



CÁMARA  
NACIONAL DE  
PRODUCTORES  
DE LECHE

# Congreso Nacional Lechero 2022

15 y 16 de Noviembre - Wyndham San José Herradura

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Reflexiones sobre la presencia de  
*Listeria monocytogenes* en queso  
fresco: ¿Amenaza real o temor  
imaginario?

Mauricio Redondo Solano, Ph.D.

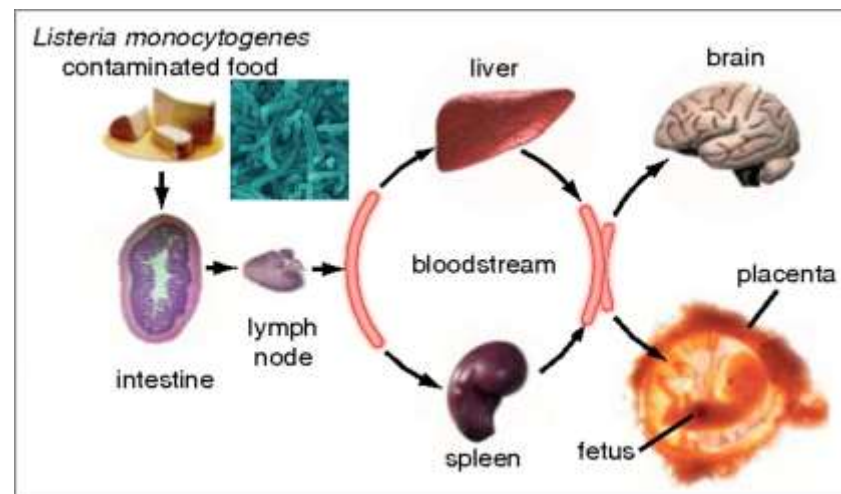
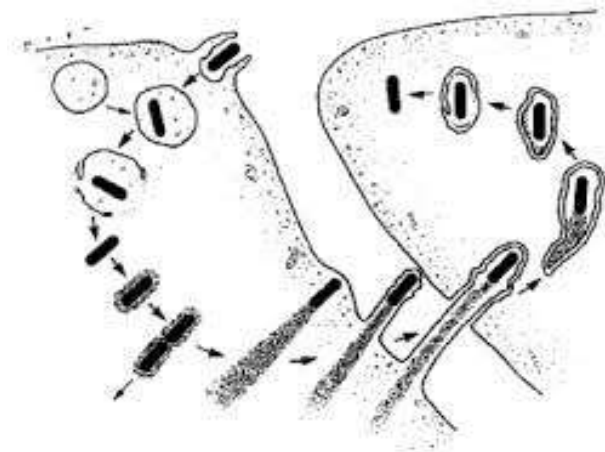
16 de Noviembre, 2022

# *Listeria monocytogenes*

- Coco bacilo Gram positivo
- Patógeno oportunista
- Patógeno post-proceso
- Bajas temperaturas

