

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae **cannot exceed 4 pages**. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	José María		
Family name	Vinardell		
Gender (*)		Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	jvinar@us.es	URL Web https://investigacion.us.es/sisius/sis_showpub.php?idpers=5711 https://bibliometria.us.es/prisma/investigador/4374 https://www.researchgate.net/profile/Jose-Vinardell https://scholar.google.es/citations?user=94eo3FoAAAAJ&hl=es	
Open Researcher and Contributor ID (ORCID)(*)	0000-0002-7105-5389		

(*) *Mandatory*

A.1. Current position

Position	Full Professor		
Initial date	02/12/2020		
Institution			
Department/Center			
Country			
Key words	Rhizobium-legume symbiosis, nodulation, gene expression regulation, molecular signals, Nod factors, effector proteins, rhizobial surface polysaccharides, genomics, transcriptomics		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2009-2020	Associate Professor (<i>Profesor Titular de Universidad</i>)/Department of Microbiology, University of Sevilla/Spain/I got a Full Professor position
2004-2009	Assistant Professor/ Department of Microbiology, University of Sevilla/I got an Associate Professor Position

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Biology	University of Seville	1997
Licensed in Biology	University of Seville	1990

Part B. CV SUMMARY (*max. 5000 characters, including spaces*) (**4976 characters**)

I obtained my degree in Biological Sciences in the University of Seville in 1990, with high qualifications (3.3/4; Biology Degree Prize). I carried out my PhD at the Department of Microbiology, University of Seville, under the supervision of Dr. J.E. Ruiz-Sainz and funded with a PhD fellowship of the Andalusian Government, in the *Sinorhizobium fredii* symbioses with soybean and other host legumes, focusing on regulation of bacterial nodulation genes. My PhD thesis was defended in June 1997 obtaining the maximum qualification. From 1998 to 2000 (26 months) I carried out a postdoctoral stay at the laboratory of Dra. Eva Kondorosi in the Institut des Sciences Végétales, CNRS, Gif-sur-Yvette, France, being funded with a Marie Curie fellowship (EU). During that period, I worked in the *Sinorhizobium meliloti-Medicago symbiosis*, focusing on plant genes involved in nodule development. Later, in 2000, I got a second Marie Curie fellowship to return to my initial lab at the University of Seville and continued my research on *S. fredii* symbiotic interactions with different legumes, with special emphasis in the production of different rhizobial molecular signals involved in symbiosis. After



several research contracts, I got positions as assistant (2004) and associate professor (2009) at the University of Sevilla, getting a position as Full Professor in December 2020. Nowadays, my research activity is related to genomic and transcriptomic studies of *Sinorhizobium fredii*, with emphasis in the regulation of the production of symbiotic rhizobial molecular signals. Up to now I have participated in 10 National (in the last four as PI), 3 Andalusian and 2 European I+D projects. Recently I have acted as PI in a University of Seville project funded by FEDER.

We have collaborated and collaborate with many research groups, both Spanish and from abroad: Universidad Autónoma de Madrid (Spain, Drs. Idefonso Bonilla, Javier Lloret), Estación Experimental del Zaidín-CSIC (Granada, Spain; Drs. Juan Sanjuan, María J. Soto, Jose I. Jiménez Zurdo), University of Bielefeld (Germany; Drs. Alfred Pühler, Stefan Weidner), University of Marburg (Germany: Dra. Anke Becker), University of Dresden (Germany: Dr. Michael Götfert), Institut des Sciences du Vegetal-CNRS (Gif-sur-Yvette, France; Drs. Eva Kondorosi, Peter Mergaert), University of Marsella (France, Dr. Eric Giraud), University of Aarhus (Denmark, Dr. Jens Stougaard), University of Napoli (Italy, Drs. Flaviana Di Lorenzo, Antonio Molinaro), University of Geneva (Switzerland, Dr. Xavier Perret).

