

For Identification of MRSA and MRSE

HiCrome™ Rapid MRSA Agar Base

It is recommended for rapid isolation and identification of Methicillin Resistant *Staphylococcus aureus* (MRSA).

M1974

Composition **

Ingredients	Grams/Litre
Special peptone	20.00
Casitose#	20.00
Sodium chloride	8.50
Carbohydrate	14.00
Phenol red	0.025
Chromogenic mix	6.50
Amino-Vitamin mix	1.20
Agar	15.00

Final pH (at 25°C) 7.4 ± 0.2

** Formula adjusted, standardized to suit performance parameters

Equivalent to Casein peptone

Directions

Suspend 85.23 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Cool to 45-50°C. Aseptically add sterile rehydrated contents of 1 vial of MRSA Selective Supplement (FD319). Mix well and pour into sterile Petri plates. DO NOT AUTOCLAVE.

Principle and 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 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 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

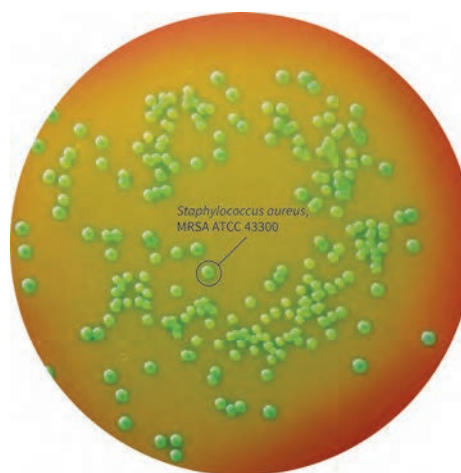
Clinical samples

Specimen Collection and Handling

For Clinical samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (4, 5). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic 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 specimens. Safety guidelines may be referred in individual safety data sheets



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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. Further confirmation must be carried out by sensitivity testing.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the recommended temperature.

Quality Control

- Appearance of Powder** : Cream to beige homogeneous free flowing powder
- Gelling** : Firm, comparable with 1.5% Agar gel.
- Colour and Clarity of prepared medium** : Red coloured, clear to slightly opalescent gel forms in Petri plates.
- Reaction** : Reaction of 8.52% w/v aqueous solution at 25°C. pH: 7.4 ± 0.2.
- Culture Response** : Cultural characteristics observed with added MRSA Selective Supplement (FD319) after an incubation at 30-35°C for 18-24 hours

Organism (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Staphylococcus aureus</i> , MRSA ATCC 43300	50-100	luxuriant	≥50%	greenish yellow (Note: Green colour may develop after 48 hours)
<i>Staphylococcus epidermidis</i> , MRSE	50-100	luxuriant	≥50%	blue
<i>Staphylococcus aureus subsp aureus</i> ATCC 25923 (00034*)	≥10 ³	inhibited	0%	-

<i>Staphylococcus aureus subsp aureus</i> ATCC 6538 (00032*)	≥10 ³	inhibited	0%	-
<i>Escherichia coli</i> ATCC 25922 (00013*)	≥10 ³	inhibited	0%	-
<i>Candida albicans</i> ATCC 10231 (00054*)	≥10 ³	inhibited	0%	-

Key : * : Corresponds to WDCM number

Storage and Shelf-life

Store between 2-8°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. 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).

References

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 © 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

Ready Prepared Media

Code	Product Name	Usage	Packing
Category : 90 mm Ready Prepared Petri Plates			
MP1974	HiCrome™ Rapid MRSA Agar Plate	for rapid isolation and identification of Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA) from clinical specimens.	50 plts