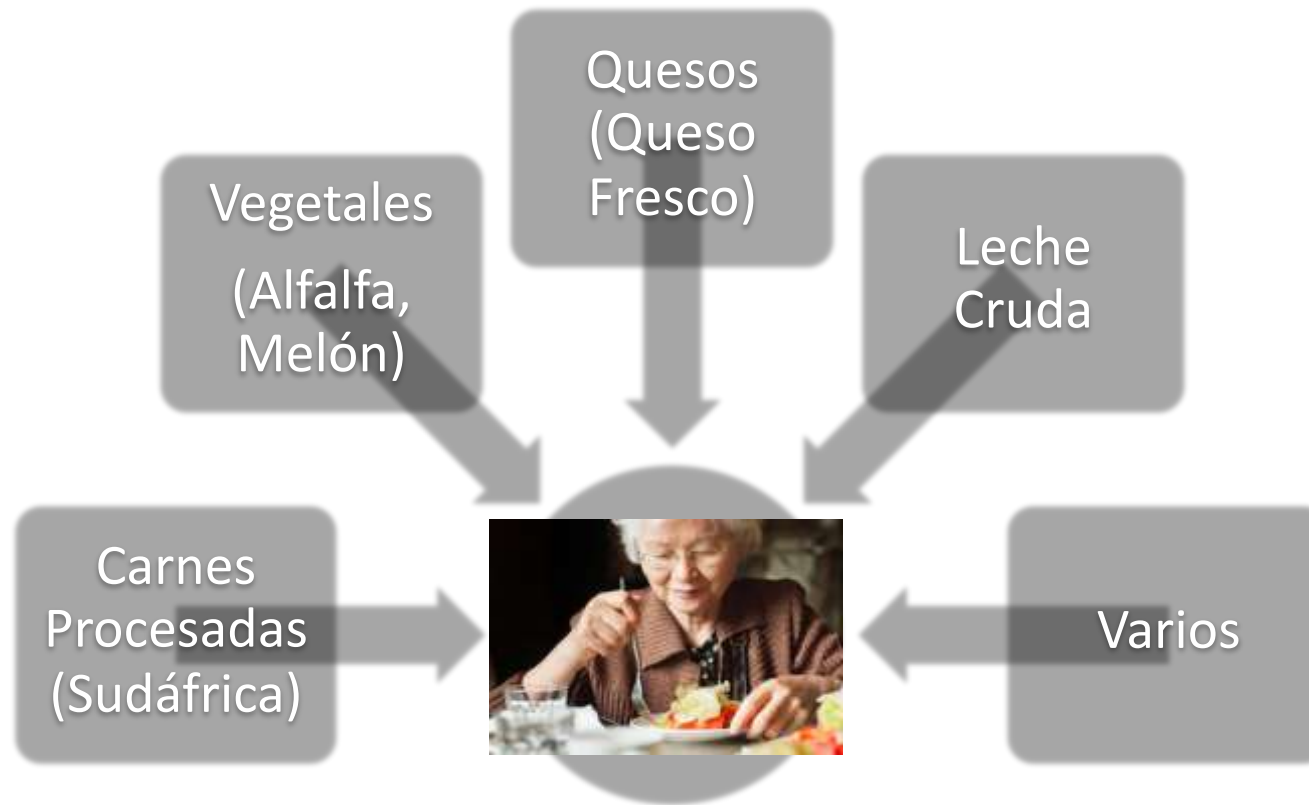


# *Listeria monocytogenes*



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# *Listeria monocytogenes*



# Listeria monocytogenes

## Listeria Outbreaks

[Print](#)

When two or more people get the same illness from the same contaminated food or drink, the event is called a foodborne disease outbreak. The list on this page primarily represents multistate foodborne outbreak investigations involving *Listeria* in which CDC was the lead public health agency. CDC's online data tool, [NORS Dashboard](#), contains a more complete listing of *Listeria* outbreaks reported to CDC since 1998.

Public health officials [investigate outbreaks](#) to control them, so more people do not get sick, and to learn how to [prevent similar outbreaks](#) from happening in the future.

### Selected Multistate Outbreaks

2022

- [Brie and Camembert Cheese](#) – Listeriosis
- [Ice Cream](#) – Listeriosis

2021

- [Dole Packaged Salads](#) – Listeriosis
- [Fresh Express Packaged Salads](#) – Listeriosis
- [Fully Cooked Chicken](#) – Listeriosis
- [Queso Fresco](#) – Listeriosis

2020

- [Deli Meats](#) – Listeriosis
- [Enoki Mushrooms](#) – Listeriosis

2019

- [Hard-boiled Eggs](#) – Listeriosis
- [Listeria monocytogenes Infections](#)
- [Deli-Sliced Meats and Cheeses](#) – Listeriosis

2018

- [Pork Products](#) – Listeriosis
- [Deli Ham](#) – Listeriosis

### Spotlight



- [Find out the series of events that happen before determining a person with a Listeria infection is part of an outbreak >](#)
- [Learn how CDC's Listeria Whole Sequencing Project is improving food safety >](#)
- [See how whole genome sequencing, patient interviews, and food trace backs helped solve an outbreak linked to caramel apples >](#)
- [Listen to CDC surveillance coordinator Kelly Jackson discusses outbreaks of Listeria infection linked to soft cheeses in the United States in this podcast >](#)



# Listeria monocytogenes

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## Outbreak of neonatal listeriosis associated with mineral oil

ANNE SCHUCHAT, MD, CECILIA LIZANO, PHD, CLAIRE V. BROOME, MD, BALA SWAMINATHAN, PHD, CHANGMIN KIM, PHD AND KEVIN WINN, MD

