Dichloran Glycerol Agar (DG 18) ISO

Cat. 1161

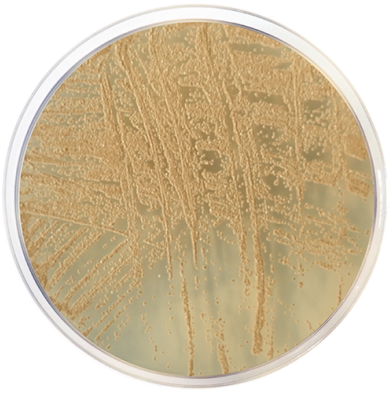
For the enumeration and isolation of xerophilic fungi in dry and semi-dry foods

Practical information

Aplications	Categories
Selective enumeration	Xerophilic fungi
Selective isolation	Xerophilic fungi

Industry: Food / Dairy products

Regulations: ISO 11133 / ISO 21527



Principles and uses

Dichloran Glycerol Agar (DG 18) is a selective medium based on the formulation of Hocking and Pitt. It is recommended for the enumeration and isolation of xerophilic molds from dried and semi-dried foods, such as fruits, spices, cereals, nuts, meat and fish products.

Glycerol reduces the water activity from 0.999 to 0.95, thereby reducing bacterial growth, and is also the carbon source.
Chloramphenicol is an antibiotic which aids in isolating pathogenic fungi from heavily contaminated material, as it inhibits most contaminating bacteria. It is a recommended antibiotic for use with media due to its heat stability and wide
bacterial spectrum. Bacteria growth inhibition and spreading of more-rapidly growing molds restriction aids in the isolation of slow-growing fungi by preventing their overgrowth by more-rapidly growing species. Dichloran prevents the fast spreading of mucoraceous fungi, improving the colony count. Peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Dextrose is the fermentable carbohydrate providing carbon and energy. Potassium phosphate acts as a buffer system. Magnesium sulfate provides sulfur and other trace elements. Bacteriological agar isthe solidifying agent.

Formula in g/L

Enzymatic digest of casein	5	Bacteriological agar	15
Chloramphenicol	0,1	D-Glucose	10
Magnesium sulfate	0,5	Potassium dihydrogenphosphate	1
Dichloran	0,002		

Preparation

Suspend 31,6 grams of the medium in one liter of distilled water. Add 175 ml of glycerol. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Distribute and sterilize in autoclave at 121°C for 15 minutes. Cool to 45-50ºC and pour into Petri dishes.

Instructions for use

- Use two different plates.
- On to one DG 18 plate, transfer 0,1 ml of the test sample if the sample in liquid, or 0,1 ml of the initial suspension if the sample is not liquid.
- On to second DG 18 plate, transfer 0,1 ml of the first decimal dilution (10-1) if liquid, or 0,1 ml of the second decimal dilution (10-2) if not.
- Inoculate and incubate at 25±1 °C.
- Examine for growth after 5-7 days. If the presence of Xeromyces bisporus is suspected, incubate the plates for 10 days.
- Select the dishes containing < 150 colonies and count them. If fast growing molds are a problem, count colonies after 2 days and again after 5-7 days of incubation.
- This number can be reported as number of xerophilic colonies per gram of food.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	Amber	5.6 ± 0.2

Microbiological test

According to ISO 11133:
Incubation conditions: (25±1 ºC / 5 days).
Inoculation conditions: (100±20. Min.50 cfu)/ Selectivity (10^4-10^6 cfu).
Reference media: SDA.

Microorganisms	Specification	Characteristic reaction
Escherichia coli ATCC 25922	No growth	
Wallemia sebi ATCC 42964	Good growth >50%	Characteristic colony/propagules according to each species
Bacillus subtilis ATCC 6633	No growth	
Saccharomyces cerevisiae ATCC 9763	Good growth >50 %	Characteristic colony/propagules according to each species

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

ISO 21527-2: Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of yeasts and moulds -- Part 2: Colony count technique in products with water activity less than or equal to 0.95

Hocking, A.D.,and Pitt,J.L. (1980) Dichloran-glycerol medium for enumeration of xerophilic fungi from low moisture foods. Appl. Enviornm. Microbiol 39, 488-492