

DR ALEJANDRO GARRIDO-MAESTU

Curriculum vitae



QUALIFICATIONS

Ph.D. Microbiology (2013) – “*Application of real-time PCR for pathogen detection in the food industry*”. Developed in the Microbiology and Bioassays Laboratory of ANFACO-CECOPECA. University of Vigo.

M.Sc. (2010) – “*Methodologies and Applications in Life Sciences (quality mention by the Spanish Ministry of Education)*”. University of Vigo.

B.Sc. (2006) – Bachelor of Science (Fundamental and Sanitary Biology). University of Vigo.

Clinical Diagnostic Laboratory Technician. I.E.S. Manuel A. (2009-2012).

EMPLOYMENT HISTORY

Jan 2020 – Present	Staff researcher , International Iberian Nanotechnology Laboratory. Braga, Portugal.
Jul 2018 – Dec 2019	Staff researcher , International Iberian Nanotechnology Laboratory. Braga, Portugal.
Jul 2017 – Jun 2018	Postdoctoral fellow , International Iberian Nanotechnology Laboratory. Braga, Portugal.
Jul 2015 – Jun 2017	Postdoctoral fellow (Marie Curie COFUND) , International Iberian Nanotechnology Laboratory. Braga, Portugal.
Jan 2015 – Jun 2015	Postdoctoral associate in Dr. Jeong’s Laboratory, Emerging Pathogens Institute (University of Florida). Gainesville, United States.
Oct 2007 – Jan 2015	Analyst in the Microbiology and Bioassays Laboratory of ANFACO-CECOPECA, Vigo.
Sept 2011 – Feb 2012	Internship in the Microbiology department of Meixoeiro Hospital.

Vigo, 380 hours.

- Aug 2007 – Oct 2007 **Internship** in the Microbiology and Bioassays Laboratory of ANFACO-CECOPECA. 401 hours, Vigo.
- Apr 2007 – Jun 2007 **Researcher** in the microbiology laboratory of ECOFLOAT CONTROL SYSTEMS S.L. Barcelona.
- Jul 2005 - Sept 2005 **Internship** in the Neurophysiology department of Meixoeiro Hospital, Vigo. 378 hours.

PUBLICATIONS

SCI journal articles

Accepted

- (1) M-J. Chapela, P. Fajardo, **A. Garrido**, A. G. Cabado, Martina Ferreira, J. Lago and J. M. Vieites. Comparison between a TaqMan Polymerase Chain Reaction Assay and a Culture Method for *ctx*-Positive *Vibrio cholerae* Detection. *J. Agric. Food Chem.* 2010, 58, 4051-4055. [IF: 2.816].
- (2) M. Ferreira, A. G. Cabado, M-J. Chapela, P. Fajardo, M. Atanassova, **A. Garrido**, J. M. Vieites, J. Lago. Cytotoxic activity of extracts of marine sponges from NW Spain on a neuroblastoma cell line. *Environmental Toxicology and Pharmacology.* 2011, 32, 430-437. [IF: 1.469].
- (3) **Garrido, A.**, Chapela, M.-J., Ferreira, M., Atanassova, M., Fajardo, P., Lago, J., Vieites, J.M., Cabado, A.G. Development of a multiplex real-time PCR method for pathogenic *Vibrio parahaemolyticus* detection (*tdh+* and *trh+*). *Food Control.* 2012, 24, 128-135. [IF: 2.738].
- (4) **A. Garrido**, M-J. Chapela, B. Román, M. Ferreira, J. Lago, J. M. Vieites, A. G. Cabado. Development of a multiplex real-time PCR method for simultaneous detection of *Salmonella enterica*, *Shigella flexneri* and *Listeria monocytogenes* in processed food samples. *European Food Research and Technology.* 2012, 234: 571-580. [IF: 1.436].
- (5) **A. Garrido**, M-J. Chapela, B. Román, P. Fajardo, J. Lago, J. M. Vieites, A. G. Cabado. A new multiplex real-time PCR developed method for *Salmonella* spp. and *Listeria monocytogenes* detection in food and environmental samples. *Food Control.* 2013, 30:76-85. [IF: 2.819]
- (6) **A. Garrido**, M-J. Chapela, B. Román, P. Fajardo, J. Lago, J. M. Vieites, A. G. Cabado. In-house validation of a multiplex Real-Time PCR method for simultaneous detection of *Salmonella* spp., *Escherichia coli* O157 and *Listeria monocytogenes*. *International Journal of Food Microbiology.* 2013, 164: 92-98. [IF: 3.155].
- (7) **A. Garrido-Maestu**, M-J. Chapela, B. Román, J. M. Vieites, A. G. Cabado. Application of a novel pathogenicity marker in a multiplex Real-Time PCR method to assess total and pathogenic *Vibrio vulnificus* in food and environmental samples. *Food Control.* 2014, 35(1): 274-283. [IF: 2.806].
- (8) Ferreira M., Blanco L., **Garrido A.**, Vieites J.M., Cabado A.G. In vitro approaches to evaluate organotin compounds tributyltin (TBT), dibutyltin (DBT) and monobutyltin (MBT)-induced toxicity in neuroblastoma cells. *J. Agric. Food Chem.* 2013, 61 (17), 4195-4203. [IF: 3.107].
- (9) **Garrido-Maestu**, M-J. Chapela, E. Peñaranda, J. M. Vieites, A. G. Cabado. In-house validation of a novel multiplex Real-Time PCR gene combination for the simultaneous detection of

