



Asparagine Gelatin Lactate Medium Base

M725

Intended Use:

Recommended for isolation of sulphur bacteria.

Composition**

Ingredients	Gms / Litre
Asparagine	1.000
Dipotassium hydrogen phosphate	0.500
Magnesium sulphate	1.000
Ammonium ferric sulphate	0.001
Gelatin	150.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 152.5 grams in 1000 ml warm purified / distilled water. Add 5 grams of sodium lactate. Heat to boiling to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 10 lbs pressure (116°C) for 15 minutes.

Principle And Interpretation

The bulk of soil sulphur is in the organic form which is metabolized by soil microorganisms to make it available in an inorganic state for plant nutrition. Sulphur is bound in organic state in proteins of vegetable and animal origin and in the protoplasm of microorganisms in the form of sulphur containing amino acids (cystine and methionine) and B-vitamins. The conversion of organically bound sulphur to the inorganic state is termed as mineralization of sulphur and is mediated through microorganisms. The sulphur thus released is either absorbed by plants or escapes to the atmosphere in the form of oxides. In the absence of oxygen, certain microorganisms produce hydrogen sulphide from organic sulphur substrates especially in water logged soils. Sulphur bacteria or sulphate reducing bacteria comprise several groups of bacteria that use inorganic sulphate as an oxidizing agent and reduce it to hydrogen sulphide. This may diminish the availability of sulphur for plant nutrition and thus influence agricultural production. *Desulfovibrio* species belonging to this class of bacteria is an obligate anaerobe, capable of producing hydrogen sulphide at a rapid rate. Asparagine Gelatin Lactate Medium is used for the isolation of sulphur bacteria (3).

Asparagine is the nitrogen source and is readily available for microbial energy and growth while the salts in medium help for growth of microorganisms. Gelatin acts as solidifying agent.

Type of specimen

Soil samples

Specimen Collection and Handling

For soil samples, follow appropriate techniques for sample collection and processing as per guidelines (3).

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. Due to variable nutritional requirements, some strains show poor growth on this medium.
2. Do not shake the tubes or flasks after incubation, as liquifaction reactions would not be observed.

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

Off-white to yellow homogeneous free flowing powder

Gelling

Semisolid, comparable with 15.0% Gelatin gel

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in tube as butt

Reaction

Reaction of 15.25% w/v aqueous at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

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

Organism	Inoculum (CFU)	Growth
<i>Desulfovibrio desulfuricans</i> ATCC 13541	50-100	good-luxuriant

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 (1,2).

Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. 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.
3. Subba Rao, 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., India.

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Disclaimer :

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