Technical Information

Lactobacillus Selection Broth Base

Product Code: DM 2166

Application: - Lactobacillus Selection Broth Base is recommended for selective isolation, cultivation 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 sulphate	0.034
Final pH (at 25°C)	5.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Lactobacilli grow in a different habitats, wherever high levels of soluble carbohydrate, protein background products, vitamins and a low oxygen tension are available [1]. These condition are found in oral cavity, intestinal tract [2, 3], vagina [4], food and dairy products [5, 6]. Lactobacillus Selection Broth Base, developed by Rogosa et al [7, 8] is recommended for the isolation and enumeration of lactobacilli was found to be more suitable for growth of lactobacilli than Tomato Juice Medium traditionally used to isolate lactobacilli. The media can be further enriched by addition of tomato juice [9]. Casein enzymic hydrolysate and yeast extract serve as sources of essential nutrients. Dextrose is the carbohydrate and energy source. Polysorbate 80 serves as an additional source of growth factors and fatty acids required for metabolism of *Lactobacillus* species. Selectivity of the medium is obtained due to the presence of ammonium citrate and sodium acetate. These inhibit the growth of accompanying microbial and fungal flora and also restrict swarming of colonies [10]. The low acidic pH of the medium obtained by addition of glacial acetic acid is inhibitory to several bacterial species. Sulphates provide essential ions. Growth from Lactobacillus Selection Broth Base can be isolated on Lactobacillus Selection Agar Base (DM 2180). Since these media are highly selective, they should not be used for maintenance of lactobacilli.

Methodology

Suspend 69.73 grams of powder media in 1000 ml distilled water containing 1.32 ml glacial acetic acid. Shake well & heat with frequent stirring for for 1-2 minutes to dissolve the medium completely. DO NOT AUTOCLAVE. If storage of medium is necessary, autoclave at 118°C for 15 minutes.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Yellow coloured, clear solution in tubes

Reaction
Reaction of 6.97% w/v aqueous solution at 25°C. pH : 5.4±0.2

pH Range:- 5.20-5.60

Cultural Response/Characteristics
DM 2166: 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
Enterococcus faecalis ATCC 29212	$>=10^3$	Inhibited
Lactobacillus acidophilus ATCC 4356	50-100	Luxuriant
Lactobacillus casei ATCC 9595	50-100	Luxuriant
Lactobacillus plantarum ATCC 8014	50-100	Luxuriant
Proteus vulgaris ATCC 13315	$>=10^3$	Inhibited
Staphylococcus aureus ATCC 25923	$>=10^3$	Inhibited
Escherichia coli ATCC 25922	$>=10^3$	Inhibited

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

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3. Ellis R. F. and Sarles W. B., 1958, J. Bacteriol., 75:272.
4. Rogosa M. and Sharpe M. E., 1960, J. Gen. Microbiol., 23:197
5. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
6. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
7. Rogosa M., Mitchell J. A and Wiseman R. F., 1951, J. Bacteriol.,62:132.
8. Rogosa M., Mitchell J. A and Wiseman R. F., 1951, J. Dental Res., 30:682.
9. Sabine D. B. and Vaselekos J., 1965, Nature, 206:960.
10. MacFaddin J.F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol.1, Williams and Wilkins, Baltimore.

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