



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	28-08-2023
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First name	DAVID		
Family name	ALABADÍ		
Gender (*)	Male	Birth date	25-01-1970
ID number	33404968K		
e-mail	dalabadi@ibmcp.upv.es	http://plasticity.ibmcp.csic.es	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-8492-6713		

A.1. Current position

Position	Investigador Científico de OPis		
Initial date	2021		
Institution	Consejo Superior de Investigaciones Científicas		
Department/Center	Instituto de Biología Molecular y Celular de Plantas		
Country	Spain	Teleph. number	+34 963877723
Key words	Gene expression, signaling, environment, prefoldin, DELLA, plants		

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

2007-2021	Científico Titular del CSIC / Spain
2004-2006	Investigador contratado RyC/ IBMCP-CSIC / Spain
2002-2003	Investigador contratado I3P/ IBMCP-CSIC / Spain
1999-2001	Postdoctoral Researcher / Scripps Research Institute / USA

A.3. Education

BSc in Science (Biology)	U. de Valencia	1993
PhD in Biological Sciences	U. de Valencia	1998

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

I have always tried to understand the molecular details of plant physiology. I owe the opportunity to start a scientific career to **Prof. Juan Carbonell**, under whose direction I did my **doctoral thesis** at the **IBMCP** (CSIC-UPV; Valencia, Spain). Although the approaches that we put in place to understand the role of polyamines in tomato and pea fruit set did not provide answers with much molecular resolution, they did help me to get in touch with the molecular approaches in vogue in the mid-1990s that reinforced my interest in unmasking molecular mechanisms underlying the physiology of the plant.

The post-doctoral stage gave me the opportunity to challenge this interest. I joined the lab of **Dr. Steve A. Kay** at **The Scripps Research Institute** (La Jolla, California) to study the circadian rhythms in *Arabidopsis*, whose molecular basis were largely unknown at the end of the 1990s. At that time the first plant clock genes were recently cloned, offering the exciting opportunity to start deciphering the underlying molecular mechanisms. During that period we proposed the **first mechanism for the circadian clock in plants**, showing that a transcriptional feedback loop formed by the clock genes *CCA1/LHY* and *TOC1* was at the core of the clock. This work, published in *Science*, has become a citation classic in the field with more than 1000 cites in Google Scholar. We continued characterizing the newly identified clock genes. In this sense, we (i) demonstrated genetically the unique and redundant role of LHY and CCA1 within the clock, and (ii) a role for TOC1 in red-light signaling that manifested the close connection between the functioning of the clock and the environment. This sparked my



interest on understanding the **molecular basis of how plants interact with the environment**, which marked my future scientific career.

In 2002, I joined the group of **Prof. Miguel A. Blázquez** at the IBMCP (CSIC-UPV), where we focused our work on understanding the contribution of hormones gibberellins to provide developmental plasticity to the plant in response to the environment. Our collaboration continued after I obtained a position as tenured scientist at CSIC. One of our main contribution was the finding that **DELLA proteins act as signaling hubs**, connecting the environment with developmental and growth pathways thanks to their ability to interact and regulate many transcription factors participating in many different processes. This finding allowed us to answer two relevant questions in the field, what are the mechanisms by which gibberellins control so many different processes, and what are the mechanisms by which the gibberellin pathway establishes interaction with other signaling pathways.

In recent years, my research interests have gravitated between investigating **novel aspects of DELLA activity**, for example what provides specificity to their action in different plant tissues or if their activity is influenced by the nutritional status of the plant, and the **characterization of** a small group of co-chaperones, the **prefoldin and prefoldin-like proteins**, which participate in transducing information from the cellular environmental in animals and yeast and whose role in plants is largely unknown. In this sense, we have already shown, for instance, that they contribute to the plant's response to temperature -mRNA splicing and expression of certain genes-, or that a mutant deficient in all prefoldins experience a quasi-constitutive stress response, pointing to a relevant role for these proteins in environmental responses.

