Peptone Water w/ Phenol Red

M028I

Intended Use:

Recommended for studying fermentation ability of *Yersinia enterocolitica* .The composition and performance criteria of this medium are in accordance with ISO 10273:2017.

Composition**

Ingredients	g / L
Peptone	10.000
Sodium chloride	5.000
Phenol red	0.020
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 15.02 grams in 1000 ml purified / distilled water. Add the test carbohydrate in desired quantity and dissolve completely. Dispense in tubes with or without inverted Durhams tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50° C.

Principle And Interpretation

Peptone Water is particularly suitable as a substrate in the study of indole production. Peptone used in Peptone Water is rich in tryptophan content. Peptone Water is also utilized as a base for carbohydrate fermentation studies with the addition of sugar and indicators such as bromocresol purple, phenol red or bromothymol blue. Peptone Water with Phenol Red is recommended for studying the ability of an organism to ferment a specific carbohydrate which aid in differentiation of genera and species (1,2,3). The formulation of Peptone Water makes it useful for cultivating non-fastidious organisms (4). This medium is recommended to study fermentation reactions of *Yersinia enterocolitica.* Peptone Water with pH adjusted to 8.4 is suitable for the cultivation and enrichment of *Vibrio* species. Peptone provides essential nutrients. Sodium chloride maintains the osmotic balance of the medium. Fermentation ability of microorganisms is studied by addition of carbohydrates separately to the basal medium before or after sterilization, such as saccharose, rhamnose, salicin, glucose, dextrose etc. at a concentration of 0.5%. Most of the end products of carbohydrate fermentation are organic acids, which, in the presence of phenol red, show a colour change of the medium from red to yellow. If desired, Durhams tube may be used to detect the gas production if produced. The addition of some sugars can lower the pH of the medium. That can be adjusted with sterile 0.1 N NaOH.

Type of specimen

Food samples

Specimen Collection and Handling:

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (4).
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. Due to variable nutrient requirements some strains may show poor growth.

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 light pink homogeneous free flowing powder

Colour and Clarity of prepared medium

Red coloured clear solution without any precipitate

Reaction

Reaction of 1.5% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

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

Organism	Growth	L(+)Rhamnose (Acid)	Saccharose (Acid)	Salicin (Acid)
Yersinia enterocolitica ATCC 27729	luxuriant	positive reaction (moderate)	positive reaction	negative reaction
Yersinia pseudotuberculosis ATCC 29833	luxuriant	positive reaction (occasional strain are rhamnose positive)	negative reaction	positive reaction

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder 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 (5,6).

Reference

1. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Co., St. Louis.
2. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
3. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
4. International Organization for Standardization (ISO), 1994 Draft ISO/DIS 10273.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. 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.

Revision : 03/2024