Product :
m-LAURYLSULFATE AGAR

Specification

Solid medium for the isolation and enumeration of coliform organisms and *E. coli* from water by membrane filtration.

Formula * in g/L

Peptone..... 39,00
Yeast extract..... 6,00
Lactose..... 30,00
Sodium laurylsulfate..... 1,00
Phenol red..... 0,20
Agar..... 15,00

Final pH 7,40 ±0,2 at 25 ºC
* Adjusted and /or supplemented as required to meet performance criteria

Directions

Suspend 91,2 g of powder in 1 L of distilled water and bring to the boil. Distribute into suitable containers and sterilize in the autoclave at 121ºC for 15 minutes. Please note: Overheating can cause the lactose to darken.

Description

MF-Laurylsulphate Agar is the solid version of the broth of the same name, and is successor to the Enrichment Teepol Broth formulated in 1976, after Teepol 610 disappeared off the market.
In liquid form this medium is recommended by the Dept. of Environment, Health & Social Security and the Public Health and Medical Service of the United Kingdom. It is recommended for the detection and enumeration of coliforms and *Escherichia coli* by the membrane-filtration technique without pre-enrichment. The solid version can be used in the same way as the absorbent pad with the broth.
The Lauryl sulfate acts as selective inhibitor of sporulating contaminants. At the formulated concentration the tension-active agent (Lauryl sulfate) has no effect over coliforms, and they grow quickly and abundantly from minute inocula.
The acid production from lactose is shown by the phenol red indicator turning from red to yellow. This change results in yellow colonies over a yellow zone in the medium.

Technique

Coliform enumeration and E. coli enumeration must be done in separate volumes of sample. The volume to be filtered must be careful selected to obtain 10-100 colonies on the membrane.
Water samples once filtered through a sterile membrane are placed on the surface of the MF Lauryl sulfate agar and incubated. Burman (1976), recommended the following times and temperatures of incubation for non-chlorinated waters:

Coliforms: 4 h at 30ºC followed by 14 h at 35ºC
Escherichia coli: 4 h at 30ºC followed by 14 h at 44ºC

In chlorinated waters it is better to change the first incubation step to 6 h at 25ºC. The 44ºC incubation is more reliable if is carried out in a hermetically sealed container in a water bath with rigorous control of the temperature. The presumptive colonies growing at 44ºC must be confirmed with the production of gas from lactose and production of indol at 44ºC.

Quality control

Incubation temperature: 30ºC±1 / 44 ºC ± 0,5 **Incubation time:** 4h / 14±2 h

Inoculum: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10^4 -10□ CFU (selectivity)/ ≥ 10^3 CFU (specificity), according to ISO 11133:2014/Amd 1:2018.

Microorganism	Growth	Remarks
Enterococcus faecalis ATCC® 19433	Inhibited	-
Escherichia coli ATCC® 8739	Productivity > 0.50	Orange-Yellow media. Yellowish colonies. L(+)
Escherichia coli ATCC® 25922	Productivity > 0.50	Orange-Yellow media. Yellowish colonies. L(+)
Pseudomonas aeruginosa ATCC® 27853	Good	Red media. Colourless colonies L(-)

References

· ATLAS R.M & L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press. London.
· BURMAN, N.P. (1976) Recent advances in Bacteriological Examination of Water, in Progress in Microbiological Techniques, edited by C.H. Collins. Butterworth. London.
· CORRY, J.E.L, G.D.W. CURTIS & R.M. BAIRD (2003) Handbook of Culture Media for Food Microbiology. Elsevier. Amsterdam.
· HOLDEN, W.S. (1970) Water Treatment and Examination. J & A Churchill. London.
· PHLS and DEPT. of ENVIRONMENT, HEALTH & SOCIAL SECURITY (1982) The Bacteriological Examination of Drinking Water Supplies. Report on Public Health and Medical Subjects No. 17. HMSO. London.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).