COOKED MEAT MEDIUM (7110)

Intended Use
Cooked Meat Medium is used for the cultivation of anaerobic microorganisms.

Product Summary and Explanation
In 1890, Smith used fresh unheated animal tissue for cultivating anaerobic organisms.[1] Tarozzi confirmed Smith's findings and discovered meat broth could be heated to 104 – 105°C for 15 minutes without destroying nutrients.[2] A steam sterilized emulsion of brain tissue in water was employed by von Hibler.[3,4] von Hibler found organisms in cooked brain broth were less susceptible to harmful effects of toxic metabolic products than in carbohydrate serum media.[3,4] Robertson substituted beef heart for brain tissue and Cooked Meat Medium is prepared according to this formula.[5]

Cooked Meat Medium initiates growth from a small inoculum, important for clinical specimens. Cooked Meat Medium is recommended in standard methods for food testing.[6,7] Cooked Meat Medium provides an effective maintenance medium. This medium can be used to differentiate saccharolytic from proteolytic *Clostridium* spp.[8] Saccharolytic species rapidly form acid and gas without digesting meat. Proteolytic species break down meat to amino acids and form sulfur compounds (blackening and putrid smell).

Principles of the Procedure
The nitrogen, vitamin, and carbon sources are provided by Enzymatic Digest of Animal Tissue and Beef Heart. The low concentration of Dextrose is sufficient as the energy source, but not high enough to accumulate toxic metabolites. Sodium Chloride maintains the osmotic balance. Solid meat particles provide favorable growth conditions for anaerobes due to reducing action of -SH (sulfhydryl) groups of muscle protein.[2-4] Sulfhydryl groups are more accessible in denatured proteins, therefore use of cooked meat particles is preferred.[8]

Formula / Liter
Beef Heart..... 454 g
Enzymatic Digest of Animal Tissue ..... 20 g
Dextrose..... 2 g
Sodium Chloride ..... 5 g
Final pH: 7.2 ± 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. Place 1.25 g of meat granules into a test tube and add 10 mL of purified water.
2. Autoclave at 121°C for 15 minutes.

Quality Control Specifications
Dehydrated Appearance: Medium is dehydrated brown pellets.

Prepared Appearance: Prepared medium is clear solution over brown pellets, medium gold/amber solution.

Expected Cultural Response: Growth supporting properties as 10% Solution:

Microorganism	Expected Results
Clostridium novyi ATCC® 7659	Growth
Clostridium perfringens ATCC® 13124	Growth
Clostridium sporogenes ATCC® 11437	Growth
Enterococcus faecalis ATCC® 29212	Growth
Escherichia coli ATCC® 25922	Growth
Staphylococcus aureus ATCC® 25923	Growth
Streptococcus pneumonia ATCC® 6305	Growth

Note: Testing performed with autoclaved liquid from aqueous mixture containing 10% (w/v) of Cooked Meat Medium.

Test Procedure

Inoculate specimen deep into meat particles (bottom of the tube). Tissue specimens should be ground prior to inoculation. For a complete discussion on the isolation and identification of aerobic and anaerobic bacteria, refer to appropriate procedures.

Results

Typically growth is visually observed in media by turbidity and/or presence of gas bubbles.

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 the appearance has changed from the original color or texture. 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

Cooked Meat Medium	**Code No.**	**7110A**	**500 g**
		7110B	**2 kg**
		7110C	**10 kg**

References

1. **Smith, T.** 1890. Centr. Bakteriol. **7**:509.
2. **Tarozzi, G.** 1905. Uber ein leicht in aerober Weise ausfuhrbares Kulturmittel von einigen bis jetzt fuu strenge Anaroben gehlatenen Keimen. Zentralb. Bakteriol. **38**:619.
3. **von Hibler, E.** 1899. Beitrage zur Kenntnis der durch anaerobe Spaltpilze erzeugen Infektions-Krankheitender Tiere und des Menschen etc. Centr. Bakteriol. **25**:513, 594, 631.
4. **von Hibler, E.** 1908. Untersuchungen uber die pathogenen Anaerobier, Jena: Verlag Fischer.
5. **Robertson, M.** 1916. Notes upon certain anaerobes isolated from wounds. J. Pathol. Bacteriol. **20:**327.
6. **Food and Drug Administration.** Bacteriological analytical manual, 8th ed., AOAC International, Gaithersburg, MD.
7. **Vanderzant, C., and D. F. Splittstoesser (eds.).** 1992. Compendium of methods for the microbiological examination of food, 3r ed. American Public Health Association, Washington, D.C.
8. **MacFaddin, J. F.** 1985. Media for isolation-cultivation-identification maintenance of medical bacteria, vol.1, p. 755-762. Williams & Wilkins, Baltimore, MD.

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.

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