



CURRICULUM VITAE (CVA)

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Part A. PERSONAL INFORMATION

CV date

23/01/2023

First name	Juan Luis		
Family name	Ramos Martín		
Gender (*)	male	Birth date	
NIF			
e-mail	juanluis.ramos@eez.csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-5350-7249		

(*) Mandatory

A.1. Current position

Position	Research Professor		
Initial date	1.11.1987		
Institution	CSIC		
Department/Center	Protección Ambiental	Estación Experimental del Zaidín	
Country	Spain	Telephone	+34958181600
Key words	Pseudomonas, 2G processes, biofertilizers, plant/microbe interactions, enzymes		

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

Period	Position/Institution/Country/Interruption cause
1.10.2013 to 30.09.2017	Head of Biotech Department/ Abengoa Research/Spain
01.04.1987 to 30.09.2017	Staff member of CSIC at EEZ/Spain
01.11.1984 to 30.03.1987	Assistant Professor/ Medical Biochemistry/University of Geneva, Geneva, Switzerland
01.01.1983 to 30.10.1984	EMBO Post-doc/ Sussex University, Brighton, UK
01.01.1982 to 31.12.1982	Assistant Professor/ University of Seville, Seville, Spain
30.09.1978 to 31.12.1981	PhD student/ University of Seville, Seville, Spain.

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Biology Degree	Seville	1978
Biochemistry PhD	Seville	1981

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

Juan L. Ramos is a Full Professor at CSIC) EEZ- in Granada. From 1990 to 1995 he was the Head of té Department of Plant Biochemistry and from 1997 to 2008 he was appointed Director of the Institute. In October 2013 he took up the challenge of leading the Department of Biotechnology at Abengoa Research where he headed a group with over 120 staff members in three laboratories in Seville, Salamanca and York, Iowa, USA.

Mentoring. Juan L. Ramos is founder of a Research Group at the CSIC-EEZ. There are 16 staff members (11 scientists, 5 technicians) and almost 20 non-permanent staff including post-docs, PhD students, technicians and Masters' students. Since Dr. Ramos joined the CSIC he has supervised 45 PhD theses and 2 PhD students during the time he was at Abengoa Research. At CSIC he has supervised the work



of almost 50 post-docs from the 5 continents. Most of these students and post-docs are now reputed scientists and hold important positions at the most prominent Universities and Research Institutions worldwide, some are CEO of biotech companies or research leaders in multinational companies; one of them holds a position as scientific officer at the EC in Brussels (Belgium).

Publications. Juan L. Ramos is an editor for *Environmental Microbiology*, *EMI Reports* and *Microbial Biotechnology*. Starting January 2022 he will become Editor-in-Chief of *Microbial Biotechnology*. He has edited or co-edited 7 book volumes on *Pseudomonas*, a worldwide accepted and series of books that collect contemporary knowledge on this group of environmentally-relevant microorganisms. The Volume “Methods on *Pseudomonas biology*” co-edited with A. Filloux has been immensely successful with over 500,000 downloads, which has made this volume one of the most renown books published by Springer.

Juan L. Ramos has also published over 350 research articles, reviews, opinion articles, and editorials in top journals, including *Science*, *PNAS*, *Nature Biotechnology*, *Microbial Biotechnology*, *Soil Biology Biochemistry* and *Ann. Rev. Microbiol.*

Advisor. He had the privilege of acting as professor on issues related to the environmental microbiology to H.M. King Philip VI when he was a young prince heir to the Spanish throne.

Juan L. Ramos has been member of “CSIC-Commission Area” on Agricultural sciences, and has been President of the Agro-food section of the National Research Agency (Agencia Nacional de Investigación).

He has been member of the International Advisory Board of Centro Nacional de Biotecnología, and has been International Advisor for the CREAM research programme in Denmark. In 2008 he became member of the EC Advisory board for the VII Framework Programme in the areas of Agriculture, Fishery, Food and Biotechnology. Since 2019 Juan L. Ramos is a member of the mirror Group of the Spanish Ministry of Science in the Soil Health Mission.

