

Thiosulfate Citrate Bile Salts Sucrose Agar, TCBS Agar (i23177)

Thiosulfate Citrate Bile Salts Sucrose Agar (TCBS Agar) is used for the isolation and selective cultivation of *Vibrio cholerae* and other enteropathogenic vibrios.

Industry: Food / clinical

Principles & Uses

TCBS Agar, developed for the selective isolation of *Vibrio* species, including those responsible for cholera, serves as a valuable medium in microbiological diagnostics. This agar utilizes a combination of components to facilitate selective growth and identification. Peptone, yeast extract, sodium citrate, sodium thiosulfate, and ox bile play pivotal roles. While providing essential nutrients for growth, the selective agents inhibit Gram-positive bacteria. Sodium thiosulfate serves as a sulfur source, and ferric ammonium citrate acts as an indicator for hydrogen sulfide production. Sucrose functions as a fermentable carbohydrate, influencing colony coloration.

Sucrose-positive vibrios, such as *Vibrio cholerae* and *Vibrio alginolyticus*, exhibit yellow colonies, while sucrose-negative ones, like *Vibrio parahaemolyticus*, display blue-green colonies. This medium, recommended for *Vibrio* isolation, is particularly effective in suppressing non-vibrios, ensuring a selective environment.

Composition (gr/L)

Yeast Extract 5 g, Proteose Peptone NO.3 10 g, Sodium citrate 10 g, Sodium thiosulfate 10 g, Oxgall 8 g, Sucrose 20 g, Sodium chloride 10 g, Ferric Ammonium Citrate 1 g, Bromothymol Blue 0.04 g, Thymol Blue 0.04 g, Agar 15 g.

Final pH at 25°C 8.6 ± 0.2

Preparation from dehydrated Powder

Suspend 89 g of the powder in 1 L of distilled water. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Cool to 45 - 50°C and use immediately. **DO NOT AUTOCLAVE.**

Quality Control

Dehydrated Appearance: Light tan with greenish cast, free-flowing, homogeneous.

Prepared Appearance: Green, slightly opalescent.

Reaction of 8.9% Solution at 25°C: pH 8.6 ± 0.2

Cultural Response

Inoculate with fresh cultures (*E. coli* grown in TSB, vibrios grown in BHI) and incubate at 35 ± 2°C for 18 - 24 hours.

Organism (ATCC*)	Recovery	Colony color
<i>Escherichia coli</i> (25922)	None	-
<i>Vibrio alginolyticus</i> (17749)	Good	Yellow
<i>Vibrio cholerae</i> El Tor (14033)	Good	Yellow
<i>Vibrio parahaemolyticus</i> (17802)	Good	Blue green

*ATCC is a registered trade mark of the American Type Culture Collection.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.