



## CURRICULUM VITAE (CVA)

**IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.**

<b>Part A. PERSONAL INFORMATION</b>		<b>CV date</b>	17/10/2022
First name	<b>Ana</b>		
Family name	<b>Conejo-García</b>		
Gender (*)	<b>Female</b>	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	<b>aconejo@ugr.es</b>	URL Web	
Open Research and Contributor ID (ORCID)(*)	<b>0000-0001-5776-7315</b>		

(\*) Mandatory

### A.1. Current position

Position	<b>Professor of Organic Chemistry</b>		
Initial date	<b>04/11/2018</b>		
Institution	<b>University of Granada</b>		
Department/Center	<b>Department of Pharmaceutical and Organic Chemistry /Faculty of Pharmacy</b>		
Country	<b>Spain</b>	Teleph. number	
Key words	<b>Organic chemistry, synthesis, biological assays, anticancer drugs</b>		

### A.2. Previous positions (research activity interruptions, art. 45.2.c))

Period	Position/Institution/Country/Interruption cause
2007-2018	Associate Professor/ Spain
2007-2006	Assistant Professor/ Spain
2003-2005	Marie Curie Fellowship/ United Kingdom
2003	Postdoctoral researcher/ Spain

### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
<b>Graduate in Pharmacy</b>	<b>University of Granada</b>	<b>1998</b>
<b>Doctoral Thesis in Pharmacy</b>	<b>University of Granada</b>	<b>2002</b>

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

I obtained my **BSc in Pharmaceutical Sciences** at the University of Granada (UGR) in 1998. Then, I gained a competitive FPU fellowship from the Ministry of Education of Spain (MEC) in the Department of Medicinal and Organic Chemistry in the UGR to conduct my PhD. During this period, I carried out a medicinal chemistry project focused on ChoK inhibitors as anticancer compounds. Funded by MEC, I did a research stay at the University College of London (UK) under the supervision of Prof. Ganellin (2000). Once I obtained my **PhD** degree (2002, Summa cum Laude, **UGR PhD Extraordinary award**), I got a **postdoctoral** contract from UGR within my department. In 2003, I moved to the University of

Oxford (Chemistry Research Laboratory/ Department of Chemistry) funded by the Ramón Areces Foundation to conduct a postdoc at the Prof. Schofield group where I worked in a highly multidisciplinary group and I gained training in molecular modeling, protein purification, and kinetic assays. In 2004, I was awarded a prestigious grant from the European Commission (MEIF-CT-2003-500521). In 2006, I returned to the UGR as Assistant Professor at the Department of Pharmaceutical and Organic Chemistry, in 2009 I was promoted to Associate Professor and since 2018 I am Professor of Organic Chemistry.

During my research career, I have published **66 articles in peer-review international journals (18 D1, 37 Q1, 1st or last author in 30 of them)** highlighting: a) a publication in the prestigious journal *Cell*, led by Harvard University, in which we assessed one of the ChoK inhibitors to prove the role of lysophosphatidylcholine in the regulation of the sexual stage differentiation in *P. falciparum*; and b) a publication about the mechanism of allosteric coupling in ChoK $\alpha$ 1 caused by a rationally designed inhibitor in *Angew. Chem* that was featured as "VIP". I am also a co-author 3 papers in non-indexed scientific journals with a relative quality index, **5 book chapters** in prestigious international publishers, **4 patents** and 81 contributions presented at international (51) and national (30) conferences.

My research has been **funded by several grants** of different institutions European Union (1), Ministries of Economy and Competitiveness and Science and Innovation of Spain (6), Junta de Andalucía (5) and University of Granada (1) being the IP of 5 of them. The funding obtained has been **greater to one million and a half euros (1527972 €)**

We have established **different collaborations at the international level** with the Universities of Harvard (USA), Saint Andrews (UK), Oxford (UK), University College of London (UK), Bath (UK) Uppsala (Sweden), Bari (Italy), Vienna (Austria), Federal do Rio Grande do Sul (Brazil), Perugia (Italy), Milano (Italy) and Pavia (Italy) that **have resulted in several publications** (*Pharmaceutics* 2022, *Nanomedicine* 2021, *J Inh Enz Med Chem* 2021, *Eur J Pharm Sci* 2021, *Cell*. 2017, *Sci Rep*. 2016, *Angew Chem Int Ed Engl* 2013, *Chromatographia*, 2013, *ACS Chem Biol* 2013, *ChemMedChem* 2011, *J Med Chem* 2011, *Bioorg Med Chem* 2010, *Chem Commun* 2008, *Bioorg Med Chem* 2005, *Chem Commun* 2005, *J Org Chem* 2003).

I have participated in several **events to disseminate research to society** such as the Science Week and Women in Science organized by the UGR as well as divulgative scientific activities such as the Initiation Project to Research and Innovation in Secondary in Andalusia and the Scientific Summer Campus 2021 of the Ministry of Education to introduce science to the young generations.

Regarding the **training of young researchers** I have supervised two doctoral thesis (Dr. Rubio, 2012 and Dr. Morales, 2014) both with the highest rating and International Doctoral mention in official Doctoral Programs with Mention of Quality. To complete their formation Dr. Morales joined the groups of Prof. Ciufolini (University of Vancouver, Canada), Prof. Wallace (University of Aberdeen, United Kingdom), and Prof. Giordano (Sbarro Institute for Cancer Research and Molecular Medicine, Temple University, USA), and Dr. Rubio joined the groups of Prof. Bradley (University of Edinburgh, United Kingdom), Dr. Carragher (Edinburgh Research Cancer Center) and Dr. Unciti (Edinburgh Research Cancer Center). 12 papers and 1 patent were derived from Dr. Rubio thesis, she is currently associate professor in the UGR. 4 papers and 1 patent were derived from Dr. Morales thesis, she is currently Assistant Professor at the University of Seville. I am supervising the doctoral thesis of Jose M. Espejo. I have also supervised 4 bachelor's thesis in collaboration with the Universities of Vienna, Pavia and Milan and 9 final master's projects in Official Master's degrees from the UGR and with a quality mention.

I am **member of the Editorial Board** of the journals *Anticancer Agents in Medicinal Chemistry* and *Frontiers in Chemistry* since 2013. I have **evaluated research projects of the Ministry of Economy and Competitiveness** of the last calls 2020 and 2021.

## Part C. RELEVANT MERITS

### C.1. Publications

- 1) Espejo-Román JM, Rubio-Ruiz B, Cano-Cortés V, Cruz-López O, Gonzalez-Resines S, Domene C, **Conejo-García A**, Sánchez-Martín RM. Selective Anticancer Therapy Based on a HA-CD44 Interaction Inhibitor Loaded on Polymeric Nanoparticles. *Pharmaceutics*. 2022 Apr 4;14(4):788. doi: 10.3390/pharmaceutics14040788. ISI 2021: 39/279 (**Q1**) *Pharmacology & Pharmacy*; IF 6.525
- 2) Cruz-López O, Ner M, Nerín-Fonz F, Jiménez-Martínez Y, Araripe D, Marchal JA, Boulaiz H, Gutiérrez-de-Terán H, Campos JM, **Conejo-García A\***. Design, synthesis, HER2 inhibition and anticancer evaluation of new substituted 1,5-dihydro-4,1-benzoxazepines. *J Enzyme Inhib Med Chem*. 2021, 36(1), 1553-1563. doi: 10.1080/14756366.2021.1948841. ISI 2020: 14/62 (**Q1**) *Medicinal Chemistry*; IF 5.051.
- 3) Rubio-Ruiz B, Serrán-Aguilera L, Hurtado-Guerrero R\*, **Conejo-García A\***. Recent advances in the design of choline kinase  $\alpha$  inhibitors and the molecular basis of their inhibition. *Med. Res. Rev.* 2020, 41(2), 902-927. doi: 10.1002/med.21746. ISI 2020: 2/62 (**D1**) *Medicinal Chemistry*; IF 12.944
- 4) Brancucci NMB, Gerdt JP, Wang C, De Niz M, Philip N, Adapa SR, Zhang M, Hitz E, Niederwieser I, Boltryk SD, Laffitte MC, Clark MA, Grüning C, Ravel D, Blancke Soares A, Demas A, Bopp S, Rubio-Ruiz B, **Conejo-García A**, Wirth DF, Gendaszewska-Darmach E, Duraisingh MT, Adams JH, Voss TS, Waters AP, Jiang RHY; Clardy J, Marti M. Lysophosphatidylcholine Regulates Sexual Stage Differentiation in the Human Malaria Parasite *Plasmodium falciparum*. *Cell*. 2017, 171(7):1544.e15. doi: 10.1016/j.cell.2017.10.020. ISI 2017: 2/292 (**D1**) *Biochemistry and Molecular biology*; IF 31.957
- 5) Cruz-López O, Ramírez A, Navarro SA, García MA, Marchal JM, Campos JM, **Conejo-García A\***. 1-(Benzenesulfonyl)-1,5-dihydro-4,1-benzoxazepine as a new scaffold for the design of antitumor compounds. *Future Med Chem*. 2017, 9 (11), 1129-1140. ISI 2017: 9/59 (**Q1**) *Medicinal Chemistry*; IF 3.969
- 6) Serrán-Aguilera L, Denton H, Rubio-Ruiz B, López-Gutiérrez B, Entrena A, Izquierdo L, Smith TK\*, **Conejo-García A\***, Hurtado-Guerrero R\*. *Plasmodium falciparum* Choline Kinase Inhibition Leads to a Major Decrease in Phosphatidylethanolamine Causing Parasite Death. *Sci Rep*. 2016, 12;6:33189. doi: 10.1038/srep33189. ISI 2016: 10/64 (**Q1**) *Multidisciplinary Sciences*; IF 4.259
- 7) Ramírez A, Boulaiz H, Morata-Tarifa C, Perán M, Jiménez G, Picon-Ruiz M, Agil A, Cruz-López O, **Conejo-García A**, Campos JM, Sánchez A, García MA, Marchal JA. HER2-signaling pathway, JNK and ERKs kinases, and cancer stem-like cells are targets of Bozopinib. *Oncotarget*. 2014, 5(11):3590-606. doi: 10.18632/oncotarget.1962. ISI 2014: 21/211 (**D1**) *Oncology*; IF 6.359
- 8) Rubio-Ruiz B, Figuerola-Conchas A, Ramos-Torrecillas J, Capitán-Cañadas F, Ríos-Marco P, Carrasco MP, Gallo MÁ, Espinosa A, Marco C, Ruiz C, Entrena A\*, Hurtado-Guerrero R\*, **Conejo-García A\***. Discovery of a new binding site on human choline kinase  $\alpha$ 1: design, synthesis, crystallographic studies, and biological evaluation of asymmetrical bispyridinium derivatives. *J Med Chem*. 2014, 57(2):507-15. doi: 10.1021/jm401665x. ISI 2014: 3/59 (**D1**) *Medicinal Chemistry*; IF 5.447
- 9) Rubio-Ruiz B, Castillo-Acosta VM, Pérez-Moreno G, Espinosa A, González-Pacanowska D, Ruiz-Pérez LM, Entrena A\*, **Conejo-García A\***. In vitro antiplasmodial and cytotoxic activities of asymmetrical pyridinium derivatives. *Eur J Med Chem*. 2014, 85:289-92. doi: 10.1016/j.ejmech.2014.07.105. ISI 2014: 11/59 (**Q1**) *Medicinal Chemistry*; IF 3.447.
- 10) Sahún-Roncero M, Rubio-Ruiz B, Saladino G, **Conejo-García A**, Espinosa A, Velázquez-Campoy A, Gervasio FL, Entrena A, Hurtado-Guerrero R. The Mechanism of Allosteric Coupling in Choline Kinase  $\alpha$ 1 Revealed by the Action of a Rationally Designed Inhibitor. *Angew Chem Int Ed Engl*. 2013; 52(17):4582-6. doi: 10.1002/anie.201209660. ISI 2013 11/148 (**D1**) *Multidisciplinary Chemistry*; IF 11.336

## C.2. Research projects

- 1) Development of a new nanotechnology platform for antitumor therapy based on CD44 inhibition (**Principal Investigator**). Ministry of Science and Innovation (PID2021-128109OB-I00). 2023-2025. 127.050 euros
- 2) Synthesis of lipophenols with anticancer activity from bioactive compounds from food by-products (**Principal Investigator**). Ministry of Ecological Transition (TED2021-132047B-I00). 2022-2024. 149.500 euros
- 3) Design, synthesis, biological evaluation and targeted release of CD44 inhibitors: a promising antitumor therapy (**Principal Investigator**). Junta de Andalucía (P18-RT-1679). 2020-2022. 140.500 euros
- 4) Development of a nanotechnology platform for in situ cell reprogramming using peptide nucleic acid based gene editing. Junta de Andalucía (P18-TP-4160). 2020-2022. 138.575 euros
- 5) Nano3Devices: Multifunctionalized Nanosystem with Theranostic Application in Cancer Ministry of Science and Innovation and Universities, Carlos III Health Institute (DTS18/00121) 2018-2020. 78,650 euros
- 6) Development of a Theranostic Antitumour Nanosystem based on CD44 inhibitors (**Principal Investigator**). UGR Research and Transfer Plan. University of Granada (PR/17/006) 2018-2020. 15.000 euros
- 7) Improvement of the anticancer activity of bozepinib, bozinib and derivatives, by introducing the trifluoromethyl group. Junta de Andalucía (CS2016.1) 2017-2018. 15,000 euros
- 8) Innovative 5-Fluorouracil O,N-Acetals and di- and tri-substituted Purine derivatives as pharmacological tools for the treatment of Cancer Stem Cells. Ministry of Science and Innovation, Carlos III Health Institute (10/00592) 2011-2013. 93.775 euros
- 9) Design of Drugs with antiproliferative activity: new improved choline kinase inhibitors. Junta de Andalucía (Excellence Project P07-CTS-032190) 2008-2011. 297.668 euros
- 10) Choline Kinase: An Important Target for Cancer, Malaria and Filariasis. Ministry of Science and Innovation (HD2008-0028) 2009-2010. 11.700 euros

## C.3. Institutional responsibilities

- 1) Vicedean of Academic Affairs of the Faculty of Pharmacy (UGR) Start date: June 12, 2021
- 2) Vicedean of Research, Development and Innovation of the Faculty of Pharmacy (UGR) Start date: May 18, 2017 – final date: June 11, 2021
- 3) Elected member of the "Governing Council" of the Faculty of Pharmacy of the University of Granada, Start date: April 20, 2016
- 4) Elected member of the "Faculty of Pharmacy Board" of the University of Granada, Start date: December 2, 2015
- 5) Member of the Steering Committee of the Department of Medicinal and Organic Chemistry (UGR), Start date: October 27, 2010

## C.4. Conference Organisation

- 1) Member of the Organising Committee of IX SEQT workshop "New perspectives and emerging Technologies in drug discovery" Baeza (Spain), 11-12 November 2010
- 2) Member of the Organising Committee of the "Global Summit on Medicinal Chemistry 2018: Current Advancements and its Applications in Medicinal Chemistry" Amsterdam (Netherlands), 30-31 July 2018
- 3) Member of the Organising Committee of the "V Chemical Biology Group Meeting" Granada (Spain), 19-21 February 2020

<b>CV Date</b>	14/10/2022
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## Part A. PERSONAL INFORMATION

First Name *	Juan Jose		
Family Name *	Diaz Mochon		
Sex *	Male	Date of Birth *	
ID number Social Security, Passport *		Phone Number *	
URL Web			
Email Address	juandiaz@ugr.es		
Researcher's identification number	Open Researcher and Contributor ID (ORCID) *	0000-0002-3599-1954	
	Researcher ID	A-4297-2009	
	Scopus Author ID		

\* Mandatory

### A.1. Current position

Job Title	Profesor Titular de Universidad		
Starting date	2019		
Institution	Universidad de Granada		
Department / Centre			
Country		Phone Number	
Keywords	Sample screenings; Solid phase synthesis; Nanomaterials; Biocompatible materials; Biomaterials		

### A.2. Previous positions

Period	Job Title / Name of Employer / Country
2017 - 2019	Profesor contratado Doctor / Universidad de Granada
2011 - 2017	Investigador contratado Ramon y Cajal / Universidad de Granada
2011 - 2011	Founder & Chief Scientific Officer / DestiNA Genomics Ltd.
2008 - 2010	Research Fellow / The University of Edinburgh
2005 - 2008	Postdoctoral Research Assistant / The University of Edinburgh
2003 - 2005	Postdoctoral Research Assistant / The University of Southampton
2002 - 2003	Postdoctoral Scientific Visitor / The University of Southampton
2001 - 2002	Postdoctoral researcher / Universidad de Granada
1997 - 2001	Predocctoral Fellow / Universidad de Granada
2011 -	Honorary Fellow / University of Edinburgh

### A.3. Education

Degree/Master/PhD	University / Country	Year
Farmacia	Universidad de Granada	2001
Licenciado en Farmacia	Universidad de Granada	1996

### A.4. General quality indicators of scientific production

H-index 24; Total cites 1,406 . Con 67 PUBLICACIONES CIENTÍFICAS en revistas científicas indexadas en el Journal Citation Reports del SCI de las cuales el 80% son Q1 80% y 65% D1.

