

Part A. PERSONAL INFORMATION

First name	Roberto		
Family name	Romero González		
Gender (*)	Male		
e-mail	rromero@ual.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)			0000-0002-2505-2056

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	01/09/2022		
Institution	University of Almeria		
Department/Center	Chemistry and Physics/Faculty of Experimental Sciences		
Country	Spain	Teleph. number	950214278
Key words	Chromatography, Mass spectrometry, contaminants, food safety, environmental analysis, validation, extraction, data treatment, chemometrics		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
1999-2003	Predoctoral fellow (Regional Government)/Granada University/Spain
2003-2005	Postdoctoral fellow (Spanish Ministry program)/Lund University/Sweden
2005-2008	Juan de la Cierva Contract/Almeria University/Spain
2008-2013	Ramón y Cajal Contract/Almeria University/Spain
2013-2015	Post-doc Researcher/Almeria University/Spain
2015-2017	Tenured-Track Professor/Almeria University/Spain
2017-2022	Senior Lecturer/Almeria University/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bachelor in Chemistry	Granada/Spain	1997
PhD in Chemistry (European PhD Mention)	Granada/Spain	2002

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Bachelor's degree in Chemistry, University of Granada, July 1997. From May 1999 to April 2003, I held a Junta de Andalucía Predoctoral Fellowship. In June 2002, I received my PhD in Chemistry (European PhD Mention), University of Granada. During my PhD, I published 8 research articles on the chromatographic determination of biogenic amines in food. I also served as an assistant professor in various degrees. Additionally, I spent 3 months at the Department of Analytical Chemistry at the University of Lund, Sweden. In 2003, I received a MEC postdoctoral fellowship and worked at the University of Lund, where I published 4 research papers in international journals, including one in Analytical Chemistry. In 2005, I joined the Research Group "Analytical Chemistry of Contaminants", University of Almería, starting as a "Juan de la Cierva" researcher and later as a "Ramón y Cajal" researcher. In 2015, I became an Assistant Professor and in October 2017, I was promoted to Senior Lecturer. Since 2022, I am a Full Professor. I have taught several courses in the Chemistry degree program and different Master programs. I have also supervised or co-supervised 13 final undergraduate projects and 35 final Master's projects. Additionally, I served as the scientific advisor of the chromatographic unit of the Research Management Service from 2011 to 2018.

In relation to my research lines, I have been primarily focused on the analysis of bioactive compounds, contaminants, and organic residues, such as pesticides, mycotoxins, and veterinary drugs, in both environmental and food matrices, and antibiotics and other compounds in biological matrices. To accomplish this, I have developed generic extraction



methods based on QuEChERS or "dilute and shoot". I published one article related to this topic (J. of Chromatography A, 1205, 2008, 10-16) which is included as one of the most cited articles in 2008-2009 published by Journal of Chromatography A. I then use chromatographic techniques coupled with mass spectrometry (MS) analyzers, including low resolution mass spectrometry analyzers (triple quadrupole) and high resolution mass spectrometry analyzers (Exactive-Orbitrap), to perform simultaneous determination of a large number of compounds, as well as transformation products. As a results of these studies, we prepared two invited reviews published in Trends in Analytical Chemistry (Vol. 63, 2014, 158-169 and Vol. 118, 2019, 170-181). Additionally, I have developed several strategies for the identification of unknown compounds and post-targeted analyses. Since 2016, I have also begun working on metabolomics and fingerprinting approaches using the aforementioned MS platforms in order to characterize various foods, and combining the information provided by MS analyzers and Nuclear Magnetic Resonance. Currently, I have co-authored more than 190 research papers that have been published in international journals, being 130 included in Q1 journals and 63 in D1. As a result, my h-index is 44, and the number of average citations per year (last 5 years from 2018-2022) is 576, and in 2022 the number of total citations was 650, according to Scopus Database. As a result of this research activity, I have been included in the Stanford University's "The World Scientist: World's Top 2% Scientist (2020 & 2022)", "Analytical Chemistry" area. Additionally, I have presented more than 100 communications at international congresses, including several oral communications and two keynote presentations. Furthermore, I have participated in 23 research projects (both national and regional calls) as well as 22 contracts with various companies. In these research projects, I have participated as the lead investigator in one of them and as a co-lead investigator in three, obtaining a total funding of over 2.5 million euros. With regards to research contracts, I have been the lead investigator in two of them and the total funding received is over 780,000 euros.

