Andrade Peptone Water

M885

Intended Use:

A basal medium which; with carbohydrate addition is used to study fermentation reactions.

Composition**

Ingredients	Gms / Litre
Peptone	10.000
Sodium chloride	5.000
Andrade indicator	0.100
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 15.1 grams in 1000 ml purified / distilled water. 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).

Principle And Interpretation

Bacteria differ widely in their ability to metabolize carbohydrates and related compounds. Carbohydrate fermentation reactions aids in the differentiation and identification of various bacteria. Andrade Peptone Water is the most commonly used media for carbohydrate fermentation (1). 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.

The peptone used in the medium is free from fermentable carbohydrates (1, 2) and the medium is also free from nitrates which may interfere with gas production. 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. The biochemical identification of organisms capable of growing in this medium is made by various sugar fermentation results (2-4).

Sxod ne rodbh l dm

Food samples; Water samples

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (10).

After use, contaminated materials must be sterilized by autoclaving before discarding.

V`qmhmf `mc Oqdb`tshnmr

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

Lh l hs`shnmr

1. Use fresh cultures of organisms only which have been presumptively identified by Gram staining and colony morphology.

2. For final identification further biochemical tests are required.

Odqenq l `mbd `mc Du`k t`shnm

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

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 1.51% w/v aqueous solution at 25°C. pH : 7.4±0.2

Cultural response

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 ATCC13883	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, colour changes to pink red	positive reaction
Salmonella Typhi *ATCC 6539*	50-100	luxuriant	negative reaction	negative reaction	positive reaction, colour changes to pink red	negative reaction
Salmonella Typhimurium *ATCC 14028*	50-100	luxuriant	negative reaction	negative reaction	positive reaction, colour changes to pink red	positive reaction
Shigella flexneri ATCC 12022	50-100	luxuriant	negative reaction	negative reaction	positive reaction, colour changes to pink red	negative reaction
Shigella sonnei ATCC 25931	50-100	luxuriant	negative reaction	negative reaction	positive reaction, colour changes to pink red	negative reaction

Reference

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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