Technical Information

Brucella MiVeg Agar Base

Product Code : VM1074

Application:- Brucella MiVeg Agar Base with supplement is recommended for the enrichment, isolation and cultivation of *Brucella species* or *Campylobacter* species from clinical and non-clinical specimens.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	10.000
MiVeg peptone	10.000
Yeast extract	2.000
Dextrose	1.000
Sodium chloride	5.000
Sodium bisulphate	0.100
Agar	15.000
Final pH (at 25°C)	7.0±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Brucella MiVeg Agar Base is prepared by using vegetable peptones inplace of animal based peptones which makes the medium BSE/TSE risks free. *Brucella* are intracellular parasites that cause epizootic abortions in animals and septicemic febrile illness or localized infections of bone, tissue or organ systems in humans (1, 2). *Brucella* species are highly fastidious and therefore require a nutrient rich medium to be able to grow. *Brucella* species are highly infective and so while handling, extreme care should be taken. Brucella Agar Base is used for the isolation and cultivation of *Brucella* species. This medium is the modification of Brucella Agar Base and serves the same purpose. The basal medium can be also used for the isolation of *Campylobacter* (with addition of Camplylobacter Supplements) (3) and other fastidious bacteria like *Brucella*, Streptococci, pneumococci, *Listeria*, *Neisseria meningitides* and *Haemophilus influenza* . Brucella Agar is also recommended by APHA for isolation of *Brucella* species from foods.(4)

It contains MiVeg hydrolysate and MiVeg peptone which supplies organic nitrogen. Yeast extract provides vitamin B complex, and it also supplies some nitrogenous nutrients. Sodium bisulphite is a reducing agent while sodium chloride helps to maintain the osmotic equilibrium of the medium. Dextrose serves as an energy source. It can be also be enriched with 5 % v/v sterile defibrinated horse blood. Antibiotic mixtures are incorporated into the base for selective isolation of *Brucella* species (5). Swab specimens can be directly streaked on the plate. Liquid specimens can be inoculated by means of an inoculation loop. All presumptive anaerobic organisms must be further confirmed by additional tests.

Methodology

Suspend 21.55 grams of powder media in 500 ml distilled water. Mix thoroughly. Heat to boiling 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 (BA2239) (Inactivate BA2239 by heating at 56°C for 30 minutes) and rehydrated contents of 1 vial of Brucella Selective Supplement , Modified (MS2161). Mix well and pour into sterile Petri plates.

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 molten medium along with 5-7% defibrinated sheep blood .

Quality Control

Physical Appearance

Cream to yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

yellow coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.31% w/v aqueous solution pH: 7.0±0.2 at 25°C

pH range

6.8-7.20

Cultural Response/Characteristics

Cultural characteristics observed under 10% Carbon dioxide (CO_2), with added Brucella selective supplement (MS2161) and , Campylobacter Supplement III (Skirrow) (MS2008) after an incubation at 35 - 37°C for 24 - 72 hours.

Organisms (ATCC)	Inoculum(CFU)	Growth w/ MS2161	Growth w/ MS2008
Brucella melitensis ATCC(4309)	50-100	Good-luxuriant	-
Brucella suis ATCC(4314)	50-100	Good-luxuriant	-
Campylobacter jejuni ATCC(33291)	50-100	-	Good-luxuriant
Campylobacter coli ATCC(33559)	50-100	-	Good-luxuriant
Escherichia coli ATCC(25922)	>=10^3	inhibited	inhibited
Staphylococcus aureus ATCC (25923)	>=10^3	inhibited	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.Moyer NP, Holcomb LA. Laboratory Diagnosis and Infectious Diseases: Principles and Practice. New York: Springer-Verlag.
2.Smith LD, Fient TA. Crit RevMicrobiol. 1990;17:209-30.
3.Murray PR, Baron JH, Pfaller MA, Jorgensen JH, Yolken RH. Manual of Clinical Microbiology, . 8 ed. Washington, D.C.: American Society for Microbiology; 2003.
4.APHA. Compendium of Methods for the Microbiological Examination of Foods. Downes FP, Ito K, editors. Washington, D.C. 2001.
5.Finegold SM, Martin WJ, Scott EG, editors. Bailey and Scott's Diagnostic Microbiology. 5 ed. St. Louis. : The C.V. Mosby Co; 1978.

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