



## PRODUCT SPECIFICATION SHEET

### Eijkman Lactose Broth (DM096)

#### Intended Use

Eijkman Lactose Broth (DM096) is recommended for detection and differentiation of *Escherichia coli* from other coliforms based on their ability to ferment lactose and liberate gas.

#### Product Summary and Explanation

Coliform organisms are a group of gram-negative bacteria found in the intestinal tract of humans and other warm blooded animals. They constitute the major microbial flora of human faeces. Coliform organism is a term used to designate the lactose-fermenting Enterobacteria such as *Escherichia coli* and *Enterobacter*. Since coliforms are readily isolated and identified, they are used as indicator organisms to check faecal contamination of food, water and other samples.<sup>(1)</sup> One of the common organisms involved in gram-negative sepsis and endotoxin-induced shock is *Escherichia coli*.<sup>(2)</sup> For selective isolation of *E. coli* from faeces of warm-blooded and cold-blooded animals Eijkman<sup>(3)</sup> described a method. This method had limitations due to the inability to obtain growth after subculturing from positive tubes incubated at 46°C, as acidity and high temperature resulted in death of the culture within 24-48 hours. Eijkman's original method was then modified by Perry and Hajna<sup>(4)</sup> by decreasing carbohydrate content and adding a phosphate buffer enabling to subculture *E. coli* after incubation at 46°C for 96 hours or longer where pH was 5.6 unlike 4.5 of Eijkman Medium. Using lactose for isolation of *E. coli* Perry<sup>(5)</sup> modified Eijkman Medium which can also be employed for bacteriological examination in water filtration control work.<sup>(6)</sup>

#### Principles of the Procedure

Eijkman Lactose Broth contains tryptose and lactose are sources of energy and carbon respectively. Lactose is fermented by *E. coli* to form acid and gas. The gas produced gets trapped in the form of gas bubbles in the inverted Durhams tubes. Phosphates act as a buffering agent. Sodium chloride maintains the osmotic equilibrium of the medium.

#### Formula / Liter

Ingredients	Gms / Liter
Tryptose	15.00
Lactose	3.00
Dipotassium phosphate	4.00
Monopotassium phosphate	1.50
Sodium chloride	5.00
Final pH: 6.8 ± 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 28.5 grams of the medium in one liter of distilled water.
2. For examination of 10 ml portions of water samples, use 57 grams per 1000 ml distilled water.
3. Heat if necessary to dissolve the medium completely.
4. Dispense into tubes with inverted Durhams fermentation tubes.
5. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.





## PRODUCT SPECIFICATION SHEET

### Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light yellow coloured, clear solution without any precipitate
Reaction of 2.85% Solution	pH : 6.8 ± 0.2 at 25°C
Gel Strength	Not Applicable

**Expected Cultural Response:** Cultural characteristics observed after an incubation at 45.5 to 46°C for 24 - 48 hours.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Gas
1.	<i>Escherichia coli ATCC 25922</i>	50 - 100	good-luxuriant	positive reaction
2.	<i>Enterobacter aerogenes ATCC 13048</i>	50 - 100	poor	negative reaction

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 for interpretation of results.

### 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

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 : Eijkman Lactose Broth

Product Code : DM096

Available Pack sizes : 500gm

### References

1. Norton C. F., 1940, Microbiology, 2nd Ed., Addison Wesley Publishing Company.
2. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed, J. B. Lippincott Company.
3. Eijkman, 1904, Centr. Bakt., 11th Abst., 37:742.





# PRODUCT SPECIFICATION SHEET

4. Perry C. A., 1939, Food Research, 4:381.
5. Perry C. A. and Hajna A. A., 1933, J. Bacteriol., 26:419.
6. Standard Methods for the Examination of Water and Wastewater, 11th Ed., 1960, APHA, N.Y.

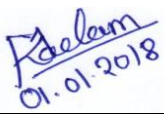

### Further Information

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](mailto:micromaster@micromasterlab.com)  
[sales@micromasterlab.com](mailto:sales@micromasterlab.com)

DM001PSS,QAD/FR/024,Rev.00/01.01.2018

	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.

