MITIS SALIVARIUS AGAR (7277)

Intended Use
Mitis Salivarius Agar is used for the isolation of *Streptococcus mitis*, *Streptococcus salivarius*, and enterococci.

Product Summary and Explanation
Streptococcus mitis, *Streptococcus salivarius,* and *Enterococcus* spp. are part of normal human flora. *S. mitis* and *S. salivarius* are known as viridans streptococci. These organisms play a role in cariogenesis and infective endocarditis, and cause an increasing number of bacteremias.[1] Enterococci cause urinary tract infections, wound infections, bacteremia, and can colonize the skin and mucous membranes.[2]

Principles of the Procedure
Enzymatic Digest of Casein and Enzymatic Digest of Animal Tissue provide carbon, nitrogen, and amino acids used for general growth requirements in Mitis Salivarius Agar. Sucrose and Dextrose are carbohydrate sources. Dipotassium Phosphate is the buffering agent. Trypan Blue is absorbed by the colonies, producing a blue color. Crystal Violet and Potassium Tellurite inhibit most Gram-negative bacilli and Gram-positive bacteria except streptococci. Agar is the solidifying agent.

Formula / Liter
Enzymatic Digest of Casein	15 g
Enzymatic Digest of Animal Tissue	5 g
Sucrose	50 g
Dextrose	1 g
Dipotassium Phosphate	4 g
Trypan Blue	0.075 g
Crystal Violet	0.0008 g
Agar	15 g

Final pH: 7.0 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Supplement (# 7989)
Tellurite Supplement (1%) Chapman
(Potassium Tellurite, 100 mg)

Precautions
1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions
1. Suspend 90 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Cool the sterile medium to 50 - 60°C and aseptically add 1 mL of Tellurite Supplement (1%) Chapman (# 7989).

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light blue-beige.

Prepared Appearance: Prepared medium is trace to slightly hazy and deep royal blue.

Expected Cultural Response: Cultural response on Mitis Salivarius Agar, enriched with Tellurite Supplement (1%) Chapman (# 7989) at 35 ± 2°C after 18 - 48 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Expected Results
Escherichia coli ATCC® 25922	300 - 1000	Partial to complete inhibition
Staphylococcus aureus ATCC® 25923	300 - 1000	Partial to complete inhibition
Streptococcus mitis ATCC® 9811	10 - 300	Growth, Blue colonies
Streptococcus pyogenes ATCC® 19615	10 - 300	Growth, Blue colonies
Streptococcus salivarius ATCC® 13419	10 - 300	Growth, Blue "gum drop" colonies

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure
Refer to appropriate references for specific procedures.

Results
S. mitis produces small blue colonies. These colonies may become easier to distinguish with longer incubation. *S. salivarius* produces blue, smooth or rough "gum drop" colonies, 1 - 5 mm in diameter depending on the number of colonies on the plate. *Enterococcus* spp. form dark blue or black, shiny, slightly raised, 1 - 2 mm colonies.

Storage
Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration
Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure
1. Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow.
2. If coliforms grow on the medium, they produce brown colonies.
3. Molds will grow on the medium after two days incubation.
4. *Erysipelothrix rhusiopathiae* produces colorless, circular, convex colonies.
5. Beta-hemolytic streptococci produce colonies that resemble *S. mitis*.

Packaging
Mitis Salivarius Agar	**Code No.**	**7277A**	**500 g**
		7277B	**2 kg**
		7277C	**10 kg**
Tellurite Supplement (1%) Chapman		**7989**	**10 mL**

References

1. **Facklam, R. R., and J. A. Washington II.** 1991. *Streptococcus* and related catalase-negative gram-positive cocci. p. 238-257. *In* A. Balows, W. J. Hausler, Jr,. K. L. Herrmann, H. D. Isenberg, and H. J. Shadomy (eds.). Manual of clinical microbiology, 5th ed. American Society for Microbiology, Washington, D.C.
2. **Facklam, R. R., and D. F. Sahm.** 1995. *Enterococcus*, p. 308-314. *In* P. R. Murray, E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.). Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
3. **Chapman, G. H.** 1944. The isolation of streptococci from mixed cultures. J. Bacteriol. **48:**113.
4. **Chapman, G. H.** 1946. The isolation and testing of fecal streptococci. Am. J. Dig. Dis. **13:**105.
5. **Chapman, G. H.** 1947. Relationship of nonhemolytic and viridans streptococci in man. Trans. N. Y. Acad. Sci. **10:**45.
6. **MacFaddin, J. F.** 1985. Media for the isolation-cultivation-identification-maintenance of medical bacteria, vol. 1 Williams & Wilkins, Baltimore, MD.

Technical Information
Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.

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