My research has contributed to increase the knowledge of both partners of the symbiosis. On the one hand, my scientific works have increased the cognizance of *Sinorhizobium fredii* HH103, that is nowadays one of the best characterized rhizobia in the world. We have sequenced its genome, studied most of its symbiotic genes, characterized most of its symbiotical signals (Nod factors, the structure of four different surface polysaccharides and many of its effector proteins delivered into the host through a symbiotic type III secretion system). We have also studied in depth the main transcriptional regulatory proteins that operate in symbiosis, and how alterations of this complex regulatory network can affect not only symbiotic performance with specific host plants but also alter the host range and extend the ability to establish symbiosis with non-host plants. More recently I started to study the repertoire of HH103 sRNAs with the aim of identifying specific sRNAs with a symbiotic role.

On the other hand, during my postdoctoral stay at the laboratory of Dra. Eva Kondorosi, I participate in the identification of MtCCS52A, the first fizzy-related protein discovered in plants. This protein, identified in the model legume *Medicago truncatula*, have orthologues in all the other legumes, and plays a crucial role in nodule development since it is required for endoreplication of the nodule cells that will host the bacteroids (the rhizobial form able to fix nitrogen). As a result, 5 articles were published in highly prestigious journals (EMBO Journal, Plant Cell, Molecular Plant-Microbe Interactions) between 1999 and 2004.

I have supervised 5 PhD Theses plus one in progress (to be defended in 2026), 14 Master projects and many Biology Degree projects (both experimental and bibliographic ones).

I have taught during 27 academic years (since 1991), both theoretical and practical lessons of Microbiology and Biotechnology, including Degree and Master studies. I have participated in the creation of both educative (for Biology students) and informative (for public) videos about different aspects of Microbiology.

I maintain an activity as reviewer of both projects (National science programs of Spain, France, Poland, and Argentina) and manuscripts (for numerous high impact journals such as Mol Plant-Microbe Interact, Env Microbiol, Appl Environm Microbiol, Front Plant Sci, Int J Mol Sci, Sci Rep, etc).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

I have published 68 scientific works so far (29 as preferent author: first, last and/or corresponding), with an H index of 27 and 2043 citations in Web of Science (H-5355-2013): 44 Q1 (21 D1), 21 Q2, 1 Q3, 2 Q4. I have also published six book chapters and ten proceedings chapters. I have acted as Topic Editor for the special issue "Early signaling in the rhizobium-legume symbiosis" of Front Plant Sci (2002), that has been published as an eBook (ISBN 978-2-83250-675-2).

The ten more relevant articles:

- 1) Alias-Villegas C, Fuentes Romero F, Cuéllar V, Navarro-Gómez P, Soto MJ, Vinardell JM (CA), Acosta-Jurado S. 2022. Surface Motility Regulation of *Sinorhizobium fredii* HH103 by Plant Flavonoids and the NodD1, TtsI, NolR, and MucR1 Symbiotic Bacterial Regulators.



