microgen
Ready Prepared Media

Technical Information

Microme Rapid MRSA Agar Plate

Product Code: PM 2974

Application: Recommended for rapid isolation and identification of Methicillin Resistant *Staphylococcus aureus* (MRSA) from clinical specimens.

Composition**

Ingredients	Gms / Litre
Special peptone	20.000
Casitose ▲	20.000
Sodium chloride	8.500
Carbohydrate	14.000
Phenol red	0.025
Chromogenic mix	6.500
Amino-Vitamin mix	1.200
Agar	15.000
ACC Selective Supplement (MS2319)	
Cefoxitin	10.000mg
Colistin	10.000mg
Amphotericin B	10.000mg
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

▲ - Equivalent to Casein peptone

Principle & Interpretation

MRSA is a resistant variation of the common bacterium *Staphylococcus aureus*. It 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 thenext 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 wound, indwelling catheters or burns are those with certain risk of developing MRSA infection (3).

Special peptone, Casitose and amino-vitamin mix provides essential nutrients for growth. Carbohydrate is the source of carbon and energy. Phenol red is the pH indicator. The chromogenic mixture incorporated in the medium is specifically cleaved by *Staphylococcus aureus* (MRSA) to give greenish yellow coloured colonies. 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. Agar acts as solidifying agent.

Type of specimen

Clinical samples - Tissue samples, wound swab, nasal swab, skin lesions, etc.

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.

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Warning and Precautions

In Vitro diagnostic use only. For professional use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Certain strains of MRSA which are intermediate may show poor growth. Further incubation upto 48 hours should be carried out.
2. Further sensitivity can be carried out to ascertain the extent of resistance.
3. Other methicillin resistant *Staphylococcus* species may grow. Further biochemical tests must be carried outto 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 Rapid MRSA Agar in 90mm disposable plates with smooth surface and absence of black particles/ cracks/bubbles .
Colour
Reddish orange coloured medium
Quantity
25 ml of medium in disposable plate
pH
7.20-7.60
Sterility Check

Passes release criteria

Cultural Response

Cultural characteristics observed after an incubation at 35-35°C for 18-24 hours

Organism	Inoculum(CFU)	Growth	Recovery	Colour of colony
Staphylococcus aureus,MRSA ATCC43300	50-100	Luxuriant	>=50%	Greenish yellow(Note:Green colour may develop after 48hours)
Staphylococcus epidermidis, MRSE	50-100	Luxuriant	>=50%	Blue
Staphylococcus aureussubsp. aureus ATCC 25923 (00034*)	>=10^3	Inhibited	0%	

Staphylococcus aureussubsp. aureus ATCC 6538 (00032*)	>=10^3	Inhibited	0%
Escherichia coli ATCC 25922 (00013*)	>=10^3	Inhibited	0%
Candida albicans ATCC 10231 (00054*)	>=10^3	Inhibited	0%

Key- (*) 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 samplemust be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Further Reading

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

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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