SF Broth

M297

SF (Streptococcus faecalis) Broth is a selective medium used for detection and differentiation of Enterococci from other cocci in diagnostic work.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Dextrose	5.000
Dipotassium phosphate	4.000
Monopotassium phosphate	1.500
Sodium azide	0.500
Sodium chloride	5.000
Bromo cresol purple	0.032
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 36.03 grams in 1000 ml distilled water. For double strength broth use 72.06 grams in 1000 ml distilled water. Heat if necesary to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Warning: Sodium azide has a tendency to form explosive metal azides with plumbing materials. It is advisable to use enough water to flush off the disposables.

Principle And Interpretation

SF Broth is prepared according to the formula of Hajna and Perry (1) for the detection of faecal Streptococci in the swimming pools, water and milk samples. SF Broth is also recommended for detection of faecal streptococci in water and other samples (2). Streptococci grow luxuriantly at 45.5°C with an acidic reaction, seen as colour change from purple to yellow.

Casein enzymic hydrolysate provides essential growth nutrients. Dextrose is the fermentable carbohydrate. Sodium azide inhibits gram-negative organisms making it selective for Enterococci. Bromo cresol purple is the pH indicator. Phosphates buffer the medium while sodium chloride maintains osmotic equilibrium.

In this medium, the indicator turning yellow in presence of Enterococci is evident after 18-20 hours but to proceed for the isolation, a supplementary incubation in Petri plates is recommended. Turbidity and a yellow colour of the medium indicate positive reaction, while no change in the colour of the medium indicates negative reaction.

Quality Control

Appearance
Cream to light green homogeneous free flowing powder

Colour and Clarity of prepared medium
Purple coloured clear solution without any precipitate

Reaction
Reaction of 3.6% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH
6.70-7.10

Cultural Response
Cultural characteristics observed after an incubation at 45-46°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of medium
Cultural Response			
Escherichia coli ATCC 25922	>=10^3	inhibited	purple
Enterococcus faecalis ATCC 29212	50-100	luxuriant	yellow
Streptococcus bovis ATCC 33317	50-100	none-poor	purple
Streptococcus pyogenes ATCC 19615	50-100	none-poor	purple
Enterococcus faecium ATCC 27270	50-100	luxuriant	yellow

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Hajna and Perry, 1943, Am. J. Publ. Hlth., 33:550.
2. Eaton A. D., Clesceri L. S., Rice E. W., and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.

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