

# TM 876 – TCBS AGAR (MODIFIED)

#### **INTENDED USE**

For selective isolation of Vibrio cholerae and other enteropathogenic Vibrios.

#### PRODUCT SUMMARY AND EXPLANATION

TCBS Agar was first formulated by Nakanishi and further modified by Kobayashi et al. It promotes rapid growth of pathogenic Vibrio's after 24 hours incubation at 37°C. The contaminating non-vibrio's are suppressed. Strains of Vibrio cholerae produce yellow colonies on TCBS Agar because of fermentation of sucrose. Vibrio alginolyticus also produce yellow colonies. Vibrio parahaemolyticus is a sucrose non-fermenting organism and produces blue-green colonies, as of Vibro vulnificus. As mentioned previously, occasional isolates of Pseudomonas and Aeromonas species also produce bluegreen colonies, but overall TCBS Agar is highly selective and any H2S-negative colony is possibly Vibrio species. The medium should be inoculated heavily with faecal specimens because some Vibrio species readily die off on the medium, owing to fermentation of sucrose and accumulation of acids.

#### **COMPOSITION**

Ingredients	Gms / Ltr		
Peptone, special	10.000		
Yeast extract	5.000		
Sodium citrate	10.000		
Sodium thiosulphate	10.000		
Sodium cholate	3.000		
Oxgall	5.000		
Sucrose	20.000		
Sodium chloride	10.000		
Ferric citrate	1.000		
Bromo thymol blue	0.040		
Thymol blue	0.040		
Agar	14.000		

# **PRINCIPLE**

Peptone special and yeast extract provide nitrogenous and carbonaceous compounds, long chain amino acids, vitamin B complex and other essential growth nutrients. Bile a derivative of bile salts and the sodium citrate inhibit gram-positive bacteria. 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 Vibrio's, sucrose is added as a fermentable carbohydrate. Bromo thymol blue and thymol blue are the pH indicators. The alkaline pH of the medium improves the recovery of Vibrio cholerae.

### **INSTRUCTION FOR USE**

- Suspend 88.08 grams in 1000 ml warm purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Bring just to boil and immediately remove from heat.
- DO NOT AUTOCLAVE. Cool to 45-50°C. Mix well and pour into sterile Petri plates.
- Dry the plates overnight or at 37-45°C before use.











### **QUALITY CONTROL SPECIFICATIONS**

**Appearance of Powder** : Light yellow to tan coloured homogeneous free flowing powder.

**Appearance of prepared medium** : Bluish green colured clear to slightly opalescent gel forms in petri plates.

pH (at 25°C) : 8.6±0.1

### **INTERPRETATION**

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Escherichia coli	25922	>=104	Inhibited	0%	-	35-37°C	18-24 Hours
Proteus vulgaris	13315	>=104	Inhibited	0%	-	35-37°C	18-24 Hours
Shigella flexner	12022	>=104	Inhibited	0%	-	35-37°C	18-24 Hours
Enterococcus faecalis	29212	>=104	Inhibited	0%	-	35-37°C	18-24 Hours
Vibrio cholerae	15748	50-100	Good- luxuriant	>=50%	Yellow	35-37°C	18-24 Hours
Vibrio fluvialis	33809	50-100	Good- luxuriant	>=50%	Yellow	35-37°C	18-24 Hours
Vibrio parahaemolyticu s	17802	50-100	Good- luxuriant	>=50%	Blue	35-37°C	18-24 Hours
Vibrio vulnificus	29306	50-100	Fair- good	>=20%	Greenish- yellow	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.

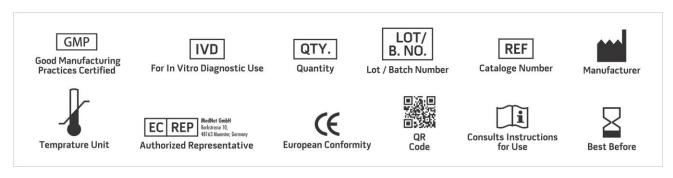
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

#### **DISPOSAL**

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

#### **REFERENCES**

- 1. Kobayashi, Enomoto, Sakazaki and Kuwahara, 1963, Jap. J. Bacteriol., 18:387.
- 2. Nakanishi, 1963, Modern MEdia, 9:246.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices. \*For Lab Use Only

Revision: 08 Nov., 2019







