Bacto™ Tryptose

Intended Use

Bacto Tryptose is an enzymatic digest of protein used in preparing microbiological culture media.

Summary and Explanation

Tryptose was originally developed as a peptone particularly adapted to growth requirements of *Brucella*. Tryptose is very useful for cultivation of streptococci, pneumococci, meningococci and other fastidious organisms, and was found to be superior to meat infusion peptone media previously used for these organisms.[1,2] Mobley et al.[3] reported that Tryptose Broth was the preferred medium for strains of *Bordetella bronchiseptica* in studies of phosphatase activity.

Tryptose has been reported as beneficial for cell culture applications. Litwin[4] found Tryptose to be suitable for supplementing a serum-free medium to grow human diploid fibroblasts. Vaughn and Fan[5] established that Tryptose provided free amino acids necessary for growth of *Spodoptera frugiperda* and *Lymantria dispar* insect cell lines. Tryptose is often used as a biomass enhancer for recombinant *E. coli* production.

Tryptose is the major ingredient and only peptone in the formulation for Tryptose Phosphate Broth (TPB), an often-used medium for various culture applications. Hata and Kojima[6] have shown TPB to be a useful supplement in culturing the nematode, *Angiostrongylus cantonensis*. TPB was also reported as a supplement to a medium for cultivating a protozoan parasite, which parasitizes vectors of Chagas' disease, on its insect cell host.[7] *Spodoptera frugiperda*, a cotton pest in Argentina[8] and several tick cell lines have also been grown using a TPB-supplemented medium.[9] Tryptose Phosphate Broth has been reported as a suitable supplement for growth of baby hamster kidney cells[10] and porcine kidney cells.[11]

Media formulations containing **Bacto** Tryptose are specified in standard methods for various applications.[12-17]

Principles of the Procedure

Bacto Tryptose is a mixed enzymatic hydrolysate with distinctive nutritional properties. The digestive process of **Bacto** Tryptose results in assorted peptides of higher molecular weight suitable for long chain amino acid requirements. **Bacto** Tryptose

User Quality Control

Identity Specifications

Bacto™ Tryptose

Dehydrated Appearance:	Tan, free-flowing, granules.
Solution:	1.0%, 2.0% and 10.0% solutions, soluble in purified water. 1.0% solution is light amber, clear. 2.0% solution is medium amber, clear to slightly opalescent. 10.0% solution is medium to dark amber, very slightly opalescent to opalescent, may have a precipitate.
Reaction of 1.0% Solution at 25°C:	pH 7.1-7.5

Cultural Response

Biochemical Reactions

Bacto™ Tryptose

Prepare a sterile solution of **Bacto** Tryptose 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%	*Escherichia coli*	25922	~10^7	Negative
Indole Production	0.1%	*Escherichia coli*	29552	0.1 mL, undiluted	Positive
Acetylmethylcarbinol Production	0.1% with 0.5% dextrose	*Enterobacter aerogenes*	13048	0.1 mL, undiluted	Positive
Hydrogen Sulfide Production	1%	*Salmonella choleraesuis* subsp. *choleraesuis* serotype Typhimurium	14028	0.1 mL, undiluted	Positive

Growth Response

Bacto™ Tryptose

Prepare a sterile solution with 2% **Bacto** Tryptose, 0.5% sodium chloride and 1.5% agar. Adjust final pH to 7.2-7.4. Inoculate and incubate plates at 35 ± 2°C for 18-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Brucella suis	4314*	Undiluted	Good
Staphylococcus aureus	25923	30-300	Good
Streptococcus pneumoniae	6303	30-300	Good
Streptococcus pyogenes	19615	30-300	Good

**If this strain is not available, verify performance with a known isolate.*

provides nitrogen, amino acids and vitamins in microbiological culture media.

Typical Analysis

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

Precautions[18]

1. Biosafety Level 2 practices, containment equipment and facilities are recommended for activities with clinical specimens of human or animal origin containing or potentially containing pathogenic *Brucella* spp.
2. Biosafety Level 3 practices, containment equipment and facilities are recommended for all manipulations of cultures of the pathogenic *Brucella* spp. and for experimental animal studies.

Directions for Preparation from Dehydrated Product

Refer to the final concentration of **Bacto** Tryptose in the formula of the medium being prepared. Add product as required.

Procedure

See appropriate references for specific procedures using **Bacto** Tryptose.

