Oxytetracycline GYE Selective Supplement

PRODUCT INFORMATION

O004-10g - Oxytetracycline HCl, Powder, 10g

O004-50g - Oxytetracycline HCl, Powder, 50g

O004-100g - Oxytetracycline HCl, Powder, 100g

O003-10g - Oxytetracycline Dihydrate, Powder, 10g

O003-50g - Oxytetracycline Dihydrate, Powder, 50g

DESCRIPTION

Oxytetracycline-Glucose-Yeast Extract Agar (OGYE Agar) with Oxytetracycline GYE Selective Supplement is used for the selective enumeration of moulds and yeasts.

BACKGROUND

Oxytetracycline was the second of the broad-spectrum tetracycline group of antibiotics to be discovered. Oxytetracycline works by interfering with the ability of bacteria to produce proteins that are essential to them. Without these proteins the bacteria cannot grow, multiply and increase in numbers.

Mechanism of action

APPLICATION IN OXYTETRACYCLINE-GLUCOSE-YEAST EXTRACT AGAR (OGYE AGAR)

Oxytetracycline-Glucose-Yeast Extract Agar is recommended for the selection and enumeration of yeasts and moulds from foodstuffs. The medium using oxytetracycline as the selective agent is based on the formulation developed by Mossel et al., who stated that the use of this antibiotic in a medium with a neutral pH gave increased counts of yeasts and moulds from a variety of foodstuffs compared with media which relied on a low pH to suppress bacterial growth. Physically stressed yeast cells give higher counts on media which depend upon broad-spectrum antibiotics rather than a low pH for selectivity. In earlier work Mossel found that Glucose Yeast Extract Agar was as favourable a basal medium as `Mycophil' Agar later recommended by Sharf. Addition of the oxytetracycline was found to make the Glucose Yeast Extract Agar more selective than `Mycophil' Agar by inhibiting the growth of lactobacilli, most of which grow at the acid pH of the latter medium.

The choice of a suitable medium for enumeration of yeasts and moulds is greatly dependent on the nature of the foodstuffs under investigation and the organisms that occur on them. Oxytetracycline-Glucose-Yeast Extract Agar remains bacteriostatic when inoculated with not greater than 1 ml of a 10-1 dilution of foods and subsequently incubated for not greater than 5 days at 25°C as is the customary practice in food mycology.

For isolation of psychrotrophic yeasts from chilled proteinaceous foods a combination of oxytetracycline and gentamicin is effective.

Very proteinaceous foods and the higher incubation temperatures around 35°C required for some organisms will inactivate oxytetracycline allowing growth of Gram positive and Gram negative rods. For such applications Rose-Bengal Chloramphenicol Agar may be substituted or Dichloran-Glycerol (DG18) Agar Base.

Content concentrations

Typical Formula*	mg/litre
Oxytetracycline-Glucose-Yeast Extract Agar (OGYE Agar)	
Yeast extract	5
Glucose	20
Agar	12
Final pH 7.6 ± 0.2 @ 25°C	
Oxytetracycline GYE Selective Supplement	
Oxytetracycline	100
* Adjusted as required to meet performance standards	

Table 1 - Typical Formula for Oxytetracycline-Glucose-Yeast Extract Agar (OGYE Agar) and Oxytetracycline GYE Selective Supplement

METHOD

Preparation

Suspend appreciate amount of Oxytetracycline-Glucose-Yeast Extract Agar (OGYE Agar) in distilled water and bring gently to the boil to dissolve completely. Sterilise by autoclaving at 115°C for 10 minutes. Allow the medium to cool to 50°C and aseptically add the contents of Oxytetracycline GYE Selective Supple-

ment reconstituted as directed. Mix thoroughly and pour into sterile Petri dishes. The pH of this medium should be 7.0±0.2 @ 25°C.

Note: The reconstituted supplement is photo-sensitive. It is recommended the solution is added immediately to the prepared agar base. Failure to do so may result in the solution becoming cloudy.

Protocol

Transfer 1 ml aliquots of a series of suitable dilutions of the sample to empty 9 cm diameter Petri dishes. Two dishes are used for each of the dilutions. Add approximately 15 ml of medium prepared as described. Mix gently, turning the plates three times clockwise and three times counter-clockwise.

Incubate for 5 days at 22 ± 2°C with the petri dishes upside down, checking for formation of aerial mycelia after 2 days.

Count the numbers of colonies in plates containing 50-100 colonies after 5 days, or in any countable plates when aerial mycelia threaten to obscure further readings after 2 days. The counts obtained for each dilution should be similar on both plates.

Calculate the number of yeasts or moulds per 1 g or 1 ml by multiplying the number of colonies by the dilution factor.

Quality control

Positive control:

Aspergillus brasiliensis ATCC® 16404: Greater than 10mm colonies, white mycelia, black spores

Saccharomyces cerevisiae ATCC® 9763: Good growth; cream coloured colonies

Negative control:

Escherichia coli ATCC® 25922: Inhibited

REFERENCES

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