In June, 1989, an outbreak of nosocomial listeriosis occurred in Costa Rica. *Listeria monocytogenes* was isolated from 9 ill infants 4 to 8 days old who were born after the delivery of an infant with early onset listeriosis. One nosocomial infection was fatal, 2 required mechanical ventilation and 1 resulted in hemiparesis. A higher proportion of cases than other infants

born during the outbreak were delivered by cesarean section (55% vs. 24%,  $P = 0.04$ ). Compared with the mothers of 36 random controls, case mothers were more often primiparous (odds ratio, 6.2,  $P = 0.03$ ) or received general anesthesia before delivery (odds ratio, 4.4,  $P = 0.09$ ). All infants were bathed with mineral oil from a multidose container. Culture of the oil by cold enrichment grew *L. monocytogenes* 4b with the same electrophoretic enzyme type as the outbreak strain. We hypothesize that aspiration of contaminated oil may have resulted in systemic listeriosis. General anesthesia may have increased the risk of aspiration. Lung tissue from the infant who died showed lipid-laden macrophages consistent with oil aspiration and had evidence of *L. monocytogenes* DNA detected by polymerase chain reaction. This is the

Accepted for publication Oct. 26, 1990.

From the Meningitis and Special Pathogens Branch, Centers for Disease Control (AS, CVB, BS, CK), and Department of Pathology, Henrietta Eggleston Hospital (KW), Atlanta, GA; and Hospital Nacional de Niños, San Jose, Costa Rica (CL).

Keywords: *Listeria monocytogenes*, listeriosis, neonatal infection, nosocomial infection, lipid pneumonia, mineral oil, polymerase chain reaction.

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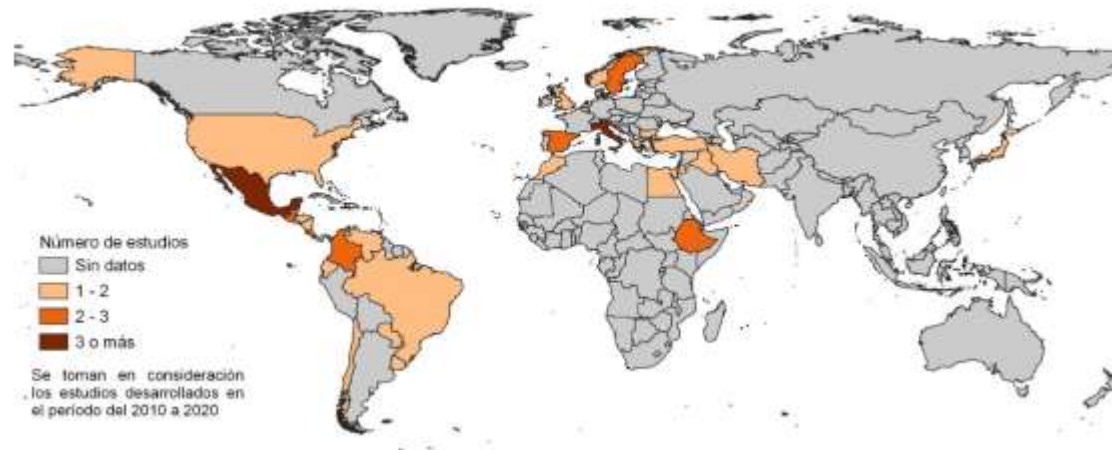
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# *Listeria monocytogenes*

- Contaminación de queso
- 48 estudios (2005-2020)
- 0-55%

Número de estudios sobre la prevalencia de *Listeria monocytogenes* en queso a nivel mundial



# *Listeria monocytogenes* -

- Producción artesanal
- 31% (Dubón-Pérez, 2014) y 26,98% (Ocampo et al., 2019).





# Listeria monocytogenes

CUADRO 1  
AISLAMIENTO DE *LISTERIA* SPP. DE DIVERSOS  
ALIMENTOS EN COSTA RICA

Alimento	Aislamiento de:			
	Número de muestras	<i>L. monocytogenes</i> Nº (%)	<i>L. innocua</i> Nº (%)	<i>Listeria spp.</i> Nº (%)
Leche cruda	20	0	0	0
Queso blanco	10	1 (10)	0	0
Natilla casera	8	0	0	0
Yogurt líquido	6	0	0	0
Helado	15	6 (40)	0	0
Carne molida	10	0	0	0
Chorizo	6	0	0	0
Pollo	10	0	3 (30)	3 (30)
Pescado fresco	10	5 (50)	2 (20)	1 (10)
Camarones frescos	12	4 (33)	8 (67)	0
Repollo	5	0	0	0
TOTAL	112	16 (14)	13 (11,6)	4 (3,5)

Ellner et al., 1991

# *Listeria monocytogenes*

ARCHIVOS LATINOAMERICANOS DE NUTRICION  
Organo Oficial de la Sociedad Latinoamericana de Nutrición