Expected Results

Refer to appropriate references and procedures for results.

References

1. Casman. 1942. J. Bacteriol. *43*:33.
2. Casman. 1947. Am. J. Clin. Pathol. *17*:281.
3. Mobley, Chengappa, Kadel and Stuart. 1984. Can. J. Comp. Med. *48*:175.
4. Litwin. 1985. Dev. Biol. Stand. *60*:25.
5. Vaughn and Fan. 1997. In Vitro Cell. Dev. Biol. Anim. *33*:479.
6. Hata and Kojima. 1990. Exp. Parasitol. *70*:467.
7. Reduth, Schaub, and Pudney. 1989. Parasitology *98*:387.
8. Deutschmann and Jager. 1994. Enzyme Microb. Technol. *16*:506.
9. Munderloh and Kurtti. 1989. Exp. Appl. Acarol. *7*:219.
10. Prodafikas and Plavsic. 2000. Focus *22*:35.
11. Sakoda and Fukusho. 1998. In Vitro Cell Dev. Biol. Anim. *34*:53.
12. Horowitz (ed.). 2000. Official methods of analysis of AOAC International, 17th ed. AOAC International, Gaithersburg, Md.
13. U.S. Food and Drug Administration. 1995. Bacteriological analytical manual 8th ed. AOAC International, Gaithersburg, Md.
14. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.
15. U.S. Environmental Protection Agency (USEPA). 2000. Improved enumeration methods for the recreational water quality indicators: Enterococci and *Escherichia coli*. EPA-821/R-97/004. Office of Water, USEPA, Washington, D.C.
16. Clesceri, Greenberg and Eaton (ed.). 1998. Standard methods for the examination of water and wastewater, 20th ed. American Public Health Association, Washington, D.C.
17. U.S. Department of Agriculture. 1998. Microbiology laboratory guidebook, 3rd ed. Food and Safety Inspection Service, USDA, Washington, D.C.
18. U.S. Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. 1999. Biosafety in microbiological and biomedical laboratories, 4th ed. HHS Publication No. (CDC) 93-8395. U.S. Government Printing Office, Washington, D.C.

Availability

Bacto™ Tryptose

AOAC BAM COMPF EPA SMWW USDA

Cat. No.	211713	Dehydrated – 500 g
	211709	Dehydrated – 10 kg

T

Tryptose Blood Agar Base

Intended Use

Tryptose Blood Agar Base is used with blood in isolating, cultivating and determining the hemolytic reactions of fastidious microorganisms.

Summary and Explanation

Investigations of the nutritive properties of tryptose demonstrated that culture media prepared with this peptone were superior to the meat infusion peptone media previously used for the cultivation of *Brucella*, streptococci, pneumococci, meningococci and other fastidious bacteria. Casman[1,2] reported that a medium consisting of 2% tryptose, 0.3% beef extract, 0.5% NaCl, 1.5% agar and 0.03% dextrose equaled fresh beef infusion base with respect to growth of organisms. The small amount of carbohydrate was noted to interfere with hemolytic reactions, unless the medium was incubated in an atmosphere of carbon dioxide.

Tryptose Blood Agar Base is a nutritious infusion-free basal medium typically supplemented with 5-10% sheep, rabbit or horse blood for use in isolating, cultivating and determining hemolytic reactions of fastidious pathogenic microorganisms. Without enrichment, this base can be used as a general-purpose medium. Tryptose Blood Agar Base is included in the FDA *Bacteriological Analytical Manual* (pH adjusted to 6.8 ± 0.2).[3]

Principles of the Procedure

Tryptose is the source of nitrogen, carbon and amino acids in Tryptose Blood Agar Base. Beef extract provides additional nitrogen. Sodium chloride maintains osmotic balance. Agar is the solidifying agent.

Supplementation with 5-10% blood provides additional growth factors for fastidious microorganisms and is used to determine hemolytic patterns of bacteria.

