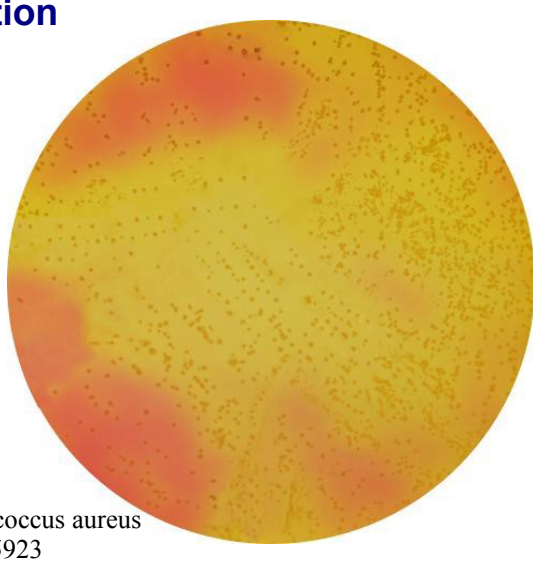
MANNITOL SALT AGAR (MSA) (Chapman Medium)

For the isolation and enumeration of pathogenic staphylococci from clinical samples and other materials

Product Description

Name :	**MSA (European Pharmacopoeia)**	
Catalog Number :	JH992A, 20 x 20 ml in Petri plates	
Formula in g/l:	Sodium Chloride	75.00
	Beef Extract	1.00
	D-Mannitol	10.00
	Phenol Red	0.025
	Pancreatic Digest of Casein	5.00
	Bacteriological Agar	15.00
	Peptic Digest of Animal Tissue	5.00
Final pH	7,4 ± 0,2 at 25°C	



Staphylococcus aureus
ATCC 25923

Storage: 2-8°C (8 weeks). Protect from light.

Application

- Isolation / Enumeration
- STAPHYLOCOCCUS

Directions for use

Guidelines for use

MANNITOL SALT AGAR (MSA) is a selective medium prepared according to the recommendations of Chapman for the isolation of presumptive pathogenic staphylococci. Most of the other bacteria are inhibited by the high concentration of Sodium chloride.

The Peptone mixture and Beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Mannitol is the carbohydrate energy source and Phenol red is the pH indicator. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Bacteriological agar is the solidifying agent.
The degradation of mannitol by bacteria produces acidic products that change the color of the medium from pink to yellow. Due to its high content of sodium chloride, a heavy inoculum of the material in study can be used.
The European Pharmacopeia recommends in the Paragraph 2.6.13 “Microbiological examination of non – sterile products: Test for specified micro-organisms”. After incubation in Casein Soya Bean Digest Broth at 30-35ºC for 18-24 hours, subculture on a plate of Mannitol Salt Agar (MSA), the incubation of the plates at 30-35ºC for 18-72 hours for growing promotion test and also to inoculate and incubate Escherichia coli ATCC 8739 as negative control. The mannitol fermenting pathogenic staphylococci are large and are surrounded by a yellow zone, colonies of non-pathogenic staphylococci appear as small colonies surrounded by a red or purple zone.

The addition of 5% Egg Yolk Emulsion allows to detect the lipase activity of staphylococci, as well as mannitol fermentation. The high concentration of salt in the medium clears the egg yolk emulsion, and lipase production is detected as a yellow opaque zone around the colonies of staphylococci producing this enzyme. This phenomenon, together with a positive coagulase test, confirms the organism as a pathogenic Staphylococcus.
Inoculate and incubate at 35 ± 2ºC and observe after 18-24 hours and after 48 hours.

Interpretation: The possible presence of S. aureus is indicated by the growth of yellow /white colonies surrounded by a yellow zone. This is confirmed by identification test.

The product complies with the test if colonies of the types described are not present or if the confirmatory identification tests are negative.

Microbiological test

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 35±2ºC and observed after 18-24 hours and after 48 hours.

Microorganisms	Growth	Colony Color
Escherichia coli ATCC 25922	Inhibited	
* Escherichia coli ATCC 8739	Inhibited	
Enterobacter aerogenes ATCC 13048	Inhibited	
Staphylococcus aureus ATCC 25923	Good	Yellow
* Staphylococcus aureus ATCC 6538	Good	Yellow
Staphylococcus epidermidis ATCC 12228	Acceptable	Red
Staphylococcus epidermidis ATCC 14990	Good	Red

* According to European Pharmacopeia 7.0 incubate at 30-35ºC during 18-72 hours

References

- Chapman, G.H. J. Bact. 50:201-203 (1945)
- McColloch Am. J. Vet. Research, 8:173. (1947)
- Velilla, Faber, and Pelczar Am. J. Vet. Research, 8:275. (1947)
- European Pharmacopoeia. 7.0

Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com.
Please inquire for higher quantities (availability, shipment conditions).

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