

# TCBS (Thiosulfate Citrate Bile Salt Sucrose) Agar



Medium used for the isolation and cultivation of *Vibrio cholerae* and other pathogenic *Vibrio* spp.

\*Equally use with MFDS (MB-T1010K).

## • CONTENTS (Liter)

Yeast Extract	5.0 g
Peptone	10.0 g
Sodium Citrate	10.0 g
Sodium Thiosulfate	10.0 g
Oxgall	5.0 g
Sodium Cholate	3.0 g
Sucrose	20.0 g
Sodium Chloride	10.0 g
Ferrous Citrate	1.0 g
Bromothymol Blue	0.04 g
Thymol Blue	0.04 g
Agar	15.0 g
Final pH = 8.4 ± 0.2 at 25°C	

## • PROCEDURE

Suspend 89.08 G of powder in 1 L of distilled or deionized water. If necessary, adjust pH to 8.6 ± 0.2. Heat to boiling until completely dissolved. DO NOT AUTOCLAVE. Cool to 45 - 50°C in water bath. Mix well. Pour into petri dishes.

## • INTERPRETATION

TCBS (Thiosulfate Citrate Bile Salt Sucrose) Agar is used for the isolation and cultivation of *Vibrio cholerae* and other pathogenic *Vibrio*. Yeast extract and peptone provide nitrogen, carbon, amino acids, minerals and vitamins. Sodium citrate, sodium thiosulfate, oxgall and sodium cholate are selective agents to inhibit Gram-positive organisms. Sodium thiosulfate is a sulfur source. Sucrose is the fermentable carbohydrate. Sodium chloride maintains the osmotic balance. Ferrous citrate detects hydrogen sulfide production. Bromothymol blue and thymol blue are the pH indicators. *V. cholerae* and *V. alginolyticus* grow forming yellow colonies because of fermentation of sucrose while *V. parahaemolyticus* and *V. vulnificus* do not ferment sucrose and grows forming blue-green colonies. Agar is the solidifying agent.

## • TECHNIC

Inoculate the specimen using a sterile loop to the medium. Incubate at 35 - 37°C for 18 - 24 hours. Refer appropriate references for recommended test procedure.

## • QUALITY CONTROL FOR USE

### Dehydrated medium

Appearance: free-flowing, homogeneous

Color: light tan

### Prepared medium

Appearance: slightly opalescent

Color: green

Incubation conditions: 35 - 37°C / 18 - 24 hours

Microorganism	ATCC	Growth	Characteristics
<i>Vibrio alginolyticus</i>	17749	good	yellow colonies
<i>Vibrio parahaemolyticus</i>	17802	good	blue-green colonies
<i>Vibrio vulnificus</i>	27562	good	blue-green colonies
<i>Escherichia coli</i>	25922	inhibited	-

## • STORE

The powder is very hygroscopic. Store the powder at room temperature, in a dry environment, in its original container tightly closed and use it before the expiry date on the label. Store prepared medium at 2 - 8°C.

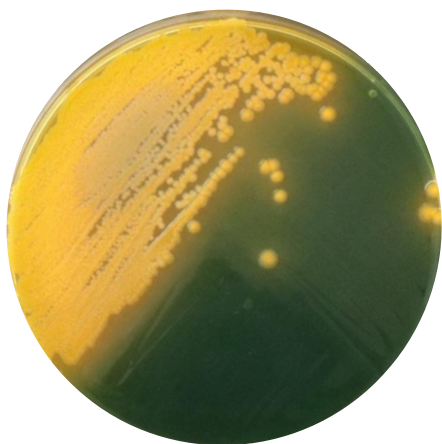
## • REFERENCES

1. AOAC (1995) – Bacteriological Analytical Manual, 8th ed.
2. Nakanishi, Y. (1963) An isolation agar medium for cholerae and enteropathogenic halophilic vibrios. Modern Media 9: 246.
3. Kobayashi, T., S. Enomoto, R. Sakasaki, and S. Kuwahara (1963). Jap. J. Bacteriol. 18: 10-11; 392-397.
4. Refer to the MFDS.

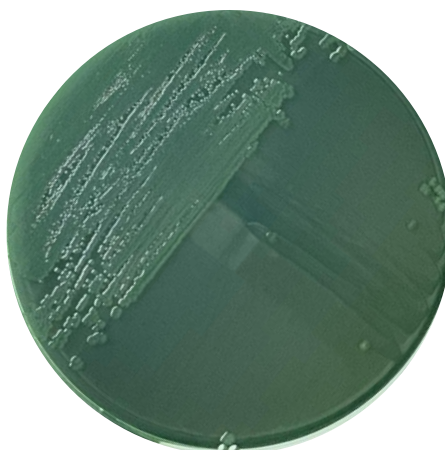
## • PACKAGE

Cat. No : MB-T1010 TCBS (Thiosulfate Citrate Bile Salt Sucrose) Agar	500 G
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## • MICROBIAL CULTURE IMAGES



*V. alginolyticus*  
ATCC 17749  
(≥10<sup>3</sup>CFU)



*V. vulnificus*  
ATCC 27562  
(≥10<sup>3</sup>CFU)



*E. coli*  
ATCC 25922  
(≥10<sup>3</sup>CFU)

Incubation conditions: 35 - 37°C / 18 - 24 hours