Part A. PERSONAL INFORMATION

CV date	8-10-2023

First name	Miguel Angel		
Family name	BLAZQUEZ		
Gender (*)	Male	Birth date	21-01-1967
ID number	50170050N		
e-mail	mblazquez@ibmcp.upv.es	http://plasticity.ibmcp.csic.es	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-5743-0448		

A.1. Current position

Position	Profesor de Investigación de OPIs		
Initial date	2015		
Institution	Consejo Superior de Investigaciones Científicas		
Department/Center	Instituto de Biología Molecular y Celular de Plantas		
Country	Spain	Teleph. number	+34 963877886
Key words	PLANTS / HORMONES / DEVELOPMENT / EVOLUTION		

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

2008-2015	Investigador Científico del CSIC / Spain
2001-2008	Científico Titular del CSIC / Spain
2000-2001	Investigador contratado / IBMCP-CSIC / Spain
1996-2000	Postdoctoral Researcher / Salk Institute / USA

A.3. Education

BSc in Science (Chemistry)	U. Autónoma de Madrid	1989
PhD in Biochemistry and Molecular Biology	U. Autónoma de Madrid	1995

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

My main research interest has always been to understand how organisms interpret environmental signals and use this information to optimize their behavior and to adapt to different habitats.

During my **PhD studies** (**Prof. C. Gancedo**'s lab, IIB [CSIC-UAM]) I studied how yeasts accommodate their metabolism to nutrient availability in the medium. Two contributions can be highlighted: (i) the discovery of trehalose-6P as **a metabolite that adjusts the glycolytic flux to the energy demand**, through the inhibition of hexokinase; and (ii) the definition of **trehalose metabolism in plants**. These results opened a currently very active research field on nutrient sensing in plants and how it regulates reproductive development.

During my **postdoc** (**Prof. D. Weigel**'s lab, Salk Institute, California) I focused my attention on the interplay between environmental signals and the plant hormones gibberellins to regulate flowering. In that period, the two contributions that can be highlighted are: (i) the **mechanism for the integration of light and age cues** directly upon the promoter of the *LEAFY* gene, which is the master regulator of the switch between leaf and flower identity at the meristems; and (ii) the **definition of a temperature-specific signaling pathway** for the control of flowering time, in contrast with the previous view that temperature simply affected metabolism and growth rate with an indirect consequence on reproductive development. Thermomorphogenesis has since then become a hot topic in plant science, to which my lab as also contributed more recently.

Since 2000, I have been working at IBMCP [CSIC-UPV], first in the group of **Prof. J. Carbonell,** and soon after as a tenured independent researcher. My research has focused on gibberellin signaling and its role in developmental plasticity, studying its connection with environmental signaling pathways and its effect on multiple developmental processes. Some of the output during the past twenty years can be exemplified by the following contributions: (i) the proposition that **DELLA proteins act as 'hubs'** transducing environmental information to transcriptional programs through their interaction with dozens of transcription factors; (ii) the

description of the first molecular explanation for the role of a polyamine in plant development (i.e., how **thermospermine regulates the translation of vascular-specific transcription factors** to modulate vascular cell division rate); (iii) the mechanism by which germinating seedlings recognize their position below the soil surface through the **perception of oxygen levels**. More recently, my work is aimed at understanding how environmental signaling pathways and other genetic circuits involved in cell differentiation have contributed to plant adaptation during evolution, an interest triggered around 2008 during my sabbatical year in **Dr. F. Parcy**'s lab (CEA-Grenoble, France).

During the initial steps in my career I was **funded** by national and international fellowships (from the Spanish Ministry of Education, HFSP and FEBS), recognized as an EMBO Young Investigator. I have also raised over 3 M € in national, regional and European funding, being coordinator or PI in three H2020 grants. Part of our research is also funded by contracts with Spanish companies and we have **one patented method** for the improvement of plant performance under high temperature stress which is still under development for the application to tomato cultivation.

I have also undertaken several **service roles**, such as Director of the Department of Plant Development and Hormone Action at IBMCP, as Chair of the Biotechnogy subarea (BTC) at the Agencia Estatal de Investigación (2018-2020) and co-Chair of the former Biotechnology Program (BIO) of the Spanish Ministry of Economy and Innovation (2016-2018). In addition, I have served in national and international grant evaluation panels (French ANR, Norwegian NRC, Colombian COLCIENCIAS), and currently as member of the Scientific Advisory Board of the Institute of Plant Sciences Paris-Saclay (IPS2, France).

