Fecha del CVA	26/01/2024

Parte A. DATOS PERSONALES

Nombre	ALEJANDRO		
Apellidos	GARRIDO MAESTU		
Sexo	Hombre	Fecha de Nacimiento	27/03/1982
DNI/NIE/Pasaporte			
URL Web			
Dirección Email	a.garridomaestu@gmail.com		
Open Researcher and Contributor ID (ORCID)	0000-0003-4587-8418		

A.1. Situación profesional actual

Puesto	Tenured Scientist		
Fecha inicio	2024		
Organismo / Institución	Consejo Superior de Investigaciones Científicas		
Departamento / Centro	Tecnología de alimentos / Instituto de Investigaciones Marinas		
País	España	Teléfono	(0034) 986 23 19 30
Palabras clave	Tecnología de alimentos; Microbiología		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2022 - 2024	Assistant Researcher / International Iberian Nanotechnology Laboratory / Portugal
2018 - 2024	Staff Researcher / International Iberian Nanotechnology Laboratory / Portugal
2015 - 2018	Research Fellow / International Iberian Nanotechnology Laboratory / Portugal
2015 - 2016	Postdoctoral Associate / University of Florida / Estados Unidos de América
2007 - 2014	Analyst / Asociación Nacional de Fabricantes de Conservas de Pescados y Mariscos / España
2007 - 2007	Researcher / ECOFLOAT CONTROL SYSTEMS S.L. / España

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Diploma de especialización en Análisis Bioinformático	Universidad Pablo de Olavide / España	2022
Programa Oficial de Doctorado en Metodología y Aplicaciones en Ciencias de la Vida	Universidade de Vigo / España	2013
Máster Universitario en Metodología y Aplicaciones en Ciencias de la Vida	Universidade de Vigo	2010
Licenciado en Biología Opción Biología Sanitaria	Universidade de Vigo	2006

Parte B. RESUMEN DEL CV

I hold a **BSc** in biology (2006), an **MSc** in “Methodologies and Applications in Life Sciences” (2010) and a **PhD** from the University of Vigo. My thesis, was focused on the application of real-time PCR for the detection of foodborne pathogens, and was granted a “doctorate award” in 2013. While doing my PhD I worked as microbiological analyst in ANFACO-CECOPESCA, where I got a deep knowledge on classical, and

molecular microbiological method development, evaluation, culture, isolation, identification and characterization.

I am interested in pathogens and antimicrobial resistant microorganisms (ARM), so in **2015** I joined the **Emerging Pathogens Institute** (University of Florida) as a **postdoctoral fellow**, to work in the synthesis of chitosan nanoparticles with antimicrobial properties. I studied their effect against E. coli O157 and ARM. I also got involved in a project dealing with the seasonality of E. coli O157 in farms and the application of molecular tools to trace it. That year, I received a **Marie Curie COFUND Fellowship** (61K€) to join **INL** and work in the development of a lab-on-chip combining isothermal NA amplification, gold nanoparticles and microfluidics for pathogen detection. In **2021** I got granted a contract as **Assistant Researcher**, funded by the Portuguese Government in the program **Scientific Employment** which, falls in between of the Spanish Juan de la Cierva and Ramón y Cajal contracts (~192K€/6 years); this was awarded to work in the development of novel, non-targeted DNA detection methods, and natural polymeric nanoparticles, to detect and reduce the incidence of ARM in ready-to-eat foods. In **2023** I received the **R3 certificate** as stablished researcher, and in January **2024** I started my new position as **tenured scientist** in the Institute of Marine Research, Spanish Research Council (**IIM-CSIC**), joining the group **MicroTec** where I brought my **expertise** in **method development, and pathogen detection**, to **broaden** the **existing research** lines of the group and the **Institute,** as this profile was not present before my arrival. I collaborated in 29 projects receiving regional, national and international funding. In 2020 I got granted my first **3 projects** as **PI**, 2 funded by the Portuguese Government and 1 by INL (~75K€).

My interests are in the development and application of molecular methods for the detection of pathogens, ARM, bacteriophages as detection tools and seek for natural antimicrobials. Even though in the last few years I have worked in different projects dealing with food spoilage, authenticity, invasive species, my major **research** line is focused on foodborne **pathogens**, where I keep working seeking for novel antimicrobials, development of **rapid methods** implementing novel **isothermal** techniques (LAMP, RPA), long-read **DNA sequencing**, among others. In 2022 I was contacted to work as **expert** in the development of the new **ISO** standard “General requirements relating to LAMP-based methods” for which I joined the Instituto **Português da Qualidade** until January 2024 and then a changed to the **Asociación Española de Normalización-UNE**.

I authored **81 publications** (75 research articles (69 in SCI indexed journals, h-index 21 with ~1200 citations), 5 book chapters and 1 book). I am associate editor of Food Analytical Methods, BMC Microbiology and Frontiers in Microbiology, and I have served as guest editor for 2 special issues of Foods.

