Fecha del CVA	14/01/2022

Parte A. DATOS PERSONALES

Nombre	MARÍA DE LOS ÁNGELES		
Apellidos	GÓMEZ ZAMBRANO		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email	angeles.gomez@ibvf.csic.es		
Open Researcher and Contributor ID (ORCID)	0000-0003-4921-0212		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2019 - 2020	Postdoctoral research at Mérida Lab / Instituto de Bioquímica Vegetal y Fotosíntesis (IBVF)
2015 - 2018	Postdoctoral research at Calonje Lab / IBVF-CSIC
2013 - 2015	Postdoctoral research at Mathieu Lab / CNRS-Francia
2011 - 2012	Titulado Medio de Actividades Técnicas y Profesionales at Jarillo Lab / INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA (INIA) / España
2010 - 2010	Titulado Medio de Actividades Técnicas y Profesionales at Jarillo Lab / INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA (INIA) / España
2006 - 2010	Predoctoral fellowship at Jarillo and Piñeiro Lab / INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA (INIA) / España

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Programa Oficial de Doctorado en Biología Vegetal	Universidad Autónoma de Madrid / España	2013
Diploma de Estudios Avanzados	Universidad Autónoma de Madrid	2008
Licenciado en Biología Itinerario Biología Experimental	Universidad de Jaén	2004

Parte B. RESUMEN DEL CV

I have carried out my PhD at CBGP (Centre for Plant Biotechnology and Genomics) in Madrid, under the supervision of Dr. J. A. Jarillo and Dr. M. Piñeiro (2006-2013). The topic of my Thesis is the Characterization genetic and molecular of SWC4, SWC6 and YAF9, components of the remodeling chromatin complexes SWR1 involved in controlling the floral transition in Arabidopsis thaliana. This complex in yeast catalyzes the replacement of nucleosomal H2A with the H2A.Z variant, which ensures full activation of underlying genes. SWR1 complex of Arabidopsis has been proposed to play a key role in achieving high levels of FLOWERING LOCUS C (FLC) expression during the vegetative phase.

Later, I worked as post-doctoral in Dr. Olivier Mathieu lab at CNRS-GRED (Génétique, Reproduction et Développement) in Clermont-Ferrand University, France (2013-2015). We worked to determine the molecular mechanisms of gene silencing. We investigated how DNA methylation homeostasis is achieved, how epigenetic information influences genome stability and how environment modulates epigenetic processes.

Subsequently, in Dr. Miriam Calonje lab at IBVF (Institute of Plant Biochemistry and Photosynthesis) in Seville, we worked to delineate the epigenetic control of plant development. Particularly, we worked with the Polycomb group (PcG) proteins which constitute a major epigenetic mechanism for gene repression throughout the plant life. The PcG mechanism has

been proposed to follow a hierarchical recruitment of PcG repressive complexes (PRCs) to target genes in which the binding of PRC2 and the incorporation of H3K27m3 marks led to recruitment of PRC1, which in turn mediated H2A monoubiquitination. However, recent studies have turned this model upside-down by showing that PRC1 activity can be required for PRC2 recruitment and H3K27me3 marking. We investigate plant PcG function, focusing on the role of the putative PRC1 components.

Lastly, I worked as post-doctoral researcher in Dr. Merida lab at IBVF to improve in "Mechanisms of signaling and regulation of photosynthesis and carbon metabolism in chloroplasts" (SIRECH). Plastoglobules (PGs) are lipoprotein particles localized in the various types of photosynthetic and non-photosynthetic plastids. In chloroplasts, they are attached to thylakoids through a half-lipid bilayer that surrounds the globule contents and is continuous with the stroma-side leaflet of the thylakoid membrane. For many years, it was believed that PGs solely represented a passive lipid deposition site for the plastid. Thus, the discovery of several dozen PG-localized proteins, mostly with unknown function, was highly surprising. In this project I have focused on the molecular and functional characterization of Seven of those FRIBILINS (FBNs) that are found associated to plastoglobules and form part of the protein core of these sub-organelles: FBN1a, 1b, 2, 4, 7a, 7b and 8.

