Liver Infusion Agar

M374

Liver Infusion Agar is used for the cultivation of *Brucella* and other pathogenic anaerobic bacteria.

Composition**

Ingredients	Gms / Litre
Beef liver, infusion from	500.000
Proteose peptone	10.000
Sodium chloride	5.000
Agar	20.000
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 55 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. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Brucella , a gram-negative intracellular parasite causes epizootic abortions in animals and septicemic febrile illness or localized infection of bone, tissue or organ systems in humans (1, 2). *Brucella* species are the causative agents of Brucellosis, a zoonotic disease with a domestic animal reservoir (3). Tryptose Agar with 5% serum remains the media of choice for isolation of *Brucella* species. However the growth is highly enhanced when grown on Liver Infusion or Brucella Agar (4), due to the high nutritive content of the infusion media. Further enhancement of growth can be achieved by the addition of 5% horse or rabbit serum to the medium (5). While isolating *Brucella* species from samples such as contaminated milk, inhibition of accompanying gram-positive bacteria is attained by the addition of crystal violet (6). Half strength Liver Infusion Agar can be used for the isolation of *Entamoeba histolytica* (7).

Infusion from beef liver and proteose peptone provide the nitrogen, amino acids, vitamins and carbon sources which permit luxuriant growth of *Brucella* and other fastidious pathogens. Sodium chloride maintains the osmotic balance. The reducing substances present in liver tissue create an anaerobic environment, which satisfies the requirements of even fastidious anaerobes. Refer appropriate references for standard procedures (3, 5, 8). *Brucella* species are highly infectious and extreme care should be taken while handling the cultures.

Quality Control

Appearance
Light yellow to light brown homogeneous free flowing powder

Gelling
Firm, comparable with 2.0% agar gel.

Colour and Clarity of prepared medium
Amber coloured clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 5.5% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH
6.70-7.10

Cultural Response
M374: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours .(Clostridium species incubated anaerobically)

Organism	Growth

Brucella melitensis ATCC 4309	luxuriant
Brucella suis ATCC 6597	luxuriant
Streptococcus mitis ATCC 9895	luxuriant
Clostridium sporogenes ATCC 11437	luxuriant

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. 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.
2. Carter G. R., 1979, Diagnostic Procedures in Veterinary Bacteriology and Mycology, 3rd Ed., Charles C., Thomas, Springfield, III.
3. Cleveland L. R. and Sanders E. P., 1930, Arch. Protietenkd. 70:223.
4. Forbes B. A., Sahm A. S., and Weissfeld D. F., Bailey & Scotts Diagnostic Microbiology, 10th Ed., 1998, Mosby, Inc., St. Louis, Mo.
5. Isenberg H. D., (Ed.), 1995, Clinical Microbiology Procedures Handbook, Vol. I, ASM, Washington, D.C.

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