Prizes and Recognitions. Juan L. Ramos’s research is characterized by a high level of originality, rigour and interdisciplinary as has been recognised by highly esteemed colleagues and committees and as witnessed by his election as member of the American Academy of Microbiology, the European Academy of Microbiology and his appointment as *Académico Numerario* (medal 13) of the Granada Academy of Sciences.

In 2012 he received the prestigious Jaime I Award for Environmental Protection and in 2013 he received the Lwoff medal of the European Societies for Microbiology in recognition for his contributions to microbiology. In 2013 he was invited as Professor at the Technical University of Denmark and in 2019 he delivered the annual talk on “Environmental Microbiology” at the Seat of the Society for Applied Microbiology in London (UK).

Services. From 2007 to 2013 he was a member of the LS9 panel (Biotechnology) in the ERC senior research grant programme. He has also been member of the International NATO panel programme on Environmental Sciences and of the NRC PETROMAKS programme in Norway. Juan L. Ramos has evaluated research projects for DOE and NSF in the USA.

Prof. Ramos has participated in personnel promotion panels for CSIC, several Spanish Universities, and evaluator for Professor Positions at the University of California Berkeley (USA) and the University of Marseille (France). Juan L. Ramos has given several research dissemination lectures to the general public on biotechnology, genetic engineering, water reutilization, bioremediation of polluted soils as a social service. His last lecture this year was in the context of “Semana de la Ciencia” (The Science Week) held in the *Parque de las Ciencias* in Granada on the “pros and cons of biofuels”.

Summary of Juan L. Ramos’ contributions

His multidisciplinary research approach go from the “bench to field,” integrating cutting-edge molecular biology, chemical engineering and field assays.

Over the past 25 years Juan L. Ramos has greatly deepened the knowledge of microbial physiology, genetics and molecular ecology and has applied it to come up with better ways of restoring polluted sites using microbial biodegradation.

Juan L. Ramos helped to establish the concept of modularity in the analysis of catabolic pathways for the degradation of toxic compounds. This involves, 1) the independent analysis as modules of the regulatory circuits that allow bacteria to sense pollutants and trigger a response, and, 2) the catabolic genes encoding enzymes for the mineralization of these chemicals. His work contributed to the understanding of the transcriptional control of catabolic pathways for aromatic hydrocarbons. He solved the 3D-structure of a number of these regulators to shed light on the exact mechanisms through which they work.

By devising an approach for the sequential modification of microbial catabolic pathways Dr. Ramos found a way to expand the range of chemicals that a single microbe can degrade. This led to the construction of hybrid pathways for recalcitrant alkyl and chloroaromatic compounds. Social concerns on the use of these modified microbes made Juan L. Ramos design “suicide bacteria” —microbes that are designed to carry out a task and destroy themselves once it has been accomplished (i.e. when a pollutant is degraded)

His findings revealed that the most effective biodegradation occurred when microbes were associated to the roots of plants, an approach that is now known as “rhizoremediation.”

When he headed the Biotechnology Unit of Abengoa Research he contributed significantly to the degradation of lignocellulosic residues through the discovery of a new set of thermophilic enzymes that ease the industrial operation of enzymatic processes. Since his return to CSIC in Granada he has been interested in the exploitation of thermophilic enzymes for new industrial processes and involving new phosphatases interesting as food additives and others that aim to be the nucleus of a new ecological fertilizer that will replace the highly contaminating.

Other activities. Juan L. Ramos is founding partner of *Bio-Iliberis R&D*, a CSIC spin-off biotech company on microbes of agricultural and environmental interest. Dr. Ramos was also the scientific advisor for the R&D Department of the company.