## Part B. CV SUMMARY

Juan J. Díaz-Mochón holds a PhD in Pharmacy from the University of Granada. In 2002 he started a post-doctoral stay at the Combinatorial Center of Excellence in Southampton (England) which lasted until 2005. That year he joined the Mark Bradley Group as Senior Researcher at the University of Edinburgh (Scotland). In 2008, he obtained his first project as an IP that allowed him to develop the use of dynamic chemistry for reading DNA, being the inventor of the patent that protects this technology. In 2010 he founded DestiNA Genomics Ltd. in Scotland with the aim of exploiting this patent, being founding partner, CSO and Director. At the end of 2011, he joined the University of Granada as a Ramón y Cajal Researcher working in the NanoChemBio Research Group whose research laboratory is located in the GENYO Center located in the Health Science Technology Park (PTS) Granada. In this area, he coordinates several multidisciplinary and intersectoral projects focused on the development of chemical and biotechnological platforms, such as the development of new diagnostic tools based on nucleic acid detection, SMART biomaterials for cell and protein modulation, and the design and synthesis of enzymatic inhibitors as antitumor agents. and antiparasitics, preparation of molecular sensors and the detection and molecular characterization of CTCs for the prognostic and diagnosis of cancer. In 2012, he helped incorporate DestiNA Genomica S.L. in Spain as a subsidiary of the Scottish company. DestiNA successfully closed a capital increase of € 1.2m in July 2015. Dr. Diaz Mochón is a member of the organizing committee of the First International Symposium on LIQUID BIOPSIES 2016 and co-founder of the International Society of Liquid Biopsy. In January 2017 he was promoted to Profesor Contratado Doctor of the University of Granada. Two years later , Feberay 2019 he become a Profesor Titular of the University of Granada. Member of Prospective European Drug-Induced Liver Injury Network (COST ACTION CA17112) and participants in Identifying Biomarkers Through Translational Research for Prevention and Stratification of Colorectal Cancer (COST ACTION CA17118).

## Part C. RELEVANT ACCOMPLISHMENTS

### C.1. Publications

AC: corresponding author. (n<sup>o</sup> x / n<sup>o</sup> y): position / total authors. If applicable, indicate the number of citations

- 1 **Scientific paper.** A Delgado-Gonzalez; JA Laz-Ruiz; MV Cano-Cortés; YW Huang; VD Gonzalez; JJ Diaz-Mochon; Wendy J Fantl; Rosario M Sanchez-Martin. 2022. Hybrid Fluorescent Mass-Tag Nanotrackers as Universal Reagents for Long-Term Live-Cell Barcoding. *Anal Chem.* 94-30, pp.10626-10635.
- 2 **Scientific paper.** Maria Victoria Cano-Cortés; Patricia Altea-Manzano; Jose Antonoi Laz-Ruiz; Juan Diego Unciti-Broceta; Francisco Javier Lopez-Delgado; Jose M. Espejo-Roman; Juan Jose Diaz-Mochon; Rosario M Sanchez-Martin. 2021. An effective polymeric nanocarrier that allows for active targeting and selective drug delivery in cell coculture systems *Nanoscale. ACS.* 13-6, pp.3500-3511.
- 3 **Scientific paper.** Juan Jose Diaz Mochon; Rosario M Sanchez Martin; Antonio Fara; et al;. 2021. Development of a nanotechnology-based approach for capturing and detecting nucleic acids by using flow cytometry *Talanta.* 226, pp.122092.
- 4 **Scientific paper.** MJ Serrano; MC Garrido-Navas; JJ Diaz.Mochon; et al;. 2020. Precision Prevention and Cancer Interception: The New Challenges of Liquid Biopsy *Cancer Discov.*10-11, pp.1635-1644.
- 5 **Scientific paper.** Christian Rolfo; Andrés F Cardona; Massimo Cristofanilli; et al;. 2020. Challenges and opportunities of cfDNA analysis implementation in clinical practice: Perspective of the International Society of Liquid Biopsy (ISLB) *Crit Rev Oncol Hematol.*151, pp.102978..
- 6 **Scientific paper.** Consuelo Ripoll; Mar Roldan; Rafael Contreras-Montoya; Juan Jose Diaz-Mochon; Miguel Martin; Maria J Ruedas-Rama; Angel Orte. 2020. Mitochondrial pH Nanosensors for Metabolic Profiling of Breast Cancer Cell Lines *Int J Mol Sci.*21-10, pp.3731.

- 7 **Scientific paper.** Barbara López-Longarela; Emma E Morrison; John D Tranter; et al;. 2020. Direct Detection of miR-122 in Hepatotoxicity Using Dynamic Chemical Labeling Overcomes Stability and isomiR Challenges *Anal Chem.* 92-4, pp.3388-3395.
- 8 **Scientific paper.** M Victoria Cano-Cortes; Saúl A Saúl Abenhamar Navarro-Marchal; Maria Paz Ruiz-Blas; Juan Jose Diaz-Mochon; Juan Antonio Marchal-Corrales; Rosario M Sanchez-Martin. 2020. A versatile theranostic nanodevice based on an orthogonal bioconjugation strategy for efficient targeted treatment and monitoring of triple negative breast cancer *Nanomedicine.* 24, pp.102120.
- 9 **Scientific paper.** Antonio Martin-Romero; Mavys Tabraue-Chavez; James W Dear; et al;. 2020. Amplification-free profiling of microRNA-122 biomarker in DILI patient serums, using the luminex MAGPIX system *Talanta.* 219, pp.121265.
- 10 **Scientific paper.** Mavys Tabraue-Chávez; M Angelica Luque-Gonzalez; Antonio Marin-Romero; Rosario M Sanchez-Martin; Pablo Escobedo-Araque; Salvatore Pernagallo; Juan Jose Diaz-Mochon. 2019. A colorimetric strategy based on dynamic chemistry for direct detection of Trypanosomatid species *Scientific Reports.* 9, pp.3696.
- 11 **Scientific paper.** Antonio Delgado González; Agustín Robles Remacho; Antonio Marín Romero; et al;. 2019. PCR-free and chemistry-based technology for miR-21 rapid detection directly from tumour cells *Talanta. ScienceDirect.* 200, pp.51-56.
- 12 **Scientific paper.** Simone Detassis; Margherita Grasso; Mavys Tabraue Chavez; et al;. 2019. New Platform for the Direct Profiling of microRNAs in Biofluids *Analytical Chemistry. ACS Publications.* 91-9, pp.5874.
- 13 **Scientific paper.** Pedro Romero Palacios; Bernardino Alcázar Navarrete; Juan José Díaz Mochón; et al;. 2019. Liquid biopsy beyond of cancer: Circulating pulmonary cells as biomarkers of COPD aggressivity *Critical Reviews in Oncology/Hematology. ScienceDirect.* 136, pp.31-36.
- 14 **Scientific paper.** Mavys Tabraue Chavez; María Angelica Luque Gonzalez; Antonio Marin Romero; Rosario María Sánchez Martín; Pablo Escobedo Araque; Salvatore Pernagallo; Juan Jose Diaz Mochon. 2019. A colorimetric strategy based on dynamic chemistry for direct detection of Trypanosomatid species *Scientific Reports. Springer Nature Publishing AG.* 9, pp.3696.

### C.3. Research projects and contracts

- 1 **Project.** Nano-GE-PNA-Desarrollo de una plataforma nanotecnológica para reprogramación celular in situ mediante edición génica basada en ácido nucleicos peptídicos. Rosario M Sanchez-Martin. (University of Granada). 20/10/2020-19/10/2023. 141.764,71 €.
- 2 **Project.** Una nueva plataforma de diagnóstico de biopsia líquida: detección COMBO de proteínas y ARN en exosomas individuales. Proyectos del Plan Nacional 2019. Rosario M Sanchez Martin. (University of Granada). 01/06/2020-31/05/2023. 157.300 €.
- 3 **Project.** Desarrollo de un nanodispositivo multifuncional para generar células T Reprogramadas como inmunoterapia frente al cáncer. Universidad de Granada; PROYECTOS DE I+D+i EN EL MARCO DEL PROGRAMA OPERATIVO FEDER ANDALUCÍA 2014-2020.. Rosario María Sánchez Martín. (Universidad de Granada). 31/12/2019-31/12/2021. 15.200 €.
- 4 **Project.** Nano3Devices: Nanosistema multifuncionalizado con aplicación teranóstica en cáncer.. Instituto de Salud Carlos III. Rosario María Sánchez Martín. (Universidad de Granada). 01/01/2019-31/12/2020. 78.650 €.
- 5 **Project.** Accurate, Rapid, Robust & Economical DiagnoStic Technologies for TuBerculosis (ARREST-TB). European Commission's Horizon 2020 research and innovation programme. (University of Edinburgh). 01/01/2019-21/12/2020. 4.438.898,75 €.
- 6 **Project.** : Implementation of a novel integrated platform to monitor tumour heterogeneity as a crucial determinant for individualized diagnostic and therapeutic outcome.. Juan Jose Diaz Mochon. (ibs.GRANADA). 01/01/2017-31/12/2019. 493.625 €.
- 7 **Project.** Análisis multiparamétrico mediante citometría de masas (CyTOF) de células tumorales circulantes: valor predictivo y pronóstico de la detección y caracterización de subpoblaciones de células tumorales circulantes como biomarcadores en pacientes afectos de. Juan Jose Diaz Mochon. (FPS-Centro GENYO). 20/07/2017-20/02/2019. 150.000 €.

- 8 **Contract.** Automatización y desarrollo de sistemas de diagnóstico molecular multiplex para detección de paneles de marcadores ARN/ADN y proteínas en las áreas de patología infecciosa y alergología. Rosario MAría Sanchez Martin. From 01/12/2015. 39.809 €.
- 9 **Contract.** DESARROLLO DE KITS DE DIAGNÓSTICO MOLECULAR BASADOS EN PCR MULTIPLEX PARA IDENTIFICACIÓN DE MUTACIONES PUNTUALES EN PATOLOGÍAS TUMORALES E INFECCIOSAS, APLICANDO LA TECNOLOGÍA SMART-NUCLEOBASE, SOBRE UNA PLATAFORMA DE HIBRIDACIÓN REVERSA POR FLUJO Juan Jose Diaz Mochon. From 16/10/2014.
- 10 **Contract.** Optimización de estrategias de liberación de fármacos Juan Jose Diaz Mochon. From 31/07/2013.

#### C.4. Activities of technology / knowledge transfer and results exploitation

- 1 Rosario M. Sanchez Martin; Juan Antonio Marchal Corrales; Juan Jose Diaz Mochon; Victoria Cano Cortes; Saul Abenhamar Navarro Marchal; Maria Paz Ruiz Blas. P201830360. NANOPARTÍCULAS MULTIFUNCIONALES PARA TERAGNOSIS Spain. 12/04/2018. Universidad de Granada.
- 2 Emilio Garcia Fernandez; Teresa Valero Griñan; Angel Orte Gutierrez; Rosario M Sanchez Martín; Antonio Delgado Gonzalez; Juan Jose Diaz Mochon. P201730777. Sondas Duales para Citometría de Flujo y Citometría de Masas Spain. 07/06/2017. Universidad de Granada.
- 3 Barbara Lopez Longarela; David Rissin; Hugh Ylline; Salvatore Pernagallo; David Duffy; Juan Jose Diaz Mochon. US62512450. Single Molecule Detection And Quantification Of Nucleic Acids With Single Base Specificity United States of America. 30/05/2017. DestiNA Genomics Ltd. and Quanterix Inc..
- 4 Pedro Romero Palacios; Juan Jose Diaz Mochon; Jose Antonio Lorente Acosta; Diego de Miguel Perez; Maria Jose Serrano Fernandez; B Alcazar Navarrete. P201730724. Aislamiento de Células de Origen Epitelial Circulantes en Sangre Periférica Spain. 24/05/2017. Servicio Andaluz de Salud (SAS) - Universidad de Granada.
- 5 Juan Jose Diaz Mochon; Marco Antonio Fara; Mavys Tabraue Chavez; Salvatore Pernagallo; Hugh Ylline. ES201630948 - GB1616556.5. Improved PNA Probe Spain. 12/07/2016. DestiNA Genomica SL.
- 6 Luis Alvarez de Cienfuegos; JA Gavira Gallardo; Juan Jose Diaz Mochon; MT Conejero Muriel; Rafael Contreras Montoya. PCT/EP2017/060842;- ES201630584. Pharmaceutically active protein crystals grown in-situ within a hydrogel Spain. 05/05/2016. Universidad de Granada.
- 7 Maria Jose Serrano Fernandez; Juan Jose Diaz Mochon; FG Ortega; JA Lorente Acosta; Jose Luis Garcia Puche; Maria Paz Ruiz Blas; Rosario Maria Sanchez Martin. P201431357. Procedure to detect circulating tumor cells, both circulating tumors cells of epithelial phenotype and circulating tumour cells having Epithelial-mesenchymal transition markers (EMTs), by using miRNA-21 as a biomarker Spain. 18/09/2014. Servicio Andaluz de Salud (SAS) y Universidad de Granada.
- 8 Ignacio Molina Pineda de las Infantas; Sara Torres Rusillo; Pedro Fernandez; Maria Jose Pineda de las Infantas y Villatoro; Juan Jose Diaz Mochon; Asier Unciti Broceta. PCT/ES2015/070203; ES2548927-A1. New purine derivative, useful for preparing pharmaceutical composition or medicament for treating disease or condition mediated by death-associated protein kinase 1 (DAPK1), preferably cancer and leukemia Spain. 21/03/2014. Universidad de Granada and University of Edinburgh.
- 9 DC Hay; JP Iredale; Mark Bradley; Juan Jose Diaz Mochon; Salvatore Pernagallo. WO2010106345-A1 ; CA2755874-A1 ; EP2408902-A1 ; US2012052525-A1 ; JP2012520667-W. Polymer useful for binding or adhering hepatocyte cells e.g. functional hepatocytes obtained from liver, substrate for culturing cells and bioartificial liver or detoxifier, comprises polyurethane United Kingdom. 20/03/2009. The University Court of the University of Edinburgh.
- 10 Mark Bradley; Juan Jose Diaz Mochon. WO/2009/037473 PCT/GB2008/003185. Nucleobase Characterisation United Kingdom. 17/09/2007. The University Court of the University of Edinburgh.



## BRIEF BIOGRAPHY

Asier Unciti-Broceta (DOB: [REDACTED]) is Professor of Medicinal Chemistry at the University of Edinburgh (UoE), where he created the Innovative Therapeutics Lab at the Cancer Research UK Edinburgh Centre in 2010. His group explores novel chemical strategies to improve the treatment of cancer. See the Unciti-Broceta lab's website for more information at [www.boomchemistry.com](http://www.boomchemistry.com)

## PROFESSIONAL HISTORY & EDUCATION

- 2018 Chair of Medicinal Chemistry, CRUK Edinburgh Centre, UoE, UK.
- 2015 Reader of Medicinal Chemistry, CRUK Edinburgh Centre, UoE, UK.
- 2010 Academic Fellow / Group Leader, CRUK Edinburgh Centre, UoE, UK.  
Chief Scientific Officer, Deliverics Limited, Glasgow, UK.
- 2008 Scottish Enterprise Research Fellow, School of Chemistry, UoE, UK.
- 2005 Postdoc, School of Chemistry, UoE, UK. Supervisor: Prof M. Bradley.
- 2004 PhD, Medicinal Chemistry, Univ. of Granada (*Magna cum Laude*). Supervisor: Prof A. Espinosa.
- 1999 MPharm, Pharmaceutical Sciences, Univ. of Granada, Granada, Spain (*1st Class Honours*).

