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Technical Data

Cetrimide Broth Base

M862A

Intended Use:

Recommended for cultivation of *Pseudomonas aeruginosa* from water samples using membrane filter technique. The composition and performance criteria of this medium are as per the specifications laid down in ISO 8360-2:1988.

Composition**

ISO 8360-2:1988 Specification -Drake's Medium 19

Ingredients	g / L
Peptone	20.000
Anhydrous Potassium sulphate	10.000
Anhydrous Magnesium chloride	1.400
Hexadecyltrimethylammonium bromide (cetrimide)	0.500
Final pH (at 25°C)	7.2±0.2

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**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 31.9 grams in 1000 ml purified / distilled water. Heat, if necessary, to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add 25 ml filter sterilized ethanol. Mix well before dispensing.

Principle And Interpretation

Cetrimide Broth Base is the modification of the formula designed by King, Ward and Raney (1) and is useful for the cultivation of *P.aeruginosa*. This medium is also selective as it contains cetrimide (Cetyl trimethyl ammonium bromide), which inhibits other bacteria except *P.aeruginosa*. ISO Committee recommends Cetrimide Broth Base for cultivation of P. aeruginosa using membrane filter technique (2).

Peptone provide necessary nutrients for *P. aeruginosa.* Cetyl trimethyl ammonium bromide (Cetrimide) is a quaternary ammonium compound, which inhibits bacteria other than *Pseudomonas aeruginosa.* The production of pyocyanin, a blue water-soluble pigment is stimulated by magnesium chloride and potassium sulphate (3,4).

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.(5) 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 isolation, biochemical and serological tests must be carried out for further identification.

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 colored homogeneous free flowing powder.

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent solution in tubes

Reaction

Reaction of 3.19% 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 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 25922 (00013*)	>=10^4	inhibited
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	luxuriant
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	>=10^4	inhibited

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°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 (6,7).

Reference

1. King, Ward and Raney, 1954, J. Lab. and Clin. Med., 44:301.
2. International Organization for Standardization (ISO), 1988, Draft ISO/DIS 8360-2.
3. Gilardi, 1985, In Manual of Clinical Microbiology, Lennett, Balows, Hausler and Shadomy (Eds.), 4th ed., ASM, Washington, D.C.
4. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
5. Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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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