Phenol Red HiVeg™ Agar Media

Phenol Red HiVeg Agar Media are used for studying the fermentation of various carbohydrates in the differentiation of microorganisms.

Composition **:

Ingredients Grams/Litre	Phenol Red HiVeg Agar Base (MV053)	Phenol Red Dextrose HiVeg Agar (MV055)	Phenol Red Maltose HiVeg Agar (MV271)	Phenol Red Lactose HiVeg Agar (MV270)	Phenol Red Sucrose HiVeg Agar (MV273)	Phenol Red Mannitol HiVeg Agar (MV571)
HiVeg peptone No. 3	10.00	10.00	10.00	10.00	10.00	10.00
HiVeg extract	1.00	1.00	1.00	1.00	1.00	1.00
Sodium chloride	5.00	5.00	5.00	5.00	5.00	5.00
Dextrose	—	10.00	—	—	—	—
Maltose	—	—	10.00	—	—	—
Lactose	—	—	—	10.00	—	—
Sucrose	—	—	—	—	10.00	—
Mannitol	—	—	—	—	—	10.00
Phenol red	0.025	0.025	0.025	0.025	0.025	0.025
Agar	15.00	15.00	15.00	15.00	15.00	15.00

Final pH (at 25°C) 7.4 ± 0.2
** Formula adjusted, standardized to suit performance parameters

Directions :

Suspend 31 grams of MV053 or 41 grams of other media in 1000 ml distilled water. Heat with frequent agitation to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Add 0.5% of seperately sterilized desired carbohydrate to M053. Allow the tubed media to cool in slanted position to form slants with deep butts.

Principle and Interpretation :

These media are prepared by using vegetable peptones in place of animal based peptones that makes the media free of BSE/TSE risks. Phenol Red HiVeg Agar media are the modification of Phenol Red Agar media which are recommended (1, 2, 3) for studying the fermentation of various carbohydrates individually by the pure cultures of microorganisms.

HiVeg peptone No.3 which is free from fermentable carbohydrates is added in the medium thereby preventing the production of false positive reactions. Phenol Red HiVeg Agar when supplemented with a specific carbohydrate, a positive carbohydrate fermentation reaction is indicated by the production of a yellow colour in agar due to the effect of acid production. Gas production is indicated by the splitting of agar or by the bubbles formation. Plates or tubes may be incubated aerobically or anaerobically depending on the type of the test organism. Addition of some carbohydrates may result in an acid reaction and hence 0.1N sodium hydroxide can be added dropwise to restore the original colour taking care not to obtain too deep red or cerise colour, would prevent fermentation occurring within the usual incubation period.

Quality Control :

Appearance of Powder

Light pink coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity

Red coloured, slightly opalescent gel forms in tubes as slants.

Reaction

Reaction of aqueous solution of 3.1% w/v of MV053 or 4.1% w/v of other media is pH 7.4 ± 0.2 at 25°C.

Cultural Response :

Cultural characteristics observered after on incubation at 35-37° for 18-24 hrs.

Organisms (ATCC)	Growth	MV053 Base		MV055 Dextrose		MV270 Lactose		MV271 Maltose		MV571 Mannitol		MV273 Sucrose	
		Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas
Alcaligenes faecalis (8750)	luxuriant	—	—	—	—	—	—	—	—	—	—	—	—
Escherichia coli (25922)	luxuriant	—	—	+	+	+	+	+	+	+	+	—	—
Klebsiella pneumoniae (13883)	luxuriant	—	—	+	+	+	+	+	+	+	+	+	+
Proteus vulgaris (13315)	luxuriant	—	—	+	+	—	—	+	+	—	—	+	+
S. serotype Typhimurium (14028)	luxuriant	—	—	+	+	—	—	+	+	+	+	—	—
Shigella flexneri (12022)	luxuriant	—	—	+	—	—	—	+	—	+	—	—	—

Key : Acid Production + : Positive reaction, yellow colour
- : Negative reaction, red colour
Gas production + : gas production
- : No gas production

References :

1. MacFaddin J., 2000 Biochemical Tests for Identification of Medical Bacteria, 3rd edition Lippinicott Wilkins and Wilkis, New York.
2. Forbes BA, Sahm DF, Weissfield AS, 2002, Bailey and Scott's Diagnostic Microbiology, 11th ed., The C.V. Mosby Co. St Louis.
3. Ewing, 1986, Edwards and Ewing's Identification of Enterobacteriaceae, 4th ed., Elsevier Science Publishing Co., Inc., New York.

Storage and Shelf-life :

Store below 30°C and the prepared medium at 2 - 8°C. Use before expiry date on the label.