



PRODUCT SPECIFICATION SHEET

Cooked Meat Medium / R.C. Medium (DM248)

Intended Use

Cooked Meat Medium/R.C. Medium (DM248) 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 decompose sugars to form butyric and acetic acids and alcohols. The meat in Robertsons Medium is reddened and gas is produced without digesting meat. Proteolytic species break down meat to amino acids. Meat in Robertsons medium is blackened and decomposed to form sulfur compounds leading to blackening and a putrid smell.

The mesophilic spore-forming anaerobes are of primary importance in the spoilage of low acid foods packed in sealed containers, due to their high heat resistance, their ability to grow in the absence of oxygen and a growth range which covers the temperature of normal storage of canned and other processed foods including the refrigerated storage of cured meats. FDA has recommended this medium for enumeration and identification of *Clostridium perfringens* from foods.^(6,10)

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⁾ For best results, medium should be used on the day it is prepared, otherwise it should be boiled or steamed for a few minutes and allowed to cool without agitation and then inoculated.

Formula / Liter

Ingredients	Gms / Litre
Beef Heart	454.00
Enzymatic Digest of Animal Tissue	20.00
Dextrose	2.00
Sodium Chloride	5.00
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 only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.



PRODUCT SPECIFICATION SHEET

Directions

1. Place 1.25 g of meat granules into a test tube and add 10 mL of purified/distilled water. (Or add 12.5g in 100mL/D/W)
2. Mix thoroughly and allow to stand for 15 minutes until all the particles are thoroughly wetted.
3. Autoclave at 121°C for 15 minutes.

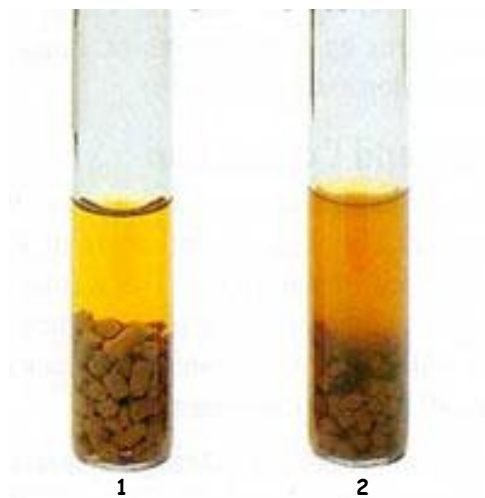
Quality Control Specifications

Dehydrated Appearance	Brown granules or particles
Solution	12.5% Solution in Distilled or deionized water is medium amber colored, and clear with insoluble granules.
Prepared Medium	Clear medium amber supernatant over insoluble granules at the base of the test tube
Reaction of 12.5% Solution	pH 7.2 ± 0.2 at 25°C
Gel Strength	Not Applicable

Expected Cultural Response: Cultural response in Cooked Meat Medium at 35-37°C after 48 - 72 hours incubation.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Clostridium botulium</i> ATCC 25763	50-100	luxuriant
2.	<i>Clostridium perfringens</i> ATCC 12924	50-100	luxuriant
3.	<i>Clostridium sporogenes</i> ATCC 11437	50-100	luxuriant
4.	<i>Streptococcus pneumonia</i> ATCC 6303	50-100	luxuriant
5.	<i>Enterococcus faecalis</i> ATCC 29212	50-100	luxuriant

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



Cooked Meat Medium (DM248)

1. Control, uninoculated tube
2. *Clostridium sporogenes* ATCC 11437

Test Procedure



PRODUCT SPECIFICATION SHEET

1. For anaerobic cultures, inoculate specimen deep into meat particles (bottom of the tube). Aerobes grow at the top whilst more anaerobic species grow deeper in the medium.
2. For the isolation of *Clostridium* from food, tissue specimens should be ground prior to inoculation or use a stomacher to prepare 10% suspension of the food in Peptone Water (DM192) diluent.
3. Make dilutions and plate, both suspensions and dilutions on Willis and Hobbs Medium Base (DM1455), Tryptose Sulphite Cycloserine (T.C.S.) Agar Base (DM566). Place a metronidazole disc on the inoculum.
4. Incubate anaerobically at 37°C overnight. To count the clostridia, pour the plates with the dilutions on Perfringens Agar Base (O.P.S.P.) (DM623).
5. Incubate duplicate plates aerobically and anaerobically to distinguish between clostridia and other organisms.
6. Add some of the suspension to two tubes of Cooked Medium. Heat one tube for 10 min at 80°C and incubate as above. Growth of clostridia is visualized as turbidity or gas bubbles. This medium can be further tested for presence of *Clostridium* (5).
7. For a complete discussion on the isolation and identification of aerobic and anaerobic bacteria, refer to appropriate procedures.

Results

In the cultivation of clostridia, saccharolytic organisms usually produce acid and gas. Growth of proteolytic organisms is generally characterized by blackening and dissolution of the meat particles.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the 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 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

Product Name : Cooked Meat Medium

Product Code : DM248

Available Pack sizes : 100gm / 500gm

References

1. Smith, T. 1890. Centr. Bakteriologie. 7:509.
 2. Tarozzi, G. 1905. Über ein leicht in aerober Weise ausführbares Kulturmittel von einigen bis jetzt für strenge Anaeroben gebliebenen Keimen. Zentralb. Bakteriologie. 38:619.
 3. Von Hibler, E. 1899. Beiträge zur Kenntnis der durch anaerobe Spaltpilze erzeugten Infektions-Krankheitender Tiere und des Menschen etc. Centr. Bakteriologie. 25:513, 594, 631.
 4. von Hibler, E. 1908. Untersuchungen über 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. 1995. 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, 3rd 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.
-



PRODUCT SPECIFICATION SHEET

9. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Tenenbaum R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
10. U. S. Food and Drug Administration, 1984, Bacteriological Analytical Manual, 6th Ed., AOAC, Arlington, Va.
11. Collins C. H., Lyne P. M., Grange J. M., 1985, 7th Ed., Microbiological Methods.

Further Information

For further information please contact your local MICROMASTER Representative.


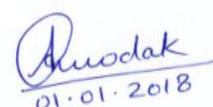



MICROMASTER LABORATORIES PRIVATE LIMITED

DM248PSS,QAD/FR/024,Rev.00/01.01.2018

Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall', Thane (W) - 400607. M.S. INDIA.
Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.

Email: micromaster@micromasterlab.com
sales@micromasterlab.com

Prepared By	Checked By	Approved By
 01.01.2018	 01.01.2018	 01.01.2018
Microbiologist	Head Quality Control	Head Quality Assurance

Disclaimer :

All Products conform exclusively to the information contained in this and other related Micromaster Publications. Users must ensure that the product(s) is appropriate for their application, prior to use. The information published in this publication is based on research and development work carried out in our laboratory and is to the best of our knowledge true and accurate. Micromaster Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are intended for laboratory, diagnostic, research or further manufacturing use only and not for human or animal or therapeutic use, unless otherwise specified. Statements included herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.