Oxytetracycline Selectavial™

SV204 For the isolation of yeasts and moulds from food specimens.

Introduction

Yeasts and moulds play an important role in spoilage of food. A wide range of fungi are involved in spoilage processes including plant pathogens that are able to disfigure and damage crops before harvest, to moulds that cause losses of quality in storage. In addition to damaging the appearance of food products, certain moulds are able to produce toxic metabolites, mycotoxins, which pose a potential health hazard to humans. Several factors including a reduction in content of the traditional preservatives sugar and salt in certain foods in response to health concerns and changes in consumer habits, such as less frequent shopping, are leading to increased mould spoilage of foodstuffs.

In the laboratory most yeasts and moulds can be easily cultured on simple media. However, cultures develop relatively slowly, up to 4-6 weeks in some cases, and are sometimes overgrown by more rapidly multiplying bacteria that are also present in the sample. To reduce the possibility of such overgrowth a primary requirement of media used for the enumeration of yeasts and moulds is the ability to prevent bacterial growth. As fungi are able to grow over a wide pH range this inhibition was for many years achieved by the use of low pH media such as acidified potato dextrose agar.

Work by Mossel et al. demonstrated that the use of acidic media could have an adverse affect on the recovery of yeasts and moulds and recommended instead a neutral medium, Glucose Yeast Extract Agar. This could be made selective for fungi with addition of a broad spectrum antibiotic, Oxytetracycline, to eliminate bacterial contamination to produce Oxytetracycline Glucose Yeast Extract (OGYE) medium.

For enumeration of yeast and mould colonies, surface plating methods are preferred over pour plates as restriction of oxygen supply and the heat of molten agar can inhibit growth or place additional stress on already damaged cells.

Description

Each MAST Oxytetracycline Selectavial™ contains an accurately assayed quantity of antibiotic in a soluble, non-interfering carrier substance.

SV204 Oxytetracycline Selectavial™

<table>
<thead>
<tr>
<th>Content</th>
<th>Concentration in 1 litre medium</th>
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<tbody>
<tr>
<td>Oxytetracycline</td>
<td>50mg</td>
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<td>100mg/litre</td>
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Directions

1. Label Petri dishes using the self-adhesive labels provided.
2. Prepare and sterilise OGYE basal medium as directed. Cool to 55°C and hold in a water bath at this temperature.
3. Reconstitute the contents of one vial using 5ml of sterile deionised water. The best method is to aseptically add the diluent using a sterile needle and syringe. Draw the diluent into the syringe and after removing the plastic cap of the vial, inject through the rubber stopper of the vial. The lyophilised supplement will rapidly dissolve and may be withdrawn into the syringe.
4. Add the antibiotic solution to 500ml of medium and discard the needle into an approved container.
   DO NOT TRY TO RE-SHEATH AN EXPOSED NEEDLE.
5. Mix gently but thoroughly to evenly distribute the selective agents.
6. Pour culture plates and allow to set.

Prepared culture plates may be used immediately or stored in plastic bags at 2-8°C for up to one week before use.
In Use

Prepare a $10^{-1}$ food homogenate of specimen using either a stomacher or blender by homogenising 25g or 25ml of sample in 225ml of prepared diluent.

Using the $10^{-1}$ homogenate and a suitable range of decimal dilutions inoculate the surface of an agar plate by a suitable method for enumeration.

Incubate the plates at 25°C for three to five days. Plates should be incubated for up to 14 days before being discarded.

Count the colonies according to the inoculation method used and calculate the number of colony forming units (cfu) per gram or millilitre of original test sample.

References