

SIM HiVeg™ Medium

MV181

SIM HiVeg Medium is recommended for determination of hydrogen sulphide production, indole formation and motility of enteric bacilli.

Composition ** :

Ingredients	Grams/Litre
HiVeg peptone	30.0
HiVeg extract	3.0
HiVeg peptonized iron	0.2
Sodium thiosulphate	0.025
Agar	3.0

Final pH (at 25°C) 7.3 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 36.23 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubes to cool in an upright position.

Principle and Interpretation :

SIM HiVeg Medium is prepared by replacing animal peptones like Peptic digest of animal tissue, Beef extract and Peptonized iron with vegetable peptones like HiVeg peptone, HiVeg extract and HiVeg peptonized iron respectively. This makes the medium free from BSE/TSE risks. SIM HiVeg Medium is the modification of animal based SIM medium. SIM HiVeg Medium is used to differentiate enteric bacilli (*Salmonella* and *Shigella*) on the same principles as in SIM medium i.e. on basis of sulphide production, indole formation and motility (1, 2). It is known that *Salmonella* serotype Paratyphi A and *Salmonella* serotype Paratyphi B can be distinguished on the basis of H₂S (hydrogen sulphide) production using lead acetate as reported by Jordan and Victorson (3). Medium with low agar helps to determine motility and indole production (4). HiVeg peptonized iron and sodium thiosulphate are the indicators of H₂S production. H₂S reacts with HiVeg peptonized iron to form black precipitate of ferrous sulphide. Motile organisms intensify the H₂S reaction. Motile organisms grow away from line of inoculation showing diffused growth while non-motile organisms grow along the stab line. Tryptophan present in HiVeg peptone is degraded by specific bacteria to produce indole (2). Indole is detected by the addition of chemical reagents following incubation period. Add 0.2 ml of Kovac's reagent to the tube and allow to stand for 10 minutes. A pink to red coloured ring indicates a positive indole reaction.

Quality Control :**Appearance of powder**

Yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Gelling

Semisolid, comparable with 0.3% Agar gel.

Colour and Clarity

Medium amber coloured, slightly opalescent gel forms in tubes as butts.

Reaction

Reaction of 3.6% w/v aqueous solution is pH 7.3 ± 0.2 at 25°C.

Product Profile :

Vegetable based (Code MV)©	Animal based (Code M)
MV181 HiVeg peptone HiVeg extract HiVeg peptonized iron	M181 Peptic digest of animal tissue Beef extract Peptonized iron
Recommended for	: Determination of hydrogen sulphide production, indole formation and motility of enteric bacilli.
Reconstitution	: 36.23 g/l
Quantity on preparation (500g)	: 13.8 L
pH (25°C)	: 7.3 ± 0.2
Supplement	: None
Sterilization	: 121°C / 15 minutes
Storage : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.	

Cultural Response

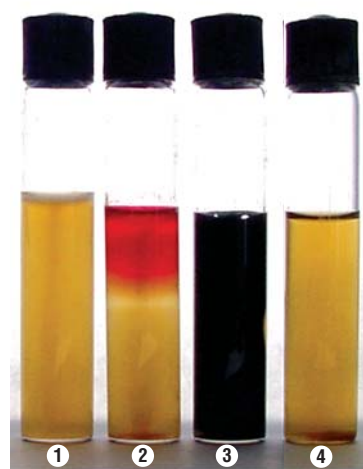
Cultural characteristics observed after an incubation at 35 - 37°C for 18 - 24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	H ₂ S	Motility	Indole
<i>Escherichia coli</i> (25922)	10 ² - 2 x 10 ²	luxuriant	-	+	+
<i>Salmonella</i> serotype Typhimurium (14028)	10 ² - 2 x 10 ²	luxuriant	+	+	-
<i>Shigella flexneri</i> (12022)	10 ² - 2 x 10 ²	luxuriant	-	-	-

Key : H₂S : + = blackening of the medium H₂S production
 Indole : + = indole production (red ring)
 Motility : + = growth away from stab line (motile).

References :

- MacFaddin 1985, Media for Isolation-Cultivation-Identification-Maintenance Medical Bacteria Vol, I, Williams, & Wilkins, Baltimore, M.D .
- Ewing, 1986, Edwards and Ewing's Identification of Enterobacteriaceae, 4th ed., Elsevier Science Publishing Co., Inc. New York.
- Jordan and Victorson, 1917, J. Inf. Dis., 21:554.
- Sosa, 1943, Rev. Inst. Bact., 11:286.



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1. Control
2. *Escherichia coli*
3. *Salmonella* serotype Typhimurium
4. *Shigella flexneri*