Bile Esculin HiVeg™ Agar / Agar Base MV972 / MV340

Bile Esculin HiVeg Agar / Agar Base is a differential medium recommended for isolation and presumptive identification of Group D *Streptococci* from food and pharmaceutical products.

Composition** :

Ingredients	MV972 Grams/Litre	MV340 Grams/Litre
HiVeg peptone	25.00	22.00
HiVeg extract	6.00	6.00
Synthetic detergent No.II	2.00	5.00
HiVeg hydrolysate	15.00	15.00
Esculin	1.00	-
Ferric citrate	0.50	0.50
Agar	15.00	15.00

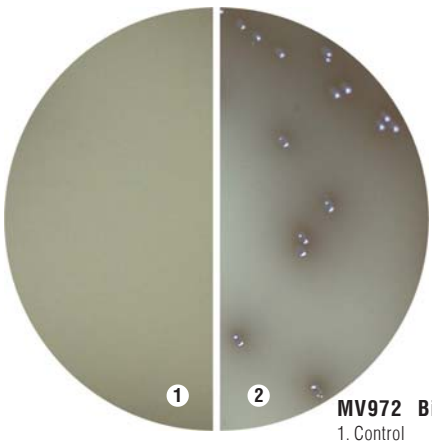
Final pH (at 25°C) 6.6 ± 0.2
** Formula adjusted, standardized to suit performance parameters

Directions :

Suspend 64.5 grams of MV972 or 63.5gms of MV340 in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Add 1 gram of esculin (2 vials of FD050) in MV340. Mix and dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Allow the tubed medium to solidify in slanted position.

Principle and Interpretation :

This medium is prepared by completely replacing animal based peptones with vegetable peptones which are free from BSE/TSE risks. Bile Esculin HiVeg Agar is the modification of Bile Esculin Agar which was formulated by Swan (1) for the isolation and identification of Group D *Streptococci* from food. The medium contains Synthetic detergent No. II that inhibits gram positive bacteria other than group D *Streptococci* and *Enterococci*. *Enterococci* and Group D *Streptococci* were able to split esculin to esculetin and dextrose, which reacts with ferric citrate producing brownish black precipitate (2). Ferric citrate is incorporated into the medium as an indicator of esculin hydrolysis and resulting esculatin formation. Originally Bile Esculin Test was used for identification of *Enterococci*, but it was found that this test is also shared by Group D *Streptococci* (3) and therefore it is recommended that other tests such as salt tolerance be performed while identifying *Enterococci* (4). Similarly this medium was also shown to aid differentiation of *Enterobacteriaceae, Klebsiella, Enterobacter-Serratia* division from other *Enterobacteriaceae* genera (5) on the basis of esculin hydrolysis. Occasional strains of viridans *Streptococci* blacken the medium or display weakly positive reactions (6).



MV972 Bile Esculin HiVeg Agar
1. Control
2. *Enteroccocus faecalis*

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV972/MV340	**M972/M340**
HiVeg peptone	Peptic digest of animal tissue
HiVeg extract	Beef extract
Synthetic detergent No.II	Oxgall
HiVeg hydrolysate	Casein enzymic hydrolysate

Reconstitution	:	(MV972) : 64.5 g/l
	:	(MV340) : 63.5 g/l
Quantity on preparation (500g)	:	(MV972) : 7.75 L
	:	(MV340) : 7.87 L
(100g)	:	(MV972) : 1.55 L
pH (25°C)	:	6.6 ± 0.2
Supplement	:	(MV340) : Esculin (FD050)
Sterilization	:	121°C / 15 minutes.

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

Quality Control:

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

Gelling
Firm, comparable with 1.5% Agar gel.

Colour and Clarity
Yellow coloured, clear to slightly opalescent gel with a bluish tinge forms in petri plates.

Reaction
Reaction of 6.45% w/v of MV972 or 6.35% w/v of MV340 aqueous solution is pH 6.6 ± 0.2 at 25°C.

Cultural Response
Cultural characteristics observed after an incubation at 35 - 37°C for 18-24 hours in an increased atmosphere of carbon dioxide

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Esculin hydrolysis
Enterococcus faecalis (29212)	10^2-10^3	luxuriant	>50%	+
Sreptococcus pyogenes (19615)	10^2-10^3	none-poor	<10%	—
Proteus mirabilis (25933)	10^2-10^3	luxuriant	>50%	—

Key : + = Blackening of the medium
— = No Change

References :

1. Swan A., 1954, J. Clin. Pathol., 7:160.
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4. Facklam R., 1973, Appl. Microbiol., 26:138.
5. Edberg S.C., Pittman S., and Singer J.M., 1977, J. Clin. Microbiol., 6:111.
6. Facklam, etal 1999. In Murray, Baron, pfaller, Tenover and yolken (ed.), Manual of clinical Microbiology, 7th ed. ASM, Washington, D. C.