

Mitis Salivarius HiVeg™ Agar Base

MV259

Intended Use:

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	g / L
HiVeg™ hydrolysate	15.000
HiVeg™ peptone	5.000
Dextrose (Glucose)	1.000
Sucrose	50.000
Dipotassium hydrogen phosphate	4.000
Trypan blue	0.075
Crystal violet	0.0008
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 90.07 grams in 1000 ml purified /distilled water. Heat to boiling to dissolve the medium completely. Dispense and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and add 1 ml of sterile PTe 1% Selective Supplement (1 ml per vial) (FD052). **DO NOT REHEAT** the medium after the addition of tellurite solution. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Streptococcus species are mostly commensal residents of the mouth and throat, though several may act as opportunistic pathogens and a few as primary pathogens (1). *Streptococcus* “viridans” group consists of *Streptococcus salivarius* and *Streptococcus mitis*. They exhibit different types of haemolysis when grown on Blood Agar Base. Therefore it is difficult to differentiate these organisms found in saliva from the other accompanying flora. Mitis Salivarius Agar Base is used for the isolation of *S.mitis*, *S. salivarius* and *Enterococcus faecalis* from mixed cultures. *E. faecalis* is the most common member of the Enterococci to cause infections in humans and is also a cause of human endocarditis (2). Mitis Salivarius Agar is formulated as per Chapman (3,4,5). This medium (with 1% potassium tellurite) is a highly selective medium, which enables to isolate streptococci from highly contaminated specimens like exudates from body cavities and faeces etc., as it inhibits a wide variety of bacteria. Some authors have also used sodium azide in this medium to inhibit the growth of gram-negative bacteria like *Proteus* (6). Mitis Salivarius HiVeg™ Agar Base is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks.

HiVeg™ hydrolysate and peptone in the medium provide the essential growth nutrients. Dextrose and sucrose are the fermentable carbohydrates. Dipotassium phosphate buffers the medium. Trypan blue is an acidic, blue diazo dye while crystal violet is a basic dye and also a bacteriostatic agent, which inhibits many gram-positive organisms. Potassium tellurite also helps to make the medium selective for streptococci. Occasionally *Streptococcus mutans* strains may be inhibited on Mitis Salivarius Agar Base due to the high concentration of trypan blue in the medium. Also some *S. mitis* strains may be more easily distinguished with longer incubation (7).

Type of specimen

Please add specimens

Specimen Collection and Handling:

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

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 specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Molds exhibit growth after 2 days of incubation. (7)
2. Do not heat medium after addition of PTe 1% Selective Supplement (1 ml per vial)(FD052); solution is heat-labile.(7)

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

Light yellow to light blue homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Dark blue coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 9.0% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours with added 1% Potassium Tellurite (FD052).

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	50-100	good-luxuriant	≥50%	blue - black
<i>Escherichia coli</i> ATCC 25922 (00013*)	≥10 ⁴	inhibited	0%	
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ⁴	inhibited	0%	
<i>Streptococcus intermedius</i> ATCC 9895	50-100	good-luxuriant	≥50%	blue
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	good-luxuriant	≥50%	blue
<i>Streptococcus salivarius</i> ATCC 13413	50-100	good-luxuriant	≥50%	blue (gum drop)

Key : *Corresponding WDCM numbers.

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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (8,9).

Reference

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