



Ready Prepared Media

Technical Information

MiCrome Coliform Agar Plate, Modified

Product Code: PM 2832

Application: Recommended as a selective medium for the simultaneous detection of *Escherichia coli* and total coliforms in water and food samples.

Composition**

Ingredients	Gms / Litre
Peptone, special	8.000
Sodium chloride	1.000
Yeast extract	3.000
Potassium dihydrogen phosphate	0.200
Dipotassium hydrogen phosphate	0.600
Bile Salts	0.800
Magnesium sulphate	0.200
Chromogenic mixture	0.200
Agar	10.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

MiCrome Coliform Agar Modified is a selective medium recommended for the simultaneous detection of *E.coli* and thermo-tolerant coliforms in water and food samples (8). Peptone special and yeast extract provide carbon, nitrogen compounds, long chain amino acids, vitamins and essential growth nutrients to the organisms. The phosphates buffer the medium well. Magnesium sulphate helps colour development. Bile salts inhibits gram-positive organisms. Sodium chloride maintains osmotic balance. The chromogenic mixture contains two chromogenic substrates, which enables the detection of two specific enzymes, β -galactosidase and β -glucuronidase. β -galactosidase produced by coliforms cleaves one chromogen, resulting in the pink colouration of coliform colonies. The enzyme β -glucuronidase produced by *E.coli*, cleaves X-glucuronide. *E.coli* forms dark blue to violet coloured colonies due to cleavage of both the chromogens (3,6,7). *E.coli* strains that are β -glucuronidase negative (serotype O157:H7) produce pink coloured colonies. Other gram negative bacteria able to grow at (44±0.5 °C) produce white or colourless colonies. Transfer 1 ml of product to analyze and its tenfold dilutions to sterile Petri plates. Pour 12 ml of medium, mix well and allow to solidify. Overlay with 4 ml of medium, allow to solidify and incubate at 43-45°C for 18-24 hours.

Type of specimen

Food and Dairy samples; Water samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1.9.10). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (2). After use, contaminated materials must be sterilized by autoclaving before discarding.



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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. β -glucuronidase is present in 97% of *E.coli* strains, however few *E.coli* may be negative.
2. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
3. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium fo any specific microorganism other than mentioned in the COA based on the user's unique requirement

Performance and Evaluation

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

Directions

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

Quality Control

Appearance

Sterile MiCrome KPC Coliform Agar Modified in 90 mm disposable plates

Colour of medium

Light yellow to yellow coloured medium

Quantity of medium

25 ml of medium in 90 mm disposable plates.

pH

7.00-7.40

Sterility Test

Passes release criteria

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 24 hours (48 hours if necessary).

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Salmonella Enteritidis</i> ATCC 13076 (00030*)	50-100	good	40-50%	Colourless
<i>Enterobacter cloacae</i> ATCC 23355	50-100	good-luxuriant	\geq 50%	Pink
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	\geq 10 ⁴	Inhibited	0%	
<i>Klebsiella pneumonia</i> ATCC 13883 (00097*)	50-100	good-luxuriant	\geq 50%	Light pink
<i>Staphylococcus aureus</i> ATCC 25923 (00034*)	\geq 10 ⁴	Inhibited	0%	
<i>Escherichia coli</i> ATCC 10536	50-100	good-luxuriant	\geq 50%	Dark blue/violet
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good-luxuriant	\geq 50%	Dark blue/violet

Key : (*) Corresponding WDCM numbers.



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Storage and Shelf Life

- On receipt store between 2-8°C Use before expiry date on the label.
- 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques(4,5) .

Further Readings

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
3. Frampton E. W., Restaino L. and Blaszkowski N., 1988, J. Food Prot., 51:402.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
5. 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. Kilian M. and Bülow P., 1976, Acta. Pathol. Microbiol. Scand., Sect. B, 84:245.
6. LeMinor L. and Hamida F., 1962, Ann. Inst. Pasteur (Paris), 102:267.
7. Manafi M. and Kneifel W., 1989, Zentralbl. Hyg., 189:225.
8. 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.
9. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate
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