Technical Information

Andrade Peptone Water, Modified

Product Code: DM 1909F

Application: - Andrade Peptone Water, Modified is a basal medium for carbohydrate fermentation studies of particularly *Enterobacteriaceae* members in accordance with FDA BAM, 1998.

Composition**

Ingredients	Gms / Litre
Beef extract	3.000
Peptone	10.000
Sodium chloride	10.000
Acid fuchsin	0.020
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Andrade Peptone Water, Modified is prepared in accordance with FDA BAM, 1998 for carbohydrate fermentation studies of particularly *Enterobacteriaceae* members (1). Bacteria differ widely in their ability to metabolize carbohydrates and related compounds. Carbohydrate fermentation reactions aids in the differentiation and identification of various bacteria. Desired carbohydrate is added to the medium, which is inoculated with the test organism. If the test organism metabolizes the added carbohydrate, acids are produced, thereby lowering the pH of the medium. This causes a subsequent colour change of the indicator, from colourless to pink to red. If the added carbohydrate is not metabolized, the medium remains pale tan to straw coloured. Gas produced during fermentation is collected in the Durhams tube. Peptone used in the medium is free from fermentable carbohydrates (2, 3) and is also free from nitrates which may interfere with gas production. Beef extract is an additional source of nutrients. Andrade indicator is a solution of acid fuchsin which changes colour from pink to yellow under alkaline conditions and yellow to pink under acidic conditions (1). The medium is pink when hot but becomes straw coloured on cooling. Test carbohydrate solutions should be sterilized separately and added aseptically to the sterile media. The biochemical identification of organisms capable of growing in this medium is made by various sugar fermentation results (2, 4, 5). Use fresh cultures of organisms, which have been presumptively identified by Gram staining and colony morphology. Biochemical tests are required for final identification of the bacteria.

Methodology

Suspend 23.02 grams of dehydrated culture media in 1000 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely and dispense in test tubes containing inverted Durhams tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to room temperature and aseptically add sterile stock solution of carbohydrate to a final concentration of 0.5% to 1.0% (w/v).

Quality Control

Appearance
Cream to yellow coloured with pink tinge homogeneous free flowing powder

Colour and Clarity
Light pink to straw coloured clear solution without any precipitate

Reaction
Reaction of 2.03% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH Range
7.00-7.40

Cultural Response
DM1909F: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Acid in absence of dextrose	Gas in absence of dextrose	Acid with added dextrose	Gas with added dextrose
Cultural Response						
Escherichia coli ATCC 25922	50-100	luxuriant	negative reaction	negative reaction	positive reaction, colour changes to pink-red	positive reaction
Klebsiella pneumoniae ATCC13883	50-100	luxuriant	negative reaction	negative reaction	positive reaction,colour changes to pink-red	positive reaction
Salmonella Typhi ATCC 6539	50-100	luxuriant	negative reaction	negative reaction	positive reaction	negative reaction
Salmonella Typhimurium ATCC 14028	50-100	luxuriant	negative reaction	negative reaction	positive reaction	positive reaction
Proteus vulgaris ATCC 13315	50-100	luxuriant	negative reaction	negative reaction	positive reaction	positive reaction
Shigella flexneri ATCC 12022	50-100	luxuriant	negative reaction	negative reaction	positive reaction	negative reaction
Shigella sonnei ATCC 25931	50-100	luxuriant	negative reaction	negative reaction	positive reaction	

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. MacFaddin, J. F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria vol. 1. Baltimore: Williams and Wilkins.
2. Cowan, S.T, and K.J Steel. 1974. Manual of Identification of Medical Bacteria. 2 ed.: Cambridge United Press.
3. FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
4. Finegold, and Baron. 1986. Bailey and Scott's Diagnostic Microbiology. 7 ed. St. Louis.: The C.V. Mosby Company.
5. Murray, P. R, E. J Baron, J. H Jorgensen, M. A Pfaller, and R. H Yolken. 2003. Manual of Clinical Microbiology. 8 ed. Washington, D.C: ASM.

Disclaimer :

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