TM 245 – ORNITHINE DECARBOXYLASE BROTH

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 *Yersinia enterocolitica*.

COMPOSITION

Ingredients	Gms / Ltr
L-Ornithine monohydrochloride	5.000
Yeast extract	3.000
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 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 9.01 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. Inoculated tubes are overlayed with mineral oil.

Microorganism	ATCC	Inoculum (CFU/ml)	Ornithine Decarboxylation	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Variable reaction	35-37°C	18-24 Hours
Enterobacter aerogenes	13048	50-100	Positive reaction, purple colour	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Negative reaction, yellow colour	35-37°C	18-24 Hours
Proteus mirabilis	25933	50-100	Negative reaction, yellow colour	35-37°C	18-24 Hours
Salmonella Paratyphi A	9150	50-100	Positive reaction, purple colour	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Negative reaction, yellow colour	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Negative reaction, yellow colour	35-37°C	18-24 Hours
Yersinia enterocolitica	27729	50-100	Positive reaction, purple colour	35-37°C	18-24 Hours

PACKAGING:
In pack size of 100 gm bottles.

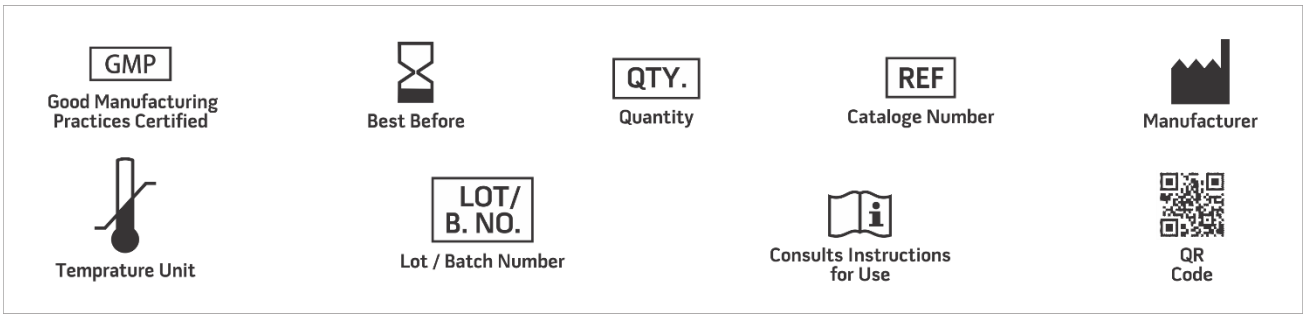
STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label 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

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

REFERENCES

1. Smith D.T., Coant N.F., Willett H.P., Zinssers Microbiology, 14th Ed., New York: Appleton-Century-Crofts, 1968:118-119
2. Moeller V., 1955, Acta Pathol. Microbiol. Scand. 36 (2): 158-172
3. MacFaddin J.F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.
4. Taylor W.I., 1961, Appl. Microbiol., 9:487.
5. International Organization for Standardization (ISO), 1994, Draft ISO/DIS 10273.



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

***For Lab Use Only**

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