

Date of the CVA	01/01/2020
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## Section A. PERSONAL DATA

Name and Surname	Antonio Martínez Abad		
DNI/NIE/Passport		Age	
Researcher's identification number	Researcher ID		
	Scopus Author ID	36464077500	
	ORCID	0000-0002-6656-2917	

### A.1. Current professional situation

Institution	Consejo Superior de Investigaciones Científicas		
Dpt. / Centre			
Address			
Phone		Email	
Professional category	Contratado Juan de la Cierva-Incorporación	Start date	2019
UNESCO spec. code			
Keywords			

### A.2. Academic education (Degrees, institutions, dates)

Bachelor/Master/PhD	University	Year
Programa Oficial de Doctorado en Ciencia de los Alimentos	Universidad Politécnica de Valencia	2014
Licenciado en Farmacia Orientación Analítico-Clínica	Universitat de València	2013
Licenciado en Ciencia y Tecnología de los Alimentos	Universitat de València	2005

### A.3. General quality indicators of scientific production

My currently available scientific research includes 31 research articles and 4 book chapters, 18 of which as first (preferential) author.

14 of these research articles are ranked **D1** (1<sup>o</sup> decile) based on the impact factor in the areas of Food Science, Polymer science and green, sustainable science (20 in Q1).

As for Dec 2019, I have received 610 citations, representing an H index of 15.

## Section B. SUMMARY OF THE CURRICULUM

I received a full **degree in Food Science and Technology** from the University of Valencia (Spain) and joined the Institute of Agrochemistry and Food Technology in 2008 as a lab assistant. During this period I was testing the **antimicrobial efficacy of natural substances** on different surfaces and incorporated into polymers. In 2009 I received a predoctoral grant to develop **silver-based antimicrobial biopolymers** for food packaging applications. During the PhD, I gained deep understanding of **polymer science** and improved my skills in microbiological assays. I was also granted a 4-month stay at Iowa state University to improve the detection skills of microbes using molecular and cytometric approaches. Parallely, I received a full **degree in pharmacy (2013)**. As a result from all my PhD research period, I wrote twelve papers and three book chapters as first author and supervised three internship and two master students. I received the **PhD in Food science in 2014** (international mention, extraordinary award 2015). After a 6-month contract within an EU-project exploring the potential use of industrial by-products and thermoplastics to improve biopolyesters, I received a **post-doctoral fellowship** at the **Swedish Royal Institute of Technology (KTH)**. During the first stage of my postdoctoral studies (**2014-2017**), I improved my skills on analytical chemistry and mass spectrometric tools as to develop a platform for the intramolecular glycomic profiling of polysaccharides. Parallely, I worked within several EU and Swedish nationally funded projects on the valorization of forestry, wheat bran and mushroom wastes within an integral biorefinery concept. I have been recipient of a **Juan de la Cierva-formación** and joined the

department of analytical chemistry, nutrition and food sciences at the **University of Alicante (2017-2019)** where I continued research on extraction of functional additives and revalorisation of agricultural residues. I was recipient of a **Juan de la Cierva-Incorporación-2017** and joined back the Institute of Agrochemistry and Food Technology in Valencia in **2019**, where I am currently co-supervising 4 PhD theses within different EU and national projects, all within the concept of valorisation of industrial residues into value-added products.

My research interests encompass the design, characterization and evaluation of biopolymers incorporating antimicrobial or other bioactive substances, the fine structural analysis and sequencing of polysaccharides, and the development of extraction/characterization/analysis/evaluation approaches for valorisation of polysaccharides and functional compounds from agricultural, food or forestry residues.

**Overall**, I have participated in **seven nationally funded projects, five EU funded projects and eleven privately funded projects**. I have proved excellent capabilities in adapting myself to new fields of research, work together along different environments, lead younger students and transform the knowledge gained into a valuable and reportable outcome.

