PRODUCT SPECIFICATION SHEET

Mold Inhibitory Agar, Ulrich (DM645)

Intended Use
Mold Inhibitory Agar, Ulrich (DM645) is recommended for selective isolation of pathogenic fungi.

Product Summary and Explanation
Among the vast number of organisms that belong to the Kingdom Fungi, pathogenic fungi constitute a very small group. Fungi that belong to the genera *Aspergillus, Candida, Cryptococcus, Histoplasma* and *Pneumocystis* have the potential to cause human diseases. Members of pathogenic fungi group are scattered throughout four taxonomic classes based on their methods of reproduction viz. *Zygomycetes, Basidiomycetes, Ascomycetes* and *Deuteromycetes* (Fungi Imperfecti).[1] To confirm the existence and nature of infection by fungi and yeasts, direct methods are more important than indirect methods; identification of the organisms is much more useful than demonstrating the humoral and cellular responses of the host.[2]
Inhibitory Mold Agar, containing Chloramphenicol, is a moderately selective medium formulated by Ulrich.[3] This medium can be used as a general cultivation medium for various strains of pathogenic fungi, especially *Hisptoplasma capsulatum* and dermatophytes. Chloramphenicol selectively inhibits saprophytic fungi and bacteria while allowing pathogenic fungi to grow. Adding antimicrobial agents to media for the isolation of pathogenic fungi is documented.[4-6] Selective fungal media are recommended for the isolation of dermatophytes because these pathogens are not sensitive to Chloramphenicol.[7]

Principles of the Procedure
Mold Inhibitory Agar, Ulrich casein enzymic hydrolysate and peptic digest of animal tissue which provides nitrogen, carbon, and amino acids essential growth nutrients. Yeast extract is a rich source of vitamin B complex. Dextrose, starch and dextrin are energy sources for the metabolism of fungi. Sodium chloride and metallic salts provide essential ions and minerals thereby helps to maintain the osmotic balance of the medium. Chloramphenicol is a broad-spectrum antibiotic inhibits a wide variety of gram-positive and gram-negative bacteria. Potential contaminants of cosmetics and toiletries like *Pseudomonas aeruginosa* and *Serratia marcescens* are effectively inhibited by chloramphenicol. Sodium phosphates buffer the medium.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	3.00
Peptic digest of animal tissue	2.00
Yeast extract	5.00
Dextrose	5.00
Starch, soluble	2.00
Dextrin	1.00
Sodium phosphate	2.00
Ferrous sulphate	0.04
Magnesium sulphate	0.80
Sodium chloride	0.04
Manganese sulphate	0.16
Chloramphenicol	0.125
Agar	15.00
Final pH: 6.7 ± 0.2 at 25°C	

PRODUCT SPECIFICATION SHEET

Formula may be adjusted and/or supplemented as required to meet performance specifications

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 36.17 grams of the medium in one liter of distilled water.
2. Mix thoroughly and heat to boiling to dissolve the medium completely.
3. Autoclave at 118-121°C, 12-15 psi pressure, for 15 minutes / validated cycle.
4. Mix well and pour into sterile petri plates.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Amber coloured, clear to slightly opalescent gel forms in Petri plates.
Reaction of 3.62% solution	pH 6.7 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Expected Cultural Response: Cultural characteristics observed after an incubation at 25-30°C for upto 7 days ii) Bacterial cultures are incubated at 35-37°C.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Recovery
1.	*Candida albicans ATCC 10231*	50-100	good-luxuriant	>=50%
2.	*Escherichia coli ATCC 25922*	>=10^3	inhibited	0%
3.	*Staphylococcus aureus ATCC 25923*	>=10^3	inhibited	0%
4.	*Trichophyton mentagrophytes ATCC 9533*	50-100	good-luxuriant	

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. Refer to appropriate references for information about the processing and inoculation of specimens.
2. For isolation of fungi from potentially contaminated specimens, a non-selective medium should be inoculated along with the selective medium.
3. Incubate the plates at 25-30°C in an inverted position (agar side up) with increased humidity.
4. The tubed slants also should be incubated at 25-30°C.
5. For isolation of fungi causing systemic mycoses, two sets of media should be inoculated, with one set incubated at 25-30°C and a duplicate set at 35 ± 2°C.
6. All cultures should be examined at least weekly for fungal growth and should be held for 4-6 weeks before being reported as negative.

Results

Examine plates for fungal colonies exhibiting typical color and morphology. Biochemical tests and serological procedures should be performed to confirm findings.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

PRODUCT SPECIFICATION SHEET

Limitations of the Procedure

1. Antimicrobial agents incorporated into a medium to inhibit bacteria may also inhibit certain pathogenic fungi. Primary isolation should include use of both non-selective and selective media.
2. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
3. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Mold Inhibitory Agar, Ulrich
Product Code : DM645
Available Pack sizes : 500gm

References

1. Frey D., Oldfield R. J., Bridger R. C., A Colour Atlas of Pathogenic Fungi, Wolfe Medical Publications, London.
2. Cruikshank R., Marmion B. P., Duguid J. P., Swain R.H.A., (Eds.), Medical Microbiology, 12th Edition, Vol. II, Churchill Livingstone.
3. Ulrich, J. A. 1956. Media and methods for the isolation and identification of pathogenic fungi. Bacteriol. Proc. SAB, M75, p. 87.
4. Georg, L. K., L. Ajello, and C. Papageorge. 1954. Use of cycloheximide in the selective isolation of fungi pathogenic to man. J.Lab Clin. Med. 44:422-428.
5. Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.). 1995. Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
6. MacFaddin, J. F. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, MD.
7. Georg, L. K., L. Ajello, E. S. McDonough, and S. Brinkman. 1960. In vitro effects of antibiotics on yeast phase of *Blastomyces dermatitidis* and other fungi. J. Lab & Clin. Med. 55:116-119.

Further Information

For further information please contact your local MICROMASTER Representative.

MICROMASTER LABORATORIES PRIVATE LIMITED

DM645PSS, QAD/FR/024,Rev.00/01.01.2018

Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall' , Thane (W) – 400607. M.S. INDIA.
Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.
Email: micromaster@micromasterlab.com
sales@micromasterlab.com

Prepared By	Checked By	Approved By
01.01.2018	01.01.2018	01.01.2018
Microbiologist	Head Quality Control	Head Quality Assurance

PRODUCT SPECIFICATION SHEET

Disclaimer :

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