Technical Information

Yeast Phosphate Agar

Product Code: DM 2061

Application: - Yeast Phosphate Agar is generally used for isolation of dimorphic pathogenic fungi from clinical specimens.

Composition**

Ingredients	Gms / Litre
Yeast extract	1.000
Disodium phosphate	0.200
Monopotassium dihydrogen phosphate	0.300
Phenol red	0.001
Agar	20.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

The systemic mycoses are responsible for coccidiodomycosis, histoplasmosis and blastomycosis infections [1], thought unrelated generically, morphologically and culturally, yet they have one common characteristic of dimorphism among them. The dimorphic fungi exist in nature as the saprophytic form, sometimes also called the mycelial phase. For the isolation of *Histoplasma* from clinical material a series of six early morning specimens should be collected in sterile bottles. Immediate inoculation is recommended as *Histoplama* does not survive at room temperature. The specimen is directly inoculated on medium like Sabouraud Dextrose Agar with and without antibiotics. 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) on one side of an inoculated plate.

Yeast Phosphate Agar was formulated by Smith and Goodman [4] for primary recovery of *B.dermatitidis, H.capsulatum* and other dimorphic pathogenic fungi from clinical specimens. Ammonium hydroxide is a used as selective agent that helps in recovery of dimorphic pathogens by inhibiting bacteria, yeasts and saprophytic fungi [2, 3].

Yeast extract provides nitrogenous nutrients and vitamin B complex to support fungal growth. Phosphates buffer 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 colour of the medium from orange yellow to pink on addition of ammonia. Phenol red also shows loss of alkalinity as the ammonia volatilizes and the pH falls below 7.0.

Clinical specimens suspected of being from cases of Histoplasmosis and Coccidiodomycosis must be processed in Biosatety Cabinet level-2 in order to minimize the risk of inhalation of infective particles [2].

Methodology

Suspend 21.50 grams of powder media in 1000 ml distilled water. Shake well & heat to to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool upto 50°C and pour into sterile Petri plates to make deep-filled plates to reduce the drying effect during prolonged incubation. After inoculating the plate, add one drop of concentrated ammonia at the edge of the medium. Allow the plates to remain undisturbed for 20 minutes before inverting. Incubate the plates at 25-30°C.

Quality Control

Physical Appearance
Cream to beige homogeneous free flowing powder

Gelling
Firm, comparable with 2.0% Agar gel.

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

Reaction
Reaction of 2.15% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH Range 6.80-7.20

Cultural Response/Characteristics
DM 1161: Cultural characteristics observed after an incubation at 25- 30°C for 48-72 hours.

Organism	Growth
Blastomyces dermatidis *ATCC 14112*	luxuriant
Candida albi cans *ATCC 26790*	luxuriant
Histoplasma capsulatum *ATCC 10230*	luxuriant

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Baker F. J. and Breach M. R., 1980, Medical Mycology, Medical Microbiological Techniques, London, Tonbridge.
2. 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.
3. 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.
4. Smith and Goodman, 1974, Am J. Clin. Pathol., 62:276.

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