



## 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
Meat 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 45-50°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 meat 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 H<sub>2</sub>S 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

#### pH

7.20-7.60

#### 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 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Corynebacterium diphtheriae</i> type mitis	50-100	good	40-50%	black, with shining surface
<i>Bacillus subtilis</i> ATCC 6633	>=10 <sup>3</sup>	inhibited	0%	

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<i>Escherichia coli</i> ATCC 25922	$\geq 10^3$	inhibited	0%	
<i>Enterococcus faecalis</i> ATCC 50-100 29212		none-poor	$\leq 10\%$	minute, black colonies

### Storage and Shelf Life

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

### 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.

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