HiCrome™ Staph Agar Base, Modified

Recommended as a selective medium for the isolation and enumeration of *Staphylococcus aureus.*

M1837

Composition **

Ingredients	Grams/Litre
Peptone special	23.000
Sodium pyruvate	4.000
Sodium chloride	40.000
Lithium chloride	5.000
Chromogenic mixture	5.300
Agar	15.000

Final pH (at 25°C) 7.2 ± 0.2
** Formula adjusted, standardized to suit performance parameters

Directions

Suspend 46.15 grams in 500 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C and aseptically add rehydrated contents of 1 vial of Polymyxin B Selective supplement (FD003). Mix well and pour into sterile Petri plates.

Principle and Interpretation

Staphylococci are widespread in nature, though they are mainly found living on the skin, skin glands and mucous membranes of mammals and birds. Humans and animals are the primary source of this organism. Because of its widespread nature it is easily transferred to food and a cause of food poisoning if not handled properly.(1)

The coagulase positive species *S. aureus* is well documented as a human opportunistic pathogen. *Staphylococcus* species are a major cause of food poisoning and produces a wide variety of enterotoxins, thus causing various types of disease symptoms. The ability to clot plasma continues to be the most widely used and accepted criterion for the identification of pathogenic staphylococci associated with acute infections (2).

This medium is a selective chromogenic medium recommended for the isolation and enumeration of coagulase positive staphylococci in foods within 24 hours. This medium has an advantage over the traditional media which requires 48 hours. Peptone special in the medium supplies the essential nitrogeneous, carbonanceous compounds long chain aminoacids, vitamins and other essential growth nutrients required for the growth. The chromogenic mixture incorporated in the medium is specifically cleaved by *Staphylococcus aureus* to give bluish green coloured colonies which are clearly visible against the opaque background. 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. Lithium chloride inhibits most of the contaminating microflora. Addition of Polymyxin B Sulphate (FD003) helps to restrict growth of gram-negative bacteria such as *Escherichia coli* and *Pseudomonas aeruginosa*.

Type of specimen

Clinical and food samples

Specimen Collection and Handling

For Clinical samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (3, 4).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (5)

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

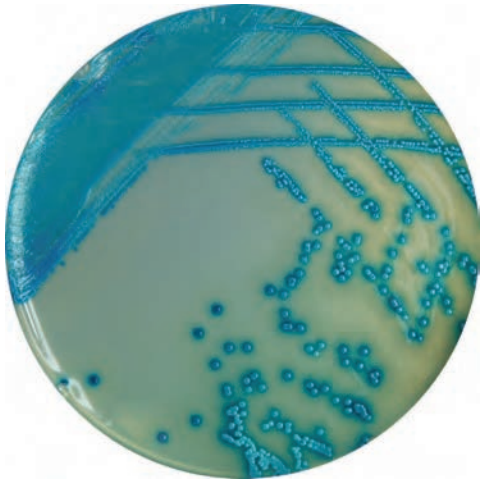
In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets

Limitations

1. Due to variable nutritional requirements, some strains may show poor growth on this medium.
2. Slight colour variation may be observed depending upon the utilization of the substrate by the organism.

Performance and Evaluation

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



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Quality Control

Appearance of Powder : Cream to yellow homogeneous free flowing powder

Gelling : Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium : Off white coloured opaque gel forms in Petri plates

Reaction : Reaction of 9.23 % w/v aqueous solution at 25°C. pH : 7.2±0.2.

Cultural Response : Cultural characteristics observed with added Polymyxin B Selective Supplement (FD003) after an incubation at 35-37°C for 24 hours.

Organism (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
Staphylococcus aureus subsp aurreus (25923) (00034*)	50 -100	luxuriant	≥50 %	blue colonies
Staphylococcus aureus subsp aurreus (6538) (00032*)	50 -100	luxuriant	≥50 %	blue colonies
Staphylococcus saprophyticus (15305)	50 -100	luxuriant	≥50 %	blue colonies
Bacillus cereus (10876)	50 -100	none- poor	≤10 %	-
Staphylococcus epidermidis (12228) (00036*)	50 -100	none- poor	≤10 %	
Enterococcus faecalis (29212) (00087*)	50 -100	none- poor	≤10 %	-
Escherichia coli (25922) (00013*)	≥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 inorder 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 (3, 4).

References

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
2. Victor , Lachica F, Weiss KF, Deibel RH (1969) Appl Microbiol 18 126-27.
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4. 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
5. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C