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

C.1. Publicaciones

1. Segura, A., Molina, L., Fillet, S., Krell, T., Bernal, P., Muñoz-Rojas, J., and J.L. Ramos. 2012. Solvent tolerance in Gram-negative bacteria. *Curr. Opin. Biotechnol* 23: 415-421.
2. Ramos, J.L., Cuenca, M.S., C. Molina-Santiago, Segura, A., Duque, E., Gómez-García, M.R., Udaondo, Z., Roca, A. 2015. Mechanism of solvent resistance mediated by interplay of cellular factors in *Pseudomonas putida*. *FEMS Microb. Rev.* 39: 555-566.
3. García-Salamanca, A., Molina-Henares, M. A., van Dillewijn, P., Solano, J., Pizarro- Tobias, P., Roca, A., Duque, E., Ramos, J.L.(2013). Bacterial diversity in the rhizosphere of maize and the surrounding carbonate-rich bulk soil. *Microb Biotechnol.* 6: 36–44.
4. Valdivia, M., Galan, J.L., Lafarga, J. and J.L. Ramos. 2017. Biofuels 2020: Biorefineries based on lignocellulosic material. *Microbial Biotechnol.* 9: 585-594.
5. Molina-Santiago, C., A. Daddaoua, S. Fillet, E. Duque, and J.L. Ramos. 2014. Interspecies signalling: *Pseudomonas putida* efflux pump TtgGHI is activated by indole to increase antibiotic resistance. *Environ. Microbiol.* 16:1267-1281.
6. Udaondo, Z., Molina, L., Segura, A., Duque, E., Ramos, J.L. 2016. Analysis of the core genome and pangenome of *Pseudomonas putida*. *Environ. Microbiol.*, 18:3268.
7. Molina, L., Udaondo, Z., Duque, E., Fernandez, M., Molina-Santiago C., Roca, A., Porcel, M., de la Torre, J., Segura, A., Plesiat, P., Jeanmot, K. and Ramos, J. L. (2014). Antibiotic resistance determinants in a *Pseudomonas putida* isolated from Hospital. *Plos One* 0081604.
8. Udaondo, Z., **Duque, E.**, Daddaoua, A., Caselles, C., Roca, A., Pizarro-Tobias, P., Ramos, J. L., (2020). Developing robust protein analysis profiles to identify bacterial acid phosphatases in genomes and metagenomic libraries. *Environmental Microbiology.* 22: 3561-3571.
9. Nogales, J., Mueller, J., Gudmundson, S. Canalejo F.J., **Duque, E.**, Ramos, J.L. and Palsson, B. (2020) High-quality genome-scale metabolic modelling of *Pseudomonas putida* highlights its broad metabolic capabilities. *Environmental Microbiology* (2020) 22, 255–269.



10. Godoy, P., García-Franco, A., Recio, M.I., Ramos, J.L., Duque, E., Synthesis of aromatic amino acids from 2G lignocellulosic substrates. *Microbial Biotechnology* (2021) 0(0), 1–13. doi:10.1111/1751-7915.13844.

C.3. Proyectos

1) Publicly funded projects since 2012:

1. The microbial metagenome of the Iberian Peninsula. **Reference:** CSD2007-00005. 2008–2013.
4. Post-genomic functional analysis of de *Pseudomonas putida* KT2440. **Reference:** BIO2010-17227. 2011-2014.
5. Integrated biotechnological solutions for combating marine oil spills. **Reference:** FP7-KBBE.2012.3.5-01. KBBE-CALL 6 -312139. 2013-2017.
6. Microbial conversion of lignocellulosic residues into added-value products. (CREVAL) **Reference:** RTI2018-094370-B-I00. 2018 - 2021.
8. EJP-Soils. Mechanisms underlying trade-offs between carbón sequestration greenhouse gas emission and nutrient losses in soils under conservation agricultura in Europe. Trace Soil. **Grant Agreement** n° 862695.

