



Malt Agar, w/ 2% Agar

M253F

Malt Agar, w/ 2% Agar is recommended for the detection and isolation of yeasts and moulds from dairy products, foods and other materials. Also used for carrying stock cultures of yeasts and moulds in accordance with FDA BAM, 1998.

Composition**

| Ingredients | Gms / Litre |
|---------------------|-------------|
| Malt extract | 30.000 |
| Agar | 20.000 |
| Final pH (at 25°C) | 5.5±0.2 |

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 50 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 120°C for 15 minutes. Avoid overheating, as it will result in a softer and darker agar. Mix well and pour into sterile Petri plates.

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 media for yeasts and moulds have been widely used for many years. In 1919, Reddish (1) prepared a satisfactory substitute for beer wort from malt extract. Malt Agar, w/ 2% Agar is recommended for the detection and isolation of yeasts and moulds from dairy products, foods and other materials. It is also recommended by FDA BAM (2) for the study of yeast and moulds from cosmetics. This medium can also be used for maintaining stock cultures of fungi. Malt extract provides carbon, protein and nutrient sources required for the growth of microorganisms. The acidified medium inhibits the growth of bacteria and allows good recovery of yeasts and moulds (3).

For isolation of yeasts and fungi from cosmetics, preliminary sample preparation is done in accordance with the BAM protocol (2). Add either 5 or 10 ml of prepared cosmetic preparation depending on the type of the sample to 45 or 90 ml, respectively, of MLB, for 10-2 dilution. Dilute samples decimally in Lethen Broth, Modified (M976) to obtain complete dilution series from 10⁻¹ to 10⁻⁶. Total yeast and mould count is checked using spread plate technique. 0.1 ml portions of each dilutions in duplicates is transferred to appropriately labeled plates of either Malt Agar, w/ 2% Agar (M253F) or Potato Dextrose Agar w/2% Agar (M096F), both containing 40 ppm Chlortetracycline (FD120F). Incubate up to 7 days at 30 ± 2°C and report the counts as the average of the two plates. For enrichment of fungal cultures, dilute prepared sample decimally in Sabouraud's dextrose broth (M033F) and incubate as described above. If growth occurs, sub culture on Sabouraud's dextrose agar (M063), Malt Agar, w/ 2% Agar (M253F) or Potato Dextrose Agar w/2% Agar (M096F) with 40 ppm chlortetracycline on later 2 agars.

Quality Control

Appearance

Cream to brownish yellow homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% Agar gel

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel forms in tubes or Petri plates

Reaction

Reaction of 5% w/v aqueous solution at 25°C. pH : 5.5±0.2

pH

5.30-5.70

Cultural Response

Cultural characteristics was observed after an incubation at 25 - 30°C for 40 - 48 hours.

Cultural Response

| Organism | Inoculum (CFU) | Growth | Recovery |
|--|----------------|-----------|----------|
| Cultural Response | | | |
| * <i>Aspergillus brasiliensis</i> ATCC 16404 | 50-100 | luxuriant | |
| <i>Candida albicans</i> ATCC 10231 | 50-100 | luxuriant | >=70% |
| <i>Saccharomyces cerevisiae</i> ATCC 9763 | 50-100 | luxuriant | >=70% |

Key * : Formerly known as *Aspergillus niger*

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

- 1.Reddish. 1919. Abstr. Bacteriol, 3(6).
- 2.FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
- 3.Can. Dept. Agr. Pamphlet, 92-N.S .

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