Glucose Yeast Extract Agar

M963

Intended Use:

Recommended for enumeration and cultivation of Lactobacilli in pharmaceutical preparations.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
Yeast extract	5.000
Dextrose (Glucose)	2.000
Potassium dihydrogen phosphate	0.500
Dipotassium hydrogen phosphate	0.500
Magnesium sulphate	0.300
Sodium chloride	0.010
Manganese sulphate	0.010
Zinc sulphate	0.0016
Copper sulphate	0.0016
Cobalt sulphate	0.0016
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 28.32 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. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Glucose Yeast Extract Agar is prepared according to the formula described by Evans and Niven (1) and Rogosa et.al. (4) and is used for enumeration and cultivation of Lactobacilli in pharmaceutical preparations.

The medium contains variety of salts like sulphates, phosphates to support the growth of Lactobacilli. Necessary nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and essential growth nutrients for Lactobacilli are provided by peptone and yeast extract. Glucose is the source of fermentable carbohydrate. The metallic salts are sources of ions essential for the replication of lactic acid bacteria.

Type of specimen

Pharmaceutical samples

Specimen Collection and Handling

For pharmaceutical 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. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Further biochemical and serological tests must be carried out for complete 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

Light yellow to beige homogeneous free flowing powder

Gelling
Firm,comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 2.83% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Lactobacillus acidophilus ATCC 4356 (00098*)	50-100	good-luxuriant	>=50%
Lactobacillus delbrueckii subsp. *bulgaricus* ATCC 11842 *(00102*)*	50-100	good-luxuriant	>=50%
Lactobacillus casei ATCC 9595	50-100	good-luxuriant	>=50%

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 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 (2,3).

Reference

1. Evans and Niven, 1951, J. Bacteriol., 62:599.
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.
4. Rogosa M., Mitchell J. A. and Wiseman R. F., 1951, J. Bacteriol., 62 :132.
5. Seppo Salminen, Atte von Wright and Arthur Ouweh and, Lactic Acid Bacteria., Microbiological and Functional Aspects, 3rd Ed., Marcel and Dekker. NY. Basel.

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