Dextrose Agar

M084

Dextrose Agar is used for cultivation of wide variety of microorganisms and for preparing Dextrose Blood Agar.

Composition**

Ingredients	Gms / Litre
Tryptose	10.000
Beef extract	3.000
Dextrose	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 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. If desired, Blood Agar can be prepared by the addition of 5% v/v sterile, defibrinated sheep blood into sterile Dextrose Agar, cooled to 50°C. Mix well and despense as desired.

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. Beef extract and tryptose serve as sources of nitrogenous compounds, sulphur, carbon, vitamins and minerals. Osmotic balance of the medium is maintained by sodium chloride.

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
M084: 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

Cultural Response

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 below 30°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1. Norton, 1932, J. Lab. Clin. Med., 17:585.
2. Vanderzant C. and Splittstoesser D. F. (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.

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