

Endo HiVeg™ Agar / Agar Base / Agar, Modified MV029 / MV1077 / MV1075

Endo HiVeg Agar media are recommended for the detection of coliform and other enteric organisms.

Composition** :

	MV029	MV1077	MV1075
Ingredients	Grams/Litre	Grams/Litre	Grams/Litre
HiVeg peptone	10.00	10.00	10.00
Lactose	10.00	10.00	10.00
Dipotassium phosphate	3.50	3.50	2.50
Sodium sulphite	2.50	2.50	3.30
Basic fuchsin	0.50	—	0.30
Agar	15.00	12.00	12.50

Final pH (at 25°C) 7.5 ± 0.2 7.5 ± 0.2 7.4 ± 0.2

** Formula adjusted, standardized to suit performance parameters

Directions :

Suspend 41.5 grams of MV029 or 38 grams of MV1077 or 38.6 grams of MV1075 in 1000 ml distilled water. Add 4 ml of 10% Basic Fuchsin (FD059) in MV1077. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well before pouring into sterile petri plates.

Caution : Basic fuchsin is a potential carcinogen and care should be taken to avoid inhalation of the powdered dye and contamination of the skin.

Principle and Interpretation :

This medium is prepared by replacing Peptic digest of animal tissue with HiVeg peptone that is free of BSE/TSE risk. Endo HiVeg Agar media are the modifications of Endo Agar media which was developed by Endo (1) for differentiation of lactose fermenters and lactose non-fermenters. Endo HiVeg Agar media like Endo Agar media are used for microbiological examination of potable water and waste water, dairy products and food (2, 3, 4).

The selectivity of Endo Agar is due to Sodium sulfite / Basic fuchsin combination, which results in the suppression of gram positive organisms. Coliforms ferment the lactose, produce pink to rose red colonies and similar colouration of the medium. The colonies of organisms that do not ferment the lactose are colourless to faint against the pink background of the medium.

Lactose fermenting coliforms produce aldehyde and acid. The aldehyde in turn liberates fuchsin from the fuchsin-sulphite complex, giving rise to a red colouration of colonies. With *Escherichia coli*, this reaction is very pronounced as the fuchsin crystallizes, exhibiting a permanent greenish metallic lustre (fuchsin lustre) to the colonies. HiVeg peptone supply nitrogenous source and other extracted nutrients.

Quality Control :

Appearance of Powder

Light purple coloured, homogeneous, free flowing powder that may contain a large amount of minute to small dark particles.

Gelling

Firm, comparable with 1.5% of MV029 or 1.2% of MV1077 or 1.25% of MV1075 Agar gel.

Product Profile :

Vegetable based (Code MV)Ⓞ		Animal based (Code M)
MV029/MV1077/MV1075 HiVeg peptone		M029/M1077/M1075 Peptic digest of animal tissue
Recommended for	:	Detection of coliform and other enteric organisms
Reconstitution	:	(MV029) : 41.5 g/l
	:	(MV1077) : 38 g/l
	:	(MV1075) : 38.6 g/l
Quantity on preparation (500g):	:	(MV029) : 12.04 L
	:	(100g) : (MV029) : 2.40 L
	:	(500g) : (MV1077) : 13.15 L
	:	(500g) : (MV1075) : 12.95 L
pH (25°C)	:	(MV029) : 7.5 ± 0.2
	:	(MV1077) : 7.5 ± 0.2
	:	(MV1075) : 7.4 ± 0.2
Supplement	:	(MV1077) : Basic Fuchsin (FD059)
Sterilization	:	121°C / 15 minutes.
Storage	:	Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

Colour and Clarity

Orangish pink coloured, clear to slightly opalescent gel with fine precipitate forms in petri plates.

Reaction

Reaction of 4.15% w/v of MV029 or 3.8% w/v of MV1077 aqueous solution is pH 7.5 ± 0.2 at 25°C. Reaction of 3.86% w/v of MV1075 aqueous solution is pH 7.4 ± 0.2 at 25°C.

Cultural Response

Cultural characteristics observed after an incubation at 35 - 37°C for 18-24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colonies
<i>Enterobacter aerogenes</i> (13048)	10 ⁴ -10 ⁵	luxuriant	>70%	pink, mucoid
<i>Escherichia coli</i> (25922)	10 ³ -10 ⁴	luxuriant	>70%	pink to rose red with metallic sheen
<i>S. serotype Typhi</i> (6539)	10 ³ -10 ⁴	luxuriant	>70%	colourless to pale pink
<i>Shigella sonnei</i> (25931)	10 ³ -10 ⁴	luxuriant	>70%	colourless to pale pink
<i>Klebsiella pneumoniae</i> (13883)	10 ³ -10 ⁴	luxuriant	>70%	pink, mucoid
<i>Proteus vulgaris</i> (13315)	10 ³ -10 ⁴	luxuriant	>70%	colourless to pale pink
<i>Pseudomonas aeruginosa</i> (27853)	10 ³ -10 ⁴	luxuriant	>70%	colourless, irregular
<i>Enterococcus faecalis</i> (29212)	10 ³ -10 ⁴	none-poor	<20%	pink, small
<i>Staphylococcus aureus</i> (25923)	10 ³ -10 ⁴	inhibited	0%	—

References :

- Endo, 1904, Zentralbl. Bakteriol., Abt. I. Orig., 35:109.
- Eaton A.D., Clesceri L.S. and Greenberg A.E., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed, APHA, Washington DC
- Standard Methods for the Examination of Dairy Products. 17th Edition, 2004 Edited by H. Michael Wehr and Joseph H.Frank.
- Downes FP and Ito K (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.