HiCrome™ Staph Selective Agar

M1931

Intended Use

Recommended for the isolation and enumeration of *Staphylococcus aureus*. It can also be used for clinical samples.

Composition**

Ingredients	Gms / Litre
Peptone special	25.000
Sodium chloride	50.000
Chromogenic mixture	3.200
Selective mixture	2.800
D-Mannitol	10.000
Phenol red	0.025
Agar	12.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 103.03 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure for 15 minutes. Cool to 45-50°C. 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.(5)

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 (7).

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 compounds required for the growth. Phenol red is pH indicator. Mannitol in the medium is fermented by *Staphylococcus aureus* and the chromogenic mixture incorporated in the medium is specifically cleaved by *Staphylococcus aureus* to give greenish coloured colonies which are easily distinguishable.

Staphylococcus epidermidis does not ferment mannitol hence blue coloured colonies are observed. Sodium chloride in the the medium helps to maintain the osmotic equilibrium of the medium. High concentration of sodium chloride also helps in inhibiting the accompanying microflora.

Type of specimen

Clinical samples : Pus, wounds, blood; Food and dairy samples; Water samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,6,8).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(2).

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

Warning and Precautions

In Vitro diagnostic use. 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. Further biochemical and serological tests must be carried out for complete identification.
2. Some species may show poor growth due to nutritional variations.
3. Slight colour variations 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 expiry period when stored at recommended temperature.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel

Colour and Clarity of prepared medium

Red coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 10.03 % w/v aqueous solution 25°C. pH : 7.4±0.2

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Staphylococcus aureus subsp. *aureus ATCC 25923* (00034*)	50 -100	luxuriant	>=50%	green colonies
Staphylococcus aureus subsp. *aureus ATCC 6538* (00032*)	50 -100	luxuriant	>=50%	green colonies
Bacillus cereus ATCC 10876	>=10^4	inhibited	0%	
Staphylococcus epidermidis ATCC 12228 (00036*)	50 -100	good	40-50%	blue colonies
Enterococcus faecalis ATCC 29212 (00087*)	>=10^4	inhibited	0 %	
Escherichia coli ATCC 25922 (00013*)	>=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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition
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. 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.
6. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
7. Victor , Lachica F, Weiss KF , Deibel RH (1969) Appl Microbiol 18 126-27.
8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed.,APHA Inc., Washington, D.C.

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IVD — In vitro diagnostic medical device

CE Marking

25°C / 15°C — Storage temperature

Do not use if package is damaged

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