HiCrome™ Salmonella Agar /HiCrome™ Improved Salmonella Agar

Recommended for the simultaneous detection of *Salmonella* and *Escherichia coli* from food, water and clinical samples.

M1296/
M1466

Composition **

	M1296	M1466
Ingredients	Grams/Litre	Grams/Litre
Peptone	6.00	—
Peptone special	—	8.00
Yeast extract	2.50	2.00
Bile salts mixture	1.00	—
Sodium deoxycholate	—	1.00
Chromogenic mixture	5.40	3.25
Agar	13.00	12.00
Final pH (at 25°C)	7.7 ± 0.2	7.3 ± 0.2

** Formula adjusted, standardized to suit performance parameters

Directions

Suspend 27.9 grams of M1296 or 26.25 grams of M1466 in 1000 ml distilled water. Heat to boiling 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* (2).

HiCrome™ *Salmonella* Agar medium is a modification of the original formulation of Rambach (3) 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 medium uses only a chromogenic mixture for identification and differentiation of *Salmonella* species.

Peptone, peptone special and yeast extract provides nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other essential growth nutrients.

Escherichia coli and *Salmonella* are easily distinguishable due to their colony characteristics. *Salmonella* forms light purple coloured colonies with a purple halo on (M1296) and pink to red colonies on (M1466). *E. coli* exhibits a characteristic blue colour, due to presence of the enzyme β-glucuronidase. Other organisms form colourless colonies. The characteristic light purple and blue colour is due to the chromogenic mixture (1). Bile salts mixture or sodium deoxycholate inhibits gram-positive organisms.

Type of specimen

Clinical: faeces, urine; Water samples and Food samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).

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

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (7).

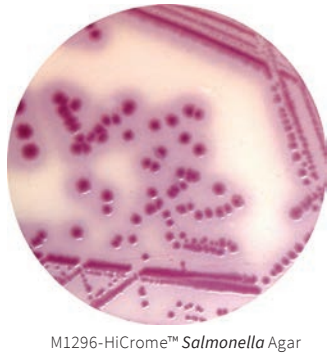
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

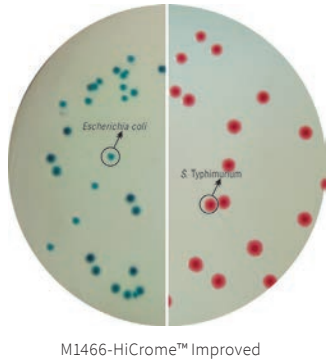
In Vitro Diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while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

Limitations

1. The medium is selective for *Salmonella* may not support the growth of other microorganisms.



M1296-HiCrome™ *Salmonella* Agar



M1466-HiCrome™ Improved *Salmonella* Agar

HiCromeVeg™ Single Streak Rapid Differentiation Series *Freedom from BSE / TSE worries*

HiCrome™ ***Salmonella*** Agar / HiCrome™ Improved ***Salmonella*** Agar (M1296/M1466) is also available as HiCrome™ ***Salmonella*** HiVeg™ Agar /HiCrome™ Improved ***Salmonella*** HiVeg™ Agar (MV1296/MV1466) HiCrome™ Improved ***Salmonella*** HiCynth™ Agar (MCD1466) wherein all the animal origin nutrients have been replaced by vegetable based nutrients / or chemical defined nutrients.

HiCrome™ Salmonella Agar /HiCrome™ Improved Salmonella Agar

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M1296/ M1466

2. Most of the *Salmonella* strains shows purple (M1296) or pink-red (M1466) colonies except few which may show colourless 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 recommended temperature.

Quality Control

Appearance of powder : Cream to yellow coloured, homogeneous, free flowing powder.

Gelling : Firm, comparable with 1.3% Agar gel of M1296 or 1.2% Agar gel of M1466.

Colour and Clarity of prepared medium : Light amber coloured (M1296) or reddish pink coloured (M1466), slightly opalescent gel forms in Petri plates.

Reaction : Reaction of 2.79% w/v aqueous solution of M1296 at 25°C. pH:7.7 ± 0.2.
Reaction of 2.62% w/v aqueous solution of M1466 at 25°C. pH : 7.3 ± 0.2.

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

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony (M1296)	Colour of colony (M1466)
Escherichia coli (25922) (00013*)	50-100	luxuriant	>50%	blue	blue to purple
Salmonella Enteritidis (13076) (00030*)	50-100	luxuriant	>50%	light purple with halo	pink to red
Salmonella Typhi (6539)	50-100	luxuriant	>50%	light purple with halo	light pink
Salmonella Typhimurium (14028) (00031*)	50-100	luxuriant	>50%	light purple with halo	pink to red
Proteus vulgaris (13315)	50-100	luxuriant	40-50%	colourless	light brown
Staphylococcus aureus subsp aureus (25923) (00034*)	$>10^3$	inhibited	0%	-	-
Bacillus subtilis sub spizizenii(6633) (00003*)	$>10^3$	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 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 (4, 5).

References

1. Greenwald R., Henderson R. W. and Yappan S., 1991, J. Clin. Microbiol., 29:2354.
2. 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.
3. Rambach A., 1990, Appl. Environ. Microbiol., 56:301.
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.
6. 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.
7. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and tWastewater, 23rd ed., APHA, Washington, D.C.

Ready Prepared Media

Code	Product Name	Usage	Packing
Category : HiDip™ Slides			
HD036	HiDip™ Hicrome™ ECC Agar- Hicrome™ Salmonella Agar	for chromogenic screening of *E.coli*, coliforms and *Salmonella* on surfaces or food or water	5 tubes 10 tubes