 - NF24 (2006), Chapter 62 "Microbial examination of nonsterile products: Tests for specified microorganisms"

European Pharmacopeia 5.6, Chapter 2.6.13 B (Harmonized Method) (2006).

## Ordering Information

Product	Merck Cat. No.	Pack size
Mannitol Salt Phenol-red Agar	1.05404.0500	500 g

## Quality control (spiral plating method)

Test strains	Inoculum [CFU]	Recovery %	Colour change to yellow
<i>Staphylococcus aureus</i> ATCC 25923	10 - 100	≥ 30	+
<i>Staphylococcus aureus</i> ATCC 6538	10 - 100	> 30	+
<i>Staphylococcus epidermidis</i> ATCC 12228	10 - 100	-	-
<i>Staphylococcus epidermidis</i> ATCC 14990	10 - 100	-	-
<i>Proteus mirabilis</i> ATCC 12453	10 - 100	-	-
<i>Escherichia coli</i> ATCC 8739	> 10 <sup>4</sup>	< 0.01	-