Hicrome™ MRSA Agar Base,Modified

M1953

HiCrome MRSA Agar Base,Modified is recommended for the differentiation and identification of MRSA and MRSE *Staphylococcus* species .

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	23.000
Sodium chloride	10.000
Sodium pyruvate	5.000
Chromogenic substrate	0.770
Inhibitor mixture	7.000
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.38 grams in 500 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C. Aseptically add sterile rehydrated contents of 1 vial of MeReSa Selective Supplement (FD229) or Cefoxitin supplement (FD259) or both in combination for more selectivity as desired. Mix well and pour into sterile Petri plates.

Principle And Interpretation

MRSA is a resistant variation of the common bacterium *Staphylococcus aureus* and MRSE is a resistant variation of the common bacterium *Staphylococcus epidermidis* . *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).

Peptic digest of animal tissue provide the essential nutrients along with carbonaceous, nitrogenous and Vitamin B complex nutrients. The chromogenic mixture incorporated in the medium is specifically cleaved by Staphylococcus aureus to give 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. Cefoxitin is recommended to use for selective isolation of MRSA. The medium is made selective for MRSA by the addition of MeReSa Selective Supplement (FD229) or Cefoxitin supplement (FD259) or both in combination.

Quality Control

Appearance
Cream to beige homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Light purple coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 6.07% w/v aqueous solution 25°C. pH : 7.2±0.2

pH
7.00-7.40

Cultural Response
Cultural characteristics observed with added MeReSa Selective Supplement (FD229) or Cefoxitin Supplement (FD259) or both after an incubation at 35-37°C for 18-48 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth w/ FD229 or FD259 or both	Recovery w/ FD229 or FD259 or both	Colour of Colony
Cultural Response				
Escherichia coli ATCC 25922	>=10^3	inhibited	0%	
Enterococcus faecalis ATCC 29212	>=10^3	inhibited	0%	
Staphylococcus aureus, MRSA ATCC 43300	50-100	luxuriant	>=50%	green
Staphylococcus epidermidis, MRSE	50-100	luxuriant	>=50%	blue
Staphylococcus xylosus ATCC 29971	>=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 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 MRSA sufferers and Dependents, Aug 1st , 2005.

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