TM 1227 – LISTERIA IDENTIFICATION BROTH BASE (PALCAM)

INTENDED USE

For selective enrichment of *Listeria* species

PRODUCT SUMMARY AND EXPLANATION

The heightened awareness and concern surrounding the presence of *Listeria monocytogenes* in food has resulted in the development of many media for its isolation. Listeria Identification Broth also known as Polymyxin-Acriflavin-Lithium chloride-Ceftazidime-Aesculin-Mannitol (PALCAM) Broth is prepared as described by van Netten et al for selective enrichment of *Listeria* species.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	23.000
Yeast extract	5.000
Lithium chloride	10.000
Esculin	0.800
Ammonium ferric citrate	0.500
D-Mannitol	5.000
Soya lecithin	1.000
Polysorbate 80	2.000
Phenol red	0.080

PRINCIPLE

This medium consists of Peptone and yeast extract which provide nitrogen and carbon compounds, long chain amino acids and other growth nutrients. High amount of lithium chloride and added selective supplement containing polymyxin B, acriflavin hydrochloride and ceftazidime inhibit accompanying microflora and allow the growth of *Listeria* species. Soya lecithin has similar properties as that of egg yolk; hence additional supplementation of egg yolk emulsion is not required. After incubation at 30°C for 24-48 hours, approximately 0.1 ml of the broth is streaked on Listeria selective agars such as Listeria Identification Agar (PALCAM) or Listeria Oxford Agar. The combination of mannitol and phenol red helps the detection of mannitol fermentation while esculin and ammonium ferric citrate together help in detection of esculin hydrolysis.

L. monocytogenes hydrolyses esculin resulting in the formation of black coloured medium. *L. monocytogenes* does not ferment mannitol, therefore its differentiation from contaminants such as Enterococci and Staphylococci can be made as the later will ferment mannitol and produce a colour change from red to yellow. Incubation under microaerophilic conditions serves to inhibit strict aerobes such as *Bacillus* and *Pseudomonas* species. Techniques for the isolation of *L. monocytogenes* will depend on the material under test. It is usual for the test sample to be first inoculated into an enrichment broth to allow multiplication before isolation and identification. Depending on the types of samples used, the appropriate method and selective enrichment broth should be used.

INSTRUCTION FOR USE

- Dissolve 23.69 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 add sterile reconstituted contents of 1 vial of Listeria Selective Supplement (PALCAM).
- Mix well and dispense into tubes or flasks as desired.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.
Appearance of prepared medium : Red coloured, clear solution without any precipitate.
pH (at 25°C) : 7.4 ± 0.2

INTERPRETATION

Cultural characteristics observed with added Listeria Selective Supplement (PALCAM) after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of medium	Incubation Temperature	Incubation Period
Enterococcus faecalis	29212	>=10^4	Inhibited	-	30°C	24-48 Hours
Listeria monocytogenes	19118	50-100	Good	Black	30°C	24-48 Hours
Micrococcus luteus	10240	>=10^4	Inhibited	-	30°C	24-48 Hours
Staphylococcus aureus	25923	>=10^4	Inhibited	-	30°C	24-48 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

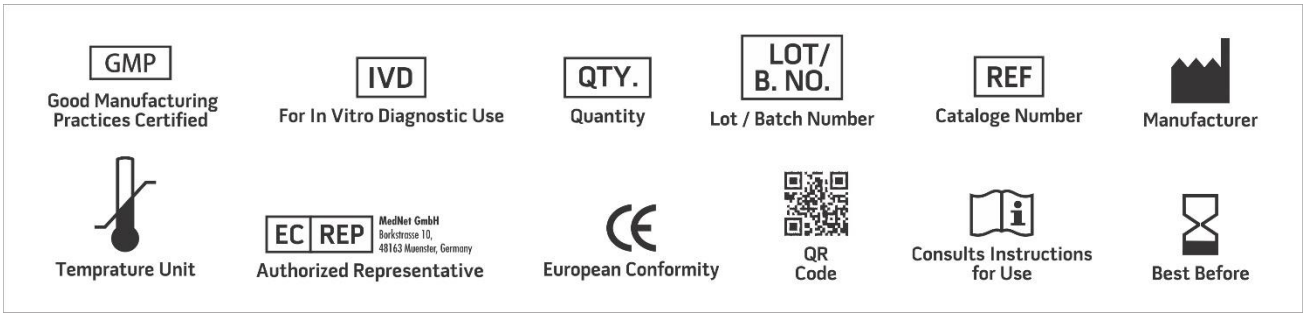
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided 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

1. Farber J. M. and Peterkin P., 1991, Microbiol. Rev. 55: 476-511.
2. Lund A. M., 1991, J. Food Prot., 54:602.
3. Van Netten P. et al, 1989, Int. J. Food Microbiol., 8:299.



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

***For Lab Use Only**

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