Technical Data

Phenol Red Dulcitol HiVeg® Broth

MV617

Intended Use:

Recommended for Dulcitol fermentation studies of microorganisms.

Composition**

Ingredients	g / L
HiVeg® peptone No. 3	10.000
HiVeg® extract	1.000
Sodium chloride	5.000
Dulcitol	5.000
Phenol red	0.018
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters
Equivalent to Beef extract

Directions

Suspend 21.02 grams in 1000 ml purified / distilled water, mix well. Heat if necessary to ensure complete dissolution. Distribute in fermentation tubes (tubes containing inverted Durham's tubes). Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Phenol Red Broth Medium is formulated as per Vera (1) and is recommended to determine the fermentation reaction of carbohydrates for the differentiation of microorganisms (2,3,4). Phenol Red Broth Medium with various carbohydrates serves as a differential medium by aiding in differentiation of various species and genera by their ability to ferment the specific carbohydrate, with the production of acid or acid and gas (5). Phenol Red Dulcitol Broth is used to study dulcitol fermentation in various bacteria. Phenol Red Dulcitol HiVeg® Broth is prepared by completely replacing animal based peptone with vegetable peptones to avoid BSE/TSE risks associate with animal peptones. HiVeg® peptone No. 3 and HiVeg® extract serve as sources for carbon and nitrogen. Sodium chloride is the osmotic stabilizer. Phenol red is the pH indicator, which turns yellow at acidic pH i.e. on fermentation of dulcitol. Gas formation is seen in Durhams tubes. All of the *Enterobacteriaceae* grow well in this medium. In addition to producing a pH colour shift, the production of mixed acids, notably butyric acids, often results in a pungent, foul odour from the culture medium (6).

Type of specimen

Pure isolate

Specimen Collection and Handling:

For samples follow appropriate techniques for handling specimens as per established guidelines (7,8).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. For identification, organism must be in pure culture.
2. Other biochemical tests must be performed for confirmation

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Light yellow to pink coloured homogeneous free flowing powder

Colour and Clarity of prepared medium

Red coloured clear solution without any precipitate

Reaction

Reaction of 2.1% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours .(48 hours if necessary)

Organism	Growth	Acid	Gas
#*Klebsiella aerogenes* *ATCC 13048* (00175*)	luxuriant	Negative reaction, no colour change	Negative reaction
Escherichia coli ATCC 25922 (00013*)	luxuriant	Positive reaction, yellow colour	Positive reaction
$ *Proteus hauseri* ATCC 13315	luxuriant	Negative reaction, no colour change	Negative reaction
Salmonella Paratyphi A ATCC 9150	luxuriant	Positive reaction, yellow colour	Positive reaction
Salmonella Enteritidis ATCC 13076 (00030*)	luxuriant	Positive reaction, yellow colour	Positive reaction

Key : *Corresponding WDCM numbers

(#)- Formerly known as *Enterobacter aerogenes* $ Formerly known as *Proteus vulgaris*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8).

Reference

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2. Ewing W. H., 1986, Edwards and Ewings Identification of Enterobacteriaceae, 4th ed.,Elsevier Science Publishing Co., Inc., New York.
3. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Co., St. Louis.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification -Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
5. MacFaddin J. F., 2000, Biochemical tests for Identification of Medical Bacteria, 3rd edi., Lippincott, Williams and Wilkins, Baltimore.
6. Koneman E. W., Allen S. D., Janda W.M., Schreckenberger P.C., Winn W.C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippinccott Company

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8. Jorgensen, J.H. Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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