

CURRICULUM VITAE ABREVIADO (CVA)

Fecha del CVA	03/09/2025
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Parte A. DATOS PERSONALES

Nombre	Araceli
Apellidos	Castillo Garriga

A.1. Situación profesional actual

Puesto	Profesor Titular de Universidad		
Fecha inicio	28-12-2017		
Organismo/ Institución	Instituto de Hortofruticultura Subtropical y Mediterránea "La Mayora" (IHSM, UMA-CSIC)		
Departamento/ Centro	Area de Genética /Universidad de Málaga Interaccion Planta-Virus (IHSM, UMA-CSIC)		
País	España	Teléfono	952132392
Palabras clave	Geminivirus, tomato, plant-pathogen interaction, post-translational modifications, gene silencing, viral suppressors, epigenetics, immunity		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora, de acuerdo con lo indicado en la convocatoria, indicar meses totales)

Periodo (meses)	Posición/Institución/País/
1998-2002 (60 m)	Investigador predoctoral (FPU) / Universidad de Málaga/España
2002/2004 (16 m)	Profesor Ayudante no Doctor / Universidad de Málaga/España
2004/2004 (6 m)	Investigador Postdoctoral / Cancer Research UK (CRUK) / Reino Unido
2004/2007 (41 m)	Investigador Postdoctoral / WTCCB-University of Edinburgh / Reino Unido
2007/2008 (11 m)	Profesor Ayudante no Doctor / Universidad de Málaga/España
2008/2010 (20 m)	Profesor Ayudante Doctor / Universidad de Málaga/España
2010/2017 (78 m)	Profesor Contratado Doctor / Universidad de Málaga/España

A.3. Formación Académica

Grado/Master/Tesis	Universidad/País	Año
Licenciada en Biología	Universidad de Málaga/España	1997
Doctorado en Biología	Universidad de Málaga/España	2002

Parte B. RESUMEN DEL CV

I obtained my Biological Sciences degree (BSc. and MSc.) from the University of Malaga (UMA) in 1997. I did my PhD at the Genetics Department of the UMA, working with the viral proteins responsible for the DNA replication (Rep and REn) of geminiviruses (single-stranded DNA plant viruses). The results from my PhD derived in a book chapter and four articles published in journals from the first quartile of the Virology area (Virology and Journal of Virology). The work describing the interaction between the Rep and REn and PCNA (Castillo et al., 2003-Virology) and the one describing the interaction between geminivirus and the plant SUMOylation system (Castillo et al., 2004-Journal of Virology) had a noticeable impact on the field and derived in the establishment of a new research line in the group.

At the beginning of 2004 I started my post-doctoral formation with a short stay in Dr. Alain Verreault's group at Clare Hall Laboratories, Cancer Research UK (London, United Kingdom). There, I was involved in the characterization of the interaction between PCNA and chromatin remodeling factors in yeast (Ben-Shahar et al., 2009-Molecular and Cellular Biology). In September 2004, I joined Dr. Robin Allshire's lab at the Wellcome Trust Centre for Cell Biology in Edinburgh (United Kingdom). My work, that focused on studying the mechanisms that control the centromeric chromatin in fission yeast, led to several articles published in PLoS Genetics, Molecular Cell and The Journal of Biological Chemistry, among others. Particularly relevant were the findings demonstrating that the centromeric histone variant, CENP-A^{Cnp1}, associated with non-centromeric chromatin when the levels of histones H3/H4 or CENP-A^{Cnp1} were altered (Castillo et al., 2007-PLoS Genetics and Castillo et al., 2013-PLoS One), and my contribution to the discovery of the loading complex of CENP-A^{Cnp1} at fission yeast centromeres (Pidoux et al., 2009-Molecular Cell).

