Technical Information

Iron Sulphite MiVeg Agar

Product Code :VM1868

Application:- Iron Sulphite MiVeg Agar is recommended for the detection of thermophilic anaerobic organisms causing sulphide spoilage in food.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	10.0
Sodium sulphite	0.5
Iron (III) Citrate	0.5
Agar	15.0
Final pH (at 25°C)	7.1 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Iron Sulphite MiVeg Agar is prepared by using MiVeg hydrolysate which is free from BSE/TSE risks associated with animal based peptones. This medium is the modification of Iron Sulphite Agar which is based on formula of Cameron Sulphite Agar developed by the National Canners Association of America (1). Beerens reported that 0.1% of sulphite is inhibitory to some strains of *Clostridium sporogenes* (2). This observation was later on confirmed by Mossel et al (3), who consequently showed that 0.05% sulphite concentration was not inhibitory to the organisms. Examination of organisms causing sulphide spoilage in food stuff can be achieved either by Deep-Shake culture method or Attenborough and Scarr (4) method.

In Deep-Shake Culture method, the medium is dispensed in 10 ml amounts in sterile tubes. Sample is inoculated when the medium is at about 50°C and allowed to set. Incubate the medium at 55°C for 24-48 hours. Typical thermophilic species of *Desulfotomaculum nigrificans*, produces distinct black spherical colonies in the depth of the medium.

In Attenborough and Scarr (4) method, diluted samples of sugar or any other food to be tested are filtered through membrane filters. These filters are then rolled up and placed in tubes containing just sufficient Iron Sulphite MiVeg Agar (at 50°C) to cover them. The medium is allowed to set and then incubated at 55 - 56°C for 24 - 48 hours. After incubation, the number of black colonies on the membrane filter are counted. This membrane filter technique is quicker, of comparable accuracy and permits theexamination of larger samples.

Note: The blackening reaction is only presumptive evidence of *Clostridial* growth. Further Confirmatory tests must be carried out to identify the organisms growing in the medium.

Methodology

Suspend 26 grams in 1000 ml distilled water. Mix thoroughly and heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

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, slightly opalescent gel forms in petri plates.

Reaction

Reaction of 2.6% w/v aqueous solution is pH 7.1 ± 0.2 at 25°C.

pH Range

6.9-7.3

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 55-56°C for 24-48 hours under anaerobic conditions.

Organisms (ATCC)	Growth	Colour of colony
Clostridium botulinum (25763)	luxuriant	black
Clostridium sporogenes (19404)	luxuriant	black
Desulfotomaculum nigrificans (19858	luxuriant	black
Escherichia coli (25922)	luxuriant	no blackening

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 day.

Further Reading

1. Tanner F.W., 1944, "The Microbiology of Foods", 2nd ed., Garrard Press, Illinois, P. 1127.
2. Beerens H., 1958, DSIR, Proc. 2nd Internat. Sym. Food Microbiol., 1957, HMSO, London, P. 235.
3. Mossel D.A.A., Golstein Brouwers G.W.M.V. and de Bruin A.S., 1959, J. Path. Bact., 78:290.
4. Attenborough J. and Scarr M., 1957, J. Appl. Bact., 20:460.

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