



## TRYPTIC SOY BROTH (7164)

### **Intended Use**

**Tryptic Soy Broth** is used for the cultivation of a wide variety of microorganisms. Tryptic Soy Broth conforms to Harmonized USP/EP/JP Requirements.<sup>1,2,3</sup>

### **Product Summary and Explanation**

Tryptic Soy Broth, a general purpose medium, is commonly referred to as Soybean-Casein Digest Medium, and abbreviated as TSB. This medium was originally developed for use without blood in determining the effectiveness of sulfonamides against pneumococci and other organisms.<sup>4</sup> Clostridia and non-sporulating anaerobes grow luxuriantly in this broth when incubated under anaerobic conditions. TSB is recommended for testing bacterial contaminants in cosmetics<sup>5</sup> and complies with established standards<sup>6,7</sup> in the food industry. TSB was chosen by the USDA Animal and Plant Health Inspection Service for detecting viable bacteria in live vaccines.<sup>8</sup>

Tryptic Soy Broth is recommended by the National Committee for Clinical Laboratory Standards (NCCLS)<sup>9</sup> for inoculum preparation in disk diffusion sensitivity tests. TSB conforms to Harmonized United States Pharmacopoeia (USP), European Pharmacopoeia (EU), and Japanese Pharmacopoeia (JP).<sup>1,2,3</sup> The rich nutritional base of TSB, supplemented with SPS and CO<sub>2</sub>, is an excellent broth for blood cultures in clinical applications.<sup>10</sup> With the addition of 6.5% NaCl, TSB can be used for the selective growth of group D streptococci.

### **Principles of the Procedure**

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
Enzymatic Digest of Soybean Meal .....	3.0 g
Sodium Chloride .....	5.0 g
Dipotassium Phosphate .....	2.5 g
Dextrose.....	2.5 g

Final pH: 7.3 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### **Precautions**

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

### **Directions**

1. Dissolve 30 g of the medium in one liter of purified water.
2. Heat with frequent agitation to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.

### **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.

**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.<sup>1,2,3</sup>

Microorganism	Approx. Inoculum (CFU)	Expected Growth
<i>Aspergillus niger</i> ATCC® 16404	10 - 100	Growth
<i>Bacillus subtilis</i> ATCC® 6633	10 - 100	Growth
<i>Bacteroides vulgatus</i> ATCC® 8482	10 - 100	Fair to excellent growth
<i>Candida albicans</i> ATCC® 10231	10 - 100	Growth
<i>Clostridium sporogenes</i> ATCC® 11437	10 - 100	Growth
<i>Escherichia coli</i> ATCC® 25922	10 - 100	Good to excellent growth
<i>Micrococcus luteus</i> ATCC® 9341	10 - 100	Growth
<i>Neisseria meningitidis</i> ATCC® 13090	10 - 100	Poor to good growth
<i>Pseudomonas aeruginosa</i> ATCC® 9027	10 - 100	Growth
<i>Staphylococcus aureus</i> ATCC® 25923	10 - 100	Good to excellent growth
<i>Staphylococcus aureus</i> ATCC® 6538	10 - 100	Growth
<i>Staphylococcus epidermidis</i> ATCC® 12228	10 - 100	Fair to excellent growth
<i>Streptococcus pneumoniae</i> ATCC® 6305	10 - 100	Fair to excellent growth
<i>Streptococcus pyogenes</i> ATCC® 19615	10 - 100	Good to excellent growth

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

### **Test Procedure**

Refer to appropriate references for specific procedures using Tryptic Soy Broth.<sup>1,2,3,4-9</sup>

### **Results**

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

### **Storage**

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed..

### **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.

### **Packaging**

Tryptic Soy Broth	Code No.	7164A	500 g
		7164B	2 kg
		7164C	10 kg

### **References**

1. **United States Pharmacopeial Convention.** 2007. The United States pharmacopeia, 31<sup>st</sup> ed., Amended Chapters 61, 62, 111. The United States Pharmacopeial Convention, Rockville, MD.
2. **Directorate for the Quality of Medicines of the Council of Europe (EDQM).** 2007. The European Pharmacopoeia, Amended Chapters 2.6.12, 2.6.13, 5.1.4, Council of Europe, 67075 Strasbourg Cedex, France.
3. **Japanese Pharmacopoeia.** 2007. Society of Japanese Pharmacopoeia. Amended Chapters 35.1, 35.2, 7. The Minister of Health, Labor, and Welfare.
4. **McCullough, N. B.** 1949. Laboratory tests in the diagnosis of brucellosis. Amer. J. of Public Health. **39**:866-869.

5. **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.
6. **U.S. Food and Drug Administration.** 1995. Bacteriological analytical manual, 8<sup>th</sup> ed. AOAC International, Gaithersburg, MD.
7. **Cunnif, P.** 1995. Official methods of analysis AOAC International, 16<sup>th</sup> ed. AOAC International, Arlington, VA.
8. **Federal Register.** 1992. Detection of viable bacteria and fungi except in live vaccine. Fed. Regist. **21**:113.26.
9. **National Committee for Clinical Laboratory Standards.** 1994. Performance standards for antimicrobial disk susceptibility tests, M2-A5, vol.13, No.24. National Committee for Clinical Laboratory Standards, Villanova, PA.
10. **Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Tenover (eds).** 1995. Manual of clinical microbiology, 6<sup>th</sup> ed. American Society for Microbiology, Washington, D.C.

### **Technical Information**

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.



---

620 Leshar Place, Lansing MI 48912  
517/372-9200 • 800/783-3212 • fax: 800/875-8563  
neogen-info@neogen.com • www.neogen.com