Lactose Peptone Water

M1527

Intended Use

Recommended for lactose fermentation studies.

Composition**

Ingredients	g / L
Peptone	10.000
Yeast extract	5.000
Lactose	10.000
Phenol red	0.040

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 25.04 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes containing inverted Durham's tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

The fermentation of Lactose is important for differentiating microbial species, specially for members of the *Enterobacteriaceae* (1). Lactose peptone water is recommended for Lactose fermentation studies.

This medium is rich in additional growth factors and nitrogen source provided by peptone and yeast extract. Lactose acts as carbohydrate and energy source for growth of organism. Lactose fermenting species will utilize lactose to produce acid which can be detected by change in pH of the medium, which is indicated by phenol red indicator to yellow colour. Durham's tubes enables the detection of gas production.

Type of specimen

Isolated microorganisms

Specimen Collection and Handling

For isolated microorganisms samples follow appropriate techniques for handling specimens as per established guidelines (2,3). 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. For lactose fermentation study, well isolated pure colonies must be used.

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 pink coloured homogeneous free flowing powder

Colour and Clarity of prepared medium

Pink coloured clear solution without any precipitate

Cultural Response

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

Organism	Growth	Acid	Gas
Citrobacter freundii ATCC 8090	luxuriant	Positive reaction, yellow colour	Positive reaction

# *Klebsiella aerogenes* ATCC 13048 (00175*)	luxuriant	Positive reaction, yellow colour	Positive reaction
Escherichia coli ATCC 25922 (00013*)	luxuriant	Positive reaction, yellow colour	Positive reaction
Klebsiella pneumoniae ATCC 13883 (00097*)	luxuriant	Positive reaction, yellow colour	Positive reaction
$ *Proteus hauseri* ATCC 13315	luxuriant	Negative reaction, no colour change	Negative reaction
Serratia marcescens ATCC 8100	luxuriant	Negative reaction, no colour change	Negative reaction
Salmonella Typhi ATCC 6539	luxuriant	Negative reaction, no colour change	Negative reaction
Salmonella Typhimurium ATCC 14028 (00031*)	luxuriant	Negative reaction, no colour change	Negative reaction
Shigella flexneri ATCC 12022 (00126*)	luxuriant	Negative reaction, no colour change	Negative reaction

Key : (*) Corresponding WDCM numbers.

$ Formerly known as *Proteus vulgaris* (#) Formerly known as *Enterobacter aerogenes*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order 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 (2,3).

Reference

1. Ewing, 1986, Edwards and Ewing's identification of *Enterobacteriaceae*, 4th Ed. Elsevier Science Publishing Co., Inc., New York.

2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

3. 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 : 03/2025