



ISP Medium No. 4 (Inorganic Salt Starch Agar)

M359

Intended Use:

Recommended for cultivation and characterization of *Streptomyces* species as per International *Streptomyces* Project.

Composition**

Ingredients	Gms / Litre
Starch, soluble	10.000
Dipotassium hydrogen phosphate	1.000
Magnesium sulphate heptahydrate	1.000
Sodium chloride	1.000
Ammonium sulphate	2.000
Calcium carbonate	2.000
Ferrous sulphate heptahydrate	0.001
Manganous chloride, heptahydrate	0.001
Zinc sulphate heptahydrate	0.001
Agar	20.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 36.5 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml purified/distilled water. Heat just to boiling. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Agitate constantly while pouring to obtain a uniform suspension into Petri plates.

Note: Due to presence of calcium carbonate, the medium forms opalescent solution with white precipitate.

Principle And Interpretation

ISP Medium No. 4 is formulated based on the original formula of Shirling and Gottlieb (1) and is used for characterization of *Streptomyces* species.

Starch provides the energy source. Dipotassium hydrogen phosphate acts as buffering system while sodium chloride maintains the osmotic equilibrium of the medium. The salts provide essential electrolytes and minerals. Inoculate the plates by streaking, using 0.1 ml of the test culture enriched in ISP Medium No. 1 (M356).

Type of specimen

Food samples

Specimen Collection and Handling:

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (2).

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. Further biochemical tests must be carried out for confirmation.

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

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% agar gel.

Colour and Clarity of prepared medium

Light amber coloured, opalescent gel forms in Petri plates

Reaction

Reaction of 3.65% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

Cultural characteristics observed after an incubation at 30-32°C for 48-72 hours

Organism**Growth**

Streptomyces achromogenes good-luxuriant
ATCC 12767

Streptomyces albus subsp good-luxuriant
albus ATCC 3004

Streptomyces lavendulae good-luxuriant
ATCC 8664

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°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

1. Sherling E.B. and Gotlieb.,1966, International J.Systemic Bacteriol., 16:3.
2. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, American Public Health Association, Washington, D.C.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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