40587 NutriSelect™ Plus Dichloran Glycerol Agar (DG 18 Agar)

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

Composition:

Ingredients	Grams/Litre
Peptic digest of animal tissue	5.0
Dextrose	10.0
Monopotassium phosphate	1.0
Magnesium sulfate	0.5
Dichloran	0.002
Chloramphenicol	0.1
Agar	15.0

Final pH 5.6 +/- 0.2 at 25°C

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at room temperature.

Appearance: Faint yellow faint beige to faint brown coloured, homogeneous, free flowing powder.

Color and Clarity: Light yellow to light brown coloured clear to slightly opalescent gel.

Directions:

Suspend 15.8 grams in 500 ml 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.

Principle and Interpretation:

Dichloran Glycerol Medium was formulated by Hocking and Pitt (2) 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 (1) without causing any problem. This restrictive characteristic makes the medium especially suitable for foods.

Peptone provides essential nitrogenous, carbonaceous compounds, vitamins and minerals. Dextrose (D-Glucose) is the carbohydrate source. Potassium phosphate is the buffering agent in 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, so slow-growing fungi are not going to be overgrown. This medium can also be used for isolation of fungi from clinical samples. Chloramphenicol is included to inhibit the growth of bacteria present in environmental and food samples.

40 grams of food sample and 200 ml of 0.1% peptone water are put in a stomacher bag. 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 (1).

Cultural characteristics after 6 days at 25°C.

Organisms (ATCC)	Inoculum [cfu]	Growth	Recovery
Bacillus subtilis subsp spizizenii (6633, WDCM 00003)	≥10^4	-	0%
Candida albicans (10231, WDCM 00054)	50-100	+++	≥ 50%
Escherichia coli (25922, WDCM 00013)	≥10^4	-	0%
Mucor racemosus (42647)	-	+++	-
Saccharomyces cerevisiae (9763, WDCM 00058)	50-100	+++	≥ 50%

References:

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

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.