

Instructions for Use

SF (STREPTOCOCCUS FAECALIS) BROTH

Cat. no. K45	SF Broth, 16x125mm Tube, 5ml	20 or 100 tubes/box
------------------------------	------------------------------	---------------------

INTENDED USE

Hardy Diagnostics SF Broth is recommended for the cultivation and differentiation of group D enterococci from group D non-enterococci.

SUMMARY

In general *Enterococcus* inhabit the intestinal tract of both warm and cold-blooded animals. *Enterococcus faecalis* and *E. faecium* are heat resistant and are able to survive milk pasteurization. *E. faecium* is especially heat tolerant. Other enterococci, especially those that are highly resistant to antibiotics, can cause serious illness to humans. Because enterococci have the ability to survive and grow in food processing plants they serve as a good index of sanitation.⁽⁸⁾

SF Broth is prepared according to the formulation developed by Hajna and Perry.⁽³⁾ The medium contains 0.05% sodium azide, casein peptone, dextrose and bromcresol purple. Sodium azide acts as the selective agent by inhibiting the cytochrome oxidase enzyme in the electron transport chain. Casein peptone and dextrose supply necessary growth nutrients. Bromcresol purple serves as the color indicator.

Specimens containing group D enterococci result in the production of acid from dextrose fermentation. Acid production is noted by a color change in the medium from purple to yellow by use of bromcresol as the pH indicator. Appearance of the yellow color change is indicative of the presence of group D enterococci.

FORMULA

Ingredients per liter of deionized water:*

Peptic Digest of Casein	20.0gm
Dextrose	5.0gm
Sodium Chloride	5.0gm
Dipotassium Phosphate	4.0gm
Monopotassium Phosphate	1.5gm
Sodium Azide	0.5gm
Bromcresol Purple	32.0mg

Final pH 6.9 +/- 0.3 at 25°C.

*Adjusted and/or supplemented as required to meet performance criteria.

STORAGE AND SHELF LIFE

Storage: Upon receipt store at 2-30°C. away from direct light. Media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), contamination, or if the expiration date has passed. Product is light and temperature sensitive; protect from light, excessive heat and freezing.

The expiration date on the product label applies to the product in its intact packaging when stored as directed. The product may be used and tested up to the expiration date on the product label and incubated for the recommended incubation times as stated below.

Refer to the document "[Storage](#)" for more information.

PRECAUTIONS

This product may contain components of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not guarantee the absence of transmissible pathogenic agents. Therefore, it is recommended that these products be treated as potentially infectious, and handle observing the usual Universal Precautions for blood. Do not ingest, inhale, or allow to come into contact with skin.

This product is for *in vitro* diagnostic use only. It is to be used only by adequately trained and qualified laboratory personnel. Observe approved biohazard precautions and aseptic techniques. All laboratory specimens should be considered infectious and handled according to "standard precautions." Refer to the document "[Guidelines for Isolation Precautions](#)" from the Centers for Disease Control and Prevention.

For additional information regarding specific precautions for the prevention of the transmission of all infectious agents from laboratory instruments and materials, and for recommendations for the management of exposure to infectious disease, refer to CLSI document M29: *Protection of Laboratory Workers from Occupationally Acquired Infections*.

Sterilize all biohazard waste before disposal.

Refer to the document "[Precautions When Using Media](#)" for more information.

PROCEDURE

Clinical specimens: Inoculate medium with a pure culture. Incubate medium aerobically at 35 degrees C. for 24-48 hours. Observe for turbidity and color change in the medium. This product is used in conjunction with other biochemical tests to identify cultures of isolated organism.

Samples of water and other material: Directly inoculate sample into the medium. Incubate in an aerobic atmosphere at 45.5°C. for 24-48 hours. Observe for turbidity and color change in the medium. This product is used in conjunction with other biochemical tests to identify cultures of isolated organism.

INTERPRETATION OF RESULTS

A positive reaction for the presence of group D enterococci is indicated by turbidity and a color change in the medium from purple to yellow. A negative reaction is indicated by absence of growth and a purple color.

LIMITATIONS

It is recommended that biochemical, immunological, molecular, or mass spectrometry testing be performed on colonies from pure culture for complete identification of bacteria and/or fungi.

