Technical Information

Brucella Broth Base

Product Code: DM 1348

Application: Brucella Broth Base with supplement is recommended for enrichment and cultivation of *Brucella* or *Campylobacter* species from clinical and nonclinical specimens.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Peptic digest of animal tissue	10.000
Yeast extract	2.000
Dextrose	1.000
Sodium chloride	5.000
Sodium bisulphite	0.100
Final pH (at 25°C)	7.0±0.2

Principle & Interpretation

Brucella is an intracellular parasite that causes epizootic abortions in animals and septicemic febrile illness or localized infections of bone, tissue or organ systems in humans [2, 3]. *Brucella* species are highly fastidious and therefore require a nutrient rich medium to be able to grow. Also, *Brucella* species are highly infective and so extreme care should be taken while handling. The basal medium (with addition of Camplylobacter Supplements) can be also used for the isolation of *Campylobacter* including Brucella species [1, 4]. Peptic digest of animal tissue, casein enzymic hydrolysate provide organic nitrogen to the organisms. Yeast extract also supply some nitrogenous nutrients but mainly it serves as a source of Vitamin B complex. Dextrose serves as an energy source. It can be enriched with 5% v/v sterile defibrinated horse blood. For selective isolation of *Brucella* species, antibiotic mixtures are incorporated into the base [5-7]. When non-selective medium is required, Brucella Broth Base may be employed with the addition of serum only (i.e. without antibiotics).

It is suggested that half the tubes to be incubated in the normal atmosphere, and half in a 10% CO_2 enriched atmosphere. *Brucella* species are highly infectious and so extreme care should be taken while handling the pathogens.

Methodology

Suspend 14.05 grams of powder media in 500 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add sterile 5% v/v inactivated horse serum (MS3239) Inactivate by heating at 56°C for 30 minutes) and add rehydrated contents of one vial of Brucella Selective Supplement (MS2005). Mix well before pouring into sterile tubes.

For *Campylobacter:* Aseptically add sterile rehydrated contents of 1 vial of Campylobacter Supplement I (MS2006) (Blaser Wang) or Campylobacter Supplement II (MS2007) (Butzler) or Campylobacter Supplement III (MS2008) (Skirrow) and Campylobacter Growth Supplement (MS2009) to 500 ml of sterile medium.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured, clear solution in tubes

Reaction

Reaction of 2.81% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range 6.80-7.20

Cultural Response/Characteristics

DM1348: Cultural characteristics observed under 10% Carbon dioxide (CO_2) with added 5%v/v inactivated horse serum (MS3239) and Brucella Selective Supplement (MS2005),after an incubation at 35-37°C for 24-72 hours

Organism	Inoculum (CFU)	Growth
Brucella melitensis ATCC 4309	50-100	luxuriant
Brucella suis ATCC 4314	50-100	luxuriant
Escherichia coli ATCC 25922	>=10^3	inhibited
Staphylococcus aureus ATCC 25923	>=10^3	inhibited

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Finegold et al (Ed.), 1990, Bailey and Scotts Diagnostic Microbiology, 8th ed., The C.V. Mosby Co., St. Louis.
2. Moyer N. P., and Holcomb L. A., Laboratory Diagnosis and Infectious Diseases: Principles and Practice, Vol. I, Springer-Verlag, New York
3. Smith L. D., and Fient T. A.,1990, Crit. Rev.Microbiol., 17 : 209-230
4. Murray P. R., Baron E. J., Jorgensen J. H., Pfaller M. A., Yolken R. H., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.
5. Jones L. M. and Brinley M.W.J., 1958, Bull. Wld. Hlth. Org., 19:200.
6. Kuzdas C.D., and Morse E.V., 1953, J. Bact., 66 (4):502.
7. Renoux G., 1954, Ann. Inst. Pasteur, 87 (3):325.

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