Vol. 59 N° 1, 2009

## **Caracterización de cepas de *Listeria monocytogenes* realizados a partir de queso fresco proveniente de diferentes zonas productoras costarricenses**

*Carolina Chaves y María Laura Arias*

Facultad de Microbiología, Universidad de Costa Rica. Centro de Investigación en Enfermedades Tropicales

- 110 muestras (Zona Norte y Turrialba)
- 24,5%

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# Listeria monocytogenes



Article

## Modelling the Effect of Salt Concentration on the Fate of *Listeria monocytogenes* Isolated from Costa Rican Fresh Cheeses

Guiomar D. Posada-Izquierdo <sup>1,\*</sup>, Beatriz Mazón-Villegas <sup>2</sup>, Mauricio Redondo-Solano <sup>3</sup>, Alejandra Huete-Soto <sup>3</sup>, Diana Viquez-Barrantes <sup>4</sup>, Antonio Valero <sup>1</sup>, Paula Fallas-Jiménez <sup>3</sup> and Rosa María García-Gimeno <sup>1</sup>

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# Listeria monocytogenes

**Table 1.** *L. monocytogenes* isolates obtained from fresh “Turrialba cheese” samples.

Province	Location *	No. of Samples	No. of Samples Positive for <i>L. monocytogenes</i>
San José	1	5	2
	2	7	0
	3	9	0
	4	2	0
	5	5	0
Cartago	6	2	0
	7	9	4
Heredia	8	5	0
	9	8	3
Alajuela	10	12	0
Total	—	64	9

\*. Shops locations: 1. Central market, 2. San José, 3. Desamparados, 4. Goicoechea, 5. Montes de Oca, 6. Cartago, 7. Cartago market, 8. Heredia, 9. Heredia market, 10. Alajuela market.

\*14,1%

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Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

## International Journal of Food Microbiology

journal homepage: [www.elsevier.com/locate/ijfoodmicro](https://www.elsevier.com/locate/ijfoodmicro)



### Quantitative risk assessment model to investigate the public health impact of varying *Listeria monocytogenes* allowable levels in different food commodities: A retrospective analysis



Fernando Sampedro<sup>a</sup>, Fernando Pérez-Rodríguez<sup>b</sup>, Joseph L. Servadio<sup>c</sup>, Sanjay Gummalla<sup>d</sup>,  
Craig W. Hedberg<sup>a,\*</sup>

<sup>a</sup> Environmental Health Sciences Division, School of Public Health, University of Minnesota, Minneapolis, USA

<sup>b</sup> Department of Food Science and Technology, Faculty of Veterinary, Agrifood Campus of International Excellence (ceiA3), University of Cordoba, 14014 Córdoba, Spain

<sup>c</sup> Center for Infectious Disease Dynamics and Department of Biology, Pennsylvania State University, University Park, PA, USA

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CÁMARA  
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COSTA RICA

# *Listeria monocytogenes*

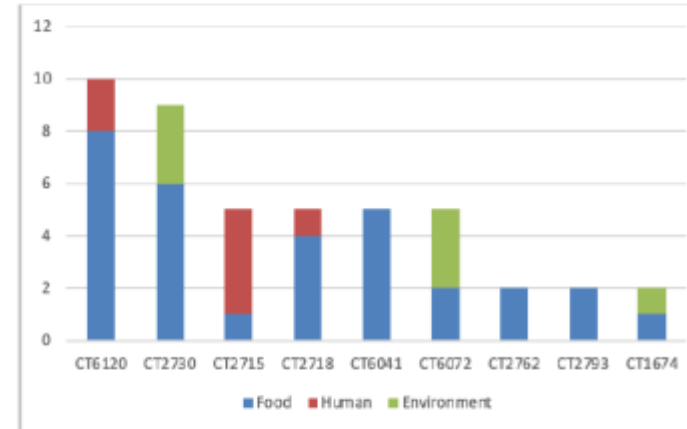
- ¿Riesgo de listeriosis?
- Estimación de riesgo (tomar acciones)
- Contaminación
- Comportamiento del patógeno (crecimiento, sobrevivencia, Resistencia, persistencia)
- Características del patógeno (virulencia)
- Datos de consume
- Población susceptible.



