Dichloran Rose Bengal Chloramphenicol Agar (DRBC Agar) M1881

Dichloran Rose Bengal Chloramphenicol Agar (DRBC Agar) is used for selective isolation of fungi-yeasts and moulds of significance in food spoilage

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Dextrose	10.000
Monopotassium phosphate	1.000
Magnesium sulphate	0.500
Rose Bengal	0.025
Chloramphenicol	0.100
Dichloran	0.002
Agar	15.000
Final pH (at 25°C)	5.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 31.6 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates

Principle And Interpretation

Dichloran Rose Bengal Chloramphenicol Agar (DRBC Agar) is formulated by as described by King et.al (1) and is recommended for selective isolation of yeasts and moulds especially in food samples.

This medium is a modification of Rose Bengal Chloramphenicol Agar which additionally contains dichloran.

Peptic digest of animal tissue provides nitrogen, vitamins and minerals. Dextrose is a carbohydrate source. Phosphate buffers the medium. Magnesium sulfate provides divalent cations and sulfate. Dichloran is an antifungal agent, added to the medium to reduce colony diameters of spreading fungi. Rose Bengal exhibits an improved inhibitory activity at pH 5.6 and hence the final pH of the medium is maintained at 5.6 for the inhibition of spreading fungi (1) The presence of rose bengal in the medium suppresses the growth of bacteria and restricts the size and colonies of the more rapidly growing moulds. Chloramphenicol is included to inhibit the growth of bacteria present in environmental and food samples. Inhibition of growth of bacteria and restriction of spreading of more-rapidly growing moulds aids in the isolation of slow-growing fungi by preventing their overgrowth by more-rapidly growing species. Additionally Rose Bengal is taken by yeast and moulds colonies , which allows these colonies to be easily recognized and enumerated.

This medium should not be exposed to direct light as rose bengal undergoes photo-degradation leading to formation of toxic chemicals for fungi (2,3).

Quality Control

Appearance
Light yellow to pink homogeneous free flowing powder

Gelling
Firm,comparable with 1.5% Agar gel

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

Reaction
Reaction of 3.16% w/v aqueous solution at 25°C. pH : 5.6±0.2

pH
5.40-5.80

Cultural Response
Cultural characteristics observed after an incubation at 25-30°C for upto 6 days.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response			
Bacillus subtilis ATCC 6633	>=10^3	inhibited	0%
Candida albicans ATCC 10231	50-100	good-luxuriant	>=50%
Escherichia coli ATCC 25922	>=10^3	inhibited	0%
Mucor racemosus ATCC 42647		good-luxuriant	
Saccharomyces cerevisiae ATCC 9763	50-100	good-luxuriant	>=50%

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

Reference
1.King D.A. Jr., Hocking A.D. and Pitt J.I., 1979, J. Appl. Environ. Microbiol., 37:959.
2.Sharp A.N. and Jackson A.K., 1972, J. Appl. Bact., 24:175.
3.U.S. Food and Drug Administration, 1995, Bacteriological Analytical Manual, 8th Ed., AOAC International, Gaithersburg, Md.

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