Gelatin DEV Agar

M1609

Gelatin DEV Agar is used for determining the total microbial count and detecting gelatin-liquefying microorganisms in water.

Composition**

Ingredients	Gms / Litre
Peptone from meat	10.000
Meat extract	10.000
Sodium chloride	5.000
Gelatin	10.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 50 grams in 1000 ml distilled water. Mix thoroughly. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. DO NOT OVERHEAT. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Gelatin, a protein derivative of animal collagen is incorporated into various media to determine an organisms ability to produce proteolytic type enzyme (proteinase) detected by digestion or liquefaction of the gelatin (1). Gelatinase is a pepsin, which hydrolyses gelatin to polypeptides, peptides and amino acids. Gelatin DEV Agar is used to determine the total microbial count and for detecting gelatin liquefying microorganisms in water as per the German Drinking Water Regulations, 1990 (2).

The medium consists of nutrients like peptone from meat, meat extract and gelatin, which provide nitrogen compounds and also carbon compounds for the growth of organisms. Gelatin acts as solidifying agent and also acts as a substrate for the organisms producing gelatinase enzyme. Gelatin breakdown can be visualized by flooding the plates with a saturated solution of ammonium sulphate. Clear zones are observed around gelatin-liquefying colonies.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel and 1.0% Gelatin gel

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

Reaction
Reaction of 5.0% 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 18-22°C for 40-48 hours.(Gelatin liquefaction is observed by flooding the plate with saturated solution of ammonium sulphate)

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Gelatin liquefaction
Cultural Response				
Escherichia coli ATCC 25922	50-100	good-luxuriant	>=70%	negative, no clear zone

				around the colony
Pseudomonas aeruginosa ATCC 27853	50-100	good-luxuriant	>=70%	positive, clear zone around the colony
Bacillus cereus ATCC 10876	50-100	good-luxuriant	>=70%	positive, clear zone around the colony
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	>=70%	positive, clear zone around the colony
Proteus vulgaris ATCC 13315	50-100	good-luxuriant	>=70%	negative, no clear zone around the colony
Enterococcus faecalis ATCC 29212	50-100	good-luxuriant	>=70%	positive, clear zone around the colony
Aeromonas hydrophila ATCC 7966	50-100	good-luxuriant	>=70%	positive, clear zone around the colony

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. MacFaddin J. F., 2000, Biochemical tests for Identification of Medical Bacteria, 3rd Edi., Lippincott, Williams and Wilkins, Baltimore.
2. Deutsche Einheitsverfahren zur Wasser-, Abwasser- und Schlammuntersuchung. - VCH Verlagsgesellschaft, D-6940 Weinheim.
3. Verordnung über Trinkwasser und über Wasser für Lebensmittelbetriebe vom 12, Dezember 1990, - Bundesgesetzbl.: Teil I; 2613-2669 (1990).

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