## CAREER HIGHLIGHTS

- Research funding: >£5M as PI (*e.g. EPSRC Healthcare Technology Challenge Award, CRUK Pioneer Award, 5x H2020-MSCA-IF, H2020-MSCA-ITN THERACAT, etc.*) and >£6M as Co-I.
- Distinctions: RSE Young Academy of Scotland Emeritus Member (2018), RSE/Patrick Neill Medal 2016, Fellow of the RSC (2015), RSE Young Academy of Scotland (2013), RSC Young Industrialist of the Year Award 2012, Nexxus Most Promising Young Life Science Company of 2011 (awarded to Deliverics Ltd) and Nexxus Young Life Scientist of the Year Award 2010.
- Supervisor of 13 graduated MSc (5) and PhD students (9).
- Full-time lab members (current): 5 postdocs and 6 PhD students.
- Examiner of >25 PhD candidates (Aberdeen, Newcastle, Birmingham, Cardiff, Granada, etc.).
- Founder, Organizer and Chair of the *Bioorthogonal & Bioresponsive* symposium series: 7-8 Jun 2017 (*1st Edition*), 6-7 Jun 2019 (*2nd Edition*) and 16 June 2021 (*3rd Edition*).
- Invited speaker at >75 scientific meetings and research centres, e.g. Pacificchem2015, EuroBIC14, 3x ACS National Meetings, RSEQ Biennial 2019, UCRA 2019 (Plenary speaker), CHAINS 2019, Master Química Médica 2020 (inaugural speaker, online), JBIC Symposium 2021 (online).
- Editorial Board member of *Front. Chem.* (2014-17) and *Sci. Rep.* (2015-18).
- Scientific Advisory Board member of *Therap. Deliv.* (2012-15) and *Bioconj. Chem.* (2019-).
- Translational track-record:
  - Principal inventor of 7 international patents (4 granted and licensed)
  - Founder and CSO of Deliverics Ltd
  - Commercial products: SAFectin™ Transfection Reagent series (Deliverics Ltd), mTOR kinase inhibitor eCF309 (Tocris, Axon Medchem), and SRC inhibitor eCF506 (Licensed to Nuvectis Pharma, largest licence deal in the history of the UoE)

## PUBLICATIONS & PATENTS

Number of publications & patents: 79 (71 + 8)

- M. C. Ortega-Liebana, [...], & A. Unciti-Broceta.\* Truly-biocompatible gold catalysis enables vivo-orthogonal intra-CNS release of anxiolytics. **Angew. Chemie Int. Ed.**, 2022, 61, e202111461.
- C. Temps, [...], & A. Unciti-Broceta.\* A Conformation Selective Mode of Inhibiting SRC Improves Drug Efficacy and Tolerability. **Cancer Research**, 2021, 81, 5438-5450.
- M. Sancho-Albero, [...], J. Santamaría\* & A. Unciti-Broceta.\* Cancer-derived exosomes loaded with ultrathin palladium nanosheets for targeted bioorthogonal catalysis. **Nat. Catal.**, 2019, 2, 864-72. *Altmetric ranked #4 of all research works ever published in Nat. Catal.*
- A. Pérez-López, [...], J. Santamaría\* & A. Unciti-Broceta.\* Gold-Triggered Uncaging Chemistry in Living Systems. **Angew. Chemie Int. Ed.**, 2017, 56, 12548-52. *INSIDE COVER. Altmetric ranked #14 of all research works ever published in Angew. Chemie.*
- J. Weiss, [...], A. Unciti-Broceta\*. Extracellular Pd-catalyzed dealkylation of 5-fluoro-1-propargyl-uracil as a bioorthogonally-activated prodrug approach. **Nat. Commun.**, 2014, 5, 3277. *Featured in C&EN.*

Fecha del CVA	14/10/2022
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## Parte A. DATOS PERSONALES

Nombre *	Rosario María		
Apellidos *	Sánchez Martín		
Sexo *	Mujer	Fecha de Nacimiento *	
DNI/NIE/Pasaporte *		Teléfono *	
URL Web	sl.ugr.es/UGRNanoChemBio		
Dirección Email	rmsanchez@ugr.es		
Identificador científico	Open Research and Contributor ID (ORCID) *	0000-0001-8912-9799	
	Researcher ID	F-3423-2010	
	Scopus Author ID		

\* Obligatorio

## A.2. Situación profesional anterior

Periodo	Puesto / Institución / País
2011 - 2011	Lecturer / Universidad de Granada
2006 - 2010	Academic researcher _Royal Society research Fellow / University of Edinburgh
2005 - 2005	Postdoctoral Research Assistant / University of Edinburgh
2002 - 2005	Postdoctoral Research Assistant / University of Southampton
1999 - 2002	Becaria predoctoral / Universidad de Granada
1997 - 1999	Tesina de Licenciatura / Universidad de Granada
2011 -	Group leader NANO-CHEM-BIO lab (CTS987) / Universidad de Granada- Centro de investigación GENYO

## A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Pharmacy_Medicinal & Organic Chemistry	Universidad de Granada	2002

## Parte B. RESUMEN LIBRE DEL CURRÍCULUM

Mis principales logros científico-técnicos y la actividad investigadora, obtenidos durante los últimos 20 años, se desarrollan en el área de la nanotecnología en biomedicina, y se centran en el desarrollo de plataformas basadas en la nanotecnología para el diagnóstico y la medicina personalizada. Los conocimientos adquiridos han sido comunicados/presentados en 61 publicaciones en revistas de alto nivel (51 Q1), incluyendo Nature Chem (IF: 26,76), Nature Protocols (IF: 13,47), Acc Chem Res (IF: 24,37), entre otras, siendo autor de correspondencia de 20 de ellas. He alcanzado 1.389 citas para 955 documentos y un índice h de 23 (datos SCOPUS), y he participado en más de 40 congresos internacionales, incluyendo 25 comunicaciones orales (10 charlas como ponente invitado). He obtenido más de 996.678,46 € en proyectos nacionales e internacionales en los últimos 5 años. Desde 2012 soy investigadora principal y líder del grupo de investigación NanoChemBio, en el Centro de Genómica e Investigación Oncológica (GENYO).

- Mi contribución a la sociedad incluye colaboraciones con el sector privado, como los contratos de I+D con una biotecnológica internacional, DestiNA Genomics Ltd., para desarrollar nuevas herramientas químicas inteligentes para detectar ácidos nucleicos para aplicaciones de diagnóstico; o la relación comercial con Fidia Farmaceutici spa (Italia) para explotar una de las cuatro patentes de las que soy coinventora. Además, fundé NanoGetic SL, una empresa emergente de nanotecnología, en 2013, siendo Jefe del Consejo Científico Asesor desde entonces. También he establecido estrechas colaboraciones con clínicos y expertos en biomedicina locales y nacionales. He participado en numerosas actividades de divulgación, como la Noche Europea de los Investigadores, la Semana de la Ciencia en Andalucía y el evento internacional de divulgación Pint of Science.

- Tengo experiencia en la formación de jóvenes investigadores/as, supervisando en los últimos 5 años a 7 investigadores postdoctorales, 12 estudiantes de doctorado, incluyendo un programa de doctorado internacional con la Universidad de Catania (Italia), y 15 estudiantes de máster. También participo en el Programa de Mentores de la UGR, soy miembro del comité de organización de las conferencias científicas organizadas en GENyO y del master en Investigación Traslacional de la UGR, así como miembro de las acciones COST Nano2clinic y DARTER, de la Plataforma Europea de Nanomedicina (ETPN) y de la red NanoCARE. También he sido miembro del Consejo Asesor Editorial de la revista Anticancer Agents Med Chem. (2017-2019), y he participado en la evaluación de las convocatorias Juan de la Cierva Incorporación 2019, 'Innovative Training Networks' H2020-MSCA-ITN-2018, Programa Estatal Proyectos de I+D+i Retos Investigación 2017 y Ayudas a proyectos de Investigación 2017 de la Consejería de Educación de Castilla-La Mancha.
- Me doctoré en Farmacia en 2002 y pasé 9 años en el Reino Unido, primero como becario postdoctoral en la Universidad de Southampton y luego, en 2006, como investigador independiente en la Universidad de Edimburgo. Allí ocupé un puesto académico en la Facultad de Química, siendo premiado con la prestigiosa beca Dorothy Hodgkin de la Royal Society. En 2011 me trasladé a la UGR, donde ascendí a Profesora Titular tras un proceso competitivo. Ese mismo año se me concedió una beca de reintegración Marie Curie CIG.

## Parte C. MÉRITOS MÁS RELEVANTES

### C.1. Publicaciones

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

- 1 **Artículo científico.** Antonio Delgado Gonzalez; Jose Antonio Laz Ruiz; Maria Victoria Cano Cortés; Ying-Wen Huang; Veronica D Gonzalez; Juan Jose Díaz Mochon; Wendy J Fantl; Rosario M Sanchez Martin. 2022. Hybrid Fluorescent Mass-Tag Nanotrackers as Universal Reagents for Long-Term Live-Cell Barcoding Analytical Chemistry. ACS Publications. 94-30, pp.10626-10635.
- 2 **Artículo científico.** Araceli Aguilar Gonzalez; Juan Elias Gonzalez Correa; Eliana Barriocanal Casado; et al;. 2022. Isogenic GAA-KO Murine Muscle Cell Lines Mimicking Severe Pompe Mutations as Preclinical Models for the Screening of Potential Gene Therapy Strategies Int J Mol Sci. MDPI. 23-11, pp.6298.
- 3 **Artículo científico.** JoseM Espejo Román; Belen Rubio Ruiz; M Victoria Cano Cortes; Olga Cruz Lopez; Saul Gonzalez Resines; Carmen Domene; Ana Conejo Garcia; Rosario M Sanchez Martin. 2022. Selective Anticancer Therapy Based on a HA-CD44 Interaction Inhibitor Loaded on Polymeric Nanoparticles Pharmaceutics. MDPI. 14-4, pp.788.
- 4 **Artículo científico.** M. Victoria Cano-Cortés; Patricia Altea Manzano; Jose A. Laz-Ruiz; Juan Diego Unciti-Broceta; Francisco J. Lopez Delgado; Jose M. Espejo Roman; Juan Jose Diaz-Mochon; Rosario M. Sanchez-Martin. 2021. An effective polymeric nanocarrier that allows for active targeting and selective drug delivery in cell coculture systems Nanoscale. Royal Society of Chemistry. 13, pp.3500-3511.
- 5 **Artículo científico.** Agustin Robles Remacho; M Angelica Luque Gonzalez; Roberto Gonzalez Casin; et al;. 2021. Development of a nanotechnology-based approach for capturing and detecting nucleic acids by using flow cytometry Talanta. 226, pp.122092.
- 6 **Artículo científico.** Antonio Marín Romero; Mavys Tabraue-Chávez; James W. Dear; et al;. 2020. Amplification-free profiling of microRNA-122 biomarker in DILI patient serums, using the luminex MAGPIX system Talanta. Elsevier. 219, pp.121265.
- 7 **Artículo científico.** 2020. Development of Cellular Models to Study Efficiency and Safety of Gene Edition by Homologous Directed Recombination Using the CRISPR/Cas9 System.Cells. MDPI. 9, pp.1492.
- 8 **Artículo científico.** Maria Victoria Cano Cortés; Jose Antonio Laz Ruiz; Juan Jose Díaz Mochon; Rosario M. Sanchez Martin. 2020. Characterization and Therapeutic Effect of a pH Stimuli Responsive Polymeric Nanoformulation for Controlled Drug Release Polymers. MDPI. 12(6)-doi.org/10.3390/poly.

- 9 **Artículo científico.** María Victoria Cano Cortés; Saúl Abenhamar Navarro Marchal; María Paz Ruíz Blas; Juan José Díaz Mochón; Juan Antonio Marchal Corrales; Rosario María Sánchez Martín. 2020. A versatile theranostic nanodevice based on an orthogonal bioconjugation strategy for efficient targeted treatment and monitoring of triple negative breast cancer *Nanomedicine: Nanotechnology, Biology and Medicine*. Elsevier. 24, pp.102120.
- 10 **Artículo científico.** Antonio Delgado González; Agustín Robles Remacho; Antonio Marín Romero; et al;. 2019. PCR-free and chemistry-based technology for miR-21 rapid detection directly from tumour cells. *Talanta*. ScienceDirect. 200, pp.51-56.
- 11 **Artículo científico.** Mavys Tabraue Chávez; María Angélica Luque González; Antonio Marín Romero; Rosario María Sánchez Martín; Pablo Escobedo Araque; Salvatore Pernagallo; Juan José Díaz Mochón. 2019. A colorimetric strategy based on dynamic chemistry for direct detection of Trypanosomatid species *Scientific Reports*. Nature Publishing Group. 9, pp.3696.
- 12 **Artículo científico.** Antonio Marín Romero; Agustín Robles Remacho; Mavys Tabraue Chavez; et al;. 2018. A PCR-free technology to detect and quantify microRNAs directly from human plasma. *Analyst*. Royal Society Chemistry. 143-23, pp.5676-5682.
- 13 **Artículo científico.** Teresa Valero; Antonio Delgado González; Juan Diego Unciti Broceta; María Victoria Cano Cortés; Ana María Pérez López; Asier Unciti Broceta; Rosario María Sánchez Martín. 2018. Drug "Clicking" on Cell-Penetrating Fluorescent Nanoparticles for In Cellulo Chemical Proteomics. *Bioconjugate Chemistry*. ACS Publications. 29-9, pp.3154-3160.
- 14 **Artículo científico.** Antonio Delgado Gonzalez; Emilio Garcia Fernandez; Teresa Valero; et al;. 2018. Metallofluorescent Nanoparticles for Multimodal Applications. *ACS Omega*. ACS Publications. 3-1, pp.144-153.
- 15 **Reseña.** Antonio Delgado Gonzalez; Rosario María Sanchez Martin. 2020. Mass Cytometry Tags: Where Chemistry Meets Single-Cell Analysis *Anal Chem*. 93-2, pp.657-664.

### C.3. Proyectos y Contratos

- 1 **Proyecto.** DiaRNAgnosis: A novel platform for the direct profiling of circulating cell-free ribonucleic acids in biofluids. H2020. Rosario M Sanchez Martin. (Universidad de Granada). 01/01/2021-31/12/2024. 759.000 €.
- 2 **Proyecto.** Desarrollo de ensayos diagnósticos basados en anticuerpos de dominio único frente a nuevos biomarcadores de tumores.. Consejería de Salud y Familias, Junta de Andalucía. Sanchez Martin. (ibsGranada). 01/12/2021-01/12/2024. 107.643,45 €.
- 3 **Proyecto.** Una nueva plataforma de diagnóstico de biopsia líquida: detección COMBO de proteínas y ARN en exosomas individuales. Proyectos del Plan Nacional 2019. Rosario M. Sanchez Martin. (University of Granada). 01/06/2020-31/05/2023. 157.300 €.
- 4 **Proyecto.** Desarrollo de una plataforma nanotecnológica para reprogramación celular in situ mediante edición génica basada en ácido nucleicos peptídicos (Acrónimo: Nano-GE-PNA) Referencia del proyecto: P18-TP-4160. Junta de Andalucía. AYUDAS A LA I+D+i, EN EL ÁMBITO DEL PLAN ANDALUZ DE INVESTIGACIÓN, DESARROLLO E INNOVACIÓN (PAIDI 2020). Convocatoria 2018. Rosario M. Sanchez Martin. (University of Granada). 01/01/2020-31/12/2022. 138.575 €.
- 5 **Proyecto.** Desarrollo de un nanodispositivo multifuncional para generar células T Reprogramadas como inmunoterapia frente al cáncer. Consejería de Economía, Conocimiento, Empresas y Universidad. Rosario María Sánchez Martín. (Universidad de Granada). 01/01/2020-31/12/2021. 15.200 €.
- 6 **Proyecto.** SARS-CoV -2: Testar y rastrear. Test de diagnóstico más aplicación móvil para la detección molecular del virus y la geolocalización de los casos positivos. Rosario Sanchez Martin. (University of Granada/Destina Genomica). 09/09/2020-08/09/2021. 95.732,3 €.
- 7 **Proyecto.** PVT-PSETC-2.0: Programa de Valorización de Tecnologías: Proyectos Singulares Estratégicos de Transferencia de Conocimiento (AT17\_6094). Consejería de Economía e Innovación Tecnológica. Rosario Sanchez Martin. (OTRI\_Universidad de Granada). 31/10/2019-30/04/2021. 118.070 €.

- 8 Proyecto.** Nano3Devices: Nanosistema multifuncionalizado con aplicación teranóstica en cáncer. Instituto de Salud Carlos III. Rosario María Sánchez Martín. (Universidad de Granada). 01/01/2019-31/12/2020. 78.650 €.
- 9 Proyecto.** BiopLiqNanotof;DETECCION DE ACIDOS NUCLEICOS CIRCULANTES Y SUS MUTACIONES MEDIANTE PROTOCOLOS PCR-FREE PARA BIOPSIAS LIQUIDAS. INTEGRACION DE NANOTECNOLOGIA,QUIMICA DINAMICA Y CITOMETRIA DE MASAS- BIO2016-80519-R. (Universidad de Granada). 30/12/2016-29/06/2020. 140.000 €.
- 10 Proyecto.** Implementation of a novel integrated platform to monitor tumour heterogeneity as a crucial determinant for individualized diagnostic and therapeutic outcome.. (Universidad de Granada). 01/01/2017-31/12/2019. 493.625 €.
- 11 Proyecto.** Nanopartículas metalo-fluorescentes para análisis celulares por citometría de flujo con doble funcionalidad, citometría fluorescente y de masas. (Universidad de Granada). 01/09/2017-01/09/2018. 10.900 €.
- 12 Contrato.** Hyaluspheres - an excipient for an efficient subcutaneous (SC) delivery of therapeutics Nanogetic SL contrato OTRI 4765. Rosario Sanchez Martin. Desde 16/03/2021.
- 13 Contrato.** Automatización y desarrollo de sistemas de diagnóstico molecular multiplex para detección de paneles de marcadores ARN/ADN y proteínas en las áreas de patología infecciosa y alergología DESTINA GENOMICA SL; Centro para el Desarrollo Tecnológico Industrial. Rosario M. Sanchez Martin. 01/12/2015-01/07/2018. 39.809 €.

#### **C.4. Actividades de transferencia y explotación de resultados**

- 1** Rosario María Sánchez Martín; Juan Antonio Marchal Corrales; Juan José Díaz Mochón; María Victoria Cano Cortés; Saúl Abenhamar Navarro Marchal; María Paz Ruiz Blas. P201830360. Nanopartículas Multifuncionales para Teragnosis España. 12/04/2018. Universidad de Granada.
- 2** Luciano Messina; Juan Diego Unciti Broceta; Rosario M. Sanchez Martin. PCT/IB2016/057824. Nanosystems for controlled transport of active molecules for diagnostic, prognostic and therapeutic purposes Italia. 29/06/2017. Fidia Farmaceutici /Nanogetic SL.
- 3** Antonio Delgado González. P201730777. Sondas Duales para Citometría de Flujo y Citometría de Masas España. 07/06/2017. Universidad de Granada.
- 4** MJ Serrano; JJ Diaz Mochon; F.G. Ortega; JA Lorente; JL Garcia Puche; MP Ruiz Blas; Rosario M. Sanchez Martin. PCT/ES2015/070681.. Method for the detection of circulating tumor cells, both circulating tumors cells of epithelial phenotype and circulating tumour cells having Epithelial-mesenchymal transition markers (EMTs), by using miRNA-21 as a biomarker España. 18/09/2014. Servicio Andaluz de Salud (SAS) y Universidad de Granada.

