

Liver Infusion Broth**M153**

Liver Infusion Broth 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
Final pH (at 25°C)	6.9±0.2

***Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

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 Broth 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 brownish yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Amber coloured clear solution in tubes

Reaction

Reaction of 3.5% w/v aqueous solution at 25°C. pH : 6.9±0.2

Cultural Response

M153: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours. *Clostridium* species incubated anaerobically)

Organism	Growth					
<i>Brucella melitensis</i> ATCC 4309	luxuriant					
<i>Brucella suis</i> ATCC 4314	luxuriant					
<i>Clostridium sporogenes</i> ATCC 11437	luxuriant					
<i>Streptococcus mitis</i> ATCC 9811	luxuriant					

Reference

1. Moyer N. P. and Holcomb L. A., 1988, Brucellosis, p. 143-154, In Balows A., Hausler W. J., Jr. Ohashi M. and Tenover F. C. (Eds.), Laboratory Diagnosis and Infectious Diseases : Principle and Practice, Vol. I., Springer-Verlag, New York.
2. Smith, L. D. and Fieht T. A., 1990, Pathogenesis of Brucella. Crit.Rev. Microbiol., 17: 209-230.
3. Murray P. R., Baron J. H., Pfaller M. A., Tenover F. C. and Tenover F. C., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
4. Carter G. R., 1979, Diagnostic Procedures in Veterinary Bacteriology and Mycology, 3rd Ed., Charles C., Thomas, Springfield, Ill.

5. Forbes B. A., Sahm A. S., and Weissfeld D. F., Bailey & Scott's Diagnostic Microbiology, 10th Ed., 1998, Mosby, Inc., St. Louis, Mo.

6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

7. Cleveland L. R. and Sanders E. P., 1930, Arch. Protietenkd. 70:223.

8. Isenberg H. D., (Ed.), 1995, Clinical Microbiology Procedures Handbook, Vol. I, ASM, Washington, D.C.

Storage and Shelf Life

Store below 30°C and prepared medium at 2-8°C. Use before expir period on the label.