



Technical Data

TYCSB Agar Base (Tryptone Yeast Extract Cystine w/ Sucrose & w/o Bacitracin Agar Base)

M1975

It is recommended for selective isolation of *Streptococcus mutans*

Composition**

Ingredients	Gms / Litre
Tryptone	15.000
Yeast extract	5.000
Disodium hydrogen phosphate.7H ₂ O	1.000
Sodium bicarbonate	2.000
Sodium acetate.3H ₂ O	20.000
Sucrose	200.000
L-Cystine HCl.H ₂ O	0.200
Sodium sulfite	0.100
Sodium chloride	0.100
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 249.97 grams (equivalent weight of dehydrated medium per litre) in 1000ml distilled water. Heat to boiling to dissolve to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add sterile rehydrated contents of 1 vial of TYCSB supplement (FD321). Mix well and pour into sterile Petri plates.

Principle And Interpretation

TYCSB Agar is devised by Gold et al. (1) as a selective medium for *Streptococcus mutans* with bacitracin and sucrose. *Streptococcus mutans* is facultatively anaerobic, Gram-positive coccus-shaped bacterium commonly found in the human oral cavity. It is the primary causative agent of dental cavities (2).

Conditions in the oral cavity are diverse and complex, frequently changing from one extreme to another. Thus, to survive in the oral cavity, *S. mutans* must tolerate rapidly harsh environmental fluctuations and exposure to various antimicrobial agents to survive (3).

Tryptone and yeast extract in the medium provide nutrients essential for the growth of Streptococci. Sodium sulphite, sodium acetate, disodium phosphate, and sodium bicarbonate are sources of ions that simulate metabolism.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 24.99% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed in presence of 10% CO₂ + 90% H₂, after an incubation at 35-37°C for 24-48 hours.

Cultural Response

Please refer disclaimer Overleaf.

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response <i>Streptococcus mutans</i> ATCC 50-100 25175		good-luxuriant	>=50%

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 the label.

Reference

1. Gold OG, Jordon H V, Van Houte J 1973 A Selective medium for *Streptococcus mutans*. Archives of Oral Biology 18:1357-1364.
2. McGhee J R, Michalek S M 1981 Immunobiology of dental caries; microbial aspects and local immunity. Annual Review of Microbiology 35:595-638.
3. Biswas, S; Biswas, I (2011). "Role of VltAB, an ABC transporter complex, in viologen tolerance in *Streptococcus mutans*". Antimicrobial agents and chemotherapy 55.

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