## Part A. PERSONAL INFORMATION

CV date 27/09/2022

First name	MARÍA VIOLANTE		
Family name	DE PAZ BÁÑEZ		
ID number			
e-mail	<a href="mailto:vdepaz@us.es">vdepaz@us.es</a>	URL Web	
Researcher codes	Open Researcher and Contributor ID (ORCID*)	0000-0002-6544-4732	
	SCOPUS Author ID	14032973700	
	WoS Researcher ID	G-6848-2015	

## A.1. Current position

Position	CATEDRÁTICA DE UNIVERSIDAD		
Initial date	12/08/2022		
Institution	UNIVERSIDAD DE SEVILLA		
Department/Center	Dpto. Química Orgánica y Farmacéutica / Facultad de Farmacia		
Country	Spain	Teleph. number	
Key words	Macromolecules; carbohydrates; Monomers; Living polymerizations; Micro- and Nano-materials; Stimulus-responsive polymeric systems; Drug delivery systems; Materials from renewable resources; hydrogels		

## A.2. General indicators of quality of scientific production

Number of sexennia: 4 Last sexennium: 2013-2018 (granted: 07/06/2019)  
 N.º of triennials: 9 N.º of quinquennia: 5; N.º autonomic complements: 5 out of 5

Publications in WoS: 70 Sum of Times Cited (G-Scholar): 2,053  
 h index (G-Scholar): 23  
 From the global scientific production: Decile-1: 21 Q-1: 40  
 No. papers being cited 200 times or above: 3

DE PAZ  
 BAÑEZ MARIA  
 VIOLANTE -  
 29777111T

Digitally signed by DE PAZ BAÑEZ  
 MARIA VIOLANTE - 29777111T  
 DN: c=ES,  
 serialNumber=IDCES-29777111T,  
 givenName=MARIA VIOLANTE,  
 sn=DE PAZ BAÑEZ, cn=DE PAZ  
 BAÑEZ MARIA VIOLANTE -  
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 Date: 2022.10.18 10:29:40 +02'00'

## Part B. CV SUMMARY

MV de Paz received her **doctorate in Pharmacy in 1997** (University of Seville, US) where she worked on the synthesis and characterization of new polyamides derived from sugar under the direction of Prof. Juan A. Galbis and M. Gracia García-Martín. **7 JCR articles** were derived from her thesis, and the synthesis of the **1<sup>st</sup> nylon-type polyamide from sugars** recorded in the literature is noteworthy. She did a post-doctoral stay (2 post-doctoral grants: MEC and *Plan Propio Universidad de Huelva*, UHU) in the laboratory of the renowned Prof. Steven P. Armes (h-index: 132) at the Univ. Sussex (UK, 1998-1999) and worked on **living polymerization techniques** of methacrylate esters. Her postdoctoral work led to **6 high-impact Q1 papers (615 citations)**. It is worth highlighting the fine-tuning of the synthesis of poly(2-hydroxyethyl methacrylate) at room temperature, in aqueous media (**277 citations**).

Already **FULL PROFESSOR**, she enjoyed a contract (**Research Fellow**) at Univ. Sussex (Jun-Sept. 2000). In March 2004 she joined the US (Department of Organic and Pharmaceutical Chemistry, QOYF, contest-opposition) as PTU where she continues to carry out her professional activity. Her research activity focused on the synthesis of functionalized condensation polymers for biomedical purposes, and she was co-author of a review article in **Chemical Reviews (2016, >200 citations)** which includes, among others, her most relevant works on the subject. **She is currently involved** in the preparation of smart nanoparticles and hydrogels with biomedical applications. She is the **principal investigator (PI) of the R+D+i projects** "Sustainable preparation of superporous hydrogels with improved biodegradability through the formation of interpenetrating networks" (**PID2020-115916GB-I00 (MICINN)**) and "Development of Nano and Microstructured Polymeric Materials with Gastroretentive Action for the Oral Administration of Drugs", (**US-1380587**), financed by the **European Union (FEDER)**, **Junta de Andalucía**.

Dr. de Paz has **worked as a doctor for 24 years** in the development of biomaterials with diverse properties and structures that have proven to be useful for biomedical applications. She is the author of **74 articles and book chapters**, **58** out of them related to polymer science, of which 55 are articles indexed in JCR (WOS), **21** of them cataloged in the **first decile** of the category. She has **led other 2 research projects** publicly funded in competitive calls, one of them at the national level (**MAT2016-77345-C3-2-P**) and another at the regional level (**P12-FQM-1553**). It has been the IP of 2 contracts **68/83 with the multinational Schlumberger Holding LTD (OG-108/05, OG-025/07)** and cooperated with 2 other foreign companies (**Zeneca Agrochemicals, UK, and ANBsensor, UK**), giving rise to the authorship of **11 technical reports and 2 patents**, one of them international and in exploitation (**GB2453112-B; US7987912-B2**). She maintains an **extensive network of national and international collaborators** as evidenced by the **22 joint publications** (2007-now). She has received various **awards/distinctions**, among which the followings stand out: \* **3<sup>rd</sup> position** out of 22 members in Dept. QOYF, US. (**Scopus Ranking 26-11-21**); \*Award for the **best scientific publication** (US, F. Farmacia, Nov-2019); \***Bruker-US Award for the best research work in applied NMR** (2012). **Pharmaceutics Editor (D1, IF 6,321 (2020-))**. **Pharmaceutics Guest Editor (D1, IF 6,321, 2019-)**. **Research Project Evaluator: KU Leuven University, Belgium (2018-); ANEP (2017-); AGAE (2010-)** Regular **reviewer in scientific journals (8 Q1, 3 Q2)** **Secretary of the department QOYF, US (63 months)** **Organizer of 4 national and international Conferences/Workshops: (2007-)** **Scientific reviewer of the book Clinical Chemistry Principles, Techniques and Correlations (ISBN: 9781-1-4963-3558-6)** **Assessor of business projects for the Campus Program in Andalusia (2011-)**.

MV de Paz has **taught at the undergraduate level (5,660 hours) 35 subjects in 15 degrees** (3 bachelor's degrees, 5 degrees, 1 higher engineering, 6 technical engineering) **at 2 universities (UHU, US)**. She has **taught at post-graduate level 15 subjects in 8 programs** (4 Doctoral Programs, 4 Masters, **3 of them with Excellence Mention**) **in 3 universities (UHU, US, and International University of Andalusia) (309 h)**. She has **supervised: 2 theses with European and Excellence Mentions** (one of them, deserving of the **Extraordinary Doctorate Award, US 2015**); **6 Master's Thesis** in 2 Master's Degrees with Excellence Mention; **34 Final Degree Projects/Final Degree Projects** in 6 different degrees.

## Part C. RELEVANT MERITS (sorted by typology)

### C.1. Publications (see instructions)

- Grosso, R.; **De-Paz, M.V (CA)** (2/2). “Scope and Limitations of Current Antibiotic Therapies against *Helicobacter pylori*: Reviewing Amoxicillin Gastroretentive Formulations”. *Pharmaceutics*, **2022**, *14*, <https://doi.org/10.3390/pharmaceutics14071340>. Pharmacology & Pharmacy: 28/275; **D1, Q1**. JIP: 6.321.
- R. Grosso, **M.-V. De-Paz (CA)**. (2/2) “Thiolated-Polymer-Based Nanoparticles as an Avant-Garde Approach for Anticancer Therapies — Reviewing Thiomers from Chitosan and Hyaluronic Acid.” *Pharmaceutics*, **2021**, *13*, 854 (1-48). <https://doi.org/10.3390/pharmaceutics13060854>. Pharmacology & Pharmacy: 28/275; **D1, Q1**. JIP: 6.321.
- N. Iglesias, E. Galbis, C. Valencia, M.J. Díaz-Blanco, B. Lacroix, & **M.-V. De-Paz (CA)**. (6/6) “Biodegradable double cross-linked chitosan hydrogels for drug delivery: Impact of chemistry on rheological and pharmacological performance”. *International Journal of Biological Macromolecules*, **2020**, *165*, 2205–2218. <https://doi.org/10.1016/j.ijbiomac.2020.10.006>. Polymer Science: 9/89; **D1, Q1**. JIP: 6.953.
- N. Iglesias, E. Galbis, L. Romero-Azogil, E. Benito, R. Lucas, M.G. García-Martín, & **M.-V. De-Paz (CA)**. (7/7) “In-Depth Study into Polymeric Materials in Low-Density Gastroretentive Formulations. *Pharmaceutics*”, **2020**, *12*(7), 636 (1-49). <https://doi.org/10.3390/pharmaceutics12070636>. Pharmacology & Pharmacy: 28/275; **D1, Q1**. JIP: 6.321.
- N. Iglesias, E. Galbis, L. Romero-Azogil, E. Benito, M.-J. Díaz-Blanco, M. G. García-Martín, **M. V. De-Paz (CA)** (7/7), “Experimental model design: Exploration and optimization of customized polymerization conditions for the preparation of targeted smart materials by click Diels Alder”, *Polymer Chemistry*, **2019**, *10*, 5473-5486. <https://doi.org/10.1039/C9PY01076A>. Polymer Science: 8/89; **D1, Q1**. JIP: 5.342.
- N. Iglesias, E. Galbis, M.-J. Díaz-Blanco, R. Lucas, E. Benito, **M. V. De-Paz (CA)** (6/6). “Nanostructured Chitosan-based biomaterials for sustained and colon-specific resveratrol release”, *International Journal of Molecular Sciences*, **2019**, *20*, 398 (1–16). <https://doi.org/10.3390/ijms20020398>. Biochemistry and molecular Biology 74/297, **Q1**, JIP: 4.556.
- N. Iglesias, E. Galbis, M.J. Díaz-Blanco, **M.-V. de-Paz (CA)**, J.A. Galbis (4/5). “Loading studies of the anticancer drug camptothecin into dual stimuli-sensitive nanoparticles. Stability scrutiny”. *Int. J. Pharm.* **2018**, *550*, 429–438. <https://doi.org/10.1016/j.ijpharm.2018.08.026>. Pharmacology & Pharmacy: 45/256; **Q1**. JIP: 3.785.
- N. Iglesias, E. Galbis, C. Valencia, **M.-V. de-Paz (CA)**, J. A. Galbis. (4/5) “Reversible pH-Sensitive Chitosan-Based Hydrogels. Influence of Dispersion Composition on Rheological Properties and Sustained Drug Delivery”. *Polymers*, **2018**, *10*, 392; 1-17. <https://doi.org/10.3390/polym10040392>. Polymer Science: 16/86; **Q1**. JIP: 3.364.
- J. A. Galbis; M. G. García-Martín; **M.V. de Paz**; E. Galbis (**CA**). (3/4) “Synthetic Polymers from Sugar-based Monomers” *Chem. Rev.*, **2016**, *116*, 1600-1636. Chemistry, Multidisciplinary: **1/166**; **D1**. JIP: **47.928**.
- M.J. Lucero, C. Ferris, C.A. Sánchez-Gutiérrez, M.R. Jiménez-Castellanos (**CA**); **M.V. de Paz (CA)**. (5/5) “Novel aqueous chitosan-based dispersions as efficient drug delivery systems for topical use. Rheological, textural and release studies”. *Carbohydr. Polym.*, **2016**, *151*, 692–699. <http://dx.doi.org/10.1016/j.carbpol.2016.06.006>. Chemistry Applied: 4/72; **D1, Q1**. JIP: 4.811.

### C.2. Research projects (PI: Principal investigator)

(• 1) REF.: PID2020-115916GB-I00. “Eco-friendly preparation of superporous hydrogels with improved biodegradability by the formation of interpenetrated networks (ECOPOLYNET)”.

PI: M.ª Violante de Paz Báñez. Funding agency: MICINN. 90,750 €. Duration: 01/09/2021 — 31/08/2024.



(• 2) REF.: US-1380587. “Development of nano and microstructured polymeric materials with gastroretentive action for oral drug administration”. PI: **M.ª Violante de Paz Báñez**. Funding agencies: **FEDER (EU)/Junta Andalucía**. 80,000€. Duration: 01/01/2021 — 31/12/2022.

(• 3) REF.: MAT2016-77345-C03-2-P (coordinated Project). “Polímeros de fuentes renovables para aplicaciones farmacéuticas. Diseño de sistemas avanzados para liberación prolongada y localizada de fármaco”. PI: Manuel Bueno Martínez / **M.ª Violante de Paz Báñez**. Funding agency: **MINECO**. 80,000€. Duration: 01/01/2017 — 01/07/2019.

(• 4) REF.: Excellence Project P12-FQM-1553. “Polímeros degradables a partir de fuentes renovables como sistemas para el transporte y liberación de fármacos y de material genético”.

PI: Juan Antonio Galbis Pérez / **M.ª Violante de Paz Báñez**. Funding agency: **Junta de Andalucía**. 273,894 €. Duration: 01/01/2014 — 16/07/2019.

### C.3. Grants and Stays in foreign Research Centers

(• 1) Contract as “Research Fellow” at the University of Sussex, U.K. (06/26/2000 to 06/29/2000);

(• 2) Post-doctoral Fellowship, Ministry of Education and Science, enjoyed in Univ Sussex, UK, 1999;

(• 3) Post-doctoral Fellowship, PP University of Huelva, University of Sussex, UK (1998);

(• 4) Predoctoral Fellowship, Junta de Andalucía (1990-1993).

### C.4. Participation in Contracts, technological and transfer merits

(• 1) Contract I+D+i with research company 68/83. REF.: OG-025/07. “Synthesis of novel sugar-based materials”. PI: **M.ª Violante de Paz Báñez**. Funding agency: Multinational **Schlumberger** Holding Limited (<https://www.slb.com/>), UK. 109,480 €; Duration: 06/02/2007 — 31/01/2011

(• 2) Author of Independent Technical Reports

- 6 Reports for the Multinational **Schlumberger** Holding Limited, (<https://www.slb.com/>)  
From May-2006 to January-2011

- 5 Reports for the Research Company **ANB Sensors**, Cambridge, UK (<http://www.anbsensors.com/>)  
From September-2017 to September 2018

### C.4. Patents

(• 1) International patent in exploitation:

Schlumberger Holding Limited, Cambridge, UK, “Reversible polymeric gelation for oilfield applications”. Robinson, K. L.; **de Paz Báñez, M. V.**; Tustin, G.; Jones, T. GB2453112-B; US7987912-B2. United States, United Kingdom, Schlumberger —2011-08-02.

(• 2) Universidad de Sevilla, Sevilla, España. “Nueva Composición de Conjugados de Chitosan o derivados con Tiolactonas”. **De Paz Báñez, M. V.**; Jiménez-Castellanos, M. R.; Lucero, M. J.; Casas, M.; Ferris, C. ES2491340, 2015-09-01

**C.5. Collaborations with other research groups** (PI: principal investigator; IPB: Instituto de Parasitología y Biomedicina López Neyra; UCA: University of Cádiz; UHU: University of Huelva; UPC: Universitat Politècnica de Catalunya US: University of Seville)

(\*) Multinational Schlumberger ([www.slb.com](http://www.slb.com)), UK. <https://doi.org/10.1039/C4PY00580E>. Patent. (\*) “Inst. of Molecules and Materials”, Radboud University, Países Bajos. IP: Prof. F. Matthias Bickelhaupt. <http://doi.org/10.1039/C7SC04850E>. (\*) “Advanced Materials”, UPC. IP: Antxón Martínez-de Ilarduya. <https://doi.org/10.1016/j.eurpolymj.2018.09.006>. (\*) “Biological Chemistry: Molecular Recognition and Drug Design” IPB, CSIC, Granada. IP: J.C. Morales.

<http://doi.org/10.1021/acs.jafc.9b07147>. (\*) “Technologies for Biomass and Organic Materials (TEP236), “PRO2TECS”. PI: M.J. Díaz-Blanco. <https://doi.org/10.1016/j.ijbiomac.2020.10.006>. (\*) “Chemistry of Biomolecules and Analogs”, US. PI: I. Robina Ramírez.

<https://doi.org/10.1016/j.eurpolymj.2019.07.027>. (\*) “Rheology Group”, UHU. PI: J.M. Franco.

<https://doi.org/10.3390/polym10040392>. (\*) “Characterization and Statistical Optimization of Drugs”, US. PI: I. Caraballo. <https://doi.org/10.3109/03639045.2012.736516>. (\*) “Galenic development of Drugs”, US, PI: M.R. Jiménez-Castellanos.

<http://dx.doi.org/10.1016/j.carbpol.2016.06.006>. (\*) “Material Science Institute”, CSIC, Seville.

<https://doi.org/10.1016/j.eurpolymj.2017.02.032>. (\*) “Electronic Microscopy and Advanced Materials”, UCA. <https://doi.org/10.1021/acsomega.7b01421>.

