SCHAEDLER BROTH (7154)

Intended Use
Schaedler Broth is used for the cultivation of anaerobic microorganisms.

Product Summary and Explanation
Anaerobic bacteria cause a variety of human infections including endocarditis, meningitis, wound infections following bowel surgery or trauma, and bacteremia.[1,2] Survival of anaerobic bacteria is dependent on their sensitivity to oxygen, nutritional requirements, appropriate collection, culture medium, and incubation time and temperature.[3] Schaedler Broth is suitable for standard procedures used in cultivating anaerobic bacteria.[3-5]

Schaedler Broth is prepared according to the formulation described by Schaedler, Dubos, and Costello,[6] and modified by Mata, Carrillo, and Villatoro.[7] Modifications include reduced dextrose to avoid interference with hemolytic reactions, reduced yeast extract to avoid darkening of the medium, and adjusted sodium chloride and nitrogen concentrations.

Stalons, Thornsberry, and Dowell evaluated nine broth media in varied carbon dioxide atmospheres for their ability to support growth of anaerobic bacteria.[8] Schaedler Broth in an atmosphere of 5%CO_2, 10% hydrogen, and 85% nitrogen exhibited the fastest and highest growth response.

Principles of the Procedure
Enzymatic Digest of Casein, Enzymatic Digest of Soybean Meal, Enzymatic Digest of Animal Tissue, and Yeast Extract provide vitamins, nitrogen, and amino acids in Schaedler Broth. Dextrose is a carbon source. Sodium Chloride maintains the osmotic balance of the medium. Tris (hydroxymethyl) Aminomethane and Dipotassium Phosphate are used to buffer the medium. Hemin (X factor) stimulates organism growth. L-Cystine is a reducing agent.

Formula / Liter
Enzymatic Digest of Casein	5.6 g
Enzymatic Digest of Soybean Meal	1 g
Enzymatic Digest of Animal Tissue	5 g
Yeast Extract	5 g
Sodium Chloride	1.7 g
Potassium Phosphate	0.82 g
Dextrose	5.82 g
Tris (hydroxymethyl) Aminomethane	3 g
Hemin	0.01 g
L-Cystine	0.4 g

Final pH: 7.6 ± 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 28.4 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.

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

Prepared Appearance: Prepared medium is amber and clear to light haze.

Expected Cultural Response: Cultural response in Schaedler Broth at 35°C after 18 - 72 hours of incubation.

Microorganism	Response
Bacteroides fragilis ATCC® 25285	growth
Clostridium perfringens ATCC® 13124	growth

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

Test Procedure

For a complete discussion of aerobic and anaerobic bacteria from clinical specimens, refer to appropriate procedures outlined in the references.[3-5] Refer to standard methods for the examination of bacteria in food.[9,10]

Results

Refer to appropriate references for results.

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 container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

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

Packaging

Schaedler Broth	**Code No.**	**7154A**	**500 g**
		7154B	**2 kg**
		7154C	**10 kg**

References

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4. **Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.).** 1995. Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
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6 **Schaedler, R. W., R. Dubos, and R. Costello.** 1965. The development of the bacterial flora in the gastrointestinal tract of mice. J. Exp. Med. **122:**59.
7. **Mata, L. J., C. Carrillo, and E. Villatoro.** 1969. Fecal microflora in healthy persons in the preindustrial region. Appl. Microbiol. **17:**596.
8. **Stalons, D. R., C. Thornsberry, and V. R. Dowell, Jr.** 1974. Effect of culture medium and carbon dioxide concentration on growth of anaerobic bacteria commonly encountered in clinical specimens. Appl. Microbiol. **27:**1098-1104.
9 **Association of Official Analytical Chemists.** 1995. Bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, MD.
10. **Vanderzant, C., and D. F. Splittstoesser (eds.).** 1992. Compendium of methods for the microbiological examination of food, 3rded. American Public Health Association, 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.

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