

User Quality Control

Identity Specifications

Difco™ Thiol Medium

Dehydrated Appearance: Light beige, free-flowing, homogeneous.

Solution: 3% solution, soluble in purified water upon boiling. Solution is very light to light amber, clear to very slightly opalescent when hot.

Prepared Appearance: Very light amber, opalescent after cooling.

Reaction of 3% Solution at 25°C: pH 7.1 ± 0.2

Difco™ Thiol Broth

Dehydrated Appearance: Light beige, free-flowing, homogeneous.

Solution: 2.9% solution, soluble in purified water upon boiling. Solution is very light to light amber, clear to slightly opalescent.

Prepared Appearance: Very light amber, clear to slightly opalescent.

Reaction of 2.9% Solution at 25°C: pH 7.1 ± 0.2

Cultural Response

Difco™ Thiol Medium or Thiol Broth

Prepare the medium per label directions. Test without and with concentrations of 5, 100 and 1,000 units of penicillin and 100, 1,000 and 10,000 µg of streptomycin per 10 mL tube. Inoculate and incubate at 35 ± 2°C for 18-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY w/o ANTIBIOTICS	RECOVERY w/ANTIBIOTICS
<i>Staphylococcus aureus</i>	25923	10 ² -10 ³	Good	Good [†]
<i>Streptococcus pyogenes</i>	19615	10 ² -10 ³	Good	Good [†]

[†]Antibiotic concentrations up to 100 units of penicillin or 1,000 µg of streptomycin.

Expected Results

Refer to appropriate references and procedures for results.

Limitation of the Procedure

Strict reliance on blood culture bottles containing Thiol Broth is not recommended for aerobic microorganisms. Always use an aerobic medium for optimum isolation of the broad spectrum of microorganisms that can cause bacteremia or septicemia.

References

- Huddleson. 1948. J. Bacteriol. 56:508.
- Christensen. 1947. Presented at the Michigan Branch, Society of American Bacteriologists, Detroit, Mich., December 12, 1947.
- Szawatkowski. 1976. Med. Lab. Sci. 33:5.
- Shanson and Barnicoat. 1975. J. Clin. Pathol. 28:407.
- Murray. 1985. J. Clin. Microbiol. 21:481.
- Donnelly. 1994. Infect. Dis. Alert 6:109.
- Isenberg (ed.). 1992. Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.
- MacFaddin. 1985. Media for isolation-cultivation-identification-maintenance medical bacteria, vol. 1. Williams & Wilkins, Baltimore, Md.
- Murray, Baron, Pfaller, Tenover and Tenover (ed.). 1999. Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.

Availability

Difco™ Thiol Medium

Cat. No. 230710 Dehydrated – 500 g

Difco™ Thiol Broth

Cat. No. 243420 Dehydrated – 500 g
243410 Dehydrated – 10 kg

Thiotone™ E Peptone

Intended Use

Thiotone E Peptone is used as a component in microbiological culture media.

Summary and Explanation

Thiotone E Peptone has been recommended for use in blood agar formulae for hemolysis studies with pneumococci and streptococci. Thiotone E Peptone is high in sulfur amino acids and can be used in media to detect hydrogen sulfide production. Tortora¹ utilized Thiotone E Peptone as the nitrogen source in a medium promoting sporulation of *Clostridium perfringens* strains. Thiotone E Peptone is recommended for use in media for testing water samples for coliforms.² Kwinn³ utilized Thiotone E Peptone as a supplement to her medium for *Corynebacterium glutamicum* to make the cells electrocompetent for transformations. Thiotone E Peptone has also been cited as an ingredient in media for nonbacterial

organisms. Thiotone E Peptone is used in Modified HL5 Medium, one of the main media used for culturing the cellular slime mold *Dictyostelium discoideum*.

Media formulations containing Thiotone E Peptone are specified in standard methods for various applications.^{2,4,5}

Principles of the Procedure

Thiotone E Peptone is an enzymatic digest of animal tissue. Thiotone E Peptone contains a wide range of peptide sizes, including the large molecular weight peptides, which support fastidious organisms. This ingredient provides nitrogen, amino acids and vitamins in microbiological culture media.