Formula

Difco™ Tryptose Blood Agar Base

Approximate Formula* Per Liter

Tryptose	10.0	g
Beef Extract	3.0	g
Sodium Chloride	5.0	g
Agar	15.0	g

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

User Quality Control

Identity Specifications

Difco™ Tryptose Blood Agar Base

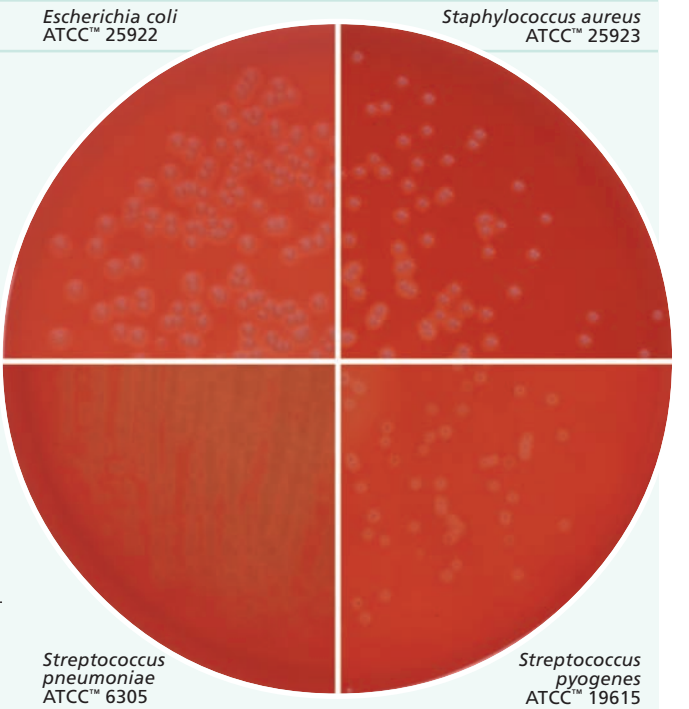
Dehydrated Appearance:	Beige, free-flowing, homogeneous.
Solution:	3.3% solution, soluble in purified water upon boiling. Solution is light amber, very slightly to slightly opalescent.
Prepared Appearance:	Plain – Light amber, slightly opalescent. With 5% sheep blood – Cherry red, opaque.
Reaction of 3.3% Solution at 25°C:	pH 7.2 ± 0.2

Cultural Response

Difco™ Tryptose Blood Agar Base

Prepare the medium per label directions without (plain) and with 5% sterile defibrinated sheep blood (SB). Inoculate and incubate at 35 ± 2°C for 18-48 hours (blood plates under 5-10% CO_2).

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY PLAIN	RECOVERY WITH SB	HEMOLYSIS 18-48 HR
Escherichia coli	25922	10^2-10^3	Good	Good	Beta
Neisseria meningitidis	13090	10^2-10^3	None to poor	Good	None
Staphylococcus aureus	25923	10^2-10^3	Good	Good	Beta
Streptococcus pneumoniae	6305	10^2-10^3	Fair to good	Good	Alpha
Streptococcus pyogenes	19615	10^2-10^3	Fair to good	Good	Beta



Directions for Preparation from Dehydrated Product

1. Suspend 33 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. To prepare blood agar, aseptically add 5% sterile defibrinated blood to the medium cooled to 45-50°C. Mix well.
5. Test samples of the finished product for performance using stable typical control cultures.

Procedure

1. Process each specimen as appropriate, and inoculate directly onto the surface of the medium. Streak for isolation with an inoculating loop, then stab the agar several times to deposit beta-hemolytic streptococci beneath the agar surface. Subsurface growth will display the most reliable hemolytic reactions of both oxygen-stable and oxygen-labile streptolysins.[4]
2. Incubate plates aerobically, anaerobically or under conditions of increased CO_2 (5-10%) in accordance with established laboratory procedures.
3. Examine plates for growth and hemolytic reactions after 18-24 and 48-hour incubation.

Expected Results

Four different types of hemolysis on blood agar media can be described:[5]

a. Alpha (α)-hemolysis is the reduction of hemoglobin to methemoglobin in the medium surrounding the colony. This causes a greenish discolorization of the medium.
b. Beta (β)-hemolysis is the lysis of red blood cells, resulting in a clear zone surrounding the colony.
c. Gamma (γ)-hemolysis indicates no hemolysis. No destruction of red blood cells occurs, and there is no change in the medium.
d. Alpha-prime (ὰ)-hemolysis is a small zone of complete hemolysis that is surrounded by an area of partial lysis.

