Technical Information

Ornithine Decarboxylase Broth

Product Code: DM2223

Application: - Ornithine Decarboxylase Broth is recommended for detection of the ability of microorganisms to decarboxylate ornithine.

Composition**

Ingredients	Gms / Litre
L-Ornithine monohydrochloride	5.000
Yeast extract	3.000
Glucose	1.000
Bromo cresol purple	0.015
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Ornithine Decarboxylase Broth is based on the Taylors modification [4] and recommended by the ISO Committee [5] for the detection of ornithine decarboxylation by *Yersinia enterocolitica.*

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 [1]. The amino acid L-ornithine is decarboxylated by the enzyme ornithine decarboxylase to yield the diamine putrescine and carbon dioxide [2, 3]. 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.

Yeast extract in the medium 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.

Methodology

Suspend 9.01 grams of powder media in 1000 ml distilled water. Shake well and heat if necessary to dissolve the medium completely. Dispense in test tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. After inoculation overlay the tubes with 2-3 ml mineral oil.

Quality Control

Physical Appearance

Light yellow to light green homogeneous free flowing powder

Colour and Clarity of prepared medium

Dark purple coloured clear solution without any precipitae

Reaction

Reaction of 0.9% aqueous solution at 25°C. pH : 6.8±0.2

pH Range 6.60-7.00

Cultural Response/ characteristices

DM 2223: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours. Inoculated tubes are overlayed with mineral oil.

Organism	Inoculum (CFU)	Ornithine Decarboxylation
Escherichia coli ATCC 25922	50-100	variable reaction
Enterobacter aerogenes ATCC 13048	50-100	positive reaction, purple colour
Klebsiella pneumoniae ATCC 13883	50-100	negative reaction, yellow colour
Proteus mirabilis ATCC 25933	50-100	negative reaction, yellow colour
Proteus vulgaris ATCC 13315	50-100	positive reaction, purple colour
Salmonella Paratyphi A ATCC 9150	50-100	positive reaction, purple colour
Salmonella Typhi ATCC 6539	50-100	negative reaction, yellow colour
Shigella flexneri ATCC 12022	50-100	negative reaction, yellow colour
Shigella sonnei ATCC 25931	50-100	positive reaction, purple colour
Yersinia enterocolitica ATCC 27729	50-100	positive reaction, purple colour

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

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.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
- **Central Drug House 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 diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- 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.
- Donot use the products if it fails to meet specificatons for identity and performens parameters.