- the main human pathogenic vibrios (*Vibrio cholerae*, *Vibrio parahaemolyticus*, and *Vibrio vulnificus*). *Food Control*. 2014, 37: 371-379. [IF: 2.806].
- (10) Atanassova, M.; Chapela, M. J.; **Garrido, A.**; Fajardo, P.; Ferreira, M.; Lago, J.; Auburg, S. P.; Vieites, J. M.; Cabado, A. G. Microbiological quality of ready-to-eat pickled fish products. *Journal of Aquatic Food Product Technology*. 2014, 23 (5): 498-510. [IF: 0.688]
 - (11) P. Fajardo, M. Atanassova, **A. Garrido-Maestu**, T. Wortner-Smith, J. Cotterill, A. G. Cabado. Bacteria isolated from shellfish digestive gland with antipathogenic activity as candidates to increase the efficiency of shellfish depuration process. *Food Control*. 2014 46: 272-281. [IF: 2.806].
 - (12) **A. Garrido-Maestu**, M-J. Chapela, J. M. Vieites, A. G. Cabado. Application of Real-Time PCR to detect *Listeria monocytogenes* in a mussel processing industry: impact on control. *Food Control*. 2014, 46: 319-323. [IF: 2.806].
 - (13) **A. Garrido-Maestu**, M-J. Chapela, J. M. Vieites, A. G. Cabado. *lolB* gene, a valid alternative for qPCR detection of *Vibrio cholerae* in food and environmental samples. *Food Microbiology* 2015, 46: 535-540. [IF: 3.682].
 - (14) **A. Garrido-Maestu**, Vieites-Maneiro R., Peñaranda E., Cabado A.G. Development, and complete evaluation, of a novel Most-Probable-Number (MPN) qPCR method for accurate and express quantification of *Listeria monocytogenes* in foodstuffs. *European Food Research and Technology*. 2015, 241 (5): 697-706. [IF: 1.433].
 - (15) **A. Garrido-Maestu**, M-J. Chapela, J. M. Vieites, A. G. Cabado. Re-evaluation of Enhanced qPCR Prevalent Method for Next-day Detection of *Salmonella* spp., *Shigella* spp., *Escherichia coli* O157 and *Listeria monocytogenes*. *Food Biotechnology*. 2015, 29 (4): 317-335. [IF: 0.814].
 - (16) **A. Garrido-Maestu**, A. Lozano-León, R. R. Rodriguez-Souto, M-J. Chapela, J. M. Vieites, A. G. Cabado. Presence of pathogenic *Vibrio* species in fresh mussels harvested in the southern Rias of Galicia (NW Spain). *Food Control*. 2016, 59: 759-765. [IF: 3.496].
 - (17) **A. Garrido-Maestu**, P. Fuciños, S. Azinheiro, J. Carvalho, M. Prado. Systematic Loop-mediated isothermal amplification assays for rapid detection and characterization of *Salmonella* spp., Enteritidis and Typhimurium in food samples. *Food Control*. 2017, 80: 297-306. [IF: 3.388].
 - (18) R. R. Rodriguez-Souto, **A. Garrido-Maestu**, A. Pastoriza-Fontan, A. Lozano-Leon. 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*. DOI: 10.1111/jfs.12367. [IF: 0.915].
 - (19) Z. Ma, **A. Garrido-Maestu**, C. Lee, J. Chon, D. Jeong, Y. Yue, K. Sung, Y. Park, K. C. Jeong. Comprehensive *in vitro* and *in vivo* risk assessments of chitosan microparticles using human epithelial cells and *Caenorhabditis elegans*. *Journal of Hazardous Materials*. 2018, 341: 248-256. [IF: 6.065].
 - (20) Z. Ma, **A. Garrido-Maestu**, K. C. Jeong. Application, mode of action, and *in vivo* activity of chitosan and its micro- and nanoparticles as antimicrobial agents: A review. *Carbohydrate Polymers*. 2017, 176: 257-265. [IF: 4.811].
 - (21) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, S. Abalde-Cela, E. Carbó-Argibay, L. Diéguez, M. Piotrowski, Y. V. Kolen'ko and M. Prado. Combination of Microfluidic Loop-Mediated Isothermal Amplification with Gold Nanoparticles for Rapid Detection of *Salmonella* spp. in Food Samples. *Frontiers in Microbiology*. 2017 (8). doi: 10.3389/fmicb.2017.02159. [IF: 4.076].

