Technical Data

# Moeller Decarboxylase Broth w/ Ornithine Hydrochloride

LQ015

## Intended Use:

Sterile, ready prepared 5 ml medium for differentiation of bacteria on the basis of their ability to decarboxylate L-Ornithine hydrochloride.

## Composition**

| Ingredients | g / L |
|---|---|
| Peptone | 5.000 |
| HM peptone B # | 5.000 |
| Dextrose (Glucose) | 0.500 |
| Bromocresol purple | 0.010 |
| Cresol red | 0.005 |
| Pyridoxal | 0.005 |
| L-Ornithine hydrochloride | 10.000 |
| Final pH ( at 25°C) | 6.0±0.2 |

**Formula adjusted, standardized to suit performance parameters

# Equivalent to Beef extract

## Directions

Label the ready to use LQ015 bottle. Inoculate 50-100 cfu sample and Incubate at specified temperature and time.

## Principle And Interpretation

Moeller Decarboxylase Broth with Ornithine hydrochloride is used for differentiating gram-negative enteric bacilli on the basis of their ability to decarboxylate L-Ornithine hydrochloride. Decarboxylase Broth was introduced by Moeller for detecting the production of lysine and ornithine decarboxylase and arginine dihydrolase (1). Prior to Moellers work, bacterial amino acid decarboxylases were studied by Gale (2) and Gale and Epps (3). Production of ornithine decarboxylase is helpful criterion in differentiating *Klebsiella* and *Enterobacter* species. *Klebsiella a*re nonmotile and do not produce ornithine decarboxylase while *Enterobacter* are motile and produce ornithine decarboxylase except *Enterobacter agglomerans* (4). Decarboxylase media are also recommended by standard methods for identification of bacteria (5-8).

This medium contains HM peptone B and peptone which provide nitrogenous nutrients for the growth of bacteria. Dextrose is the fermentable carbohydrate and pyridoxal is the co-factor for the decarboxylase enzyme. Bromo cresol purple and cresol red are the pH indicators in this medium. When the medium is inoculated with the dextrose fermenting bacteria, the pH is lowered due to acid production which changes the colour of the indicator from purple to yellow. Acid produced stimulates decarboxylase enzyme. Putrescine is produced due to ornithine decarboxylation. Formation of amine putrescine increases the pH of the medium, changing the colour of the indicator from yellow to purple. If the organisms do not produce the appropriate enzyme, the medium remains acidic, yellow in colour. Each isolate to be tested should also be inoculated into the basal medium tube lacking the amino acid. After incubation, a decarboxylase test may show two layers of different colours, yellow and purple. Shake the tube gently before interpreting the results (4).

## Type of specimen

Isolated Microorganism from clinical and non-clinical samples.

## Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (7,9).

After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions :

In Vitro diagnostic use only. For professional use only. Read the label before opening the container. Wear protective gloves/ protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations :

1. Inoculated tubes must be protected from air with a layer of sterile mineral oil. Exposure to air may cause alkalinization at the surface of the medium which makes the test invalid.
2. Other biochemical tests must be carried out for confirmation.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

**Appearance**

Sterile clear Moeller Decarboxylase Broth w/Ornithine HCl in bottles.

**Colour**

Light brown to greyish purple to light purple coloured clear solution

**Quantity of medium**

5 ml of medium in bottles

**Sterility Check**

Passes release criteria

**pH**

5.80-6.20

**Cultural Response**

Cultural characteristics observed on addition of a layer of sterile mineral oil and after incubation at 35-37°C for 48-72 hours.

| Organism | Ornithine decarboxylation |
|---|---|
| *Citrobacter freundii* ATCC 8090 | variable reaction |
| # *Klebsiella aerogenes* ATCC 13048 (00175*) | positive reaction, purple colour |
| *Escherichia coli* ATCC 25922 (00013*) | variable reaction |
| *Klebsiella pneumoniae* ATCC 13883 (00097*) | negative reaction, yellow colour |
| *Proteus mirabilis* ATCC 25933 | positive reaction, purple colour |
| ## *Proteus hauseri* ATCC 13315 | negative reaction, yellow colour |

Key : *Corresponding WDCM numbers. # Formerly known as *Enterobacter aerogenes*
## *Formerly known as Proteus vulgaris*

## Storage and Shelf Life

On receipt store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,9).

## Reference

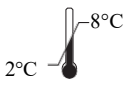
1. Moeller V., 1955, Acta Pathol. Microbiol. Scand. 36:158.
2. Gale G. F., 1940, Biochem. J., 34:392.
3. Gale and Epps, 1943, Nature, 152:327.
4. MacFaddin J., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd ed., Williams and Wilkins, Baltimore.
5. Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.

6. FDA Bacteriological Analytical Manual, 8th Ed., AOAC International, Gaithersburg, Md.
7. Isenberg (Ed.), 1992, Clinical Microbiology Procedures Handbook, Vol. I, ASM, Washington, D. C..
8. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
9. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Revision : 05/2025

HiMedia Laboratories Pvt. Limited,
Plot No.C-40, Road No.21Y,
MIDC, Wagle Industrial Area,
Thane (W) -400604, MS, India

IVD ***In vitro* diagnostic medical device**




**Storage temperature**

EC REP CEpartner4U, Esdoornlaan 13,
3951DB Maarn, NL
www.cepartner4u.eu

**CE Marking**

**Do not use if package is damaged**

Disclaimer :

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