

LISTERIA PALCAM AGAR

Selective medium for the isolation and enumeration of *Listeria monocytogenes* according to ISO 11290-1.

TYPICAL FORMULA	(g/ l)
Peptone	23.0
Starch	1.0
Sodium Chloride	5.0
Yeast Extract	3.0
Glucose	0.5
Mannitol	10.0
Esculin	0.8
Ferric Ammonium Citrate	0.5
Lithium Chloride	15.0
Phenol Red	0.08
Agar	12.0
Final pH = 7.2 ± 0.2 at 25 °C.	

DESCRIPTION

The complete LISTERIA PALCAM AGAR, prepared by adding Listeria Palcam supplement to the medium base, is a selective and differential medium, formulated by Van Netten and other, and according to ISO 11290, for isolation and enumeration of *Listeria monocytogenes* from foods.

The medium is also recommended by:

1. AFNOR for the research of *L. monocytogenes* in foods.
2. IDF as an additional plating medium for the detection of *Listeria spp* in milk and milk products.
3. Health Canada for the detection of *L. monocytogenes* in food and environmental samples.

Aesculin and mannitol, present in the medium, yield a presumptive differentiation of *Listeria* from other aesculin positive bacteria, such as faecal streptococci.

PRINCIPLE

The peptones favour the excellent growth of *Listeria*, glucose and starch are energy sources, esculin is hydrolysed by *Listeria* strains to glucose and esculetin, the latter compound forming a black complex with ferric ions. The competitive flora is inhibited by lithium chloride and by the antimicrobials of the selective supplement: ceftazidim, polymyxin B, acriflavine. The fermentation of mannitol by contaminating bacteria that may grow causes phenol red to turn yellow.

PREPARATION

Suspend 35.4 g of powder in 500 ml of distilled or deionized water. Heat until completely dissolved. Sterilize in autoclave at 121°C for 15 minutes. Cool to 45-50°C. Aseptically add 1 vial of Listeria Palcam Supplement (code 81026). Mix well. Dispense into Petri dishes.

TECHNIQUE

Streak a loopful of the suitable enriched broth, inoculated with the sample to analyze, onto the surface of the medium. Incubate at 36±1°C for 24-48 hours.

INTERPRETATION OF RESULTS

Listeria monocytogenes cultivates with grey-green colonies surrounded by a black zone (aesculin hydrolysis) with medium's turning to red for missed mannitol fermentation. Possible contaminants such as staphylococci and enterococci, ferment mannitol and cultivate with yellow colonies surrounded by a yellow zone. The suspected colonies must be submitted to Gram colouring, catalase test, mobility examination and identification biochemical tests (*Listeria* System 18R cod. 71640).

STORAGE

The powder is very hygroscopic: store the powder at 10-30 °C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident.

Store prepared media at 2-8°C.

WARNING and PRECAUTIONS

The product is classifiable as hazardous under current legislation; it is recommended that the Safety Data Sheet be consulted on its use.

The product is designed for *In vitro* diagnostic use and must be used only by properly trained operators.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES

1. ISO 11290- 1/2 Microbiology of food and animal feeding stuffs- Horizontal method for the detection and enumeration of *Listeria monocytogenes*; Part 1 Detection method – Part 2: enumeration method
2. Normalisation Française, AFNOR (1993) V08-55.
3. Manuel suisse des denrées alimentaires, Chapitre 56, E21, juillet 2000,
4. Rapporto ISTISAN 96/35 Istituto Superiore di Sanità; ISSN 1123- 3117
5. Van Netten, P. et al. (1989) Int. J. Food Microbiol. 8, 299-316.



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PRODUCTION SPECIFICATIONS

NAME

LISTERIA PALCAM AGAR

PRESENTATION

Dehydrated culture medium.

STORAGE

10-30°C.

PACKAGING

Code	Content	Packaging
610168	500 g	500 g of powder in plastic bottle
620168	100 g	100 g of powder in plastic bottle

pH OF THE MEDIUM

7.2 ± 0.2

USE

The complete LISTERIA PALCAM AGAR, prepared by adding Listeria Palcam supplement to the medium base, is a selective and differential medium, formulated by Van Netten and other, and according to ISO 11290, for isolation and enumeration of *Listeria monocytogenes* from foods.

TECHNIQUE

Refer to technical sheet of the product.

APPEARANCE of the MEDIUM

Dehydrated medium

Appearance: free-flowing, homogeneous.

Color: pink.

Prepared medium

Appearance: slightly opalescent.

Color: red.

SHELF LIFE

4 years.

QUALITY CONTROL

- Control of general characteristics, label and print
- Sterility control
 - 7 days at 25 ± 1°C, in aerobiosis
 - 7 days at 36 ± 1°C, in aerobiosis

Microbiological control

Inoculum for productivity: 10-100 UFC/ml







Inoculum for selectivity: 10⁴-10⁵ UFC/ml

Inoculum for specificity: ≤ 10⁴ UFC/ml

Incubation conditions: 37 ± 1°C for 24-48 hours.

Microorganism	ATCC	Growth	Characteristics
<i>Listeria monocytogenes</i>	19111	good	Gray colonies/ black halo
<i>Listeria monocytogenes</i>	13932	good	Gray colonies/ black halo
<i>Escherichia coli</i>	25922	inhibited	
<i>Enterococcus faecalis</i>	29212	inhibited	
<i>Candida albicans</i>	10231	inhibited	

TABLE OF SYMBOLS

LOT Batch code	 Temperature limitation	 Manufacturer	 Contains sufficient for <n> tests	IVD <i>In vitro</i> Diagnostic Medical Device
REF Catalogue number	 Keep away from heat	 Use by	 Caution, consult accompanying documents	



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