Technical Information

Charcoal MiVeg Agar Base with Niacin

Product Code : VM2053

Application:- Charcoal MiVeg Agar Base, with Niacin is used for the cultivation of *Bordetella pertussis* for vaccine production and also for the maintenance of stock cultures.

Composition

Ingredients	Gms / Litre
MiVeg peptone No.2	10.00
MiVeg extract	10.00
Sodium chloride	5.00
Starch, soluble	10.00
Charcoal	4.00
Nicotinic acid	0.001
Agar	12.00
Final pH (at 25°C)	7.4±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Charcoal MiVeg Agar Base with Niacin is prepared by using vegetable peptones in place of animal based peptones. This media is the modification of Charcoal Agar Base formulated according to the method devised by Mishulow et al (1) which is recommended for the cultivation of *Bordetella pertussis* and its vaccine production. Necessity of Nicotinic acid as a growth factor was shown by Proom (2). Earlier medium viz. Bordet Gengou, can be replaced by this medium, as the conventional medium for the vaccine production of *Bordetella pertussis* as suggested by Ensminger et al (3) who added charcoal to the medium.

It contains MiVeg peptone No.2 and MiVeg extract which supplies essential nutrients to the organisms. Sodium chloride maintains osmotic balance. Starch supports growth of organism as it is the carbohydrate source in the medium. Charcoal neutrilizes toxic substances like fatty acid, that can inhibit growth of *Bordetella.* The difficulty in the isolation of *Bordetella pertussis* from nasopharyngeal secretions is the repression of unwanted flora during the long incubation period on nutritious media. To resist other contaminants Penicillin can be added to the medium as an antimicrobial agent. However Penicillin resistant floras still cause the contamination which was observed by Lacey (4). Methicillin was found to be superior than Penicillin in suppressing unwanted nasopharyngeal flora as observed by Broome et al (5). Sutcliffe and Abbott found that Cephalexin was still better than Methicillin (6). Therefore this medium with added supplement, Cephalixin and blood is suitable for cultivation of *B.pertussis*.

The media can also be used for the maintenance of stock cultures of *Bordetella pertussis* on slants with weekly subcultures. This media can be converted to Chocolate Agar Base for isolation of *Haemophilus* species.

Methodology

Suspend 51 grams of powder media in 1000 ml distilled water. Mix thoroughly. Boil to dissolve the medium with frequent stirring. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add sterile 50 ml of defibrinated blood and Bordetella Selective Supplement (MS2004).

Quality Control

Physical Appearance

Grey coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.2% Agar gel

Colour and Clarity of prepared medium

Black coloured,opaque gel forms in petri plates andcontains undissolved black particles.

Reaction

Reaction of 5.1 % w/v aqueous solution pH: 7.4 ±0.2 at 25°C

pH range

7.2-7.6

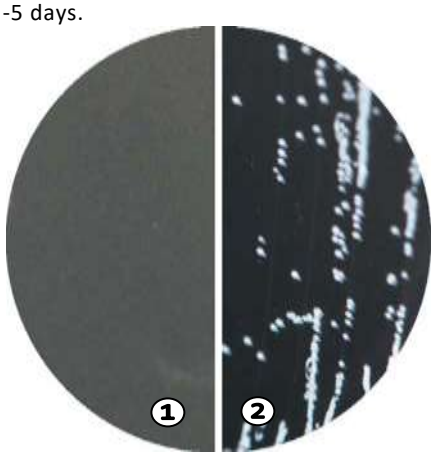
Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
Bordetella bronchiseptica (4617)	10^2-10^3	luxuriant	>50%
Bordetella parapertussis (15237)	10^2-10^3	luxuriant	>50%
Bordetella pertussis (8467)	10^2-10^3	luxuriant	>50%

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.



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1. Control
2. *Bordetella bronchiseptica*

Further Reading

1. Mishulow L., Sharpe L. S. and Cohen L. L., 1953, J. Pub. Hlth., 43((II) : 1466.
2. Proom H., 1955, J. Gen. Microbiol., 12(I) : 63.
3. Ensminger P. W., Gulberston C. G. and Powell H. M., 1953. J. Infect. Dis., 93(3):266
4. Lacey B.W., 1954, J. Hyg., 59:273.
5. Broome C.V., Fraser D.W. and English J.W., 1979, Internat. Symp. on Pertussis DHEW J., Washington D.C. pp 19-29.
6. Sutcliffe E.M. and Abbott J.D., 1979, B.M.J. II:732-733.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
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