Typical Analysis

Refer to Product Tables in the Reference Guide section of this manual.

User Quality Control

Identity Specifications

BBL™ Thiotone™ E Peptone

Dehydrated Appearance:	Tan, fine, homogeneous, free of extraneous material.
Solution:	2.0% solution, soluble in purified water. Solution is clear to moderately hazy.
Reaction of 2.0% Solution at 25°C:	pH 6.5-7.5

Cultural Response

Biochemical Reactions

BBL™ Thiotone™ E Peptone

Prepare a sterile solution of **Thiotone** E Peptone as directed below. Adjust final pH to 7.2-7.4. Inoculate and incubate at 35 ± 2°C for 18-48 hours.

TEST	TEST SOLUTION	ORGANISM	ATCC™	INOCULUM CFU	RESULT
Fermentable Carbohydrates	2%	<i>Escherichia coli</i>	29552	~10 ⁷	Positive
Indole Production	0.1%	<i>Escherichia coli</i>	29552	0.1 mL, undiluted	Positive
Acetylmethylcarbinol Production	0.1% with 0.5% dextrose	<i>Enterobacter aerogenes</i>	13048	0.1 mL, undiluted	Positive
Hydrogen Sulfide Production	1%	<i>Citrobacter freundii</i>	8454	0.1 mL, undiluted	Positive

Growth Response

BBL™ Thiotone™ E Peptone

Prepare a sterile solution of peptone agar without (plain) and with 5% sheep blood (SB) using 10 g of **Thiotone** E Peptone, 2.5 g of sodium chloride and 6.5 g of agar in 500 mL of purified water. Adjust final pH to 7.2-7.4. Inoculate and incubate plates at 35 ± 2°C for 2-3 days (incubate streptococci with 3-5% CO₂).

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY PLAIN	RECOVERY WITH SB	HEMOLYSIS
<i>Enterococcus faecalis</i>	29212	10 ³ -10 ⁴	Good	N/A	–
<i>Streptococcus pneumoniae</i>	6305	10 ³ -10 ⁴	N/A	Good	Alpha
<i>Streptococcus pyogenes</i>	49117	10 ⁴ -10 ⁵	Good	Good	Beta

Directions for Preparation from Dehydrated Product

Refer to the final concentration of **Thiotone** E Peptone in the formula of the medium being prepared. Add product as required.

Procedure

See appropriate references for specific procedures using **Thiotone** E Peptone.

Expected Results

Refer to appropriate references and procedures for results.

References

1. Tortora. 1984. Appl. Environ. Microbiol. 47:1172.
2. Clesceri, Greenberg and Eaton (ed.). 1998. Standard methods for the examination of water and wastewater, 20th ed. American Public Health Association, Washington, DC.
3. Kwin. 2001. Bug Journal, Biology Department, Massachusetts Institute of Technology. 4:193.
4. Horowitz (ed.). 2000. Official methods of analysis of AOAC International, 17th ed. AOAC International, Gaithersburg, Md.
5. U.S. Food and Drug Administration. 1995. Bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, Md.

Availability

BBL™ Thiotone™ E Peptone

AOAC BAM SMWW

Cat. No. 212302 Dehydrated – 500 g

Tinsdale Agar Base Tinsdale Enrichment Desiccated

Intended Use

Tinsdale Agar Base is used with Tinsdale Enrichment Desiccated in isolating and differentiating *Corynebacterium diphtheriae*.

Summary and Explanation

Tinsdale Agar Base, supplemented with Tinsdale Enrichment, is employed in the cultural diagnosis of diphtheria. Diphtheria, an acute infectious disease primarily of the upper respira-

tory tract but occasionally of the skin,¹ is caused by toxigenic strains of *Corynebacterium diphtheriae*. The three biotypes are mitis, intermedius and gravis.¹ The signs and symptoms of the disease are a pharyngeal membrane, sore throat, malaise, headache and nausea.² Death can result from respiratory obstruction by the membrane or myocarditis caused by the toxin.²

Tinsdale³ developed a serum-cystine-thiosulfate-tellurite agar medium for the primary isolation and differentiation of