With regard to **fundraising and training**, since I joined the IBMCP, I have participated in numerous grants funded by national, regional or european agencies, either as PI, co-PI or team member, for a total amount of more than 4M euros. During all these years at the IBMCP, I have co-supervised 9 PhD thesis; I am currently supervising and co-supervising three and two PhD theses, respectively. Seven of the Doctors trained in the lab are currently pursuing a scientific career either in Spain or abroad. I participate as leader of the IBMCP team in the **MSCA-Doctoral Network EpiSeedLink** together with other Spanish and European labs to train early stage researchers in Epigenetics and crop biotechnology. Moreover, I teach (since 2008) and I am the coordinator (since 2016) of the subject "Molecular mechanisms of plant hormone action" in the Master "Plant Molecular and Cellular Biotechnology" taught at the IBMCP.

Part C. RELEVANT MERITS (*sorted by typology*)

C.1. Publications (*corresponding author; last 10 years). Find all my publications in the following link: <https://pubmed.ncbi.nlm.nih.gov/?term=alabadi+d&sort=date>

1. Briones-Moreno A, Hernández-García J, Vargas-Chávez C, ..., Alabadí D, Blázquez MA* (8/9) (2023) Evolution of DELLA proteins as transcriptional hubs. **Nature Plants** 9:535-543.
2. Blanco-Touriñán N, Esteve-Bruna D, Serrano-Mislata A, ..., Alabadí D* (12/12). (2021) A genetics approach reveals different modes of action of prefoldins. **Plant Physiology** 187:1534-1550.
3. Blanco-Touriñán N, Alabadí D*. (2021) Gibberellin signaling turns blue. **Molecular Plant** 14:1226-1228.
4. Blanco-Touriñán N, Serrano-Mislata A*, Alabadí D*. (2020) Regulation of DELLA proteins by post-translational modifications. **Plant and Cell Physiology** 61:1891-1901.
5. Blanco-Touriñán N, Legris M, Minguet EG, ..., Casal JJ*, Alabadí D* (22/22). (2020) COP1 destabilizes DELLA proteins in Arabidopsis. **Proc Natl Acad Sci USA** 117:13792-13799.



6. Esteve-Bruna E, Carrasco-López C, Blanco-Touriñán N, ..., Salinas J*, Alabadí D* (12/12). (2020) Prefoldins contribute to maintaining the levels of the spliceosome LSM2-8 complex through Hsp90 in Arabidopsis. **Nucleic Acids Research** 48:6280-6293.
7. Abbas M, Hernández-García J, Pollmann S, ..., Blázquez MA*, Alabadí D (9/9). (2018) Auxin methylation is required for differential growth in Arabidopsis. **Proc Natl Acad Sci USA** 115, 6864-6869.
8. Abbas M, Hernández-García J, Blanco-Touriñán N, Aliaga N, Minguet EG, Alabadí D, Blázquez MA*. (2017) Reduction of IAA Methyltransferase activity compensates for high-temperature male sterility in Arabidopsis. **Plant Biotechnol J** 16, 272-279.
9. Marín-de la Rosa N, Pfeiffer A, Hill K, ..., Blázquez MA*, Alabadí D (12/12). (2015) Genome wide binding-site analysis reveals transcriptional co-activation of cytokinin-responsive genes by DELLA proteins. **PLoS Genet** 11, e1005337.
10. Marín-de la Rosa N, Sotillo B, Miskolczi P, ..., Alabadí D*, Blázquez MA (10/11). (2014) Large-scale identification of gibberellin-related transcription factors defines Group VII ERFs as functional DELLA partners. **Plant Physiology** 166:1022-1032.
11. Locascio A, Blázquez MA*, Alabadí D. (2013) Dynamic regulation of cortical microtubule organization through prefoldin-DELLA interaction. **Current Biology** 23, 804-809.

C.2. Congress presentations

I have had the opportunity to present my work to colleagues as invited lecturer in several research centers in Spain, France, Germany, Czech Republic and Argentina. I have also presented our work as speaker in various national and international workshops and congresses.

C.3. Research projects (last 10 years)

POST-TRANSCRIPTIONAL REGULATION OF THE PLANT RESPONSE TO HIGH TEMPERATURES BY THE R2TP/PREFOLDIN-LIKE COMPLEX (PFD-LIKEITHOT; **PID2022-141447NB-I00**). AEI-MCIN. 09-2023 to 08-2026. **PI: David Alabadí**. 190000 euros.

