Technical Information

Lysine Iron Cystine MiVeg Broth Base

Product Code : VM1845

Application:- Lysine Iron Cystine MiVeg Broth Base is used for rapid presumptive detection of *Salmonellae* in foods, food ingredients and feed materials.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	5.0
Yeast extract	3.0
L-Lysine hydrochloride	10.0
Mannitol	5.0
Dextrose	1.0
Salicin	1.0
L-Cystine	0.1
Ferric ammonium citrate	0.5
Sodium thiosulphate	0.1
Neutral red	0.025
Final pH (at 25°C)	6.2 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Lysine Iron Cystine MiVeg Broth Base is prepared by adding MiVeg hydrolysate instead of Casein enzymic hydrolysate thereby making the medium free from BSE/TSE risks. Lysine Iron Cystine MiVeg Broth Base is the modification of the formula of Hoben, Aston and Peterson (1). They described the usefulness of this medium for detecting *Salmonellae* in food samples in three days, thus reducing the holding time for foods and food ingredients.

MiVeg hydrolysate and L-Cystine supply carbonaceous and nitrogenous compounds. Yeast extract provide Vitamin B complex. Dextrose, mannitol and salicin are the fermentable carbohydrates. Ferric ammonium citrate and sodium thiosulphate are the H_2S production indicators. Lysine is the substrate which is either decarboxylated or deaminated.

25 g of the test sample under examination is added to Lactose MiVeg Broth (VM1026) and blended. Incubate for 24 hours at 35 ± 2°C and then 1 ml of this culture is added to 10 ml of Tetrathionate MiVeg Broth (VM1032) and incubated at 35 ± 2°C for 24 hours. From this secondary culture, 1 ml is added to 10ml Lysine Iron Cystine MiVeg Broth Base with Novobiocin and incubated at 35 ± 2°C for 24 hours. To eliminate the possibility of non H_2S (hydrogen sulphide) producing *Salmonellae*, incubate for an additional 16-24 hours. 0.1 ml. Bromo thymol blue solution (0.3%) in 0.1 N NaOH and 50% ethanol is added to each tube. If the colour changes from yellow to dark green or blue, it indicates an alkaline reaction and the presence of *Salmonella* species.

Methodology

Suspend 25.7 grams of powder media in 1000 ml distilled water. Mix thoroughly and heat if necessary to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to room temperature and aseptically add 1 vial of reconstituted Novobiocin Selective Supplement (MS2101). Mix well before dispensing into sterile tubes.

Quality Control

Physical Appearance

Light pink coloured, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Reddish coloured, clear solution with slight particles.

Reaction

Reaction of 2.57% w/v aqueous solution is pH 6.2 ± 0.2 at 25°C.

pH Range

6.0-6.4

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 24 - 48 hours with addition of Novobiocin Selective Supplement (MS2101).

Organisms (ATCC)	Growth	Colour of medium	Colour of medium*	H_2S
Escherichia coli (25922)	inhibited	red	red-blue	-
Salmonella serotype Typhi (19430)	luxuriant	yellow	dark green-blue	+
Salmonella serotype Enteritidis (13076)	luxuriant	yellow	dark green-blue	+
Shigella flexneri (12022)	inhibited	red	red-blue	_

Key : * = after addition of Bromo Thymol Blue.
+ = blackening of the media

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 day.

Further Reading

1. Hoben, Ashton and Peterson, 1973, Applied Microbiol., 25:123.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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