# Sorbitol Iron HiVeg™ Agar MV299

Sorbitol Iron HiVeg Agar is used for cultural identification and differentiation of enteropathogenic *Escherichia coli* which do not ferment sorbitol.

## Composition ** :

| Ingredients | Grams/Litre |
|---|---|
| HiVeg extract | 3.0 |
| HiVeg peptone No. 3 | 15.0 |
| D-Sorbitol | 2.0 |
| Sodium chloride | 5.0 |
| Ferric ammonium citrate | 0.5 |
| Sodium thiosulphate | 0.5 |
| Phenol red | 0.03 |
| Agar | 20.0 |

Final pH (at 25°C ) 7.6 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

## Directions :

Suspend 46 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in test tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubes to cool in slanted position.

## Principle and Interpretation :

Sorbitol Iron HiVeg Agar is prepared by using vegetable peptones instead of animal peptones that makes the medium free from BSE/TSE risks. Sorbitol Iron Agar is a differential tube medium described by Rappaport and Henig (1). It is a modification of Kligler Iron Agar where Dextrose and Lactose is substituted with D-Sorbitol. The pathogenic strain of *Escherichia coli* (EPEC) is identified on the basis of its inability to ferment sorbitol and produce hydrogen sulfide ($H_2S$). Sorbitol Iron HiVeg Agar is the modification of Sorbitol Iron Agar using HiVeg peptone No.3 and HiVeg extract and serves the same purpose as that of Sorbitol Iron Agar.
Colourless colonies from Sorbitol HiVeg Agar (MV298) are inoculated into Sorbitol Iron HiVeg Agar (MV299) by stabbing the butts and streaking the slants. After 18-24 hours of incubation, freshly isolated pathogenic strains of *Escherichia coli* of the serotypes 011 and 055 show neither acid production nor blackening of the medium. Ordinary strains of *Escherichia coli* produce acid and gas on Sorbitol Iron HiVeg Agar. Some pathogenic strains after laboratory cultivation may develop the capacity to ferment sorbitol and produce acid. Subsequent transfer of such cultures on Kliger Iron HiVeg Agar (MV078) or Triple Sugar Iron HiVeg Agar (MV021) & Urea Broth Base (M111) help in identification. *Proteus* species may or may not blacken the medium and may produce acid in the butt, but these give a positive reaction on Urea Broth Base (M111).

**Product Profile :**

| Vegetable based (Code MV)◉ | Animal based (Code M) |
|---|---|
| **MV299**<br>HiVeg extract<br>HiVeg peptone No. 3 | **M299**<br>Beef extract<br>Proteose peptone |

| | | |
|---|---|---|
| **Recommended for** | : | Cultural identification and differentiation of enteropathogenic *Escherichia coli* which do not ferment sorbitol. |
| **Reconstitution** | : | 46.0 g/l |
| **Quantity on preparation (500g)** | : | 10.86 L |
| **pH (25°C)** | : | 7.6 ± 0.2 |
| **Supplement** | : | None |
| **Sterilization** | : | 121°C / 15 minutes. |

**Storage :** Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

## Quality Control :

**Appearance of powder**
Light pink coloured, homogeneous, free flowing powder.
**Gelling**
Firm, comparable with 2.0% Agar gel.
**Colour and Clarity**
Red coloured, clear to slightly opalescent gel forms in tubes as slants.
**Reaction**
Reaction of 4.6% w/v aqueous solution is pH 7.6 ± 0.2 at 25°C.
**Cultural Response**
Cultural characteristics observed after an incubation at 35-37°C for 24 - 48 hours.

| Organisms (ATCC) | Inoculum (CFU) | Growth | Sorbitol | $H_2S$ |
|---|---|---|---|---|
| *E. coli* (0157:H7) | $10^2$-$10^3$ | luxuriant | - | - |
| *E. coli serotype* 011 and 055 (pathogenic) | $10^2$-$10^3$ | luxuriant | - | - |
| *Enterobacter aerogenes* (13048) | $10^2$-$10^3$ | luxuriant | + | - |
| *Enterococcus faecalis* (29212) | $10^2$-$10^3$ | luxuriant | + | - |
| *Escherichia coli* (25922) | $10^2$-$10^3$ | luxuriant | +* | - |
| *Klebsiella pneumoniae* (13883) | $10^2$-$10^3$ | luxuriant | + | - |
| *Proteus vulgaris* (13315) | $10^2$-$10^3$ | luxuriant | - | + |
| *Salmonella* serotype Typhimurium (14028) | $10^2$-$10^3$ | luxuriant | + | + |
| *Shigella flexneri* (12022) | $10^2$-$10^3$ | luxuriant | - | - |

Key : + = positive reaction, yellow colour or blackening
- = negative reaction
+* = acid and gas production

## References :

1. Rappaport and Henig, 1952, J. Clin. Path., 5:361.

◉ Prepared from GMO free Vegetable proteins replacing Animal based peptones. Freedom from BSE/TSE worries.