

## TMV 436 – TCBS AGAR (VIBRIO SELECTIVE AGAR) (VEG.)

### INTENDED USE

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

### PRODUCT SUMMARY AND EXPLANATION

TCBS Agar was developed by Kobayashi et al, who modified the selective medium of Nakanishi. Although this medium was originally designed for the isolation of *V. cholerae* and *V. parahaemolyticus*, most *Vibrios* grow to healthy large colonies with many different colonial morphologies. TCBS Agar is also recommended by APHA for the selective isolation of *V. cholerae* and *V. parahaemolyticus*. Enrichment in Alkaline Peptone Water (M618), followed by isolation on TCBS Agar is routinely used for isolation of *V. cholerae*. TCBS Agar, Selective has an additional selective ingredient i.e. sodium cholate for improved selectivity.

Strains of *V. cholerae* produce yellow colonies on TCBS Agar because of fermentation of sucrose. *V. alginolyticus* also produce 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. TCBS Agar is not a suitable medium for oxidase testing of *Vibrio* species. A few strains of *V. cholerae* may appear green or colourless on TCBS Agar due to delayed sucrose fermentation. TCBS Agar is highly selective for *Vibrio* species. However, occasional isolates of *Pseudomonas* and *Aeromonas* may also form blue green colonies on TCBS Agar. Any H<sub>2</sub>S negative colony of TCBS Agar can be considered presumptive positive for *Vibrio*. The medium should be inoculated heavily with faecal specimens because growth of few species may be inhibited on the medium due to fermentation of sucrose and accumulation of acids.

### COMPOSITION

Ingredients	Gms / Ltr
Veg. Peptone	15.000
Yeast extract	6.000
Sodium thiosulphate	10.000
Sodium citrate	10.000
Synthetic detergent No. II	2.000
Sucrose	20.000
Sodium chloride	10.000
Ferric citrate	1.000
Bromo thymol blue	0.040
Thymol blue	0.040
Agar	15.000

### PRINCIPLE

Veg. Peptone and yeast extract provide nitrogenous, carbonaceous compounds, long chain amino acids, vitamin B complex and other essential growth nutrients. Synthetic detergent No. II and sodium citrate inhibit gram-positive bacteria and coliforms. Sodium thiosulphate serves as a good source of sulphur, which in combination with ferric citrate detects the production of hydrogen sulphide. For the metabolism of *Vibrios*, sucrose is added as a fermentable carbohydrate. *Vibrio* that is able to utilize sucrose will form yellow colonies. Bromothymol blue and thymol blue are the pH indicators. The alkaline pH of the medium improves the recovery of *V. cholerae*.



### INSTRUCTION FOR USE

- Dissolve 89.08 grams in 1000 ml distilled water.
- Heat to boil to dissolve the medium completely.
- DO NOT AUTOCLAVE.
- Cool to 50°C and pour into sterile petri plates.

### QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : Light yellow to light tan homogeneous free flowing powder.
- Appearance of prepared medium** : Bluish green coloured clear to slightly opalescent gel forms in Petri plates.
- pH (at 25°C)** : 8.6±0.2

### INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
<i>Escherichia coli</i>	25922	$\geq 10^4$	Inhibited	0%	-	35-37°C	18-24 Hours
<i>Vibrio parahaemolyticus</i>	17802	50-100	Good-luxuriant	$\geq 50\%$	Bluish green	35-37°C	18-24 Hours
<i>Vibrio vulnificus</i>	29306	50-100	Good-luxuriant	$\geq 30\%$	Greenish yellow	35-37°C	18-24 Hours
<i>Vibrio fluvialis</i>	33809	50-100	Good-luxuriant	$\geq 50\%$	Yellow	35-37°C	18-24 Hours
<i>Enterococcus faecalis</i>	29212	$\geq 10^4$	Inhibited	0%	-	35-37°C	18-24 Hours
<i>Vibrio cholerae</i>	15748	50-100	Good-luxuriant	$\geq 50\%$	Yellow	35-37°C	18-24 Hours
<i>Shigella flexneri</i>	12022	$\geq 10^4$	Inhibited	0%	-	35-37°C	18-24 Hours

### PACKAGING:

In pack size of 100 gm and 500 gm bottles.

### STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.















**DISPOSAL**

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

**REFERENCES**

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4. Howard B., 1994, Clinical and Pathogenic Microbiology, 2nd Ed., The C.V. Mosby.
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7. Morris G. K., Merson M. H., Huq A. K., Kibrya A. K. and Black R., 1979, J. Clin. Microbiol., 9:79.
8. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Tenover F. C., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
9. Nakanishi Y., 1963, Modern Media 9: 246.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Barkstrasse 10, 49163 Moenster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

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

**\*For Lab Use Only**  
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