CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	**Francisco Javier**		
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A.1. Current position

Position	Full Research Professor (CSIC)		
Institution	Spanish National Research Council (CSIC)		
Department/Center	Stress, Development and Signaling in Plants at **Estación Experimental del Zaidin** (EEZ), Granada		
Country	Spain	Teleph. number	+34 958 526602
Key words	Free Radicals, Antioxidants, oxidative and nitrosative stress, fruit ripening, nitric oxide, hydrogen sulfide, peroxisomes, redox regulation		

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

My research activity started in 1987, I have been able to do both national (the University of Granada and CSIC) and international (**Arizona State University** in the USA and **Kindai University**, Japan) centers. My scientific aims have focused on two main biochemical areas: the metabolism of **reactive oxygen and nitrogen species** (ROS and RNS). Both are interrelated and involved in all the processes of the physiology of plants from germination, development, senescence, fruit ripening, or responses to environmental stresses. These aims have been carried out mainly by studying the function of enzymatic antioxidant systems (catalase, superoxide dismutase, ascorbate glutathione cycle, etc.) as well as enzymes involved in the regulation of cellular redox state (NADPH-generating enzymes) or subcellular compartmental analysis of these systems as a mechanism of regulation, with special attention to an oxidative organelle such as the **peroxisome**. In this sense, I would like to emphasize that in the field of plant peroxisomes, several works with an eminent biochemical base have been pioneers in the identification and characterization of proteases, NADP dehydrogenases, superoxide dismutases, enzymes of the ascorbate-glutathione cycle (ascorbate peroxidase, glutathione reductase, monodehydroascorbate reductase) and especially the identification of the **free radical nitric oxide** (NO) and more recently **hydrogen sulfide** (H_2S). During the last 25 years, my work has contributed to demonstrating that the endogenous NO is involved in the development, senescence, and response to diverse environmental stresses both abiotic (salinity, heavy metals, extreme temperature, etc.) and biotic. More recently, my work has deepened the post-translational modifications mediated by NO such as tyrosine nitration and S-nitrosation that specifically regulate the function of target proteins identified by proteomics approaches and using mass spectrometry techniques to identify the target residues. On the other hand, through the use of next-generation sequencing (NGS) technologies such as RNAseq or iTraq, I have shown that the *S*-nitrosoglutathione (GSNO) and NO gas differentially regulate the expression of genes and proteins between different plant organs, particularly fruits, indicating that it is a signaling molecule. These general objectives have been developed in various plant species that include both plants of agronomic interest as model plants such as pepper, pea, olive, rice, sunflower, cucumber, cotton, tomato, wheat, and *Arabidopsis thaliana* among others, and based on projects of research funded by Spanish and foreign institutions.

I have been **principal investigator (PI) in 6 national and international projects since 2009**. I have also served as an Ad-hoc Evaluator of Research Projects for national and international agencies such as the National Evaluation and Prospective Agency (ANEP), Agency for the Quality of the University System of Castilla y León (ACSUCYL), The National Agency for Scientific and Technological Promotion of Argentina (PICT), The Israel Science Foundation (ISF), the National Science Foundation (NSF) of the USA, the Czech Science

Foundation (GA CR), the National Agency of Uruguay, Polish Agency, The Leverhulme Trust, Natural Sciences and Engineering Research Council of Canada (NSERC), Intramural Research Program, the Department of Biology of the University of Padova, Austrian Science Fund, European Science Foundation (2022), and Japan Society for the Promotion of Science (JSPS).

Recently, I have received the award for **Highly Cited Researcher** (HCR) 2022 Clarivate. In recognition of exceptional research performance demonstrated by production of multiple highly cited papers that rank in the top 1% for field and year in Cross-Field.

- Supervisor of 8 Doctoral Thesis + 1 in the implementation phase, 14 master's thesis.

