Asparagine Broth for Pseudomonas

M1903

Intended Use:

Recommended for the presumptive identification and enumeration of *Pseudomonas* by MPN method.

Composition**

Ingredients	Gms / Litre
DL-Asparagine	3.000
Dipotassium hydrogen phosphate	1.000
Magnesium sulphate heptahydrate	0.500
Final pH (at 25°C)	7.05±0.15

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 4.24 grams (the equivalent weight in dehydrated medium per litre) in 1000 ml purified / distilled water. Heat if neccesary to dissolve the medium completely. Dispense into tubes or flasks or as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Pseudomonas is an opportunist pathogen for humans, capable of growing in water with low concentration of nutrients. *Pseudomonas aeruginosa* is one of the major contaminants of natural, fresh and recreational water (1). The presence of high numbers of *Pseudomonas aeruginosa* in potable water,can be associated with complaints about taste, odour and turbidity (4). Asparagine broth is an enrichment broth for *Pseudomonas aeruginosa.* The composition is strictly mineral base with Asparagine as the sole source of nitrogen. The Potassium salts act as a buffer system and Magnesium sulfate is a magnesium ion required in a large variety of enzymatic reactions, including DNA replication and also acts as a buffer. *Pseudomonas aeruginosa* hydrolyze asparagine to aspartic acid.

Type of specimen

Water samples

Specimen Collection and Handling

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(1). 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 strains may show poor growth due to nutritional variations.
2. For further confirmation biochemical and serological test must be carried out.

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
White to cream homogeneous free flowing powder
Colour and Clarity of prepared medium
Colourless clear solution, without any precipitate

pH
6.90-7.20
Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-72 hours.

Organism	Growth	Inoculum (CFU)	Pigment
Pseudomonas aeruginosa ATCC 9027 (00026*)	luxuriant	50-100	yellow green
Pseudomonas aeruginosa ATCC 27853 (00025*)	luxuriant	50-100	yellow green
Pseudomonas aeruginosa ATCC 25668 (00114*)	luxuriant	50-100	yellow green

Key : (*) Corresponding WDCM numbers.

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 (2,3).

Reference

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd Ed., APHA, Washington, D.C.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. 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.
4. WHO (ed.) (2011) Guidelines for drinking-water quality,4th edition.

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