



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	december 25
First name	Marta		
Family name	Martin Basanta		
Gender (*)	Female	Birth date	
NIF			
e-mail	URL Web: https://portalcientifico.uam.es/ipublic/agent-personal/profile/iMarinalD/04-260042/name/		
Open Researcher and Contributor ID (ORCID)	https://orcid.org/0000-0003-2498-9768		

A.1. Current position

Position	Professor		
Initial date	03/10/2022		
Institution	Universidad Autónoma de Madrid		
Department/Center	Biología	Ciencias	
Country	Spain	Teleph. number	
Key words	Rhizosphere, Pseudomonas, PGPRs, colonization, motility, biofilms, c-di-GMP, SynCom, phase variation		

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

Period	Position/Institution/Country/Interruption cause
1986-1990	• Predoctoral CIB-CSIC
1990-1993	• Fleming postdoctoral fellowship (British Council), John Innes Centre- Norwich UK
1993-1996	• Incorporación Doctores y Tecnólogos Contract-CNB CSIC
1996-1998	• Postdoctoral fellowship at Biotechnology Department-ETSI Agrónomos-UPM
1998-2022	• Incorporación Doctores y Tecnólogos Contract/ RyC/ PCD/ Prof Titular/ Facultad de Ciencias-UAM

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed in Pharmacy	UCM/Spain	1986
PhD in Pharmacy	UCM/Spain	1990

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

I completed my PhD. in Plant Cell Biology at the CIB-CSIC in 1990 under the supervision of Dr. Medina, locating transcriptionally active genes in the nucleolus and characterizing Nucleolin in *Allium cepa*. I later gained experience (1990-1993) in plant molecular genetics in Dr Coupland's laboratory, John Innes (Norwich-UK), where I worked on the development of a mutagenesis system based on Ac/Ds elements in *Arabidopsis*. I also participated in the characterization of a Polycomb group gene that regulates homeotic gene expression in a similar way to *Thriatorax* from *Drosophila*. On my return to Spain, I joined (1993-1996) the laboratory of Dr Sánchez-Serrano (CNB-CSIC) working on the role of desaturases in plant wound response. Later, (1996-1998) I moved to plant microbiology in Dr. Ruíz-Argüeso's lab at the UPM, where I studied the importance of *Rizobium leguminosarum* chemotaxis



towards legumes for rhizosphere colonization. This knowledge allowed me to work in the field of plant-microbe interactions at the Department of Biology at UAM (1998-nowadays). I then obtained a contract from the RyC program to work on the molecular basis of plant-pseudomonas interactions, my first project as PI and later a full position. My research focused on the adaptation of *Pseudomonas* to the rhizosphere to develop better inoculants for agriculture. I discovered competitive traits of rhizobacteria, such as motility, biofilm formation and phase variation, a new mechanism for bacterial population adaptation in response to sudden environmental changes. The knowledge acquired has allowed us to design more competitive rhizobacteria with better biocontrol properties than the wild-type strains. In addition, by understanding the signaling pathways involved in bacterial responses to the rhizosphere, it is also possible to search for naturally isolated bacteria with improved colonization abilities to be used as inoculants for plant growth promotion. Some of these newly characterized strains have already been transferred and are currently available on the market. During these 27 years, I have contributed with publications on the molecular mechanisms of *Pseudomonas* adaptation to the environment and I have received funding in 3 contracts/projects for knowledge transfer and 9 projects from the Spanish government. I have participated in 3 EU projects, 2 projects and 2 programs of the Madrid City Council and 1 project of Santander-UAM with Argentina. In addition to teaching, designing and coordinating subjects belonging to the degrees in Biology, Environmental Sciences and Food Sciences, I also teach and coordinate subjects in the master's degrees in microbiology and in Biotechnology. I have supervised BSc and 10 Master theses, 4 DEAs and 6 PhD theses, I am currently supervising 2 PhD students. I am a reviewer for journals related to Molecular Microbiology and Environmental Microbiology and I have also served as a topic editor. I have usually participated as a proposal reviewer for ANEP and AEI. Since 2021 I have been a member of the Expert Committee of the Biotechnology Program (DEVA-ACCUA). In 2021 I participated in the Biotechnology Panel for the evaluation of Juan de la Cierva Incorporation and in 2023 I participated in the same Biotechnology Panel for the evaluation of Research Projects AEI.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (relevant last 5 years)