Limitations of the Procedure

1. Blood Agar Base Media are intended for use with blood supplementation. Although certain diagnostic tests may be performed directly on this medium, biochemical and, if indicated, immunological testing using pure cultures are recommended for complete identification. Consult appropriate references for further information.
2. Hemolytic reactions of some strains of group D streptococci have been shown to be affected by differences in animal blood. Such strains are beta-hemolytic on horse, human and rabbit blood agar and alpha-hemolytic on sheep blood agar.[4]

3. Colonies of *Haemophilus haemolyticus* are beta-hemolytic on horse and rabbit blood agar, and must be distinguished from colonies of beta-hemolytic streptococci using other criteria. The use of sheep blood has been suggested to obviate this problem since sheep blood is deficient in pyridine nucleotides and does not support growth of *H. haemolyticus*.[6]
4. The atmosphere of incubation has been shown to influence hemolytic reactions of beta-hemolytic streptococci.[3] For optimal performance, incubate blood agar base media under increased CO_2 or anaerobic conditions.
5. Hemolytic patterns may vary with the source of animal blood or type of base medium used.[4]

References

1. Casman. 1942. J. Bacteriol. *43*:33.
2. Casman. 1947. Am. J. Clin. Pathol. *17*:281.
3. Harmon, Kautter, Golden and Rhodehamel. 1995. *In* FDA bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, Md.
4. Ruoff, Whiley and Beighton. 1999. *In* Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.
5. Isenberg. (ed.). 1992. Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.
6. Baron, Peterson and Finegold. 1994. Bailey & Scott's diagnostic microbiology, 9th ed. Mosby-Year Book, Inc., St. Louis, Mo.

Availability

Difco™ Tryptose Blood Agar Base

BAM

Cat. No.	223220	Dehydrated – 500 g
	223210	Dehydrated – 2 kg

Tryptose Agar • Tryptose Broth

Intended Use

Tryptose Agar is used for cultivating a wide variety of fastidious microorganisms, particularly for isolating *Brucella* according to Huddleson and Castañeda.

Tryptose Broth is used for cultivating *Brucella* and other fastidious microorganisms.

User Quality Control

Identity Specifications

Difco™ Tryptose Agar

Dehydrated Appearance:	Light beige, homogeneous, free-flowing.
Solution:	4.1% solution, soluble in purified water upon boiling. Solution is light amber, slightly opalescent.
Prepared Appearance:	Light amber, slightly opalescent.
Reaction of 4.1% Solution at 25°C:	pH 7.2 ± 0.2

Difco™ Tryptose Broth

Dehydrated Appearance:	Beige, homogeneous, free-flowing.
Solution:	2.6% solution, soluble in purified water. Solution is light amber, clear.
Prepared Appearance:	Light amber, clear.
Reaction of 2.6% Solution at 25°C:	pH 7.2 ± 0.2

Cultural Response

Difco™ Tryptose Agar or Tryptose Broth

Prepare the medium per label directions. Inoculate and incubate at 35 ± 2°C under 5-10% CO_2 for 40-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Brucella abortus	11192*	10^2-10^3	Good
Brucella melitensis	4309*	10^2-10^3	Good
Brucella suis	9843*	10^2-10^3	Good

**Minimally one strain of* Brucella *should be used for performance testing. These ATCC strains should be used if available.*

Summary and Explanation

Tryptose media, prepared without extract or infusion of meat, are recommended for the cultivation and isolation of pathogenic and saprophytic bacteria. Historically, it was considered necessary to include meat extract or infusion as a nutritional supplement in culture media. Tryptose was developed while studying the growth requirements of *Brucella*. Huddleson[1] found tryptose media to be equal or superior to meat infusion media, providing uniformity for the cultivation and differentiation of fastidious organisms.

Tryptose media are particularly well suited for the isolation of *Brucella* from blood. Castañeda[2] studied the isolation of *Brucella* species using a broth containing 2% tryptose and 2% sodium citrate. Sodium citrate serves as an anticoagulant and assists in inactivating complement in the blood specimen.

Tryptose Broth can be used as a complete basal medium or supplemented with enrichments. Huddleson[3] used a broth containing 2% tryptose as an enrichment medium in the isolation of *Brucella* from clinical specimens. McCullough et al. reported that addition of thiamine, dextrose and iron salts increased growth of *Brucella suis*.[4] Addition of 0.1% agar to Tryptose Broth can increase growth of aerobes and anaerobes in liquid media. Blood agar may be prepared by adding 5% sterile, defibrinated sheep, horse or rabbit blood to the sterile medium.

