



Glucose Agar

M1589

Glucose Agar is used for determining the fermentation reactions of presumptive *Enterobacteriaceae*.

Composition**

Ingredients	Gms / Litre
Tryptone	10.000
Yeast extract	1.500
Glucose	10.000
Sodium chloride	5.000
Bromocresol purple	0.015
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 41.52 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. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Enterobacteriaceae are widely distributed and found in soil, water, vegetation and the intestinal tract of animals. Examination of foods, ingredients and raw materials, for the presence of marker groups such as coliforms or total *Enterobacteriaceae*, is one of the most common tests in food microbiology laboratory, because of the relative speed and ease with which the tests can be accomplished. *Enterobacteriaceae* are gram-negative chemoautotrophs that possess both respiratory and fermentative metabolism. Glucose Agar medium is used in the presumptive identification of *Enterobacteriaceae* based on the fermentation observed in the medium (1). This medium is also recommended by ISO (2, 3) as a solid medium for the confirmation of *Enterobacteriaceae*.

The medium contains tryptone and yeast extract, which provides nitrogenous source and other essential growth factors. Sodium chloride maintains the osmotic balance of the medium. Glucose in the medium provides the energy source and when fermented produces acid. The production of acid is indicated by yellow colour, as the indicator bromocresol purple turns yellow under acidic conditions.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Purple coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 4.15% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M1589: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Medium
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	luxuriant	≥70%	yellow

<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	$\geq 70\%$	yellow
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	luxuriant	$\geq 70\%$	colourless

Storage and Shelf Life

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

Reference

1. Corry J. E. L., Curtis G. D. W. and Baird R. M., Culture Media For Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam.
2. ISO 4702 Standard, 1993, Microbiology General Guidance For The Enumeration Of Enterobacteriaceae Without Resuscitation
3. ISO 8523 Standard, 1991, Microbiology General Guidance For The Detection of Enterobacteriaceae With Pre-enrichment.

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