- (22) **A. Garrido-Maestu**, S. Azinheiro, P. Fuciños, J. Carvalho, M. Prado. Highly sensitive detection of gluten-containing cereals in food samples by real-time Loop-mediated isothermal Amplification (qLAMP) and real-time polymerase chain reaction (qPCR). *Food Chemistry*. 2018 (246) 156-163. [IF: 4.529].
- (23) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, P. Fuciños, M. Prado. Development and evaluation of loop-mediated isothermal amplification, and Recombinase Polymerase Amplification methodologies, for the detection of *Listeria monocytogenes* in ready-to-eat food samples. *Food Control*. 2018, 86: 27-34. [IF: 3.388].
- (24) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, M. Prado. Rapid and sensitive detection of viable *Listeria monocytogenes* in food products by a filtration-based protocol and qPCR. *Food Microbiology*. 2018 73 (2018) 254-263. [IF: 3.759].
- (25) J. Carvalho, R. Negrinho, S. Azinheiro, **A. Garrido-Maestu**, J. Barros-Velázquez, M. Prado. Novel approach for accurate minute DNA quantification on microvolumetric solutions. *Microchemical Journal*, 2018. doi: 10.1016/j.microc.2018.02.001. [IF: 3.034].
- (26) J. Carvalho, G. Puertas, J. Gaspar, S. Azinheiro, L. Diéguez, **A. Garrido-Maestu**, M. Vázquez, J. Barros-Velázquez, S. Cardoso, M. Prado. Highly efficient DNA extraction and purification from olive oil on a washable and reusable miniaturized device. *Analytical Chimica Acta*. doi: 10.1016/j.aca.2018.02.079. [IF: 4.950].
- (27) V.D.F. Martins, M. A. Cerqueira, P. Fuciños, **A. Garrido-Maestu**, J. M.R. Curto, L. M. Pastrana. Active bi-layer cellulose-based films: development and characterization. *Cellulose*, 2018, 25:6361. [IF: 3.809].
- (28) **A. Garrido-Maestu**, Z. Ma, SYR Paik, N. Chen, S. Ko, Z. Tong, K. C. Jeong. Engineering of chitosan-derived nanoparticles to enhance antimicrobial activity against foodborne pathogen *Escherichia coli* O157:H7. *Carbohydrate Polymers*. 2018, 197: 623-630. [IF: 4.811].
- (29) **A. Garrido-Maestu**, A., Fuciños, P., Azinheiro, S., Carvalho, C., Carvalho, J., & Prado, M. (2019). Specific detection of viable *Salmonella* Enteritidis by phage amplification combined with qPCR (PAA-qPCR) in spiked chicken meat samples. *Food Control*, 99, 79-83. [IF: 3.667].
- (30) Wu, L., **Garrido-Maestu**, A., Guerreiro, J. R., Carvalho, S., Abalde-Cela, S., Prado, M., & Diéguez, L. (2019). Amplification-free SERS Analysis of DNA mutation in cancer cells with single-base sensitivity. *Nanoscale*, 11(16), 7781-7789. [IF: 6.970].
- (31) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, M. Prado. (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*, 84 (7), 1881-1887. [IF: 2.081].
- (32) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, P. Fuciños, M. Prado. (2019). Optimized sample treatment, combined with real-time PCR, for same-day detection of *E. coli* O157 in ground beef and leafy greens. *Food Control*, DOI: 10.1016/j.foodcont.2019.106790. [IF: 4.248].
- (33) S. Azinheiro, K. Kant, M-A Shahbazi, **A. Garrido-Maestu**, M. Prado, L. Diéguez. (2020). A smart microfluidic platform for rapid multiplexed detection of foodborne pathogens. *Food Control*, DOI: 10.1016/j.foodcont.2020.107242. [IF: 4.258].
- (34) A. Teixeira, J. L. Paris, F. Roumani, L. Diéguez, M. Prado, B. Espiña, S. Abalde-Cela, **A. Garrido-Maestu**, L. Rodriguez-Lorenzo. (2020) Multifunctional Gold Nanoparticles for the SERS Detection of Pathogens Combined with a LAMP-in-Microdroplets Approach. *Materials*, DOI: 10.2290/ma13081934. [IF: 3.057].

*Journal cover

- (35) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, B. Espiña, M. Prado. (2020). Evaluation and implementation of commercial antibodies for improved nanoparticle-based immunomagnetic separation and real-time PCR for faster detection of *Listeria monocytogenes*. *Journal of Food Science and Technology-Mysore*, DOI: 10.1007/s13197-020-04450-1. [IF: 1.946].
- (36) **A. Garrido-Maestu**, S. Azinheiro, P. Fuciños, J. Carvalho, M. Prado. (2020). Comparative study of multiplexed real-time recombinase polymerase amplification and ISO 11290-1 methods for the detection of *Listeria monocytogenes* in dairy products. *Food Microbiology*, DOI: 10.1016/j.fm.2020.103570. [IF: 4.155].
- (37) L. Wu, A. Teixeira, **A. Garrido-Maestu**, L. Muínelo-Romay, L. Lima, L. L. Santos, M. Prado, L. Diéguez. (2020). Profiling DNA mutation patterns by SERS fingerprinting for supervised cancer classification. *Biosensors & Bioelectronics*, DOI: 10.1016/j.bios.2020.112392. [IF: 10.257].
- (38) F. M. C. Freitas, M. A. Cerqueira, C. Gonçalves, S. Azinheiro, **A. Garrido-Maestu**, A. A. Vicente, L. M. Pastrana, J. A. Teixeira, M. Michelin. (2020). Green synthesis of lignin nano- and micro-particles: Physicochemical characterization, bioactive properties and cytotoxicity assessment. *International Journal of Biological Macromolecules*, DOI: 10.1016/j.ijbiomac.2020.09.110. [IF: 5.162].
- (39) **A. Garrido-Maestu**, S. Azinheiro, F. Roumani, J. Carvalho, M. Prado. (2020). Application of Short Pre-enrichment, and Double Chemistry Real-Time PCR, Combining Fluorescent Probes and an Intercalating Dye, for Same-Day Detection and Confirmation of *Salmonella* spp. and *Escherichia coli* O157 in Ground Beef and Chicken Samples. *Frontiers in Microbiology*, DOI: 10.3389/fmicb.2020.591041. [IF: 4.326].
- (40) S. Azinheiro, J. Carvalho, M. Prado, **A. Garrido-Maestu**. (2020). Application of Recombinase Polymerase Amplification with Lateral Flow for a Naked-Eye Detection of *Listeria monocytogenes* on Food Processing Surfaces. *Foods*, DOI: 10.3390/foods9091249. [IF: 4.092].

*Journal cover

- (41) S. Azinheiro, J. Carvalho, M. Prado, **A. Garrido-Maestu**. (2020). Multiplex Detection of *Salmonella* spp., *E. coli* O157 and *L. monocytogenes* by qPCR Melt Curve Analysis in Spiked Infant Formula. *Microorganisms*, DOI: 10.3390/microorganisms8091359. [IF: 4.152].
- (42) J. Carvalho, L. Diéguez, A. Ipatov, J.R. Guerreiro, **A. Garrido-Maestu**, S. Azinheiro, M. Prado. (2021). Single-use microfluidic device for purification and concentration of environmental DNA from river water. *Talanta*, DOI:10.1016/j.talanta.2021.122109. [IF: 5.339].
- (43) F. Roumanni, S. Azinheiro, J. Carvalho, M. Prado, **A. Garrido-Maestu**. (2021). Loop-mediated isothermal amplification combined with immunomagnetic separation and propidium monoazide for the specific detection of viable *Listeria monocytogenes* in milk products, with an internal amplification control. *Food Control*, DOI: 10.16/j.foodcont.2021.107975. [IF: 4.258].