Other Projects: MCA Algas

C2. Congresses

- 5th Congress of FEMS 2013. Closing conference. Leipzig, Germany.
14th International Conference on Pseudomonas. Lausanne, Switzerland.
Marine Mier’Omics for Biotech Applications, 2nd Industry Expert workshop. Madrid. 2015.
UNIA Workshop on “Adaptation and Communication of bacterial pathogenus. Baeza. 2015.
XXVII Congreso Nacional SEM 2019. On line.
Microbiome Conference 2021. On line
Received invitations to deliver talks in 2022 in Japan, Korea, Georgia (USA) and Croacia. To be decided.

C3. Contratos, meritos tecnológicos o de transferencia.

Projects financed by Abengoa led by J. L. Ramos as Director of the Biotechnology Unit from October 2013 to September 2017.

Title: Waste 2 Biofuels.

Title: 2G Brazil: Production of bioethanol from sugarcane straw.

Title: Biotechnological valorization of lignin.

Title: Fermentation of sugars from different feedstocks.

Title: Butanol through fermentation.

Title: Enzymes for 2G bioethanol.

C.4. Patentes y modelos de utilidad.

Authors: Ramos, J. L., Haïdour, A., Duque, E. **Title:** Microorganisms y procedimiento para la degradación de hidrocarburos. **Referencia:** 9401385 ES 2085239. Licencied to Dupont-USA.

Authors: Ramos, J. L., Duque, E. **Title:** Process for biological renovel of nitrated derivations **Referencia:** P0589818A2. Licencied to Maxam/Fabrica nacional de la Marañosa.

Authors: Ramos, J. L., Ben-Bassat, A., Godoy, P., Ramos-González, M. I., Duque, E. **Title:** Methods for production of p-hydroxybenzoate **Referencia:** US 2003/0158397 A1. Licencied Dupont de Nememos, USA.

Authors: Ramos, J. L., Espinisa-Vergel, M. **Title:** Systems for expressing proteins in the rhizosphere of plant. **Referencia:** PCT/ES01/00446. Licencied New Bio-Technics S.A.

Authors: Ramos, J. L., Haïdour, A., Duque, E. **Title:** Microorganisms y procedimiento para la degradación de hidrocarburos. **Referencia:** 9401385 ES 2085239. Licencied to Dupont-USA.

Authors: Ramos, J. L., Ben-Bassat, A., Godoy, P., Ramos-González, M. I., Duque, E. **Title:** Exb-ExbD-TonB gene cluster of DOT-T1E conferring resistance to aromatic compounds and antibiotic **Referencia:** W00229034. Licencied Dupont.



Authors: Bruno Díez García, et al., **Title:** Variantes mejoradas de celobiohidrolasa 1.. **Registro:** P201530467. **Propietario:** Abengoa Bioenergía Nuevas Tecnologías SA. **Referencia:** ES1861.44. **Países:** España. **Año:** 8/4/2015. Licencia en negociación.

Authors: Gomez García, María Rosario (ES); Cuenca Martin, María Del Sol (ES); Udaondo Dominguez, Zulema (ES); Roca Hernández, Amalia (ES); Ramos Martin, Juan Luis (ES); Duque Martin de Oliva, María Estrella. **Title:** Bacteria modificada genéticamente deficiente en la asimilación de alcoholes. **Nº de solicitud:** P201431826. **Entidad titular:** Abengoa Research. **Países:** Española. **Año presentación:** 12/12/2014 . **Registro Nº:** ES2573958 A1. **Fecha de aceptación:** 13/06/2016.

Authors: Gomez García, María Rosario (ES); Cuenca Martin, María Del Sol (ES); Udaondo Dominguez, Zulema (ES); Roca Hernández, Amalia (ES); Ramos Martin, Juan Luis (ES); Duque Martin de Oliva, María Estrella. **Title:** Célula microbiana modificada genéticamente con tolerancia mejorada frente a alcoholes. **Nº de solicitud:** P201530174. **Entidad titular:** Abengoa Research. **Países:** Española. **Año presentación:** 13/02/2015. **Registro Nº:** ES2579761 A1. **Fecha de aceptación:** 16/08/2016.