My first 2 PhD students defended their thesis **in 2022** in the University of Santiago de Compostela, focusing their work in the development of rapid methods for the detection of pathogenic and spoilage microorganisms; currently I have a third student working in the development of non-targeted methods for the detection of pathogens and ARM. I also supervised **3 MSc** and **BSc**.

Most of my research has direct impact in the food industry (the methods developed in my PhD are included in the portfolio of ANFACO-CECOPESCA). This was also reflected later, as in **2020**, one of the projects I got granted as **PI** by the **Portuguese Government** during the **COVID-19 pandemic**, attracted the interest from companies like Unilabs and ALS Global, being signed a technology transfer agreement with ALS to develop a **commercial kit** for the detection of SARS-CoV-2 based on isothermal nucleic acid amplification by LAMP, combined with a simple color change results assessment (https://www.alsdiagnostics.com/product/als-sars-cov-2-rt-pcr-2/). I also successfully lead 3 other kit developments for ALS using isothermal DNA amplification and qPCR (not in the market yet).

In **2020**, I received an **intramural award** from INL for projects with industrial impact for a project dealing with the detection of antibiotic resistant microorganisms, in **2022** the **Tanner Award** from the Institute of Food Technologists to the “most cited article” and in **2022** a best **poster award** from the **AOAC** in its annual meeting. I have also participated in outreach activities to bring science to the public, like GreenFest 2018 and NERD Mission (INL).

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Costa-Ribeiro, Ana; Lamas, Alexandre; Prado, Marta; (4/4) Garrido-Maestu, Alejandro (AC). 2023. Evaluation of the Novel mTA10 Selective Broth, MSB, for the Co-Enrichment and Detection of Salmonella spp., Escherichia coli O157 and Listeria monocytogenes in Ready-to-Eat Salad Samples. Foods. MDPI. 13-63. https://doi.org/10.3390/foods13010063

2 **Artículo científico**. Alexandre Lamas; (2/5) Alejandro Garrido-Maestu; Alberto Prieto; Alberto Cepeda; Carlos Manuel Franco. 2023. Whole genome sequencing in the palm of your hand: how to implement a MinION Galaxy-based workflow in a food safety laboratory for rapid Salmonella spp. serotyping, virulence, and antimicrobial resistance gene identification. Frontiers in Microbiology. Frontiers. 14. https://doi.org/10.3389/fmicb.2023.1254692

3 **Artículo científico**. Alexandre Lamas; Sílvio B. Santos; Prado, Marta; (4/4) Garrido-Maestu, Alejandro (AC). 2023. Phage amplification coupled with loop-mediated isothermal amplification (PA-LAMP) for same-day detection of viable Salmonella Enteritidis in raw poultry meat. Food Microbiology. Elsevier. 104341.

4 **Artículo científico**. SA; FR; ACR; MP; (5/5) AGM (AC). 2022. Application of MinION sequencing as a tool for the rapid detection and characterization of Listeria monocytogenes in smoked salmon. Frontiers in Microbiology. FRONTIERS MEDIA SA.

5 **Artículo científico**. (1/2) Garrido-Maestu, Alejandro (AC); Prado, Marta. 2022. Naked-eye detection strategies coupled with isothermal nucleic acid amplification techniques for the detection of human pathogens. Comprehensive Reviews in Food Science and Food Safety. Wiley. 21-2, pp.1913-1939.

6 **Artículo científico**. Lozano-León, Antonio; García-Omil, Carlos; Rodríguez-Souto, Rafael R.; Lamas, Alexandre; (5/5) Garrido-Maestu, Alejandro (AC). 2022. An Evaluation of the Pathogenic Potential, and the Antimicrobial Resistance, of Salmonella Strains Isolated from Mussels. Microorganisms. MDPI.

7 **Artículo científico**. Azinheiro, Sarah; Roumani, Foteini; Carvalho, Joana; Prado, Marta; (5/5) Garrido-Maestu, Alejandro (AC). 2021. Suitability of the MinION long read sequencer for semi-targeted detection of foodborne pathogens. Analytica Chimica Acta. Elsevier. 1184-339051.

8 **Artículo científico**. Garrido-Maestu, Alejandro; Azinheiro, Sarah; Carvalho, Joana; (4/4) Prado, Marta (AC). 2019. Combination of Immunomagnetic Separation and Real-Time Recombinase Polymerase Amplification (IMS-qRPA) for Specific Detection of Listeria monocytogenes in Smoked Salmon Samples. Journal of Food Science. WILEY. 84-7, pp.1881-1887. ISSN 0022-1147.

9 **Artículo científico**. Rodriguez-Souto, Rafael R.; (2/4) Garrido-Maestu, Alejandro (AC); Pastoriza-Fontan, Alejandro; Lozano-León, Antonio. 2017. Investigation and characterization of Shiga toxin-producing Escherichia coli present in mussels from harvesting areas in Galician southern Rias (NW Spain). Journal of Food Safety. WILEY. 37-4. ISSN 0149-6085.

