

TECHNICAL DATA SHEET

Pikovskaya's Agar

Principle

Pikovskayas Agar was modified by Sundara Rao and Sinha (1963) for detection of phosphate-solubilizing bacteria from soil. It is composed of yeast extract, dextrose, calcium phosphate, ammonium sulphate, potassium chloride, magnesium sulphate, manganese sulphate, ferrous sulphate and agar. Yeast extract provides nitrogen, carbon, vitamins and other nutrients necessary to support bacterial growth. Dextrose acts as an energy source. Different salts and yeast extract supports the growth of organisms and enhances phosphate solubilization. Agar is solidifying agent. Calcium phosphate is inorganic phosphate, solubilizes to forms clear zone around the colonies.

Use: For the detection of phosphate solubilizing soil microorganisms.

Contents*

| Ingredients | Gram/Liter |
|--------------------|------------|
| Yeast Extract | 0.5000 |
| Dextrose | 10.0000 |
| Calcium Phosphate | 5.0000 |
| Ammonium Sulphate | 0.5000 |
| Potassium Chloride | 0.2000 |
| Magnesium Sulphate | 0.1000 |
| Manganese Sulphate | 0.0001 |
| Ferrous Sulphate | 0.0001 |
| Agar | 15.0000 |
| pH at 25°C | 6.1 ±0.2 |

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 31.30 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in petri plates. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Soil samples and biofertilizers etc.

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Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

| | |
|-----------------------------------|--|
| Appearance | Off white colored free flowing, homogeneous powder |
| Reaction of 3.13% solution | 6.1 ±0.2 at 25 °C |
| pH | 5.90- 6.30 |
| Gelling | Firm comparable with 1.5% agar gel |
| Color and clarity of ready medium | Off white with flocculants gel |
| Growth Promotion properties | Best at ≤ 100 CFU at 32-37 °C for 18-72 h |
| Indicative properties | Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h |
| Negative control | Performed using sterile distilled water |

Different Microbial Response: Cultural characteristics observed after incubation at 35±2°C for 24-48 hours.

| Organism | ATCC | Inoculum (CFU) | Growth |
|-------------------------------|-------|----------------|-----------|
| <i>Pseudomonas aeruginosa</i> | 27853 | 50-100 | Luxuriant |

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

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Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Subba Rao N. S., (1977), Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.
2. Sundara Rao W. V. B. and Sinha M. K., (1963), Indian Journal of Agriculture Science, 33:272.

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