Non SCI journal articles

- (1) Chapela M.J, **Garrido-Maestu A.**, Vieites J.M., Cabado A.G. Detection of foodborne pathogens by qPCR: a practical approach for food industry applications. *Cogent Food & Agriculture* 1 (1) 2015.
- (2) M-J. Chapela, M. Ferreira, A. Ruiz-Cruz, I. Martin-Varela, J. Fernández-Casal, **A. Garrido-Maestu**. Application of real-time PCR for early diagnosis of diseases caused by *Aeromonas salmonicida*, *Vibrio anguillarum*, and *Tenacibaculum maritimum* in turbot: A field study. *Journal of Applied Aquaculture*. 2018 (30), 76-89.

- (3) S. Azinheiro, J. Carvalho, M. Prado, **A. Garrido-Maestu**. Evaluation of different genetic targets for *Salmonella enterica* serovar Enteritidis and Typhimurium, using Loop-mediated isothermal AMPLification for detection in food samples. *Frontiers in Sustainable Food Systems*. doi: 10.3389/fsufs.2018.00005.
- (4) Carvalho, J., Negrinho, R., Azinheiro, S., **Garrido-Maestu, A.**, Barros-Velázquez, J., & Prado, M. (2018). Data on minute DNA quantification on microvolumetric solutions: comparison of mathematical models and effect of some compounds on the DNA quantification accuracy. *Data in brief*, 21, 424-431.
- (5) Rodríguez-Lorenzo, L., **Garrido-Maestu, A.**, Bhunia, A.K., Espiña, B., Prado, M., Diéguez, L., Abalde-Cela, S. Gold Nanostars for the Detection of Foodborne Pathogens via Surface-Enhanced Raman Scattering Combined with Microfluidics. *ACS Applied Nano Materials*. 2019, 2, 10, 6081-6086.

Books and Book Chapters

- (1) Atanassova M., Chapela M.J., **Garrido A.**, Vieites J.M., Cabado A.G. Evaluation of the microbiological risk in ready-to-eat food. Editorial Académica Española. ISBN: 978-3-659-02902-8.
- (2) A. Otero, M-J. Chapela, P. Fajardo, **A. Garrido**, and A. G. Cabado. Seafood and Freshwater Toxins. Pharmacology and Detection. Chapter 17: Genetic tools for aquatic toxin detection. Editor: Luis M. BotA.. Editorial: Taylor & Francis. Third edition. 497-519. ISBN: 978-1-4665-0514-8.
- (3) A. Martínez, **A. Garrido-Maestu**, B. Ben, M-J Chapela, V. González, J. M Vieites, A. G Cabado. Springer Handbook of Marine Biotechnology. Chapter 37: Marine Biotoxins. Editor: Se-Kwon Kim. Editorial: Springer. ISBN 978-3-642-53970-1.
- (4) **Garrido-Maestu A.**, Tomás Fornés D., Prado Rodríguez M. (2019). The Use of Multiplex Real-Time PCR for the Simultaneous Detection of Foodborne Bacterial Pathogens. In: Bridier A. (eds) Foodborne Bacterial Pathogens. Methods in Molecular Biology, vol 1918. Huma. Press, New York, NY.
- (5) A. Ipatov, **A. Garrido-Maestu**, J. R. Guerreiro, A. Purwidyantri, S. Azinheiro, J. Carvalho, F. Roumani, M. Elumalai. M. Prado. (2020). Chapter X: Application of omics-based miniaturized systems in food quality and safety. Editor: Jorge Barros-Velázquez. ISBN: pending

POSTGRADUATE TEACHING AND SUPERVISION EXPERIENCE

Instructor - “Seafood Processing: Modern Technologies and New Product Development”. Blocks: “Screening of residues of antibiotics in processed seafood products” and “Rapid Detection of Pathogens”. Organizer: Food and Agriculture Organization of the United Nations (FAO) and the International Centre of High Mediterranean Agronomic Studies (Mediterranean Agronomic Institute of Zaragoza). Vigo, February 04-08th, 2013.

MAJOR CONFERENCE PRESENTATIONS

- (1) B. Buján, **A. Garrido**, G. Marcote, J. Lago, J. M. Vieites y A. G. Cabado. Validation of a fast Analysis method for the quantification of microbiological parameters (poster). **VI Reunion of the Microbial Biotechnology and Industrial Microbiology group of the SEM**. Barcelona. November 12-14th, 2008.
- (2) Chapela M.J., **Garrido A.**, Fajardo P., Ferreira M., Atanassova M., Lago J., Vieites J.M., Cabado A.G. Serotyping of pathogenic microorganisms using real time PCR: Identification of toxigenic *Vibrio cholera* (poster). **III Congress of Parga Pondal and Ramón y Cajal researchers from Galicia**. Ourense, November 13th, 2009.
- (3) **Garrido A.**, Chapela M.J., Lago J., Ferreira M., Atanassova M., Vieites J.M., Cabado A.G. Comparison of real time PCR and ISO 21872-1:2007 for the detection of pathogenic *Vibrio parahaemolyticus* (oral presentation). **VIII Meeting of the Microbiology of Aquatic Medium**. Vigo, Pontevedra (Spain), September 14-16th, 2010.
- (4) Chapela M.J., **Garrido A.**, Ferreira M., Atanassova M., Lago J., Vieites J.M., Cabado A.G. A new multiplex real time PCR platform for rapid and simultaneous detection of *Salmonella*, *Shigella* and *Listeria monocytogenes* in seafood products (poster). **40th WEFTA Annual Meeting**. Izmir (Turkey), 4-7 de Octubre, 2010.
- (5) **Garrido A.**, Chapela M.J., Ferreira M., Atanassova M., Lago J., Fajardo P., Vieites J.M., Cabado A.G. Detection of pathogenic *Vibrio parahaemolyticus* (*tdh* + and *trh* +) in seafood by real time PCR. Comparison with ISO 21872-1:2007 (poster). **Food Innova 2010**. Valencia (Spain), October 25-29th, 2010.
- (6) **A. Garrido**, M.J. Chapela, P. Fajardo, M. Ferreira, M. Atanassova, J. Lago, J.M. Vieites, A. Cabado. **Vibrio 2011**. Development of a Real-Time PCR method for the detection of pathogenic *V. parahaemolyticus* in seafood and water samples (poster). **The fourth conference on the biology of Vibrions**. Santiago de Compostela. November 1-4th 2011
- (7) **A. Garrido**, M.J. Chapela, J.M. Vieites, A.G. Cabado. *Salmonella* spp. and *Listeria monocytogenes* Detection in Food Samples Combining a Single Step Enrichment with Multiplex Real-Time PCR (poster). **European Symposium on Food Safety**. Varsovia. May 21-23th 2012.
- (8) **A. Garrido-Maestu**, M-J. Chapela, B. Román, J. M. Vieites, A. G. Cabado. New multiplex qPCR method for *Vibrio vulnificus* detection, an environmental bacterium and emerging pathogen (poster). **Reference Congress. Food Analysis 2014, National Food Center**. Majadahonda. June 10-12th 2014.
- (9) **A. Garrido-Maestu**, M-J. Chapela, B. Román, E. Peñaranda, J. M. Vieites, A. G. Cabado. Detection of pathogenic species of *Vibrio* genus by multiplex qPCR (poster). **Workshop on Food Safety of life bivalve mollusks**. Bueu. September 12th 2014.

