Lactobacillus Selection Agar Base M1180

Intended Use:

Recommended for isolation and enumeration of Lactobacilli from food.

Composition**

Ingredients	Gms / Litre
Tryptone	10.000
Yeast extract	5.000
Dextrose (Glucose)	20.000
Sodium acetate	25.000
Potassium dihydrogen phosphate	6.000
Ammonium citrate	2.000
Polysorbate 80 (Tween 80)	1.000
Magnesium sulphate	0.575
Manganese sulphate	0.120
Ferrous sulphate	0.034
Agar	15.000
Final pH (at 25°C)	5.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 84.73 grams in 1000 ml purified / distilled water containing 1.32 ml glacial acetic acid. Heat with frequent stirring. Boil for 1-2 minutes to dissolve the medium completely. DO NOT AUTOCLAVE. If storage is necessary, autoclave at 12 lbs pressure (118°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Lactobacillus Selection Agar is used for isolation and enumeration of Lactobacilli. Rogosa et al (1, 2) developed LBS Agar as a selective medium for isolation and enumeration of Lactobacilli from oral, faecal specimens (3), food (4) and dairy products (5). Lactobacillus Selection Medium was demonstrated to be more suitable for growth of lactobacilli than Tomato Juice Medium traditionally used to isolate lactobacilli. Lactobacilli Selection Media can be further enriched by addition of tomato juice (6).

Tryptone, yeast extract and dextrose are the nitrogen and carbon sources. Polysorbate 80 provides fatty acids required for the metabolism of Lactobacilli. Selectivity of the medium is obtained due to the presence of ammonium citrate and sodium acetate. These inhibit the accompanying microbial and fungal flora and also restrict swarming of colonies (7). Addition of acetic acid lowers the pH which is inhibitory to many microorganisms but favours the growth of Lactobacilli.

Lactobacillus on this medium appears as large, white colonies. Growth from Lactobacillus Selection Broth Base (M1166) can be isolated on Lactobacillus Selection Agar Base. Since these media are highly selective, they should not be used for maintenance of lactobacilli.

Type of specimen

Food samples.

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,8,10). 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.

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The Bacterias sustaining low pH, may grow on this media.
2. Some organisms may show poor growth due to nutritional variations.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Yellow coloured slightly opalescent gel forms in Petri plates

Reaction
Reaction of 8.47% w/v aqueous solution at 25°C. pH : 5.5±0.2

pH
5.30-5.70

Cultural Response
Cultural characteristics observed in presence of 3-5% Carbon dioxide (CO2) after an incubation at 35- 37°C for 48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Enterococcus faecalis ATCC 29212	>=10^4	inhibited	0%
Lactobacillus acidophilus ATCC 4356	50-100	luxuriant	>=50%
Lactobacillus casei ATCC 9595	50-100	luxuriant	>=50%
Lactobacillus plantarum ATCC 8014	50-100	luxuriant	>=50%
Proteus vulgaris ATCC 13315	>=10^4	inhibited	0%
Staphylococcus aureus ATCC 25923	>=10^4	inhibited	0%
Escherichia coli ATCC 25922	>=10^4	inhibited	0%

Reference

1.Rogosa, Mitchell and Wiseman, 1951, J. Bacteriol., 62:132.
2.Rogosa, Mitchell and Wiseman, 1951, J. Dental Res., 30:682.
3.Ellis and Sarles, 1958, J. Bacteriol., 75:272.
4.Speck M. (Ed.), 1984, Compendium of Methods for the Microbiological Examination of Foods, 2nd ed., APHA, Washington, D.C.
5. Richardson (Ed.), 1985, Standard Methods for the Examination of Dairy Products, 15th ed., APHA, Washington, D.C.
6. Sabine D. B. and Vaselekos J., 1965, Nature, 206:960.
7.MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore