Technical Information

Moeller Decarboxylase MiVeg Broth with Lysine Hydrochloride

Product Code : VM1687

Application:- Moeller Decarboxylase MiVeg Broth with Lysine Hydrochloride is used to differentiate bacteria on the basis of their ability to decarboxylate the specific Lysine Hydrochloride.

Composition

Ingredients	Gms / Litre
MiVeg peptone	5.00
MiVeg extract	5.00
Dextrose	0.50
Bromo cresol purple	0.01
Cresol red	0.005
Pyridoxal	0.005
L-Lysine hydrochloride	10.00
Final pH (at 25°C)	6.0±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Moeller Decarboxylase MiVeg Broth with Lysine Hydrochloride is prepared by using Miveg peptones and Miveg extract in place of animal based peptones and Beef extract respectively thereby making the media free from BSE/TSE risk. This medium is used for differentiating gram-negative enteric bacilli on the basis of their ability todecarboxylate Lysine Hydrochloride. The Decarboxylase Broth was introduced by Moeller for detecting the production of lysine and ornithine decarboxylase and arginine dihydrolase (1). Prior to Moeller's work, bacterial amino acid decarboxylases were studied by Gale (2) and Gale and Epps (3).

This medium contains nutritious ingredient which supplies 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 serve as the pH indicators in the medium. The pH is lowered due to acid production by dextrose fermenting bacteria which changes the colour of the indicator from purple to yellow. Production of acid stimulatesdecarboxylase enzyme. Decarboxylation of lysine yields cadaverine.Formation of this amine increases the pH of themedium, 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.

Inoculated tubes must be overlayed with sterile mineral oil to protect from air. Exposure to air may cause alkalinization at the surface of the medium which can make false results.

Methodology

Suspend 20.52 grams of powder media in 1000 ml distilled water. Mix thoroughly. Heat if necessary to dissolve the medium completely Dispense in 5 ml amount in screw- capped tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 10 minutes.

Quality Control

Physical Appearance

Greenish yellow coloured, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Purple coloured, clear solution without any precipitate.

Reaction

Reaction of 2.05 % w/v aqueous solution pH: 6.0 ±0.2 at 25°C

pH range

5.8-6.2

Cultural Response/Characteristics

Cultural characteristics observed after after inoculating tubes, overlaying with sterile mineral oil and incubating at 35 - 37°C for upto 4 days.

Organisms (ATCC)	**Lysine**
Citrobacter freundii (8090)	-
Enterobacter aerogenes (13048)	+
Escherichia coli (25922)	±
Klebsiella pneumoniae (13883	+
Proteus vulgaris (13315)	-
Proteus mirabilis (25933)	-
Pseudomonas aeruginosa (9027	-
Salmonella serotype Paratyphi A	-
Salmonella serotype Typhi (6539)	+
Shigella flexneri (12022)	-
Shigella sonnei (25931)	-
Shigella dysenteriae (13313)	-
Serratia marcescens (8100	+

Key : + = positive reaction, purple colour
— = negative reaction, yellow or no colour change
± = variable
(+) = delayed positive reaction

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

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.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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