Technical Information

Modified Skim Milk Agar

Product Code: DM 2213

Application: - Modified Skim Milk Agar is recommended for cultivation and enumeration of microorganisms encountered in dairy industry.

Composition**

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

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Modified Skim Milk Agar is formulated by APHA [1] for cultivation and enumeration of microorganisms found in dairy industry. It is also recommended by ISO Committee under the specifications ISO 6610:1992 [2] and ISO 6730:1992 [3]. The medium is rich in nutrients to get luxuriant growth of organisms.

The inoculated agar plates are incubated at 30°C to enumerate organisms from milk and milk products. Seeded plates are incubated at 6.5°C to isolate and enumerate psychrotrophic microorganisms from milk. Psychrotrophic organisms can grow at temperature below 7°C, although their optimal growth temperature is in the range of 20-30°C [4].

Methodology

Suspend 24.5 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (12 1°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 clear to slightly opalescent gel forms in Petri plates
Reaction
Reaction of 2.45% w/v aqueous solution at 25°C. pH : 7.0±0.2
pH range 6.80-7.20
Cultural Response/ characteristices
DM 2213: Cultural characteristics observed after an incubation for 24-48 hours.

Organism	Inoculum (CFU)	Growth (30°C)	Recovery	Growth (30°C)	Recovery (6.5°C)
Bacillus subtilis ATCC 6633	50-100	luxuriant	>=70%	luxuriant	>=70%
Clostridium perfringens ATCC 12924	50-100	luxuriant	>=70%	luxuriant	>=70%
Escherichia coli ATCC 25922	50-100	luxuriant	>=70%	luxuriant	>=70%
Lactobacillus casei ATCC 9595	50-100	luxuriant	>=70%	inhibited	0%
Pseudomonas aeruginosa ATCC 27853	50-100	luxuriant	>=70%	inhibited	0%
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%	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° in sealable plastic bags for 2-5 days.

Further Reading

1. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed, APHA,Washington, D.C.
2. International Organization for Standardization (ISO), 1992, Draft, ISO/DIS 6610.
3. International Organization for Standardization (ISO), 1992, Draft, ISO/DIS 6730.
4. Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th Ed., APHA, Washington, D.C.

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