The high productivity of tryptose media in the isolation and cultivation of *Brucella* supports use of these formulas as general-purpose media, especially when avoidance of animal tissue products is desired. Tryptose Agar with 5% bovine serum, with or without antibiotics, remains a standard plating medium for the isolation of brucellae.[5] For isolation of *Brucella* stains from contaminated milk, crystal violet (gentian violet) can be added to Tryptose Agar to suppress gram-positive organisms.[6] Tryptose media can be supplemented with thiamine or citrate for the cultivation and maintenance of fastidious aerobic and facultative microorganisms.[7]

Tryptose Agar is specified in the *Compendium of Methods for the Microbiological Examination of Foods*.[8] Tryptose media are recommended in the FDA *Bacteriological Analytical Manual* for serological testing.[9]

Principles of the Procedure

Tryptose peptone is a source of nitrogen and carbon. Dextrose is a source of carbohydrate. Sodium chloride maintains osmotic balance. Agar is the solidifying agent in Tryptose Agar.

Formulae

Difco™ Tryptose Agar

Approximate Formula* Per Liter

Tryptose	20.0	g
Dextrose	1.0	g
Sodium Chloride	5.0	g
Agar	15.0	g

Difco™ Tryptose Broth

Consists of the same ingredients without the agar.

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

Precautions[10]

1. Biosafety Level 2 practices, containment equipment and facilities are recommended for activities with clinical specimens of human or animal origin containing or potentially containing pathogenic *Brucella* spp.
2. Biosafety Level 3 practices, containment equipment and facilities are recommended for all manipulations of cultures of the pathogenic *Brucella* spp. and for experimental animal studies.

Directions for Preparation from Dehydrated Product

Difco™ Tryptose Agar

1. Suspend 41 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. Test samples of the finished product for performance using stable, typical control cultures.

NOTE: To prepare blood agar, aseptically add 5% sterile defibrinated sheep, horse or rabbit blood. Dispense into sterile Petri dishes.

Difco™ Tryptose Broth

1. Dissolve 26 g of the powder in 1 L of purified water.
2. Autoclave at 121°C for 15 minutes.
3. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

Methodologies for the multiple applications using tryptose media are outlined in the references.

Expected Results

Refer to appropriate references and procedures for results.

Limitations of the Procedure

1. Tryptose media are general-purpose, non-selective media. Although certain diagnostic tests may be performed directly on the medium, biochemical and, if indicated, immunological testing using pure cultures are recommended for complete identification.
2. When preparing blood agar, hemolytic reactions of some strains of group D streptococci have been shown to be affected by differences in animal blood.
3. Atmosphere of incubation has been shown to influence hemolytic reactions of beta-hemolytic streptococci.[11] For optimal performance, incubate tryptose media supplemented with blood under increased CO_2 or anaerobic conditions.
4. Dextrose has been shown to inhibit hemolysin production by some organisms.

References

1. Huddleson. 1943. Brucellosis in man and animals, rev. ed. The Commonwealth Fund, New York, N.Y.
2. Castañeda. 1947. Proc. Soc. Exp. Biol. Med. *64*:114.
3. Huddleson. 1939. Brucellosis in man and animals. Oxford University Press, Oxford, England.
4. McCullough, Mills, Herbst, Roessler and Brewer. 1947. J. Bacteriol. *53*:5.
5. Moyer and Holcomb. 1995. *In* Murray, Baron, Pfaller, Tenover, and Yolken (ed.), Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
6. MacFaddin. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, Md.
7. Atlas. 1995. Handbook of microbiology media for the examination of food. CRC Press, Boca Raton, Fla.
8. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods. 4th ed. American Public Health Association, Washington, D.C.
9. U.S. Food and Drug Administration. 1995. Bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, Md.
10. U.S. Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. 1999. Biosafety in microbiological and biomedical laboratories, 4th ed. HHS Publication No. (CDC) 93-8395. U.S. Government Printing Office, Washington, D.C.
11. Ruoff, Whiley and Beighton. 1999. *In* Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.

Availability

Difco™ Tryptose Agar

BAM CCAM COMPF

Cat. No.	264300	Dehydrated – 500 g
	264100	Dehydrated – 2 kg

Difco™ Tryptose Broth

BAM CCAM COMPF

Cat. No.	262200	Dehydrated – 500 g
	262100	Dehydrated – 10 kg

Bacto™ Tryptose Phosphate Broth

Intended Use

Bacto Tryptose Phosphate Broth is used for cultivating fastidious microorganisms.

