

L-PALCAM Listeria Selective Enrichment Broth Base acc. to VAN NETTEN et al.

For the selective enrichment of Listeria.

Mode of Action

The nutrient substrates contained in the L-PALCAM Broth enable a very good proliferation of Listeria. Growth of the undesirable accompanying flora is inhibited by the selective substances Polymyxin-B-sulfate, acriflavine, lithium chloride and ceftazidime. Soybean lecithin has properties similar to egg-yolk emulsion, meaning that additional supplementation with egg-yolk emulsion is not required.

Esculin, ammonium iron(III) citrate, mannitol, and phenol red enable a differential-diagnostic statement regarding the possible presence of Listeria.

Listeria hydrolyse the glucoside esculin into glucose and esculetin. The latter substance reacts with iron(III) ions to form an olive-green to black complex.

When Listeria proliferate in the L-PALCAM Broth, therefore, in the majority of cases the broth turns black-brown in colour.

Typical Composition (g/litre)

Peptone 23.0; yeast extract 5.0; lithium chloride 10.0; esculin 0.8; ammonium iron(III) citrate 0.5; D(-)mannitol 5.0; phenol red 0.08; soybean lecithin 1.0; Tween® 80 2.0.

Preparation

Suspend 23.7 g in 500 ml of demin. water, autoclave (15 min at 121 °C). Suspend the contents of 1 vial of PALCAM Listeria Selective Supplement acc. to VAN NETTEN et al. in 1 ml sterile, distilled water and add to the basic broth, which has been cooled below 50 °C. Carefully swirl to mix the selective supplement into the broth homogeneously.

pH: 7.4 ± 0.2 at 25 °C.

The prepared broth (incl. supplement) is opalescent/turbid and red.

Quality control

Test strains	Growth	Color change to brown-black
Listeria monocytogenes NCTC 7973	good	+
Listeria monocytogenes ATCC 19113	good	+
Listeria monocytogenes ATCC 19114	good	+
Listeria monocytogenes ATCC 13932	good	+
Listeria ivanovii ATCC 19119	good	+
Enterococcus faecium ATCC 882	inhibited	-
Micrococcus luteus ATCC 9341	inhibited	-
Staphylococcus aureus ATCC 6538	inhibited	-

Experimental Procedure and Evaluation

Inoculate the broth with sample material (generally 25 g sample material into 225 ml broth) and incubate at 30 °C for 24-48 hours aerobically.

Approximately 0.1 ml of the broth is then smeared on the surface of a Listeria selective agar (e.g. PALCAM Agar or Oxford Agar) in a way to obtain well isolated single colonies.

Literature

VAN NETTEN, P., et al.: Liquid and solid selective differential media for the detection and enumeration of L. Int. - *J. Food Microbiol.*, **8 (4)**: 299-316 (1989).

LUND, A.M.: Comparison of Methods for Isolation of Listeria from Raw Milk. - *J. Food Protect.*, **54 (8)**: 602-606 (1991).

Ordering Information

Product	Merck Cat. No.	Pack size
L-PALCAM Listeria Selective Enrichment Broth Base acc. to VAN NETTEN et al.	1.10823.0500	500 g
PALCAM Listeria Selective Supplement acc. to VAN NETTEN et al.	1.12122.0001	1 x 16 vials