Technical Information

Staphylococcus MiVeg Agar No.110

Product Code : VM1521

Application:- Staphylococcus MiVeg Agar No.110 is used as a selective medium for the selective isolation and testing of pathogenic Staphylococci.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	10.0
MiVeg peptone	30.0
Yeast extract	2.5
Lactose	2.0
D-Mannitol	10.0
Sodium chloride	75.0
Dipotassium phosphate	5.0
Agar	15.0
Final pH (at 25°C)	7.0 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Staphylococcus MiVeg Agar No.110 is prepared by adding vegetable peptones in place of animal based peptones thereby making the medium BSE/TSE risks free. This medium is the modification of Staphylococcus Agar No.110. Staphylococci are widespread in nature as they are mainly found on the skin, skin glands and mucous membrane of mammals and birds. Staphylococcus Agar No. 110 (2, 3, 1) also known as Stone Gelatin Agar (4) is used for the selective isolation of pathogenic Staphylococci on the basis of pigment production, mannitol fermentation and gelatin liquefaction. These properties are few of the characteristics of pathogenic Staphylococci (5, 6). Staphylococcus Agar No. 110 is recommended by APHA (7) and AOAC (8) for isolation and testing of pathogenic *Staphylococcus* from clinical specimens. Egg Yolk Emulsion (MS2045) can be added to the medium to study the egg yolk reactions (9). MiVeg hydrolysate and yeast extract supplies all the essential nutrients and growth factors including vitamins. D-Mannitol is the fermentable carbohydrate with lactose being an additional carbon source. Sodium chloride maintains the osmotic equilibrium while phosphate buffers the medium. Mannitol fermentation can be visualized as yellow colouration by addition of a few drops of bromothymol blue to the areas of the plates where colonies have been removed. *Enterococcus faecalis* may grow on this medium as small colonies with slight mannitol fermentation (1).

Methodology

Suspend 149.5 grams of powder media in 1000 ml distilled water. Mix thoroughly and heat, to boiling, to dissolve the medium contents completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Resuspend the precipitate by gentle agitation to avoid bubbles and pour the plates while the medium is hot. Alternatively, cool the medium to 45-50°C and add blood or egg yolk if desired. This medium may also be used without sterilization; it should be boiled for 5 minutes and used at once.

Quality Control

Physical Appearance

Cream to light yellow, may have slight green tinge, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Light amber coloured opalescent gel forms in petri plates.

Reaction

Reaction of 14.95% w/v aqueous solution is pH 7.0 ± 0.2 at 25°C.

pH Range

6.8-7.2

Cultural Response/Characteristics

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

Organisms (ATCC)	Growth	Mannitol fermentation	Pigment Production
Escherichia coli (25922)	inhibited	-	-
Enterococcus faecalis ATCC29212	none-poor	Variable reaction	negative
Staphylococcus aureus ATCC 25923	luxuriant	Positive reaction	positive
Staphylococcus epidermidis ATCC 12228	luxuriant	Variable reaction	negative

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. Chapman G. H., 1946, J. Bacteriol., 51:409.
2. Chapman G. H., 1947, J. Bacteriol., 53:504.
3. Chapman G. H., 1952, J. Bacteriol., 63:147.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore
5. Stone R. V., 1935. Proc. Soc. Exper. Biol. and Med. 33:185-187.
6. Chapman G. H., Lieb C. W. and Cumco L. G., 1937, Food Research 2., 349-367
7. Speck M. L., (Eds.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd Ed., APHA, Washing D.C.
8. Association of Official Analytical Chemists (AOAC), Bacteriological Analytical Manual, 5th Ed., 1978, AOAC International, Gaithersburg, Md.
9. Carter C. H., 1960, J. Bacteriol., 79:753.
10. Smucker S. A. and Appleman. M. D., 1964, Appl. Microbiol., 12(4):355.

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