## Section C. MOST RELEVANT MERITS (ordered by typology)

### C.1. Publications

- 1 Scientific paper.** Ramos, Marina; et al. 2019. Agaricus bisporus and its by-products as a source of valuable extracts and bioactive compounds Food Chemistry. 292, pp.176-187. ISSN 0308-8146.
- 2 Scientific paper.** McKee, L.S.; et al. 2019. Focused Metabolism of  $\beta$ -Glucans by the Soil Bacteroidetes Species Chitinophaga pinensis Applied and environmental microbiology. 85-2.
- 3 Scientific paper.** Martínez-Sanz, M.; et al. 2019. Production of unpurified agar-based extracts from red seaweed Gelidium sesquipedale by means of simplified extraction protocols Algal Research. 38.
- 4 Scientific paper.** Fontes-Candia, C.; et al. 2019. Superabsorbent food packaging bioactive cellulose-based aerogels from Arundo donax waste biomass Food Hydrocolloids. 96, pp.151-160.
- 5 Scientific paper.** J. Arnling-Bååth; et al. 2018. Mannanase hydrolysis of spruce galactoglucomannan focusing on the influence of acetylation on enzymatic mannan degradation Biotechnology for Biofuels. Springer Nature. 11-1, pp.114-230.
- 6 Scientific paper.** Martínez-Abad, A.; et al. 2018. Differences in extractability under subcritical water reveal interconnected hemicellulose and lignin recalcitrance in birch hardwoods Green Chemistry. 20-11, pp.2534-2546.
- 7 Scientific paper.** Morais de Carvalho, D.; et al. 2017. Isolation and characterization of acetylated glucuronoarabinoxylan from sugarcane bagasse and straw Carbohydrate Polymers 156, pp. 223-234. Elsevier. 156, pp.223-234.
- 8 Scientific paper.** Antonio Martínez-Abad; et al. (1). 2017. Regular Motifs in Xylan Modulate Molecular Flexibility and Interactions with Cellulose Surfaces Plant Physiology. American Society of Plant Biologists. 175-4, pp.1579-1592. ISSN 0032-0889.
- 9 Scientific paper.** Andrea C. Ruthes; et al. 2017. Sequential fractionation of feruloylated hemicelluloses and oligosaccharides from wheat bran using subcritical water and xylanolytic enzymes Green Chemistry. Royal Society of Chemistry. 10.1039/C6GC03473J.
- 10 Scientific paper.** Martínez-Abad, A.; et al. 2016. Biodegradable poly(3-hydroxybutyrate-co-3-hydroxyvalerate)/thermoplastic polyurethane blends with improved mechanical and barrier performance
- 11 Scientific paper.** Martínez-Abad, A.; et al. 2016. Characterization of polyhydroxyalkanoate blends incorporating unpurified biosustainably produced poly(3-hydroxybutyrate-co-3-hydroxyvalerate) Journal of Applied Polymer Science. 133-2.
- 12 Scientific paper.** Martínez-Abad, A.; Ruthes, A.C.; Vilaplana, F.2016. Enzymatic-assisted extraction and modification of lignocellulosic plant polysaccharides for packaging applications Journal of Applied Polymer Science. 133-2.

