Skim Milk Agar M763

Skim Milk Agar is used for cultivation and enumeration of microorganisms encountered in dairy industry.

Composition**

Ingredients	Gms / Litre
Skim milk powder	28.000
Casein enzymic hydrolysate	5.000
Yeast extract	2.500
Dextrose	1.000
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 51.5 grams of in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Skim Milk Agar is used for the demonstration of coagulation and proteolysis of casein (1). The medium is recommended by APHA (2) for cultivation and enumeration of microorganisms encountered in dairy industry (3). Addition of skim milk to any nutrient-rich medium creates favourable conditions for growth of organisms, which are encountered in milk. The number of bacteria isolated thus is more than the number of organisms isolated on a regular medium (4). Proteolytic bacteria hydrolyze casein to form soluble nitrogenous compounds indicated as clear zone surrounding the colonies. More clear zones are seen on milk agar if, the bacteria produce acid from fermentable carbohydrates in the medium.

Casein enzymic hydrolysate provides amino acids and other complex nitrogenous substances. Yeast extract supplies vitamin B complex. Addition of skim milk in the medium makes the conditions optimal for microorganisms encountered in milk. Glucose acts as the carbon source.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Off white coloured opaque gel forms in Petri plates

Reaction

Reaction of 5.15% w/v aqueous solution at 25°C. pH : 7.0±0.2

Cultural Response

M763: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Proteolytic activity		
Bacillus subtilis ATCC 6633	50-100	good-luxuriant	>=70%	positive reaction, clear zone surrounding colonies		
Enterococcus faecalis ATCC 29212	50-100	luxuriant	>=70%	negative reaction, no clear zone surrounding colonies		
Escherichia coli ATCC 25922	50-100	good-luxuriant	>=70%	negative reaction,no clear zone surrounding colonies		

Proteus mirabilis ATCC 25933	50-100	luxuriant	>=70%	positive reaction, clear zone surrounding colonies		
Pseudomonas aeruginosa ATCC 27853	50-100	luxuriant	>=70%	positive reaction, clear zone surrounding colonies		
Serratia marcescens ATCC 8100	50-100	luxuriant	>=70%	positive reaction, clear zone surrounding colonies		

Reference

1. Frazier W. C. and Ripp P., 1928, J. Bacteriol., 16: 57.
2. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
3. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
4. Terplan G. Rundfeldt,H.u. Zaadhof, K.J. Zur Eignung verschiedener Nährböden für die Bestimmung der Gesamtkeimzahl der Milch. - Arch. Lebensmittelhyg., 18; 9-11 (1967).

Storage and Shelf Life

Store below 30°C and the prepared medium at 2 - 8°C. Use before expiry date on the label.