Technical Information

Bacillus Cereus MiVeg Agar Base

Product Code : VM1833

Application:- Bacillus Cereus MiVeg Agar Base with added supplements is a selective medium used for the isolation and enumeration of *Bacillus cereus*.

Composition

Ingredients	Gms / Litre
MiVeg peptone	1.0
Mannitol	10.0
Sodium chloride	2.0
Magnesium sulphate	0.1
Disodium phosphate	2.5
Monopotassium phosphate	0.25
Sodium pyruvate	10.0
Bromo thymol blue	0.12
Agar	15.0
Final pH (at 25°C)	7.2±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Bacillus Cereus MiVeg Agar is developed by MiVeg peptone, thereby making the medium BSE/TSE risks free. This medium is the modification of Bacillus Cereus Agar Base developed by Holbrook and Anderson (1), which is a highly specific, selective medium for the isolation and enumeration of *Bacillus cereus* from foods. It supports the growth of even a small number of *Bacillus cereus* cells and spores in the presence of large number of other food contaminants. The typical colonies of *Bacillus cereus* are crenated, about 5 mm in diameter and have a distinctive turquoise to peacock blue colour surrounded by a good egg yolk precipitate of the same colour.

For making the medium selective for the isolation of *Bacillus cereus,* addition of Polymyxin - B Sulphate (2, 3) at a final concentration of 100 units per ml of medium is sufficient. If moulds are suspected in the inoculum, 40 mcg per ml of filter-sterilized, Cycloheximide may be incorporated to suppress the mould contamination. Some strains of *Bacillus cereus* have very weak egg yolk reaction. Moreover, on this medium *Bacillus cereus* is indistinguishable from *Bacillus thuringiensis*. *Bacillus cereus* causes food poisoning due to the consumption of contaminated rice (4, 5, 6), eye infections and a wide range of other clinical conditions like abscess formation, meningitis, septicaemia and wound infection. *Bacillus cereus* is a known cause of disease mastitis, especially in ewes and heifers among the veterinarians. MiVeg peptone and sodium pyruvate enhances egg yolk precipitation and sporulation. Bromo thymol blue act as pH indicator to detect mannitol fermentation.

Methodology

Suspend 20.5 grams of powder media in 475 ml distilled water. Mix throughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add rehydrated contents of 1 vial of Polymyxin B Selective Supplement (MS2003) and 25 ml of sterile Egg Yolk Emulsion (MS2045). Mix well and pour into sterile petri plates.

Quality Control

Physical Appearance

Greenish yellow coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5 % Agar gel.

Colour and Clarity of prepared medium

Basal medium yields green coloured clear to slightly opalescent gel. With additon of 5% egg yolk emulsion yellowish green coloured opaque gel forms in petri plates.

Reaction

Reaction of 4.1% w/v aqueous solution of basal medium is pH 7.2 ± 0.2 at 25°C.

pH range

7.0-7.4

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours with added Polymyxin B Selective Supplement (MS2003) and Egg Yolk Emulsion (MS2045).

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony	Egg Yolk Reaction
Bacillus cereus (10876)	10^2-10^3	good-luxuriant	>50%	Blue	precipitation
Escherichia coli (25922)	10^2-10^3	inhibited	0%	-	-
Proteus vulgaris (13315)	10^2-10^3	good-luxuriant	>50%	Green	-
Serratia marcescens (8100)	10^2-10^3	good-luxuriant	>50%	Red	Clearing
Staphylococcus aureus (25923)	10^2-10^3	good-luxuriant	>50%	Yellow	Clearing

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. Holbrook R. and Anderson J., 1980, Can. J. Microbiol., 26(7):753.
2. Donovan K.O., 1958, J. Appl. Bacteriol, 21(1):100.
3. Mossel, D.A.A., Koopman J. and Jongerius E., 1967, J. Appl. Microbiol., 15(3):650.
4. Mortimer P.R. and McCann.G, 1974, Lancet, 1043.
5. Bouza E., Grant S., Jordan C., et al, 1979, Arch.Ophthalmol., 97:488.
6. Wohlgemuth K., Kirkbride, C.A., Bicknell, E. J. and Ellis, R.P. , 1972, Am. Vet. Med. Ass., 161:1691.

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