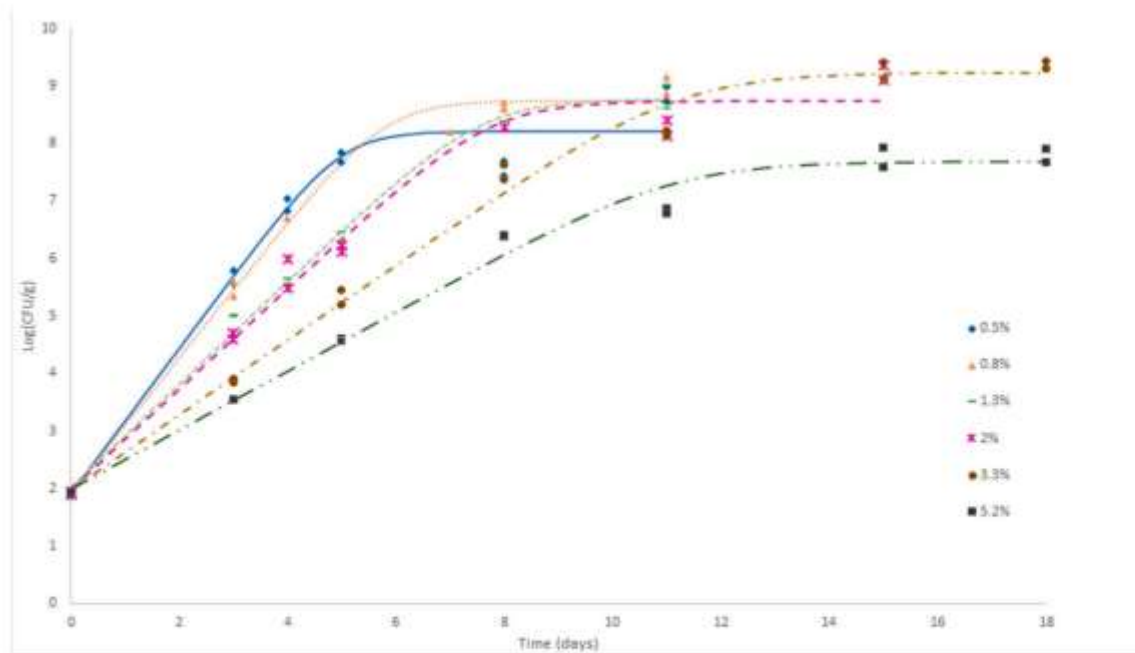
# Listeria monocytogenes

ID43151 F (Cheese)	CC2 CT6120								
ID43067 F (Cheese)	CC2 CT6120								
ID43617 F (Cheese)	CC2 CT6120								
ID43618 F (Cheese)	CC2 CT6120								
ID16827 H (Blood)	CC2 CT6120								
ID16951 F (Cheese)	CC2 CT6120								
ID16949 F (Cheese)	CC2 CT6120								
ID16947 F (Cheese)	CC2 CT6120								
ID16836 H (CSF)	CC2 CT6120								
ID16944 F (Cheese)	CC2 CT6120								

b



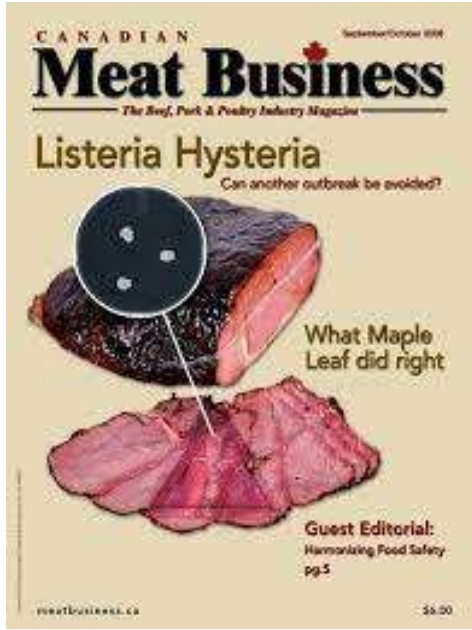
# *Listeria monocytogenes*



**Figure 1.** Growth curves of *L. monocytogenes* inoculated in fresh cheese with different %NaCl (0.5, 0.8, 1.3, 2.0, 3.3, 5.2) and stored at 4°C. The markers correspond to the observed data and the lines to the prediction curves — 0.5%, — 0.8%, - - - 1.3%, - - - 2%, - - - 3.3% and ··· 5.2%.

\*Posada-Izquiero et al., 2021





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# *Listeria monocytogenes*

- Análisis de contaminación en otras zonas (Zona Norte, Zona Sur); caso de Guanacaste
- Efecto protector de cultivos
- Cuantificación de riesgo
- Trabajo con productores

**microHibro**

