

CM 22453 - TCBS AGAR PLATE

INTENDED USE

For selective isolation of *Vibrio cholerae* and enteropathogenic *Vibrios*.

PRODUCT SUMMARY AND EXPLANATION

Thiosulfate-Citrate-Bile Salts-Sucrose Agar (TCBS) was developed by Nakanishi and modified by Kobayashi et al. in 1963. It was developed for selective isolation of *Vibrios* which cause cholera, diarrhea, and food poisoning. TCBS Agar is recommended by the World Health Organization (WHO) for isolation of *Vibrio cholerae*. In 1982, West et al. reported TCBS Agar could be used for recovery of certain new pathogens such as *Vibrio fluvialis* and *Vibrio vulnificus*. TCBS Agar is also recommended by the AOAC International.

COMPOSITION

Ingredients	Gms / Ltr
Sucrose	20.000
Sodium thiosulphate	10.000
Sodium citrate	10.000
Proteose peptone	10.000
Sodium chloride	10.000
Oxgall	5.000
Yeast extract	5.000
Ferric citrate	1.000
Bromo thymol blue	0.040
Thymol blue	0.040
Agar	15.000
Sodium Chololate	3.000

PRINCIPLE

TCBS Agar is both a selective and differential medium. The selective agent in TCBS Agar is oxgall and sodium citrate, which inhibits the growth of gram-positive organisms and coliforms. It contains proteose peptone and yeast extract as a source of nitrogenous compounds, vitamin B complex and other essential growth nutrients. The carbohydrate source is sucrose. Bromo thymol blue and thymol blue make up the pH indicator system. The addition of sodium thiosulfate and ferric ammonium citrate as a sulphur source and indicator, respectively, allows hydrogen sulphide forming organisms to produce colonies with black centers, under alkaline conditions. Sodium chloride provides optimum growth for the halophilic *Vibrio* spp. and agar is added as a solidifying agent. *Vibrio* spp. that is able to utilize sucrose will form yellow colonies. *V. parahaemolyticus* is a sucrose non-fermenting organism and therefore produces blue-green colonies, as does *V. vulnificus*. *Proteus* species that are sucrose-fermenters may form yellow colonies.

INSTRUCTION FOR USE

Either streak, inoculate or surface spread the test inoculum aseptically on the plate



QUALITY CONTROL SPECIFICATIONS

Appearance	:	Bluish green colour medium
Quantity of Medium	:	25ml of medium in 90mm plates.
pH (at 25°C)	:	8.6 ± 0.2
Sterility Check	:	Passes release criteria

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colony Appearance	Incubation Temperature	Incubation Period
Vibrio cholerae	15748	50-100	Good-luxuriant	>=50%	Yellow	35-37°C	18-48 hours
Vibrio vulnificus	29306	50-100	Fair-good	>=50%	Greenish yellow	35-37°C	18-48 hours
Vibrio parahaemolyticus	17802	50-100	Good-luxuriant	>=50%	Bluish green	35-37°C	18-48 hours
Shigella flexneri	12022	≥ 1000	Inhibited	0%	--	35-37°C	18-48 hours
Escherichia coli	25922	≥ 1000	Inhibited	0%	--	35-37°C	18-48 hours
Enterococcus faecalis	29212	≥ 1000	Inhibited	0%	--	35-37°C	18-48 hours

PACKAGING:

Doubled layered packing containing 5 No. of plates with one silica gel desiccant bag packed inside it.

STORAGE

On receipt, store the plates at 15–30 °C. Avoid freezing and overheating. Do not open until ready to use. Prepared plates stored in their original sleeve wrapping until just prior to use may be inoculated up to the expiration date and incubated for recommended incubation times. Allow the medium to warm to room temperature before inoculation. Product Deterioration: Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

- Baumann P, Furniss AL, Lee JV (1984). Genus 1, Vibrio. In: Krieg PNR, Holt JG, eds. Bergey's manual of systematic bacteriology. Vol. 1. Baltimore, Williams & Wilkins: 518– 538.
- Food and Drug Administration. 2004. Bacteriological Analytical Manual Online. Chapter 9, Updated May 2009. Authors: C.A. Kaysner and A. Depaola, Jr. AOAC International, Gaithersburg, MD.
- Nakanishi, Y. 1963. Modern Media. 9:246
- Kobayashi, T., S. Enomoto, R. Sakazaki, and S. Kuwahara. 1963. Jpn. J. Bacteriol. 18: 387392.
- MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams & Wilkins, Baltimore, Md.
- Morris G. K., Merson M. H., Huq A. K., Kibrya A. K. and Black R., 1979, J. Clin. Microbiol., 9:79
- West, P.A., W. Russek, P.R. Brayton and P.R. Colwell. 1982. J Clin. Microbiol. 16:1110-1116
- World Health Organization (WHO). 1974. Guidelines for the Laboratory Diagnosis of Cholera. WHO, Geneva, Switzerland.



QTY.
Quantity

**LOT/
B. NO.**
Lot / Batch Number


Temperature Unit


Manufacturer


Best Before

GMP
Certification of
Good Manufacturing Practices

REF
Catalogue No.

EC REP Mediker GmbH
Hindenburg 16
42113 Barmen, Germany
Authorized Representative

CE
European Conformity


QR
Code


Consults Instructions for use :

IVD
For In Vitro Diagnostic Use

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*ForLabUse Only