With respect to **training activities**, I would highlight that I have supervised (or co-supervised) 15 finished PhD Theses and 10 postdoctoral researchers. All the trainees (except one) are still active in science, and 7 of them are tenured professors or staff researchers in Spain, Argentina, Colombia, Ecuador, Netherlands and Italy.

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

C.1. Publications (* corresponding author) (full list in Google Scholar)

1. Briones-Moreno A, Hernández-García J, Vargas-Chávez C, Blanco-Touriñán N, Phokas A, Úrbez C, Cerdán PD, Coates JC, Alabadí D, Blázquez MA* (2023).
   Evolution of DELLA functions by rewiring of associated transcriptional networks
   Nature Plants 9, 535-543.

2. Mesejo C, Marzal A, Martínez-Fuentes A, Reig C, de Lucas M, Iglesias DJ, Primo-Millo E, Blázquez MA*, Agustí M* (2022)
   Reversion of fruit-dependent inhibition of flowering in *Citrus* requires sprouting of buds with epigenetically silenced *CcMADS19*.
   New Phytol. 233, 526-533.

3. Hernández-García J, Sun R, Serrano-Mislata A, Inoue K, Vargas-Chávez C, Esteve-Bruna D, Arbona V, Yamaoka S, Nishihama R, Kohchi T*, Blázquez MA* (2021)
   Coordination between growth and stress responses by DELLA in *Marchantia polymorpha*.
   Curr. Biol. 31, 3678-3686.

4. Agustí M*, Mesejo C, Muñoz-Fambuena N, Vera-Sirera F, de Lucas M, Martínez-Fuentes A, Reig C, Iglesias DJ, Primo-Millo E, Blázquez MA* (2020)
   Fruit-dependent epigenetic regulation of flowering in *Citrus*.
   New Phytol 225, 376-384.

5. Hernández-García J, Briones-Moreno A, Dumas R, Blázquez MA* (2019)
   Origin of gibberellin-dependent transcriptional regulation by molecular exploitation of a transactivation domain in DELLA proteins
   Mol Biol Evol 36, 908-918.

6. Abbas M, Hernández-García J, Pollmann S, Samodelov SL, Kolb M, Friml J, Hammes UZ, Zurbriggen M, Blázquez MA*, Alabadí D. (2018)
   Auxin methylation is required for differential growth in Arabidopsis.
   Proc Natl Acad Sci USA 115, 6864-6869.

7. 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.
8. Vera-Sirera F, De Rybel B, Úrbez C, Kouklas E, Pesquera M, Álvarez-Mahecha JC, Minguet EG, Tuominen H, Carbonell J, Borst JW, Weijers D*, Blázquez MA* (2015)
   A bHLH-based feedback loop that restricts vascular cell proliferation in plants.
   Dev Cell 35, 432-443.
9. Abbas M, Berckhan S, Rooney D, Gibbs DJ, Vicente-Conde J, Marín-de la Rosa N, Sousa-Correia C, Bassel GW, León J, Alabadí D., Blázquez MA*, Holdsworth MJ* (2015)
   Oxygen sensing coordinates photomorphogenesis to facilitate seedling survival.
   Curr Biol 25, 1483-1488.
10. Locascio A, Blázquez MA*, Alabadí D. (2013)
    Dynamic regulation of cortical microtubule organization through prefoldin-DELLA interaction.
    Curr Biol 23, 804-809.
11. Gallego-Bartolomé J, Minguet EG, Grau-Enguix F, Abbas M, Locascio A, Thomas SG, Alabadí D, Blázquez MA. (2012)
    Molecular mechanism for the interaction between brassinosteroid and gibberellin signaling pathways in Arabidopsis.
    Proc Natl Acad Sci USA 109, 13446-13451.

C.2. Congress presentations

During the past 10 years I have been invited to give **lectures** in over 40 research centers in Spain, Europe, Argentina, Chile and Japan, I have been a **keynote speaker** in 5 international meetings, and our work has been selected for **oral presentations** in at least 10 national and international meetings.

