

Methicillin Resistant Staphylococcus aureus (MRSA) Chrome Agar Plate (M1110)

Recommended for detection of methicillin resistant Staphylococcus aureus from clinical samples.

Composition

Ingredients	g/ L
Peptone -----	20.000
Casitose -----	20.000
Carbohydrate -----	14.000
Sodium chloride -----	8.500
Phenol red -----	0.025
Chromogenic mix -----	6.500
Amino-Vitamin mix -----	1.200
Agar -----	15.000

Selective Supplement

Cefoxitin, Colistin and Amphotericin B : 10.000 mg each.

Description

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. 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). Patients with breaks in their skin due to wound, indwelling catheters or burns are those with certain risk of developing MRSA infection. 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.

Specimen Collection and Handling

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

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Follow good microbiological lab practices while handling specimens and culture.

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 out to differentiate between resistant strains.
4. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium

5. The surface of the medium should be dry when inoculated.

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**Physical/Chemical control**

Color : Red pH: 7.20-7.60

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Microbiological activity

Organisms	Inoculum CFU/ml	Growth
Staphylococcus aureus ATCC 43300	50-100	Good growth, greenish yellow colonies
Staphylococcus aureus ATCC 25923	$\geq 10^3$	inhibited
Staphylococcus epidermidis (MRSE)	50-100	Good growth, blue colonies
Escherichia coli ATCC 25922	$\geq 10^3$	inhibited
Candida albicans ATCC 10231	$\geq 10^3$	inhibited

Storage and Shelf Life

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.

Reference

1. Dr. Alan Johnson, methicillin resistant Staphylococcus aureus (MRSA) infection. The Support group for MSRA sufferers and Dependents, Aug 1st, 2005.
2. DWorkin M et. al 2006. The Prokaryotes (Handbook on the Biology of Bacteria) 3rd ed, Vol. 2, page 345.
3. Methicillin Resistant Staphylococcus aureus Copyright © 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.