

CURRICULUM VITAE (CVA)

PERSONAL INFORMATION

CV date	17/3/2023
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First and Family name	Daniel MARINO BILBAO		
Researcher codes	WoS Researcher ID	AAZ-2971-2020	
	Scopus Author ID	12791484800	
	Open Researcher and Contributor ID (ORCID)	0000-0002-8788-6646	

A.1. Current position

Position	Permanent Researcher (Investigador Doctor Permanente)		
Initial date	12 October 2022		
Institution	University of the Basque Country (UPV/EHU)		
Departament/Center	Dept. Plant Biology and Ecology/Fac. Science and Technology		
Country	Spain	Teleph. number	946017957
Key words	Plant nutrition / Signal transduction / Omics / Nitrogen / Iron		

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

Period	Position/Institution/Country
2017-2022	Ikerbasque Research Associate (UPV/EHU, Spain)
2012-2017	Ikerbasque Research Fellow (UPV/EHU, Spain)
2009-2012	Postdoctoral (INRAE-CNRS, Toulouse, France)
2007-2009	Postdoctoral (INRAE, Sophia-Antipolis, France)
2006-2007	Research assistant (IBMB-CSIC, Barcelona, Spain)
2005-2005	3 months short-stay (INRAE, Sophia-Antipolis, France)
2002-2006	PhD student (Public University of Navarra, Spain)

Education

PhD, Licensed, Graduate	University/Country	Year
Bachelors´s Degree in Biology	University of the Basque Country/Spain	2002
PhD	Public University of Navarre/Spain	2006

CV SUMMARY

Biologist with extensive experience working in plant physiology and molecular biology, my research has been focused on understanding the interaction of plants with their surrounding environment: biotic and abiotic. In 2006 I obtained my PhD in the Public University of Navarra working in the regulation of pea nitrogen fixation under drought. Among others, during my PhD I deciphered important links between the nodule carbon metabolism and the cell redox status. Then, I spent 1 year as research assistant in the Institute of Molecular Biology of Barcelona (today CRAG) with a CSIC-Técnicos-I3P contract and 5 years as a postdoctoral researcher in France: 2007-2009 in INRAE (Sophia-Antipolis) and in 2009-2012 in INRAE-CNRS (Toulouse). In Sophia-Antipolis I worked in the role of reactive oxygen species in the legume-rhizobia symbiosis and, among others, discovered the essential role of MtRbohA NADPH oxidase for *Medicago truncatula* nodule functioning. In Toulouse, I worked in plant immunity and described a novel E3 ligase (MIEL1) with a key role in the regulation of Arabidopsis transcription factor MYB30, affecting plant hypersensitive response in response to bacterial pathogens.

In November 2012 I joined the Nutrition Management in Plant and Soil (NUMAPS) research group in the Dept. of Plant Biology and Ecology of the University of the Basque Country (UPV/EHU) with the program Ikerbasque, Basque Foundation for Science, to work in the field of nitrogen nutrition. In October 2022 I was awarded with a permanent position as “Investigador Doctor Permanente” in the UPV/EHU. I have participated in 18 research projects funded in regional, national and international calls. Out of the 18, in the UPV/EHU I have been principal investigator of 7, notably a Marie Curie Career Integration Grant (FP7-PEOPLE Ref. 334019) and 4 national projects (three from R+D+I Program Oriented to the Challenges of Society and one from the recent “Transición Ecológica y Digital” call). Importantly, the NUMAPS group maintains a close relationship with **companies** of the fertilizers sector such as with EuroChem Agro Iberia SL, world leader in nitrification inhibitors. In the UPV/EHU, I have dedicated many efforts to understand plants response to ammonium nutrition in different plants including tomato, wheat, *Brachypodium distachyon* and *Arabidopsis thaliana*. Among others, we have advanced understanding the close link between C and N metabolism under ammonium nutrition and described the natural variability associated to ammonium nutrition. Recently we revealed a novel function for Arabidopsis MYB28 and MYB29 transcription factors to regulate ammonium nutrition in relation with iron homeostasis.