- 13 **Scientific paper.** Martínez-Abad, A.; Lagarón, J.M.; Ocio, M.J.2014. Antimicrobial beeswax coated polylactide films with silver control release capacity International Journal of Food Microbiology. 174, pp.39-46.
- 14 **Scientific paper.** Martínez-Abad, A.; Lagarón, J.M.; Ocio, M.J.2014. Characterization of transparent silver loaded poly(l-lactide) films produced by melt-compounding for the sustained release of antimicrobial silver ions in food applications Food Control. 43, pp.238-244.
- 15 **Scientific paper.** Martínez-Abad, A.; Ocio, M.J.; Lagaron, J.M.2014. Morphology, physical properties, silver release, and antimicrobial capacity of ionic silver-loaded poly(L-lactide) films of interest in food-coating applications Journal of Applied Polymer Science. 131-21.
- 16 **Scientific paper.** Castro-Mayorga, J.L.; et al. 2014. Stabilization of antimicrobial silver nanoparticles by a polyhydroxyalkanoate obtained from mixed bacterial culture International Journal of Biological Macromolecules. 71, pp.103-110.
- 17 **Scientific paper.** Martínez-Abad, A.; et al. 2013. Antibacterial performance of solvent cast polycaprolactone (PCL) films containing essential oils Food Control. 34-1, pp.214-220.
- 18 **Scientific paper.** Martínez-Abad, A.; et al. 2013. Evaluation of silver-infused polylactide films for inactivation of Salmonella and feline calicivirus in vitro and on fresh-cut vegetables International Journal of Food Microbiology. 162-1, pp.89-94.
- 19 **Scientific paper.** Martínez-Abad, A.; et al. 2013. Influence of speciation in the release profiles and antimicrobial performance of electrospun ethylene vinyl alcohol copolymer (EVOH) fibers containing ionic silver ions and silver nanoparticles Colloid and Polymer Science. 291-6, pp.1381-1392.
- 20 **Scientific paper.** Yo; et al. 2013. Ligands affecting silver antimicrobial efficacy on Listeria monocytogenes and Salmonella enterica Food Chemistry. Elsevier. 139-1-4, pp.281-288.
- 21 **Scientific paper.** Martínez-Abad, A.; Lagaron, J.M.; Ocio, M.J.2012. Development and characterization of silver-based antimicrobial ethylene-vinyl alcohol copolymer (EVOH) films for food-packaging applications Journal of Agricultural and Food Chemistry. 60-21, pp.5350-5359.
- 22 **Scientific paper.** Martínez-Abad, A.; et al. 2012. On the different growth conditions affecting silver antimicrobial efficacy on Listeria monocytogenes and Salmonella enterica International Journal of Food Microbiology. 158-2, pp.147-154.
- 23 **Scientific paper.** Torres-Giner, S.; et al. 2010. Stabilization of a nutraceutical omega-3 fatty acid by encapsulation in ultrathin electrospayed zein prolamine Journal of Food Science. 75-6.
- 24 **Book chapter.** Castro-Mayorga, JL; et al. 2016. Silver-Based Antibacterial and Virucide Biopolymers: Usage and Potential in Antimicrobial Packaging Antimicrobial Polymers. Elsevier. ISBN 978-0-12-800723-5.
- 25 **Book chapter.** Martínez-Abad, A.; et al. 2014. Polymeric Materials Containing Natural Compounds with Antibacterial and Virucide Properties Polymeric Materials with Antimicrobial Activity: From Synthesis to Applications. RSC publishing. pp.310-326. ISBN 978-1-84973-807-1.
- 26 **Book chapter.** Martínez-Abad, A.2011. Silver based nanoreinforced polymers for food packaging Multifunctional and nanoreinforced polymers for food packaging. Woodhead Publishing. pp.347-367. ISBN 9781845697389.
- 27 **Book chapter.** Martínez-Abad, A.2011. Silver- and Nanosilver-Based Plastic Technologies Antimicrobial Polymers. Wiley. pp.287-316. ISBN 978-0-470-59822-1.

## C.2. Participation in R&D and Innovation projects

- 1 RTI2018-094268-B-C22, Enhancing technological and nutritional food properties using gels and emulsions formulated with non-purified carbohydrates obtained from alternative sources Proyectos I+D+i «Retos Investigación» 2018. Amparo López Rubio. (Instituto de Agroquímica y Tecnología de Alimentos). 01/01/2019-31/12/2022. 323.433 €. Team member.
- 2 PCI2018-092886, BIOCARB-4-FOOD-Extraction and characterization of BIOactives and CARBohydrates from seaweeds and seagrasses FOR FOOD-related applications Horizon 2020 Eranet SUSFOOD2. Amparo López Rubio. (Instituto de Agroquímica y Tecnología de Alimentos). 01/09/2018-30/07/2021. 955.000 €. Team member.