## Parte A. DATOS PERSONALES

Fecha del CVA

29/6/2022

Nombre y apellidos	María José Ruedas Rama		
DNI/NIE/pasaporte		Edad	
Núm. identificación del investigador	Researcher ID	L-2277-2014	
	Código Orcid	0000-0003-0853-187X	

### A.1. Situación profesional actual

Organismo	Universidad de Granada		
Dpto./Centro	Dept. de Físicoquímica. Facultad de Farmacia		
Dirección	Campus Cartuja, s/n		
Teléfono	correo electrónico	<a href="mailto:miruedas@ugr.es">miruedas@ugr.es</a>	
Categoría profesional	Profesora Titular de Universidad	Fecha inicio	14/08/2012
Espec. cód. UNESCO	2209.04, 2210.22, 2301.06, 2301.12		
Palabras clave	Nanosensores, Fluorescencia, Quantum Dots, Microscopia		

### A.2. Formación académica (*título, institución, fecha*)

Licenciatura/Grado/Doctorado	Universidad	Año
Licenciatura en Química	Universidad de Jaén	2001
Doctorado Europeo	Universidad de Jaén	2005

### A.3. Indicadores generales de calidad de la producción científica

**Sexenios de investigación:** 3 (último sexenio concedido en 2020)

**Tesis Doctorales dirigidas últimos 10 años:** 2

**Citas Totales:** 1722 (WoS) – 2685 (Google Scholar)

**Publicaciones totales en primer cuartil (Q1):** 40

**Índice h:** 24 (WoS) – 28 (Google Scholar)

## Parte B. RESUMEN LIBRE DEL CURRÍCULUM

Me licencié en Química en 2001 en la Universidad de Jaén, y en 2005 obtuve el título de Doctor por la Universidad de Jaén. También obtuve el premio extraordinario de licenciatura, y el premio extraordinario de doctorado. Posteriormente, obtuve una beca posdoctoral del MEC para trabajar en el Instituto de Biotecnología de la Universidad de Cambridge (Reino Unido), una de las instituciones más prestigiosas en investigación, bajo la supervisión de la Dr. Hall. Mi formación posdoctoral continuó allí cuando en 2007 conseguí un contrato de investigador de la Fundación Newton (Cambridge). Durante este tiempo he realizado investigación de alta calidad, adquiriendo experiencia en multitud de líneas de investigación, gracias a la multidisciplinaridad de los proyectos desarrollados y la participación en redes de colaboración científica. En concreto, trabajé en la síntesis de nanopartículas fluorescentes poliméricas que actuaban como nanosenores de iones de interés biológico. Posteriormente, abrí una nueva línea de investigación en el grupo empleando nanopartículas de semiconductores, Quantum Dots (QDs), demostrando su potencial y utilidad para el desarrollo de nanosenores intracelulares, publicando estos resultados en revistas internacionales de impacto, como *Anal. Chem.* o *Chem. Commun.*

A finales de 2008 conseguí varios contratos posdoctorales en el Departamento de Físicoquímica de la Universidad de Granada, que continué hasta que en 2012 obtuve una plaza de Profesor Titular de Universidad. Durante los últimos años, he trabajado en la aplicación de técnicas avanzadas de fluorescencia, especialmente técnicas de resolución

temporal, para el desarrollo de sensores intracelulares y el estudio de biomoléculas como ADN y proteínas.

Desde el comienzo de mi carrera investigadora he participado en 20 proyectos de investigación financiados, habiendo liderado como IP 5 proyectos de investigación en convocatorias altamente competitivas. Estos proyectos han supuesto el punto de inicio de una de las principales líneas de investigación en las que trabajo, el desarrollo de nanosensores intracelulares para la determinación de sustancias de interés biológico y biomédico, dentro de la que se engloba la presente propuesta. De estas investigaciones se han publicado hasta la fecha varios artículos en revistas de alto impacto, entre ellas *ACS Nano* o *Chem. Commun.*, siendo autora de correspondencia de 10 de ellos. Mi objetivo actual es continuar con estas líneas de investigación innovadoras y de competitividad internacional, y aplicarlas a la resolución de problemas biomédicos de importancia, como el cáncer, entre otros. Hasta la fecha, he publicado 65 artículos en revistas de alto impacto, incluyendo una publicación en la prestigiosa revista *Nature*. Estas publicaciones, y la presentación de los resultados en congresos científicos internacionales, avalan la calidad de la investigación desarrollada durante mis 17 años de experiencia postdoctoral.

En cuanto a mi experiencia formativa, he dirigido los trabajos de varios investigadores en formación, incluyendo un “part III Project” en la Universidad de Cambridge, cinco trabajos fin de máster, varios trabajos fin de grado y tres tesis doctorales en la Universidad de Granada.

## Parte C. MÉRITOS MÁS RELEVANTES (ordenados por tipología)

### C.1. Publicaciones (10 últimos años)

- 1) C. Ripoll, M. Roldan, M. J. Ruedas-Rama, A. Orte, M. Martin, 2021, Breast Cancer Cell Subtypes Display Different Metabolic Phenotypes That Correlate with Their Clinical Classification, **Biology**, 10, 1267. (IF: 5.079). Posición: 16/93.
- 2) C. Ripoll, A. Orte, L. Paniza, M.J. Ruedas-Rama<sup>§</sup> 2019, A Quantum Dot-Based FLIM Glucose Nanosensor, **Sensors**, 19, 4992. Autor de correspondencia (IF: 3.275). Posición: 15/64.
- 3) C. Ripoll, C. Cheng, E. Garcia-Fernandez, J. Li, A. Orte, H. Do, L. Jiao, D. Robinson, L. Crovetto, J.A. González-Vera, E.M. Talavera, J.M. Alvarez-Pez, N. Boens, M.J. Ruedas-Rama<sup>§</sup>, 2018, Synthesis and Spectroscopy of Benzylamine-Substituted BODIPYs for Bioimaging, **Eur. J. Org. Chem.**, 2018, 2561-2571. Autor de correspondencia. 3.029). Posición: 16/57. Citas:5 .
- 4) M.C. Ortega-Liebana, M.M. Encabo-Berzosa, M.J. Ruedas-Rama, J.L. Hueso, 2017, Nitrogen-Induced Transformation of Vitamin C into Multifunctional Up-converting Carbon Nanodots in the Visible-NIR Range, **Chem. Eur. J.**, 23, 3067-3073. (IF: 5.16). Posición:35/71. Citas: 6
- 5) C. Ripoll, M. Martin, M. Roldan, E.M. Talavera, A. Orte, M.J. Ruedas-Rama<sup>§</sup>, 2015, Intracellular Zn<sup>2+</sup> detection with quantum dot-based FLIM nanosensors, **Chem. Commun.** 51, 16964-16967. Autor de correspondencia. (IF: 6.567) Posición 21/163. Citas: 11
- 6) M.J. Ruedas-Rama<sup>§</sup>, E.A.H. Hall, 2014, pH sensitive Quantum Dot – anthraquinone nanoconjugates, **Nanotechnology**, 25, 195501-1955013. Autor de correspondencia (IF: 3.672). Posición: 39/251. Citas: 8
- 7) A. Orte, J. M. Alvarez-Pez, M.J. Ruedas-Rama<sup>§</sup>, 2013, Fluorescence Lifetime Imaging Microscopy for the Detection of Intracellular pH with Quantum Dot Nanosensors, **ACS Nano**, 7, 6387–6395. Autor de correspondencia (IF: 12.033) Posición 9/148 (Top 10). Citas: 106
- 8) Y. Ye, G. Blaser, M. H. Horrocks, M. J. Ruedas-Rama, S. Ibrahim, A. A. Zhukov, A.Orte, D. Klenerman, S. E. Jackson, D. Komander, 2012, Ubiquitin chain conformation governs

recognition and activity of ubiquitin interacting proteins, **Nature** 492, 266–270. (IF: 38.597) Posición 1/54 (Top 1). Citas: 103.

9) M.J. Ruedas-Rama<sup>§</sup>, A Orte, E.A.H. Hall, J. M. Alvarez-Pez, E. M. Talavera, 2012, A chloride ion nanosensor for time-resolved fluorimetry and fluorescence lifetime imaging, **Analyst**, 137, 1500-1508. Autor de correspondencia (IF: 3.969) Posición 8/75. Citas: 39.

10) M.J. Ruedas-Rama<sup>§</sup>, A Orte, E.A.H. Hall, J. M. Alvarez-Pez, E. M. Talavera, 2011, Quantum Dot Photoluminescence Lifetime-based pH-Nanosensor, **Chem. Comm.** 47, 2898 – 2890. (IF: 6.169) Posición 19/154. Citas: 62.

## C.2. Proyectos

Proyecto A.FQM.230.UGR20: Diseño racional de nuevos sensores fluorescentes para su bioaplicación en microscopía de súper resolución y tiempos de vida (STED-FLIM). Programa Operativo FEDER Andalucía 2014-2020. **IPs: MJ Ruedas Rama** y Delia Miguel Álvarez. Inicio: Enero 2021-Fin: Diciembre 2023. Cantidad: 35,000€. Investigador Principal.

Proyecto CTQ2014-56370-R: Una Plataforma de Multi-Imagen para la Evaluación del Metabolismo Celular. Aplicación al Diagnóstico del Cáncer y la Citotoxicidad de Oligómeros Amiloides. Ministerio de Economía y Competitividad. **IPs: A. Orte Gutiérrez y MJ Ruedas Rama**. Inicio: Enero 2015-Fin: Diciembre 2018. Cantidad: 99,000€. Investigador Principal.

Proyecto P\_BS\_51: Nanosensores FLIM de Quantum Dots para detección de pH intracelular: Aplicación en diagnóstico del cáncer mediante análisis metabólico diferencial. Campus de Excelencia Internacional BIO TIC Granada, 2014. **IP: MJ Ruedas Rama**. Inicio: Mayo 2014-Fin: Diciembre 2014. Cantidad: 21500€. Investigador Principal.

Proyecto GREIB.PYR\_2010\_14: pH-selective Quantum Dots-based nanosensors. Start-up projects for young researchers. Proyecto Campus de Excelencia Internacional 2009 Subprograma de I+D+I y Transferencia (Programa GREIB) (Granada Research of Excellence Initiative in Bio-health). **IP: MJ Ruedas Rama**. Inicio: Enero 2011-Fin Diciembre 2011. Cantidad: 3000€. Investigador Principal.

Proyecto CTQ2017-85658-R: Nuevas estrategias de diagnóstico basadas en fluorescencia con ventana temporal. Ministerio de Economía, Industria y Competitividad. **IP: Ángel Orte Gutiérrez y Luis Crovetto González**. Inicio: Enero 2018-Fin: Diciembre 2020. Cantidad: 116160€. Investigador.

Proyecto: Diagnóstico del Cáncer mediante una Plataforma de Nanosensores Metabólicos. Fundación Ramón Areces, dentro del XVII Concurso Nacional para la adjudicación de ayudas a la investigación en Ciencias de la vida y de la Materia. **IP: A. Orte Gutiérrez**. Inicio: Abril 2015-Fin: Abril 2018. Cantidad: 83,430€. Investigadora.

Proyecto (diaRNAgnosis) (101007934): A novel platform for the direct profiling of circulating cell-free ribonucleic acids in biofluids. Proyecto MSCA-RISE de H2020 (UE). Coordinador: Salvatore Pernagallo. Inicio: Enero 2021-Fin: Diciembre 2024. Cantidad: 87400 €. Investigadora.

## C.4. Patentes

Ref: P201330861. Título: Procedimiento para la estimación de la concentración de fosfatos en células vivas, colorante xanténico y síntesis del mismo. Inventores: J. M. Alvarez Pez; L. Crovetto; J. M. Cuerva; M. D. Giron; J. R. Justicia; A. Orte; M. J. Ruedas; R. Salto; E. M. Talavera; Á. Martínez; J. M. Paredes. Prioridad: España. Fecha: 10/06/2013.

## C.5. Dirección de trabajos

- Tesis Doctoral: Estudiante: Consuelo Ripoll Lorente. Título: Nanosensores metabólicos para la identificación de fenotipos tumorales. Universidad de Granada. Año: Año de defensa: 2019.

- Tesis Doctoral: Estudiante: Fabio Castello. Título: Cambios estructurales en agregados pre-amiloideogénicos del dominio SH3 de  $\alpha$ -espectrina. Universidad de Granada. Año de defensa: 2016. Mención Internacional. Publicaciones del doctorando: 5.
- Tesis Doctoral: Estudiante: Patricia Lozano Vélez. Título: Síntesis y fotofísica del 2,5 dioxipirrolidin-1-il-4-(3-hidroxi-6-oxo-6H-xanten-9-il)-3-metilbenzoato. Aplicación en la detección fluorescente de la hibridación de ADN. Universidad de Granada. Fecha defensa: 2010. Publicaciones de la doctoranda: 1.
- Proyecto Fin de Máster: Estudiante: Antonio J. Chacón García. Título: Caracterización fotoquímica de nuevos colorantes derivados de BODIPY para su empleo como sensores. Curso: 2018-2019. Universidad de Granada.
- Proyecto Fin de Máster: Estudiante: Lorena Paniza Muñoz. Título: Desarrollo de nanosensores intracelulares de glucosa basados en Microscopía de Imagen de Tiempos de vida de Fluorescencia (FLIM). Curso: 2017-2018. Universidad de Granada.
- Proyecto Fin de Máster: Estudiante: Margarita María Forigua Medina. Título: Desarrollo de nuevos fluoróforos con estructuras de acridonas modificadas con heterociclos para localización intracelular mitocondrial. Curso: 2017-2018. Universidad de Granada
- Proyecto Fin de Máster: Estudiante: Consuelo Ripoll Lorente. Título: Nanosensores intracelulares de  $Zn^{2+}$  con Quantum Dots y detección basada en tiempos de vida de fluorescencia. Curso: 2015-2016. Universidad de Granada.
- Proyecto Fin de Máster: Estudiante: María C. Martín Domingo. Título: Estudio fotofísico de las interacciones entre el colorante YOYO-3 y cadenas de homonucleótidos. Curso: 2012-2013. Universidad de Granada.

### **C.6. Participación en tareas de evaluación**

- Gestora del área científica de Ciencias y Tecnologías Químicas. Agencia Estatal de Investigación (AEI). Desde Junio de 2020
- Actividad como evaluador de la agencia estatal de investigación: Cargo: Evaluador de proyectos. Entidad: Agencia Estatal de Investigación, Subdivisión de Coordinación y Evaluación. Fecha: Desde 2018
- Evaluadora presencial en las Comisiones Científico Técnicas de Evaluación: (1) Convocatorias de Proyectos de I+D de Retos y Excelencia del año 2018, del área de Ciencias y Tecnologías Químicas; (2) Programa Juan de la Cierva Formación (CTQ-JCF-2018); (3) Programa Juan de la Cierva Incorporación (CTQ-JCF-2019).
- Revisora de las revistas: ACS Nano, Chem. Comm., Anal. Chem., Phys. Chem. Chem. Phys, J. Phys. Chem, The Analyst, J. Luminescence, Nanoletters, Nanoscale, Int. J. Nanomedicine, Talanta, Langmuir. Desde 2007 hasta 2020.

### **C.7. Premios**

- Premio Extraordinario de Doctorado. 2004/2005. Facultad de Ciencias Experimentales. Universidad de Jaén.
- Premio Extraordinario de Licenciatura en Química. Promoción 1997/2001. Universidad de Jaén.

### **C.8. Gestión**

- Vicedecana de Relaciones Internacionales de la Facultad de Farmacia de la Universidad de Granada desde 17 de Mayo de 2017 hasta la actualidad.

**INSTRUCCIONES PARA RELLENAR EL CVA**

**AVISO IMPORTANTE**

En virtud del artículo 11 de la convocatoria **NO SE ACEPTARÁ NI SERÁ SUBSANABLE EL CURRÍCULUM ABREVIADO** que no se presente en este formato.

Este documento está preparado para que pueda rellenarse en el formato establecido como obligatorio en las convocatorias (artículo 11.7.a): letra Times New Roman o Arial de un tamaño mínimo de 11 puntos; márgenes laterales de 2,5 cm; márgenes superior e inferior de 1,5 cm; y espaciado mínimo sencillo.

La extensión máxima del documento (apartados A, B y C) no puede sobrepasar las 4 páginas.

**Parte A. DATOS PERSONALES**

**Researcher ID** (RID) es una comunidad basada en la web que hace visibles las publicaciones de autores que participan en ella. Los usuarios reciben un número de identificación personal estable (RID) que sirve para las búsquedas en la Web of Science. Los usuarios disponen de un perfil donde integrar sus temas de investigación, sus publicaciones y sus citas.

Acceso: Web of Science > Mis herramientas > Researcher ID

**Código ORCID** es un identificador compuesto por 16 dígitos que permite a los investigadores disponer de un código de autor inequívoco que les permite distinguir claramente su producción científico-técnica. De esta manera se evitan confusiones relacionadas con la autoría de actividades de investigación llevadas a cabo por investigadores diferentes con nombres personales coincidentes o semejantes.

Acceso: [www.orcid.org](http://www.orcid.org)

Si no tiene Researcher ID o código ORCID, no rellene estos apartados.

**A.3. Indicadores generales de calidad de la producción científica**

Se incluirá información sobre el número de sexenios de investigación y la fecha del último concedido, número de tesis doctorales dirigidas en los últimos 10 años, citas totales, promedio de citas/año durante los últimos 5 años (sin incluir el año actual), publicaciones totales en primer cuartil (Q1), índice h. Adicionalmente, se podrán incluir otros indicadores que el investigador considere pertinentes.

Para calcular estos valores, se utilizarán por defecto los datos recogidos en la Web of Science de Thomson Reuters. Cuando esto no sea posible, se podrán utilizar otros indicadores, especificando la base de datos de referencia.

**Parte B. RESUMEN LIBRE DEL CURRÍCULUM** (*máximo 3500 caracteres, incluyendo espacios en blanco*)

Describa brevemente su trayectoria científica, los principales logros científico-técnicos obtenidos, los intereses y objetivos científico-técnicos a medio/largo plazo de su línea de investigación. Indique también otros aspectos o peculiaridades que considere de importancia para comprender su trayectoria.

Si lo considera conveniente, en este apartado se puede incluir *el mismo resumen* del CV que se incluya en la solicitud, teniendo en cuenta que este resumen solo se utilizará para el proceso de evaluación de este proyecto, mientras que el que se incluye en la solicitud podrá ser difundido.

## **Parte C. MÉRITOS MÁS RELEVANTES** *(ordenados por tipología)*

Teniendo en cuenta las limitaciones de espacio, detalle los méritos más relevantes ordenados por la tipología que mejor se adapte a su perfil científico. Los méritos aportados deben describirse de una forma concreta y detallada, evitando ambigüedades.

Los méritos aportados se pondrán en orden cronológico inverso dentro de cada apartado. Salvo en casos de especial importancia para valorar su CV, se incluirán únicamente los méritos de los últimos 10 años.

