Malt Extract Agar Base

M1913

Intended Use:

Recommended for detection and cultivation of yeasts.

Composition**

Ingredients	Gms / Litre
Malt extract	20.000
Peptone	1.000
Dextrose (Glucose)	20.000
Agar	20.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 61 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 45-50°C and add 5 ml glacial acetic acid and immediately dispense as desired, because the medium cannot be reheated. The final pH is approximately 3.2

Principle And Interpretation

Media based on malt extract may be considered as general growth substrates due to their richness and nutrient balance. They are very suitable for the cultivation of fastidious microorganisms. With acidic pH, they are used for the isolation, cultivation and maintenance of yeast and moulds.

Malt Extract Agar Base is recommended for the detection and cultivation of yeasts (4). Yeasts are more demanding than moulds. Most species are unable to assimilate nitrate and complex carbohydrates; some require vitamins (1). Some yeasts species are capable of growing in the presence of preservative, the most common among these species is *Zygosaccharomyces bailii* but *Candida krusei* and *Pichia fermantans* are also capable of growing in the presence of preservatives.

Malt extract provides carbon, protein and nutrient sources required for the growth of microorganisms. Malt extract provides an acidic environment and nutrients favorable for growth and metabolism of yeasts. Dextrose is the fermentable carbohydrate. The acidified medium inhibits the growth of bacteria and allows good recovery of yeasts and moulds.

Type of specimen

Food samples

Specimen Collection and Handling

For Food samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (4). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. *Candida krusei* and *Pichia fermantans* are capable of growing in the presence of preservatives so further biochemical and serological test must be carried out for further identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Yellow to brownish yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Amber coloured clear to slightly opalescent gel forms in Petri plates

Cultural Response
Cultural characteristics observed after an incubation at 25-30°C for 3-5 days.

Organism	Growth
Candida krusei ATCC 24408	luxuriant
Zygosaccharomyces bailii ATCC MYA-4549	luxuriant
Pichia fermentans ATCC 10651	luxuriant

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. Compendium of methods for the microbiological Examination of foods (Beuchat & Cousin, 2001, Cousin et al., 2001).
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
4. Third edition of the book Fungi and Food spoilage (Pitt & Hocking, 2009).

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