Cystine Tellurite Agar Base M881

Cystine Tellurite Agar Base is used for the selective isolation and differentiation of *Corynebacterium diphtheriae* types.

Composition**

Ingredients	Gms / Litre
Beef heart, infusion from	500.000
Tryptose	10.000
Sodium chloride	5.000
L-Cystine	0.050
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40.05 grams in 900 ml distilled water. 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 5% v/v sterile defibrinated sheep blood and 5% v/v of 1% Potassium Tellurite (FD052). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Cystine Tellurite Agar Base was originally formulated by Tinsdale (1) which was later on modified by Moore (2) and Parsons and then by Imre et al (3). Present formulation of Cystine Tellurite Agar Base with the addition of sterile sheep blood is used for selective isolation and differentiation of *Corynebacterium diphtheriae* types. Medium constituents beef heart infusion and tryptose supply the necessary nutrients for the growth of *C. diphtheriae* . Sheep blood also provides the necessary growth factors for *C. diphtheriae* types. Potassium tellurite inhibits most upper respiratory tract normal flora other than *Corynebacterium* species and also inhibits the growth of majority of gram-negative bacteria. This medium is differential on the basis of the ability of *Corynebacterium* species to reduce tellurite whereas diphtheroides found in upper respiratory tract are not able to reduce tellurite. L-Cystine is the source of amino acid, which enhances H2S production. Further biochemical tests are necessary to distinguish between *C. diphtheriae* and *C. ulcerans* due to similar reactions on this medium.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm,comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Basal medium: Amber coloured clear to slightly opalescent gel. After addition of blood & tellurite : Brownish red coloured opaque gel forms in Petri plates

Reaction

Reaction of 4.0% w/v aqueous solution at 25°C. pH : 7.4±0.2

Cultural Response

M881: Cultural characteristics observed with added sterile defibrinated sheep blood and 1% Potassium tellurite solution (FD052),after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony		
Corynebacterium diphtheriae type mitis	50-100	good	40-50%	black, with shining surface		
Bacillus subtilis ATCC 6633	>=10^3	inhibited	0%			
Escherichia coli ATCC 25922	>=10^3	inhibited	0%			
Enterococcus faecalis ATCC 29212	50-100	none-poor	<=10%	minute, black colonies		

Reference

1. Tinsdale G. F. W., 1947, J. Pathol. Bacteriol., 59(3):461.
2. Moore M. S. and Parsons E. I., 1958, J. Infect. Dis., 102:88.

3. Imre Z., Eylan E. and Keydar J., 1960, Proc. Isr. Microbiol. Soc. (Abstr.), 8, E.

Storage and Shelf Life

Store below 30°C and the prepared medium at 2 - 8°C. Use before expiry date on label.