Technical Information

Diphtheria Virulence MiVeg Agar Base

Product Code : VM1882

Application:- Diphtheria Virulence MiVeg Agar Base with supplement is recommended for testing toxigenicity of *Corynebacterium diphtheriae*

Composition

Ingredients	Gms / Litre
MiVeg peptone No. 3	20.0
Sodium chloride	2.5
Agar	15.0
Final pH (at 25°C)	7.8±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Diphtheria Virulence MiVeg Agar Base is prepared by using MiVeg peptone No. 3 in place of Proteose peptone which makes the conventional medium BSE/TSE risk free. This medium is the modification Diphtheria Virulence Agar Base formulated as per the Hermann et al (1) to support luxuriant growth of *Corynebacteriumdiphtheriae*. Elek (2) demonstrated an agar diffusion technique for testing virulence of *Corynebacterium diphtheriae* in-vitro. King et al (3) standardized the medium by comparing with animal inoculation tests to obtain consistent results. However, it was found that serum of different animals gives different results. Hermann et al (1) developed medium to overcome these difficulties. This medium serves the same purpose as the Diptheria Virulence Agar Base. After incubation a line of precipitin is observed for toxigenic strains in the inoculated plate. Potassium tellurite is inhibitory to most gram-negative bacteria except *Corynebacterium* species, *Streptococcus mitis*, *Streptococcus salivarius* and *Enterococci*. *Staphylococcus epidermidis* may exhibit growth.

Methodology

Suspend 37.5 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 55-60°C. Aseptically add 2ml sterile Diphtheria Virulence Supplement (MS2072) and 0.5 ml sterile 1% Potassium Tellurite (MS2052) to a 100 mm petri plate and quickly add 10 ml of the sterile. Before the medium solidifies, place a filter paper strip saturated with potent Diphtheria antitoxin across the diameter of the plate. Allow the strip to sink to the bottom of the plate. Inoculate the plate with heavy inoculum across the strip.

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

Medium amber coloured, slightly opalescent gel forms in petri plates.

Reaction

Reaction of 3.75 % w/v aqueous solution pH: 7.8 ±0.2 at 25°C

pH range

7.6-7.8

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 24-72 hours with added Diptheria Virulence Supplement (MS2072) and 1% Potassium tellurite solution (MS2052).

Organisms (ATCC)	Growth	Line of preciptin
Bacillus subtilis (6633)	inhibited	-
Corynebacterium diphtheriae type gravis	luxuriant	+
Corynebacterium diphtheriae type intermedius	luxuriant	+
Corynebactrium diphtheriae type mitis	luxuriant	+
Staphylococcus epidermidis (12228)	none-poor	-

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. Hermann, Moore and Parsons, 1958, Am. J. Clin. Path., 29:181.
2. Elek, 1948, Brit. Med. J., 1:493.
3. King, Frobisher and Parsons, 1949, Am. J. Pub. Health, 39:1314.

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