Dextrose Agar

M084

Intended Use:

Recommended for cultivation of a wide variety of microorganisms.

Composition**

Ingredients	g / L
Tryptose	10.000
HM peptone B	3.000
Dextrose (Glucose)	10.000
Sodium chloride	5.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 43.0 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. If desired, Blood Agar can be prepared by the addition of 5% v/v sterile, defibrinated sheep blood into sterile Dextrose Agar. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Dextrose in culture media serves as a source of energy. A basal media with 0.5-1.0% dextrose, supplemented with defibrinated blood is recommended for the isolation of a wide variety of fastidious organisms (1). Dextrose Agar, recommended by APHA (2), contains 1.0% dextrose and therefore supports early and luxuriant growth of a variety of organisms including older cultures. The lag phase is comparatively reduced on this medium. But due to high concentrations of dextrose, the medium is not recommended for studying the haemolytic pattern of organism since dextrose interferes with the haemolytic reaction.

Dextrose Agar contains high concentration of dextrose as an energy source for the rapid growth of microorganisms. However this medium is not very suitable for the study of haemolysis because of high carbohydrate content. HM peptone B and tryptose serve as sources of nitrogenous compounds, sulphur, carbon, vitamins and minerals. Osmotic balance of the medium is maintained by sodium chloride.

Type of specimen

Clinical samples - faeces, abscess, etc. Food and dairy samples; Water samples

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (5,6,7).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (8).

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

Warning and Precautions :

In Vitro diagnostic Use. For professional use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3. Further biochemical and serological tests must be carried out for further identification.

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

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Basal medium :Light yellow After addition of 5%v/v sterile defibrinated blood :Cherry red coloured, Basal medium :clear to slightly opalescent gel; After addition :opaque gel forms in Petri plates

Reaction

Reaction of 4.3% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

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

Organism	Inoculum (CFU)	Growth	Recovery	Growth w/ blood	Recovery w/ Blood
Bordetella pertussis ATCC 8467	50-100	good	50-70%	luxuriant	>=70%
Neisseria meningitidis ATCC 13090	50-100	good	50-70%	luxuriant	>=70%
Neisseria gonorrhoeae ATCC 19424	50-100	good	50-70%	luxuriant	>=70%
Streptococcus pyogenes ATCC 19615	50-100	good	50-70%	luxuriant	>=70%
Clostridium perfringens ATCC 12919	50-100	fair-good	40-50%	luxuriant	>=70%

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium 20-30°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 (3,4).

Reference

1. Norton, 1932, J. Lab. Clin. Med., 17:585.
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3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. 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.
5. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
6. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
7. Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.

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IVD ***In vitro*** **diagnostic medical device**

30°C
10°C **Storage temperature**

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CE Marking

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