



Technical Data

Briggs Agar

M1891

Intended Use:

Recommended for the cultivation of Lactobacilli from food and dairy products.

Composition**

| Ingredients | Gms / Litre |
|---------------------------|-------------|
| Tryptone | 8.000 |
| Peptone | 8.000 |
| Yeast extract | 6.000 |
| Dextrose (Glucose) | 20.000 |
| Starch, soluble | 0.500 |
| Polysorbate 80 (Tween 80) | 1.000 |
| Sodium chloride | 5.000 |
| Tomato juice (400 ml) | 20.000 |
| Agar | 20.000 |
| Final pH (at 25°C) | 6.8±0.2 |

**Formula adjusted, standardized to suit performance parameters

Equivalent to Pancreatic digest of casein

Directions

Suspend 88.5 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Lactobacillus species have very exacting nutritional requirements for amino acids and vitamins. This restricts them to nutritionally compete in the environment. *Lactobacillus* species grow poorly on non-selective media. Briggs, 1953 developed Briggs agar primarily for the cultivation of lactobacilli from milk and dairy products (1). It may be used for the enumeration of Lactic acid bacteria and has better productivity for some strains of *Lactobacillus delbrueckii* ssp. *bulgaricus* and *Lactococcus lactis* ssp. *lactis* (2).

Tryptone and Peptone and yeast extract serves as a source of nitrogen. amino acids, vitamin B and other nutritional requirements. Glucose is the carbon source, starch as the carbohydrate source and Polysorbate 80 (Tween 80) acts as an emulsifier. Sodium chloride maintains the osmotic equilibrium of the medium. Tomato juice is added to create the proper acidic environment.

Lactobacillus delbrueckii ssp. *bulgaricus*, and *Lactobacillus lactis* ssp. *lactis* shows luxuriant growth.

Type of specimen

Food and dairy samples

Specimen Collection and Handling

For Food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,2,8). 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. Due to variable nutritional requirements, some strains may show poor growth on this medium.
2. Further biochemical and serological test must be carried out for complete identification.

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.

Please refer disclaimer Overleaf.

Quality Control

Appearance

Cream to light yellow homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% Agar gel.

Colour and Clarity of prepared medium

Medium to dark amber coloured, clear to slightly opalescent gel, may have slight precipitate forms in Petri plates

Reaction

Reaction of 6.85% 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 30°C for 2 days and 1 day at 22°C or at either 37°C or 42°C for 2 days under anaerobic or microaerobic conditions.

| Organism | Inoculum (CFU) | Growth | Recovery |
|---|----------------|-----------|----------|
| <i>Lactobacillus bulgaricus</i> ATCC 11842 (00102*) | 50-100 | luxuriant | ≥50% |
| <i>Streptococcus thermophilus</i> ATCC 14485 | 50-100 | luxuriant | ≥50% |
| <i>Lactobacillus lactis</i> ATCC 8000 | 50-100 | luxuriant | ≥50% |

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°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 (4,5).

Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Briggs, M.J. (1953) An improved medium for lactobacilli J. dairy Res. 20, 36-40.
3. Cox, C.P. and Briggs, M.J. (1954) Experiments on growth media for lactobacilli. J. Appl. Bacteriol. 17, 18-26.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
5. 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.
6. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
7. 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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