

Also known as

Casein Soya bean Digest Broth; TSB

Specification

Liquid high nutrient medium for general purpose use according to Pharmacopeial Harmonized Methods.

Formula * in g/L

Casein peptone	17.0
Soy peptone	3.0
Sodium chloride	5.0
Dipotassium phosphate	2.5
Dextrose	2.5

Final pH 7.3 ±0.2 at 25 °C

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

Directions

Dissolve 30 g of powder in 1 L of distilled water. Distribute in suitable containers and sterilize in the autoclave at 121°C for 15 minutes.

Description

The Tryptic Soy Broth was initially developed for the cultivation of very fastidious microorganisms without the addition of serum, blood or any other enrichment agent.

As a general purpose culture medium it supports the growth of most organisms, both aerob and facultative anaerobes, even if their requirements are high. Due to its high vitamin content *Brucella*, *Pasteurella* and *Streptococcus* are perfectly viable, moreover a CO₂ enriched atmosphere can further enhance growth.

In anaerobic conditions this broth will grow *Bacteroides* and *Clostridium species*. For this purpose, the best results can be obtained by adding 0.3% agar and 0.05% sodium azide for *Clostridium*.

Tryptic Soy Broth's superior growth-promoting properties make it particularly suitable for tube dilution methods for antibiotic sensitivity testing.

The broth can be used for bile solubility testing in pneumococci, and also used for catalase and coagulase assays and for the preparation of hypersaline broths.

It is a most suitable medium for the preparation of antigens and toxins in bacteria, moulds and yeasts.

TSB is used as a primary enrichment medium for food examination. In the dairy industry it is employed for testing resazurine reduction.

The medium is not suitable for maintenance purposes since carbohydrate fermentation liberates many acids which may threaten the organism's viability. Therefore, though it allows the growth of streptococci and *Neisseria*, these species tend to die if repeatedly sub-cultured in this medium. Such fastidious organisms are best maintained on Cystine Tryptone Fluid Medium (CTA) or even TSA.

Quality control

Incubation temperature: 30-35°C **Incubation time:** 18-72h / ≤ 5 d

Inoculum: Practical range 10-100 CFU. Min. 50 CFU (productivity), according to Ph. Eur.

Microorganism	Growth	Remarks
<i>Bacillus subtilis</i> ATCC® 6633	Good	-
<i>Staphylococcus aureus</i> ATCC® 6538	Good	-
<i>Escherichia coli</i> ATCC® 8739	Good	-
<i>Pseudomonas aeruginosa</i> ATCC® 9027	Good	-
<i>Salmonella typhimurium</i> ATCC® 14028	Good	-
<i>Aspergillus brasiliensis</i> ATCC® 16404	Good	≤ 5 days
<i>Candida albicans</i> ATCC® 10231	Good	≤ 5 days

References

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- EUROPEAN PHARMACOPOEIA 8.0 (2014) 8th ed. § 2.6.13. Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. EDQM. Council of Europe. Strasbourg.
- FDA (Food and Drug Administrations) (1998) Bacteriological Analytical Manual. 8th ed. Revision A. AOAC International. Gaithersburg. MD.
- HORWITZ, W. (2000) Official Methods of Analysis of AOAC INTERNATIONAL. 17th ed. Gaithersburg. MD. USA.
- ISO 11133:2014. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- ISO 9308-1 Standard (2000) Water Quality. Detection and enumeration of E. coli and coliform bacteria. Membrane filtration method.
- PASCUAL ANDERSON, M^aR^a (1992) Microbiología Alimentaria. Díaz de Santos S.A., Madrid.
- USP 33 - NF 28 (2011) <62> Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. USP Corp. Inc. Rockville. MD. USA.
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Storage

Keep tightly closed, away from light, in a dry place (4-30 °C).