

# LETHEEN BROTH

## INTENDED USE

Remel Lethen Broth is a liquid medium recommended for use in qualitative procedures for testing quaternary ammonium compounds for antimicrobial activity.

## SUMMARY AND EXPLANATION

Lethen Broth was developed as a subculture medium for the neutralization of quaternary ammonium compounds.<sup>1</sup> Quisno, Gibby, and Foter discovered that adding lecithin and polysorbate 80 to FDA Broth resulted in a medium that neutralized high concentrations of quaternary ammonium salts.<sup>2</sup> This medium, which became known as Lethen Broth, was used to recover bacteria from solutions containing residues of disinfectant used in the sanitization of food utensils and equipments. Lethen Broth is recommended by AOAC International (AOAC) to isolate microorganisms from cosmetic samples.<sup>3</sup>

## PRINCIPLE

Meat peptone and beef extract provide nitrogenous compounds and amino acids essential for the growth of bacteria. Sodium chloride is a source of essential electrolytes and maintains osmotic equilibrium. Lecithin neutralizes quaternary ammonium compounds and polysorbate 80 neutralizes phenolic disinfectants, hexachlorophene, and formalin.

## REAGENTS (CLASSICAL FORMULA)\*

Meat Peptone.....	10.0	g	Sodium Chloride.....	5.0	g
Beef Extract.....	5.0	g	Lecithin .....	0.7	g
Polysorbate 80 .....	5.0	g	Demineralized Water.....	1000.0	ml

pH 7.0 ± 0.2 @ 25°C

\*Adjusted as required to meet performance standards.

## PRECAUTIONS

This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

## PREPARATION OF DEHYDRATED CULTURE MEDIUM

1. Suspend 25.7 g of medium in 1000 ml of demineralized water.
2. Heat to boiling with agitation to completely dissolve.
3. Sterilize by autoclaving at 121°C for 15 minutes or following established procedures.
4. Dispense into appropriate containers.

## PROCEDURE

1. Consult current edition of appropriate references for the recommended procedure for sample preparation, inoculation, testing, and interpretation.

## QUALITY CONTROL

Each lot number of Lethen Broth has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been 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, sample results should not be reported.

### CONTROL

*Escherichia coli* ATCC® 25922  
*Pseudomonas aeruginosa* ATCC® 27853  
*Staphylococcus aureus* ATCC® 25923

### INCUBATION

Ambient, 18-24 h @ 33-37°C  
Ambient, 18-24 h @ 33-37°C  
Ambient, 18-24 h @ 33-37°C

### RESULTS

Growth  
Growth  
Growth

## BIBLIOGRAPHY

1. MacFaddin, J.F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Williams and Wilkins, Baltimore, MD.
2. Quisno, R., I.W. Gibby, and M.J. Foter. 1946. Am. J. Pharm. 118:320-323.
3. Horwitz, W. 2002. Official Methods of Analysis of AOAC International. 17<sup>th</sup> ed., 1<sup>st</sup> rev. AOAC International, Washington, D.C.

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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IFU 61268, Revised June 10, 2014

Printed in U.S.A.

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