Technical Information

Gelatin Iron Agar

Product Code: DM 1686

Application: - Gelatin Iron Agar is used for detecting gelatin liquefaction and hydrogen sulphide production.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	25.000
Meat extract	7.500
Sodium chloride	5.000
Gelatin	120.000
Ferrous chloride	0.500
Agar	1.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Gelatin liquefaction along with the production of hydrogen sulphide is one of the important features used in the classification of bacteria. Hydrogen sulphide can be produced in small amounts from sulphur containing amino acids by a large number of bacteria. Methods to detect hydrogen sulphide production by suspending strips of paper impregnated with lead acetate above cultures has variable sensitivity and is of limited use. The hydrogen sulphide production test combined with gelatin liquefaction test is useful for group differentiation within the *Enterobacteriaceae* species [1]. Few Clostridia exhibit gelatinase activity as well as H_2S production. *Escherichia coli* grow well on this medium but show neither gelatinase activity nor H_2S production.

The medium consists of peptic digest of animal tissue, meat extract and gelatin, which provide nitrogen compounds and also the carbon compounds for the growing organisms. Gelatin acts as solidifying agent and is the substrate for the organisms producing gelatinase enzyme. Ferrous chloride aids in the detection of hydrogen sulphide indicated by black precipitate. Gelatin is usually liquefied by *Clostridium perfringens* within 24 to 48 hours.

Methodology

Suspend 15.9 grams of powder media in 100 ml distilled water. Shake well & heat to dissolve the medium completely. Dispense in test tubes as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder
Gelling
Semisolid, comparable with 0.1% Agar gel and 12.0% Gelatin gel.
Colour and Clarity of prepared medium
Light yellow coloured, clear to slightly opalescent gel forms in tubes as butts
Reaction
Reaction of 15.9% w/v aqueous solution at 25°C. pH : 7.0±0.2
pH range 6.80-7.20
Cultural Response/ characteristices
DM 1686: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Gelatinase reaction	H2S production
Bacillus subtilis ATCC 6633	50-100	luxuriant	positive reaction	negative, no blackening of medium
Clostridium perfringens ATCC 12924	50-100	luxuriant	positive reaction	positive, blackening of medium
Escherichia coli ATCC 25922	50-100	luxuriant	negative reaction	negative, no blackening of medium

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: 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology,1996, 14th Edition, Churchill Livingstone

Disclaimer :

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