microgen
Ready Prepared Media

Technical Information

MiCrome MeReSa Agar Plate

Product Code: PM 2674

Application: For isolation and selective identification of Methicillin Resistant *Staphylococcus aureus* (MRSA) from clinical isolates.

Composition**

Ingredients	Gms / Litre
Tryptone	13.000
Yeast extract	2.500
HM Peptone B #	2.500
Sodium chloride	40.000
Sodium pyruvate	5.000
Chromogenic mixture	5.300
Agar	15.000
MeRS Selective Supplement (MS2229) - 2 vials	
Methicillin (2.0 mgX2)	4.000mg
CF Selective Supplement II (MS2259) - 2 vials	
Cefoxitin (3.0 mgX2)	6.000mg
Final pH (at 25°C)	7.0 ± 0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Beef extract

Principle & Interpretation

Staphylococcus aureus is an invasive pathogen that can cause disease in almost any tissue or organ in the human body, primarily in compromised individuals (1). Staphylococcal infections were earlier treated using Penicillin. But over the years resistance to this drug developed. Methicillin was the next drug of choice. While methicillin is very effective in treating most Staphylococcus infections some strains have developed resistance to methicillin and can no longer be killed by this antibiotic. These resistant bacteria are called Methicillin Resistant *Staphylococcus aureus* (MRSA) (2). Patients with breaks in their skin due to wounds, indwelling catheters or burns are those with certain risk of developing MRSA infection (3). Spread of MRSA infections can be controlled to a great extent by maintaining personal hygiene after interaction with an MRSA infected person (2).

Tryptone, HM Peptone B and yeast extract provide the essential nutrients along with carbonaceous, nitrogenous compounds, and Vitamin B complex. The chromogenic mixture incorporated in the medium is specifically cleaved by *Staphylococcus aureus* to give bluish green coloured colonies. Sodium pyruvate enhances the growth of Staphylococcus species. Sodium chloride in the medium helps to maintain the osmotic equilibrium of the medium.

High concentration of sodium chloride also helps in inhibiting the accompanying microflora. The medium is made selective for MRSA by the addition of MeRS Selective Supplement (MS2229) and CF Selective Supplement II (MS2259).

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Type of specimen

Clinical samples: Tissue samples, wound swab, nasal swab.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic Use. For professional use only. Read the label before opening the pack. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Some intermediate strains may show poor growth due to nutritional variations and resistance to methicillin /cefoxitin.
2. Slight colour variation may be observed depending upon the utilization of the substrate by the organism.
3. Other methicillin resistant *Staphylococcus* species may grow. Further biochemical tests must be carried out to differentiate between resistant strains.
4. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium
5. 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.

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.

Methodology

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

Quality Control

Appearance
Sterile MiCrome™ MeReSa Agar in 90mm disposable plates with smooth surface and absence of black particles/cracks/ bubbles

Colour
Light yellow coloured medium

Quantity of medium
25ml of medium in disposable plate

Reaction
6.80- 7.20

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Sterility Check

Passes release criteria

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum(CFU)	Growth	Recovery	Colour of Colony
Escherichia coli ATCC 25922 (00013*)	>=10^4	Inhibited	0%	
Enterococcus faecalis ATCC 29212 (00087*)	>=10^4	Inhibited	0%	
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	>=10^4	Inhibited	0%	
Staphylococcus aureus subsp. aureus ATCC 6538 (00032*)	>=10^4	Inhibited	0%	
Staphylococcus aureus MRSA ATCC 43300	50-100	Luxuriant	>=50%	Bluish green
Staphylococcus epidermidis ATCC 12228 (00036*)	>=10^4	Inhibited	0%	
Staphylococcus xylosus ATCC 29971	>=10^4	Inhibited	0%	

(*) - Corresponding WDCM numbers

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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Further Reading

1. DWorkin M et. al 2006. The Prokaryotes (a Handbook on the Biology of Bacteria) 3rd ed, Vol. 2, page 345.
2. Methicillin Resistant Staphylococcus aureus Copyright ã 1997-2005 Canadian Centre for Occupational Health and Safety, Sept 19th, 2005.
3. Dr. Alan Johnson, methicillin resistant staphylococcus aureus (MRSA) infection. The Support group for MSRA sufferers and Dependents, Aug 1st , 2005.
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.

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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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