Lysine Decarboxylase HiVeg™ Broth MV376

Lysine Decarboxylase HiVeg Broth is used for distinguishing *Salmonella* serotype Arizonae from the Bethesda Ballerup group of *Enterobacteriaceae*.

Composition ** :

Ingredients	Grams/Litre
HiVeg peptone	5.0
Yeast extract	3.0
Dextrose	1.0
L-Lysine hydrochloride	5.0
Bromo cresol purple	0.02

Final pH (at 25°C) 6.8 ± 0.2
** Formula adjusted, standardized to suit performance parameters.

Directions :

Suspend 14 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense 5 ml amount into screw capped test tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle and Interpretation :

This medium is prepared by completely replacing animal based peptones with vegetable peptones. Lysine Decarboxylase HiVeg Broth is the modification of Lysine Decarboxylase Broth which was originally formulated by Falkow (1).
During the initial stages of incubation, fermentation of glucose by the organisms, yields acid production resulting in a colour change of indicator to yellow. On further incubation, if L-Lysine is decarboxylated to cadaverine, there will be an alkaline reaction and indicator colour will then change to purple. If colour remains yellow, the decarboxylase reaction is negative. HiVeg peptone and yeast extract provide essential growth nutrients. Dextrose is the fermentable carbohydrate and bromo cresol purple is the pH indicator. Use light inocula and do not read the tests under 24 hours incubation as some organisms require longer incubation time upto 4 days. To obtain proper reactions, inoculated tubes must be protected from air. This is done to avoid false alkalinization at the surface of the medium, which could cause a decarboxylase negative bacteria to appear to be positive. This can be done by overlaying a medium with sterile mineral oil as suggested by Ewing, Davis and Edwards (2).

Quality Control :

Appearance of powder
Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.
Colour and Clarity
Purple coloured, clear solution without any precipitate.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV376 HiVeg peptone	**M376** Peptic digest of animal tissue

Recommended for	:	Distinguishing *Salmonella* serotype Arizonae from the Bethesda Ballerup group of *Enterobacteriaceae*.
Reconstitution	:	14.0 g/l
Quantity on preparation (500g)	:	35.71 L
(100g)	:	7.14 L
pH (25°C)	:	6.8 ± 0.2
Supplement	:	None
Sterilization	:	121°C / 15 minutes.

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

Reaction
Reaction of 1.4% w/v aqueous solution is pH 6.8 ± 0.2 at 25°C.
Cultural Response
Cultural characteristics observed after an incubation at 35 - 37°C for 18-24 hours.

Organisms (ATCC)	Inoculum (CFU)	Lysine decarboxylation*
Citrobacter freundii (8090)	10^2-10^3	@
***Enterobacter aerogenes* (13048)	10^2-10^3	+
Escherichia coli (25922)	10^2-10^3	±
#*Klebsiella pneumoniae* (13883)	10^2-10^3	+
Proteus mirabilis (25933)	10^2-10^3	-
Proteus vulgaris (13315)	10^2-10^3	-
Salmonella serotype Arizonae (13314)	10^2-10^3	+
Salmonella serotype Paratyphi A (5006)	10^2-10^3	-
Salmonella serotype Typhi (6539)	10^2-10^3	+
Serratia marcescens (8100)	10^2-10^3	+
Shigella dysenteriae (13313)	10^2-10^3	-

Key : + = positive reaction, purple colour
- = negative reaction, yellow colour or no change
* = inoculated tubes overlaid with Sterile Mineral oil.
± = variable
@ = it is negative but shows false positivity
** = including the Bethesda-Ballerup group
# = including late lactose variants Alkalescens - Dispar

References :

1. Falkow S., 1958, Am. J. Clin. Pathol., 29:598.
2. Ewing, W. H., B. R. Davis and P. R. Edwards, 1960. The decarboxylase reaction of Enterobacteriaceae and their value in taxonomy. Publ. Health Lab., 18: 77-83.

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