PRODUCT SPECIFICATION SHEET

Yeast Phosphate Agar (DM1341)

Intended Use
Yeast Phosphate Agar (DM1341) is recommended for isolation of dimorphic pathogenic fungi from clinical specimens.

Product Summary and Explanation
Dimorphic fungi are fungi which can exist as mold/hyphal/filamentous form or as yeast. Systemic mycoses responsible for coccidiodomycosis, histoplasmosis and blastomycosis infections,[1] are generically unrelated, but morphologically and culturally, they have one characteristic in common, that of dimorphism. The dimorphic organisms involved exist in nature as the saprophytic form, sometimes called the mycelial phase.
Smith and Goodman[2] developed Yeast Phosphate Agar for primary recovery of *B.dermatitidis*, *H.capsulatum* and other dimorphic pathogenic fungi from clinical specimens. This medium is designed to be used with ammonium hydroxide, a selective agent that aids in recovery of dimorphic pathogens by inhibiting bacteria, yeasts and saprophytic fungi.[3,4]

Principles of the Procedure
Yeast Phosphate Agar contains yeast extract which provides B complex vitamins and nitrogenous nutrients to support fungal growth. Phosphates act as a buffering agent in the medium. A drop of ammonia added to the surface of the inoculated plate inhibits bacteria, yeasts and saprophytic fungi present in clinical specimens without affecting dimorphic fungi like *Blastomyces* and *Histoplasma*. Phenol red changes the color of the medium from pale tan to pink to show that the NH_4OH has been applied to the agar surface. It also shows the loss of alkalinity as the ammonia volatilizes and the pH falls below 7.0. Since *Histoplasma* and *Blastomyces* spp. grow more slowly than bacteria or yeasts they are probably less affected by the transient high pH produced by NH_4OH.

Formula / Liter

Ingredients	Gms / Liter
Yeast extract	1.00
Disodium phosphate	0.20
Monopotassium dihydrogen phosphate	0.30
Phenol red	0.001
Agar	20.00
Final pH: 7.0 ± 0.2 at 25°C	
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 21.5 grams of the medium in one litre of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Cool upto 50°C and pour into sterile Petri plates to make deep-filled plates to reduce the drying effect during prolonged incubation.

Quality Control Specifications

Dehydrated Appearance	Cream to beige homogeneous free flowing powder
Prepared Medium	Beige coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 2.15% Solution	pH : 7.0 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 2.0% Agar gel

Expected Cultural Response: Cultural characteristics observed after an incubation at 25- 30°C for 48-72 hours.

Sr. No.	Organisms	Results to be achieved
		Growth
1.	*Blastomyces dermatidis ATCC 14112*	good-luxuriant
2.	*Candida albicans ATCC 26790*	good-luxuriant
3.	*Histoplasma capsulatum ATCC 10230*	good-luxuriant

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

Test Procedure

1. For the isolation of *Histoplasma* from clinical material a series of six early morning specimens should be collected in sterile bottles.
2. Immediate inoculation is recommended. The specimen is directly inoculated on medium like Sabouraud Dextrose Agar with and without antibiotics.
3. Never hold the specimen at room temperature, as *Histoplama* does not survive at room temperature.
4. Another procedure that may be useful for recovery of *Histoplasma* as well as *Blastomyces* from clinical specimens involves placing one drop of concentrated NH_4OH (ammonia) at the edge of the inoculated medium and allow the medium to sit for 20 minutes before inverting.
5. Incubate the plates in an inverted position (agar side up) at 25-30°C.
6. Refer appropriate references for standard test procedures.

Results

All cultures should be examined for growth at least weekly. Cultures should be held for 4-6 weeks before reporting as negative. Refer appropriate references and test procedures for interpretation of results.

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.

Limitations of the Procedure

1. Clinical specimens suspected of being from cases of Histoplasmosis and Coccidiodomycosis must be manipulated in an exhaust protective cabinet in order to minimize the risk of inhalation of infective particles.[2]
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 : Yeast Phosphate Agar
Product Code : DM1341
Available Pack sizes : 500gm

References

1. Baker F. J. and Breach M. R., 1980, Medical Mycology, Medical Microbiological Techniques, London, Tonbridge.
2. Smith and Goodman, 1974, Am J. Clin. Pathol., 62:276.
3. Haley L. D. and Callaway C. S., 1978, Laboratory Methods in Medical Mycology, HEW Publication No. (CDC) 78-8361, Centre for Diseases Control, Atlanta, Ger.
4. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), Manual of Clinical Microbiology, 8th Ed., 2003, American Society for Microbiology, Washington, D.C.

Further Information

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