During these years I collaborate with different research groups from several countries as Brazil, Italy, France, Slovakia, Tunisia, and Portugal, and currently I am member of the research groups of two international projects with Brazil and Portugal.

Regarding contributions to society, I am a member of the research team of two patents, and I have participated in numerous outreach activities at the European level, such as the "European Researchers' Night" and other local events such as "Visit Your University" and "Science Week."

I have been co-supervisor of 13 PhD Thesis and 7 out of them with International Mention and one obtained the PhD Extraordinary Award from the University of Almería as the best PhD Thesis of 2020

I have served as a reviewer for several scientific journals from various publishing companies such as Elsevier and Springer-Verlag, among others and I am associated editor of Foods.

To summarize, up until now, I have completed three six-year research periods, three five-year teaching periods.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1. *Authors:* R. López Ruiz, A. J. Maldonado Reina, J. Marín Sáez, R. Romero González, J. L. Martínez Vidal, A. Garrido Frenich

Title: Unravelling plant protection product analysis: Use of chromatography techniques (GC and LC) and high resolution mass spectrometry

Journal: Trends in Environmental Analytical Chemistry, 37 (2023), e00191 (1-11)

2. *Authors:* M. E. Hergueta Castillo, R. López Ruiz, A. Garrido Frenich, R. Romero González (Corresponding Author).

Title: Characterization of the composition of plant protection products in different formulation types employing suspect screening and unknown approaches

Journal: Journal of the Science of Food and Agriculture, 102 (2022) 5995-6004.

3. *Authors:* A. Rivera Pérez, R. Romero González, A. Garrido Frenich

Title: Persistent organic pollutants (PCBs and PCDD/Fs), PAHs, and plasticizers in spices, herbs, and tea – A review of chromatographic methods from the last decade

Journal: Critical Reviews in Food Science and Nutrition, 62 (2022) 5224-5244.



4. *Authors:* A. J. Maldonado Reina, R. López Ruiz, A. Garrido Frenich, F. J. Arrebola, R. Romero González (Corresponding Author)

Title: Co-formulants in plant protection products: An analytical approach to their determination by gas chromatography-high resolution mass accuracy spectrometry

Journal: *Talanta*, 234 (2021) 122641 (1-10).

5. *Authors:* A. Romera Torres, R. Romero González, J. L. Martínez Vidal, A. Garrido Frenich
Title: Comprehensive tropane alkaloids analysis and retrospective screening of contaminants in honey samples using liquid chromatography-high resolution mass spectrometry (Orbitrap)

Journal: *Food Research International*, 133 (2020) 109130 (1-9)

6. *Authors:* R. López Ruiz, R. Romero González, E. Ortega-Carrasco, J. L. Martínez Vidal, A. Garrido Frenich

Title: Degradation studies of dimethachlor in soils and water by UHPLC-HRMS: putative elucidation of unknown metabolites

Journal: *Pest Management Science*, 76 (2020) 721-729.

7. *Authors:* R. López Ruiz, R. Romero González, A. Garrido Frenich

Title: Ultrahigh-pressure liquid chromatography-mass spectrometry: An overview of the last decade

Journal: *Trends in Analytical Chemistry* 118 (2019) 170-181.

8. *Authors:* R. López Ruiz, R. Romero González, A. Garrido Frenich

Title: Metabolomics approaches for the determination of multiple contaminants in food

Journal: *Current Opinion in Food Science* 28 (2019) 49-57

9. *Authors:* R. López Ruiz, R. Romero González, A. Garrido Frenich

Title: Residues and dissipation kinetics of famoxadone and its metabolites in environmental water and soil samples under different conditions

Journal: *Environmental Pollution* 252 (2019) 163-170

10. *Authors:* R. Romero González, A. Garrido Frenich.

Title of the Book: Applications in high resolution mass spectrometry. Food Safety and Pesticide Residue Analysis.

Editorial: Elsevier Inc.

ISBN: 978-0-12-809464-8

Year: 2017

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1. *Authors:* R. Romero González

Title: From targeted to non-targeted analysis in food safety: What's up, Doc?

Participation: Invited Conference, Keynote

Congress: XXI Scientific Meeting of the Spanish Society of Chromatography and Related Techniques

Place and date: Almería, Spain, October, 2022.

