Monsur Medium Base

M474

Intended Use:

Recommended for selective isolation and differentiation of *Vibrio cholerae* and other *Vibrio* species from pathological samples like faeces or rectal swabs.

Composition**

Ingredients	g / L
Tryptone	10.000
Sodium chloride	10.000
Sodium taurocholate	5.000
Sodium carbonate	1.000
Gelatin	30.000
Agar	15.000
Final pH (at 25°C)	8.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 7.1 grams in 100 ml warm purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 115°C (10 lbs pressure) for 20 minutes. Cool to 45-50°C. Aseptically add 0.5 ml sterile PTe 1% Selective Supplement (FD052). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Vibrio's are fairly easy to isolate from both clinical and environmental material, though some species may require growth factors and /or vitamins. *Vibrio parahaemolyticus* is the leading cause of bacterial diarrhea associated with the consumption of contaminated food products. *Vibrio cholerae* is a non-halophilic *Vibrio* which cannot grow in media with a concentration of sodium chloride greater than 5-6% and is able to grow in media lacking NaCl (1). Human disease is associated with ingestion of contaminated water or food. *V. cholerae* is the etiological agent of a secretory diarrhea spread by the faecal-oral route. The most critical virulence factor of *V. cholerae* is CT (cytotoxin), which is responsible for the main symptom of the cholera disease (2). Monsur Medium was formulated by Monsur (3) and recommended by WHO (4) for the isolation of *V. cholerae* and other *Vibrio* species from pathological samples like faeces or rectal swabs. This medium is also known as Taurocholate Tellurite Gelatin Agar. On this medium, the colonies are often surrounded by a gelatin liquefaction halo, which becomes definite and clearly visible after 48 hours incubation.

Tryptone in the medium supplies nitrogen and carbon compounds, long chain amino acids, vitamins and essential nutrients. Sodium taurocholate inhibits the contaminating gram-positive bacteria. Potassium tellurite is a selective and differential agent. It inhibits many gram-positive bacteria and due to the reduction reaction the colonies form a grey to black colour. Sodium chloride maintains the osmotic equilibrium while sodium carbonate helps in maintaining the elevated pH of the medium. Gelatin acts as an additional carbon and energy source. The high pH and potassium tellurite are inhibitory to most *Enterobacteriaceae* and gram-positive bacteria, though *Proteus* may form grey centered colonies without a halo.

After 24 hours *Vibrio's* show small translucent colonies with a grey-black center and a turbid halo, at 48 hours and longer, colonies become black centered with a well-defined halo.

Type of specimen

Clinical: Faeces or rectal swabs.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (5,6).

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Many members of the genus *Vibrio* have similar characteristics on this medium, additional tests (antisera and/or biochemical) are necessary to screen isolates from this medium.
2. Certain *Vibrio* species may not grow due to the high pH and potassium tellurite which are inhibitory.

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 greenish yellow coarse free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel and 3.0% Gelatin gel.

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 7.1% w/v aqueous solution at 25°C. pH : 8.5±0.2

pH

8.30-8.70

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours with added PTe 1% Selective Supplement (FD052) .

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Proteus mirabilis ATCC 25933	50-100	none-poor	<=10%	black
Vibrio cholerae ATCC 15748	50-100	good-luxuriant	>=50%	grey
Vibrio parahaemolyticus ATCC 17802 (00037*)	50-100	good-luxuriant	>=50%	light grey

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5,6).

Reference

1. Bruno and Ana, Isolation, Enumeration and Preservation of the Vibrionaceae. Thompson F. L., Austin B. and Swings J.,The Biology of *Vibrios.* ASM press.
2. Collee J. G., Fraser A. G., Marmion B. P., Simmons A. (Eds.) 1996, Mackie and McCartney, Practical Medical Microbiology,14th Edition, Churchill Livingstone.
3. Monsur K. A., 1961, Trans R. Soc. Trop. Med. Hyg., 55:440.
4. World Health Organization, 1974, WHO, Geneva.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
6. 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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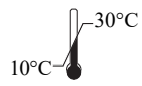
IVD ***In vitro* diagnostic medical device**



Storage temperature

EC REP CEpartner4U, Esdoornlaan 13,
3951DB Maarn, NL
www.cepartner4u.eu

CE Marking

Do not use if package is damaged

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