TM 1225 – LISTERIA ENRICHMENT MEDIUM BASE (UVM)

INTENDED USE

For selective isolation and cultivation of *Listeria monocytogenes* from clinical specimens

PRODUCT SUMMARY AND EXPLANATION

Listeriosis is caused by *Listeria monocytogenes*, a short gram-positive non-sporulating rod. The bacilli are commonly found in soil and in the intestines of many animals including birds, fish, barnyard animals, dairy cattle and household pets. It is transmitted to humans by foods contaminated with faecal matter, as well as by the consumption of animal foods contaminated with the bacilli.

Listeria Enrichment Medium Base is used for the selective cultivation and isolation of *L. monocytogenes* from clinical samples. The medium was originally formulated by Donnelly and Baigent. It was later modified by decreasing the nalidixic acid concentration in the selective supplements and subsequently increasing the acriflavin concentration. University of Vermont Modification Medium (UVM) used a two-step selective enrichment medium resulting in a higher isolation rate of *L.monocytogenes* from meat products within 3-4 days. This UVM Broth is recommended as a primary enrichment broth for recovery of heat-injured *Listeria*.

The two-step selective enrichment method developed results in a higher detection rate of *L.monocytogenes* from specimens and has the added advantage of only taking 3-4 days. For primary isolation inoculate 25 gm or 25 ml specimen in 225 ml Listeria Enrichment Medium Base with added Listeria UVM Supplement I. After 24 hours incubation, spread 0.2 ml of this medium on Listeria Selective Agar plate. Simultaneously transfer 0.1 ml of Enrichment broth to 10 ml of fresh Listeria Enrichment Medium Base with added Listeria UVM Supplement II. For secondary enrichment after 24 hours spread 0.2 ml of this medium on Listeria Selective Agar plate.

Note: Broth cultures of *Listeria* are more dangerous than colonies on agar plates, so proper precautions should be taken while handling.

COMPOSITION

Ingredients	Gms / Ltr
Tryptose	5.000
Proteose peptone	5.000
Beef extract	5.000
Yeast extract	5.000
Sodium chloride	20.000
Disodium hydrogen phosphate	12.000
Potassium dihydrogen phosphate	1.350
Esculin	1.000

PRINCIPLE

This medium consists of Tryptone, proteose peptone, Beef extract and yeast extract which provide nitrogenous and carbonaceous compounds, long chain amino acids and other necessary nutrients while esculin offers differential properties to the medium. Nalidixic acid and acriflavin hydrochloride together with higher concentration of phosphate render the medium selective for *Listeria*. Gram-negative and gram-positive organisms are inhibited by nalidixic acid and acriflavin hydrochloride respectively.

INSTRUCTION FOR USE

- Dissolve 27.17 grams in 500 ml purified/distilled water.

- Heat if necessary to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C and aseptically add rehydrated contents of 1 vial of Listeria UVM Supplement I for primary enrichment or 1 vial of Listeria UVM Supplement II for secondary enrichment.
- Mix well and dispense into tubes or flasks as desired.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to light tan homogeneous free flowing powder.
Appearance of prepared medium : Medium amber coloured, slightly opalescent solution with a bluish tinge.
pH (at 25°C) : 7.4 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth(On addition of TS 117 or TS 118)	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	None-Poor	35-37°C	24-48 Hours
Listeria monocytogenes	19111	50-100	Luxuriant	35-37°C	24-48 Hours
Listeria monocytogenes	19112	50-100	Luxuriant	35-37°C	24-48 Hours
Listeria monocytogenes	19117	50-100	Luxuriant	35-37°C	24-48 Hours
Listeria monocytogenes	19118	50-100	Luxuriant	35-37°C	24-48 Hours
Staphylococcus aureus subsp. aureus	25923	50-100	None-Poor	35-37°C	24-48 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 10 - 25°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
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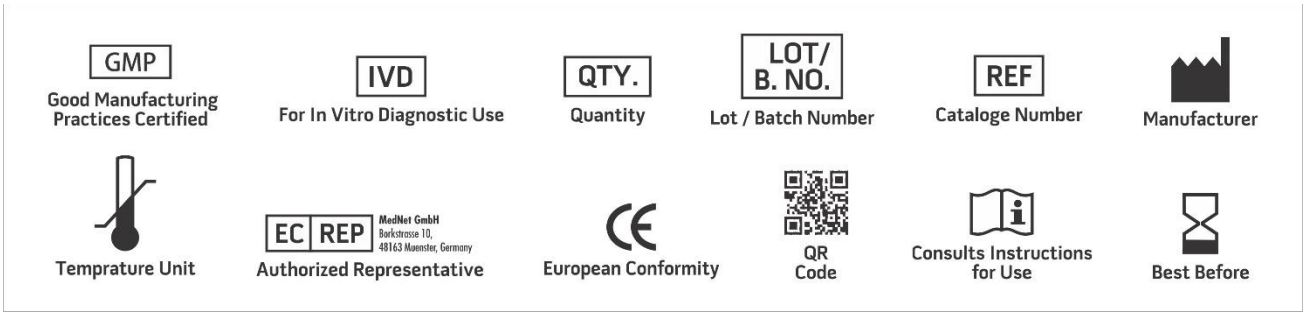

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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