MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

**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 | 20/06/2024 |
|---|---|

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|---|---|---|---|
| First name | Juan Luis | | |
| Family name | Ramos Martín | | |
| Gender (*) | male | Birth date | |
| NIF | 28442888F | | |
| e-mail | juanluis.ramos@eez.csic.es | URL Web | |
| Open Researcher and Contributor ID (ORCID) (*) | | 0000-0002-8731-7435 | |

*(*) 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 interuptions, 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 Geneve, Geneve, 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 the 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 14 staff members (9 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, July 2017 to September 2021).

He has been member of the International Advisory Board of Centro National de Biotecnología, and has been International Advisor for the CREAM research program in Denmark. In 2008 he became member of the EC Advisory board for the VII Framework Program 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, rigor and interdisciplinary as has been recognized 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 program. He has also been member of the International NATO panel program on Environmental Sciences and of the NRC PETROMAKS program 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.

**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 celular factors in *Pseudomonas putida*. FEMS Microb. Rev. 39: 555-566.
3. García-Salamanca, A., Molina-Henares, M. A., van Dillewjin, 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., Galán, 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 índole 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.


**Proyects**

**1) Publicly funded projects since 2012:**

**P**ost-genomic functional analysis of de *Pseudomonas putida* KT2440. **Reference:** BIO2010-17227. 2011-2014.

Integrated biotechnological solutions for combating marine oil spills. **Reference**: FP7-KBBE.2012.3.5-01. KBBE-CALL 6 -312139. 2013-2017.

Microbial conversion of lignocellulosic residues into added-value products. (CREVAL) **Reference:** RTI2018-094370-B-I00. 2018 - 2021.

EJP-Soils. Mechanisms underlying trade-offs between carbon sequestration greenhouse gas emission and nutrient losses in soils under conservation agriculture in Europe. Trace Soil. **Grant** 862695.

Enzimas extremófilas para el sector agroalimentario.Agencia estatal Consejo Superior Investigaciones Científicas (CSIC).

Proyectos de Generación de Conocimiento 2021. **Reference:**PID2021-123469OB-I00.2023-2025

Aproximaciones biológicas de segunda generación para producir bio-petroquímicos.Proyecto de Transición Ecológica y Transición Digital 2021. **Reference:** TED2021-129632B-I00. 2023-2024.

**Projects financed by Abengoa led by J. L. Ramos as Director of the Biotechnology Unit from October 2013 to September 2017: 1)** Waste 2 Biofuels. 2) 2G Brazil: Production of bioethanol from sugarcane straw. **3)** Biotechnological valorization of lignin. **4)** Fermentation of sugars from different feedstocks. **5)** Butanol through fermentation. **6)** Enzymes for 2G bioethanol.

**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 pathogens. Baeza. 2015.

XXVII Congreso Nacional SEM 2019. On line.

Microbiome Conference 2021. On line

200th anniversary of Pasteur. Poland, November 2023

Baeza Environmental Sciences Workshop: Microbes as safeguards of the Planet. Organizer. March, 2024

**Patents**

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

**Authors:** Ramos, J. L., Duque, E. **Title:** Process for biological renoval of nitrated derivations **Referencia:** P0589818A2. Licensed 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. Licensed 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. Licensed 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 confering resistance to aromatic compounds and antibiotic **Referencia:** W00229034. Licensed 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:** Gómez García, María Rosario (ES); Cuenca Martin, María Del Sol (ES); Udaondo Domínguez, 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.