



Technical Data

HiCrome Rapid MRSA Agar Base

M1974

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

Composition**

Ingredients	Gms / Litre
Special peptone	20.000
Casein peptone	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
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

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, Casein peptone 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.

Quality Control

Appearance

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 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

Cultural characteristics observed with added MRSA Selective Supplement(FD319)after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Cultural Response <i>Staphylococcus aureus</i> , <i>MRSA ATCC 43300</i>	50-100	luxuriant	>=50%	greenish yellow (Note: Green colour may develop after 48 hours)
<i>Staphylococcus aureus</i> <i>ATCC 25923</i>	>=10 ³	inhibited	0%	
<i>Staphylococcus aureus</i> <i>ATCC 6538</i>	>=10 ³	inhibited	0%	
<i>Escherichia coli</i> <i>ATCC</i> <i>25922</i>	>=10 ³	inhibited	0%	
<i>Candida albicans</i> <i>ATCC</i> <i>10231</i>	>=10 ³	inhibited	0%	

Storage and Shelf Life

Store dehydrated powder and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

- 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.

Revision : 0/ 2014



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