HiCrome™ MeReSa Agar Base

M1674

Intended use

Recommended for the isolation and selective identification of Methicillin Resistant *Staphylococcus aureus* (MRSA) from clinical isolates.

Composition**

Ingredients	g / L
Tryptone	13.000
Yeast extract	2.500
HM peptone B #	2.500
Sodium chloride	40.000
Sodium pyruvate	5.000
Chromogenic mixture	5.300
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Equivalent to Beef extract

Directions

Suspend 41.65 gram in 500 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add sterile rehydrated contents of 1 vial of MeRS Selective Supplement (FD229) & CF Selective Supplement II (FD259) for selectivity. Mix well and pour into sterile Petri plates.

Principle And Interpretation

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).

Tryptone, HM peptone B and yeast extract 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 bluish 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 MeRS Selective Supplement (FD229) & CF Selective Supplement II (FD259) in combination.

Type of specimen

Clinical samples - Mouth, skin lesions, intestine, upper respiratory tract of humans, urine, wound samples, 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.

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. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
3. Further sensitivity can be carried out to ascertain the extent of resistance.
4. Further biochemical tests must be carried out to differentiate between MRSA and other Methicillin Resistant *Staphylococcus* species.

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

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Off white to cream coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 8.33% w/v aqueous solution 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed with added MeReSa Selective Supplement (FD229) & Cefoxitin Supplement (FD259) after an incubation at 30-35°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth w/ FD229 & FD259	Recovery w/ FD229 & FD259	Colour of Colony
Escherichia coli ATCC 25922 (00013*)	>=10^4	inhibited	0%	
Enterococcus faecalis ATCC 29212 (00087*)	>=10^4	inhibited	0%	
Staphylococcus aureus subsp. *aureus* ATCC 25923 (00034*)	>=10^4	inhibited	0%	
Staphylococcus aureus subsp. *aureus* ATCC 6538 (00032*)	>=10^4	inhibited	0%	
Staphylococcus aureus, MRSA ATCC 43300 (00211*)	50-100	luxuriant	>=50%	Light blue -green
Staphylococcus epidermidis ATCC 12228 (00036*)	>=10^4	inhibited	0%	
Staphylococcus xylosus ATCC 29971	>=10^4	inhibited	0%	

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store between 15-25°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. 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).

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 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.

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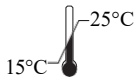
IVD ***In vitro* diagnostic medical device**



Storage temperature

EC REP CEpartner4U, Esdoornlaan 13,
3951DB Maarn, NL
www.cepartner4u.eu

CE Marking

Do not use if package is damaged

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