- 1.E. Blanco-Romero, D. Garrido-Sanz, D. Durán, M. Rybtke, T. Tolker-Nielsen, M. Redondo-Nieto, Rivilla and M. Martín. Role of extracellular matrix components in biofilm formation and adaptation of *Pseudomonas ogarae* F113 to the rhizosphere environment. *Frontiers in Microbiology* Volume 15 - 2024 | <https://doi.org/10.3389/fmicb.2024.1341728>.
- 2.E. Blanco-Romero, D. Durán, D. Garrido-Sanz, M. Redondo-Nieto, M. Martín and R. Rivilla. Adaption of *Pseudomonas ogarae* F113 to the Rhizosphere Environment—The AmrZ-FleQ Hub. *Microorganisms* (2023) 11, 1037 <https://doi.org/10.3390/microorganisms11041037>
- 3.D. Durán, D. Vázquez-Arias, E. Blanco-Romero, D. Garrido-Sanz, M. Redondo-Nieto, R. Rivilla and M. Martín. An Orphan VrgG Auxiliary Module Related to the Type VI Secretion Systems from *Pseudomonas ogarae* F113 Mediates Bacterial Killing. *Genes* (2023) 14(11), 1979; <https://doi.org/10.3390/genes14111979>
4. E Blanco-Romero, D Garrido-Sanz, D Durán, R. Rivilla, M. Redondo-Nieto, M. Martín. (2022) Regulation of extracellular matrix components by AmrZ is mediated by c-di-GMP in *Pseudomonas ogarae* F113. *Scientific Reports* (2022) 12:11914 <https://doi.org/10.1038/s41598-022-16162-x>
5. E Blanco-Romero, D Garrido-Sanz, D Durán, M Martín, R Rivilla, M Redondo-Nieto (2022) Transcriptomic analysis of *Pseudomonas ogarae* F113 reveals the antagonistic roles of AmrZ and FleQ during rhizosphere adaption. *Microbial Genomics*. DOI10.1099/mgen0.000750
6. D Garrido-Sanz, M Redondo-Nieto, M Martín, R. Rivilla (2021) Comparative genomics of the *Pseudomonas corrugata* subgroup reveals high species diversity and allows the description of *Pseudomonas ogarae* sp. nov *Microbial Genomics* 2021 Jun;7(6). doi: 10.1099/mgen.0.000593
7. D Durán, P Bernal, D Vazquez-Arias, E Blanco-Romero, D Garrido-Sanz, M Redondo-Nieto, R Rivilla, M Martín (2021) *Pseudomonas fluorescens* F113-Type 6 Secretion Systems mediate bacterial



killing and adaption to the rhizosphere microbiome. Scientific Reports. <https://doi.org/10.1038/s41598-021-85218-1>

8. E Blanco-Romero, D Garrido-Sanz, R Rivilla, M Redondo-Nieto, M Martín (2020) In silico characterization and phylogenetic distribution of extracellular matrix components in the model rhizobacteria *Pseudomonas fluorescens* F113 and other pseudomonads. Microorganisms DOI: 10.3390/microorganisms8111740

9. D Garrido-Sanz, M Redondo-Nieto, M Martín, R Rivilla (2020) Comparative genomics of the *Rhodococcus* genus shows wide distribution of biodegradation traits. Microorganisms 8(5), 774 doi.org/10.3390/microorganisms8050774

10. C Muriel, E Blanco-Romero, E Trampari, E Arrebola, D Durán, M Redondo-Nieto, J Malone, M Martín, R Rivilla (2019) The diguanylate cyclase AdrA regulates flagella biosynthesis in *Pseudomonas fluorescens* F113 through SadB. Scientific Reports. 9:8096 doi.org/10.1038/s41598-019-44554-z

C.2. Congress

In the last ten years I have participated with more than 60 communications at national and international congresses, meetings or workshops, being 19 of them oral communications and 4 invited talks.

I have also been invited to give talks in the seminar series at the CBGP (UPM-INIA) and twice at the CIB-Margarita Salas (CSIC) in Madrid. I have also participated in the organization of one international meeting, the VI Portuguese-Spanish Congress on nitrogen fixation in 2019 and two national meetings of the Plant Microbiology Group (SEM): the MIP2015 (Miraflores de la Sierra) and MIP 2021 (Madrid-online meeting).

C.3. Research projects (last 5 years)

1. Adaptación bacteriana al ambiente rizosférico. Modelado del nodo regulador AmrZ/FleQ y diseño de comunidades sintéticas (RHIZOMODEL) PID2021-125070OB-I00. Funding entity: Ministerio de Ciencia e innovación. From 01/09/2022 to 31/08/2025. Budget: 169400. Main researchers: Marta Martín and Rafael Rivilla

2. Generación de microbiomas mínimos funcionales mediante la manipulación racional de procesos naturales. (TOPDOWNMICROBIOMES) TED2021-130616B-I00. From 01/12/2022 to 30/11/2024. Funding entity: Ministerio de Ciencia e innovación. Budget: 130000. Marta Martín is in the researcher team.

3. Recuperación de suelos contaminados con hidrocarburos mediante consorcios bacterianos. TED2021-130996B-I00. Funding entity: Ministerio de Ciencia e innovación. From 01/12/2022 to 30/11/2024. Budget: 156000. Marta Martín is in the researcher team.

4. Adaption of *Pseudomonas fluorescens* to the rhizosphere environment. The AmrZ/FleQ regulatory hub. Funding entity: Ministerio de Ciencia, Innovación y Universidades RTI 2018 093991-B-I00. Participants: UAM. From 01/01/2019 to 31/12/2021. Budget 133.000 euros. Main Researchers: M. Martín and R. Rivilla.

5. InteGRated systems for Effective EnvironmEntal Remediation (GREENER). Funding entity: EU2020. Participants UAM and other 20. From 1/1/2019 to 31/12/2022. Budget 233.000. Main Reseracher from UAM R. Rivilla, participants from UAM: M. Martín and M. Redondo-Nieto.

C.4. Contracts, technological or transfer merits

1. Characterization and isolation of inoculants and probiotics for tomato. Funding Company: Kimitec, Participants. UAM. From 1/01/2020 to 31/12/2020. Budget, 80.590. Main Researchers: M. Martín and R. Rivilla.

2. Isolation and analysis of bacteria consortia to be used as inoculants in agriculture. Funding company: Kimitec. Participants: UAM. From 1/01/2018 to 31/06/2019. Budget: 33,982.99 Euros. Main Researchers: M. Martín and R. Rivilla.

3. Isolation and characterization of natural rhizospheric *Pseudomonas* to be used as inoculants to biocontrol phytopathogenic fungi. Funding company: Grupo Kimitec. Participants: UAM. From 01/11/2014 to 31/10 2015. Budget: 17,000 Euros. Main researchers: M. Martín and R. Rivilla.