

01337 Mitis Salivarius Agar (M-S Agar)

Mitis Salivarius Agar is recommended for the isolation from mixed cultures of Streptococci especially *Streptococcus mitis*, *Streptococcus salivarius*, *Enterococcus faecalis* showing alpha and gamma haemolytic reactions on Blood Agar.

Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	15.0
Peptic digest of animal tissue	5.0
Dextrose	1.0
Sucrose	50.0
Dipotassium phosphate	4.0
Trypan blue	0.075
Crystal violet	0.0008
Agar	15.0
Final pH 7.0 +/- 0.2 (at 25°C)	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Light blue coloured, homogeneous, free flowing powder.
 Gelling: Firm.
 Colour and Clarity: Deep blue coloured, clear to very slightly opalescent gel forms in petri plates.

Directions:

Suspend 90 g in 1000 ml distilled water. Boil to dissolve the medium completely. Dispense and sterilize by autoclaving at 121°C for 15 minutes. Cool to 50-55°C and add 1 ml of sterile 1 % potassium tellurite solution (Cat. No. 17774). DO NOT REHEAT the medium after the addition of tellurite solution.

Principle and Interpretation:

Mitis Salivarius Agar is prepared as described by Chapman (3) for isolating streptococci. The medium facilitates isolation of *Streptococcus mitis* (*Streptococcus viridans*), *Streptococcus salivarius* (non-hemolytic streptococci) and enterococci from mixed cultures.

The medium contains casein enzymic hydrolysate and peptic digest of animal tissue as sources of carbon, nitrogen, vitamins and minerals. Dextrose and saccharose are the fermentable carbohydrate sources. Dipotassium phosphate is the buffer substanz and trypan blue is an acidic diazo dye and is responsible for the blue colour of the colonies. Crystal violet and potassium tellurite (from 1% tellurite solution) inhibit most gram-negative bacilli and most gram-positive bacteria except streptococci. Crystal violet is also the base dye of the medium. It is also possible to add sodium azide to inhibit the growth of gram negative bacteria like *Proteus*. Agar is the solidifying agent.

Cultural characteristics after 18-48 hours at 35-37°C.

Organisms (ATCC)	Growth	Colour of Colony
<i>Enterococcus faecalis</i> (19433)	+++	blue-black
<i>Streptococcus pyrogenes</i> (19615)	+++	blue
<i>Streptococcus mitis</i> (9895)	+++	blue
<i>Streptococcus salivarius</i> (9758)	+++	blue "gum drop" shape
<i>Escherichia coli</i> (25922)	-	brown if any
<i>Staphylococcus aureus</i> (25923)	-	-



References:

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5. J.F. MacFaddin, *Media for isolation-cultivation-identification-maintenance of medical bacteria*, vol. 1, p. 522-526. Williams & Wilkins, Baltimore, MD (1985)
6. R.R. Facklam, J.A. Washington II., *Streptococcus and related catalase-negative gram-positive cocci*. p. 238-257. In A. Balows, W.J. Hausler, Jr., K.L. Herrmann, H.D. Isenberg, H.J. Shadomy (ed.), *Manual of clinical microbiology*, 5th ed. American Society for Microbiology. Washington, D.C. (1991)
7. R.R. Facklam, D.F. Sahn, *Enterococcus*, p. 308-314. In P.R. Murray, E.J. Baron, M.A. Pfaller, F.C. Tenover, R.H. Tenover (ed.), *Manual of clinical microbiology*, 6th ed. American Society for Microbiology, Washington, D.C. (1995)

Precautions and Disclaimer

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