Throughout my scientific career, I have acquired a broad expertise in genetics, as well as molecular biology and biochemistry techniques. I have performed ChIP assays and all basic molecular biology techniques, from gene cloning to DNA and RNA extraction, qRT-PCR, heterologous protein expression in bacteria and yeast, western-blot, pull-down and Co-Immunoprecipitation. Besides, I have experience in microscopy techniques and in vivo luminescence imaging systems. I can work independently as part of a team. I was able to publish my research in renowned international journals and communicated my results in national and international conferences.

Other techniques:

- Protein purification by conventional chromatography techniques (affinity, ionic exchange, hydrophobicity, adsorbance, gel filtration, reverse phase), as well as purification of tag-fused proteins (Histidine tags, GST, MBP).
- Gateway Technology.
- Agrobacterium-mediated Arabidopsis thaliana transformation.
-Transient expression in Nicotiana benthamiana.
- Mutagenesis.
- Yeast two hybrid analysis.
- In vitro translation assays.
- Genomic Bisulfite sequencing and methylation data analysis. McrBC assay.
- Determining Nucleosome Position by MNase assay.
- Methods to defining re-replication process by Flow Cytometry.

-Computer skills:

-Image processing (Adobe Photoshop CS, ImageJ).
- Sequence analysis (DNA strider, Sequed, Chromas).
- Quantification and densitometry (Quantity One, Typhoon).
- Databases (EXPASY, EMBL, EBI, NCBI, TAIR).

* DNA and protein alignment: CLUSTALW [At EBI, PBIL, My Hits or at EMBnet-CH]. Analysis of protein primary, secondary and tertiary structures (Swiss.Model, RasMol, MolMol).

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Baile, Fernando; Gomez-Zambrano, Ángeles; Calonje, Myriam. 2021. Roles of Polycomb complexes in regulating gene expression and chromatin structure in plants Plant Communications. https://doi.org/10.1016/j.xplc.2021.100267.

2 **Artículo científico**. Torres-Romero, Diego; Gómez-Zambrano, Ángeles; Serrato, Antonio Jesús; Sahrawy, Mariam; Mérida, Ángel. 2021. Arabidopsis fibrillin 1-2 subfamily exerts their functions via specific protein-protein interactions Journal Experimental Botany. https://doi.org/10.1093/jxb/erab452. ISSN 1460-2431.

3 **Artículo científico**. Bourguet, Pierre; Lopez-Gonzalez, Leticia; Gomez-Zambrano, Ángeles; et al; Mathieu, Olivier. 2020. DNA polymerase epsilon is required for heterochromatin maintenance in Arabidopsis Genome Biology. DOI: 10.1186/s13059-020-02190-1. 21-1, pp.283. ISSN 1474-760X. WOS (1)

4 **Artículo científico**. Angeles Gómez Zambrano; Wiam Merini; Myriam Calonje. 2019. The repressive role of Arabidopsis H2A.Z in transcriptional regulation depends on AtBMI1 activity Nature Communication. DOI: 10.1038/s41467-019-10773-1. 10-1, pp.2828. ISSN 2041-1723. WOS (25)

5 **Artículo científico**. Crevillén, Pedro; Gomez-Zambrano, Ángeles; Lopez, Juan A.; Vázquez, Jesús; Piñeiro, Manuel; Jarillo, Jose Antonio. 2019. Arabidopsis YAF9 histone readers modulate flowering time through NuA4-complex-dependent H4 and H2A.Z histone acetylation at FLC chromatin.New Phytologist. DOI: 10.1111/nph.15737. ISSN 0028-646X. WOS (19)

6 **Artículo científico**. Pierre Bourguet; Stève de Bossoreille; Leticia López-González; et al;. 2018. A role for MED14 and UVH6 in heterochromatin transcription upon destabilization of silencing Life Science alliance. DOI: 10.26508/lsa.201800197. ISSN 2575-1077. WOS (8)

7 **Artículo científico**. Ángeles Gómez-Zambrano; Pedro Crevillen; José M. Franco-Zorrilla; Juan A. López; Jordi Moreno-Romero; Juan Santos-González; José A. Jarillo. 2018. Arabidopsis SWC4 binds DNA and recruits the SWR1 complex to modulate histone H2A.Z deposition at key regulatory genes.Molecular Plant. DOI10.1016/j.molp.2018.03.014. ISSN 1674-2052. WOS (30)

