UVM-I Listeria Selective Enrichment Broth Modified

Cat. 1279

For the selective enrichment of Listeria spp in two stages from raw meat and food as per USDA-FSIS procedures

Practical information

Aplications	Categories
Enrichment	Listeria

Industry: Food

Principles and uses

Listeria Selective Enrichment Broth, Modified (UVM Formula) is a modification of the formula described by Donnelly and Baigent; reducing the content of Nalidixic Acid in UVM-I and UVM-II from the previous formulation and increasing the concentration of acriflavine hydrochloride in the UVM-II Listeria Selective Enrichment Broth, Modified Cat. 1280.

This modification and the two-stage selective enrichment method (USDA-FSIS) have meant the most isolation of Listeria monocytogenes in meat products and, additionally, have the advantage of doing so in only 3-4 days.

Tryptone, proteose peptone and beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Potassium phosphates act as a buffer system. Esculin is hydrolyzed by all Listeria species. Nalidixic acid blocks the DNA replication of susceptible bacteria and acts against many Gram-negative bacteria. Acriflavine hydrochloride inhibits many Gram-positive bacteria.

Formula in g/L

Acriflavine	0,012	Beef extract	5
Disodium phosphate	12	Esculin	1
Nalidixic acid	0,02	Potassium phosphate	1,35
Sodium chloride	20	Tryptone	5
Yeast extract	5	Proteose peptone	5

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 54,4 grams of the medium in one litre of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes.

Instructions for use

USDA-FSIS method:
- Inoculate10 grams of the sample in 90 ml of UVM-I broth.
- Incubate at 35±2 ºC and observe after 18-48 hours.
- After this is complete, take 100 µl of the incubated UVM-I and inoculate in 9,9ml of UVM-II broth (Cat. 1280).
- Incubate at 35± 2ºC and observed after 18-48 hours

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	Yellow-green	7,2 ± 0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-48 h)

Microorganisms	Specification
Listeria monocytogenes ATCC 19112	Good growth
Listeria innocua ATCC 33090	Good growth
Staphylococcus aureus ATCC 6538	Inhibition

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

McClain, D., Lee W.H: Development of USDA-FSIS Method for isolation of Listeria monocytogenes from raw meat and poultry.- J. Assoc.Off.Anal. Chem., 71(3)
Donnelly C.W. y Baigent G.J.(1986) Appl.Environ.Microbial 52.689-695