Dehydrated Culture Media
Bases / Media Supplements

Technical Information

Andrade Peptone Water w/ Meat extract

Product Code: DM 1909

Application: - Andrade Peptone Water with Meat extract is a basal medium to which various carbohydrates can be added to study fermentation reactions, particularly of members of the *Enterobacteriaceae.*

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Meat extract	3.000
Sodium chloride	5.000
Andrade indicator	0.100
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Bacteria differ widely in their ability to metabolize carbohydrates and related compounds. Carbohydrate fermentation reactions help in the differentiation and identification of various bacteria. Andrade Peptone Water w/ Meat Extract is the most commonly used media for carbohydrate fermentation [1]. Requsite 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.

Peptic digest of animal tissue used is in the medium is free from fermentable carbohydrates [1,2] & nitrate which may interfere with gas production. Meat extract is an additional source of nutrients. Andrade indicator is a solution of acid fuchsin which when titrated with sodium hydroxide; changes colour from pink to yellow. The Andrade indicator changes colour from yellow to pink as the pH decreases [1]. The medium is pink when hot but becomes straw coloured on cooling. Test carbohydrate solutions should be sterilized separately and aseptically added to sterile Andrade Peptone Water w/ meat extract. The biochemical identification of organisms capable of growing in this medium is made by various sugar fermentation results [2-4].

Use fresh cultures of organisms only which have been presumptively identified by Gram staining and colony morphology. For final identification further biochemical tests are required.

Methodology

Suspend 18.1 grams of powder media in 1000 ml distilled water. Shake well & 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

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

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

Reaction
Reaction of 1.8 1% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH range 6.90-7.30

Cultural Response/ characteristices
DM1909: 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
Escherichia coli ATCC 25922	50-100	luxuriant	Negative reaction	Negative reaction	Positive reaction colour changes to pink-red	Positive reaction
Klebsiella pneumoniae ATCC 13883	50-100	luxuriant	Negative reaction	Negative reaction	Positive reaction colour changes to pink-red	Positive reaction
Proteus vulgaris ATCC 13315	50-100	luxuriant	Negative reaction	Negative reaction	Positive reaction	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
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	Positive 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^{o} 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. I, Williams and Wilkins, Baltimore.
2. Cowan S. T. and Steel K. J., 1974, Manual of Identification of Medical Bacteria, 2nd Ed., Cambridge United Press.
3. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Co., St. Louis.
4. Murray P. R., Baron E. J., Jorgensen J. H., Pfaller M. A., Yolken R.H., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.

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