Technical Information

Actinomyces Agar

Product Code: DM 1341

Application: - Actinomyces Agar is recommended for the cultivation and maintenance of the anaerobic *Actinomyces* species.

Composition**

Ingredients	Gms / Litre
Beef heart infusion, solids	10.000
Tryptose	10.000
Casein enzymic hydrolysate	4.000
Yeast extract	5.000
Dextrose	5.000
L-Cysteine hydrochloride	1.000
Starch, soluble	1.000
Sodium chloride	5.000
Monopotassium phosphate	15.000
Ammonium sulphate	1.000
Magnesium sulphate	0.200
Calcium chloride	0.020
Agar	20.000
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principal & Interpretation

Actinomycetes are gram-positive bacteria, which show marked chemical and morphological diversity but form a distinct evolutionary line of organisms that range from coccoid and pleomorphic forms to branched filaments [(1)]. *Actinomycetes* form an integral part of soil, water and vegetation. Actinomyces Agar/Broth is further modified and is recommended for the cultivation and maintenance of anaerobic *Actinomycete* species [(6)] when *Actinomycete* grow in the medium itleads to the formation of volatile metabolites [(2)] which are sufficient to impart disagreeable odour to water or a muddy flavour to in pond fish [(3)]. *Actinomycetes* also disrupte the function of wastewater treatment plant by forming massive growths, which are capable of producing thick foam in the activated sludge process [(4, 5)]

.Beef heart infusion, tryptose, casein enzymic hydrolysate, yeast extract, starch and dextrose act as sources of carbon, nitrogen, sulphur, vitamins and other growth factors. The metallic salts provide essential electrolytes and minerals.

Methodology

Suspend 77.22 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Distribute into tubes or flasks. Sterilize by autoclaving at 15 lbs pressure (12 1°C) for 15 minutes.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 2.0% agar gel.

Colour and Clarity of prepared medium
Yellow to light amber coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 7.72% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH Range:- 6.70-7.10

Cultural Response/Characteristics
DM 1341: Cultural characteristics observed after an incubation at 25-30°C for 40-72 hours (*- incubated anaerobically)

Organism	Inoculum (CFU)
Actinomyces israelii ATCC 10049	Luxuriant
Streptomyces achromogenes ATCC 12767	Good
Streptomyces albus subsp albus ATCC 3004	Good
Streptomyces lavendulae ATCC 8664	Good
**Actinomyces bovis ATCC 13683*	good

Storage and Shelf Life

Dried media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14 th Edition, Churchill Livingstone.
2. Adams B. A., 1929, Water and Water Eng., 31:327.
3. Eaton A. D., Clesceri L. S. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
4. Lechevalier H. A., 1975, Environ. Protection Technol. Ser., EPA-600/ 2-75-03 1, U. S. Environmental Protection Agency, Cincinnati, Ohio.
5. Lechevalier M. P., and Lechevalier H. A., 1974, Int. J. Syst.Bacteriol., 24:278.
6. Ajello L., Georg L. K., Kaplan W. and Kaufman L., 1963, CDC Lab Manual Med. Mycology, PHS Publication No. 994, CDC, Washingto n D.C.

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