



HiCrome MM HiVeg Agar

MV1393

HiCrome MM HiVeg Agar is recommended for identification and differentiation of *Salmonella* and non-salmonella like *Citrobacter* from food, water and clinical samples.

Composition**

Ingredients	Gms / Litre
HiVeg peptone	10.000
HiVeg extract	2.000
D-Cellobiose	3.000
Lactose	10.000
D-Mannitol	1.200
D-Trehalose	1.330
Chromogenic mixture	6.600
Agar	15.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 49.13 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Cool to 45-50°C and pour into sterile Petri plates.

Principle And Interpretation

HiCrome MM HiVeg Agar is prepared by replacing animal based peptones with vegetable peptones, making the medium BSE/TSE risk free. HiCrome MM HiVeg Agar is a slight modification of HiCrome MM Agar which was formulated by Miller and Mallison (1) for specific isolation and detection of Salmonellae. This medium is superior to XLT4 Agar in supporting growth of *Salmonella* due to the presence of appropriate proportion of four sugars. Most differential and selective media are formulated with one or more sugars and pH indicators respectively. The utilization of sugars by organisms results in pH-changes. This is used as a means of distinguishing *Salmonella* from competing bacteria on the basis of colony colour. *Salmonella* usually are unable to ferment these sugars (2) that supports growth of competing bacteria. Thus other bacteria tend to overgrow Salmonellae, masking their presence. The inclusion of sugars like mannitol, cellobiose and trehalose stimulate the better initial growth of Salmonella cells. However, the low concentrations of these sugars do not interfere with the utilization of protein and H₂S production. Presence of lactose suppresses H₂S production by non-salmonellae like *Citrobacter freundii*.

The chromogenic mixture, present in this medium helps to differentiate between lactose fermenters and nonfermenters. Lactose fermenters give bluish green coloured colonies, which would have been impossible to differentiate with an indicator based on pH change. Inclusion of tergitol 4 in the medium suppresses the presence of *Proteus* and *Providencia* colonies. HiVeg peptone and HiVeg extract provide essential nitrogen compounds.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 4.91% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH

7.40-7.80

Cultural Response

MV1393: Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 24 hours.

Organism	Growth	Colour of Colony
<i>Citrobacter freundii</i> ATCC 8090	good-luxuriant	blue green
<i>Enterococcus faecalis</i> ATCC 29212	inhibited	
<i>Escherichia coli</i> ATCC 25922	luxuriant	blue green
<i>Salmonella Typhimurium</i> ATCC 14028	luxuriant	black centered
<i>Salmonella Enteritidis</i> ATCC 13076	luxuriant	black centered

Storage and Shelf Life

Store dehydrated powder and prepared medium at 2-8°C in tightly closed container. Use before expiry period on the label.

Reference

1. Miller R.G. and Mallison E.T., 2000, J. Food Protection, 63(10), 1443-46.
2. Miller R.G., Tate C.R., Mallinson E.T. and Scherrer J.A., 1991, Pault Sa 70:2429-32.

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