Summary and Explanation

Tryptose Phosphate Broth is an infusion-free buffered medium recommended for the cultivation of fastidious, pathogenic microorganisms. It can be used in a procedure for the serodiagnosis of *Listeria monocytogenes*.[1] It is valuable in tissue culture procedures,[2] where the peptone content is considered to be a stimulating factor for cells.

Principles of the Procedure

Peptone provides carbon and nitrogen. Dextrose is a carbon source. Sodium chloride maintains osmotic balance. Buffering capacity is provided by disodium phosphate.

The addition of 0.1-0.2% agar to Tryptose Phosphate Broth facilitates anaerobic growth and aids in dispersion of reducing substances and CO_2 formed in the environment.[3] The low agar concentration provides suitable conditions for both aerobic growth in the upper zone and for microaerophilic and anaerobic growth in the lower zone.

Formula

Bacto™ Tryptose Phosphate Broth

Approximate Formula* Per Liter		
Tryptose	20.0	g
Dextrose	2.0	g
Sodium Chloride	5.0	g
Disodium Phosphate	2.5	g

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

Directions for Preparation from Dehydrated Product

1. Dissolve 29.5 g of the powder in 1 L of purified water. (If a medium containing 0.1-0.2% agar is desired, add 1-2 g of agar; heat with frequent agitation and boil for 1 minute to completely dissolve the powder.)
2. Autoclave at 121°C for 15 minutes.
3. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

See appropriate references for specific procedures.

Expected Results

Refer to appropriate references and procedures for results.

User Quality Control

Identity Specifications

Bacto™ Tryptose Phosphate Broth

Dehydrated Appearance:	Beige, free-flowing, homogeneous.
Solution:	2.95% solution, soluble in purified water. Solution is light amber, clear to very slightly opalescent, may have a very slight precipitate.
Prepared Appearance:	Light amber, clear to very slightly opalescent, may have a very slight precipitate.
Reaction of 2.95% Solution at 25°C:	pH 7.3 ± 0.2

Cultural Response

Bacto™ Tryptose Phosphate Broth

Prepare the medium per label directions. Inoculate and incubate at 35 ± 2°C for 18-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY
Neisseria meningitidis	13090	10^2-10^3	Good
Staphylococcus epidermidis	12228	10^2-10^3	Good
Streptococcus pneumoniae	6305	10^2-10^3	Good
Streptococcus pyogenes	19615	10^2-10^3	Good

Uninoculated Tube

Streptococcus pneumoniae ATCC™ 6305

T

References

1. Bennett and Weaver. 1995. *In* FDA bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, Md.
2. Ginsberg, Gold and Jordan. 1955. Proc. Soc. Exp. Biol. Med. *89*:66.
3. MacFaddin. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, Md.

Availability

Bacto™ Tryptose Phosphate Broth

BAM

Cat. No.	260300	Dehydrated – 500 g
	260100	Dehydrated – 2 kg
	260200	Dehydrated – 10 kg

Tween™ 80 Water

Intended Use

Tween™* 80 Water may be used to restore and/or inoculate microdilution panels.

**Tween is a trademark of ICI Americas.*

Summary and Explanation

Tween 80 (polysorbate 80) is a surface active agent that is recommended for use at a 0.02% concentration in routine inoculum preparation and dispensing procedures in various microdilution systems.[1]

Principles of the Procedure

Tween 80 Water is a 0.02% concentration of polysorbate 80 in purified water that is convenient for use in dispersing microorganisms during inoculum preparation and for reconstituting antimicrobial agents in microdilution plates.

Procedure

Follow those procedures or test methods requiring the use of water with 0.02% polysorbate 80.

Reference

1. Thrupp. 1986. *In* Lorian (ed.), Antibiotics in laboratory medicine, 2nd ed. Williams & Wilkins, Baltimore, Md.

Availability

BBL™ Tween™ 80 Water

Cat. No.	297381	Prepared Tubes (D Tubes), 12.5 mL – Ctn. of 100
	296207	Prepared Tubes (A Tubes), 25 mL – Pkg. of 10
	296184	Prepared Tubes (A Tubes), 25 mL – Ctn. of 100

Tyrosine Agar

(See Nocardia Differentiation Media)