L.S. Differential HiVeg™ Medium Base MV582

L.S. (Lactobacillus Streptococcus) Differential HiVeg Medium Base is used for the differentiation of *Lactobacilli* and *Streptococci* on the basis of colonial morphology, T.T.C. reduction and casein reaction.

Composition ** :

Ingredients	Grams/Litre
HiVeg hydrolysate	10.0
Papaic digest of soyabean meal	5.0
HiVeg extract	5.0
Yeast extract	5.0
Dextrose	20.0
Sodium chloride	5.0
L-Cysteine hydrochloride	0.3
Agar	15.0

Final pH (at 25°C) 6.1 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 65.3 grams in 890 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and add the following sterile solutions previously kept warm at 50°C just prior to use; (1) 100 ml of 10% w/v aqueous solution of antibiotic free skim milk powder sterilized at 15 lbs pressure (121°C) for 5 minutes.
(2) 10 ml of 2,3,5-Triphenyl-Tetrazolium Chloride (T.T.C.) (FD057) Solution. Mix well and pour into sterile petri plates.

Principle and Interpretation :

L.S. (Lactobacillus Streptococcus) Differential HiVeg Medium Base has HiVeg hydrolysate and HiVeg extract, of vegetable source in place of Casein enzymic hydrolysate and Beef extract respectively. This medium is therefore BSE/TSE risk free associated with animal based peptones. L.S. (Lactobacillus Streptococcus) Differential HiVeg Medium Base is the modification of L.S. Differential Medium Base developed by Eloy and Lacrosse (1) for isolation and differentiation of *Lactobacilli* and *Streptococci* in yoghurt. Yoghurt is manufactured by controlled fermentation of milk held at 43°C using a starter culture of *Streptococcus thermophilus* and *Lactobacillus bulgaricus*. These two organisms have a complementary relationship. The *Streptococci* grow first and reduce redox potential and enables *Lactobacilli* to multiply which in turn produce growth stimulatory products for *Streptococci* and characteristic flavours associated with mature yoghurt (2).
The ratio of *Streptococci* and *Lactobacilli* in the starter culture and in the finished product controls the important factors such as flavour and acidity. A ratio of 1:1 has been recommended by several workers (3, 4, 5). Samples of yoghurt or starter cultures are added to melted and cooled L.S. Differential HiVeg Medium Base, mixed thoroughly and plates are poured. The plates are incubated at 43°C for 48 hours. Both total viable counts and differential counts can be studied.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV582 HiVeg hydrolysate HiVeg extract	**M582** Casein enzymic hydrolysate Beef extract

Recommended for	:	Growth and differentiation of *Lactobacilli* and *Streptococci* on the basis of colonial morphology, T.T.C. reduction and casein reaction.
Reconstitution	:	65.3 g/l
Quantity on preparation (500g)	:	7.65 L
pH (25°C)	:	6.1 ± 0.2
Supplement	:	Sterile antibiotic free skim milk solution (10%), TTC Solution (FD057)
Sterilization	:	121°C / 15 minutes.

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

Quality Control :

Appearance of powder
Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Gelling
Firm, comparable with 1.5% Agar gel.

Colour and Clarity
Light yellow coloured, opalescent gel forms in petri plates.

Reaction
Reaction of 6.53% w/v aqueous solution is pH 6.1 ± 0.2 at 25°C

Cultural Response
Cultural characteristics observed after an incubation at 43-45°C for 48 hours with added antibiotic free skim milk powder and 1% T.T.C. (FD057).

Organisms (ATCC)	Colony characteristics
***Streptococcus thermophilus* (14485)	red, smooth, surrounded by clear zone
**Lactobacillus bulgaricus* (41842)	red, rhizoidal, surrounded by opaque zone

Key : * = surrounded by opaque zone
** = surrounded by clear zone

References :

1. Eloy C. and Lacrosse R., 1976, Bull. Rech. Agron Gembloux, 11(1-2):83.
2. Davis J.G., Ashton T.F. and McCaskill M., 1971, Dairy Ind., 36:569.
3. Pette J.W. and Lolkema H., 1950, Neth. Milk Dairy J., 4:261.
4. Stocklin P., 1969, Cultured Dairy Prod. J., 4 (3), 6.
5. Sellars R.L. and Babel F. J., 1970, "Cultures for the Manufacture of Dairy Products", Chr. Hansens's Laboratory, Inc., Milwankee, Wis.