



Dichloran Glycerol Medium Base

M1129

Intended use

Dichloran Glycerol Medium Base with Chloramphenicol is recommended for selective isolation of xerophilic moulds from food samples.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
Dextrose (Glucose)	10.000
Potassium dihydrogen phosphate	1.000
Magnesium sulphate	0.500
Dichloran	0.002
Chloramphenicol	0.100
Agar	15.000
Final pH (at 25°C)	5.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 15.8 grams in 500 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Add 110 grams of glycerol (Analytical Reagent Grade). Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

Mix well and pour into sterile Petri plates.

Principle And Interpretation

Dichloran Glycerol Medium was formulated by Hocking and Pitt (1) and is recommended for isolation and enumeration of xerophilic moulds from dried and semidried foods. The glycerol at 18% (w/w) lowers the water activity (aw) from 0.999 to 0.95 (2) without causing any problem. This restrictive characteristic makes the medium especially suitable for foods.

Peptone provides carbon, nitrogen, vitamins and minerals. Dextrose (Glucose) 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.

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.

Process 40 gm of food sample in a stomacher by adding 200 ml of 0.1% Peptone Water (M028). Shake periodically for 30 minutes with 0.1% Peptone Water for powdered products. Dilute the sample to 1:10 in 0.1% Peptone water and spread on plate. Count the number of Xerophilic colonies per gram of food. The medium can also be used as general medium for the isolation of yeasts and moulds from foodstuffs (2).

Type of specimen

Food samples

Specimen Collection and Handling:

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (3).

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets

Limitations :

1. Due to nutritional variations some strains may show poor growth.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Medium amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 3.16% w/v aqueous solution 22 grams of glycerol at 25°C. pH : 5.6±0.2

pH

5.40-5.80

Cultural Response

M1129: Cultural characteristics observed with added 22 grams of glycerol after an incubation at 25°C for upto 6 days.

Organism	Inoculum (CFU)	Growth	Recovery
<i>Bacillus subtilis subsp spizizenii</i> ATCC 6633 (00003*)	≥10 ³	inhibited	0%
<i>Candida albicans</i> ATCC 10231 (00054*)	50-100	good-luxuriant	≥50%
<i>Escherichia coli</i> ATCC 25922 (00013*)	≥10 ³	inhibited	0%
<i>Mucor racemosus</i> ATCC 42647	-	good-luxuriant	
<i>Saccharomyces cerevisiae</i> ATCC 9763 (00058*)	50-100	good-luxuriant	≥50%

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label.

Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Reference

- Hocking A.D. and Pitt J.I., 1980, J. Appl. Environ. Microbiol., 39:488.
- Beckers H.J., et al, 1982, Intern. Stand. Org. Document ISO/TC34/SC9/N151
- Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
- Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
- Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Disclaimer :

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