

Technical Information

Elliker Broth (Lactobacilli Broth)

Product Code: DM 1368

Application: - Elliker Broth, also known as Lactobacilli Broth, is used for cultivating Streptococci and Lactobacilli of importance in the dairy industry.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Yeast extract	5.000
Gelatin	2.500
Dextrose	5.000
Lactose	5.000
Saccharose	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

Principle & Interpretation

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⁾.

Lactic acid bacteria found in dairy products are primarily consisting of Streptococcus, Lactococcus, Leuconostoc and homofermentative and heterofermentative Lactobacillus species. Testing for lactic acid bacteria in dairy products is useful for determining the cause of acid defects in products and evaluating quality of lactic starter cultures and thus controlling the quality of curds, cheese, cultured milks etc.

Casein enzymic hydrolysate and gelatin 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 the growth of gram-negative bacteria and moulds, without affecting the growth of lactobacilli.

Methodology

Suspend 48.5 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely. Dispense as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical 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/ characteristics

DM 1368: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours

Organism	Inoculum (CFU)	Growth
<i>Lactobacillus casei</i> ATCC 7469	50-100	luxuriant
<i>Lactococcus lactis</i> ATCC 19435	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

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Marshall R., (Ed.), 1993, Standard Methods for the Examination of Dairy Products, 16th Ed., American Public Health Association, Washington, D.C.
2. Elliker P. R., Anderson A. W. and Hannesson G., 1956, J. Dairy Sci., 39:1611.
3. McLaughlin, 1946, J. Bacteriol., 5 1:560.

Disclaimer :

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