
SF BROTH

INTENDED USE

Remel SF Broth is a liquid medium recommended for use in qualitative procedures for differentiation of enterococci from group D streptococci and other *Streptococcus* species.

SUMMARY AND EXPLANATION

SF Broth was developed by Hajna and Perry for detection of fecal streptococci in water, milk, and other materials of sanitary importance.¹ They recommended an incubation temperature of 45.5°C for this medium. In earlier studies, Snyder and Lichstein demonstrated sodium azide would prevent swarming of *Proteus* and permit selective isolation of fecal streptococci from clinical material.^{2,3} Fecal streptococci consist of enterococci and group D streptococci of human origin that usually occur in higher densities in animal feces.⁴

PRINCIPLE

Tryptone and dextrose supply nutrients necessary to support the growth of streptococci. Dextrose is a fermentable carbohydrate. Sodium azide is an inhibitor of the cytochrome oxidase enzyme in the electron transport chain, thereby exhibiting a bacteriostatic effect on gram-negative bacteria. Brom cresol purple serves as the pH indicator. Enterococci will grow in SF Broth and produce an acid (yellow) reaction, while other streptococci fail to grow and the medium remains purple in color.

REAGENTS (CLASSICAL FORMULA)*

Tryptone	20.0 g	Monopotassium Phosphate	1.5 g
Dextrose	5.0 g	Sodium Azide	0.5 g
Sodium Chloride	5.0 g	Brom Cresol Purple	32.0 mg
Dipotassium Phosphate	4.0 g	Demineralized Water	1000.0 ml

pH 6.9 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PROCEDURE

1. Inoculate SF Broth using a pure, 18-24 hour culture of the test isolate. (Note: SF Broth is intended for use only with pure cultures of catalase-negative, gram-positive cocci in chains or pairs.)
2. Incubate tube aerobically with cap loosened for 24-48 hours at 45°C ± 0.2 (preferable temperature) or at 33-37°C.
3. Observe for growth and a color change from purple to yellow.

INTERPRETATION OF THE TEST

Positive Test - Turbidity, yellow to yellow-brown color development due to the fermentation of dextrose

Negative Test - A lack of turbidity and no color change; the medium remains purple

QUALITY CONTROL

All lot numbers of SF Broth have been tested using the following quality control organisms and found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, patient results should not be reported.

CONTROL

Enterococcus faecalis ATCC® 29212

Streptococcus bovis ATCC® 9809

INCUBATION

Aerobic, up to 48 h @ 33-37°C

Aerobic, up to 48 h @ 33-37°C

RESULTS

Positive

Negative

BIBLIOGRAPHY

1. Hajna, A.A. and C.A. Perry. 1943. Am. J. Public Health. 33:550-556.
2. Snyder, M.L. and H.C. Lichstein. 1940. J. Infect. Dis. 67:113-115.
3. Lichstein, H.C. and M.L. Snyder. 1941. J. Bacteriol. 42:653-663.
4. Hartman, P.A., G.W. Reinbold, and D.S. Saraswat. 1966. Int. J. Syst. Bacteriol. 16:197-221.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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