Lysine Arginine Iron HiVeg™ Agar MV1230

Lysine Arginine Iron HiVeg Agar is used for the isolation and presumptive identification of *Yersinia* species from milk and milk products.

Compostion ** :

Ingredients	Grams/Litre
L-Arginine	10.0
L-Lysine	10.0
HiVeg peptone	5.0
Yeast extract	3.0
Glucose	1.0
Ferric ammonium citrate	0.5
Sodium thiosulphate	0.04
Bromo cresol purple	0.02
Agar	15.0

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

Directions :

Suspend 44.56 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Dispense in 5 ml amount into screw capped test tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubed medium to give slants and butts.

Principle and Interpretation :

Lysine Arginine Iron HiVeg Agar is prepared by using HiVeg peptone in place of Peptic digest of animal tissue which makes the medium free of BSE/TSE risks. Lysine Arginine Iron HiVeg Agar is the modification of Lysine Arginine Iron Agar which is formulated as recommended by APHA (1) for isolation and identification of *Yersinia* species from milk and milk products. Some *Yersinia* species have been implicated in human disease with a variety of clinical syndromes (2).
HiVeg peptone and yeast extract provide the necessary nitrogenous nutrients and vitamin B complex to the organisms. Ferric ammonium citrate and sodium thiosulphate are the indicators for hydrogen sulphide (H_2S) production. This medium contains two amino acids L-Arginine and L-Lysine. The organisms which do not decarboxylate L-Lysine but ferment glucose, gives an alkaline slant and an acid butt (yellow colour, as bromo cresol purple is the pH indicator).
The sample suspected of *Yersinia* can be inoculated on MacConkey HiVeg Agar (MV081) rather than directly streaking on Lysine Arginine Iron HiVeg Agar. Inoculate the suspected *Yersinia* colony from MacConkey HiVeg Agar (MV081) on Lysine Arginine Iron Hiveg Agar and incubate at 22-26°C upto 48 hours. Organisms which give a alkaline slant, acidic butt, no gas and no hydrogen sulphide (H_2S) production on Lysine Arginine Iron HiVeg Agar and urease-positive are considered to be presumptive *Yersinia* (1).

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV1230 HiVeg peptone	**M1230** Peptic digest of animal tissue

Recommended for	:	Isolation and presumptive identification of *Yersinia* species from milk and milk products.
Reconstitution	:	44.56 g/l
Quantity on preparation (100g)	:	2.24 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.

MV1230 Lysine Arginine Iron HiVeg Agar
1. Control
2. *Klebsiella pneumoniae*
3. *Yersinia enterocolitica*

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
Purple coloured, clear to slightly opalescent gel forms in tubes as butts.

Reaction
Reaction of 4.45% w/v aqueous solution is pH 6.8 ± 0.2 at 25°C.

Cultural Response
Cultural characteristics observed after an incubation at 25-30°C for 24 - 48 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Slant	Butt	Gas	H_2S
Klebsiella pneumoniae (13883)	10^2-10^3	luxuriant	AK	A	+	-
Yersinia enterocolitica (27729)	10^2-10^3	luxuriant	AK	A	-	-

Key : AK = alkaline reaction, purple colour.
A = acidic reaction, yellow colour.

References :

1. Standard Methods for the Examination of Dairy Products. 17th Edition, 2004 Edited by H. Michael Wehr and Joseph H.Frank.
2. U.S.Food and Drug Administration, 1984, Bacteriological Analytical Manual, 6th ed., Arlington, VA.

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

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