Technical Information

Lactobacillus Selection Agar Base

Product Code: DM 2180

Application: - Lactobacillus Selection Agar Base is recommended for isolation and enumeration of Lactobacilli from foods.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Yeast extract	5.000
Dextrose	20.000
Sodium acetate	25.000
Monopotassium hydrogen phosphate	6.000
Ammonium citrate	2.000
Polysorbate 80	1.000
Magnesium sulphate	0.575
Manganese sulphate	0.120
Ferrous sulphite	0.034
Agar	15.000
Final pH (at 25°C)	5 .5±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

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 found to be more suitable for growth of lactobacilli than Tomato Juice Medium traditionally used to isolate lactobacilli which can be further enriched by addition of tomato juice [6]. Casein enzymic hydrolysate, 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 due to the presence of ammonium citrate and sodium acetate which restrict swarming of colonies & inhibit the growth of accompanying microbial and fungal flora [7]. Addition of acetic acid lowers the pH which is also inhibitory to the growth of many microorganisms but favours the growth of Lactobacilli.

Lactobacillus on this medium appears as large, white colonies. Growth from Lactobacillus Selection Broth Base (DM 2166) can be isolated on Lactobacillus Selection Agar Base. Since these media are highly selective, they should not be used for maintenance of lactobacilli.

Methodology

Suspend 84.73 grams of powder media in 1000 ml distilled water containing 1.32 ml glacial acetic acid. Shake well & 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. Mix well and pour into sterile Petri plates.

Quality Control

Physical 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 Range:- 5.30-5.70

Cultural Response/Characteristics

DM2180: Cultural characteristics observed in presence of 3-5% Carbon dioxide (CO_2) after an incubation at 35- 37°C for 48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Enterococcus faecalis ATCC 29212	>=10^3	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	>=10^3	Inhibited	0%
Staphylococcus aureus ATCC 25923	>=10^3	Inhibited	0%
Escherichia coli ATCC 25922	>=10^3	Inhibited	0%

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

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

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