

Elliker HiVeg™ Broth (Lactobacilli HiVeg™ Broth)

MV368

Intended Use:

Recommended for cultivation of Lactobacilli and Streptococci of importance in dairy industry.

Composition**

Ingredients	g / L
HiVeg™ hydrolysate	22.500
Yeast extract	5.000
Dextrose (Glucose)	5.000
Lactose	5.000
Saccharose (Sucrose)	5.000
Sodium chloride	4.000
Sodium acetate	1.500
Ascorbic acid	0.500
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 48.5 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

Principle And Interpretation

Lactic acid bacteria found in dairy products are a diverse group consisting primarily of *Streptococcus*, *Lactococcus*, *Leuconostoc* and homofermentative and heterofermentative *Lactobacillus* species. Testing for lactic acid bacteria in dairy products may be useful for determining the cause of acid defects in products and evaluating lactic starter cultures and thus controlling the quality of curds, cheese, cultured milks etc. Elliker Broth, recommended by APHA, is used for culturing Streptococci and lactobacilli in the dairy industry (1). Elliker, Anderson and Hannesson developed Elliker Broth (2), which was further modified by McLaughlin (3). Elliker HiVeg™ Broth (Lactobacilli HiVeg™ Broth) is prepared by using vegetable peptones in place of animal based peptones which make the media free of BSE/TSE risks.

HiVeg™ hydrolysate provide nitrogen to the organisms. Yeast extract serves as the source of vitamin. Dextrose, lactose and saccharose are the fermentable carbohydrates and hence the sources of energy. Sodium chloride maintains the osmotic equilibrium of the medium. With the addition of ascorbic acid, the medium becomes slightly acidic which supports the growth of lactobacilli. Sodium acetate has an inhibitory effect on gram-negative bacteria and moulds, without affecting the growth of lactobacilli.

Type of specimen

Dairy samples

Specimen Collection and Handling:

For dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (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. Further biochemical and serological tests must be carried out for complete identification.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured, clear solution without any precipitate

Reaction

Reaction of 4.85% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours

Organism	Inoculum (CFU)	Growth
<i>Lactobacillus casei</i> ATCC 7469 (00101*)	50-100	luxuriant
<i>Lactococcus lactis</i> ATCC 19435 (00016*)	50-100	luxuriant
<i>Lactobacillus plantarum</i> ATCC 8014	50-100	luxuriant
<i>Streptococcus cremoris</i> ATCC 19257	50-100	luxuriant (incubated at 30-32°C)
<i>Streptococcus thermophilus</i> ATCC 14485	50-100	good-luxuriant

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 (4,5).

Reference

1. Elliker P. R., Anderson A. W. and Hannesson G., 1956, J. Dairy Sci., 39:1611.
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. McLaughlin, 1946, J. Bacteriol., 51:560.
5. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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