

## HiDip™ PCA - Malt Extract Agar Medium

HD019

### Intended Use:

Recommended for total bacterial count and isolation of yeast & moulds.

### Composition\*\*

| Ingredients             | g/ L    |
|-------------------------|---------|
| <b>Plate Count Agar</b> |         |
| Tryptone                | 5.000   |
| Yeast extract           | 2.500   |
| Dextrose (Glucose)      | 1.000   |
| Agar                    | 15.000  |
| Growth Indicator        | 0.100   |
| Final pH ( at 25°C)     | 7.1±0.2 |

\*\*Formula adjusted, standardized to suit performance parameters

### Malt Extract Agar

|                     |         |
|---------------------|---------|
| Malt extract        | 30.000  |
| Mycological peptone | 5.000   |
| Agar                | 15.000  |
| Final pH ( at 25°C) | 5.4±0.2 |

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

1. Surfaces : Loosen cap and remove HiDip™ slide from container taking care not to touch agar surfaces. Check for dehydration or contamination. Gently lower the slides and press agar to touch the test surface by bending the scull around the hinge line. Apply even and firm pressure for 15-20 seconds. Take care not to smudge agar over the test surface.

Repeat procedure using the second agar surface on an area adjacent to the initial test side. Return the slide to the container and close tightly. Incubate in an up right position at indicated temperature.

2. Liquids: Loosen cap and remove the HiDip™ slide from container. Check for dehydration or contamination. Dip slide into test fluid for upto 15-20 seconds so that agar surface becomes totally covered. (In case of inadequate liquid sample availability, pour sample over the surface of the slide). Allow to drain. Tap it gently to remove excess fluid from surface. Return the slide to the container and close tightly. Incubate in an upright position at indicated temperature. Label the container for sample number,source, date and time etc. for reference.

### Principle And Interpretation

**Plate Count Agar:** Plate Count Agar is formulated as described by Buchbinder et al (1) which is recommended by APHA (2,3,4) and FDA (5). Tryptone provides nitrogenous and carbonaceous compounds, long chain amino acids, and other essential nutrients. Yeast extract supplies Vitamin B complex. APHA recommends the use of pour plate technique. The samples are diluted and appropriate dilutions are added in Petri plates. Sterile molten agar is added to these plates and plates are rotated gently to ensure uniform mixing of the sample with agar. The poured plate count method is preferred to the surface inoculation method, since it gives higher results. Plate Count Agar is also suitable for enumerating bacterial count of sterile rooms.

**Malt extract Agar :** The laboratory diagnosis of fungal infection relies largely on direct as opposed to indirect methods. The use of malt and malt extracts for the propagation of yeasts and moulds is quite common. Reddish (6) described a culture medium prepared from malt extract that was a satisfactory substitute for wort. Malt Extract Medium is similar to the formula of Galloway and Burgess (7) used for the detection, isolation and enumeration of yeasts and moulds.

Malt extract provides an acidic environment and nutrients favorable for growth and metabolism of yeasts and moulds. Mycological peptone rapidly gives a luxuriant growth with typical morphology and pigmentation.

## Type of specimen

Food and dairy samples; Water samples

## Specimen Collection and Handling:

Refer Directions.

## 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:

Plate Count Agar/ Malt extract agar

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
2. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
3. Further biochemical tests 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

The HiDip™ slide containing a combination of sterile PCA Medium and Malt Extract Agar on separate individual surfaces.

### Colour

#### Colour of Plate Count Agar

Light yellow coloured medium

#### Colour of Malt Extract Agar

Light brown coloured medium

### Quantity of medium

2.5 ml per surface

### pH of Plate Count Agar

pH Range : 6.90-7.30

### pH of Malt Extract Agar

pH Range : 5.20-5.60

### Sterility Check :

Passes release criteria

### Cultural Response

Cultural characteristics observed after incubation at 35-37°C for 18-24 hours for PCA & at 25 - 30°C for 48 - 72 hours for Malt extract agar.

| Organism  | Growth    | Colour of colony |
|---|-----------|------------------|
| <b>PCA Medium</b>                                   |           |                  |
| ** <i>Bacillus spizizenii</i><br>ATCC 6633 (00003*) | luxuriant | Red to maroon    |
| <i>Enterococcus faecalis</i><br>ATCC 29212 (00087*) | luxuriant | Red to maroon    |
| <i>Escherichia coli</i> ATCC<br>25922 (00013*)      | luxuriant | Red to maroon    |
| <i>Lactobacillus casei</i> ATCC<br>9595             | luxuriant | Red to maroon    |
| <i>Klebsiella aerogenes</i><br>ATCC 13048 (00175*)  | luxuriant | Red to maroon    |
| <b>Malt Extract Agar</b>                            |           |                  |
| # <i>Aspergillus brasiliensis</i><br>ATCC 16404     | luxuriant | -                |

|  |           |                    |
|--|-----------|--------------------|
| <i>Candida albicans</i> ATCC 10231 (00054*)        | luxuriant | Off-white to cream |
| <i>Saccharomyces cerevisiae</i> ATCC 9763 (00058*) | luxuriant | Off-white to cream |

Key :- \* Corresponding WDCM numbers,

(\$) Formerly known as *Enterobacter aerogenes*

\*\*Formerly known as *Bacillus subtilis* subsp. *spizizenii*

# Formerly known as *Aspergillus niger*

## Storage and Shelf Life

On receipt store between 15-30°C. Use before expiry date on the label. Product performance is best if used within stated.

## Disposal

Used HiDip™ slides should be handled carefully, as it contains live microorganisms. These slides can be best disposed off either by or by immersing in a suitable disinfectant solution (i.e. dettol, phenyl etc.) over night or by autoclaving them after loosening the cap. 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 (8,9).

## References

1. Buchbinder L., Baris Y., Aldd E., Reynolds E., Dilon E., Pessin V., Pincas L. and Strauss A., 1951, Publ. Hlth. Rep., 66:327.
2. Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
3. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
5. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
6. Reddish A., 1919, Abstr. Bacteriol., 3:6.
7. Galloway L. D. and Burgess R., 1952, Applied Mycology and Bacteriology, 3rd Ed., Leonard Hill, London, pg. 54 and 57.
8. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
9. 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.

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