8 **Artículo científico**. Yue Zhou; Francisco J. Romero-Campero; Ángeles Gómez-Zambrano; Franziska Turck; Myriam Calonje. 2017. H2A monoubiquitination in Arabidopsis thaliana is generally independent of LHP1 and PRC2 activity Genome Biology. DOI10.1186/s13059-017-1197-z. ISSN 1474-760X. WOS (32)

9 **Artículo científico**. ; Wiam Merini; Francisco J. Romero-Campero; Angeles Gómez-Zambrano; Yue Zhou; Franziska Turck; Myriam Calonje. 2016. The Arabidopsis Polycomb Repressive Complex 1 (PRC1) components AtBMI1A, B and C impact gene networks throughout all stages of plant development.Plant Physiology. DOI10.1104/pp.16.01259. ISSN 0032-0889. WOS (27)

10 **Artículo científico**. Ana Lázaro; Ángeles Gómez Zambrano; Leticia López González; Manuel Piñeiro; Jose Antonio Jarillo. (/2). 2008. Mutations in Arabidopsis SWC6, encoding a component of the SWR1 chromatin remodelling complex, accelerate flowering time and alter leaf and flower development Journal Experimental Botany. DOI10.1093/jxb/erm332. 59-3, pp.653-666. ISSN 0022-0957. WOS (65)

11 **Artículo científico**. Jose A. Jarillo; Iván del Olmo; Ángeles Gómez Zambrano; et al;. 2008. Photoperiodic control of flowering time Agricultural Research. DOI10.5424/sjar/200806S1-391. 6, pp.221-244. ISSN 1695-971X. WOS (12)

C.3. Proyectos o líneas de investigación

1 **Proyecto**. PGC2018-096851-B-C22-Signalling mechanisms and regulation of photosynthesis and carbon metabolism in chloroplasts. (Instituto de Bioquímica Vegetal y Fotosíntesis (IBVF)). 2018-2021.

2 **Proyecto**. BIO2016-76457-P Explorando el mecanismo de regulación PcG y su potencial Biotecnológico para la mejora de caracteres de interés agronómico. MIRIAM CALONJE MACAYA. ((IBVF) Instituto de Bioquímica Vegetal y Fotosíntesis). 31/12/2016-31/12/2019. 187.550 €.

3 **Proyecto**. FP7-PEOPLE-2012- Marie Curie CIG-Do plants go further in deciding their fate: different target genes, different Polycomb group mechanism?. MIRIAM CALONJE MACAYA. ((IBVF) Instituto de Bioquímica Vegetal y Fotosíntesis). 01/04/2013-31/03/2017. 100.000 €.

4 **Proyecto**. BIO2013-44078-P-Papel de la regulación Polycomb en la plasticidad celular de las plantas. MIRIAM CALONJE MACAYA. ((IBVF) Instituto de Bioquímica Vegetal y Fotosíntesis). 01/01/2014-31/12/2016. 159.720 €.

5 **Proyecto**. I2ST: Initiating and Interfering with silencing of Transposons. Olivier Mathieu. (CNRS-Francia). 2013-2015.

6 **Proyecto**. BIO2010-15589-Disección genética y molecular de mecanismos implicados en la represión de la floración. Jose Antonio Jarillo Quiroga. ((INIA) Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria). 2010-2013. 200.000 €. Miembro de equipo.

7 **Proyecto**. BIO2008-00351-Disección genética y genómica de las rutas de la represión floral en Arabidopsis II. Jose Antonio Jarillo Quiroga. (INSTITUTO NACIONAL DE INVESTIGACIÓN Y TECNOLOGÍA AGRARIA Y ALIMENTARIA (INIA)). 2009-2010. 114.950 €. Miembro de equipo.

C.5. Estancias en centros de I+D+i públicos o privados

Instituto de Bioquímica Vegetal y Fotosíntesis (IBVF). CSIC. España. Sevilla. 15/04/2010-15/07/2010. 3 meses. Doctorado/a.