- (10) R. Rodriguez-Souto, **A. Garrido-Maestu**, A. Lozano-Leon. Dynamics of *Vibrio parahaemolyticus* with virulence genes detected in mussel (*Mytilus galloprovincialis*) in Galicia harvesting areas (poster). **Workshop on Food Safety of life bivalve mollusks**. Bueu. September 12th 2014.
- (11) **A. Garrido-Maestu**, M-J. Chapela, J. M. Vieites, A. G. Cabado. *Listeria monocytogenes* boiled frozen mussels cross-contamination (poster). **II International Scientific Symposium on Innovation in Marine and Food Industry. "Sustainable Future Food"**. Vigo. September 15-16th 2014.
- (12) R. Rodriguez-Souto, **A. Garrido-Maestu**, A. Pastoriza-Fontan, A. Lozano-Leon. Action and cellular effects of adherence and cytotoxicity produced by European clinical and environmental strain of *Vibrio parahaemolyticus* (poster). **49th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections**. Gainesville, FL. January 14-16th 2015.
- (13) Z. Ma, **A. Garrido-Maestu**, K. C. Jeong. In situ antimicrobial activity of chitosan nanoparticles (poster). **Emerging Pathogens Institute Research Day**. Gainesville, FL. February 26th 2015.
- (14) Z. Ma, **A. Garrido-Maestu**, K. C. Jeong. Engineering of Chitosan-based Nanoparticles for pathogenic microorganisms in animals (poster). **Gordon Research Conferences, Nanoscale Science & Engineering for Agriculture & Food Systems**. Bentley University, Waltham, MA. June 7th-12th 2015.
- (15) Z. Ma, **A. Garrido-Maestu**, SYR. Paik, N. Chen, S. Ko, Z. Tong, K. C. Jeong. Engineering of Chitosan-Driven Nanoparticles to Enhance Antimicrobial Activity against Foodborne Pathogen *Escherichia coli* O157:H7 (poster). **International Association for Food Protection**. St. Louis, MO. June 31st – August 3rd, 2016.
- (16) **A. Garrido-Maestu**, P. Fuciños, E. Carbó-Argibay, Y. V. Kolen'ko, M. Prado. Detection of *Salmonella* spp. by Loop-mediated isothermal AMPlification, combined with gold nanoparticles (poster and oral presentation). **XX National Conference on Food Microbiology**, León, Spain. September 14th – 16th, 2016.
- (17) M-J. Chapela, **A. Garrido-Maestu**, M. Ferreira, A. Ruiz Cruz, I. Martín Varela, J. Fernández. Development and application of molecular techniques for fast diagnosis of bacterial diseases in turbot tissue (poster). **XIX Forum of marine resources and aquaculture of the Galician Rias**. O Grove, Spain October 17th, 2016.
- (18) M. Ferreira, M-J. Chapela, Celia Varela, **A. Garrido-Maestu**, L. Arregui. Development of a multiplex real-time PCR method for the diagnosis of three bacterial diseases in rainbow trout (poster). **XIX Forum of marine resources and aquaculture of the Galician Rias**. O Grove, Spain October 17th, 2016.
- (19) G. Puertas, J. Carvalho, J. Gaspar, L. Diéguez, S. Azinheiro, **A. Garrido-Maestu**, M. Vázquez, M. Prado. Optimization of a DNA purification protocol by microscale solid phase extraction (μ SPE) and microfluidics for food products on a washable and reusable device (poster). **Ex-Tech 2017**. Santiago de Compostela, Spain June 27th-30th, 2017.
- (20) M. Cerqueira, V. D. F. Martins, J. M. R. Curto, P. Fuciños, **A. Garrido-Maestu**, Lorenzo Pastrana. Active Cellulose/ Ethyl Cellulose Bi-layer Films: Development And Characterization (poster). **3rd International Conference on Natural Fibers – Advanced Materials for a Greener World**. Braga, Portugal 21st-23rd June 2017.
- (21) S. Azinheiro, **A. Garrido-Maestu**, P. Fuciños, J. Carvalho, M. Prado. Development and evaluation of different DNA amplification approaches based on Loop-mediated isothermal amplifica-