10 **Artículo científico**. (1/6) Alejandro Garrido-Maestu; Antonio Lozano-León; Rafael R. Rodríguez-Souto; Ramón Vieites-Maneiro; María-José Chapela; Ana G. Cabado. 2016. Presence of pathogenic Vibrio species in fresh mussels harvested in the southern Rias of Galicia (NW Spain). Food Control. Elsevier. 59, pp.759-765.

C.2. Congresos

1 Foteini Roumani; Ana Costa-Ribeiro; Sarah Azinheiro; Joana Carvalho; Marta Prado; Alejandro Garrido-Maestu. Multiplex Loop-mediated isothermal amplification method for the detection of viable Listeria monocytogenes implementing a competitive Internal Amplification Control. AOAC Annual Meeting. AOAC. 2023. Participativo - Póster. Congreso.
2 SA; FR; MP; AGM. Application of nanopore-based sequencing for multiplex detection of foodborne pathogens. 3rd BioIberoAmerica. Sociedades Española e Iberoamericanas de Biotecnología. 2022. Portugal.
3 AGM; SA; JC; MP. Isothermal DNA Amplification and their Advantages for Foodborne Pathogen Detection. Mission 10000. International Iberian Nanotechnology Laboratory. 2018. Portugal. Congreso.
4 AGM; PF; ECA; YVK; MP. Detection of Salmonella spp. by Loop-mediated isothermal AMPlification, combined with gold nanoparticles. XX National Conference on Food Microbiology. SOCIEDAD ESPAÑOLA DE MICROBIOLOGIA. 2016. España. Congreso.
5 Dynamics of Vibrio parahaemolyticus with virulence genes detected in mussel (Mytilus galloprovincialis) in Galicia harvesting areas. Workshop on Food Safety of life bivalve mollusks. Mussel Production Association. 2014. España.

C.3. Proyectos o líneas de investigación

1 **Proyecto**. Development of non-targeted detection methods and novel natural antimicrobial nanoparticles to fight pathogens and antimicrobial-resistant microorganism in the food chain of ready-to-eat foods. Alejandro Garrido-Maestu. (International Iberian Nanotechnology Laboratory). 01/06/2022-31/05/2028. 192.083 €.
2 **Proyecto**. R&W Clean - New solutions for sensing of environmental and biological parameters to aid the demedicalization of the agricultural and livestock sector. (International Iberian Nanotechnology Laboratory). 2021-2023. 1.588.620,07 €.
3 **Proyecto**. Seafoodage. (International Iberian Nanotechnology Laboratory). 2019-2022. 2.926.188 €.
4 **Proyecto**. COF-enhanced qPCR. (International Iberian Nanotechnology Laboratory). 2020-2021. 5.000 €.
5 **Proyecto**. CRISPR technology against the COVID-19 pandemic. The DETECTR of SARS-CoV-2. (International Iberian Nanotechnology Laboratory). 2020-2021. 40.000 €.
6 **Proyecto**. Nanobiosensor. (International Iberian Nanotechnology Laboratory). 2018-2021. 932.176,37 €.
7 **Proyecto**. LAMP – Light in the diagnosis of COVID-19. (International Iberian Nanotechnology Laboratory). 2020-2020. 29.268,11 €.
8 **Proyecto**. Multipathogen detection lab-on-a-chip based on Loop-mediated Isothermal Amplification combined with gold nanoparticles. Marie Curie COFUND. Alejandro Garrido-Maestu. (International Iberian Nanotechnology Laboratory). 01/07/2015-30/06/2017. 61.142 €.
9 **Proyecto**. SF4SF: Smart factory for safe foods. (International Iberian Nanotechnology Laboratory). 2015-2017. 626.174,6 €.
10 **Contrato**. Development of a Colorimetric LAMP assay to detect Salmonella spp. ALS Global. Alejandro Garrido-Maestu. 09/2022-31/10/2022. 21.162,4 €.
11 **Contrato**. Development of a Colorimetric LAMP assay to detect L. monocytogenes (Listeria_LAMP) ALS Global. Alejandro Garrido-Maestu. (International Iberian Nanotechnology Laboratory). 06/2022-30/11/2022. 24.400 €.
12 **Contrato**. Development of a Pathogen detection by multiplex qPCR (multiplex qPCR) ALS Global. Alejandro Garrido-Maestu. 06/2022-30/11/2022. 30.160 €.

C.4. Actividades de transferencia de tecnología/conocimiento y explotación de resultados

1 21383048. Method for the Identification and Rapid Detection of Bluefin tuna España. 18/05/2022. CSIC/INL.
2 EPAY-SOD4-ONSC. Know-how description_LAMP_SARSCoV2_Final 01/03/2021. International Iberian Nanotechnology Laboratory.