

Dextrose Broth (Glucose Broth)

For the cultivation of fastidious microorganisms and for the study of glucose fermentation

Practical information

Applications	Categories
Enrichment	Fastidious microorganisms

Industry: Food

Principles and uses

Dextrose Broth (Glucose Broth), being highly nutritious, is used to cultivate fastidious microorganisms and specimens containing a low inoculum, as well as to detect gas formation from enteric bacilli through dextrose fermentation.

Peptone mixture and Beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Dextrose is the fermentable carbohydrate, providing carbon and energy. Sodium chloride supplies essential electrolytes for transport and osmotic balance.

Adding 0.1-0.2% agar to Dextrose Broth helps anaerobic growth, and the dispersion of reducing substances and CO₂ formed in the environment. The low agar concentration is suitable for aerobic growth, in the clear upper zone, and for microaerophilic and anaerobic growth in the lower, flocculent agar zones.

Formula in g/L

Dextrose	10	Beef extract	3
Peptone	10	Sodium chloride	5

Preparation

Suspend 28 grams of the medium in one liter of distilled water. If desired, add 0,1-0,2 % of Bacteriological agar. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into tubes with Durham gas collecting tubes for gas detection and sterilize in autoclave at 121°C for 15 minutes.

Instructions for use

Inoculate medium, with or without the agar added, and incubate at 35 ± 2°C. Read growth and gas production is at 18 - 48 hours.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Clear amber	7,3 ± 0,2

Microbiological test

Incubation conditions: (35±2 °C / 18-48 h)

Microrganisms	Specification	Characteristic reaction
Shigella flexneri ATCC 12022	Good growth	Gas production (-)
Escherichia coli ATCC 25922	Good growth	Gas production (+)

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

Norton, 1932. Bacteriology of pus. J. Lab. Clin. Med.

MacFaddin J.D. 1985 Media for isolation cultivation identification maintenance of medical bacteria. Williams & Wilking, Baltimore. MD.