DRBC Agar modified

Selective medium for the enumeration of yeasts and moulds, according to ISO 21527.

TYPICAL FORMULA	(g/l)
Enzymatic Digest of Animal and Plant Tissues	5.0
Glucose	10.0
Potassium Dihydrogenphosphate	1.0
Magnesium Sulfate	0.5
Dichloran (2,6-dichloro-4-nitroanile)	0.002
Rose Bengal	0.025
Chloramphenicol	0.050
Chlortetracycline Chlorhydrate	0.050
Zinc Sulfate	0.010
Cupric Sulfate	0.005
Agar	15.0
Final pH 5.6 ± 0.2 at 25°C	

DESCRIPTION

DRBC (Dichloran Rose Bengal Chloramphenicol) Agar modified is a selective medium used for the enumeration of viable yeasts and moulds in products intended for human and animal consumption that have a water activity greater than 0.95.

This medium complies with the requirements of ISO 21527-1.

PRINCIPLE

Enzymatic digest of plant and animal tissues provides carbon, nitrogen, vitamins and minerals required for organism growth. Glucose is an energy source. Phosphate is a buffering agent. Magnesium sulfate is a source of divalent cations and sulfate. The antifungal agent, dichloran, is included to reduce colony diameters of spreading fungi. Rose bengal suppresses the growth of bacteria and restricts the size and height of colonies of the more rapidly growing moulds. Chloramphenicol and chlortetracycline are incorporated in the medium to inhibit the majority of bacteria present in environmental and food samples. Inhibition of bacterial growth and restriction of spreading of more-rapidly growing moulds aids in the isolation of slow-growing fungi. Also the low pH serves to prevent the growth of most bacteria. Zinc and copper in the form of sulfates enhance pigment production from moulds. Agar is the solidifying agent.

The addition of Tergitol is recommended to limit overgrowth of Mucoraceae.

PREPARATION

Suspend 31.64 g of the powder in 1 liter of purified water. Mix thoroughly. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder. Add 1 ml of Tergitol (ref. 80305). Autoclave at 121°C for 15 minutes. Cool to 45-50°C. Pour into Petri dishes.

TECHNIQUE

Inoculate 0.1 ml of sample and/or its appropriate decimal dilutions by spreading over the entire agar surface. Incubate plates aerobically at 25 ± 1°C for 5 days.

INTERPRETATION OF RESULTS

Observe growth after 2 days and again after 5 days of incubation. Read the plates containing less than 150 colonies/propagules.

Colonies of yeasts appear pink due to the uptake of rose bengal. For identification of yeast and moulds, perform high microscopic examination or inoculate on suitable media.

STORAGE

The powder is very hygroscopic, store the powder at 10-30°C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until sings of deterioration or contamination are evident. Store prepared plates at 2-8°C away from light.

WARNING AND PRECAUTIONS

The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous. It is nevertheless recommended to consult the safety data sheet for its correct use. The product must be used only by properly trained operators.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES

1. EN ISO 11133:2014+Amd1:2018. Microbiology of food, animal feed and water – Preparation, production, storage and performance testing of culture media.
2. ISO 21527-1:2008. Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of yeasts and moulds
3. Beuchat and Cousin. 2001. *In* Downes and Ito (ed.). Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association. Washington, D.C.
4. U.S. Food and Drug Administration. 1995. Bacteriological analytical manual, 8th ed. AOAC International, Gaithersburg, Md.
5. Banks, Board and Paton. 1985. Lett. Appl. Microbiol. *1*:7.
6. King, Hocking and Pitt. 1979. Appl. Environ. Microbiol. *37*:959.

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PRODUCT SPECIFICATIONS

NAME
DRBC Agar modified

PRESENTATION
Dehydrated medium

STORAGE
10-30°C

PACKAGE

Ref.	Content	Packaging
610399	500 g	500 g of powder in plastic bottle

pH OF THE MEDIUM
5.6 ± 0.2

USE
DRBC Agar modified is a selective medium used for the enumeration of yeasts and moulds according to ISO 21527-1

TECHNIQUE
Refer to technical sheet of the product

APPEARANCE OF THE MEDIUM
Dehydrated medium
Appearance: free-flowing, homogeneous
Colour: pink
Prepared medium
Appearance: very slightly to slightly opalescent
Colour: bright pink

SHELFLIFE
4 years

QUALITY CONTROL
1. Control of general characteristics, label and print
2. Microbiological control
   Inoculum for productivity: 50-100 CFU
   Inoculum for selectivity: 10^4-10^6 CFU
   Incubation conditions: 5 days at 25 ± 1°C

Microorganism		Growth
Saccharomices cerevisiae	WDCM 00058	Good ($P_R \geq 0.5$)
Aspergillus brasiliensis	WDCM 00053	Good ($P_R \geq 0.5$)
Candida albicans	WDCM 00054	Good ($P_R \geq 0.5$)
Escherichia coli	WDCM 00012	Inhibited
Bacillus subtilis	WDCM 00003	Inhibited

TABLE OF SYMBOLS

LOT Batch code	Keep away from heat sources	Manufacturer	Use by	Fragile, handle with care
REF Catalogue number	Temperature limitation	Contains sufficient for <n> tests	Consult instructions for use	

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