

CM 20884 – L-ORNITHINE DECARBOXYLASE BROTH (ISO / TS 22964: 2017)

INTENDED USE

For detection of the ability of microorganisms to decarboxylate ornithine.

PRODUCT SUMMARY AND EXPLANATION

Decarboxylation is the process in which bacteria that possess specific decarboxylase enzyme attack amino acids at their carboxyl end (-COOH) to yield an amine or a diamine and carbon dioxide. The amino acid L-ornithine is decarboxylated by the enzyme ornithine decarboxylase to yield the diamine putrescine and carbon dioxide. Ornithine Decarboxylase Broth is based on the Taylors modification. It is recommended by the ISO Committee for the detection of ornithine decarboxylation by *Cronobacter sakazakii*.

COMPOSITION

Ingredients	Gms / Ltr
L-Ornithine monohydrochloride	10.000
Yeast extract	3.000
Dextrose (Glucose)	1.000
Bromo cresol purple	0.015

PRINCIPLE

The medium consists of Yeast extract in the medium which provides nitrogen and other nutrients necessary to support bacterial growth. The amino acid L-ornithine is added to detect the production of ornithine decarboxylase. Glucose is the fermentable carbohydrate, which during the initial stages of incubation, is fermented by the organisms with acid production, which results in colour change of the pH indicator (BCP) to yellow. The acidic condition also stimulates decarboxylase activity. If the organism produces the appropriate enzyme, i.e. decarboxylase, the amino acid (ornithine) in the medium is degraded, yielding a corresponding amine. Decarboxylation of ornithine yields putrescine. The production of this amine elevates the pH of the medium towards alkalinity, changing the color of the indicator from yellow to purple or violet. If the organism does not produce the appropriate enzyme, the medium remains acidic or yellow in colour.

INSTRUCTION FOR USE

Dissolve 14.02 grams in 1000 ml purified / distilled water.

Heat if necessary to dissolve the medium completely.

Dispense in test tubes and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

After inoculation overlay the tubes with 2-3 ml mineral oil.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Light yellow to light green homogeneous free flowing powder.
Appearance of prepared medium	: Dark purple coloured clear solution without any precipitate.
pH (at 25°C)	: 6.8 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Ornithine Decarboxylation	Incubation Temperature	Incubation Period
Cronobacter sakazakii	29544	50-100	Positive reaction, purple colour	35-37°C	18-24 Hours
Cronobacter muytjensii	51329	50-100	Positive reaction, purple colour	35-37°C	18-24 Hours

PACKAGING:

Inpacksizeof100 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

Afteruse,prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. International Organization for Standardization. Microbiology of the food chain- Horizontal method for the detection of Cronobacter spp. Draft ISO/ TS 22964, 2017 (E).
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
4. 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.
5. MacFaddin J.F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.
6. Moeller V., 1955, Acta Pathol. Microbiol. Scand. 36 (2): 158-172
7. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
8. Smith D.T., Coant N.F., Willett H.P., Zinssers Microbiology, 14th Ed., New York: Appleton-Century-Crofts, 1968:118-119
9. Taylor W.I., 1961, Appl. Microbiol., 9:487.
10. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*ForLabUseOnly



