Phenol Red HiVeg™ Broth Media

Phenol Red HiVeg Broth media are used for determination of fermentation of carbohydrates in the differentiation of microorganisms.

Composition ** :

Ingredients Grams/Litre	Base (MV054)	Dextrose (MV056)	Dulcitol (MV617)	Lactose (MV275)	Maltose (MV276)	Mannitol (MV570)	Sucrose (MV274)
HiVeg peptone No.3	10.00	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	1.00
Sodium chloride	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Dextrose	—	5.00	—	—	—	—	—
Dulcitol	—	—	5.0	—	—		
Lactose	—	—	—	5.00	—		
Maltose	—	—	—	—	5.00		
Phenol red	0.018	0.018	0.018	0.018	0.018	0.018	0.018
Mannitol	—	—	—	—	—	5.00	—
Sucrose	—	—	—	—	—	—	5.0

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

Directions :

Suspend 16 grams of MV054 or 21 grams of other media in 1000 ml distilled water. Heat to dissolve the medium completely. Dispense in tubes containing inverted Durham's tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Aseptically add filter sterilized or autoclave sterilized carbohydrate solution to sterile basal medium (MV054).

Principle and Interpretation :

These media are prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks. These media are the modification of Phenol Red Broth media which are recommended (1, 2, 3) for determination of fermentation reactions in differentiation of microorganisms. Ability of an organism to ferment specific carbohydrate added in a basal medium, results in the production of acid and gas which in turn helps in the differentiation between genera and species. Phenol Red HiVeg Broth Base is a complete medium without added carbohydrate. It is used as a negative control for studying fermentations or as a base for the addition of carbohydrates.

HiVeg peptone No. 3 and HiVeg extract provide nitrogenous nutrients to the organisms. Phenol red is the pH indicator which turns yellow at acidic pH. Sodium chloride maintains osmotic equilibrium. Gas formation is seen in Durham's tubes.

No yellow colour should occur in the control tube. If it does the results cannot be correctly interpreted since acid has been produced without fermentation.

Quality Control :

Appearance of Powder

Light pink coloured, homogeneous, free flowing powder.

Colour and Clarity

Red coloured, clear solution without any precipitate.

Reaction

Reaction of aqueous solution of 1.6% w/v of MV054 or 2.1% w/v of other media is pH 7.4 ± 0.2 at 25°C.

Continued...

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Cultural Response :

* Cultural characteristics observed after an incubation at 35-37°C for 18-24 hrs. (§)

Organisms (ATCC)	Growth	Base		Dextrose		Dulcitol		Lactose		Maltose		Mannitol		Sucrose	
		Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas	Acid	Gas
Citrobacter freundii (8090)	luxuriant	—	—	+	+	—	—	+	+	+	+	+	+	+	+
Enterobacter aerogenes (13048)	luxuriant	—	—	+	+	—	—	+	+	+	+	+	+	+	+
Escherichia coli (25922)	luxuriant	—	—	+	+	—	—	+	+	+	+	+	+	—	—
Klebsiella pneumoniae (13883)	luxuriant	—	—	+	+	—	—	+	+	+	+	+	+	+	+
Proteus vulgaris (13315)	luxuriant	—	—	+	+	—	—	—	—	+	+	—	—	+	+
S. serotype Typhimurium (14028)	luxuriant	—	—	+	+	+	+	—	—	+	+	+	+	—	—
S. serotype Typhi (6539)	luxuriant	—	—	+	—	—	—	—	—	+	—	+	—	—	—
Serratia marcescens (8100)	luxuriant	—	—	+	+	—	—	—	—	+	—	+	—	+	+
Shigella flexneri (12022)	luxuriant	—	—	+	—	—	—	—	—	+	—	+	—	—	—

Key : (§) = longer if necessary
+ = positive reaction, yellow colour / gas formation
— = negative reaction, no colour change or red / no gas formation
*for more details refer,

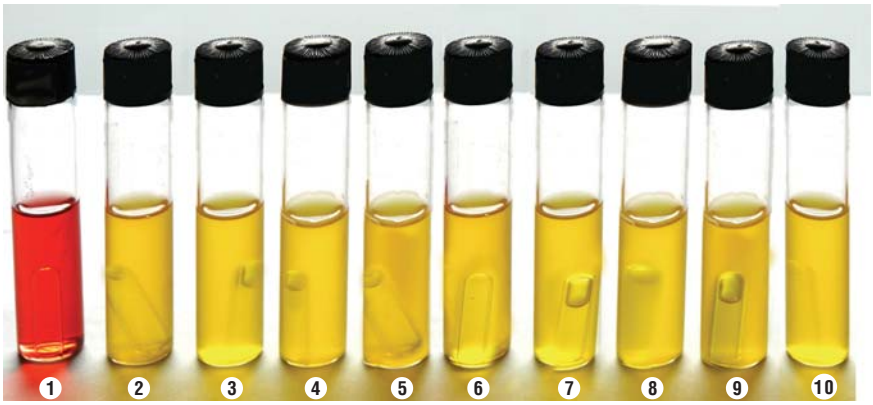
1. Bergey's Manual of Systematic Bacteriology, 1984, Vol. 1, Williams and Wilkins, Baltimore.
2. Bergey's Manual of Systematic Bacteriology, 1994, 9th ed., Williams and Wilkins, Baltimore.

References :

1. MacFaddin J., 2000 Biochemical Tests for Identification of Medical Bacteria, 3rd edition 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.



MV054 Phenol Red HiVeg Broth Base (w/ added Dextrose)

1. Control
2. *Citrobacter freundii*
3. *Enterobacter aerogenes*
4. *Escherichia coli*
5. *Klebsiella pneumoniae*
6. *Salmonella* serotype Typhi
7. *Proteus vulgaris*
8. *S.* serotype Typhimurium
9. *Serratia marcescens*
10. *Shigella flexneri*