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# TODD HEWITT BROTH

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## INTENDED USE

Remel Todd Hewitt Broth is a liquid medium recommended for use in qualitative procedures for cultivation of beta-hemolytic streptococci, production of antigenic streptococcal hemolysins, and isolation of most pathogenic organisms.

## SUMMARY AND EXPLANATION

Todd and Hewitt formulated a serum-free culture medium with a high content of protein and glucose for the growth of fastidious streptococci.<sup>1</sup> Buffers in Todd Hewitt Broth maintain a pH suitable for the growth of streptococci even as acids are being produced from fermented glucose. Elliott found growth in Todd Hewitt Broth promoted the development and maintenance of type-specific M protein, used for the purpose of grouping beta-hemolytic streptococci.<sup>2</sup> Updyke and Nickle demonstrated Todd Hewitt Broth was superior to other media tested for growth of Group A *Streptococcus* to be typed by the precipitin technique.<sup>3,4</sup> Cherry and Moody reported enrichment of throat swabs in Todd Hewitt Broth prior to culture superior to conventional direct plating for detection of Group A *Streptococcus* by either the cultural-precipitin or the fluorescent antibody method.<sup>5</sup> Jones et al. recommended using this medium for enrichment of throat swabs prior to use in fluorescent antibody test procedures.<sup>6</sup>

## PRINCIPLE

Peptones and heart infusion supply nitrogenous compounds and amino acids essential for the growth of beta-hemolytic streptococci and prevent the formation of proteinase; type-specific M protein production is inhibited by proteinase. Dextrose is an energy source which also stimulates streptococcal antigenic hemolysin production. Disodium phosphate and sodium carbonate are buffers which counteract the acidity produced during the fermentation of dextrose, thereby protecting the hemolysin from inactivation by acid.

## REAGENTS (CLASSICAL FORMULA)\*

Casein Peptone.....	10.0 g	Dextrose .....	2.0 g
Meat Peptone.....	10.0 g	Sodium Chloride .....	2.0 g
Heart Infusion.....	3.1 g	Disodium Phosphate .....	0.4 g
Sodium Carbonate .....	2.5 g	Demineralized Water.....	1000.0 ml

pH 7.8 ± 0.2 @ 25°C

\*Adjusted as required to meet performance standards.

## PROCEDURE

1. Inoculate Todd Hewitt Broth with the throat swab specimen and incubate aerobically or in 5-10% CO<sub>2</sub> at 35-37°C for 2-5 hours. Follow established laboratory guidelines for testing with fluorescent antibody procedures. Consult appropriate references for further instructions.<sup>7,8</sup>
2. Incubation may be continued up to 24 hours prior to subculture onto selective or nonselective blood agar plates.
3. Todd Hewitt Broth may be inoculated with pure cultures of streptococci prior to the preparation of extracts for serological typing.

## QUALITY CONTROL

All lot numbers of Todd Hewitt Broth 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, patient results should not be reported.

### CONTROL

*Streptococcus agalactiae* ATCC® 12386  
*Streptococcus pyogenes* ATCC® 19615

### INCUBATION

Aerobic, 24 h @ 33-37°C  
Aerobic, 24 h @ 33-37°C

### RESULTS

Growth  
Growth

## BIBLIOGRAPHY

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8. Isenberg, H.D. 2004. Clinical Microbiology Procedures Handbook. 2<sup>nd</sup> ed. ASM Press, 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 64800, Revised July 2, 2008

Printed in U.S.A.

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