Technical Information

DNase Test MiVeg Agar Base

Product Code : VM1482

Application:- DNase Test MiVeg Agar is used for the detection of deoxyribonuclease activity of bacteria and fungi, and especially for identification of pathogenic *Staphylococci*.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	15.0
Papaic digest of soyabean meal	5.0
Deoxyribonucleic acid (DNA)	2.0
Sodium chloride	5.0
Agar	15.0
Final pH (at 25°C)	7.3±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

DNase Test MiVeg Agar Base is specially prepared by using MiVeg hydrolysate instead of tryptone thereby making the medium BSE/TSE risks free. This media is the modification of DNase Test Agar which is used for detecting deoxyribonuclease activity of bacteria and fungi and particularly for identification of pathogenic *Staphylococci.* After addition of toluidine blue, it is used in differentiation and identification of nonpigmented *Serratia* species isolated from clinical sources that might be improperly identified as *Enterobacter* and *Klebsiella* species. DNase activity was observed by Weckman and Catlin (1) in *Micrococci* and found the correlation with coagulase activity as coagulase positive species were DNase positive. DiSalvo (2) confirmed the results of Weckman and Catlin and observed accurate correlation of DNase and coagulase activity. In his experiment Di Salvo incorporated DNA and calcium chloride to activate DNase enzyme. DNase medium was modified by adding toluidine blue by Schreier (3). Modified medium achieved faster identification of *Serratia marcescens* than the previous and could differentiate *Serratia* from other members of the *Enterobacteriaceae.*

This medium contains MiVeg hydrolysate, papaic digest of soyabean meal which supplies essential nutrients. The DNase depolymerizes the DNA resulting in the formation of a clear zone around the microbial growth which is visualized by flooding the plate with 1N hydrochloric acid (4). When toluidine blue is added to the medium itself then, DNase activity results in the production of a bright pink zones surrounding growth due to the metachromatic property of toluidine blue. Due to toluidine blue some strains of *Staphylococci* may get inhibited on this medium. Further confirmatory tests should be carried out, for the identification.

Methodology

Suspend 42 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling with frequent agitation to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45°C and pour into sterile petriplates. Add rehydrated contents of one vial of Toludine Blue (MS2051) before sterilizing the medium or flood the plates with 0.1% Toluidine Blue (MS2051) after incubation.

Quality Control

Physical Appearance

Light 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

Light amber coloured, clear to slightly opalescent gel forms in petri plates or blue coloured, clear to slightly opalescent

gel forms in petriplates when Toluidine blue (MS2051) is added.

Reaction

Reaction of 4.2 % w/v aqueous solution pH: 7.3 ±0.2 at 25°C

pH range

7.1-7.5

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	DNase Activity
Serratia marcescens (8100)	10^2-10^3	luxuriant	+
Staphylococcus aureus (25923)	10^2-10^3	luxuriant	+
Staphylococcus epidermidis (12228)	10^2-10^3	luxuriant	-
Streptococcus pyogenes (19615)	10^2-10^3	luxuriant	+

Key : On flooding the DNase Test Veg Agar plate with 1N HCl

+ = clear area surrounding growth

- = no clearing surrounding growth

DNase Test Agar with Toluidine blue

+= pink to red zone surrounding growth

- = no colour change surrounding growth

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. Weckman and Catlin, 1957, J. Bact., 73:747.
2. Di Salvo, 1958, Med. Tech. Bull., U.S. Armed Forces Med. J., 9:191.
3. Schreir, 1969, Am. J. Clin. Pathol., 51:711.
4. Streitfeld, Hoffman and Janklow, 1962, J.Bact., 84:77.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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