Altogether, I am author of **49 JCR articles** (44 Q1, 29D1, WoS h-index 24, >2200 citations). Out of the 49, I am **first of author of 14 and corresponding author of 22**. Two of these papers are classified as Highly cited papers (last 10 years) of the ISI-WoS. Besides, I am author of 5 book chapters and more than 75 contributions to national and international **congresses (37 talks)**. I have given 8 **invited seminars** in research centers of Spain, Italy, Denmark and France. In 2020, during the pandemics. I have also participated in the organization of the XI and XVI Nutriplanta meetings (2006 in Pamplona and 2018 in Lisbon) and of the XII Meeting of Nitrogen Metabolism (2014, Bilbao). In 2020, during the pandemics, I was coordinator of an initiative for the diagnosis of SARS-Cov2 in the UPV/EHU (Guruceaga *et al.*, 2020). I collaborate in **science divulgation** activities such as being an author of the scientific blog Mapping Ignorance (20 contributions since 2013). From January 2017 I am member of the Ethics Committee for Research involving Biological Agents & GMOs of the UPV/EHU. From 2020 I am member of the Faculty Board of the Science and Technology Faculty (UPV/EHU). I have **evaluated** 8 theses, projects for the Spanish Research Agency, the Science and Technology Ministry of Argentina, La República University of Uruguay and the French National Research Agency. In addition, I am reviewer of prestigious journals such as Plant Physiol, New Phytol, J Exp Bot, Plant Cell, etc.

I have **directed 4 doctoral theses** (defended in 2019-2022) with **3 more that are ongoing** at present. Besides, I have supervised 16 Bachelor's Degree Final Projects (TFG) and 7 Master's Degree Projects (TFM). From 2022 I am one of the three members of the **Academic Commission** of the Agrobiology Doctorate Program of the UPV/EHU. Finally, I cumulate more than 300 hours **teaching** in different Degrees for instance Environmental Sciences and Pharmacy or collaborating in the Master of Agrobiology.

List of selected publications from the last 10 years

- Poucet T, Beauvoit B*, González-Moro MB, Cabasson C, Pétriacq P, Flandin A, Gibon Y, **Marino D***, Dieuaide-Noubhani M*. (2022). Impaired cell growth in ammonium stress explained by modeling the energy cost of vacuole expansion in tomato leaves. *The Plant Journal* 112, 1014-1028.

- **Marino D***, Cañas RA, Betti M. (2022). Is plastidic glutamine synthetase essential for C3 plants? A tale of photorespiratory mutants, ammonium tolerance and conifers. *New Phytologist* 234, 1559-1565
- De la Peña M, Marín-Peña AJ, Urmeneta L, Coletto I, Castillo-González J, van Liempd SM, Falcón-Pérez JM, Álvarez-Fernández A, González-Moro MB, **Marino D***. (2022). Ammonium nutrition interacts with iron homeostasis in *Brachypodium distachyon*. *Journal of Experimental Botany* 73, 263-274.
- Poucet T, González-Moro MB, Cabasson C, Beauvoit B, Gibon Y, Dieuaide-Noubhani M, **Marino D***. (2021) Ammonium supply induces differential metabolic adaptive responses in tomato according to leaf phenological stage. *Journal of Experimental Botany*, 72: 3185-3199.
- Coletto I, Bejarano I, Marín-Peña AJ, Medina J, Rioja C, Burow M, **Marino D***. (2021) *Arabidopsis thaliana* transcription factors MYB28 and MYB29 shape ammonium stress responses by regulating Fe homeostasis. *New Phytologist*, 229: 1021-1035
- Vega-Mas I, Cukier C, Coletto I, González-Murua C, Limami AM; González-Moro MB & **Marino D***. (2019) Isotopic labelling reveals the efficient adaptation of wheat root TCA cycle flux modes to match carbon demand under ammonium nutrition *Scientific Reports*, 9:8925
- **Marino D*** & Moran JF* (2019) Can ammonium stress be positive for plant performance? *Frontiers in Plant Science* 10:1103
- Rodrigues JM, Lasa B, Betti M; Fernández-Irigoyen J; Santamaría E, González-Murua C; Aparicio-Tejo PM & **Marino D***. Multi-omic and physiologic approach to understand *Lotus japonicus* response upon exposure to 3,4 dimethylpyrazole phosphate nitrification inhibitor. *Science of the Total Environment*, 2019; 660, 1201 – 1209
- Rodrigues JM, Lasa B, Aparicio-Tejo PM, González-Murua C, **Marino D***. (2018). 3,4-Dimethylpyrazole phosphate and 2-(N-3,4-dimethyl-1H-pyrazol-1-yl) succinic acid isomeric mixture nitrification inhibitors: Quantification in plant tissues and toxicity assays. *Science of the total Environment*, 2018; 624, 1180 – 1186
- Coletto I, de la Peña M, Rodríguez-Escalante J, Bejarano I, Glauser G, Aparicio-Tejo PM, M. González-Moro MB and **Marino D***. (2017). Leaves play a central role in the adaptation of nitrogen and sulfur metabolism to ammonium nutrition in oilseed rape (*Brassica napus*). *BMC Plant Biology* 17:157
- **Marino D***, Ariz I, Lasa B, Santamaría E, Fernández-Irigoyen J, González-Murua C, Aparicio Tejo PM. (2016). Quantitative proteomics reveals the importance of nitrogen source to control glucosinolate metabolism in *Arabidopsis thaliana* and *Brassica oleracea* *Journal of Experimental Botany*, 67, 3313 – 3323
- Sarasketa A, González-Moro MB, González-Murua C, **Marino D*** (2016) Nitrogen source and external medium pH interaction differentially affects root and shoot metabolism in *Arabidopsis*. *Frontiers in Plant Science* 7:29.
- Sarasketa A, González-Moro MB, González-Murua C, **Marino D***. (2014) Exploring ammonium tolerance in a large panel of *Arabidopsis thaliana* natural accessions. *Journal of Experimental Botany* 65: 6023–6033.
- **Marino D***, Damiani I, Gucciardo S, Mijangos I, Pauly N and Puppo A (2013) Inhibition of nitrogen fixation in symbiotic *Medicago truncatula* upon Cd exposure is a local process involving leghemoglobin. *Journal of Experimental Botany* 64: 5651–5660.
- Andrio E, **Marino D**, Marmeys A, Dunoyer de Segonzac M, Damiani I, Genre A, Huguet S, Frendo P, Puppo A and Pauly N (2013) Hydrogen peroxide-regulated genes in the *Medicago truncatula*–*Sinorhizobium meliloti* symbiosis. *New phytologist* 198:190-202