2022. Int. J. Mol. Sci. 23, 7698. DOI: <https://doi.org/10.3390/ijms23147698>. 1st T, 1st Q. IF = 6.208 (2021). Citations WOS: 2.
- 2) Acosta-Jurado S, Alías-Villegas C, Navarro-Gómez P, Almozara A, Rodríguez-Carvajal MA, Medina C, Vinardell JM (CA). 2020. *Sinorhizobium fredii* HH103 *syrm* inactivation affects the expression of a large number of genes, impairs nodulation with soybean, and extends the host-range to *Lotus japonicus*. Environ Microbiol. 22: 1104-1124. DOI: <https://doi.org/10.1111/1462-2920.14897>. 1st T, 1st Q. IF: 5.491. Citations WOS: 12.
 - 3) Acosta-Jurado S, Rodríguez-Navarro DN, Kawaharada Y, ..., Vinardell JM (CA, 18/18). 2019. *Sinorhizobium fredii* HH103 *noIR* and *nodD2* mutants gain capacity for infection thread invasion of *Lotus japonicus* Gifu and *Lotus burttii*. Environ Microbiol. 21: 1717-1739. DOI: <https://doi.org/10.1111/1462-2920.14584>. 1st T, 1st Q. IF: 4.933. Citations WOS: 16.
 - 4) Pérez-Montaño F, Jiménez-Guerrero I, Acosta-Jurado S, Navarro-Gómez P, Ollero FJ, Ruiz-Sainz JE, López-Baena FJ, Vinardell JM (CA). 2016. A transcriptomic analysis of the effect of genistein on *Sinorhizobium fredii* HH103 reveals novel rhizobial genes putatively involved in symbiosis. Sci. Rep. 6:31592. DOI: <https://doi.org/10.1038/srep31592>. 1st T, 1st Q. IF: 4,259. Citations WOS: 34.
 - 5) Vinardell JM (CA, 1/22), Acosta-Jurado S, Göttfert M, ..., Weidner S. 2015. The *Sinorhizobium fredii* HH103 genome: a comparative analysis with *S. fredii* strains differing in their symbiotic behaviour with soybean Mol. Plant-Microbe Interact. 28:811-824. DOI: <https://doi.org/10.1094/MPMI-12-14-0397-FI>. 1st T, 1st Q, 1st D. IF: 4,145. Citations WOS: 43.
 - 6) Parada M, Vinardell JM (2/13), Ollero FJ,...Ruiz-Sainz JE (CA). 2006. *Sinorhizobium fredii* HH103 mutants affected in capsular polysaccharide (KPS) are impaired for nodulation with soybean and *Cajanus cajan*. Molecular Plant-Microbe Interactions 19: 43-52. DOI: <https://doi.org/10.1094/MPMI-19-0043>. 1st T, 1st Q, 1st D. IF: 3,936. Citations WOS: 51.
 - 7) Vinardell JM (1/15), Ollero FJ, Hidalgo A,...Ruiz-Sainz JE. (CA) 2004. *NoIR* regulates diverse symbiotic signals of *Sinorhizobium fredii* HH103. Molecular Plant-Microbe Interactions 17: 676-685. DOI: <https://doi.org/10.1094/MPMI.2004.17.6.676>. 1st T, 1st Q, 1st D. IF: 4,054. Citations WOS: 53.
 - 8) Tarayre S, Vinardell JM, Cebolla A, Kondorosi A, Kondorosi E. (CA) 2004. Two classes of the Cdh1-type activators of the Anaphase-Promoting Complex in plants: novel functional domains and distinct regulation. The Plant Cell 16: 422-434. DOI: <https://doi.org/10.1105/tpc.018952>. 1st T, 1st Q, 1st D. IF: 11,295. Citations WOS: 67.
 - 9) Vinardell JM(1/11), Federova E, Cebolla A,...Kondorosi, E. (CA) 2003. Endoreduplication mediated by the Anaphase-Promoting Complex activator CCS52A is required for symbiotic cell differentiation in *Medicago truncatula* nodules. The Plant Cell 15: 2093-2105. DOI: <https://doi.org/10.1105/tpc.014373>. 1st T, 1st Q, 1st D. IF: 10,679. Citations WOS: 158.
 - 10) Cebolla, A.; Vinardell, J.M.; Kiss, E.; Oláh, B.; Roudier, F.; Kondorosi, A., and Kondorosi; E. (CA) 1999. The mitotic inhibitor *ccs52* is required for endoreduplication and ploidy-dependent cell enlargement in plants. The EMBO Journal 18: 4476-4484. DOI: <https://doi.org/10.1093/emboj/18.16.4476>. 1st T, 1st Q, 1st D. IF: 13,973. Citations WOS: 272.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

I have participated in more than 50 national or international congresses, in which I have presented 125 communications (40 national and 85 international), including two oral presentations and **5 invited conferences. These conferences were:**

- 1) “Señales moleculares bacterianas en la simbiosis rizobio-leguminosa”. XXVIII Congreso Nacional de Microbiología (Sociedad Española de Microbiología, SEM). Book of abstracts, p. 94. Celebrated on-line, 28th June- 2nd July 2022.
- 2) “Estudios genómicos, transcriptómicos y simbióticos de *Sinorhizobium fredii* HH103, un rizobio de amplio rango de hospedador capaz de nodular soja.” RELAR2019 (XXIX Reunión Latinoamericana de Rizobiología). Puerto Varas (Chile), April 2019. –
- 3) “A genomic and transcriptomic analysis of the soybean symbiont *Sinorhizobium fredii* HH103.” The 13th International Symposium on Biocontrol and Biotechnology. Shenzhen (China), November 2015.
- 4) “Analyses of the *Sinorhizobium fredii* HH103 genome and of its secretome in the presence and absence of genistein”. 11th European Nitrogen Fixation Conference; Satellite Meeting



Workshop on the Genomics of N₂-fixing Microorganisms. Costa Adeje, Tenerife (Spain), September 2014.