- 3 MOOC 20170, Consumers and Environmental Safety: Food Packaging and Kitchenware EIT Food. Antonio Martínez Abad. (Instituto de Agroquímica y Tecnología de Alimentos). 01/01/2020-31/12/2020. 65.750 €. Principal investigator.
- 4 720720, FUNGUSCHAIN - Cascade approach for the valorization of mushroom agro-waste residues into high-added value chemicals and polymers H2020-BBI-PPP-2015-2-1. Francisco Javier Vilaplana Domingo. (Royal Institute of Technology). 01/10/2016-01/10/2020. 980.875 €. Team member.
- 5 745578, BARBARA - Biopolymers with advanced functionalities for building and automotive parts processed through additive manufacturing H2020-BBI-JTI-2016. Maria Carmen Garrigós Selva. (Universidad de Alicante). 01/05/2017-30/04/2020. 2.770.749 €. Team member.
- 6 621-2014-5295, Deciphering the Plant Cell Wall Glycome: Polysaccharide Sequencing, Macromolecular Architecture and Supramolecular Interactions Francisco Vilaplana Domingo. (Royal Insitute of Technology). 01/01/2015-31/12/2018. 366.000 €. Team member.
- 7 2014F1-0001, Valorization of wheat bran into high added-value carbohydrate materials Lantmännen Research Foundation. Francisco Vilaplana Domingo. (Royal Insitute of Technology). 01/01/2014-31/12/2016. 148.000 €. Team member.
- 8 MAT2012-38947-CO2-01, DESARROLLO DE MATERIALES NANOCOMPUESTOS TOTALMENTE RENOVABLES BASADOS EN BIOPOLIESTERES CON PROPIEDADES BARRERA, BIOCIDA Y VIRUCIDA PARA ENVASES ALIMENTARIOS Jose Maria Lagaron Cabello. (Consejo Superior de Investigaciones Científicas). 01/01/2013-31/12/2015. 70.200 €. Team member.
- 9 AGL2012-30647, DESARROLLO Y CARACTERIZACION DE SISTEMAS DE NANO- Y MICROENCAPSULACION DE INGREDIENTES BIOACTIVOS DE INTERES EN EL DESARROLLO DE ALIMENTOS FUNCIONALES Amparo Lopez Rubio. (Consejo Superior de Investigaciones Científicas). 01/01/2013-31/12/2015. 119.340 €. Team member.
- 10 ECOBIOCAP, ECOefficient BIODEgradable Composite Advanced Packaging (ECOBIOCAP) 7th EU Framework Programme (FP) for Research, Technological Development, and Demonstration. Nathalie Gontard. (Consejo Superior de Investigaciones Científicas). 01/03/2011-28/02/2015. 2.990.000 €. Team member.
- 11 MAT2009-14533-CO2-01, DESARROLLO Y CARACTERIZACION DE ADITIVOS REFORZANTES ANTIMICROBIANOS Y BIOACTIVOS Y DE SUS NANOCOMPUESTOS CON POLIESTERES DE INTERES EN APLICACIONES DE ENCAPSULADO Y ENVASES ALIMENTARIOS Jose Maria Lagaron Cabello. (Consejo Superior de Investigaciones Científicas). 01/01/2010-31/12/2012. 134.310 €. Team member.

### C.3. Participation in R&D and Innovation contracts

- 1 Obtención de componentes bioactivos para el sector agroalimentario mediante procesos de bioconversión y biorrefinería de subproductos de origen animal y vegetal (BIOPRO) ARGAL S.A.. Amparo Lopez Rubio. 01/11/2017-01/11/2021. 30.000 €.
- 2 Obtención de componentes bioactivos para el sector agroalimentario mediante procesos de bioconversión y biorrefinería de subproductos de origen animal y vegetal (BIOPRO) KIMITEC. Amparo Lopez Rubio. 01/11/2017-P4Y. 30.000 €.
- 3 Obtención de componentes bioactivos para el sector agroalimentario mediante procesos de bioconversión y biorrefinería de subproductos de origen animal y vegetal (BIOPRO) MAHOU, S.A.. Amparo Lopez Rubio. 01/11/2017-P4Y. 35.000 €.

### C.4. Patents