- tion and real-time PCR for the detection gluten-containing cereals in food samples (poster). **8th International Symposium on Recent Advances in Food Analysis (RAFA 2017)**. November 7–10, 2017. Prague, (Czech Republic).
- (22) S. Azinheiro, J. Carvalho, M. Prado, **A. Garrido-Maestu**. Loop-mediated isothermal amplification (LAMP) for foodborne pathogen detection: evaluation of different genetic targets for *Salmonella enterica* serovar Enteritidis and Typhimurium characterization (poster). **8th International Symposium on Recent Advances in Food Analysis (RAFA 2017)**. November 7–10, 2017. Prague, (Czech Republic).
- (23) J. Carvalho, G. Puertas, S. Azinheiro, J. Gaspar, **A. Garrido-Maestu**, L. Diéguez, J. Barros-Velázquez, Manuel Vázquez, M. Prado. Miniaturized devices for sample preparation providing highly efficient DNA extraction from olive oil (poster). **8th International Symposium on Recent Advances in Food Analysis (RAFA 2017)**. November 7–10, 2017. Prague, (Czech Republic).
- (24) **A. Garrido-Maestu**, S. Azinheiro, P. Fuciños, J. Carvalho, M. Prado. Isothermal DNA amplification for *Salmonella* spp. detection and characterization (poster and oral presentation). **2nd International Conference on Food Microbiology**, Madrid, Spain. November 29th-30th, 2017.
- (25) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, M. Prado. Detection of *Listeria monocytogenes* by combination of Immunomagnetic separation and Real-Time RPA in smoked salmon (poster). **40th International Conference on Environmental & Food Monitoring**, Santiago de Compostela. June 19th-22nd, 2018.
- (26) J. Carvalho, **A. Garrido-Maestu**, S. Azinheiro, J. Barros-Velázquez, M. Prado. Development of Real-Time Loop-mediated isothermal AMPlification (qLAMP) and Polymerase Chain Reaction (qPCR) methods for detection of *Dreissena polymorpha* in the Guadalquivir river basin. **40th International Conference on Environmental & Food Monitoring**, Santiago de Compostela. June 19th-22nd, 2018.
- (27) **A. Garrido-Maestu**. S. Azinheiro, J. Carvalho, M. Prado. Isothermal DNA amplification strategies for the detection of *Listeria monocytogenes* in food samples (oral presentation). **40th International Conference on Environmental & Food Monitoring**, Santiago de Compostela. June 19th-22nd, 2018.
- (28) J. Carvalho, **A. Garrido-Maestu**, S. Azinheiro, A. Ipatov, R. Guerreiro, M. Elumalai, L. Diéguez, J. Gaspar, J. Barros-Velázquez, M. Prado. Miniaturization and Optimization of Devices for Different DNA Analysis Steps (poster). **Mission 10000**, Braga. October 17th, 2018.
- (29) S. Azinheiro, J. Carvalho, M. Prado, **A. Garrido-Maestu**. Antimicrobial Activity of Chitosan Nanoparticles in *E. coli* O157 (poster). **Mission 10000**, Braga. October 17th, 2018.
- (30) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, M. Prado. Isothermal DNA Amplification and their Advantages for Foodborne Pathogen Detection (poster). **Mission 10000**, Braga. October 17th, 2018.
- (31) S. Azinheiro, **A. Garrido-Maestu**, J. Carvalho, M. Prado. Sample Pre-treatment Improvement for Faster Pathogen Detection in Foodstuff (poster). **Mission 10000**, Braga. October 17th, 2018.
- (32) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, P. Fuciños, M. Prado. Optimized Methodology for Same-day Detection of *E. coli* O157 by Multiplex qPCR in Ground Meat and Leafy Greens (oral presentation). **IAFP's European Symposium on Food Safety**, Nantes. April 24th-26th, 2019.

- (33) **A. Garrido-Maestu**, S. Azinheiro, J. Carvalho, P. Fuciños, M. Prado. Naked-Eye Detection of *E. coli* O157 by Recombinase Polymerase Amplification and SYBR Green I (poster). **IAFP's European Symposium on Food Safety**, Nantes. April 24th-26th, 2019.
- (34) J. Carvalho, L. Diéguez, S. Yadav, **A. Garrido-Maestu**, S. Azinheiro, J. Barros-Velázquez, M. Prado. Disposable Miniaturized Device for DNA Purification from Complex Samples (poster). **EuroFoodChem**, Porto. June 17th-19th, 2019.
- (35) S. Azinheiro, **A. Garrido-Maestu**, J. Carvalho, M. Prado. Comparative study of multiplex real-time Recombinase Polymerase Amplification and ISO 11290-1 methods for the detection of *Listeria monocytogenes* in dairy products (poster). **EuroFoodChem**, Porto. June 17th-19th, 2019.
- (36) J. Carvalho, A. Ipatov, L. Diéguez, J. Gaspar, **A. Garrido-Maestu**, S. Azinheiro, J. R. Guerreiro, M. Elumalai, J. Barros-Velázquez, M. Prado. Development and optimization of miniaturized devices for DNA analysis of food samples (poster). **9th International Symposium on Recent Advances in Food Analysis (RAFA 2019)**. November 5–8, 2019. Prague, (Czech Republic).
- (37) F. Roumani, **A. Garrido-Maestu**, S. Azinheiro, C. Rodrigues, M. Prado. A DNA-based fast method for the detection of spoilage fungi in fruit preparations (poster). **9th International Symposium on Recent Advances in Food Analysis (RAFA 2019)**. November 5–8, 2019. Prague, (Czech Republic).
- (38) A. Teixeira, J. L. Paris, F. Roumani, L. Diéguez, M. Prado, B. Espiña, S. Abalde-Cela, **A. Garrido-Maestu**, L. Rodriguez-Lorenzo. SERS Detection of Pathogens using a LAMP-in-Microdroplets platform (poster). **Nanobiomed online conference 2020**. July 10th, 2020.
- (39) **A. Garrido-Maestu**, F. Roumani, S. Azinheiro, H. Sousa, A. Tavares, J. Carvalho, M. Prado. Rapid diagnosis of SARS-CoV-2 by naked-eye loop-mediated isothermal amplification (oral presentation). **Rapid Methods Europe 2021 (RME2021)**. February 1-3, 2021, on-line.
- (40) F. Roumani, **A. Garrido-Maestu**, S. Gómez, C. Rodrigues, M. Prado. A Colorimetric LAMP for the detection of fungi in fruit preparations (poster). **Rapid Methods Europe 2021 (RME2021)**. February 1-3, 2021, on-line.

