Kenknight & Munaier's Medium

M695

Intended Use:

Recommended for isolating *Actinomyces* species from soil samples.

Composition**

Ingredients	Gms / Litre
Dextrose (Glucose)	1.000
Potassium dihydrogen phosphate	0.100
Sodium nitrate	0.100
Potassium chloride	0.100
Magnesium sulphate	0.100
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 16.4 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

The genera *Actinomyces*, belong to the fermentative *Actinomycetes* group. They cause a number of diseases, notably, actinomycosis and some opportunistic diseases (2). Actinomycetes have some unique properties that may be related to their ability to survive and grow in the soils. They are prolific producers of extracellular enzymes that degrade the complex macromolecule substrates commonly found in soils (5). The dessication resistance properties of spore formers such as *Streptomyces* (6) are likely to be important to survive in soils that are often dry (1).

Kenknight and Munaiers medium is used for isolating *Actinomyces* species from soil samples (7). Dextrose serves as carbohydrate source for the growth of *Actinomyces*. Sodium nitrate serves as the source of nitrogen. Various salts in the medium not only buffer the medium but also provide essential ions required for the growth of *Actinomyces.*

Type of specimen

Soil samples.

Specimen Collection and Handling

For soil samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (7). 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. Some species may show poor growth due to nutritional variations.

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 brownish yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured, clear to slightly opalescent gel forms in Petri plates

Cultural Response

Cultural characteristics observed after an incubation at 25-30°C for upto 7 days.

Organism	Growth
Actinomyces israelii ATCC 10049	luxuriant
Streptomyces albus subsp *albus* ATCC 3004	good

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 (3,4).

Reference

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5. MacCartney A. J., 1989, FEMS Microbiol. Rev., 46:145-163
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