# Feeley Gorman Broth (F.G. Broth)

**M812**

## Intended Use:

Recommended for cultivation of *Legionella* species.

## Composition**

| Ingredients | g / L |
|---|---|
| Acicase™# | 17.500 |
| HM peptone B ## | 3.000 |
| Starch | 1.500 |
| L-Cysteine hydrochloride | 0.400 |
| Ferric pyrophosphate, soluble | 0.250 |
| Final pH ( at 25°C) | 6.9±0.2 |

**Formula adjusted, standardized to suit performance parameters
#Equivalent to casein acid hydrolysate
## Equivalent to Beef extract

## Directions

Suspend 22.65 grams in 1000 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

## Principle And Interpretation

Feeley et al formulated (1,2) this medium, which is used as nonselective enrichment medium for isolation of *Legionella* species. *Legionella* is a gram-negative bacterium, including species that cause legionellosis or Legionnaires' disease, most notably *L. pneumophilia* (3). *Legionella* species are the causative agent of the human Legionnaires' disease and the lesser form, Pontiac fever. *Legionella* transmission occurs via aerosols- inhalation of mist droplets containing the bacteria. Common sources include cooling towers, domestic hot-water systems, fountains, and similar disseminators that tap into a public water supply. Natural sources of *Legionella* include freshwater ponds and creeks. Person-to-person transmission of *Legionella* has not been demonstrated (4).

*Legionella* are nutritionally fastidious and require L-cysteine and iron salts for their growth, which are provided in the medium. *Legionella* species are highly pathogenic microorganisms. Certain safety precautions must be taken when handling *Legionella* cultures.

Acicase™, HM peptone B, L-cysteine hydrochloride and ferric pyrophosphate act as sources of nutrients. Incubation should be carried out in the presence of 2.5% carbon dioxide but if it exceeds the limit, *Legionella* growth is inhibited due to formation of acidic condition. Legionella species can be identified by their characteristic fluorescence in presence of UV light (5,6). Since Legionella disease is primarily a pulmonary infection, prevention and containment of aerosols is essential (7).

## Type of specimen

Clinical samples - Urine; Water samples

## Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (8,9). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (10).

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

After handling with *Legionella* species sample decontaminate work surface with either 5% hypochlorite or 5% phenil (carbolic acid).

## Warning and Precautions :

In Vitro diagnostic use. 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.

## Limitation

1.Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.

2.Incubation should be carried out in the presence of 2.5% carbon dioxide but if it exceeds the limit, *Legionella* growth is inhibited due to formation of acidic condition.

3.Further biochemical and serological tests must be performed for confirmation.

## 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 homogeneous free flowing powder

**Colour and Clarity of prepared medium**

Yellow coloured, clear to slightly opalescent solution in tubes

**Reaction**

Reaction of 2.3% w/v aqueous solution at 25°C. pH : 6.9±0.2

**pH**

6.70-7.10

**Cultural Response**

Cultural characteristics observed in presence of 2.5% Carbon dioxide ($CO_2$) after an incubation at 35-37°C for 4 days .

| Organism | Growth | Fluorescence under 366 nm |
|---|---|---|
| *Legionella bozemanni* ATCC 33217 | good-luxuriant | blue-white |
| *Legionella micdadei* ATCC 33218 | good-luxuriant | none |
| *Legionella pneumophila* ATCC 33153 | good - luxuriant | bright yellow |

## 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (8,9).

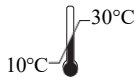
## Reference

1. Feeley J. C. et al, 1978, J. Clin. Microbiol., 8(3): 320.
2. Feeley J. C. et al, 1979, J. Clin. Microbiol., 10(4):437.
3. Ryan K. J., Ray C. G. (Eds.), 2004, Sherris Medical Microbiology, 4th Edition, McGraw Hill.
4. Winn, W. C. Jr. ,1996, Legionella (In: Baron's Medical Microbiology, Barron, S. et al, (Eds.), 4th Edition, University of Texas Medical Branch
5. Herbert G. A. et al, 1959, Ann. Intern, Med., 92(1):45.
6. Herbert G. A. et al, 1980, Ann. Intern. Med., 92(1):53.
7. MacFaddin J. F., Vol. I, 1985, Media for Isolation Cultivation-Identification-Maintenance of Medical Bacteria, Williams and Wilkins, Baltimore/ London, pg.307-308.
8. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
9. 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.
10. Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.

Revision : 04/2024

HiMedia Laboratories Pvt. Limited,
Plot No.C-40, Road No.21Y,
MIDC, Wagle Industrial Area,
Thane (W) -400604, MS, India

IVD ***In vitro*** **diagnostic medical device**




**Storage temperature**

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

CE **CE Marking**

**Do not use if package is damaged**

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory,diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.