



Heart Infusion Broth

M170

Heart Infusion Broth is used for the isolation and cultivation of a wide variety of fastidious organisms.

Composition**

Ingredients	Gms / Litre
Beef heart, infusion from	500.000
Tryptose	10.000
Sodium chloride	5.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 25 grams in 1000 ml of distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. If desired 5% v/v sterile defibrinated blood may be added. Mix well and dispense as desired.

Principle And Interpretation

Fastidious organisms having exacting nutritional requirement could be cultivated on infusion media, as demonstrated by Hüntoon (1). 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 for cultivation of fastidious bacteria (2). Heart Infusion Broth, containing infusion from beef heart is used for the isolation and cultivation of a wide variety of fastidious organisms (3). Heart infusion media can also be used for the cultivation of *Vibrio* species (2,4). Heart Infusion Broth can also be supplemented with glucose, horse serum and antibiotics for the cultivation a wide variety of organisms (3). Heart Infusion Broth can be used as a base to study carbohydrate fermentation. This medium was used for isolation and enumeration of haemolytic *Streptococci* in milk (5).

Tryptose and beef heart infusion 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

Colour and Clarity of prepared medium

Basal medium: Light yellow coloured, clear to slightly opalescent solution. After addition of 5% sterile defibrinated blood: Cherry red coloured, opaque solution in tubes

Reaction

Reaction of 2.5% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

M170: Cultural characteristics observed with added 5% w/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant
<i>Neisseria meningitidis</i> ATCC 13090	50-100	good-luxuriant

<i>Streptococcus pneumoniae</i> ATCC 6303	50-100	good-luxuriant
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	good-luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good-luxuriant

Storage and Shelf Life

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

Reference

1. Huntoon F. M., 1918, J. Inf. Dis., 23:169.
2. FDA Bacteriological Analytical Manual, 8th Ed., AOAC International, Gaithersburg, MD.
3. Atlas R. M., 2004, Handbook of Microbiological Media, 3rd Ed., CRC Press.
4. Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association Washington, D.C.
5. Diagnostic Procedures and Reagents, 1950, 3rd Edition, 13

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