Mn Agar Base

M771

Mn Agar Base is used for detection of *Leptothrix* species based on its ability to oxidize manganous ion

Composition**

Ingredients	Gms / Litre
Beef extract	1.000
Yeast extract	0.075
Manganous carbonate	2.000
Ferrous ammonium sulphate	0.150
Sodium citrate	0.150
Agar	12.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 15.37 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50-55°C and aseptically add filter-sterilized solution of cyanocobalamin to a final concentration of 0.005 mg/litre. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Leptothrix is a sheathed filamentous bacterium that can generally be found in different types of aquatic environments with sufficient organic matter. *Leptothrix* bacteria are known to be capable of oxidizing both iron (II) and manganese (II), unlike other sheathed bacteria. These belong to the group of nuisance organisms which have the ability to transform or deposit significant amount of iron, usually in the form of objectionable slimes. Iron bacteria (Leptothrix) may cause, or be associated with, fouling and plugging of wells. They also cause odour, taste, frothing, colour and increases turbidity in waters.

Mn Agar is formulated in accordance with APHA (1) and is used as a differential medium (2) based on the ability of Leptothrix species to oxidize manganous ion.

Beef extract and yeast extract supply the essential growth nutrients. *Leptothrix-Sphaerotilus* derive energy by oxidation of ferrous sulphate. Alternatively *Leptothrix* may be grown by direct plating on Mn Agar No. 2 (3).

Quality Control

Appearance
White to cream homogeneous free flowing powder

Gelling
Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium
Yellow coloured clear to slightly opalescent gel with a slight precipitate forms in Petri plates

Cultural Response
M771: Cultural characteristics observed after an incubation at 25-30°C for 24-48 hours.

Organism	Growth	Manganese oxidation
Leptothrix discophora ATCC 43182	luxuriant	positive reaction
Sphaerotilus natans ATCC 13338	good	negative reaction

Storage and Shelf Life

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

Reference

1. Eaton A. D., Clesceri L. S., Rice E. W. and Greenberg A W., (Eds.),2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
2. Mulder E. G. and VanVeen W. L., 1963, Antonie Van Leeuwenhock (Holland), 29:121.
3. Ghiorse W. C., 1984, Ann. Rev. Microbiol., 38:515.

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