TECHNICAL DATA SHEET

OXYTETRACYCLINE GLUCOSE AGAR (OGA)

ENUMERATION OF YEASTS AND MOLDS

1 INTENDED USE

Oxytetracycline Glucose Agar is used for the detection and enumeration of yeasts and molds in food products.

The typical composition corresponds to that defined in the standards ISO 6611 and NF V08-059.

2 HISTORY

In 1965, Buttiaux and Catsaras recommended the use of this medium for the detection of yeasts and molds in beer. Subsequently, Sainclivier and Roblot recommended it for the analysis of butter. Mossel also showed that neutral pH led to a better recovery than acid pH medium with several types of foods (pH being the only selective mechanism against the growth of bacteria in this particular medium).

3 PRINCIPLES

The growth of yeasts and molds is favored by the presence of glucose and yeast extract.

The addition of oxytetracycline just before use inhibits most bacteria, including lactobacilli (acidophilic bacteria which may be the dominant flora in certain food products).

If a massive contamination is suspected, notably in meat products or raw seafood, the addition of gentamicin can inhibit the majority of Gram negative flora which may be present.

4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

The typical formulation differs according to the applied standard.

For 1010 mL of complete media (ISO 6611):

- Yeast extract ..... 5,0 g
- Glucose ..... 20,0 g
- Oxytetracycline ..... 0,1 g
- Bacteriological agar ..... 15,0 g

For 1100 mL of complete media (NF V 08-059):

- Yeast extract ..... 5,0 g
- Glucose ..... 20,0 g
- Oxytetracycline ..... 0,1 g
- Bacteriological agar ..... 15,0 g

pH of the ready-to-use media at 25 °C : 6,6 ± 0,2.

For 40 g of dehydrated base media BK053

- Yeast extract ..... 5,0 g
- Glucose ..... 20,0 g
- Bacteriological agar ..... 15,0 g

For one vial of supplement BS008

- Oxytetracycline ..... 50 mg

5 PREPARATION

Supplement reconstitution

- Rehydrate the freeze-dried supplement BS008 by aseptically adding 5 mL of sterile distilled water.
- Vortex or shake the vial in order to insure a complete dissolution, avoiding the production of foam.

Preparation of agar media (ISO 6611)

- Dissolve 40,0 g of dehydrated media (BK053) in 1 liter of distilled or demineralized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense into vials, 00 mL per vial.
- Sterilize in an autoclave at 121 °C for 15 minutes.
- Cool and maintain in a molten state at 44-47 °C.
- Aseptically add 1,0 mL of reconstituted Oxytetracycline 50 mg selective supplement (BS008) to 100 mL of base media.
- Maintain at 44-47 °C until use.

✓ **Reconstitution :**
40,0 g /L

✓ **Sterilization :**
15 min at 121 °C

Preparation of agar media (NF V08-059)

- DIssolve 40,0 g of dehydrated media (BK053) in 1,1 liters of distilled or demineralized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense into flasks at 110 mL per vial.
- Sterilize in an autoclave at 121 °C for 15 minutes.
- Cool and maintain in a molten state at 44-47 °C.
- Aseptically add 1,0 mL of reconstituted 50 mg Oxytetracycline Selective supplement (BS008) to 100 mL of base media.
- Maintain at 44-47 °C until use.

✓ **Reconstitution :**
40,0 g /1,1 L

✓ **Sterilization :**
15 min at 121 °C

NOTE :
In both standards cited above, it is possible to perform enumeration by replacing oxytetracycline by chloramphenicol at the same concentrations. .
In this case, use the Chloramphenicol 50 mg Selective supplement (BS021).
Rehydrate the supplement with 5 mL of sterile distilled water and add 1 mL of the reconstituted supplement to each 100 mL vial of media.

6 INSTRUCTION FOR USE

- Transfer 1 mL of the initial suspension and its serial dilutions to sterile Petri plates.
- Pour in roughly 15 mL of the molten media per plate.
- Homogenize by swirling and let solidify on a cold surface.
- Incubate at 25 °C for 5 days. Do not invert the plates during incubation.

✓ **Inoculation :**
1 mL in pour plates

✓ **Incubation :**
5 days at 25 °C

NOTE :
Inoculation of samples via surface streaking is also possible.

7 RESULTS

After incubation, count separately yeasts, thallus and molds.

See ANNEX 1 : PHOTO SUPPORT.

8 QUALITY CONTROL

Dehydrated based media : beige powder, free-flowing and homogeneous.
Oxytetracycline Selective Supplement : yellowish pellet, after reconstitution producing a yellow, limpid solution.
Prepared (complete) media : amber agar.

Typical culture response after 72 hours of incubation at 25 °C (NF EN ISO 11133) :

Microorganisms		Growth (Productivity Ratio : $P_{R)}$
Saccharomyces cerevisiae	WDCM 00058	$P_R \geq 50$ %
Candida albicans	WDCM 00054	$P_R \geq 50$ %
Aspergillus brasiliensis	WDCM 00053	$P_R \geq 50$ %
Escherichia coli	WDCM 00013	Inhibited
Bacillus subtilis	WDCM 00003	Inhibited

9 STORAGE / SHELF LIFE

Dehydrated base media : 2-30 °C.
Ready-to-melt media in vials : 2-25 °C.
Oxytetracycline 50 mg Selective Supplement : 2-8 °C.
The expiration dates are indicated on the labels.

Prepared base media in vials (*) : 180 days at 2-25 °C.
Rehydrated Oxytetracycline selective supplement (*) : 30 days at 2-8 °C. During conservation, the solution can become opalescent to cloudy. This phenomenon has no incidence on the bacteriological activity of the reagent.
Prepared (complete) media in plates (*) :15 days at 2-8 °C.
(*) Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

10 PACKAGING

Dehydrated base media (without Oxytetracycline) :
500 g bottle BK053HA
5 kg drum BK053GC

Oxytetracycline 50 mg Selective Supplement :
10 vials BS00808

Ready-to-melt vials (without Oxytetracycline, NF V 08-059) :
10 x 110 mL vials BM02208

11 BIBLIOGRAPHY

Mossel, D.A.A., Visser, M., and Mengerink, W.H.J. 1962. A comparison of media for the enumeration of moulds and yeasts in foods and beverages. Lab. Pract., 11: 109-112.

Buttiaux, R., et Catsaras, M. 1965. L'analyse bactériologique des bières. Ann. Inst. Pasteur, 16: 167.

Sainclivier, M., et Roblot, A.M. 1966. Choix d'un milieu de culture pour le dénombrement des levures et moisissures dans le beurre. Ann. Inst. Pasteur, 17: 181.

NF V08-059. Novembre 2002. Microbiologie des aliments. Dénombrement des levures et moisissures par comptage des colonies à 25 °C. Méthode de routine.

ISO 6611 / FIL 94. Octobre 2004. Lait et produits laitiers. Dénombrement des unités formant colonie de levures et/ou moisissures. Comptage des colonies à 25 °C.

12 ADDITIONAL INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

Document code : OXYTETRACYCLINE GLUCOSE AGAR_ENv7
Creation date : 06-2003
Updated : 05-2016
Origin of revision : General update.

Oxytetracycline Glucose Agar

Detection and enumeration of yeasts and molds

Results :

Growth obtained after 3 days of incubation at 25 °C.