PRODUCT INFORMATION

Product Type: Bottle product:

Available in 18ml to 1800ml bottles, with septum cap or screw cap, with or out wrap (single and double wrap).

Cat No. BP266 - Tryptic Soy Broth

Application- Microbiological method.

Intended Use:

Tryptic Soy Broth used for cultivation of aerobic bacteria and fungi. (USP/EP/JP Compliance)

- This formulation is included in the USP/EP as a medium for use in performing microbial enumeration tests and tests for specified microorganisms when testing nonsterile pharmaceutical products.
- TSB was chosen by the USDA Animal and Plant Health Inspection Service for detecting viable bacteria in live vaccines.
- TSB is recommended for testing bacterial contaminants in cosmetics and complies with established standards in the food industry.
- Because of its capacity for growth promotion, TSB is also recommended for use as the inoculum broth for disc diffusion and agar dilution antimicrobial susceptibility testing as standardized by the Clinical and Laboratory Standards Institute (CLSI).

Principles And Explanation of the Procedure:

Tryptic Soy Broth (TSB) is a nutritious medium that will support the growth of a wide variety of microorganisms, especially common aerobic and facultatively anaerobic bacteria.[1,2] Because of its capacity for growth promotion, this formulation was adopted by The United States Pharmacopeia (USP) and the European Pharmacopeia (EP) as a sterility test medium.[3,4] In clinical microbiology, the medium is used in a variety of procedures, e.g., for the preparation of the inoculum and for suspending strains for disc diffusion susceptibility testing, and for the microbiological test procedure of culture media according to the CLSI standards.[5,6] However, un-supplemented Tryptic Soy Broth is not recommended as a primary enrichment medium directly inoculated with the clinical specimen but can be used for pure cultures previously isolated from clinical specimens. Enzymatic digests of casein and soybean provide amino acids and other complex nitrogenous substances. Glucose (=dextrose) is an energy source. Sodium chloride maintains the osmotic equilibrium. Dibasic potassium phosphate acts as a buffer to control pH.

Test Procedure

For application in clinical microbiology, inoculate the medium with the strain and incubate as required. Usually, an incubation temperature of 35 ± 2° C is adequate. Incubate for 18 to 24 h or longer if required. For use as a suspension medium, inoculate the tube with a small amount of growth from an overnight culture on a solid medium. For use in industrial microbiology, inoculate the sample or material to be tested into the medium. For use in sterility testing, consult the USP or EP for procedural details and specifications for volume of medium relative to container size.[3,4]

For all applications, it is important to provide sufficient aeration during incubation. Therefore, containers with this medium should be vented. Depending on the type of closure of the container, this can be achieved by slightly loosening the caps or by introducing a sterile injection needle plugged with sterile cotton wool into the septum of the cap. Alternatively, injection needles fitted with a membrane filter can be used.

Results
Growth in broth media is indicated by the presence of turbidity, specks, or flocculation in the medium while an uninoculated control remains clear and without turbidity after incubation. If the material tested causes turbidity of the medium, subcultures onto appropriate solid media must be performed after incubation to decide if the turbidity is caused by the material only or by microorganisms that have multiplied in the broth. Subcultures onto suitable solid media and biochemical and microscopic tests are necessary to determine the purity of the culture and for the identification of the isolated organisms.

Performance Characteristics and Limitations of the Procedure
Tryptic Soy Broth is a universal enrichment and isolation medium for many nonclinical procedures. [1,3,4]. In clinical microbiology, it is mainly used for suspending cultures for susceptibility tests and for the preparation of inocula in quality control test procedures.[5,6] Growth obtained in this medium must be subcultured onto appropriate solid media to obtain pure cultures which afterwards can be identified with methods appropriate for the isolates.

References

1. Marshall, R.T. (ed.). 1993. Standard methods for the examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
2. MacFaddin, J.F. 1985. Media for the isolation – cultivation – maintenance of medical bacteria. Volume 1. Williams and Wilkins, Baltimore, London
3. U.S. Pharmacopeial Convention, Inc. The U.S. Pharmacopeia /The national formulary Current edition. U.S. Pharmacopeial Convention, Inc., Rockville, Md
4. Council of Europe. European Pharmacopoeia, current edition. European Pharmacopoeia Secretariat. Strasbourg/France.
5. Clinical and Laboratory Standards Institute (CLSI, formerly NCCLS). Approved standard: M2. Performance standards for antimicrobial disk susceptibility tests. CLSI, Wayne, PA, USA. Search for latest version at www.clsi.org
6. Clinical and Laboratory Standards Institute (CLSI, formerly NCCLS). Approved standard: M22. Performance standards for antimicrobial disk susceptibility tests. CLSI, Wayne, PA, USA. Search for latest version at www.clsi.org

Composition:
Reagents Tryptic Soy Broth:
Tryptone (Pancreatic Digest of Casein) - 17.0 g/L
Soytone (Peptic Digest of Soybean) - 3.0g/L
Glucose (= Dextrose) - 2.5g/L
Sodium Chloride - 5.0g/L
Dipotassium Phosphate - 2.5g/L

Storage: 15-25 °C
pH: 7.3±0.2
Appearance: Uninoculated appearance Light amber to amber, clear, no precipitates
Shelf life: 12 months
Exp. Date: Printed on label and on the item.
Required materials not supplied: Laboratory equipment as required.

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Version Number: 02

Warning and Precautions:

Warning and Precautions - For professional use only. Follow good microbiological lab practices while handling specimens and culture. Do not use Bottles if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration. Avoid freezing and overheating. The Bottles may be used / inoculated up to the expiration date and incubated for the recommended incubation times. After use and prior to discarding, specimen containers and all contaminated material, including the used culture media and contaminated culture containers, must be sterilized or incinerated by validated procedures. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium.

Waste Disposal

After interpretation all items should be destroyed by standard incineration methods.

Performance Testing Results:

Test strains	Strain number	Incubation	Growth results
Aspergillus brasiliensis (=A. niger)	ATCC™ 16404	20-25° C, </= 5 days	Growth
Candida albicans	ATCC 10231	20-25° C, </= 5 days	Growth
Bacillus subtilis	ATCC 6633	20-25° C, </= 3 days and 30-35° C, </= 3 days	Growth
Pseudomonas aeruginosa	ATCC 9027	30-35° C, </= 3 days	Growth
Escherichia coli	ATCC 8739	30-35° C, 18-24 hours	Growth
Salmonella Typhimurium	ATCC 14028	30-35° C, 18-24 hours	Growth
Staphylococcus aureus	ATCC 6538	30-35° C, </= 3 days	Growth

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