PROJECT PARTICIPATIONS

- (1) Development of an active container for the control of microorganisms that alter fish and refrigerated fishing products; and also a molecular method for the evaluation of its effectiveness. Xunta de Galicia (PGIDIT08TAL003CT). 2008-2010. **97,500€**.
- (2) Exploitation of marine sponges or viability of their culture to obtain active substances. Xunta de Galicia (08MMA011CT). 2008-2010. **118,435€**.
- (3) Development of active containers with natural additives obtained from agro-industrial residues. Spanish Science and Innovation Ministry (PID-600200-2009-18). 2009-2011. **70,914€**
- (4) Development of molecular tools for the diagnostic of bacterial and parasitic diseases in cultured sole. Xunta de Galicia (10MMA006E). 2010-2012. **130,671€**.
- (5) **ECOSON**. Design and Development of an ultrasound preservation system for fish and aquaculture products. Xunta de Galicia (10DPI14CT). 2010-2013. **158,009€**.

- (6) **Pharmatlantic**. Knowledge Transfer Network for Prevention of Mental Diseases and Cancer in the Atlantic Area. European Union (ERDF, No. 2009-1/117). 2010-2012. **220,946€**.
- (7) **Fiskeri-og havbruksnæringens forskningsfond (FHF)**. “Development and implementation of technical criteria for the differentiation of light vs. Fully salted/ desalted cod products. How to disseminate appropriate information and avoid misleading consumers”. Norwegian Seafood Research Fund. 2014-2015. **190,896.09€**.
- (8) **Development of chitosan nanoparticles targeting pathogenic *E. coli* in beef and dairy cattle**. Project duration: 01/01/2014-31/12/2019, participation from 05/01/2015-03/06/2015. USDA-NIFA ref#: 2014-67021-21597. **481,320 USD**.
- (9) **Multipathogen detection lab-on-a-chip based on Loop-mediated Isothermal Amplification combined with gold nanoparticles**. NanoTRAINforGrowth (grant agreement 600375), Seventh Framework Programme, Marie Curie Actions, COFUND. 2015-2017. **61,142 €** (salary).
- (10) **INL 2020**. “Implement an integrated a sustainable strategy to promote INL’s participation in the EU Framework Programme for Research and Innovation – Horizon 2020”, Project 1: “water monitoring and treatment” and Project 2: “food quality and safety”. CCDR-N, Norte2020 (NORTE-01-0145-FEDER-016014). 2016-2018. **181,978.42€**.
- (11) **Development of a system for early detection of the Zebra mussel through analysis of environmental DNA**. Cooperation Agreement with Confederación Hidrográfica del Guadalquivir. 2016-2019. **600,000€**.
- (12) **SF4SF: Smart factory for safe foods**. “Increase the productive efficiency of food processing plants and the food safety of products made by integrating faster, sensitive, efficient and sustainable emerging technologies into the plant for the detection, elimination and management of microbiological risks and allergens”. CDTI Ministry of Industry, INTECCONECTA (EXP-00082964 / ITC-20151195). 2015-2017. **626,174.60€**.
- (13) **NANOEATERS**: Valorization and transfer of NANOTEchnologies to EARly adopTERS of the Euroregion Galicia-Norte Portugal, use case 2: Olive Oil Characterization. ERDF, INTERREG V-A Spain-Portugal (POCTEP) 2014-2020 (0181_NANOEATERS_1_EP). 2017-2019. **4,255,750.69€**.
- (14) **NanoBioSensor** – Development of nanosensors to evaluate the microbiological quality of fruit-based products. COMPETE2020, PT2020 (POCI-FEDER-033925). 2018-2021. **932,176.37€**.
- (15) **PACKTERIOPHAGE** - Bacteriophage-releasing nanostructured smart packaging materials for the control of food-borne pathogens. FCT, COMPETE2020, PT2020 (POCI-01-0145-FEDER-032594). 2018-2021. **235,635.82€**.
- (16) **SEAFOOD-AGE**. Smart and eco-innovative SEAFOOD processes and products for healthy AGEing. ERDF, Interreg Atlantic Area (EAPA_758/2018). 2019-2022. **2,926,188€**.
- (17) **PORTGRAPHE**. Control of Port and Douro Wines authenticity using graphene DNA sensors. FCT, COMPETE2020, PT2020 (POCI-01-0145-FEDER-031069). 2018-2021. **239,760.83€**.
- (18) **CULTURE**. Pre-commercial procurement, cascade funding within the Anti-SUPERBUGS project. EC, H2020 (code pending). Passed phase 1. **65,000€+second phase**.
- (19) **LAMP – Light in the diagnosis of COVID-19 (PI)**. FCT Apoio Especial Research4COVID-19 (165_596847607). 2020. **29,268.11€**.

