Technical Information

Ampicillin Dextrin Agar Base

Product Code: DM 2262

Application: - Ampicillin Dextrin Agar Base is recommended for differential and selective isolation of *Aeromonas* species from water samples using membrane filter technique.

Composition**

Ingredients	Gms / Litre
Tryptose	5.000
Dextrin	10.000
Yeast extract	2.000
Sodium chloride	3.000
Potassium chloride	2.000
Magnesium sulphate	0.200
Iron (III) chloride	0.100
Bromothymol blue	0.080
Agar	15.000
Final pH (at 25°C)	8.0±0.1

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Ampicillin Dextrin Agar Base is recommended for isolation and differentiation of *Aeromonas* species from other gram- negative rods such as *Pseudomonas* and *Enterobacteriaceae* from water samples by membrane filter technique (4).

Aeromonas is a genus of bacteria that is ubiquitous in the environment. It is present in all types of water worldwide, as well as in food and soil. There are approximately 16 different species in this genus, the best known of which is *Aeromonas hydrophila*. Physiologically, *Aeromonas* are similar to bacteria in the coliform group and can be isolated from similar environments. *Aeromonas* are commonly isolated from a variety of aquatic environments, including freshwater, estuarine, brackish, and salt waters. Some members of this group of bacteria have been implicated in human disease, although not all strains appear to be pathogenic to humans (1). *Aeromonas* species can cause various enteric symptoms in children and adults (2, 3).

Tryptose and yeast extract supply nitrogenous compounds along with other essential nutrients for growth of *Aeromonas*. Sodium chloride maintains the osmotic balance of the medium. *Aeromonas* forms acid from dextrin, which is indicated by colour change from blue to yellow by the pH indicator, bromothymol blue. The selectivity of the medium is increased by the addition of Ampicillin. The effectiveness of Ampicillin as selective agent has been reported by several workers (5, 6, 7).

After 24 hours of growth on this agar, colonies are sprayed with Nadi reagent (1% solution of N, N, N, N' -tetramethyl-p-phenylene-diammonium dichloride). A positive Nadi reaction (dextrin degradation) is indicated by a purple colour at the periphery of the colony. Dextrin fermentation is also indicated by yellow colonies. *Aeromonas* species appear as large, convex yellow colonies with a purple periphery.

Methodology

Suspend 37.38 grams of dehydrated culture media in 1000 ml distilled water. Mix thoroughly & heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add rehydrated contents of one vial of Ampicillin Dextrin Selective Supplement (MS2107A). Mix well and pour into sterile Petri plates.

Quality Control

Appearance
Light yellow to greenish yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity
Dark green coloured clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 3.74% w/v aqueous solution at 25°C. pH : 8.0±0.1

pH Range
7.90-8.10

Cultural Response
DM2262: Cultural characteristics observed with added Ampicillin Dextrin Selective Supplement (MS2107A), after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response			
Aeromonas hydrophila ATCC 7966	50-100	luxuriant	>=50%
Escherichia coli ATCC 25922	50-100	none-poor	<=10%
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	0%

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2- 8°C.Use before expiry date on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Embrey M. A., Parkin R. T., and Balbus J. M., (Ed.), 2002, Handbook of CCL Microbes in Drinking Water, American Water Works Association: Denver, CO.
2. Atkinson M., 1986, Culture, Vol. 7, No. 2.
3. Moyer N. P., 1987, J. Clin. Microbiol., 25, 2044-2048.
4. Havelaar A. H., During M. and Versteigh J. F. M., 1987, J. Appl. Bacteriol., 62 (3):279-87.
5. Richardson C. J., Robinson J. O., Wagener L. B., Burke V. J., 1982,Antimicrob., Chemother., 9:267.
6. Moulsdale M. T. 1983, The Lancet, 1:351.
7. Rogol M., Sechlter I., Grenber L., Gerichter Ch. B., 1979, J. Med. Microbiol., 12:229.

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