# Tryptone Yeast Extract Cystine w/Sucrose and w/o Bacitracin Agar (TYCSB)

**M1975**

## Intended Use:

Recommended for selective isolation of *Streptococcus mutans.*

## Composition**

| Ingredients | g / L |
|---|---|
| Tryptone | 15.000 |
| Yeast extract | 5.000 |
| Disodium hydrogen phosphate.$7H_2O$ | 1.000 |
| Sodium bicarbonate | 2.000 |
| Sodium acetate.$3H_2O$ | 20.000 |
| Sucrose | 200.000 |
| L-Cystine | 0.200 |
| Sodium sulphite | 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 249.99 grams(equivalent weight of dehydrated medium per litre) in 1000 ml purified / 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.

## Type of specimen

Clinical samples - Saliva Swab, Decaying tooth (4), etc

## Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).
After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions :

In Vitro diagnostic Use only. For professional use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations :

1.Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3.Further serological and biochemical testing is required for complete identification.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## 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 with added TYCSB supplement (FD321), after an incubation at 35-37°C for 24-48 hours.

| Organism | Inoculum (CFU) | Growth | Recovery |
|---|---|---|---|
| *Streptococcus mutans* ATCC 25175 | 50-100 | good-luxuriant | >=50% |

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

## Reference

1. Biswas, S; Biswas, I (2011). "Role of VltAB, an ABC transporter complex, in viologen tolerance in *Streptococcus mutans*". Antimicrobial agents and chemotherapy 55.

2. Gold OG,Jordon H V,Van Houte J 1973 A Selective medium for *Streptococcus mutans.* Arhives of Oral Biology 18:1357-1364.

3. Ryota Nomura et.al , J. of Medical Microbiology, "Repeated bacteramia caused by mutants in a patient with Sjogren's Syndrome." (2007),56,988-992

4. McGhee J R, Michalek S M 1981 Immunobiology of dental caries; microbial aspects and local immunity. Annual Review of Microbiology 35:595-638.

5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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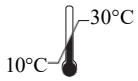


**Storage temperature**

EC REP CEpartner4U, Esdoornlaan 13,
3951DB Maarn, NL
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**CE Marking**

**Do not use if package is damaged**

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