Mucate Broth

M1226

Mucate Broth is used for identification of enteropathogenic *Escherichia coli* and *Salmonella* species from milk and milk products.

Composition**

Ingredients	Gms / Litre
Mucic Acid	10.000
Peptic digest of animal tissue	10.000
Bromothymol blue	0.024
Final pH (at 25°C)	7.4±0.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 20.02 grams in 1000 ml distilled water. Dissolve mucic acid by slowly adding 5 N sodium hydroxide and stirring. Dispense in 5 ml amounts in screw-capped tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 10 minutes.

Principle And Interpretation

Mucate Broth is prepared based on the formula originally developed by Kauffman and Petersen (1) and recommended by APHA (2) for identification of enteropathogenic *Escherichia coli* from milk and milk products. This medium can also be used as an aid in differentiation of *Enterobacteriaceae* especially within *Salmonella* genus.

Mucic acid is a saccharolactic acid or also called as tetrahydroxyadipic acid and acts as a carbon source in the medium. It is fermented by enteropathogenic *Escherichia coli* , *Salmonella* Paratyphi B and also by *Klebsiella pneumoniae* to produce acid, which makes the medium yellow as the pH, indicator is bromo thymol blue (3). Peptic digest of animal tissue supplies the necessary nutrients to the organisms.

Transfer a loopful of 24 hour Tryptone Broth (M463) culture to Mucate Broth. Include Mucate Control Broth tube as a control because occasionally un-inoculated tubes of Mucate Broth turn blue on standing. Incubate at 48 ± 1 hour at 35°C. A negative test result is indicated by a blue or unchanged colour in this broth. 90 % of the *E.coli* strains are mucate positive.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Blue coloured clear solution without any precipitate

Reaction
Reaction of 2.0% w/v aqueous solution at 25°C. pH : 7.4±0.1

pH
7.30-7.50

Cultural Response
M1226: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of medium
Cultural Response			
Escherichia coli ATCC 25922	50-100	luxuriant	yellow
Klebsiella pneumoniae ATCC 13883	50-100	luxuriant	yellow
Salmonella paratyphi B	50-100	luxuriant	yellow

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 the label.

Reference

1.Kauffmann F., and Petersen A., 1956, Acta. Pathol. Microbiol. Scand., 38 (6) : 481.
2.Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th ed., APHA, Washington, D.C.
3.MacFaddin J.F., 1985, Media for Isolation - Cultivation - Identification - Maintenance of Medical Bacteria, Vol.I, Williams and Wilkins, Baltimore.

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