



TRYPTIC SOY BROTH, MODIFIED with ACID DIGEST OF CASEIN (7167)

Intended Use

Tryptic Soy Broth, Modified with Acid Digest of Casein is used for the selective enrichment of enterohemorrhagic *E. coli* in foods in a laboratory setting. Tryptic Soy Broth, Modified with Acid Digest of Casein is not intended for use in the diagnosis of disease or other conditions in humans. Conforms to USDA Formulation¹ with Acid Digest of Casein.

Product Summary and Explanation

The first major outbreak of *E. coli* O157:H7 was in 1982, and traced to contaminated hamburgers.² Other known sources of infection include sprouts, lettuce, salami, unpasteurized milk, juice and/or swimming in or drinking contaminated water.³ Tryptic Soy Broth, Modified with Acid Digest of Casein is used to enrich food samples suspected of having low levels of EHEC during pathogen testing.^{1,4,5}

Principles of the Procedure

Enzymatic Digest of Casein, Acid Digest of Casein, and Enzymatic Digest of Soybean Meal provide nitrogen, vitamins and minerals to stimulate growth in Tryptic Soy Broth Modified with Acid Digest of Casein. Sodium Chloride maintains the osmotic balance of the medium. Dipotassium Phosphate is the buffering agent. Dextrose is the carbon energy source. Bile Salts No. 3 and Novobiocin (added where indicated by the procedure requirements) are used as selective agents to inhibit bacterial growth.

Formula / Liter

| | |
|---------------------------------------|--------|
| Enzymatic Digest of Casein..... | 17.0 g |
| Acid Digest of Casein | 10.0 g |
| Sodium Chloride | 5.0 g |
| Dipotassium Phosphate..... | 4.0 g |
| Enzymatic Digest of Soybean Meal..... | 3.0 g |
| Dextrose..... | 2.5 g |
| Bile Salts No. 3 | 1.5 g |

Final pH: 7.3 ± 0.2 at 25°C

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

Precaution

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

Directions

1. Suspend 43 grams of the medium in 1000 mL of purified water.
2. Autoclave at 121°C for 15 minutes.
3. If required, add filter sterilized Novobiocin solution at desired concentration (adjusted for 100% potency).

Quality Control Specifications

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

Prepared Appearance: Prepared medium clarity is clear to lightly hazy with no to light precipitate, and light to medium amber.

Expected Cultural Response: Tryptic Soy Broth Modified with Acid Digest of Casein was inoculated with the test organisms listed below. These organisms were incubated at the appropriate atmosphere and temperature and examined for growth after 18 – 22 hours.

| Microorganism | Approx. Inoculum (CFU) | Growth |
|-------------------------------------|------------------------|--------|
| <i>Escherichia coli</i> ATCC® 25922 | 10 - 300 | Growth |



| | | |
|---|----------|--------|
| <i>Escherichia coli</i> ATCC® 11775 | 10 - 300 | Growth |
| <i>Escherichia coli</i> ATCC® 35150 | 10 - 300 | Growth |
| <i>Escherichia coli</i> ATCC® 43888 | 10 - 300 | Growth |
| <i>Escherichia coli</i> ATCC® 43889 | 10 - 300 | Growth |
| <i>Escherichia coli</i> ATCC® 43895 | 10 - 300 | Growth |
| <i>Pseudomonas aeruginosa</i> ATCC® 27853 | 10 - 300 | Growth |

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

Test Procedure

Refer to appropriate references for specific procedures on the recovery of pathogenic *E. coli*.

Results

Refer to appropriate references for test results on the detection and enumeration of pathogenic *E. coli*.

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 appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

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

Packaging

Tryptic Soy Broth, Modified with Acid Digest of Casein

| | | |
|-----------------|--------------|--------------|
| Code No. | 7167A | 500 g |
| | 7167B | 2 kg |
| | 7167C | 10 kg |

References

1. **USDA.** 2013. Food Safety and Inspection Service, Media and Reagents, MLG Appendix 1.08, USDA/FSIS Microbiology Laboratory Guidebook, Washington D.C.
2. **U.S. FDA.** Center for Food Safety & Applied Nutrition. 2001. Food pathogenic microorganisms and natural toxins handbook. *Escherichia coli* O157:H7. College Park, MD
3. http://www.cdc.gov/ncidod/abmd/diseaseinfo/escherichiacoli_g.htm.
4. **Hill, W.E., A. R. Datta, P. Feng, K. A. Lampel, and W. L. Payne.** 1998. FDA Bacteriological analytical manual, 8th ed. Identification of Foodborne Bacterial Pathogens by Gene Probes. AOAC International, Gaithersburg, MD.
5. www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalManualBAM/default.htm.

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.