

Lactic Bacteria Differential HiVeg™ Agar / Broth

MV1087 / MV1086

Lactic Bacteria Differential HiVeg Agar / Broth is used for differentiation of homofermentative and heterofermentative lactic acid bacteria.

Composition** :

Ingredients	MV1087	MV1086
	Grams/Litre	Grams/Litre
HiVeg hydrolysate	10.00	10.00
Papaic digest of soyabean meal	1.50	1.50
HiVeg acid hydrolysate	3.00	3.00
Yeast extract	1.00	1.00
Fructose	2.50	2.50
Monopotassium phosphate	2.50	2.50
Bromo cresol green	0.055	0.055
Agar	15.00	—

Final pH (at 25°C) 7.0 ± 0.2

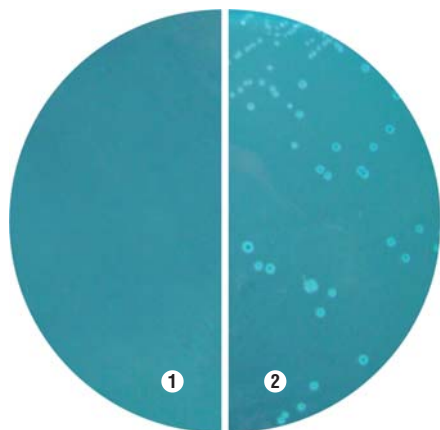
** Formula adjusted, standardized to suit performance parameters

Directions :

Suspend 35.56 grams of MV1087 and 20.5 grams of MV1086 in 1000 ml distilled water. Add 1 gram of polysorbate 80. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle and Interpretation :

These media are prepared by using HiVeg hydrolysate and HiVeg acid hydrolysate in place of Casein enzymic hydrolysate and Casein acid hydrolysate respectively which make the medium free of BSE/TSE risks. Lactic Bacteria Differential HiVeg Media are the modifications of Lactic Bacteria Differential Media which are formulated as per McDonald et al (1) for differentiation of homofermentative *Lactobacilli* and heterofermentative *Streptococci*. *Lactobacilli* and *Streptococci* are used as starter cultures in food and dairy industry. *Streptococci* grow first and produce metabolites, lowering redox potential which enables *Lactobacilli* to grow. *Lactobacilli* synthesize products which stimulate growth of *Streptococci*. Medium constituents like HiVeg acid hydrolysates, Papaic digest of soyabean meal and yeast extract supply all the necessary nutrients for the growth of lactic bacteria. Fructose is the fermentable carbohydrate in the medium. Bromo cresol green is the pH indicator.



MV1087 Lactic Bacteria Differential HiVeg Agar

1. Control

2. *Lactobacillus casei*

Product Profile :

Vegetable based (Code MV)Ⓞ	Animal based (Code M)
MV1087/MV1086 HiVeg hydrolysate HiVeg acid hydrolysate	M1087/M1086 Casein enzymic hydrolysate Casein acid hydrolysate
Recommended for	: Differentiation of homofermentative and heterofermentative lactic acid bacteria.
Reconstitution	: (MV1087) : 35.56 g/l : (MV1086) : 20.5 g/l
Quantity on preparation (500g)	: (MV1087) : 14.06 L : (MV1086) : 24.39 L
pH (25°C)	: 7.0 ± 0.2
Supplement	: Polysorbate 80
Sterilization	: 121°C / 15 minutes.
Storage	: Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

Heterofermentative lactic acid bacteria produce CO₂, lactic acid, acetic acid, ethanol and mannitol. Homofermentative lactic acid bacteria 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.

Quality Control :

Appearance of Powder

Bluish grey coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel of MV1087.

Colour and Clarity

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

Reaction

Reaction of 3.56% w/v of MV1087 or 2.05% w/v of MV1086 aqueous solution is pH 7.0 ± 0.2 at 25°C.

Cultural Response

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

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

Key : * = incubated at 45°C

** = incubated at 30°C

References :

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