

TECHNICAL DATA SHEET

Chapman Stone Agar

Principle

Chapman stone agar is selective medium used for isolation of staphylococci from food and food products. The media is composed of tryptone, yeast extract, gelatin, lactose, mannitol, sodium chloride, dipotassium phosphate and agar. Tryptone as a source of nitrogen, vitamins and minerals. Yeast Extract provides carbon and nitrogen and B-complex vitamins which stimulate bacterial growth. Sodium Chloride, in high concentration, inhibits most bacteria other than staphylococci. Lactose and D-Mannitol are the carbohydrates. Gelatin is included for testing liquefaction. Agar is the solidifying agent.

Use: For selective isolation of Staphylococci causing food poisoning.

Contents*

Ingredients	Gram/Litre
Tryptone	10.00
Yeast Extract	2.50
Gelatin	30.00
Mannitol	10.00
Sodium Chloride	55.00
Ammonium sulphate	75.00
Dipotassium Phosphate	5.00
Agar pH	15.00
at 25°C	7.0 ±0.2

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 202.00 grams in 1000 ml distilled water, boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs. pressure (121°C) for 15 min, cool it to 42-45 °C and continuously shake while distributing in petri plates. Ensure complete solidification and inoculate test sample aseptically. Mannitol fermentation test: Pick a colony from the medium on a cavity slide, add a drop of 0.04% bromothymol blue to the plate, and observe for the formation of a yellow color (positive reaction). Gelatinase test: Flood the plate with 5 ml of saturated ammonium sulfate solution and incubate at 35 ± 2°C for 10 minutes. Observe for a zone of clearing around the colonies (positive reaction).

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Specimens types analyzed

Food samples etc.

Precautions to be taken

These microbial media are intended for the in-vitro use only. 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 beige colored free flowing, homogeneous powder
Reaction of 20.20% solution	7.0 ±0.2 at 25 °C
pH	6.80- 7.20
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Light amber colored 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:

Organism	Inoculum	Growth	Mannitol fermentation	Gelatinase	Incubation period
<i>Staphylococcus aureus</i> (ATCC 25923)	50-100	Luxurious	Positive reaction	Positive reaction	33-37 °C, 18-48 h
<i>Escherichia coli</i> (ATCC 8739)	50-100	Inhibited	---	---	18-48 h

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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

1. Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.
2. *Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.

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