15776 PALCAM Listeria Selective Agar, Vegitone (Vegitone PALCAM Listeria Selective Agar)

PALCAM Listeria Selective Agar with added supplement is recommended for selective isolation and identification of *Listeria* species. This modified medium contains no animal derived material.

Composition:

Ingredients	Grams/Litre
Peptone (vegetable)	23.0
Starch	1.0
Sodium chloride	5.0
Mannitol	10.0
Ammonium ferric citrate	0.5
Esculin	0.8
Dextrose	0.5
Lithium chloride	15.0
Phenol red	0.08
Agar	13.0
Final pH 7.0 +/- 0.2 (at 25°C)	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance:	Light pink coloured, homogeneous, free flowing powder.
Gelling:	Firm.
Colour and Clarity:	Red coloured, clear to slightly opalescent gel forms in petri plates.

Directions:
Suspend 69 g in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to around 50°C and aseptically add the dissolved contents of 2 vials of PALCAM Listeria Selective Supplement according to Van Netten et al. (02336). Mix well and pour into sterile petri plates.

Principle and Interpretation:
PALCAM Listeria Selective Agar is a selective Agar formulated by Van Netten et al (1) and is recommended for the isolation of *Listeria monocytogenes* from foods. PALCAM is the abbreviation for Polymyxin Acriflavin Lithium-chloride Ceftazidime Esculin Mannitol. PALCAM medium is highly selective due to the presence of lithium chloride, Ceftazidime, Polymyxin B and Acriflavin hydrochloride. This medium contains vegetable peptone which provides nitrogenous and other important nutrients. Starch detoxifies metabolic by-products and sodium chloride maintains the osmotic balance of the medium. PALCAM medium is a differential diagnostic medium utilizing two indicator systems. One system is based on the hydrolysis of esculin to esculetin and dextrose, which reacts with ferric citrate producing a brownish black precipitate around the colonies. Mannitol and phenol red is the other indicator system. *Listeria monocytogenes* hydrolyzes esculin (black halo around colonies) but it does not ferment mannitol. Contaminants such as Enterococci and Staphylococci ferment mannitol and is indicated by colour change from red to yellow. Under microaerophilic conditions strict aerobes such as *Bacillus* species and *Pseudomonas* species are inhibited. The addition of egg yolk (2.5% v/v) to PALCAM Agar has been reported to improve the recovery of damaged cells (2).

Medium containing blood when overlaid on PALCAM Agar enables to differentiate and enumerate haemolytic Listeria species (3).
Depending upon the type of sample used, selective enrichment broth should be used prior to inoculation onto PALCAM Agar. Generally, Listeria Selective Enrichment Medium (62353) is used for Dairy products and UVM Listeria Selective Enrichment Broth, modified (94485), Fraser Secondary Enrichment Broth (F6672) are used for meats and poultry.

Cultural characteristics after 48 hours at 35°C, under microaerophilic condition.

Organisms (ATCC)	Growth	Colony Characteristics
Listeria monocytogenes (19112)	+++	grey-green with black centre and a black halo
Staphylococcus aureus (25923)	+/-	yellow colonies with yellow halo
Enterococcus faecalis (29212)	+/-	grey colonies with a brown-green halo

References:

1. P. van Netten et al, Int. J. Food. Microbiol., 8(4), 299 (1989)
2. P.H. in't Veld, E. de Boer, Int. J. Food Microbiol., 13, 295 (1991)
3. P. van Netten, B. van Gaal, D.A.A. Mossel, Lett.Appl. Microbiol, 12, 20 (1991)

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.