Modified Fungal Agar Base (Modified Inhibitory Mould Agar Base)

M1045

Intended Use:

Recommended for estimation of moulds in cosmetics and toiletries.

Composition**

Ingredients	Gms / Litre
Tryptone	2.500
Peptone	2.500
Yeast extract	5.000
Dextrose (Glucose)	20.000
Disodium hydrogen phosphate	3.500
Potassium dihydrogen phosphate	3.400
Ammonium chloride	1.400
Sodium carbonate	1.000
Magnesium sulphate	0.060
Chloramphenicol	0.100
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 54.46 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Add 20 ml of Polysorbate 80. 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 Fungal Agar Base is formulated as described by Mead and ONeill (3) for estimating moulds in cosmetics and toiletries. Earlier culture media developed for determining mould counts in cosmetics and toiletries etc. required upto 7 days of incubation for the valid count (4,5,6), unlike Mead and ONeill formulation which requires 3 days at 27.5 ± 0.5°C. The medium contains peptone, tryptone, yeast extract, dextrose and inorganic salts which makes it a very nutritious medium. Potential contaminants of cosmetics and toiletries like *Serratia marcescens* are effectively inhibited by the Chloramphenicol in the medium. Sodium and potassium phosphates make the medium well buffered. Polysorbate 80 serves as a neutralizer of preservatives such as methyl paraben and physically hold or seclude the surfactants like sodium lauryl sulphate and lauroyldiethanolamide. These surfactants might suppress the growth or the spore germination of moulds (4). The pH of the medium is neutral which inactivates preservatives such as benzoic acid that is active at pH values below 6.0 but not active at pH near to the neutrality (6).

Type of specimen

Cosmetic products

Specimen Collection and Handling:

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

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 specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. The 27.5 ±0.5°C incubation temperature is critical for obtaining scrupulously significant mold counts after three days.
2. Being selective medium a non selective media can be tested in parallel to recover all microorganisms.
3. Some organism may show poor growth due to nutritional variation.

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

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 5.46% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
Cultural characteristics observed after an incubation at 27 - 28°C for 48 - 72 hours.

Organism	Inoculum (CFU)	Growth	Recovery
# *Aspergillus brasiliensis* ATCC 16404 (00053*)	50-100	good-luxuriant	
Escherichia coli ATCC 25922 (00013*)	>=10^4	inhibited	0%
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	none-poor	<=10%

Key: *Corresponding WDCM numbers. #Formerly known as *Aspergillus niger*

Storage and Shelf Life

Store dehydrated and the prepared medium at 15-25°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. 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (1,2).

Reference

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. 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.
3. Mead and ONeill, 1986, J. Soc. Cosmet. Chem., 37 : 49.
4. The United States Pharmacopeia, 1985, 21st rev., United States Pharmacopeial Convention, Rockville, MD.
5. U.S. Food and Drug Administration, 1984, Bacteriological Analytical Manual, 6th ed., AOAC. Arlington, Va.
6. Williams (Ed.), 1984, Official Methods of Analysis of the AOAC, 14th ed., AOAC, Arlington, Va.

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