### **C.1. Publicaciones**

Incluya una reseña completa de las 5-10 publicaciones más relevantes.

Si es un artículo, incluya autores por orden de firma, año de publicación, título del artículo, nombre de la revista, volumen: pág. inicial-pág. final.

Si se trata de un libro o de capítulo de un libro, incluya, además, la editorial y el ISBN.

Si hay muchos autores, indique el número total de firmantes y la posición del investigador que presenta esta solicitud (p. ej., 95/18).

### **C.2. Participación en proyectos de I+D+i**

Indique los proyectos más destacados en los que ha participado (máximo 5-7), incluyendo: referencia, título, entidad financiadora y convocatoria, nombre del investigador principal y entidad de afiliación, fecha de inicio y de finalización, cuantía de la subvención, tipo de participación (investigador principal, investigador, coordinador de proyecto europeo, etc.) y si el proyecto está en evaluación o pendiente de resolución.

### **C.3. Participación en contratos de I+D+i**

Indique los contratos más relevantes en los que ha participado (máximo 5-7), incluyendo título, empresa o entidad, nombre del investigador principal y entidad de afiliación, fecha de inicio y de finalización, cuantía.

### **C.4. Patentes**

Relacione las patentes más destacadas, indicando los autores por orden de firma, referencia, título, países de prioridad, fecha, entidad titular y empresas que las estén explotando.

### **C.5, C.6, C.7... Otros**

Mediante una numeración secuencial (C.5, C.6, C.7...), incluya los apartados que considere necesarios para recoger sus principales méritos científicos-técnicos: dirección de trabajos, participación en tareas de evaluación, miembro de comités internacionales, gestión de la actividad científica, comités editoriales, premios, etc.

Recuerde que todos los méritos presentados deberán presentarse de forma concreta, incluyendo las fechas o período de fechas de cada actuación.

El currículum abreviado pretende facilitar, ordenar y agilizar el proceso de evaluación. Mediante el número de identificación individual del investigador es posible acceder a los trabajos científicos publicados y a información sobre el impacto de cada uno de ellos. Si considera que este currículum abreviado no recoge una parte importante de su trayectoria, puede incluir voluntariamente el currículum en extenso en la documentación aportada, que será facilitado también a los evaluadores de su solicitud.

CV date	17/10/2022
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**Part A. PERSONAL INFORMATION**

First and Family name	José Manuel Paredes Martínez		
Social Security, Passport, ID number		Age	
Researcher codes	Open Researcher and Contributor ID (ORCID)	0000-0002-3252-9174	
	SCOPUS Author ID	23470410000	
	WoS Researcher ID	M-3494-2014	

**A.1. Current position**

Name of University/Institution	University of Granada		
Department	Physical Chemistry		
Address and Country	Campus Universitario de Cartuja. 18071-Granada (Spain)		
Phone number		E-mail	<a href="mailto:jmparedes@ugr.es">jmparedes@ugr.es</a>
Current position	Assistant Prof.	From	18/8/2020
Key words	Fotophysics, fluorescence, fluorescence lifetime imaging microscopy		

**A.2. Education**

PhD, Licensed, Graduate	University	Year
PhD	University of Granada	2010
Pharmacy	University of Granada	2004
Optics and optometry	University of Granada	2015

**A.3. General indicators of quality of scientific production** (see instructions)

- Number of six-year term of research: **2** (2009–2014) (2015–2020)
- Number of supervised Doctoral Thesis: **2** (2017) (2022)
- Number of supervised Final Master projects: **9** (2017(×2), 2017, 2018(×3), 2020(×2), 2021(×2))
- Number of supervised Final degree projects: **10** (2014, 2017, 2018(×3), 2019, 2020 (×3), 2022)
- Number of publications: **34**
- Number of cites: **434** (WoS)
- Average cites/year: **28.40** (WoS)
- Number of publications in the first quartile. (Q1): **25**
- H Index: **11** (WoS)
- Number of publications as corresponding author: **9**
- Number of publications in the last 5 years (2018–2022): **16** (WoS)
- Number of cites in the last 5years (2018–2022): **54** (WoS)
- Average of cites/year in the last 5years (2018–2022): **10.8** (WoS)
- Total publications in the first quartile in the last 5years (2018–2022): **14**

**Part B. CV SUMMARY** (max. 3500 characters, including spaces)

I am graduate in Pharmacy and Optics (University of Granada, 2004 and 2015, respectively). I got the PhD in the University of Granada with the maximum marks obtaining the extraordinary doctorate award in the year 2010.

During the doctorate, I acquired a deep knowledge in photophysics characterization of fluorescent molecules through advanced spectrophotometric, steady-state and time-resolved fluorimetric techniques. Furthermore, I studied kinetics process of excited state proton transfer (ESPT) reaction mediated by phosphate buffer. Finally, I specialized in single molecule fluorescence techniques as fluorescence lifetime correlation spectroscopy (FLCS).



Once finished my doctorate, I continued as post-doctoral in the University of Granada where I continued with the same research line. But also, we performed a more applied research. In this sense, we used the microscopy imaging lifetime fluorescence (FLIM) to monitor the entry of phosphate during the osteoblastic differentiation process thanks to the ESPT reactions studied years ago. From the results of this research, an international patent has been published.

Later, I obtained a postdoctoral stay and I joined to a bioimaging expert group lead by prof. Daniele Arosio in the CNR in Trento (Italy). After a research contract I obtained a Marie Curie fellowship to manage, as PI, a project focus in the development of new fluorescent proteins mutants more sensitive to chloride and better photophysics characteristics to use them as intracellular chloride sensors. During my postdoctoral stay, I specialized in the acquisition, treatment and analysis of fluorescent image data. Moreover, I learnt the knowledge and techniques to design, produce, mutate and purify fluorescent proteins. During this period, I published my first work as corresponding author (*ACS Chem. Biol.* **2016**, 11, 1652-1660) and the results were selected by World Biomedical Frontiers, an organization that focuses on cutting-edge biomedical research from around the globe (<http://biomedfrontiers.org/ep-2016-23/>). During this stay I supervised a final degree Thesis (Tesi di laurea) defended in the University of Trento (Italy) (2014).

Once I finished my postdoctoral stay, I reincorporate in the Physical Chemistry Department of the Faculty of Pharmacy in the University of Granada as Substitute professor, later as Lecturer, and finally as Assistant professor.

During the last years, we have studied the photophysics characteristics of new organic and genetically encoded compounds useful as biomedical sensors. We are especially interested to investigate new approaches through intensity and fluorescence lifetimes microscopy images. Following these approaches, we published different works with scientific advances in the development and biological application of different fluorescent molecules. Between them, I would like remark three works. First, a simultaneously intracellular probe of phosphate and thiols (*Chem. Eur. J.* **2015**, 21, 14772). This new sensor has been used to monitor the cellular oxidative stress promoted by light in photoreceptors like cells (*Sci. Rep.* **2019**, 9, 1659). Second, a new methodology for the identification of bacteria alanine-aminopeptidase activity. The fluorescent sensor used meets the requirement for use in super-resolution microscopy (*Sensors and Actuators B: Chemical.* **2020**, 321, 128487). And third, the development of a new chloride-sensitive red fluorescent protein (*ACS Sensors.* **2021**, 6 (7), 2563-2573).

## Part C. RELEVANT MERITS (sorted by typology)

### C.1. Publications

1. Espinar-Barranco, L.; **Paredes, J.M.**; Orte, A.; Crovetto, L.; Garcia-Fernandez, E. "[A solvatofluorochromic dye as a fluorescent lifetime-based probe of  \$\beta\$ -amyloid aggregation](#)" *Dyes and Pigments*, **2022**, 202, 110274.
2. Fuego-González, F; Espinar-Barranco, L; Herranz, R.; Alkorta, I; Crovetto, L.; Fribourg, M.; **Paredes, J. M.**; Orte, A.; and González-Vera, J. A. "[Self-Assembled Lanthanide Antenna Glutathione Sensor for the Study of Immune Cells](#)", *ACS Sensors.* **2022**, 7, 322–330.
3. Salto, R.; Giron, M. D.; Puente-Muñoz, V.; Vilchez, J. D.; Espinar-Barranco, L.; Valverde-Pozo, J.; Arosio, D.; **Paredes, J. M.** "[New Red-Emitting Chloride-Sensitive Fluorescent Protein with Biological Uses](#)" *ACS Sensors*, **2021**, 6 (7), 2563-2573.
4. Denofrio, M. P; Rasse-Suriani, F. A. O.; **Paredes, J. M.**; Fassetta, F.; Crovetto, L.; Giron, M.D.; Salto, R.; Epe, B.; Cabrerizo, F. M. "[N-Methyl- \$\beta\$ -carboline alkaloids: structure-dependent photosensitizing properties and localization in subcellular domains](#)" *Org. Biomol. Chem.*, **2020**, 18, 6519-6530.
5. Valverde-Pozo, J.; **Paredes, J. M.**; Salto-Giron, C.; Herrero-Foncubierto, P.; Giron, M. D.; Miguel, D.; Cuerva, J.M.; Alvarez-Pez, J. M.; Salto, R.; Talavera, E. M. "[Detection by fluorescence microscopy of N-aminopeptidases in bacteria using an ICT sensor with multiphoton excitation: Usefulness for super-resolution microscopy](#)" *Sensors and Actuators B: Chemical.* **2020**, 321, 128487.
6. Espinar-Barranco L, Meazza M, Linares-Perez A, Rios R, **Paredes JM**, Crovetto L "[Synthesis, Photophysics, and Solvatochromic Studies of an Aggregated-Induced-Emission Luminogen Useful in Bioimaging](#)" *Sensors.* **2019**, 19(22), 4932.
7. Espinar-Barranco L, Luque-Navarro P, Strnad MA, Herrero-Foncubierto P, Crovetto L, Miguel

- D, Giron MD, Orte A, Cuerva JM, Salto R, Alvarez-Pez JM, **Paredes JM**. "[A solvatofluorochromic silicon-substituted xanthene dye useful in bioimaging](#)" *Dyes and Pigments*. **2019**, 168, 264–272.
8. Zhang Q, Xiao K, **Paredes JM**, Mamonova T, Sneddon WB, Liu H, Wang D, Li S, McGarvey JC, Uehling D, Al-Awar R, Joseph B, Jean-Alphonse F, Orte A, Friedman PA. "[Parathyroid hormone initiates dynamic NHERF1 phosphorylation cycling and conformational changes that regulate NPT2A dependent phosphate transport](#)" *J. Biol. Chem.* **2019**, 294(12), 4546–4571.
  9. Puente-Muñoz, V.; **Paredes, J. M.**; Resa, S.; Vílchez, J.D.; Zitnan, M.; Miguel, D.; Girón, M.D.; Cuerva, J.M.; Salto, R.; Croveto, L. "[New Thiol-Sensitive Dye Application for Measuring Oxidative Stress in Cell Cultures](#)" *Sci. Rep.* **2019**. 9, 1659.
  10. Herrero-Foncubierta, P.; **Paredes, J.M.**; Giron, M.D; Salto, R.; Cuerva, J.M.; Miguel, D.; Orte, A. "[A Red-Emitting, Multidimensional Sensor for the Simultaneous Imaging of Biothiols and Phosphate Ions](#)" *Sensors*. **2018**, 18, 623-628.

## C.2. Research projects

1. Reference: **PID2020-113059GB-C21**  
 Title: Síntesis y modelización de nuevos materiales con propiedades ópticas y magnéticas enantioespecíficas  
 Ministerio de Ciencia e Innovación (2014)  
 Period: 2021-2023 (36 months)  
 IP: Juan Manuel Cuerva and Delia Miguel Álvarez.
2. Reference: **A-FQM-230-UGR20**  
 Title: Diseño racional de nuevos sensores fluorescentes para su bioaplicación en microscopía de súper resolución y tiempos de vida (STED-FLIM)  
 Proyectos I+D+i Junta de Andalucía (2020)  
 Period: 2021-2023 (36 months)  
 IP: María José Ruedas Rama and Delia Miguel Álvarez.
3. Reference: **CTQ2017-85454-C2-1-P**  
 Title: Synthesis and applications of homochiral photoactive organic systems.  
 Ministerio de Ciencia e Innovación (2014)  
 Period: 2018-2020 (36 months)  
 IP: Juan Manuel Cuerva and Delia Miguel Álvarez.
4. Reference: **P18-FR-2877**  
 Title: Desarrollo de dispositivos y máquinas moleculares basados en rotaxanos y nanografenos curvos  
 Proyectos I+D+i Junta de Andalucía (2018)  
 Period: 2020-2022  
 IP: González Campaña, María Araceli and Blanco Suárez, Víctor
5. Reference: **6900866**  
 Title: MiRNA-diseasy -microRNA biomarkers in an innovative biophotonic Sensor kit for high-specific diagnosis.  
 Programa Marco HORIZONTE 2020. Comisión Europea.  
 Period: 29/03/2017–30/11/2019  
 IP: Ángel Orte Gutiérrez
6. Reference: UEQ-1-02  
 Title: Desarrollo y puesta a punto de una nueva familia de proteínas fluorescentes rojas sensibles al cloro y posible utilización como técnica de diagnóstico de fibrosis quística.  
 Period: 01/10/2018-30/09/2019  
 IP: José Manuel Paredes and José Dámaso Vílchez.
7. Reference: **FP7-PEOPLE-2010-COFUND**  
 Title: Molecular Imaging of intracellular chloride concentration and check of drugs effect over chloride fluxes  
 European Union within the 7<sup>o</sup> Research Framework Program; Marie Curie Actions  
 Period: 01/10/2012–31/09/2014  
 IP: José Manuel Paredes Martínez
8. Reference: **NANO AR O25I2011 PI**  
 Title: Biosensor-Based Assay for High-Throughput Quantitative Screening of Chloride Transport  
 Consiglio Nazionale delle Ricerche

Period: 01/05/2012–01/10/2012

IP: Daniele Arosio

9. Reference: **P10-FQM-6154**

Title: Cambios estructurales en la formación de fibras amiloides estudiados mediante espectroscopía de fluorescencia de moléculas individuales y técnicas de imagen de tiempos de vida.

Consejería de Economía, Innovación y Ciencia.

Period: 15/03/2011–14/03/2015

IP: Ángel Orte Gutiérrez.

### **C.3. Contracts, technological or transfer merits**

- Assistant Professor. (Profesor Titular de Universidad).  
Physical Chemistry Department. University of Granada. 18/08/2020-Now
- Permanent Assistant Lecturer. (Profesor Contratado Doctor).  
Physical Chemistry Department. University of Granada. 1/11/2018–17/08/2020.
- Assistant Lecturer. (Profesor Ayudante Doctor).  
Physical Chemistry Department. University of Granada. 29/01/2016–31/10/2018.
- Substitute Professor. (Profesor Sustituto Interino).  
Physical Chemistry Department. University of Granada. 04/11/2014–28/01/2016.
- Postdoctoral researcher.  
CNR–Istituto di Nanoscienze. Trento. Italy. 01/05/2012–01/10/2012.
- Postdoctoral researcher.  
Physical Chemistry Department. University of Granada. 01/09/2008–18/05/201.
- Assistant Pre-doctoral researcher. (Técnico de Apoyo Licenciado).  
Departamento de Fisicoquímica. Universidad de Granada. 19/05/2011–17/07/2012.

### **C.4. Patents**

- Ref: WO 2014/198986 A1.  
Inventors: J. M. Alvarez Pez; L. Crovetto; J. M. Cuerva; M. D. Giron; J. R. Justicia; A. Orte; M. J. Ruedas; R. Salto; E. M. Talavera; Á. Martínez; J. M. Paredes.  
Title: Method for estimating the concentration of phosphates in live cells, xanthene colourant and synthesis thereof.  
Priority: International. Date: 18/12/2014.

### **C.5. Research stays**

- 29 months in the CNR-Biophysics Institute in Trento (Italy) (2012-2014)

### **C.6. Awards**

- Extraordinary doctorate award in Health Science. 2009/2010.
- Award “Ilustre Colegio Oficial de Farmacéuticos de Granada” given by the “Academia Iberoamericana de Farmacia”. 2014.

### **C.7. Management**

- Member of the General Committee of the Faculty Boards. From 28-04-2016 until 30/10/2018.
- ERASMUS academic tutor of students from the Faculty of Pharmacy of the University of Granada with different Italian Universities. From 01-05-2017.
- Secretary of “Comisión Interna de Calidad del Título Grado en Farmacia” from 19-12-2016.

### **C.8 Editorial and peer-review**

- Guest editor for a special issue of Sensors magazine (MDPI). 2018-2019.
- Frequent reviewer of scientific articles for journals: 30 reviews in journals like: *The journal of Physical Chemistry*, *Analytica Chimica Acta*, *Food Chemistry* or *Sensors and Actuators B: Chemical*, among others.

Fecha del CVA	30/09/2022
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## Parte A. DATOS PERSONALES

Nombre	JOSE IGNACIO		
Apellidos	CANDELA LENA		
Sexo	Hombre	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email	jicandela@us.es		
Open Researcher and Contributor ID (ORCID)	0000-0002-7420-9005		

### A.1. Situación profesional actual

Puesto	Profesor titular de universidad		
Fecha inicio	2008		
Organismo / Institución	Universidad de Sevilla		
Departamento / Centro			
País	España	Teléfono	
Palabras clave			

## 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

- Artículo científico.** MARTINEZ-AGUADO, PABLO; Sánchez-céspedes, Javier; Vega-Holm, Margarita; Candela-Lena, Jose Ignacio; Marrugal-lorenzo, José Antonio; Pachón-Díaz, Jerónimo; Iglesias-Guerra, Fernando; Vega-Perez, Jose Manuel. 2016. New 4-Acyl-1-phenylaminocarbonyl-2-phenylpiperazine Derivatives as Potential Inhibitors of Adenovirus Infection. Synthesis, Biological Evaluation, and Structure-activity Relationships Journal of Medicinal Chemistry. 59-11, pp.5432-5448. ISSN 1520-4804.
- Artículo científico.** Chowdhury, R; Candela-Lena, Jose Ignacio; Chan, Mun Chiang; et al; Schofield, Christopher J.2013. Selective Small Molecule Probes for the Hypoxia Inducible Factor (HIF) Prolyl Hydroxylases ACS Chemical Biology. 8-7, pp.1488-1496. ISSN 1554-8929.