Type Publications	**Number**
Included in the SCI (Scopus) **Index h = 85**	**315**
Not included in the SCI	**10**
Book´s chapters	**31**
Edited books	**14**

Publications *(selected from the period* **2022-24**)

1. González-Gordo S, López-Jaramillo J, Rodríguez-Ruiz M, Taboada J, Palma JM, **Corpas FJ.** (**2024**) Pepper catalase: a broad analysis of its modulation during fruit ripening and by nitric oxide. **Biochem J**. 481(13):883-901.
2. Muñoz-Vargas MA, González-Gordo S, Aroca A, Romero LC, Gotor C, Palma JM, Corpas FJ. (**2024**) Persulfidome of Sweet Pepper Fruits during Ripening: The Case Study of Leucine Aminopeptidase That Is Positively Modulated by H2S. Antioxidants (Basel). 2024 Jun 13;13(6):719.
3. **Corpas FJ**, González-Gordo S, Palma JM (**2024**) Function of the ascorbate peroxidase (APX) in fruits and their modulation by reactive species. **J Exp Bot.** 75(9):2716-2732.
4. Mukherjee S, Roy S, **Corpas FJ** (**2024**) Aquaporins: A Vital Nexus in H_2O_2-Gasotransmitter Signaling. **Trends in Plants Science** 29(6):681-693.
5. Muñoz-Vargas MA, López-Jaramillo J, González-Gordo S, Paradela A, Palma JM, **Corpas FJ** (**2023**) H_2S-generating cytosolic L-cysteine desulfhydrase and mitochondrial D-cysteine desulfhydrase from sweet pepper (*Capsicum annuum* L.) are regulated during fruit ripening and by nitric oxide. **Antioxid Redox Signal**. 39(1-3):2-18.
6. González-Gordo S, Muñoz-Vargas MA, Palma JM, **Corpas FJ** (**2023**) Class III Peroxidases (POD) in Pepper (*Capsicum annuum* L.): Genome-Wide Identification and Regulation during Nitric Oxide (NO)-Influenced Fruit Ripening. **Antioxidants** (Basel)12(5):1013.
7. Muñoz-Vargas MA, González-Gordo S, Taboada J, Palma JM, **Corpas FJ** (**2023**) In Silico RNAseq and Biochemical Analyses of Glucose-6-Phosphate Dehydrogenase (G6PDH) from Sweet Pepper Fruits: Involvement of Nitric Oxide (NO) in Ripening and Modulation. **Plants** (Basel) 12(19):3408.
8. Taboada J, González-Gordo S, Muñoz-Vargas MA, Palma JM, **Corpas FJ.** (**2023**) NADP-Dependent Malic Enzyme Genes in Sweet Pepper Fruits: Involvement in Ripening and Modulation by Nitric Oxide (NO). **Plants** (Basel). 12(12):2353.
9. Mukherjee S, **Corpas FJ**. (**2023**) H_2O_2, NO, and H_2S networks during root development and signalling under physiological and challenging environments: Beneficial or toxic? **Plant Cell Environ**. 46(3):688-717.
10. González-Gordo S, Cañas A, Muñoz-Vargas MA, Palma JM, **Corpas FJ** (2022) Lipoxygenase (LOX) in Sweet and Hot Pepper (*Capsicum annuum* L.) Fruits during Ripening and under an Enriched Nitric Oxide (NO) Gas Atmosphere. **Int J Mol Sci.** 23(23):15211.
11. **Corpas FJ**, Rodríguez-Ruiz M, Muñoz-Vargas MA, González-Gordo S, Reiter RJ, Palma JM (2022) Interactions of melatonin, ROS and NO during fruit ripening: An update and prospective view. **J. Exp. Bot.** 73(17):5947-5960
12. Aghdam MS, Mukherjee S, Flores FB, Arnao MB, Luo Z, **Corpas FJ**. (2023) Functions of Melatonin during Postharvest of Horticultural Crops. **Plant Cell Physiol.** 63(12):1764-1786.
13. **Corpas FJ**, González-Gordo S, Palma JM. (2022) NO source in higher plants: present and future of an unresolved question. **Trends Plant Sci**. 27:116-119.