Tryptic Soy Broth (Soybean-Casein Digest Broth) (NCM0004)

Intended Use
Tryptic Soy Broth (Soybean-Casein Digest Broth) is used for the cultivation of a wide variety of microorganisms. Tryptic Soy Broth conforms to Harmonized USP/EP/JP requirements and is not intended for use in the diagnosis of disease or other conditions in humans.

Description
Tryptic Soy Broth, a general purpose medium, is commonly referred to as Casein Soya Bean or Soybean-Casein Digest broth, and abbreviated as TSB. This medium was originally developed for use without blood in determining the effectiveness of sulfonamides against pneumococci and other organisms. Clostridia and non-sporulating anaerobes grow luxuriantly in this broth when incubated under anaerobic conditions. TSB is recommended for testing bacterial contaminants in cosmetics[5] and complies with established standards in the food industry. TSB was chosen by the USDA Animal and Plant Health Inspection Service for detecting viable bacteria in live vaccines.

TSB conforms to Harmonized United States Pharmacopoeia (USP), European Pharmacopoeia (EU), and Japanese Pharmacopoeia (JP). The rich nutritional base of TSB, supplemented with SPS and CO_2, is an excellent broth for blood cultures. With the addition of 6.5% NaCl, TSB can be used for the selective growth of group D streptococci.

Enzymatic Digest of Casein and Enzymatic Digest of Soybean Meal are nitrogen sources in TSB. Dextrose is the carbon energy source that facilitates organism growth. Sodium Chloride maintains osmotic balance; Dipotassium Phosphate is a buffering agent.

Formula / Liter

Enzymatic Digest of Casein	17.0 g/L
Enzymatic Digest of Soybean	3.0 g/L
Sodium Chloride	5.0 g/L
Dipotassium Hydrogen Phosphate	2.5 g/L
Glucose Monohydrate	2.5 g/L

Final pH: 7.3 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution
Refer to SDS

Preparation
1. Dissolve 30 g of the medium in one liter of purified water.
2. Mix thoroughly.
3. Autoclave at 121°C for 15 minutes.

Test Procedure
Refer to appropriate references for specific procedures using Tryptic Soy Broth.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is brilliant to clear, yellow to amber, with none to light precipitate.

Effective Date: 1/24/2019
Revision: 1

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Expected Cultural Response and USP/EP/JP Growth Promotion Testing: Cultural response in Tryptic Soy Broth tested at Harmonized USP/EP/JP specified temperatures and incubation times. precipitate.

Microorganism	Approx. Inoculum (CFU)	Incubation Period	Expected Growth
Aspergillus brasiliensis ATCC® 16404	10 – 100	Within 5 days	Growth
Bacillus subtilis ATCC® 6633	10 – 100	18 – 72 hours	Growth
Candida albicans ATCC® 10231	10 – 100	18 – 72 hours	Growth
Clostridium sporogenes ATCC® 19404	10 – 100	18 – 72 hours	Growth
Escherichia coli ATCC® 8739	10 – 100	18 – 24 hours	Growth
Pseudomonas aeruginosa ATCC® 9027	10 – 100	18 – 24 hours	Growth
Salmonella typhimurium ATCC® 14028	10 – 100	18 – 24 hours	Growth
Staphylococcus aureus ATCC® 6538	10 – 100	18 – 24 hours	Growth
Streptococcus pneumoniae ATCC® 6305	10 – 100	18 – 72 hours	Growth

The organisms listed are the minimum that should be used for Growth Promotion testing.

Results

Refer to appropriate references for test results. Growth is indicated by turbidity.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original pale to light beige. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

Due to nutritional variation, some strains may grow poorly or fail to grow on this medium.

References

1. European Pharmacopoeia 9th Edition (2017)
2. United States Pharmacopeia National Formulary 2017: USP 40 NF 35
3. Japanese Pharmacopeia 17th Edition (2017)
4. Curry, A. S., G. G. Joyce, and G. N. McEwen, Jr. 1993. CTFA Microbiology guidelines. The Cosmetic, Toiletry, and Fragrance Association, Inc. Washington, D.C.
5. www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalmanualBAM/default.htm.
6. Cunnif, P. 2016. Official methods of analysis AOAC International, 20th ed. AOAC International, Arlington, VA.
7. Federal Register. 1992. Detection of viable bacteria and fungi except in live vaccine. Fed. Regist. 21:113.26.

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