

## HiCrome™ Listeria Agar Plate

MP1417F

### Intended use

For rapid and direct identification of *Listeria* species in accordance with FDA BAM.

### Composition\*\*

Ingredients	Gms / Litre
Peptone, special	30.000
HM Extract #	5.000
Yeast Extract	1.000
Lithium Chloride	9.000
D-Xylose	10.000
Phenol Red	0.120
Chromogenic Mixture	5.130
Agar	13.000
<b>CA Selective Supplement (FD181)</b>	<b>1 vial</b>
Ceftazidime	2mg
Amphotericin B	2.500mg
Final pH ( at 25°C)	7.3±0.1

\*\*Formula adjusted, standardized to suit performance parameters

Key : # - Equivalent to Meat extract

### Directions

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

### Principle And Interpretation

HiCrome™ Listeria Agar Base, Modified is a modification of the formulas by Notermans et al. (1) and Mengaud et al. (2) for the detection of *Listeria* species from food stuffs. This is also in accordance with the FDA BAM (3). This media helps in the presumptive identification of *Listeria monocytogenes* within 24-48 hours after pre-enrichment. The principle of detection is based on the specific chromogenic detection of beta -glucosidase activity and also D-Xylose fermentation. *Listeria* species hydrolyse the purified chromogenic substrate in the medium giving blue coloured colonies. Since β-glucosidase activity is specific for *Listeria* species; other organisms cannot utilize the chromogenic substrate and therefore give white colonies. Differentiation between *Listeria* species is based on the property of D-Xylose fermentation. The colonies of *L.ivanovii* appear blue with a yellow halo (D-Xylose positive) while the colonies of *L.monocytogenes* and *L.innocua* appear blue without a yellow halo (D-Xylose negative). Peptone, yeast extract and HM extract provide nitrogenous substances, vitamin B complex and other essential growth nutrients. D-Xylose is the fermentable carbohydrate with phenol red as an indicator. Sodium chloride maintains the osmotic equilibrium. The added lithium chloride and CA Selective Supplement (FD181) inhibit growth of most gram-positive bacteria, gram-negative bacteria, yeasts and moulds.

### Type of specimen

Food samples.

### Specimen Collection and Handling

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

### Limitations

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.

- Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.
- Further biochemical tests must be carried out for confirmation.

## 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

Sterile HiCrome™ Listeria Agar Plate in 90 mm disposable plates with smooth surface and absence of black particles/cracks/bubbles

### Colour of medium

Red coloured medium

### Quantity of medium

25 ml of medium in 90 mm disposable plates.

### pH

7.10-7.50

### Sterility Check

Passes release criteria

### Cultural Response

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

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony	Xylose fermentation
<i>Bacillus subtilis</i> subsp. <i>spizizenni</i> ATCC 6633 (00003*)	$\geq 10^4$	inhibited	0%		
<i>Candida albicans</i> ATCC 10231 (00054*)	$\geq 10^4$	inhibited	0%		
<i>Escherichia coli</i> ATCC 25922 (00013*)	$\geq 10^4$	inhibited	0%		
<i>Listeria innocua</i> ATCC 33090 (00017*)	50-100	luxuriant	$\geq 50\%$	bluish green	negative reaction
<i>Listeria ivanovii</i> ATCC 19119 (00018*)	50-100	luxuriant	$\geq 50\%$	bluish green	positive reaction, (yellow halo)
<i>Listeria monocytogenes</i> ATCC 19118	50-100	luxuriant	$\geq 50\%$	bluish green	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	$\geq 10^4$	inhibited	0%		

Key : \*Corresponding WDCM numbers.

## Storage and Shelf Life

On receipt store between 2-8°C. 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

## Reference

- Notermans S.H. and Dufrenne J., (1991), Applied and Environmental Microbiology, 57(09): 2666-70.
- Mengaud J., Braun-Breton C. and Cossart P., (1991), Molecular Microbiology, 5(2): 367-372.

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. Isenberg, H. Clinical Microbiology Procedures Handbook 2nd Edition.
5. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Tenover F. C., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.

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