Brain Heart Infusion Agar, Modified

M1611

Brain Heart Infusion Agar is a solid medium recommended for the cultivation of a wide variety of organisms like bacteria, yeasts and moulds.

Composition**

Ingredients	Gms / Litre
Brain heart, infusion from (solids)	3.500
Peptic digest of animal tissue	15.000
Pancreatic digest of casein	10.000
Dextrose	2.000
Sodium chloride	5.000
Disodium phosphate	2.500
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 53 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. It may be further enriched with addition of blood. For addition cool the medium at 45-50°C and aseptically add 5% v/v sterile defibrinated sheep blood. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Brain Heart Infusion Agar, Modified is similar to Brain Heart Infusion Agar with the exception of some of the medium constituents.

Brain Heart Infusion Agar, Modified is highly nutritious and can support luxuriant growth of wide variety of microorganisms. It can be further enriched by the addition of blood or rendered selective by adding different antibiotics (1, 2). It is a general purpose media used for primary isolation of aerobic bacteria from clinical specimens. Addition of 50 mg/l chloramphenicol or 40mg/l streptomycin or a mixture of 50mg/l gentamicin and 50mg/l chloramphenicol along with 5-10% sterile defibrinated blood is often recommended for inhibition of bacteria and isolation of pathogenic systemic fungi.

A mixture of cycloheximide (0.5 g/l) and chloramphenicol (0.05 g/l) is also used for selective isolation of pathogenic fungi (incubation at 25-30°C for 1-2 weeks) (3). Some fungi may be inhibited on this medium with 10% sheep blood, gentamicin and chloramphenicol (4-6).

Peptones and infusions used in the media serves as sources of carbon, nitrogen, vitamins, amino acids, along with essential growth factors. Dextrose is the energy source. Sodium chloride maintains the osmotic equilibrium of the medium while disodium phosphate buffers the medium. Defibrinated sheep blood added to the basal medium provides essential growth factors for the more fastidious fungal organisms.

Quality Control

Appearance
Light yellow 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 5.3% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

M1611: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours (If desired add 5%v/v sterile defibrinated blood).

Organism	Inoculum (CFU)	Growth	Recovery	Growth w/ blood	Recovery w/ blood
Cultural Response					
Escherichia coli ATCC 25922	50-100	luxuriant	>=70%	luxuriant	>=70%
Streptococcus pyogenes ATCC 19615	50-100	luxuriant	>=70%	luxuriant	>=70%
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%	luxuriant	>=70%
Streptococcus pneumoniae ATCC 6303	50-100	luxuriant	>=70%	luxuriant	>=70%

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. Roseburg T. et al, 1944, J. Infect. Dis., 74:131.
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3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
4. Creitz and Puckett, 1954, Am. J. Clin. Pathol., 24:1318.
5. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
6. Ajello L., Georg L., Kaplan W. and Kaufman L., 1963, CDC Laboratory Manual for Medical Mycology, PHS Publication No. 994, U.S. Govt. Office, Washington, D.C.

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