Heart Infusion Agar, Modified

M073F

Heart Infusion Agar, Modified is used in the isolation and cultivation of diarrheagenic *Escherichia coli* in accordance with FDA BAM, 1998.

Composition**

Ingredients	Gms / Litre
Heart muscle, infusion from	375.000
Soya peptone	10.000
Sodium Chloride	5.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 37.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Cool to 50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

A liquid medium containing an infusion of meat was one of the first media used for the cultivation of bacteria. These infusion media need not be further supplemented by the addition of supplements incase of fastidious bacteria(1). Heart Infusion Agar, Modified is used in the isolation and cultivation of diarrheagenic *Escherichia coli* in accordance with FDA BAM, 1998 (2). *E.coli* is a Gram negative, facultatively anaerobic bacterium that is found as commensals in human intestine.

This medium is cited in BAM for primary screening in the conventional biochemical screening and identification of diarrheagenic *Escherichia coli* . Enrichment of the sample on BHI and TP broths is recommended as the first step in primary screening of diarrheagenic *E. coli* . This may induce the growth and proliferation of other members of *Enterobacteriaceae* including non lactose fermenting strains of *E.coli* . Hence additional tests may need to be performed for isolation. Transfer suspicious colonies to TSI agar, Heart Infusion Agar, Modified slants (M073F), Tryptone Broth, Arabinose Broth, and Urea Broth and incubate for 20 hr at 35°C. Organisms isolated on primary screening are processed for secondary screening and confirmed using genotypic, biochemical and serological reactions. On supplementation of blood, Heart Infusion Agar, Modified can be used to study haemolytic reactions (3). Heart Muscle, infusion from and soya peptone provide nutritional requirements for the pathogenic bacteria. Sodium chloride maintains the osmotic equilibrium of the medium.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Basal medium : Light amber coloured clear to slightly opalescent gel. After addition of 5% v/v sterile defibrinated blood : Cherry red coloured opaque gel forms in Petri plates.

Reaction
Reaction of 4.0% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH
7.10-7.50

Cultural Response
Cultural characteristics observed with added 5% w/v sterile defibrinated blood,after an incubation at 35-37°C for 18-48 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth w/o blood	Recovery w/o blood	Growth with blood	Recovery with blood	Haemolysis
Cultural Response						
Neisseria meningitidis ATCC 13090	50-100	fair	40-50%	luxuriant	>=70%	none
Staphylococcus aureus ATCC 25923	50-100	good	50-70%	luxuriant	>=70%	beta
Staphylococcus epidermidis ATCC 12228	50-100	good	50-70%	luxuriant	>=70%	none
Streptococcus pneumoniae ATCC 6303	50-100	fair-good	40-50%	luxuriant	>=70%	alpha
Streptococcus pyogenes ATCC 19615	50-100	fair-good	40-50%	luxuriant	>=70%	beta

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.Hansen, N. H. 1962. J. Appl. Bacteriol., 25.
2.FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
3.Downes, F.P. and Ito, K. 2001. Methods For The Microbiological Examination of Foods. APHA, Food 4 ed. Washington, D.C.

Revision : 2 / 2015