

PRODUCT SPECIFICATION SHEET

Elliker Broth (Lactobacilli Broth) (DM097)

Intended Use

Elliker Broth (Lactobacilli Broth) (DM097) is recommended for cultivation of *Lactobacilli* and *Streptococci* of importance in dairy industry.

Product Summary and Explanation

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 various reasons.⁽¹⁾ These include determining the cause of acid defects in dairy products, evaluating lactic starter cultures and controlling the quality of cured cheese, cultured milks and uncultured products.⁽¹⁾

Elliker Broth is prepared according to the formulation of Elliker, Anderson, and Hannesson,⁽²⁾ and modified by McLaughlin.⁽³⁾ This slightly acidic medium contains nutrients to support the growth of streptococci and lactobacilli. Elliker Broth, recommended by APHA, is used for culturing Streptococci and lactobacilli in the dairy industry.⁽⁴⁾

Principles of the Procedure

Elliker Broth contains casein enzymic hydrolysate and gelatine which provide carbon, nitrogen and other essential growth nutrients to the organisms. Yeast extract serves as the source of essential vitamins. Dextrose, lactose and saccharose are the fermentable carbohydrates and hence the sources of energy and carbon. Sodium chloride helps to maintain the osmotic equilibrium of the medium. Addition of ascorbic acid, creates a reduced environment which supports the growth of lactobacilli. Sodium acetate has an inhibitory effect on gram-negative bacteria and moulds, without affecting the growth of lactobacilli.

Formula / Liter

| Ingredients | Gms / Liter |
|--|-------------|
| Casein enzymic hydrolysate | 20.00 |
| Yeast extract | 5.00 |
| Gelatin | 2.50 |
| Dextrose | 5.00 |
| Lactose | 5.00 |
| Saccharose | 5.00 |
| Sodium chloride | 4.00 |
| Sodium acetate | 1.50 |
| Ascorbic acid | 0.50 |
| Final pH: 6.8 ± 0.2 at 25°C | |
| Formula may be adjusted and/or supplemented as required to meet performance specifications | |

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 48.5 grams in one liter of distilled water.
2. Heat, if necessary, to dissolve the medium completely.
3. Dispense as desired.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

| | |
|-----------------------|--|
| Dehydrated Appearance | Cream to yellow homogeneous free flowing powder |
| Prepared Medium | Light amber coloured, clear solution without any precipitate |



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|----------------------------|----------------------|
| Reaction of 4.85% solution | pH 6.8 ± 0.2 at 25°C |
| Gel Strength | Not Applicable |

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

| Sr. No. | Organisms | Results to be achieved | |
|---------|--|------------------------|--|
| | | Inoculum (CFU) | Growth |
| 1. | <i>Lactobacillus casei</i> ATCC 7469 | 50-100 | good- luxuriant |
| 2. | <i>Lactococcus lactis</i> ATCC 19435 | 50-100 | good- luxuriant |
| 3. | <i>Lactobacillus plantarum</i> ATCC 8014 | 50-100 | good- luxuriant |
| 4. | <i>Streptococcus cremoris</i> ATCC 19257 | 50-100 | good- luxuriant (incubated at 30-32°C) |
| 5. | <i>Streptococcus thermophilus</i> ATCC 14485 | 50-100 | good- luxuriant |

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to appropriate references for standard test procedures in food testing for a complete discussion on the isolation and identification of streptococci and lactobacilli. ^(1, 4-6)

Results

Refer to appropriate references and standard test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Elliker Broth (Lactobacilli Broth)

Product Code : DM097

Available Pack sizes : 500gm

References

1. Wehr and Frank (ed.). 2004. Standard methods for the examination of dairy products. 17th 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., 51:560.
4. Marshall R., (Ed.), 1993, Standard Methods for the Examination of Dairy Products, 16th Ed., American Public Health Association, Washington, D.C.
5. U.S. Food and Drug Administration. 2001. Bacteriological analytical manual, online. AOAC International, Gaithersburg, Md.
6. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th. ed. American Public Health Association, Washington, D.C.





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Further Information

For further information please contact your local MICROMASTER Representative.



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