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

Recommended for selective isolation of *Streptococcus mutans*.

REF: BS.1/TY01.100.0100	100 Gram	REF: BS.1/TY01.250.0250	250 Gram
REF: BS.1/TY01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

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).

METHOD PRINCIPLE

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.

MEDIA COMPOSITION

Item	Formula per liter of medium
-Tryptone	15.0 gm
- Yeast extract	5.00 gm
- Disodium hydrogen phosphate.7H2O	1.00 gm
- Sodium bicarbonate	2.00 gm
- Sodium acetate.3H2O	20.0 gm
- Sucrose	200.0 gm
- L-Cystine	0.200 gm
- Sodium chloride	0.100 gm
- Sodium sulphite	0.100 gm
- Agar	15.00 gm

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the TYCSB Agar material safety data sheet.

STORAGE AND STABILITY

BioScien TYCSB Agar should be stored between 10-30°C in a firmly 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 avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a 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.

Final pH 7.3 ± 0.2 at 25°C

PREPARATION

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. Mix well and pour into sterile petri plates.

Deterioration

The color of ***BioScien*** TYCSB Agar is Cream to yellow homogeneous free flowing powder. Prepared Media is Light yellow coloured clear to slightly opalescent gel forms in Petri plates. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

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

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri plates
- Incubator
- Autoclave

Performance Characteristics

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

Microorganisms	Growth
Streptococcus mutans ATCC 25175	Good-luxuriant

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

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.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		