

PRODUCT SPECIFICATION SHEET



Deoxycholate Lactose Agar (DM077)

Intended Use

Deoxycholate Lactose Agar (DM077) is recommended for isolation and enumeration of coliforms in water, wastewater, milk and dairy products.

Product Summary and Explanation

Desoxycholate Lactose Agar is a modification of Desoxycholate Agar formulated by Leifson⁽¹⁾ and is prepared according to formula specified in Standard Methods for Examination of Dairy Products⁽²⁾ Water and Waste Water⁽³⁾ and Food⁽⁴⁾ for the detection of coliform bacilli. His original medium demonstrated improved recovery of intestinal pathogens from specimens containing normal intestinal flora by using citrates and sodium desoxycholate in specified amounts as inhibitors to gram-positive bacteria. Standard methods manuals for dairy and water specified a modification of Desoxycholate Agar to contain less sodium desoxycholate and, accordingly, be less inhibitory to gram-positive bacteria. This formulation, known as Desoxycholate Lactose Agar, was used in pour plate procedures for isolation and enumeration of coliforms in milk, water and other specimens. A thin layer of additional agar can be poured over the solidified pour plates to facilitate enumeration.

Principles of the Procedure

Deoxycholate Lactose Agar contains peptone which provides nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. Sodium desoxycholate and sodium citrate inhibit growth of gram-positive bacteria. Neutral red is a pH indicator. Lactose also helps in differentiating enteric bacilli as lactose fermenters which degrades the lactose causing acidification of the medium and under the pH indicator or neutral red forms red or pink colonies; while lactose non-fermenters produce colorless colonies. Coliform bacteria if present form pink colonies on this medium. These colonies usually are also surrounded by a turbid zone of precipitated deoxycholic acid formed due to acidification of the medium. Sodium desoxycholate combines with neutral red in an acidic environment, causing the dye to go out of the solution with the subsequent precipitation of desoxycholate.

Formula / Liter

Ingredients	Gms / Liter
Peptone, special	10.00
Lactose	10.00
Sodium chloride	5.00
Sodium citrate	2.00
Sodium desoxycholate	0.50
Neutral red	0.03
Agar	15.00
Final pH: 7.1 ± 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.

Directions

1. Suspend 42.53 grams of the medium in one liter of distilled water.
2. Mix well and heat to boiling to dissolve the medium completely.
3. The medium requires no autoclaving if it is to be used at once.
4. If the medium is to be stored, it should be sterilized at 15 psi pressure (121°C) for 15 minutes.
5. AVOID OVERHEATING.



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Quality Control Specifications

Dehydrated Appearance	Light yellow to pink homogeneous free flowing powder
Prepared Medium	Reddish orange coloured, clear to slightly opalescent gel forms in Petri plates
Reaction of 4.25% solution	pH 7.1 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Recovery	Color of colony
1.	<i>Bacillus subtilis</i> ATCC 6633	$\geq 10^3$	inhibited	0%	--
2.	<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	$\geq 50\%$	pink with bile precipitate
3.	<i>Enterobacter aerogenes</i> ATCC 13048	50-100	good-luxuriant	$\geq 50\%$	pink
4.	<i>Enterococcus faecalis</i> ATCC 29212	$\geq 10^3$	inhibited	0%	--
5.	<i>Salmonella typhimurium</i> ATCC 14028	50-100	good-luxuriant	$\geq 50\%$	colorless

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

Test Procedure

Refer to appropriate references for standard test procedures.

Results

Refer to appropriate references and standard test procedures for interpretation of results.

Storage

Store the 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.

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

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Deoxycholate Lactose Agar

Product Code : DM077

Available Pack sizes : 100gm / 500gm

References

1. Leifson, 1935, J. Path. Bact., 40:581.
2. Richardson (Ed.), 1985, Standard Methods for the Examination of Dairy Products, 15th ed., APHA, Washington, D.C.
3. Greenberg A. E., Eaton A. D., Clesceri L. S., (Eds.), 1998, Standard Methods for the Examination of Water and Waste Water, 20th Ed., APHA, Washington, D.C.
4. Speck M. (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.

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Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED

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

DM077PI, Rev.0, 01.08.2008

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