

TCBS AGAR (SELECTIVE)**TM 875**

For selective isolation of *Vibrio cholerae* & other enteropathogenic *Vibrios* causing food poisoning

Composition

Ingredients	Gms/Ltr.
Sucrose	20.00
Agar	15.00
Spl. peptone	10.00
Sodium citrate	10.00
Sodium chloride	10.00
Sodium thiosulphate	10.00
Yeast extract	5.00
Ox gall	5.00
Sodium cholate	3.0
Ferric citrate	1.00
Bromothymol blue	0.04
Thymol blue	0.04

* Dehydrated powder, hygroscopic in nature, store, in a dry place in tightly- sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 89gms in 1000ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. **DO NOT AUTOCLAVE**. Cool to 45-50°C and pour into sterile petri plates.

Appearance: Green colour, clear to slightly opalescent gel

pH (at 25°C): 8.6± 0.2

Principle

TCBS AGAR (VIBRIO SELECTIVE AGAR) is highly selective for the isolation of *Vibrio cholerae* and *V. parahaemolyticus* from stool specimens, and specified in standard methods for food testing. This highly selective medium meets the nutritional requirements of *Vibrio* sp., and allows competing with intestinal flora. *Vibrio* spp. is able to grow in media containing increased salt concentrations. *Vibrio* spp. are natural inhabitants of water. Special peptone and Yeast extract are the source of vitamins, carbon, nitrogen and amino acids in the medium. Sodium thiosulphate serves as a sulphur source and, in combination with Ferric citrate, detects hydrogen sulphide production. Sucrose is included as a fermentable carbohydrate for the metabolism of *Vibrios*. Inhibition of gram- positive bacteria is achieved by the incorporation of Ox gall, which is a naturally occurring substance containing a mixture of bile salts, and Sodium cholate, a pure bile salt. Oxgall and cholate suppress primarily enterococci. The alkaline pH of the medium enhances the recovery of *V. cholera* because this organism is sensitive to acid environments. Thymol blue and Bromothymol blue are included as indicators of pH changes. Sodium citrate and Sodium thiosulphate are the selective agents, providing an alkaline pH to inhibit gram- positive organisms and suppress coliforms. Agar is the solidifying agent. TCBS agar deeps (pour tubes) are provided in a 20 ml fill so that the medium may be liquefied and poured into a petri plates. This provides a convenient source of medium with a longer shelf - life than pre-poured plated media.

Interpretation

Cultural characteristics observed after inoculating (10^3 CFU/ml), on incubation at $35 \pm 2^\circ\text{C}$ for 18-24hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Recovery	Appearance of colony
<i>Vibrio cholera</i>	9459	10^3	Luxuriant	Yellow
<i>Vibrio fluvialis</i>	33809	10^3	Luxuriant	Yellow
<i>Vibrio parahaemolyticus</i>	17802	10^3	Luxuriant	Green
<i>Vibrio alginolyticus</i>	17749	10^3	Luxuriant	Yellow
<i>Escherichia. coli</i>	25922	10^3	Inhibited	-

References

1. Department of Health NHS Executive: The Caldicott Committee. Report on the review of patient identifiable information. London. December. (1997).
2. Kobayashi, Enomoto, Sakazaki and Kuwahara, A new selective isolation medium for pathogenic vibrios: TCB5-Agar, Jap. J. Bacteriol., 18, 387. (1963).
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4. Kobayashi, T., S. Enomoto, R. Sakazaki, and S. Kuwahara. 1963. A new selective medium for pathogenic vibrios, TCBS (modified Nakanishi's agar). Jpn, J. Bacteriol. 18:387. Nakanishi, Y. (1963).