TRYPTIC SOY AGAR (7100)

Intended Use

Tryptic Soy Agar is used for the cultivation of a wide variety of microorganisms. Tryptic Soy Agar conforms with the formula specified in the US Pharmacopeia, USP.[1]

Product Summary and Explanation

In 1955, Leavitt et al.[2] discovered Tryptic Soy Agar (TSA) facilitated vigorous growth of aerobic and anaerobic microorganisms. TSA, a general purpose medium, is commonly referred to as Soybean-Casein Digest Agar USP 23. TSA is a nutritious base, and a variety of supplements can be added to enhance this medium. The addition of 5% sterile, defibrinated sheep, horse, or rabbit blood provides an excellent non-selective medium, used to determine hemolytic reactions of bacteria. TSA supplemented with lecithin and Tween 80® is widely used in environmental monitoring.[3]

TSA is recommended in multiple water & wastewater applications,[4] and numerous standard methods for food testing.[5] Clinically, TSA is used in the differentiation of Haemophilus species (the X and V factors are omitted from this medium), and widely used for blood cultures. TSA is commonly used as a maintenance medium for culture collections, and testing bacterial contaminants in cosmetics.[6]

Principles of the Procedure

Enzymatic Digest of Casein and Enzymatic Digest of Soybean Meal provide the nitrogen, vitamins and carbon in TSA. Sodium Chloride maintains osmotic balance in the medium. Agar is the solidifying agent.

Formula / Liter

Enzymatic Digest of Casein ..... 15 g
Enzymatic Digest of Soybean Meal ..... 5 g
Sodium Chloride ..... 5 g
Agar ..... 15 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. Suspend 40 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Prepare 5 to 10% blood agar by adding appropriate volume of sterile defibrinated blood to melted sterile agar medium, cooled to 45 – 50°C .

Quality Control Specifications

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

Prepared Appearance: Prepared medium without enrichment is clear to slight hazy, yellow beige in color, and free of sediment. Prepared medium with 5% sheep blood is red and opaque.

Expected Cultural Response: Cultural response in TSA at 35°C after 18 - 24 hours incubation.

Microorganism	Response	Reactions
Escherichia coli ATCC® 25922	growth	--
Staphylococcus aureus ATCC® 25923	growth	beta hemolysis
Streptococcus pneumoniae ATCC® 6305	growth	alpha hemolysis
Streptococcus pyogenes ATCC® 19615	growth	beta hemolysis

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure
Refer to appropriate references for specific procedures using TSA.[1,3-6]

Results
Refer to appropriate references for test results.

Storage
Store sealed bottle containing the dehydrated medium at 2 - 30°C . Once opened and recapped, place the 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 it is not free flowing, or if medium has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure
Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

Tryptic Soy Agar	**Code No.**	**7100A**	**500 g**
		7100B	**2 kg**
		7100C	**10 kg**

References

1. **United States Pharmacopeial Convention.** 1995. The United States pharmacopeia, 23rd ed. The United States Pharmacopeial Convention, Rockville, MD.
2. **Leavitt, J. M., I. J. Naidorf and P. Shugaevsky.** 1955. The undetected anaerobe in endodontics: a sensitive medium for detection of both aerobes and anaerobes. The NY J. Dentist. **25**:377-382.
3. **Orth, D. S.** 1993. Handbook of cosmetic microbiology. Marcel Dekker, Inc., New York, NY.
4. **Greenberg, A. E., L. S. Clesceri, and A. D. Eaton (eds.).** 1995. Standard methods for the examination of water and wastewater, 19th ed. American Public Health Association, Washington, D.C.
5. **U.S. Food and Drug Administration.** Bacteriological analytical manual, 8thed., AOAC International, Gaithersburg, MD.
6. **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.

Technical Information
Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (410)780-5120 or fax us at (410)780-5470.