- (20) **COUNTED.** Coronavirus Transmission: Count and Detect. Agência Nacional de Inovação SA, COMPETE2020, PT2020 (POCI-01-02B7-FEDER-050226). 2020-2021. **492,688.55€**.
- (21) **CRISPR technology against the COVID-19 pandemic. The DETECTR of SARS-CoV-2 (PI).** FCT 2nd call Apoio Especial Research4COVID-19 (480_613669146). 2020-2021. **40,000€**.
- (22) **COF-enhanced qPCR (PI).** INL Intramural funding. 2021. **5,000€**.
- (23) **ICONSS.** Innovative Customer-Oriented Safe Solutions. EIT Food iVZW (20431). 2020. **833,375€**.
- (24) **INNO4COV-19 – Boosting Innovation for COVID-19 Diagnostic, Prevention and Surveillance.** EU-EC, H2020 (101016203). 2020-2022. **6,188,612.50€**.
- (25) **HighSenseCoV2.** Highly sensitive immunoassay for SARS-CoV-2 detection using a new amplification technology. Agência Nacional de Inovação SA, PT2020 (NORTE-01-02B7-FEDER-069951). 2021. **488,639.91€**.
- (26) **R&W Clean – New solution new solutions for the sensing of environmental and biological parameters to aid the demedicalization of the agricultural and livestock sector.** 2021. ERDF (070109). 2021-2023. **1,588,620.07€**.

AWARDS

- (1) IBAB Industry award for the project CULTURE. Intramural INL (2020).
- (2) Extraordinary Doctorate Award. University of Vigo (2013).

ADDITIONAL ACTIVITIES AND RESPONSIBILITIES

Associate editor of *Food Analytical Methods* – Springer Nature.

Invited editor for the Special Issue “Innovative Techniques for Detecting and Preventing Foodborne Pathogens in Food Processing” in *Foods* – MDPI.

Journal reviewer - Invited reviewer for International Journal of Food Microbiology, Frontiers in Microbiology, Food Analytical Methods, Food Control, Journal of Microbiological Methods, Canadian Journal of Microbiology, Journal of Dairy Science, Springer Plus, Ecosistemas y Recursos Agropecuarios, African Journal of Microbiology Research, Journal of Veterinary Medicine and Animal Health, Food Biotechnology, Journal of Photochemistry and Photobiology B Biology, Journal of Food Safety and Co-gent Food & Agriculture,.

Responsible of the Molecular Biology Laboratory and deputy responsible for the Microbiology Laboratory of the International Iberian Nanotechnology Laboratory.

Assistance to Workshops and Technical Formation Activities:

- (1) **VIII Practical Initiation to Clinical Analyses.** Recognized of sanitary interest by the Galician Government. University of A Coruña. 64 hours. 3/07/2006 31/07/2006.

- (2) **Food Microbiology Analyses (13rd edition).** University of Vigo, Campus of Ourense. 45 hours. 10/11/2006 25/11/2006.
- (3) **Microbiological and Physic-Chemical Parameters Analyses of Water (13th edition).** University of Vigo, Campus of Ourense. 36 hours. 12/01/2007 27/01/2007.
- (4) **Microbiological Indicators of Contamination (13rd edition).** University of Vigo, Campus of Ourense. 39 hours. 2/02/2007 – 17/02/2007.
- (5) **XXII Manual and Automatic Techniques for the Isolation and Identification of Pathogenic Microorganisms.** Organized by bioMérieux España, S. A. Vigo. 23/10/2007 – 24/10/2007.
- (6) **Industrial Microbiology Workshop “bioMérieux Próximo Vigo”.** Organized by bioMérieux España, S. A. Vigo. 25/10/2007.
- (7) **PCR in the food industry Workshop.** Organized by Bioser. Vigo. 15/04/2008.
- (8) **Solutions for the Control of Histamine Workshop.** Organized by Bioser. Vigo. 1/07/08.
- (9) **Application of biosensors for the detection of toxins in mollusks.** Vigo. 8/10/08.
- (10) **Fast detection of biotoxins in seafood.** Vigo. 9-10/10/08.
- (11) **Theoretic and Practical Real Time PCR.** Organized by Cultek. Vigo 25 hours. 10/02/09
- (12) **Statistic applied to Biology using free software (on-line).** 51 hours. 01/10/09 – 31/10/09.
- (13) **Fast Techniques for Pathogens detection by Immunofluorescence (VIDAS), and Quantification of Contaminating microorganisms by miniaturized MPN (TEMPO).** Organized by BioMérieux España. Vigo 22 hours. 02/11/09 – 06/11/09.
- (14) **Advanced Tests about New Toxins appeared in the Atlantic Area. Training in rapid testing for algal toxins in shellfish.** Vigo 24/05/11.
- (15) **Pandemics: new viral infections.** On-line, 12 hours. 10/2014.
- (16) **Microbes around you.** On-line, 17.5 hours. 06/ 2015.
- (17) **Culture-independent techniques in food microbiology.** On-line, 01/10/2015-20/12/2015.
- (18) **From the Lab to the Market- the next step for INL’s Researchers.** Organized by Porto Business School at INL (Braga). June 13th-22nd 2016.
- (19) **Hands-on qPCR.** Organized by TATAA Biocenter in Vestec, Prague, Czech Republic. 27-29/03/2017.
- (20) **Digital PCR – Applications and A.lysis.** Organized by TATAA Biocenter in Vestec, Prague, Czech Republic. 30-31/ 03/2017.
- (21) **3rd International hands-on Phage biotechnology course.** Organized by the Bacteriophage Biotechnology Group from the University of Minho, in Braga, Portugal. June 19-23/06/2017.

- (22) **High-throughput sequencing using Illumina, PacBio, and ONT: key concepts and applications.** AllGenetics & Biology S.L., A Coruña, Spain. March 14th-15th 2019 (11 hours).
- (23) **Intensive training in biosafety in laboratories.** General Council of Official Biologists College, online. May 8th 2020 (25 hours).

Outside interests – Futsal, Soccer, Squash, Karate.

CURRENT COLLABORATIVE RELATIONSHIPS

- Dr. A. Lozano-León (Institute of Applied Microbiology-ASMECRUZ). Study of bacterial pathogens in food products.

PROFESIONAL ASSOCIATIONS

Member of Spanish Society for Microbiology

Member of the Galician College of Biologists

REFEREES

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Head of the Food Safety Division

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