- **Marino D**, Froidure S, Canonne J, Ben Khaled S, Khafif M, Pouzet C, Jauneau A, Roby D and Rivas S (2013) Arabidopsis ubiquitin ligase MIEL1 mediates degradation of the transcription factor MYB30 weakening plant defence. *Nature Communications* 4:1476.
- **Marino D**, Peeters N and Rivas S (2012) Ubiquitination during plant immune signaling. *Plant Physiology* 160:15-27 *Indice de Impacto* 7.394 *ISSN* 0032-0889
- **Marino D***, Dunand C, Puppo A, and Pauly N (2012) A burst of plant NADPH oxidases. *Trends in Plant Science* 17: 9-15

Research projects and grants (LAST 10 years)

- 2022-2024 Improving wheat ammonium use efficiency in a climate change scenario: from biological nitrification inhibition to plant sulfur demand. Funded by: Spanish Ministry of Science and Innovation (Plant de Recuperación, Transformación y Resiliencia TED2021-132279B-I00).
Principal Investigator: D Marino and MB González-Moro (UPV/EHU).
- 2022-2026 Nutrition management in plant and soil. Funded by: Basque Government (Ikerketa Taldeak IT1560-22).
Principal Investigator: JM Estavillo (UPV/EHU).
- 2021-2024 Interacción entre nitrógeno, hierro y azufre para optimizar la eficiencia en el uso del amonio en plantas.
Funded by: Spanish Ministry of Science and Innovation (PID2020-113385RB-I00).
Principal Investigator: D Marino and MB González-Moro (UPV/EHU).
- 2021-2024 Improved nitrogen use in agriculture by catch crops as producers of biological nitrification inhibitors.
Funded by: H2020 European project (SusCrop ERA-NET ID35 CATCH-BNI).
Principal Investigator: MB González-Moro for UPV/EHU (Coord.: H. Vanderschuren, Univ. of Liège)
- 2020-2021 First stone towards deciphering DMPP and DMPSA mode of action to inhibit nitrification.
Funded by: Eurochem Agro Iberia SL
Principal Investigator: D Marino (UPV/EHU)
- 2018-2020 Identificación y Caracterización de Nuevos Factores Metabólicos y Genéticos Implicados en la Respuesta de las Plantas a la Nutrición Amoniacal.
Funded by: Spanish Ministry of Economy & Competitiveness (BIO2017-84035-R)
Principal Investigator: D Marino (UPV/EHU)
- 2018-2018 BRACHYTION - Metabolic adaptation to ammonium nutrition: learning from natural variation in *Brachypodium distachyon*.
Funded by: H2020 (EPPN2020).
Principal Investigator: D Marino (UPV/EHU).
- 2016-2021 Nutrition management in plant and soil.
Funded by: Basque Government (Ikerketa Taldeak IT932-16).
Principal Investigator: C González Murua (UPV/EHU).
- 2015-2016 Cysteine-rich RLKs involvement as part of the signaling network associated to ammonium toxicity in plants.
Funded by: Spanish Ministry of Economy & Competitiveness (BIO2014-56271-R).
Principal Investigator: D Marino (UPV/EHU).
- 2015-2016 Environmental and genetic factors involved in plants NH_4^+ use efficiency.
Funded by: University of the Basque Country (EHUA14/14).
Principal Investigator: D Marino (UPV/EHU).
- 2013-2017 Identification of new molecular and genetic basis of ammonium use efficiency in plants.
Funded by: Marie Curie Career Integration Grant (FP7-PEOPLE Ref. 334019).
Principal Investigator: D Marino (UPV/EHU).