

Technical Information

Lactose Gelatin Medium

Product Code: DM 1628

Application: - Lactose Gelatin Medium is used for detection of *Clostridium* species from food samples.

Composition**

Ingredients	Gms / Litre
Lactose	10.000
Disodium phosphate	5.000
Gelatin	120.000
Phenol red	0.050
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Members of the genus *Clostridium* are distributed widely in nature and are found in soil as well as in fresh and marine water sediments throughout the world ⁽¹⁾. Clostridial species are one of the major causes of food poisoning / gastro-intestinal illnesses. They are gram-positive, spore-bearing rods that occur naturally in soil ⁽²⁾. Among the family are: *Clostridium botulinum*, which produces one of the most potent toxins; *Clostridium tetani*, causative agent of tetanus; and *Clostridium perfringens*, associated with wound infections and in diarrhoea cases. The use of toxins to damage the host is a method adopted by many bacterial pathogens including *Clostridium* in host parasite defence system.

Lactose Gelatin Medium is prepared as per APHA ⁽³⁾ for detecting *Clostridium* species from food samples. The medium contains lactose which is fermented by the *Clostridium* species, mainly by *Clostridium perfringens* yielding acid and gas. Phenol red is the pH indicator which turns yellow at acidic pH. Gelatin is usually liquefied by *Clostridium perfringens* within 24-48 hours ⁽⁴⁾. Disodium phosphate buffers the medium.

Methodology

Suspend 135 grams of powder media in 1000 ml warm distilled water. Shake well & heat to dissolve the medium completely and dispense 10 ml amounts in 15x150 mm screw capped tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Just before use, heat to boiling to remove dissolved oxygen and cool rapidly to incubation temperature.

Quality Control

Physical Appearance

Light yellow to pink coloured homogeneous free flowing slightly coarse powder

Colour and Clarity of prepared medium

Red coloured clear to slightly opalescent gel forms in tubes.

Reaction

Reaction of 13.5% w/v aqueous solution at 25°C. pH : 7.5±0.2

pH Range: 7.30-7.70

Cultural Response/Characteristics

DM 1628: Cultural characteristics observed under an anaerobic condition after an incubation at 35-37°C for 48-72 hours.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Lactose Fermentation	Gelatin liquefaction
<i>Clostridium perfringens</i> ATCC 12924	Positive reaction,yellow colour	Positive reaction
<i>Clostridium sporogenes</i> ATCC 11437	Negative reaction,no colour change or red	Positive reaction

Storage and Shelf Life

Dried media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Tenover F. C., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
2. Czeczulin J. R., Hanna P. C., McClane B. A., 1993, Cloning, nucleotide sequencing, and expression of the Clostridium perfringens enterotoxin gene in Escherichia coli. Infect. Immun. 61: 3429-3439.
3. Speck M.(Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
2. Hauschild A.H.W. and Hilscheimer R., 1974, Appl. Microbiol., 27:78.

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