HiCrome™ Improved Salmonella HiVeg™ Agar

MV1466

Intended Use:

This medium is prepared by completely replacing animal based peptones with vegetable peptones. Recommended as an improved selective and differential medium for *Salmonella* species.

Composition**

Ingredients	Gms / Litre
HiVeg™ special peptone	8.000
Yeast extract	2.000
Synthetic detergent No. III	1.000
Chromogenic mixture	3.250
Agar	12.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 26.25 grams in 1000 ml purified / distilled water. Boil gently to dissolve the medium completely. **DO NOT AUTOCLAVE.** Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Salmonella species have been isolated from humans and almost all animals throughout the world. They cause many types of infections from mild, self-limiting gastroenteritis to life threatening typhoid fever. *Salmonella* Typhi and *Salmonella* Paratyphi A & B cause gastroenteritis, bacteremia and enteric fever, *Salmonella* Choleraesuis causes gastroenteritis and enteric fever, especially in children. *Salmonella* Typhimurium is the most frequently isolated serotype of *Salmonella* (1). HiCrome™ Improved Salmonella Agar is a modification of the original formulation of Rambach (2) and is used for the differentiation of *Salmonella* species from other enteric bacteria. Rambach formulation differentiates *Salmonella* based on propylene glycol utilization and presence of a chromogenic indicator. However, HiCrome™ Salmonella Agar, Modified uses only a chromogenic mixture which contains chromogenic substrate and indicator dye for identification and differentiation of *Salmonella* species. HiCrome™ Improved Salmonella HiVeg™ Agar is same as HiCrome™ Improved Salmonella Agar except that the animal based peptones are completely replaced with vegetable peptones to avoid the BSE/ TSE risks associated with animal peptones. HiVeg™ special peptone and yeast extract provides nitrogenous, carbonaceous compounds, long chain amino acids, vitamins and other essential growth nutrients. *Escherichia coli* and *Salmonella* are easily distinguishable due to their colony characteristics. All *Salmonella* species isolated from food or clinical sample exhibit pink to red colonies including *Salmonella* Typhi. *E.coli* exhibits a characteristic green to blue colour, due to presence of the enzyme specific for chromogenic substrate. Synthetic detergent No. III inhibits gram-positive organisms.

Type of specimen

Food samples; Water samples

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (3). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (4). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

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 specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. The medium is selective for *Salmonella* may not support the growth of other microorganisms.
2. Most of the *Salmonella* strains show pink-red colonies except few which may show colorless colonies.
3. Due to nutritional variations, some strains may show poor growth.
4. Final confirmation of suspected colonies must be carried out by serological and biochemical tests.

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

Reddish pink coloured, slightly opalescent gel forms in Petri plates

Reaction

Reaction of 2.62% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

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

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Bacillus subtilis subsp. spizizenii ATCC 6633 (00003*)	>=10^4	inhibited	0%	
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant	>=50%	green to blue
Salmonella Typhimurium ATCC 14028 (00031*)	50-100	luxuriant	>=50%	pink to red
Salmonella Enteritidis ATCC 13076 (00030*)	50-100	luxuriant	>=50%	pink to red
Proteus vulgaris ATCC 13315	50-100	good	40-50%	light brown
Salmonella Typhi ATCC 6539	50-100	good-luxuriant	>=50%	light pink
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	>=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 (5,6).

Reference

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2. Rambach A., 1990, Appl. Environ. Microbiol., 56:301.
3. Salfinger Y., and Tortorello M.L. , 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
6. 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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