2. *Authors:* R. Romero González

Title: Generic extraction methods coupled to chromatography-high resolution mass spectrometry: game over?

Participation: Invited Conference, Keynote

Congress: XIV Latin American Symposium on Environmental Analytical Chemistry

Place and date: Bento Gonçalves, Brazil, October, 2019.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. *Title:* Implementation of low-field nuclear magnetic resonance (LF-NMR) in control laboratories for quantitative studies and classification of food products and other industrial sectors.

Funding entity: Ministry of Science and Innovation (State Program of R&D+I Oriented to the Challenges of Society)

Reference: CPP2021-008672 *Total amount:* 1190,882.73 €; UAL: 165,164.49 €).

Principal Investigator: Sergio Marcos Estival/Antonia Garrido Frenich *Role:* Research Team

Start and end date: from 01/10/2022 to 30/09/2025



2. *Title:* Phytosanitary products: comprehensive evaluation of composition and residues in food and agricultural soils.

Funding entity: Ministry of Science and Innovation (Knowledge Generation Projects)

Reference: PDI2019-106201RB-I00 *Total amount:* 93170 €

Principal Investigator: Antonia Garrido Frenich/Roberto Romero González

Start and end date: from 01/06/2020 to 31/05/2023

3. *Title:* Characterization of macro and microplastics in the marine food web of the Mediterranean Sea

Funding entity: Ministry of Ecological Transition

Reference: PlastiMarMed.FB *Total amount:* 67471.13 €

Principal Investigator: Marga López Rivas *Role:* Member of the Research Team

Start and end date: from 15/01/2020 to 15/09/2021

4. *Title:* Study of the presence of tropane alkaloids and their degradation products in food, feed and homeopathic products.

Funding entity: Ministry of Economy and Competitiveness (National Research Plan)

Reference: CTQ2015-69899-R *Total amount:* 94380 €

Principal Investigator: Antonia Garrido Frenich *Role:* Member of the Research Team

Start and end date: from 01/01/2016 to 31/12/2018

5. *Title:* Identification and analysis of phytochemicals in ready to eat fruits and vegetables. Development of a database for the identification of phytochemicals

Funding entity: Andalusian Regional Ministry of Economy, Innovation, Science and Employment.

Reference: P11-AGR-07034 *Total amount:* 73,312.5 €.

Principal Investigator: Roberto Romero González

Start and end date: from 30/04/2013 to 29/04/2016

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any
Contracts

1. Environmental monitoring of Almería and Carboneras harbours in the Alquízar-Cabo de Gata environment. Port Authority of Almería, MEDGAZ S.A., RONCO y CIA S. L. & LÓPEZ GUILLÉN S. A. PI: Antonia Garrido Frenich. 01/01/2018-31/12/2022. 76,525 €. (Annual renewal contract since 2008).

2. Advice on the quality management complying with ISO 17025. Laboratorio Analítico Bioclínico (LAB), S. L. PI: Roberto Romero González. 01/07/2016-30/06/2017. 8470 €.

3. Validation of official analytical methods for the control of the Deretil S. A. biological wastewater treatment plant. DSM Deretil, S.A. PI: José Luis Martínez Vidal. 01/07/2016-30/06/2017. 19.481 €.

4. Improvement of the food safety monitoring pesticide residues in food from vegetal origin and veterinary drug residues in fishery products. Laboratorio Analítico Bioclínico (LAB), S.L. PI: José Luis Martínez Vidal. 01/08/2014-01/08/2016. 72,600 €.

Patentes

1 José Luis Martínez Vidal; Ignacio Fernández de las Nieves; Ana Belén Ruiz Muelle; Rosalía López Ruíz; Antonia Garrido Frenich; Roberto Romero González. P201600466. Deuterated compounds of flonicamid. Preparation procedure and use thereof. Spain. 27/06/2016. University of Almería.

2. Magnolia Grau Gálvez; Manuel Ángel Rodríguez Maresca; José Gutiérrez Fernández; Adolfo Sicilia Enríquez de Salamanca; Isabel María Reche Molina; Antonia Garrido Frenich; José Luis Martínez Vidal; Roberto Romero González; Antonio Sorlózano Puerto; Waldo Sánchez Yebra. P201330112. Kit, procedure and conditioning apparatus for chromatographic analysis of biological matrices. Spain. 31/01/2013. Andalusian Health Service, Universities of Granada and Almería.