



TCBS Agar (Thiosulfate-Citrate-Bile-Sucrose Agar)

RDM-TCBS-01

Principle

TCBS agar is composed of yeast extract, proteose peptone, sodium citrate, sodium thiosulfate, oxgall, saccharose, sodium chloride, ferric citrate, bromothymol blue, thymol blue and agar. Yeast extract provides nitrogen, carbon, vitamins and other growth factors and proteose peptone provide the nitrogen and amino acids. Sodium citrate, sodium thiosulfate and oxgall are selective agents to inhibit gram-positive organisms and suppress coliforms in addition to that increase the pH of medium. The alkaline pH of the medium enhances the growth of *Vibrio cholerae*. Saccharose is a fermentable carbohydrate. Sodium chloride maintain osmotic balance. Sodium Thiosulfate is a sulfur source and reacts with ferric citrate as an indicator to detect hydrogen sulfide production. Bromothymol blue and thymol blue are pH indicators. Agar is a solidifying agent.

Use: Recommended for isolating and cultivating *Vibrio cholerae* and other enteropathogenic vibrio's.

Contents*

Ingredients

	Gram/Litre
Yeast Extract	5.00
Proteose Peptone	10.00
Sodium Citrate	10.00
Sodium Thiosulfate	10.00
Oxgall	8.00
Saccharose	20.00
Sodium Chloride	10.00
Ferric Citrate	1.00
Bromothymol Blue	0.04
Thymol Blue	0.04
Agar	15.00
pH at 25°C	8.6 ±0.2

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 89.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely **DO NOT AUTOCLAVE**, cool it to 42-45 °C and distribute aseptically in petri plates. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical 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 tan with greenish ting colored free flowing, homogeneous powder
Reaction of 8.9% solution	8.6 ±0.2 at 25 °C
pH	8.40- 8.80
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Greenish blue 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	Recovery	Colony color	Incubation period
<i>Vibrio cholerae</i> (ATCC 15748)	50-100	Luxurious	70-80%	Yellow color	33-37 °C, 18-48 h
<i>Escherichia coli</i> (ATCC 8739)	50-100	Inhibited	-	---	33-37 °C, 18-48 h

Storage and Shelf Life

Hygroscopic; keep container tightly closed. Store in cool dry place.

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.
3. Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), *Standard methods for the examination of water and wastewater*. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.

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