Technical Information

Phenol Red Adonitol Broth

Product Code: DM 2200

Application: - Phenol Red Adonitol Broth is used for detection of adonitol fermenting bacteria.

Composition**

Ingredients	Gms / Litre
Proteose peptone	10.000
Beef extract	1.000
Sodium chloride	5.000
Adonitol	5.000
Phenol red	0.018
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Phenol Red Broth Medium devised by Vera [2] is recommended to determine the fermentation behavior of different carbohydrates for the differentiation of microorganisms [3-5]. Phenol Red Broth Medium with various carbohydrates serves as a differential medium by helping in differentiation of various species and genera by their ability to ferment the specific carbohydrate, with the production of acid or acid and gas [6]. Phenol Red Adonitol Broth is used to study adonitol fermentation in various bacteria.
Proteose peptone and beef 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 adonitol. Gas formation is seen in Durham's 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 [1].

Methodology

Suspend 21 grams of powder media in 1000 ml distilled water and mix well. Shake well & heat if necessary to ensure complete solution. Distribute in fermentation tubes (tubes containing inverted Durham's tubes). Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical 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. 7.4±0.2 pH : 7.4±0.2

pH Range
7.20-7.60

Cultural Response/Characteristics
DM 2200: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Acid production	Gas
Citrobacter freundii ATCC 8090	50-100	Luxuriant	Negative reaction, no colour change	Negative reaction

Escherichia coli ATCC 25922	50-100	luxuriant	Negative reaction, no colour change	Negative reaction
Enterobacter aerogenes ATCC 13048	50-100	Luxuriant	Positive reaction, yellow colour	Positive reaction
Klebsiella pneumoniae ATCC 13883	50-100	Luxuriant	Positive reaction, yellow colour	Positive reaction
Proteus vulgaris ATCC 13315	50-100	Luxuriant	Negative reaction, no colour change	Negative reaction
Serratia marcescens ATCC 8100	50-100	Luxuriant	Negative reaction, no colour change	Negative reaction
Salmonella Typhi ATCC 6539	50-100	Luxuriant	Negative reaction, no colour change	Negative reaction
Salmonella Typhimurium ATCC 14028	50-100	Luxuriant	Negative reaction, no colour change	Negative reaction
Shigella flexneri ATCC 12022	50-100	Luxuriant	Negative reaction, no colour change	Negative reaction

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. 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
2. Vera H. D., 1950, Am. J. Public Health, 40, 1267
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification -Maintenanceof Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
4. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Co., St. Louis.
5. Ewing W. H., 1986, Edwards and Ewings Identification of Enterobacteriaceae, 4th ed.,Elsevier Science Publishing Co., Inc., New York.
6. MacFaddin J. F., 2000, Biochemical tests for Identification of Medical Bacteria, 3rd edi., Lippincott, Williams and Wilkins, Baltimore.

Disclaimer :

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