NUEVOS COMPUESTOS PARA EL USO SOSTENIBLE DE FOSFATO EN LA AGRICULTURA (PHOSCHEM; **TED2021-131509B-C21**). AEI-MCIN. 11-2022 to 10-2024. **PI1: Miguel Blázquez, PI2: David Alabadí**. 290000 euros.

FROM SEED TO SEEDLING: EPIGENETIC MECHANISMS OF PRIMING TO DESIGN STRATEGIES FOR CROP IMPROVEMENT (**EpiSeedLink-101073476**). HORIZON-MSCA-DN-2021. 10-2022 to 9-2026. Coordinator: Vicente Rubio. **PI IBMCP research team: David Alabadí**. 2407312 euros (251971 euros for IBMCP research team).

ROLE OF THE PREFOLDIN-LIKE PROTEINS IN ENVIRONMENTAL SIGNALING AND PROTEIN HOMEOSTASIS IN ARABIDOPSIS (ILIKEPREFOLDIN; **PID2019-109925GB-I00**). Ministerio de Economía y Competitividad. 06-2020 to 5-2023. **PI: David Alabadí**. 170000 euros.

RATIONAL DESIGN OF DELLA PROTEINS AS BIOTECHNOLOGICAL TOOLS (TECNODELLA; **PROMETEO/2019/021**). Generalitat Valenciana. 01-2019 to 12-2022. **PI: Miguel A. Blázquez**. 214.603 euros. **Role: research team**.



LIGHT-DEPENDENT COMPOSITION OF TRANSCRIPTIONAL COMPLEXES IN PLANTS (**MSCA-IF-835599**). H2020-MSCA-IF-2018. 09-2019 to 09-2021. **PI: David Alabadí**. 160932 euros.

REGULATION OF RNA POL II ACTIVITY AND ALTERNATIVE SPLICING BY DELLA-PREFOLDIN IN ARABIDOPSIS (**BIO2016-79133-P**). Ministerio de Economía y Competitividad. 01-2016 to 12-2019. **PI: David Alabadí**. 230000 euros.

DELLA-DEPENDENT NUCLEAR ROLE FOR PREFOLDIN IN ARABIDOPSIS (**BIO2013-43184-P**). Ministerio de Economía y Competitividad. 01-2014 to 12-2016. **Co-PIs: David Alabadí, Miguel A Blázquez**. 280000 euros.

EVALUATION OF PLANT SIGNALING NETWORKS IN NATURAL ENVIRONMENTS (**644435-SIGNAT**). H2020-MSCA-RISE-2014. 01-2015 to 12-2018. PI: Miguel A. Blázquez (IBMCP). 411000 euros (148500 euros for CSIC research team). **Role: research team**.

BÚSQUEDA Y EVALUACIÓN MOLECULAR DE NUEVOS COMPUESTOS BIOESTIMULANTES Y SU APLICACIÓN EN AGRICULTURA SOSTENIBLE (**RTC-2014-2876-2**). Ministerio de Economía y Competitividad. 04-2014 to 10-2017. PI: Luí Galán (Dadelos S.L.). 522312 euros (166996 euros for CSIC research team). **Role: research team**.

C.4. Contracts, technological or transfer merits

1. ALCALIBER I+D+i SL “Mejora biotecnológica del metabolismo de *Papaver somniferum*”. I.Ps.: Miguel A. Blázquez, **David Alabadí**. Jul 2021 – Feb 2023. [160.000 €]
2. ALCALIBER, SA “Mejora de la adormidera mediante aproximaciones biotecnológicas”. PIs.: **David Alabadí**, Miguel A. Blázquez. Oct 2018 – Jul 2021 [221.750 €]
3. ALCALIBER, SA “Empleo de herramientas biotecnológicas para la mejora de la adormidera”. PIs.: **David Alabadí**, Miguel A. Blázquez. Jul 2016 – Sep 2018. [194.450 €]
4. PATENT: Abbas M, Minguet EG, **Alabadí D**, Blázquez MA. “Método para incrementar la fertilidad de las plantas”. CSIC-U Politécnica de Valencia - P201431459 (2-OCT-2014) WO2016/051009