PRODUCT SPECIFICATION SHEET

Liver Infusion Broth (DM1082)

Intended Use
Liver Infusion Broth (DM1082) is recommended for cultivating a variety of organisms, particularly *Brucella* and anaerobes.

Product Summary and Explanation
Brucella is 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] Transmission by milk, milk products, meat and direct contact with infected animals is the usual route of exposure.[4] Most strains of *Brucella* will grow on chocolate or blood agar. However, special media such as liver infusion, tryptose, tryptone or brucella agar are preferred.[2] The nutritive factors of Liver Infusion media permit luxuriant growth of *Brucella* and other fastidious pathogens. For isolating *Brucella* strains from contaminated milk, crystal violet (gentian violet) can be added to Liver Infusion Agar to suppress gram-positive organisms.[5] Further enhancement of growth can be achieved by the addition of 5% horse or rabbit serum to the medium. Liver Infusion Broth maintains a degree of anaerobiosis well suited to support growth of anaerobic microorganisms, especially *Clostridium* species.

Principles of the Procedure
Liver Infusion broth contains infusion from beef liver and proteose peptone which provides 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.

Formula / Liter

Ingredients	Gms / Liter
Beef liver, infusion from	500.00
Proteose peptone	10.00
Sodium chloride	5.00
Final pH: 6.9 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions
1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.
3. Biosafety Level 2 practices, containment equipment and facilities are recommended for activities with clinical specimens of human or animal origin containing or potentially containing pathogenic *Brucella* spp.
4. Biosafety Level 3 practices, containment equipment and facilities are recommended for all manipulations of cultures of the pathogenic *Brucella* spp. and for experimental animal studies.

Directions
1. Suspend 35 grams in one liter distilled water.
2. Heat if necessary to dissolve the medium completely.
3. Mix well and dispense as desired.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

Dehydrated Appearance	Light yellow to brownish yellow homogeneous free flowing powder
Prepared Medium	Amber coloured clear solution in tubes
Reaction of 3.5% Solution	pH : 6.9 ± 0.2 at 25°C
Gel Strength	Not Applicable

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

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	*Brucella melitensis ATCC 4309*	50-100	good-luxuriant
2.	*Brucella suis ATCC 4314*	50-100	good-luxuriant
3.	*Clostridium sporogenes ATCC 11437*	50-100	good-luxuriant
4.	*Streptococcus mitis ATCC 9811*	50-100	good-luxuriant

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to the procedures described in *Bailey & Scott's Diagnostic Microbiology*,[6] *Clinical Microbiology Procedures Handbook* [7] and *Manual of Clinical Microbiology*,[8] for a complete discussion of the isolation and identification of *Brucella*, anaerobic microorganisms and other fastidious pathogens.

Results

Refer to appropriate references and procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Liver Infusion Broth
Product Code : DM1082
Available Pack sizes : 500gm

References

1. Murray, Baron, Jorgensen, Landry and Pfaller (ed.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.
2. Carter. 1979. Diagnostic procedures in veterinary bacteriology and mycology, 3rd ed. Charles C. Thomas, Springfield, Ill.
3. Cleveland and Sanders. 1930. Arch. Protietenkd. 70:223.
4. Shapiro and Wong. 1999. *In* Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.
5. MacFaddin. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol.1. Williams & Wilkins, Baltimore, Md.
6. Forbes, Sahm and Weissfeld. 2007. Bailey & Scott's diagnostic microbiology, 12th ed. Mosby, Inc., St. Louis, Mo.
7. Isenberg and Garcia. (ed.). 2004. (update, 2007). Clinical microbiology procedures handbook, 2nd ed. American Society for Microbiology, Washington, D.C.
8. Murray, Baron, Jorgensen, Landry and Pfaller (ed.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.

Further Information

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DM1082PSS, QAD/FR/024,Rev.00

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