Enterococci will usually result in heavy growth and a color change within 24 hours; some strains, however, take 48 hours while others grow with no color change even aft 72 hours.⁽⁶⁾

Refer to the document "[Limitations of Procedures and Warranty](#)" for more information.

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as loops, other culture media, swabs, applicator sticks, incinerators, and incubators, etc., as well as serological and biochemical reagents, are not provided.

QUALITY CONTROL

Hardy Diagnostics tests each lot of commercially manufactured media using appropriate quality control microorganisms and quality specifications as outlined on the Certificate of Analysis (CofA) and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media*. The following microorganisms are routinely used for testing at Hardy Diagnostics:

Test Organisms	Inoculation Method*	Incubation			Results
		Time	Temperature	Atmosphere	
<i>Enterococcus faecalis</i> ATCC® 29212	E	24-48hr	35°C	Aerobic	Growth; broth turns yellow
<i>Streptococcus pyogenes</i> ATCC® 19615	E	24-48hr	35°C	Aerobic<	Inhibited; broth remains purple

* Refer to the document "[Inoculation Procedures for Media QC](#)" for more information.

USER QUALITY CONTROL

End users of commercially prepared culture media should perform QC testing in accordance with applicable government regulatory agencies, and in compliance with accreditation requirements. Hardy Diagnostics recommends end users check for signs of contamination and deterioration and, if dictated by laboratory quality control procedures or regulation, perform quality control testing to demonstrate growth or a positive reaction and to demonstrate inhibition or a negative reaction, if applicable. Hardy Diagnostics quality control testing is documented on the certificate of analysis (CofA) available from Hardy Diagnostics [Certificate of Analysis](#) website. Also refer to the document "[Finished Product Quality Control Procedures](#)," and the CLSI document M22-A3 *Quality Assurance for Commercially Prepared Microbiological Culture Media* for more information on the appropriate QC procedures. See the references below.

PHYSICAL APPEARANCE

SF Broth should appear clear, and purple in color.



Enterococcus faecalis (ATCC® 29212) growing in SF Broth (Cat. no. K45). The color change to yellow is indicative of dextrose



Streptococcus pyogenes (ATCC® 19615) inhibited in SF Broth (Cat. no. K45). Incubated aerobically for 24 hours at 35°C.

fermentation. Incubated aerobically for 24 hours at 35°C.

REFERENCES

1. Anderson, N.L., et al. *Cumitech 3B; Quality Systems in the Clinical Microbiology Laboratory*, Coordinating ed., A.S. Weissfeld. American Society for Microbiology, Washington, D.C.
2. Tille, P., et al. *Bailey and Scott's Diagnostic Microbiology*, C.V. Mosby Company, St. Louis, MO.
3. Hanja and Perry. 1943. *Am. Jour. Publ. Health.*; 33:550.
4. Isenberg, H.D. *Clinical Microbiology Procedures Handbook*, Vol. I, II & III. American Society for Microbiology, Washington, D.C.
5. MacFaddin, J.F. *Biochemical Tests for Identification of Medical Bacteria*, Lipincott Williams & Wilkins, Philadelphia, PA.
6. Jorgensen., et al. *Manual of Clinical Microbiology*, American Society for Microbiology, Washington, D.C.
7. *Quality Assurance for Commercially Prepared Microbiological Culture Media*, M22. Clinical and Laboratory Standards Institute (CLSI - formerly NCCLS), Wayne, PA.
8. APHA Technical Committee on Microbiological Methods for Foods. *Compendium of Methods for the Microbiological Examination of Foods*, APHA, Washington, D.C.

ATCC is a registered trademark of the American Type Culture Collection.

IFU-10733[A]



1430 West McCoy Lane, Santa Maria, CA 93455, USA

Phone: (805) 346-2766 ext. 5658

Fax: (805) 346-2760

Website: HardyDiagnostics.com

Email: TechnicalServices@HardyDiagnostics.com

[Ordering Information](#)

Distribution Centers:

California · Washington · Utah · Arizona · Texas · Ohio · New York · Florida · North Carolina

The Hardy Diagnostics manufacturing facility and quality management system is certified to ISO 13485.

Copyright© 2020 by Hardy Diagnostics. All rights reserved.

HDQA 2207F [D]

