M17 HiVeg™ Agar Base MV929

M17 HiVeg Agar Base is used for selective enumeration and cultivation of lactic *Streptococci* from yoghurt , cheese starters and other dairy products and for plaque assay of lactic bacteriophages.

Composition ** :

Ingredients	Grams/Litre
HiVeg peptone	5.0
Papaic digest of soyabean meal	5.0
Yeast extract	2.5
HiVeg extract	5.0
Ascorbic acid	0.5
Magnesium sulphate	0.25
Lactose	5.0
Agar	10.0

Final pH (at 25°C) 7.1 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 33.25 grams in 1000 ml distilled water. Add 19 grams of Disodium β-Glycerophosphate. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Principle and Interpretation :

M17 HiVeg Agar Base is specially developed by using HiVeg peptone and HiVeg extract to avoid BSE/TSE risks associated with animal origin peptone. M17 HiVeg Agar Base is the modification of M17 Agar Base which is based on the formulation described by Terzaghi and Sandine (1) for the cultivation and enumeration of lactic *Streptococci* and their bacteriophages.

It is possible to study plaque morphology and lysogeny using this medium. Lactic *Streptococci* are nutritionally fastidious and require complex media for optimal growth (2,3). Disodium glycerophosphate maintains the pH above 5.7 as acid is produced by lactose fermentation. The maintenance of pH is very important as lower pH results in injury and reduced recovery of lactic *Streptococci*. Glycerophosphate does not form precipitate with calcium which is needed for the plaque assay of lactic bacteriophages.

HiVeg peptone, Papaic digest of soyabean meal, yeast extract, HiVeg extract, provide carbonaceous, nitrogenous compounds, vitamin B complex and other essential growth factors. Lactose is the fermentable carbohydrate and ascorbic acid is stimulatory for the growth of lactic *Streptococci*. Magnesium sulphate provides essential ions to the organisms.

Shankar and Davies (4) reported isolation and enumeration of *Streptococcus thermophilus* from yoghurt. Disodium glycerophosphate suppresses *Lactobacillus bulgaricus*. M17 HiVeg Agar is suitable for cultivation and maintenance of starter cultures for cheese and yoghurt manufacturing. This medium helps in detecting *Streptococcus mutants* which is a lactose non-fermenter.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV929 HiVeg peptone HiVeg extract	**M929** Peptic digest of animal tissue Beef extract

Recommended for	:	Cultivation of lactic *Streptococci* and plaque assay of lactic bacteriophages
Reconstitution	:	33.25 g/l
Quantity on preparation (500g)	:	15.03 L
pH (25°C)	:	7.1 ± 0.2
Supplement	:	Disodium ß-Glycerophosphate
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 1.0% Agar gel.

Colour and Clarity

Light yellow coloured, slightly opalescent gel forms in petri plates.

Reaction

Reaction of 3.33% w/v aqueous solution is pH 7.1 ± 0.2 at 25°C.

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 24 - 48 hours with added Disodium β-Glycerophosphate.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
Enterococcus faecalis (29212)	10^2-10^3	good-luxuriant	>50%
Lactobacillus bulgaricus (11842)	10^2-10^3	none-poor	<10%
Lactobacillus leichmannii (4797)	10^2-10^3	good-luxuriant	>50%
Lactobacillus plantarum (8014)	10^2-10^3	good-luxuriant	>50%
Streptococcus thermophilus (14486)	10^2-10^3	good-luxuriant	>50%

References :

1. Terzaghi B.E. and Sandine W.E., 1975, Appl. Microbiol., 29:807.
2. Anderson A.W. and Elliker P.R., 1953, J. Dairy Sci., 36:161.
3. Reiter B. and Oran J.D., 1962, J. Dairy Res., 29:63.
4. Shankar P.A. and Davies F.L., 1977, Soc. Dairy Technol., 30:28.

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