

# TECHNICAL DATA SHEET

Article No. 9677

**DRBC Agar (Dichloran Rose Bengal Chloramphenicol Agar)**

## SYNONYMS

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## SPECIFICATION

Selective medium for the enumeration of moulds and yeasts in foods, according to ISO standards.

## FORMULA\* IN G/L

Mycological peptone	5.000
Dextrose	10.000
Potassium dihydrogenphosphate	1.000
Magnesium sulphate	0.500
Dichloran	0.002
Rose bengal	0.025
Chloramphenicol	0.100
Agar	15.000

Final pH 5.6 ±0.2 at 25 °C

\*Adjusted and/or supplemented as required to meet performance criteria.

## DIRECTIONS

Suspend 31.6 g of powder in 1 l of distilled water and heat to boiling until completely dissolved. Distribute into suitable containers and sterilize by autoclaving at 121 °C for 15 minutes.

## DESCRIPTION

DRBC Agar (Dichloran Rose Bengal Chloramphenicol Agar) is a medium based on the Dichloran Rose Bengal Chlortetracycline medium developed by King et al. (1979) and on the formulation of Rose Bengal Chlortetracycline medium of Jarvis (1973). The combination of Dichloran and Rose Bengal markedly restricts the size and height of mould colonies thus preventing overgrowth of luxuriant species and assisting accurate counting of colonies. The presence of Chloramphenicol and the low pH of 5.6 serve to prevent the growth of most bacteria.

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Amtsgericht Stuttgart / HRA-Nr. 254140  
Persönlich haftende Gesellschafterin:  
Geyer Beteiligungsgesellschaft mbH  
Amtsgericht Stuttgart / HRB-Nr. 252035  
Geschäftsführer: Lutz-Alexander Geyer / Thomas Roth

This medium supports good growth of yeasts and moulds and can be used to enumerate both toxigenic and non-toxigenic fungi but it is not diagnostic for detecting specific mycotoxin-producers.

In the current formulation the concentration of Rose Bengal is reduced to 25 µg/ml for optimal performance with Dichloran. Chlortetracycline is replaced by chloramphenicol as it is more stable and easier to handle. It is also preferred for use in the food and environmental sectors.

Rose Bengal is taken up by most yeasts and some moulds, which allows the easy recognition and enumeration of these colonies. Sometimes there can be a reduced recovery of certain yeasts due to increased activity of Rose Bengal at pH 5.6.

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## TECHNIQUE

Using 0.1-0.2 ml of inoculum per 9 cm diameter plate, spread it over the whole surface of the plate. Incubate the plates upright at 25 °C for 5 days in the dark with examination for growth after 3, 4 and 5 days. Where identification is required prolong the incubation until characteristic colonies are formed. Colonies of yeast generally appear pink due the uptake of Rose Bengal.

Where separate counts of moulds and yeasts are required, identify by morphological appearance and perform microscopic examination of these two groups of microorganisms where necessary. Colonies of yeast and bacteria can be confused and microscopic examination should be carried out if unsure.

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## CAUTIONS AND LIMITATIONS

Due to the selective properties of this medium and the type of specimen being cultured some strains of fungi can fail to grow or grow poorly. Similarly, some strains of bacteria may be encountered that are not inhibited or only partially inhibited. This medium is photo-sensitive. Do not expose to light since photo-degradation of Rose Bengal produces compounds toxic to fungi.

The prepared medium has a short shelf-life and retains this at 4 ±2 °C in the dark.

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## QUALITY CONTROL

- Incubation temperature: 25 ±1.0 °C
- Incubation time: 48 h/5 d
- Inoculum: Practical range 100 ±20 CFU. Min. 50 CFU (productivity)/10<sup>4</sup>-10<sup>6</sup> CFU selectivity), according to ISO 11133:2014. Spiral Plate Method.

Microorganism	Growth	Remarks
<i>Bacillus subtilis</i> ATCC® 6633	Inhibited	None
<i>Escherichia coli</i> ATCC® 25922	Inhibited	None
<i>Aspergillus niger</i> ATCC® 16404	Productivity >0.50	None
<i>Saccharomyces cerevisiae</i> ATCC® 9763	Productivity >0.50	None
<i>Candida albicans</i> ATCC® 10231	Productivity >0.50	None
<i>Mucor racemosus</i> ATCC® 42647	Productivity >0.50	None

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## REFERENCES

- ATLAS, R.M. & L.C. PARKS (1993) Handbook of Microbiological Culture Media. CRC Press. Boca Raton. Fla. USA.
- BAYLIS, C.L. (2003) Manual of Microbiological Methods for the Food and Drinks Industry. CCFRA. Chipping Campden. Gloucestershire. UK.
- BEUCHAT, L.R. & M.A. COUSIN (2001) Yeasts and Molds. In Downes and Ito (ed.) Compendium of methods for the microbiological examination of foods. 4th ed. APHA. Washington. USA.
- CORRY, J.E.L., G.D.W. CURTIS & R.M. BAIRD (2003) Handbook of Culture Media for Food Microbiology. Elsevier Science. Amsterdam.
- ISO 21527-1 Standard (2008) Microbiology of food and animal feeding stuffs - Horizontal methods for the enumeration of yeast and moulds - Part1: Colony count technique in products with water activity greater than 0,95.
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- JARVIS, B.(1973) Comparison of an improved Rose-Bengal-Chlortetracycline Agar with other media for the selective isolation and enumeration of moulds and yeasts in food. J. Appl. Bacteriol. 36:723-727.
- KING, D.A., A.D. HOCKING & J.J.PITT (1979) Dichloran-Rose Bengal medium for enumeration and isolation of molds from foods. Appl. Environm. Microbiol. 37:959-964.

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## STORAGE

Keep tightly closed, away from light, in a dry place (4-30 °C).

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## SHELF LIFE

5 years from date of production.

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