Actinomyces broth

M233

Actinomyces broth 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
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 57.22 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Distribute into tubes or flasks. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And 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. *Actinomycete* development leads to the formation of volatile metabolites (2). Traces of these volatile metabolites are sufficient to impart disagreeable odour to water or a muddy flavour to fish (3). *Actinomycetes* also cause disruptions in wastewater treatment by forming massive growths, which are capable of producing thick foam in the activated sludge process (4, 5) Actinomyces Broth is a modification of the Maintenance Medium formulated by Pine and Watson (6). Actinomyces Broth is further modified and is recommended for the cultivation and maintenance of anaerobic *Actinomycete* species (7).

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

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Yellow to light amber coloured slightly opalescent solution with a slight precipitate forms in tubes.

Reaction
Reaction of 5.72% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
M233: Cultural characteristics observed after an incubation at 25-30°C for 40-72 hours.(*- incubated anaerobically)

Organism	Growth

Cultural Response

**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

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

Reference

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