

For isolation and identification of *Salmonella* species

HiCrome™ Selective Salmonella Agar Base

Recommended for the selective isolation of *Salmonella* species from food samples

M1842

Composition **

Ingredients	Grams/Litre
HI powder#	12.000
Yeast hydrolysate	5.000
Tryptose	5.000
Sodium cholate	3.000
Sodium taurocholate	5.000
Sodium deoxycholate	1.000
Chromogenic mixture	8.000
Agar	15.000

Final pH (at 25°C) 7.3 ± 0.2

** Formula adjusted, standardized to suit performance parameters

#Equivalent to Heart Infusion powder

Directions

Suspend 54.00 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 45-50°C. Aseptically add the rehydrated contents of one vial of HiCrome™ Selective *Salmonella* Agar Supplement (FD274). 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*. *Salmonella* species are the major cause of food poisoning (1) Various chromogenic media are available for the differentiation of *Salmonella* species. The original media formulated by Rambach (2) differentiates *Salmonella* based on propylene glycol utilization *Enterobacter* and presence of a chromogenic indicator. However HiCrome™ Selective *Salmonella* Agar Base uses chromogenic mixture for identification and differentiation of *Salmonella* species. Sodium cholate, Sodium taurocholate and Sodium deoxycholate in the medium helps to restrict the growth of other organisms. Besides the selective supplement added to the medium inhibits competing microorganisms.

HI powder, yeast hydrolysate and tryptose in the medium provides nitrogenous, carbonaceous compounds, long chain amino acids, vitamins and other essential growth nutrients. Due to the presence of chromogenic mix in the medium *Salmonella* are easily distinguishable and forms purple coloured colonies while some *Enterobacteriaceae* like *Klebsiella* and *Enterobacter* forms blue to dark blue coloured colonies. Conventional method employs the H₂S production property for *Salmonella* detection which is also exhibited by other non *Salmonella*

species such as *Citrobacter*, *Proteus*, etc. Hence further biochemical confirmation is required for further identification.

This medium is specially employed for food samples where the sample is initially enriched in *Salmonella* Selective Enrichment Broth (M1843) and then isolated on HiCrome™ Selective *Salmonella* Agar Base. *Salmonella* species give purple coloured colonies due to the enzyme specificity.

Type of specimen

Food samples

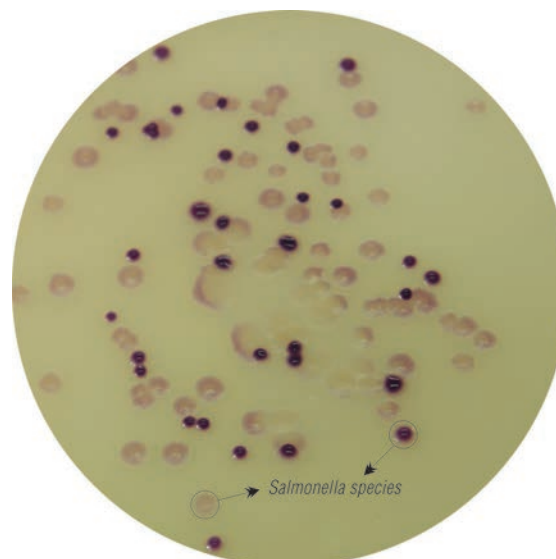
Specimen Collection and Handling

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

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



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Limitations

1. Being highly selective, some strains may show poor growth.
2. Most of the *Salmonella* strains shows purple colonies except few.
3. 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 recommended temperature.

Quality Control

- Appearance of Powder** : Light yellow to beige homogeneous free flowing powder
- Gelling** : Firm, comparable with 1.5 % Agar gel.
- Colour and Clarity of prepared medium** : Whitish cream coloured, opalescent gel forms in Petri plates
- Reaction** : Reaction of 5.4% w/v aqueous solution at 25°C. pH : 7.3 ± 0.2.
- Cultural Response** : Cultural characteristics observed with added HiCrome™ Selective Salmonella Agar Supplement (FD274), after an incubation at 35-37°C for 22-24 hours.

Organism (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Salmonella</i> Typhimurium (14028) (00031*)	50 -100	good-luxuriant	≥50%	purple
<i>Salmonella</i> Enteritidis (13076) (00030*)	50 -100	good-luxuriant	≥50%	≥50%
<i>Klebsiella pneumoniae</i> (13883) (00097*)	50 -100	good	40-50%	blue
<i>Enterococcus faecalis</i> (29212) (00087*)	>10 ³	inhibited	0 %	-
<i>Staphylococcus aureus</i> subsp aureus (25923) (00034*)	>10 ³	inhibited	0 %	-

Key : * = corresponding WDCM Numbers

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

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. 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 (4, 5).

References

1. Murray P. R., Baron J. H., Tenover F. C., Tenover F. C., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
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3. 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.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
5. Jorgensen, J.H., Tenover, F.C., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S. and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.