



## Modified SM Agar

M1213

### Intended Use

Modified SM Agar is recommended for cultivation and enumeration of microorganisms encountered in dairy industry.

### Composition\*\*

Ingredients	Gms / Litre
Tryptone	5.000
Yeast extract	2.500
Glucose monohydrate	1.000
SM powder	1.000
Agar	15.000
Final pH ( at 25°C)	7.0±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 24.50 grams (the equivalent weight of dehydrated medium per litre) 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. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

Modified SM Agar is formulated as per APHA (1) for cultivation and enumeration of microorganisms encountered 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 facilitate luxuriant growth of organisms.

Tryptone and yeast extract provides nitrogenous and carbonaceous compounds, long chain aminoacids, vitamins and other essential nutrients. Glucose monohydrate is the source fermentable carbohydrate.

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 may be in the range of 20-30°C (4).

### Type of specimen

Dairy samples

### Specimen Collection and Handling:

For Dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (5). After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions :

In Vitro diagnostic Use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations :

Due to variable nutritional requirements, some strains show poor growth on this medium.

### Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

**Please refer disclaimer Overleaf.**

**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**

6.80-7.20

**Cultural Response**

M1213: Cultural characteristics observed after an incubation for 24 -48 hours at 30°C & 6.5°C

Organism	Inoculum (CFU)	Growth (30°C)	Recovery (30°C)	Growth (6.5°C)	Recovery (6.5°C)
<i>Bacillus subtilis</i> ATCC 6633 (00003*)	50-100	luxuriant	≥70%	luxuriant	≥70%
<i>Clostridium perfringens</i> ATCC 12924	50-100	luxuriant	≥70%	luxuriant	≥70%
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	luxuriant	≥70%	luxuriant	≥70%
<i>Lactobacillus casei</i> ATCC 9595	50-100	luxuriant	≥70%	inhibited	0%
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	luxuriant	≥70%	inhibited	0%
<i>Staphylococcus aureus</i> ATCC 25923 (00034*)	50-100	luxuriant	≥70%	inhibited	0%

Key : \*Corresponding WDCM numbers.

**Storage and Shelf Life**

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

**Disposal**

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).

**Reference**

- Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed, APHA, Washington, D.C.
- International Organization for Standardization (ISO), 1992, Draft, ISO/DIS 6610.
- International Organization for Standardization (ISO), 1992, Draft, ISO/DIS 6730.
- Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th Ed., APHA, Washington, D.C.
- Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
- Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
- Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Revision : 03 / 2017

**Disclaimer :**

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.