- 5) First analyses of the genomic sequence of the soybean symbiont *Sinorhizobium fredii* HH103". II Iberoamerican Conference on Beneficial Plant-Microorganism-Environment Interactions (IBEMPA). Sevilla (Spain), September 2013.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

The ten more relevant projects in which I have participated:

1. "RNA regulation of nodulation and nitrogen fixation in symbionts of crop legumes (RizoRNA)". Funded by Junta de Andalucía (regional government). Project P20_00185. Principal Investigator: José Ignacio Jiménez Zurdo. Budget: 84,000 €. 2021-2023. Member of the research team.
2. "Role of the Non-coding transcriptome in symbiotic diversity of rhizobia nodulating legume crops". Funded by University of Seville (FEDER). Project US-1250546. Principal Investigator: José María Vinardell. Budget: 80,000 €. 2021-2022.
3. "Identification of novel molecular signals and genes involved in the rhizobium-legume symbiosis (NEOSIGNALS)". Funded by Spanish Ministry of Science, Innovation and Universities. Project PID2019-107634RB-I00. Principal Investigators: José María Vinardell and Francisco Javier López Baena. 2010-2023. Budget: 140,000 €.
4. "The symbiotic regulon of *Sinorhizobium fredii*: identification of key genes in the symbiotic interaction with soybean and the model legume *Lotus*". Funded by Spanish Ministry for Economy and Competitiveness. Project BIO2016-78409-R. Principal Investigators: José María Vinardell and Francisco Javier López Baena. 2016-2019. Budget: 130,000 €.
5. "Studies of the symbiotic relations of *Sinorhizobium fredii* with soybean and the model legume *Lotus*". Funded by Junta de Andalucía. Project CVI-7500. Principal Investigator: José Enrique Ruiz Sainz. 2012-2016. Budget: 267,904€. Member of the research team.
6. "*Sinorhizobium fredii* signals involved in symbiotic interactions with legumes". Project funded by Spanish Ministry for Economy and Competitiveness. Project BIO2011-30229-C02-01. Principal Investigator: José María Vinardell. 2012-2015. Budget: 72,600 €.
7. "Molecular signals in the symbiotic interactions of *Sinorhizobium meliloti* and *S. fredii* with host legumes". Funded by Spanish Ministry for Economy and Competitiveness. Project BIO2008-05736-C02-02. Principal Investigator: José María Vinardell (Coordinator: Dr. Ildelfonso Bonilla Mangas, Autonomous University of Madrid). 2009-2011. Budget: 100,000 €.
8. "*Sinorhizobium fredii* surface polysaccharides: involvement in nodulation with soybean and in plant defence responses". Funded by Junta de Andalucía. Project CVI-2506. Principal Investigator: José Enrique Ruiz Sainz. 2008-2012. Budget: 443,168.12€. Member of the research team.
9. "Production of rhizobial soybean inoculants for sustainable agricultural use in China". Funded by INCO-DEV, EU. Project ICA4-CT-2001-10056. Principal Investigator: Jane Thomas-Oathes. 2001-2004. Budget (for the Spanish Team): 130,500 €. Member of the research team.
10. "Improvement of symbiotic nitrogen fixation in Chinese soybean cropping areas". Funded by INCO-DC, EU. Project ERBIC18CT970191. Principal Investigator: José Enrique Ruiz Sainz. 1997-2000. Budget (for the Spanish Team): 153,000 €. Member of the research team.

Other merits:

- Member of the Spanish Society of Nitrogen Fixation (SEFIN) and the Spanish Society of Microbiology (SEM, and its sub-group dedicated to Plant Microbiology).
- Principal investigator of the PAIDI (Junta de Andalucía) group BIO-169: "Biotechnology of the interaction of microorganisms with legumes and other crops".