C.3. Research projects

1. "Nuevos compuestos para el uso sostenible del fosfato en la Agricultura [PHOSCHEM]"
   Instituto de Biología Molecular y Celular de Plantas PIs: M.A. Blázquez, D. Alabadí
   TED2021-131509GB-C21. AEI-MICINN. Dec 2022 – Nov 2024. [333.500 €]
2. "Evolución del mecanismo de integración de la señalización por luz y temperatura en plantas [EVOLITE]"
   Instituto de Biología Molecular y Celular de Plantas PI: Miguel A. Blázquez
   PID2019-110717GB-I00. AEI-MICINN. Jun 2020 – May 2023. [272.250 €]
3. "Análisis evolutivo de un 'hub' funcional en plantas [HUBFUN]"
   Instituto de Biología Molecular y Celular de Plantas. PI: Miguel A. Blázquez
   BFU2016-80621-P. MINECO. Jan 2017 – Sep 2020*. [314.600 €] **9-months extension*
4. "Papel de la prefoldina en el núcleo dependiente de DELLAs en Arabidopsis [PRENUC]"
   Instituto de Biología Molecular y Celular de Plantas. CoPIs.: D. Alabadí, M.A. Blázquez
   BIO2013-43184-P. MINECO. Jul 2014 – Jun 2017. [338.800 €]
5. "Señalización por giberelinas dependiente del contexto en Arabidopsis [ANACONGA]"
   Instituto de Biología Molecular y Celular de Plantas. PI: Miguel A. Blázquez
   BIO2010-15071. MICINN. Dec 2010 – Jun 2014. [322.102 €]
6. "Spatial regulation of thermomorphogenesis in plants" [SPATHERM]"
   Instituto de Biología Molecular y Celular de Plantas.
   Miguel A. Blázquez (PI); J. Agustí; D. Alabadí, J. León; M. Sanmartín; C. Úrbez.
   CIPROM/2022/7 Programa Prometeo Gen. Valenciana. Jan 2023 – Dec 2026. [573.964 €]

7. “Diseño racional de proteínas DELLA como herramienta biotecnológica en plantas [TECNODELLA]”
   Instituto de Biología Molecular y Celular de Plantas. PI: Miguel A. Blázquez
   PROMETEO/2019/021. Generalitat Valenciana. Oct 2019 – Sept 2023. [214.603 €]
8. “Clock-mediated modulation of growth-defense tradeoffs and its potential as a biotechnological tool [CHRONOTRADE]”
   Instituto de Biología Molecular y Celular de Plantas. PI: Miguel A. Blázquez
   H2020-MSCA-IF-2019-895249. European Union. 2019 – 2021. [172.932 €]
9. “New DELLA-based biotechnological tools for sustainable Agriculture [DELLATECH]”
   Instituto de Biología Molecular y Celular de Plantas. Coordinator: Miguel A. Blázquez
   H2020-MSCA-IF-2016-746396. Euroipean Union. 2017 – 2019. [170.121 €]
10. “Increasing reproductive success in crops under high ambient temperature [REPROHEAT]”
    Instituto de Biología Molecular y Celular de Plantas. Coordinator: Miguel A. Blázquez
    H2020-MSCA-IF-2015-704697. European Union. 2017 – 2019. [158.121 €]
11. “Evaluation of plant signaling networks in natural environments [SIGNAT]”
    Instituto de Biología Molecular y Celular de Plantas. Coordinator: Miguel A. Blázquez
    H2020-MSCA-RISE-2014-644435. European Union. 2014 – 2019. [414.000 €]
12. “Búsqueda y evaluación molecular de nuevos compuestos en Agricultura sostenible”
    Dadelos S.L. / Instituto de Biología Molecular y Celular de Plantas. PI: Luis Galán
    RTC-2014-2876-2. MINECO. Jul 2014 – Jun 2017. [522.300 € total, 161.996 € in IBMCP]

C.4. Contracts, technological or transfer merits

1. ALCALIBER I+D+i SL “Mejora biotecnológica del metabolismo de *Papaver somniferum*”. I.Ps.: MA Blázquez, D Alabadí. Jul 2021 – Jan 2023. [160.000 €]
2. ALCALIBER, SA “Mejora de la adormidera mediante aproximaciones biotecnológicas”. Pis.: D Alabadí, MA Blázquez. Oct 2018 – Jul 2021 [221.750 €]
3. ALCALIBER, SA “Empleo de herramientas biotecnológicas para la mejora de la adormidera”. PIs.: D. Alabadí, MA 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