Phenol Red Dextrose Broth

Cat. 1235

For the differentiation and confirmation of bacteria based on dextrose fermentation.

Practical information

Aplications	Categories
Confirmation	Dextrose fermenters
Differentiation	Dextrose fermenters

Industry: General cultivation

Principles and uses

Phenol Red Dextrose Broth is the same as Phenol Red Broth Base (Cat. 1115) with the addition of dextrose for fermentation studies.

Casein peptone provides nitrogen, vitamins, minerals and amino acids essential for growth and allows the abundant growth of a wide variety of fastidious microorganisms. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Phenol red is the pH indicador and changes to yellow in acid conditions as a result of bacterial fermentation. Durham tubes trap any gases produced during fermentation. Dextrose is the fermentable carbohydrate providing carbon and energy. Vera recommended using casein peptone in fermentation test media since she found that it could be used with the pH indicator phenol red in fermentation tests with a high degree of accuracy.

Formula in g/L

Dextrose	5	Casein peptone	10
Phenol red	0,018	Sodium chloride	5

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 20 grams of the medium in one liter of distilled water. If the medium is for the cultivation of anaerobes, add 0,5-1 g of agar. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense in amounts of 5 ml into tubes with Durham gas collecting tubes for gas detection. Sterilize in autoclave at 118 °C for 15 minutes. DO NOT OVERHEAT.

Instructions for use

- Inoculate tubes with test organisms and incubate at 37 °C for 18-48 hours.
- Observe for color change. The appearance of a yellow color is the indication of fermentation, with or without gas production.
- Control tubes of the uninoculated medium should be run parallel with inoculated tubes. - Tubes should be examined frequently because different carbohydrates are utilized at variable speeds.

For anaerobes, the medium should be used on the day of preparation. If not, the medium must be heated and cooled before use.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Pink	Red-Orange	7,4±0,2

Microbiological test

Incubation conditions: (37±1 ºC / 18-48 h).

Microorganisms	Characteristic reaction
Proteus vulgaris ATCC 13315	Acid (+)/Gas (+)
Salmonella typhimurium ATCC 14028	Acid (+)/Gas (+)
Escherichia coli ATCC 25922	Acid (+)/Gas (+)
Alcaligenes faecalis ATCC 8750	Acid (-)/Gas (-)

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

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Baron EJ LR Peterson and S.M. Finegold 1994. Bailey & Scott's diagnostic microbiology, 9th edition. Mosby-Year Book, Inc. St. Louis, MO. Murray, PR., E.J. Baron M.A. Pfaller F.C. Tenover and R.H. Yolken (ed) 1995. Manual of clinical microbiology, 6th edition. American Society for Microbiology, Washington DC.