TMAO Medium (Trimethylamine-N-Oxide Medium) M1159

TMAO Medium (Trimethylamine-N-Oxide Medium) is used for cultivation and differentiation of *Campylobacter* species from foods, except *Campylobacter jejuni* and *Campylobacter coli* in accordance with APHA.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Beef extract	10.000
Sodium chloride	5.000
Yeast extract	1.000
Trimethylamine-N-Oxide	1.000
Agar	2.000
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 29 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense 4 ml in 13x100 mm screw cap tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubes in an upright position.

Principle And Interpretation

Campylobacters are mainly present in the intestinal tract of animals and therefore contaminate the foods of animal origin. *Campylobacter lari* is a thermophilic species that was first isolated from gulls and has since been isolated from other avian species, dogs, cats and chickens. *C. lari* has been frequently reported from humans with bacteremia and with gastrointestinal and urinary tract infections (1). TMAO is an osmolyte found in salt water fish, sharks and rays, molluscs and crustaceans. TMAO decomposes to trimethylamine (TMA) which is the main odorant that is characteristic of degrading seafood.

TMAO (Trimethylamine-N-Oxide) Medium is prepared as recommended by APHA (2) for cultivation and differentiation of *Campylobacter* species from foods except *Campylobacter jejuni* and *Campylobacter coli* .

C. jejuni and *C. coli* are sensitive to Trimethylamine-N-Oxide and hence do not grow in this medium while growth of *C. lari* remains unaffected as it is not sensitive to TMAO. Therefore anaerobic growth in 1% TMAO is used to differentiate this strain from *C. jejuni* and *C. coli* .

Beef extract, peptic digest of animal tissue and yeast extract provide nitrogenous compounds, vitamin B complex and growth factors for *C. lari* . Sodium chloride maintains the isotonic atmosphere in the medium.

Culture is stab inoculated in upper one third of the medium and incubated in anaerobic condition for 7 days with loose caps. Growth of *C. lari* can be observed away from the stab line.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.2% Agar gel.

Colour and Clarity of prepared medium
Yellow coloured clear to slightly opalescent gel forms in tubes as butts.

Reaction
Reaction of 2.9% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH
7.30-7.70

Cultural Response

M1159: Cultural characteristics observed under anaerobic condition after an incubation at 42°C for 24-48 hours (further incubation upto 7 days may be required).

Organism	**Growth Cultural Response**
Campylobacter coli ATCC 33559	inhibited
Campylobacter jejuni ATCC 29428	inhibited
Campylobacter lari ATCC 35221	good-luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.). 2003, Manual of Clinical Microbiology, 8th Ed. American Society for Microbiology, Washington, D.C.
2. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.

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