Technical Information

Lactic Bacteria Differential MiVeg Agar

Product Code : VM2087

Application:- Lactic Bacteria Differential MiVeg Agar is used for differentiation of homofermentative and heterofermentative lactic acid bacteria.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	10.00
Papaic digest of soyabean meal	1.50
MiVeg acid hydrolysate	3.00
Yeast extract	1.00
Fructose	2.50
Monopotassium phosphate	2.50
Bromo cresol green	0.055
Agar	15.00
Final pH (at 25°C)	7.0 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Lactic Bacteria Differential MiVeg Agar is prepared by adding MiVeg hydrolysate and MiVeg acid hydrolysate instead of Casein enzymic hydrolysate and Casein acid hydrolysate respectively thus making the medium free from BSE/TSE risks. This medium is the modification of Lactic Bacteria Differential Agar which was formulated as per McDonald et al (1) used for differentiation of homofermentative *Lactobacilli* and heterofermentative *Streptococci*. Both *Lactobacilli* and *Streptococci* are used as starter cultures in food and dairy industry. *Lactobacilli* grows best at low redox potential condition which can be achieved by first growing *Streptococci,* which in turn produces certain metabolites and lowers the redox potential thereby enables *Lactobacilli* to grow. *Lactobacilli* synthesize certain products that stimulate the growth of *Streptococci*.

MiVeg acid hydrolysates, Papaic digest of soyabean meal and yeast extract provides essential nutrients required for the growth of lactic bacteria. Fructose is the fermentable carbohydrate and bromo cresol green act as a pH indicator in the medium. Heterofermentative lactic acid bacteria produce CO_2, lactic acid, acetic acid, ethanol and mannitol whereas homofermentative produce only lactic acid from fructose and is indicated by the yellow colour formation. Heterofermentative lactic acid bacteria induce lesser acidification and thus vary in the colour formation by the indicator in the medium. Homofermentative bacteria cultivated on this medium form bluish-green colonies on agar while heterofermentative bacteria do not form much coloured colonies on agar surface.

Methodology

Suspend 35.56 grams of powder media in 1000 ml distilled water then add 1 gm of polysorbate 80. Mix well and heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

Bluish grey coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Blue coloured, clear to slightly opalescent gel forms in petri plates.

Reaction

Reaction of 3.56% w/v aqueous solution is pH 7.0 ± 0.2 at 25°C.

pH Range

6.8 - 7.2

Cultural Response/Characteristics

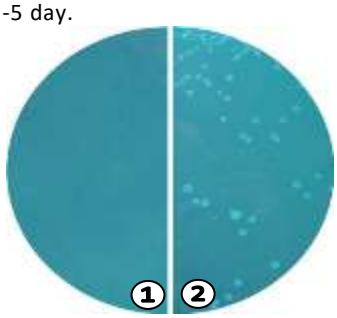
Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
Lactobacillus casei (9595)	10^2-10^3	luxuriant	>70%	green
Lactobacillus plantarum (8014)	10^2-10^3	luxuriant	>70%	green
Streptococcus thermophilus (14485)*	10^2-10^3	luxuriant	>70%	bluish green
Streptococcus cremoris (19257)**	10^2-10^3	luxuriant	>70%	blue

Key : * = incubated at 45°C
** = incubated at 30°C

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 day.



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1. Control
2. *Lactobacillus casei*

Further Reading

1. McDonald L.C., McFecters R.F., Daeschel M.A. and Fleming H.P., 1987, Appl.Environ. Microbiol., 53:1382.

Disclaimer :

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