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## PALCAM Listeria Selective Agar Base acc. to VAN NETTEN et al.

Selective and differential medium acc. to VAN NETTEN et al. (1989) for the detection and isolation of *Listeria monocytogenes* from faeces, biological samples, foodstuffs and heavily contaminated material from the environment.

### Mode of Action

PALCAM Agar provides a quantitative cultivation of *Listeria monocytogenes*, while, at the same time, inhibiting the Gram-negative and most of the Gram-positive accompanying bacteria. The selectivity of the medium results from its content of polymyxin, acriflavin, ceftazidime and lithium chloride. *L. monocytogenes* breaks down the esculin in the medium to glucose and esculetin. Esculetin forms an olive-green to black complex with iron(III) ions which stains the colonies of *L. monocytogenes*. Mannitol-positive accompanying bacteria such as staphylococci grow as yellow colonies, if they are not inhibited.

According to Hammer et al. (1990) PALCAM Agar is superior, with respect to selectivity, compared to other listeria media.

### Typical Composition (g/litre)

Peptone 23.0; yeast extract 3.0; starch 1.0; sodium chloride 5.0; agar-agar 13.0 (= Columbia Agar); D(-)mannitol 10.0; ammonium iron(III) citrate 0.5; esculin 0.8; glucose 0.5; lithium chloride 15.0; phenol red 0.08.

### Preparation

Suspend 35.9 g in 500 ml of demin. water, autoclave 15 min at 121 °C. Dissolve 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 sterile medium cooled to 50 °C. If necessary rinse the vial with 1 ml of sterile distilled water. Mix well and pour plates.

pH: 7.2 ± 0.2 at 25 °C.

The prepared plates (incl. supplement) are clear and dark-red.

### Experimental Procedure and Evaluation

Inoculate by spreading the sample on the surface of the medium and incubate at 35 °C for up to 48 hours preferably under microaerophilic conditions (using Anaerocult® C or Anaerocult® C mini).

*L. monocytogenes* grows as grey-green coloured colony with a black zone. If the colonies are very close together the whole medium is coloured black-brown.

PALCAM Listeria Selective Agar is highly selective. If, however, mannitol-positive enterococci or staphylococci do grow, they appear yellow with a yellow zone.

Further biochemical tests should be carried out. Suspicious colonies should be confirmed with biochemical or serological tests.

### Literature

VAN NETTEN, P., PERALES, J., VAN DE MOOSDIJK, A., CURTIS, G.D.W., a. MOSSEL, D.A.A.: Liquid and solid selective differential media for the detection and enumeration of *Listeria monocytogenes*. – *Int. Food Microbiol.*, **8**; 299-316 (1989).

HAMMER, G., HAHN, G., KIRCHHOFF, H., a. HEESCHEN, W.: Vergleich der Eignung von Oxford- und PALCAM-Medium zur Isolierung von *Listeria monocytogenes* aus Weichkäse. – *Dtsch. Milchwirtschaft*, **41**; 334-336 (1990).

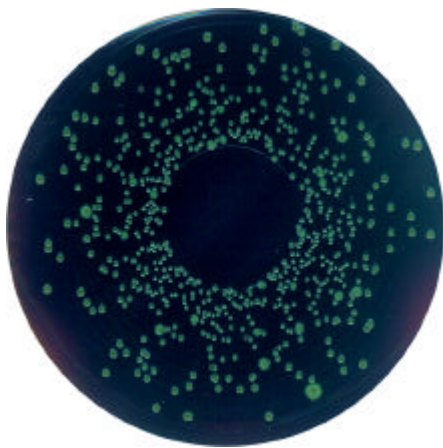
### Ordering Information

Product	Merck Cat. No.	Pack size
PALCAM Listeria Selective Agar Base acc. to VAN NETTEN et al.	1.11755.0500	500 g
Anaeroclip	1.14226.0001	1 x 25
Anaerocult® C	1.16275.0001	1 x 10
Anaerocult® C mini	1.13682.0001	1 x 25
PALCAM Listeria Selective Supplement acc. to VAN NETTEN et al.	1.12122.0001	1 x 16 vials

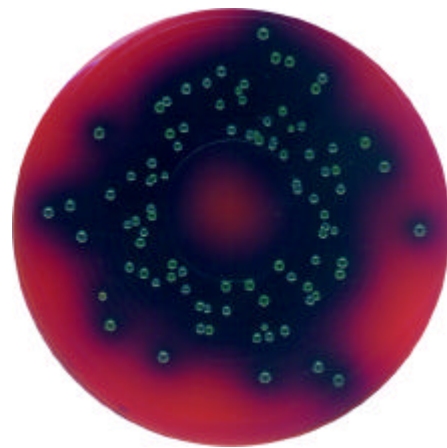
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## Quality control

Test strains	Growth	Recovery rate %	Black zones
<i>Listeria monocytogenes</i> ATCC 19118	good / very good	≥ 30	+
<i>Listeria monocytogenes</i> NCTC 19113	good / very good	≥ 30	+
<i>Listeria monocytogenes</i> ATCC 13932	good / very good	≥ 30	+
<i>Listeria monocytogenes</i> NCTC 7973	good / very good	≥ 30	+
<i>Listeria innocua</i> ATCC 33090	good / very good	≥ 30	+
<i>Staphylococcus aureus</i> ATCC 25923	none	≤ 0.01	
<i>Enterococcus faecalis</i> ATCC 19433	none	≤ 0.01	
<i>Erysipelothrix rhusiopathiae</i> ATCC 19414	none	≤ 0.01	
<i>Escherichia coli</i> ATCC 25922	none	≤ 0.01	



*Listeria innocua*  
ATCC 33090



*Listeria monocytogenes*  
ATCC 19118