Potato Dextrose Agar w/Chloramphenicol

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Potato Dextrose agar is recommended for the selective isolation and enumeration of yeasts and moulds from dairy and other food products.

Composition**

Ingredients	Gms / Litre
Potatoes, infusion from	200.000
Dextrose	20.000
Agar	15.000
Chloramphenicol	0.050
Final pH (at 25°C)	5.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 39.05 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15lbs pressure (121°C) for 15 minutes. Mix well before dispensing. In specific work, when pH 3.5 is required, acidify the medium with sterile 10% tartaric acid. The amount of acid required for 100 ml. of sterile, cooled medium is approximately 1 ml. Do not heat the medium after addition of the acid.

Principle And Interpretation

Potato Dextrose Agar is recommended by APHA (1) and F.D.A. (2) for plate counts of yeasts and moulds in the examination of foods and dairy products (3). Potato Dextrose Agar is also used for stimulating sporulation, for maintaining stock cultures of certain dermatophytes and for differentiation of typical varieties of dermatophytes on the basis of pigment production (4). Potato Dextrose Agar with chloramphenicol is recommended for the selective isolation of fungi.

Potato infusion and dextrose promote luxuriant fungal growth. Adjusting the pH of the medium by tartaric acid to 3.5, inhibits the bacterial growth. Heating the medium after acidification should be avoided as it may hydrolyse the agar which can render the agar unable to solidify. Chloramphenicol inhibits a wide range of Gram-positive and Gram-negative bacteria which makes the medium selective for fungi (5).

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and clarity of prepared medium
Light amber coloured clear to slightly opalescent gel forms in Petri plates

Reaction
pH of 3.91% w/v aqueous solution at 25°C. pH : 5.6±0.2

pH
5.40-5.80

Cultural Response
Cultural Response was observed at 20-25°C for 2-7 day's. Recovery rate is considered as 100% for fungus growth on Sabouraud Dextrose Agar

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery

Cultural Response

Aspergillus brasiliensis ATCC 16404	50-100	good-luxuriant	
Candida albicans ATCC 10231	50-100	good-luxuriant	>=50%
Escherichia coli ATCC 25922	>=10^3	inhibited	0%
Lactobacillus casei ATCC 334	>=10^3	inhibited	0%
Saccharomyces cerevisiae ATCC 9763	50-100	good-luxuriant	>=50%
Trichophyton rubrum ATCC 28191	50-100	good-luxuriant	
Escherichia coli NCTC 9002	>=10^3	inhibited	0%
Escherichia coli ATCC 8739	>=10^3	inhibited	0%

Storage and Shelf Life

Store between 15-25°C in tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label.

Reference

1.Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
2.FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
3.Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
4.MacFaddin J. F., 1985, Media for the Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol.1, Williams and Wilkins, Baltimore
5.Lorian (Ed.),1980, Antibiotics In Laboratory Medicine, Williams and Wilkins, Baltimore

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