### C.2. Congresos

- MARGARITA VEGA HOLM; Cebrero-cangueiro, Tania; Mazzotta, Sarah; YOUNES SMANI; Gema Labrador Herrera; Aiello, Franscesca; JOSE IGNACIO CANDELA LENA; INMACULADA FERNANDEZ FERNANDEZ; JERÓNIMO PACHÓN DÍAZ; Javier Sánchez Céspedes; MARÍA EUGENIA PACHÓN IBÁÑEZ; JOSE MANUEL VEGA PEREZ; FERNANDO IGLESIAS GUERRA. Synthesis of new piperazine derivatives and in vitro activity against clinical strains of panresistant Acinetobacter baumannii. 6th EuCheMS Chemistry Congress. 11/09/2016. Congreso.
- PABLO MARTINEZ AGUADO; JOSE IGNACIO CANDELA LENA; Javier Sánchez Céspedes; JOSE MANUEL VEGA PEREZ; MARGARITA VEGA HOLM; FERNANDO IGLESIAS GUERRA. New 4-Acyl-1 Phenylaminocarbonyl-2-Phenylpiperazine Derivatives as Potential Inhibitors of Adenovirus Infection. 1st Adenonet Congress. 18/04/2016. Congreso.

- 3 MARGARITA VEGA HOLM; Serna-gallego, A.; JOSE IGNACIO CANDELA LENA; Marrugal-lorenzo, J.a.; Gómez-marín, I; FERNANDO IGLESIAS GUERRA; JOSE MANUEL VEGA PEREZ; Javier Sánchez Céspedes. New Therapeutic Alternatives for the Treatment of Adenovirus Infections in Immunosuppressed Patients: Design, Synthesis and Evaluation of the Anti-Adenovirus Activity of Piperazine Derivatives. 13th Spanish National Congress of Virology. 07/06/2015. Congreso.
- 4 PABLO MARTINEZ AGUADO; Javier Sánchez Céspedes; JOSE IGNACIO CANDELA LENA; JOSE MANUEL VEGA PEREZ; MARGARITA VEGA HOLM; FERNANDO IGLESIAS GUERRA; JERÓNIMO PACHÓN DÍAZ. Identification of anti-HAdV piperazine derivatives and characterization of their mechanism of activity. Comité científico del XIII Congreso Nacional de la Sociedad Española de Virología. 07/06/2015. Congreso.
- 5 Tania Cebrero Cangueiro; FERNANDO IGLESIAS GUERRA; Javier Sánchez Céspedes; MARGARITA VEGA HOLM; YOUNES SMANI; JOSE IGNACIO CANDELA LENA; Gema Labrador Herrera; JOSE MANUEL VEGA PEREZ; JERÓNIMO PACHÓN DÍAZ; MARÍA EUGENIA PACHÓN IBÁÑEZ. In vitro activity of a library of piperazine derivatives against clinical strains of panresistant *Acinetobacter baumannii*. 10th International Symposium on the Biology of *Acinetobacter*. 03/06/2015. Congreso.

### C.3. Proyectos o líneas de investigación

- 1 **Proyecto**. 2017/96, VI Plan Propio. Ayuda Suplementaria a Grupos de Investigación por el Cumplimiento del Contrato-Programa entre la CEICE y la U.S.. INMACULADA FERNANDEZ FERNANDEZ. Desde 07/03/2017. 1,022 €.
- 2 **Proyecto**. CTQ2016-78580-C2-2-R, Desarrollo de Nuevos Sistemas Moleculares y Supramoleculares para una Catálisis Asimétrica Sostenible. Síntesis de Compuestos Antitumorales, Antivíricos y Antibacterianos. (Ministerio De Economía Y Competitividad). Desde 30/12/2016. 96,800 €.
- 3 **Proyecto**. CTQ2016-78580-C2-2-R, Desarrollo de Nuevos Sistemas Moleculares y Supramoleculares para una Catálisis Asimétrica Sostenible. Síntesis de Compuestos Antitumorales, Antivíricos y Antibacterianos. INMACULADA FERNANDEZ FERNANDEZ. (Ministerio De Economía Y Competitividad). Desde 30/12/2016. 96,800 €.
- 4 **Proyecto**. Cod. 2014/809, AYUDA SUPLEMENTARIA A GRUPOS DE INVESTIGACION POR EL CUMPLIMIENTO DEL CONTRATO-PROGRAMA ENTRE LA CEICE Y LA U.S.. INMACULADA FERNANDEZ FERNANDEZ. Desde 01/12/2014. 4,410 €.
- 5 **Proyecto**. CTQ2013-49066-C2-2-R, Diseño y Síntesis de Nuevos Sistemas Moleculares y Supramoleculares Nanométricos Como Herramientas Útiles en Síntesis Asimétrica y Biomedicina. (Ministerio De Economía Y Competitividad). Desde 01/01/2014. 127,050 €.
- 6 **Proyecto**. CTQ2013-49066-C2-2-R, Diseño y Síntesis de Nuevos Sistemas Moleculares y Supramoleculares Nanométricos como Herramientas Útiles en Síntesis Asimétrica y Biomedicina. INMACULADA FERNANDEZ FERNANDEZ. (Ministerio De Economía Y Competitividad). Desde 01/01/2014. 127,050 €.
- 7 **Proyecto**. PI-0058-2012, Nuevas Alternativas Terapéuticas para el Tratamiento de Infecciones Por Adenovirus: Desarrollo de Un Modelo Animal para el Estudio de la Eficacia y Citotoxicidad de Pequeñas Moléculas Anti-Adenovirus Generadas Mediante Química Combinatoria. (CONSEJERÍA DE SALUD. JUNTA DE ANDALUCÍA). Desde 01/01/2013. 51,300 €.
- 8 **Proyecto**. PI-0892- 2012, Búsqueda de nuevos inhibidores de las proteínas PTP y TCTP como terapia alternativa en la Hepatitis C. JOSE ANTONIO DEL CAMPO CASTILLO. Desde 01/01/2013.



### CURRICULUM VITAE (CVA)

**IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.**

#### Part A. PERSONAL INFORMATION

CV date	18/10/2022
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First name	OLGA		
Family name	CRUZ LÓPEZ		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	olgacl@ugr.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-9807-4061		

(\*) Mandatory

#### A.1. Current position

Position	Associate Professor of Organic Chemistry		
Initial date	16-12-2011		
Institution	University of Granada		
Department/Center	Medicinal and Organic Chemistry/Faculty of Pharmacy		
Country	Spain	Teleph. number	
Key words	Cancer, cluster of differentiation 44, hyaluronic acid, nanosystem, heterocycles, disaccharides, enzyme inhibitors		

#### A.2. Previous positions (research activity interruptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
2017	Professor stay/ University of Edinburgh/United Kingdom
2009-2011	Assistant Professor/ University of Granada/ Spain
2008	Postdoctoral Research / University of Ferrara/ Italy
2006-2008	Ramón Areces Fellowship / University of Ferrara/ Italy
2006	Postdoctoral Research/ University of Granada/Spain

#### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate in Pharmacy	University of Granada	2000
Doctoral Thesis in Pharmacy	University of Granada	2005

#### Part B. CV SUMMARY

I obtained my **BSc in Pharmaceutical Sciences** at the University of Granada (UGR) in 2000. Then, I gained a competitive FPU fellowship from the Andalusian Regional Government - Innovation, Science and Enterprise Division - in the Department of Medicinal and Organic Chemistry in the UGR to conduct my PhD. During this period, I carried out a medicinal chemistry project focused on COX-2 inhibitors. I did a research stay at the University of Oxford (Chemistry Research Laboratory/ Department of Chemistry) under the supervision of Prof. Christopher J. Schofield (2003). Once I obtained my **PhD** degree (2005, Summa cum Laude), I got a **postdoctoral** contract from European Commission within my department. In 2006, I moved to the University of Ferrara (Dipartimento di Scienze Farmaceutiche) funded by the Ramón Areces Foundation to conduct a postdoc at the Prof. Pier Giovanni Baraldi group. I continued in the same research group by postdoctoral contract funded by the University of Ferrara. In 2009, I returned to the UGR as Assistant Professor at the Department of Medicinal



and Organic Chemistry, and since 2011 I am Associate Professor of Organic Chemistry. In 2017, I did a research stay in Dr. Unciti-Broceta group at the Edinburgh Cancer Research UK Centre-University of Edinburgh funded by the Spanish Ministry of Education, Culture and Sport.

During my research career, I have published **52 articles in peer-review international journals (25 Q1**; total bibliographic citations: 1292; H Index: 20) I am also a co-author 9 papers in non-indexed scientific journals with a relative quality index, **3 book chapters** in prestigious international publishers, **1 patent** and 31 contributions presented at international and national conferences.

I have **3 six-year research periods** from the national committee for the assessment of the research action (date of last period 2021).

My research has been **funded by several grants** of different institutions European Union (1), Ministries of Economy and Competitiveness and Science and Innovation of Spain (6), Junta de Andalucía (4) and University of Granada (2) being the IP of 2 of them. The funding obtained has been approximately 1.100.000 €.

We have established **different collaborations at the international level** with the Universities of Edinburgh (UK), Uppsala (Sweden), Ferrara (Italy), Federal do Rio Grande do Sul (Brazil), Lund (Sweden), Leiden (Netherlands), Cardiff (UK), Padua (Italy), Louvain (Belgium) that **have resulted in several publications** (*Pharmaceutics* 2022, *Nanomedicine* 2021, *J Enzim Inhib Med Chem* 2021, *Eur J Pharm Sci* 2021, *ACS Omega* 2019, *Mol Nutr Food Res* 2017, *Eur J Med Chem* 2015, *J Med Chem* 2014, *J Med Chem* 2012, *ChemMedChem* 2011).

I have participated in several **events to disseminate research to society** such as the Science Week and Women in Science organized by the UGR as well as divulgative scientific activities such as the Initiation Project to Research and Innovation in Secondary in Andalusia and the Scientific Summer Campus 2021 of the Ministry of Education to introduce science to the young generations.

Regarding the **training of young researchers** I have supervised 4 bachelor's thesis in collaboration with the Universities of Sassari, Bari and Milan and 3 final master's projects in Official Master's degrees from the UGR and with a quality mention (MCD2006-00064).

## Part C. RELEVANT MERITS

### C.1. Publications

1. Espejo-Román JM, Rubio-Ruiz B, Cano-Cortés V, **Cruz-López O**, Gonzalez-Resines S, Domene C, Conejo-García A, Sánchez-Martín RM. Selective Anticancer Therapy Based on a HA-CD44 Interaction Inhibitor Loaded on Polymeric Nanoparticles. *Pharmaceutics*. 2022 Apr 4;14(4):788. doi: 10.3390/pharmaceutics14040788. ISI 2021: 39/279 (**Q1**) Pharmacology & Pharmacy; IF 6.525
2. **Cruz-López O**, Ner M, Nerín-Fonz F, Jiménez-Martínez Y, Araripe D, Marchal JA, Boulaiz H, Gutiérrez-de-Terán H, Campos JM, Conejo-García A\*. Design, synthesis, HER2 inhibition and anticancer evaluation of new substituted 1,5-dihydro-4,1-benzoxazepines. *J Enzyme Inhib Med Chem*. 2021, 36(1), 1553-1563. doi: 10.1080/14756366.2021.1948841. ISI 2020: 14/62 (**Q1**) Medicinal Chemistry; IF 5.051.
3. de Fraga Días A, Dallemole DA, Bruinsmann FA, Lopes Silva LF, **Cruz-López O**, ConejoGarcía A, Oliveira Battastini AM, Campos JM, Staniscuaski Guterres S, Raffin Pohlmann A, Figueiro F. (AC) Development of bozepinib-loaded nanocapsules for nose-to-brain delivery: preclinical evaluation in glioblastoma. *Nanomedicine* 2021, 16(23), 2095-2115. Position 5/11. ISI 2020: 30/159 (**Q1**) Biotechnology & Applied Microbiology; IF 5.307
4. de Fraga Días A, Scholl JN, Moritz CEJ, Kagami LP, das Neves GM, Eifler-Lima VL, **Cruz-López O**, Conejo-García A, Sevigny J, Oliveira Battastini AM, Campos JM, Figueiro F. (AC) New insights into cytotoxic mechanisms of bozepinib against glioblastoma. *Eur J Pharm Sci* 2021, 16(23), 2095-2115. Position 7/12. ISI 2020: 14/62 (**Q2**) Medicinal Chemistry; IF 5.051
5. **Cruz-López O**, Temps C, Longo B, Myers SH, Franco F, Unciti-Broceta A (AC). Synthesis and characterization of a click-assembled 18-atom macrocycle that displays selective AXL



kinase inhibitory activity. *ACS Omega*. 2019, 4 (25), 21620–21626. Position 1/6. ISI 2019: 81/177 (**Q2**) Chemistry, Multidisciplinary; IF 2.870.

**6. Cruz-López O**, Ramírez A, Navarro SA, García MA, Marchal JM, Campos JM, Conejo-García A (AC). 1-(Benzenesulfonyl)-1,5-dihydro-4,1-benzoxazepine as a new scaffold for the design of antitumor compounds. *Future Med Chem*. 2017, 9 (11), 1129-1140 . Position 1/7. ISI 2017: 9/59 (**Q1**) Medicinal Chemistry; IF 3.969

**7.** Silvia Pastoriza de la Cueva, Juana Alvarez , Akos Vegvari, Javier Montilla-Gomez, **Olga Cruz-Lopez** , Cristina Delgado-Andrade, Jose A. Rufian-Henares (AC). Relationship between HMF intake and SMF formation in vivo: An animal and human study. *Mol Nutr Food Res* 2017, 61 (3), 1600773. Position 5/7. ISI 2017: 5/133 (**D1**) Food Science & Technology; IF 5.151

**8.** Romagnoli R (AC), Baraldi PG, Lopez-Cara LC, **Cruz-Lopez O**, Moorman AR, Massink A., IJzerman AP, Vincenzi F, Borea PA, Varani K. Synthesis and biological evaluation of a new series of 2-amino-3-aryl thiophene derivatives as agonist allosteric modulators of the A1 adenosine receptor. A position-dependent effect study. *Eur J Med Chem* 2015, 101, 185-204. Position 4/10. ISI 2015: 6/59 (**Q1**) Medicinal Chemistry; IF 3.902

**9.** Romagnoli R (AC), Baraldi PG, IJzerman AP, Massink A, **Cruz-Lopez O**, Lopez-Cara LC, Saponaro G, Preti D, Aghazadeh Tabrizi M, Baraldi S, Moorman AR, Vincenzi F, Borea PA, Varani K. Synthesis and Biological Evaluation of Novel Allosteric Enhancers of the A1 Adenosine Receptor Based on 2-Amino-3-(4'-Chlorobenzoyl)-4-Substituted-5-Arylethynyl Thiophene. *J Med Chem* 2014, 57, 7673-7686. Posición 5/14. ISI 2014: 3/59 (**D1**) Medicinal Chemistry; IF 5.447

**10.** Ramirez A, Boulaiz H, Morata-Tarifa C, Peran M, Jimenez G , Picon-Ruiz M, Agil A, **Cruz-Lopez O**, Conejo-García A, Campos J, Sanchez A, Garcia M (AC), Marchal JA (AC). HER2-signaling pathway, JNK and ERKs kinases, and cancer stem-like cells are targets of Bozepinib small compound. *Oncotarget*, 5 (11), 2014, 3590-3606. Posición 8/13. ISI 2014: 21/211 (**D1**) Oncology; IF 6.359

## C.2. Research projects

**1.** Development of a new nanotechnology platform for antitumor therapy based on CD44 inhibition. Ministry of Science and Innovation (PID2021 128109OBI00). 2023-2025. 127.050 euros

**2.** Synthesis of lipophenols with anticancer activity from bioactive compounds from food byproducts (**Principal Investigator**). Ministry of Ecological Transition (TED2021-132047B-I00). 2022-2024. 149.500 euros

**3.** Design, synthesis, biological evaluation and targeted release of CD44 inhibitors: a promising antitumor therapy (**Principal Investigator**). Junta de Andalucía (P18-RT-1679). 2020-2022. 140.500 euros

**4.** Development of a nanotechnology platform for in situ cell reprogramming using peptide nucleic acid based gene editing. Junta de Andalucía (P18-TP-4160). 2020-2022. 138.575 euros

**5.** Nano3Devices: Multifunctionalized Nanosystem with Theranostic Application in Cancer Ministry of Science and Innovation and Universities, Carlos III Health Institute (DTS18/ 00121) 2018-2020. 78,650 euros

**6.** Development of a Theranostic Antitumour Nanosystem based on CD44 inhibitors. UGR Research and Transfer Plan. University of Granada (PR/17/006) 2018-2020. 15.000 euros

**7.** Improvement of the anticancer activity of bozepinib, bozinib and derivatives, by introducing the trifluoromethyl group. Junta de Andalucía (CS2016.1) 2017-2018. 15,000 euros

**8.** Innovative 5-Fluorouracil O, N-Acetals and di- and tri-substituted Purine derivatives as pharmacological tools for the treatment of Cancer Stem Cells. Ministry of Science and Innovation, Carlos III Health Institute (10/00592) 2011-2013. 93.775 euros

## C.3. Institutional responsibilities

**1.** Coordinator of the Pharmacy Degree (UGR) Start date: November 23, 2016





2. Coordinator of the Internal Quality Assurance Committee of the Pharmacy Degree (UGR)  
Start date: November 23, 2016
3. Elected member of the "Academic Planning Committee " of the Faculty of Pharmacy of the University of Granada, Start date: December 2, 2020
4. Elected member of the "Faculty of Pharmacy Board" of the University of Granada, Start



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## CURRICULUM VITAE (CVA)

**IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.**

### Part A. PERSONAL INFORMATION

CV date 15/07/2022

First name	ELENA MATILDE		
Family name	SÁNCHEZ FERNÁNDEZ		
Gender (*)	Female	Date of Birth (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	esanchez4@us.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	ID: C-4594-2013 ORCID: 0000-0002-8617-8234		

(\*) Mandatory

#### A.1. Current position

Position	Senior Lecturer		
Initial date	30/12/2019		
Institution	University of Seville		
Department/Centre	Organic Chemistry	Faculty of Chemistry	
Country	Spain	Phone number	
Keywords	Organic chemistry, carbohydrates, iminosugars, cancer, inflammation, glycomimetics, glycodrugs		

#### A.2. Previous positions (research activity interruptions)

Period	Position/Institution/Country/Cause of the interruption
01/05/2007-30/04/2010	Postdoctoral Researcher/Institute of Chemical Research (CSIC)/Spain/End
28/07/2010-27/07/2012	Postdoctoral Intra-European Marie Curie/University of Oxford/UK/End
01/07/2013-09/06/2017	Postdoctoral Marie Curie Integration Grant/University of Seville/Spain/Start as Assistant Professor
10/06/2017- 09/04/2019	Assistant Professor/University of Seville/Spain/End
10/04/2019-29/12/2019	Lecturer/University of Seville/Spain/End
30/12/2019-to the present	Senior Lecturer/University of Seville/Spain

#### A.3. Education

PhD, Graduate Degree	University/Country	Year
Degree in Chemistry	University of Granada/Spain	2001
PhD	University of Granada/Spain	2006

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

Three-year research periods positively evaluated: **3** (2002/07, 2008/13, 2014/2019).

JCR articles: **44 (69.39% Q1, JCR)**; Q1-publications: 34, D1-publications: 8. Total number of citations: 1224 (WOS); **h-index: 21** (WOS) (Scopus) 07/04/2022.



Elena M. Sánchez Fernández obtained her Degree in Chemistry from the University of Granada in 2001. Her first forays into the field of Organic Chemistry began in 1999 when she started working as internal student in the group of Professor A. F. Barrero. She got a collaboration grant in the academic year 2000-2001. Then she was awarded with a predoctoral grant for conducting her PhD entitled " Stereoselective Synthesis of Bioactive Terpenoids via Radical Processes" in the Department of Organic Chemistry at the same university. During 2002 and 2005 she made two predoctoral stays abroad, twelve and three months respectively, at the Institut de Chimie des Substances Naturelles (ICSN-CNRS) (France) under the supervision of Professor Siméon Arseniyadis and the Chemistry Research Laboratory (CRL) at the University of Oxford (UK) under the supervision of Professor Stephen G. Davies. In both stays she worked in the asymmetric synthesis of natural products with biological activity. In June 2006 she obtained her PhD in Chemistry from the University of Granada. In 2007 she received a Postdoctoral contract of three years for the incorporation of researchers into the Spanish Science and Technology (I3P) at the Institute of Chemical Research of "Isla de la Cartuja" (CSIC) (2007- 2010) under the supervision of Professor José M. García Fernández. During this time, she worked on the design and synthesis of sp<sup>2</sup>-iminosugars as inhibitors of glycosidases. Then she got a prestigious Postdoctoral contract of two years (2010-2012) in the "People Marie Curie Actions FP7-PEOPLE-2009-IEF" program to carry out a European project under the supervision of Professor Christopher J. Schofield based on the study of mechanism of action of histones demethylases by a biochemical/biophysical approach in the Chemistry Research Laboratory at the University of Oxford. After this period in the UK, she joined to the University of Seville as a postdoctoral researcher "Marie Curie Reintegration Grant" in the Department of Organic Chemistry of the Faculty of Chemistry under the supervision of Professor Carmen Ortiz Mellet for 4 years (2013-2017) for the development of a project entitled "Glycodrugs: new strategies for controlling the activity of glycosidase enzymes and their application in cancer". Since June 2017, she has been teaching and researching as Assistant Professor in the same Department. In April 2019 she was promoted to Lecturer and in December 2019 she got a permanent position as Senior Lecturer. All these years of scientific career have led to the active participation in 13 projects funded research, stays at five renowned research centers, 44 publications in journals of high impact, with a total of 1224 citations, h-index = 21, 2 patents, more than 50 participations (posters, oral and flash communications) at national and international conferences, as well as active participation in dissemination activities and seminars. Co-supervisor of 14 Final Degree Works, 2 Master's Thesis and 1 Doctoral Thesis. Her line of research in recent years is based mainly on the design of new strategies for the preparation of glycomimetics with potential biomedical activity. Her achievements include the synthesis of glycolipid analogues as immunomodulators with potent anti-tumor and anti-inflammatory activity.

## Part C. RELEVANT MERITS (sorted by typology)

### C.1. Publications

1. F. Cano-Cano, E. Alcalde-Estevez, L. Gómez-Jaramillo, M. Iturregui, **E. M. Sánchez-Fernández**, J. M. García Fernández, C. Ortiz Mellet, A. Campos-Caro, C. López-Tinoco, M. Aguilar-Diosdado, A. M. Valverde, A. I. Arroba. Anti-Inflammatory (M2) Response is Induced by a sp<sup>2</sup>-Iminosugar Glycolipid Sulfoxide in Diabetic Retinopathy. *Front. Immunol.* **2021**, *12*, 632132. **IF: 7,561**. Ranking: Immunology 24/162. **Q1. Corresponding Author**. DOI: 10.3389/fimmu.2021.632132.
2. **E. M. Sánchez-Fernández**, R. García-Hernández, F. Gamarro, A. I. Arroba, M. Aguilar-Diosdado, J. M. Padrón, J. M. García Fernández, C. Ortiz Mellet. Synthesis of sp<sup>2</sup>-iminosugar selenoglycolipids as multitarget drug candidates with antiproliferative, leishmanicidal and anti-inflammatory properties. *Molecules* **2021**, *26*, 7501. **IF: 4,412**. Ranking: Multidisciplinary Chemistry 63/178. **Q2. Corresponding Author**. <https://doi.org/10.3390/molecules26247501>.
3. P. A. Guillen-Poza, **E. M. Sánchez-Fernández**, G. Artigas, J. M. García Fernández, H. Hinou, C. Ortiz Mellet, S. I. Nishimura, F. Garcia-Martin. Amplified Detection of Breast Cancer Autoantibodies Using MUC1- Based Tn Antigen Mimics. *J. Med. Chem.*, **2020**, *63*, 8524-8533. **IF: 7,446**. Ranking: Medicinal Chemistry 3/63. **Q1, D1**. DOI: 10.1021/acs.jmedchem.0c00908.



**Mention for the article of the month of July 2020 awarded by the Faculty of Chemistry (University of Seville).**

4. I. A. Bermejo, C. D. Navo, J. Castro-López, A. Guerreiro, E. Jiménez-Moreno, **E. M. Sánchez-Fernández**, F. García-Martín, H. Hinou, S.-I. Nishimura, J. M. García Fernández, C. Ortiz Mellet, A. Avenozza, J. H. Busto, G. J. L. Bernardes, R. Hurtado-Guerrero, J. M. Peregrina, F. Corzana. Synthesis, conformational analysis and in vivo assays of an anti-cancer vaccine that features an unnatural antigen based on an sp<sup>2</sup>-iminosugar fragment. *Chem. Sci.*, **2020**, *11*, 3996-4006. **IF: 9,825**. Ranking: Multidisciplinary Chemistry 22/178. **Q1**. DOI: 10.1039/C9SC06334J.

5. I. Herrera, **E. M. Sánchez-Fernández**, A. Sau, C. Nativi, J. M. García Fernández, M. C. Galán, C. Ortiz Mellet. Título: Stereoselective Synthesis of Iminosugar 2-Deoxy(thio)glycosides from Bicyclic Iminoglycal Carbamates Promoted by Cerium(IV) Ammonium Nitrate and Cooperative Brønsted Acid-Type Organocatalysis. *J. Org. Chem.*, **2020**, *85*, 5038-5047. **IF: 4,335**. Ranking: Organic Chemistry 9/57. **Q1**. DOI: 10.1021/acs.joc.0c00324.

6. sp<sup>2</sup>-Iminosugars as Chemical Mimics for Glycodrug Design. *In Small Molecule Drug Discovery. Methods, Molecules and Applications*. Editorial: Elsevier. Editores: A. Trabocchi, E. Lenci. Autores: **E. M. Sánchez-Fernández**, M. I. García-Moreno, J. M. García Fernández, C. Ortiz Mellet. ISBN: 9780128183496. **2020. Corresponding Author**.

7. E. Schaeffer, **E. M. Sánchez-Fernández**, R. Gonçalves-Pereira, V. Flacher, D. Lamon, M. Duval, J.-D. Fauny, J. M. García Fernández, C. G. Mueller, C. Ortiz Mellet. sp<sup>2</sup>-Iminosugar glycolipids as inhibitors of lipopolysaccharide-mediated human dendritic cell activation in vitro and of acute inflammation in mice in vivo. *Eur. J. Med. Chem.*, **2019**, *169*, 111-120. **IF: 5,572**. Ranking: Medicinal Chemistry 5/61. **Q1, D1**. DOI: 10.1016/j.ejmech.2019.02.078. **Mention for the article of the month of May 2019 awarded by the Faculty of Chemistry (University of Seville)**.

8. **E. M. Sánchez-Fernández**, M. García-Moreno, A. I. Arroba, M. Aguilar-Diosdado, J. M. Padrón, R. García-Hernández, F. Gamarro, S. Fustero, J. E. Sánchez-Aparicio, L. Masgrau, J. M. García Fernández, C. Ortiz Mellet. Synthesis of polyfluoroalkyl sp<sup>2</sup>-iminosugar glycolipids and evaluation of their immunomodulatory properties towards anti-tumor, anti-leishmanial and anti-inflammatory therapies. *Eur. J. Med. Chem.*, **2019**, *182*, 111604. **IF: 5,572**. Ranking: Medicinal Chemistry 5/61. **Q1, D1**. DOI: 10.1016/j.ejmech.2019.111604. **Corresponding Author**.

9. E. Romero-Ben, T. Mena, E. García de Dionisio, **E. M. Sánchez-Fernández**, J. M. García Fernández, E. Guillén-Mancina, M. López-Lázaro, N. Khiar. Mannose-coated polydiacetylene (PDA)-based nanomicelles: synthesis, interaction with Concanavalin A and application in the water solubilization and delivery of hydrophobic molecules. *J. Mater. Chem., B*, **2019**, *7*, 5930-5946. **IF: 5,047**. Ranking: Biomaterials 6/32. **Q1**. <https://doi.org/10.1039/C9TB01218D>.

10. E. M. Sánchez-Fernández, M. I. García-Moreno, R. García Hernández, J. M. Padrón, J. M. García Fernández, F. Gamarro, C. Ortiz Mellet. Thiol-ene "Click" Synthesis and Pharmacological Evaluation of C-Glycoside sp<sup>2</sup>-Iminosugar Glycolipids. *Molecules* **2019**, *24*, 2882. **IF: 3,367**. Ranking: Multidisciplinary Chemistry 70/177. **Q2. Corresponding Author**. <https://doi.org/10.3390/molecules24162882>

11. E. Alcalde-Estévez, A. I. Arroba, **E. M. Sánchez-Fernández**, C. Ortiz Mellet, J. M. García Fernández, L. Masgrau, A. M. Valverde. The sp<sup>2</sup>-iminosugar glycolipid 1-dodecylsulfonyl-5N,6O-oxomethylidenenojirimycin (DSO<sub>2</sub>-ONJ) as selective anti-inflammatory agent by modulation of hemeoxygenase-1 in Bv.2 microglial cells and retinal explants. *Food Chem. Toxicol.*, **2018**, *111*, 454-466. **IF: 3,977**. Ranking: Food Science and Technology 8/130. **Q1, D1**. <http://dx.doi.org/10.1016/j.fct.2017.11.050>.

12. M. I. García-Moreno, M. de la Mata, **E. M. Sánchez-Fernández**, J. M. Benito, A. Díaz-Quintana, S. Fustero, E. Nanba, K. Higaki, J. A. Sánchez-Alcázar, J. M. García Fernández, C. Ortiz Mellet. Fluorinated Chaperone-β-Cyclodextrin Formulations for β-Glucocerebrosidase Activity Enhancement in Neuronopathic Gaucher Disease. *J. Med. Chem.*, **2017**, *60*, 1829-1842. **IF: 6,253**. Ranking: Medicinal Chemistry 3/59. **Q1, D1**. DOI:



10.1021/acs.jmedchem.6b01550. **Mention for the article of the month of May 2017 awarded by the Faculty of Chemistry (University of Seville).**

**13.** N. Gueder, G. Allan, M.-S. Telliez, F. Hague, J. M. García Fernández, **E. M. Sánchez-Fernández**, C. Ortiz-Mellet, A. Ahidouch, H. Ouadid-Ahidouch.  $sp^2$ -Iminosugar  $\alpha$ -glucosidase inhibitor 1-C-octyl-2-oxa-3-oxocastanospermine specifically affected breast cancer cell migration through Stim1,  $\beta$ 1-integrin, and FAK signaling pathways. *J. Cell Physiol.*, **2017**, 232, 3631-3640. **IF: 4,218**. Ranking: Physiology 16/84. **Q1**. DOI: 10.1002/jcp.25832.

## C.2. Congresses

**1.** **E. M. Sánchez Fernández**, M. I. García Moreno, A. I. Arroba, M. Aguilar Diosdado, J. Padrón, R. García-Hernández, F. Gamarro J. M. García Fernández, J.-E. Sánchez-Aparicio, L. Masgrau, C. Ortiz Mellet.  $sp^2$ -Iminosugar glycolipid mimetics as immunoregulatory agents. **Oral Communication**. V Chemical Biology Group Meeting. Granada (Spain). 19-21 February **2020**.

**2.** Glycal-type enecarbamates: straightforward access to O- and S- $\alpha$ -glycoside mimetics. **E. M. Sánchez-Fernández**, I. Herrera, C. Nativi, A. Sau, M. C. Galán, J. M. García Fernández, C. Ortiz Mellet. European Carbohydrate Symposium (Eurocarb XX). **Poster**. Leiden (Netherlands). 30/06-04/07 **2019**.

**3.**  $sp^2$ -Iminosugar glycolipids as p38 $\alpha$  MAPK activators: drug candidates for diabetic retinopathy. **E. M. Sánchez-Fernández**, C. Ortiz Mellet, J. M. García Fernández, E. Alcalde-Estévez, A. I. Arroba, L. Masgrau, A. M. Valverde. 29<sup>th</sup> International Carbohydrate Symposium. **Oral Communication**. Lisbon (Portugal). 14-19 July **2018**.

## C.3. Research projects

**1.** Cross-recognition of glycosidases and lectins: mechanisms and opportunities in multitarget drug development. Funding body: Junta de Andalucía, Ref: US-1380698. Date of start: 01/01/2022, end of the Project: 31/12/2022. Amount granted: 80.000,00 €. Type of participation: Researcher. Principal investigator: Dra. C. Ortiz Mellet.

**2.** Glycoconjugate mimetics: new strategies in glycomedicine targeting neurological and immune system diseases. Funding body: "Programas Estatales de Generación de Conocimiento y Fortalecimiento Científico y Tecnológico del Sistema de I+D+i y de I+D+i Orientada a los Retos de la Sociedad", Ref.: PID2019-105858RB-I00. Date of start: 01/06/2020, end of the project: 30/05/2023. Amount granted: 115.000,00 €. Type of participation: Researcher. Principal investigator: Dra. C. Ortiz Mellet.

**3.** Glycodrugs: new strategies for controlling the activity of glycosidase enzymes and their application in therapies for lysosomal storage diseases (LSDs) and cancer. Funding body: European Union, Ref.: 333594. Date of start: 01/07/2013, end of the project: 30/06/2017. Amount granted: 100.000,00 €. Principal investigators: **Dra. E. M. Sánchez Fernández**, Dra. C. Ortiz Mellet.

**4.** Glycomimetic-based therapies for the treatment of protein folding diseases, inflammation, and cancer. Funding body: "Plan Estatal 2013-2016 Retos - Proyectos I+D+i", Ref.: SAF2016-76083-R. Date of start: 30/12/2016, end of the project: 31/12/2020. Amount granted: 169.400 €. Type of participation: Researcher. Principal investigator: Dra. C. Ortiz Mellet.

## C.4. Technology/Knowledge transfer

**1.** J. M. García Fernández, C. Ortiz Mellet, M. González-Cuesta, **E. M. Sánchez-Fernández**, Y.- J. Chang, A. Chuan-Ying Lai. Anti-Inflammatory Glycolipid Mimetics and Uses Thereof, CSIC – University of Seville - Academia Sinica (Taiwan). EP21382981.5, **2021**. Priority Country: Spain. Priority date: 29/10/**2021**.