In October 2007, I got a position as Assistant Professor in the Genetics Dpt. at UMA. In 2008 and 2011 I made two short scientific stays (three months each) in Dr. Robin Allshire's lab that led to a couple of publications (one of them by applying the epigenetics findings in Dr. Robin Allshire's lab to Arabidopsis, Castonguay et al., 2014- Molecular and Cellular Biology). Since 2008, I have taught genetics in the degrees of Biology and Biochemistry and in masters and doctoral programs at the UMA. In 2017 I was appointed as Associate Professor (Profesor Titular) and became a member of the Plant-Microorganism-Vector Interaction Department at the Instituto de Hortofruticultura Subtropical y Mediterránea "La Mayora" (IHSM), a mix institute between the UMA and CSIC. My research line is focused on the characterization of the geminivirus-plant interaction at a genetic and epigenetic level. Over these years I have been a principal investigator in several competitive national or regional projects. My main contributions to the host-virus interaction field have been the finding that Rep displays transcriptional gene silencing activity through a novel mechanism (Rodríguez-Negrete et al., 2013), the description of the first integrative single-nucleotide maps of DNA methylation, vsRNA accumulation and gene expression from a plant virus (Piedra-Aguilera et al., 2019) and the characterization of V2 from curtoviruses as a post-transcriptional gene silencing suppressor (Luna et al., 2017 and Luna et al., 2020). In a collaboration with Dr. Rosa Lozano Durán, we explored the intertwined relation between biotic and abiotic stresses demonstrating that the C4 protein from the geminivirus, confers drought tolerance in Arabidopsis through an ABA-independent mechanism (Corrales-Gutierrez et al., 2020). I have established several fruitful collaborations with different groups from the IHSM that have also derived in various publications. Especially relevant for my actual research line is the long-lasting collaboration with Dr MA. Botella about the biological characterization of TTL3, a protein involved in the brassinosteroids pathway, which is controlled, among other proteins by the RLKs, BRI1 and BAK1 (Lakhssassi et al., 2012, Amorim-Silva et al., 2019; Kesten et al., 2022). I have directed four doctoral theses (defended in 2014, 2019, 2022 and 2023) and I am directing another three (two will be defended in September 2025). I have also participated on the organization of two national scientific meetings (2009 and 2020) and I am a member of the editorial team for a special issue from Frontiers in Plant Science, focused on geminivirus-plant-vector interactions (2020).

Regarding scientific communication I have participated two years in "La Noche Europea de los investigadores" (2020 and 2021) and I have given numerous seminars at high schools in Malaga province about epigenetics, transgenic plants and scientific career development. I have also contributed to scientific communication through two publications in PHYTOMA (2012 and 2020).

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review”. Selección de los ULTIMOS 10 años.

- Julia Pastor-Fernández, Neus Sanmartín, Maria Manresa-Grao, Cédric Cassan, Pierre Pétriacq, Yves Gibon, Jordi Gamir, Beatriz Romero-Rodríguez, **Araceli G. Castillo**, Miguel Cerezo, Victor Flors, and Paloma Sánchez-Bel. Deciphering molecular events behind Systemin-induced resistance to Botrytis cinerea in tomato plants. **Journal of Experimental Botany**, **2024**. Advance Access Publication 6 April 2024. DOI: doi.org/10.1093/jxb/erae146. Impact factor: 5.6. Area: Plant Sciences. Journal position in the area: 25/265 (Q1).
- Beatriz Romero-Rodríguez, Marko Petek, Chen Jiao, Maja Križnik, Maja Zagorščak, Zhangjun Fei, Eduardo R. Bejarano, Kristina Gruden and **Araceli G. Castillo**. Transcriptional and epigenetic changes during tomato yellow leaf curl virus infection in tomato. **BMC Plant Biology**, **2023**. 23:65. DOI: 10.1186/s12870-023-04534-y. Impact factor: 4.3. Area: Plant Sciences. Journal position in the area: 27/265 (Q1).
- Tabata Rosas-Díaz, Pepe Cana-Quijada, Mengshi Wu, Du Hui, Gemma Fernandez-Barbero, Alberto P. Macho, Roberto Solano, **Araceli G. Castillo**, Xiao-Wei Wang, Rosa Lozano-Duran, Eduardo R. Bejarano. The transcriptional regulator JAZ8 interacts with the C2 protein from geminiviruses and limits the geminiviral infection in Arabidopsis. **Journal of Integrative Plant Biology**, **2023**. DOI: 10.1111/jipb.13482. Impact factor: 9.106. Area: Plant Sciences. Journal position in the area: 9/265 (Q1).
- Christopher Kesten, Álvaro García-Moreno, Vítor Amorim-Silva, Alexandra Menna, **Araceli G. Castillo**, Francisco Percio, Laia Armengot, Noemi Ruiz-Lopez, Yvon Jaillais, Clara Sánchez-Rodríguez, Miguel A Botella. Peripheral membrane proteins modulate stress tolerance by safeguarding cellulose synthases. **Science Advances**, **2022**. Vol 8, Issue 46. DOI: 10.1126/sciadv.abq6971. ISSN: 2375-2548. Impact factor: 13.6. Area: Multidisciplinary Sciences. Journal position in the area: 11/134 (Q1).
- Isabel M. Fortes, Verónica Pérez-Padilla, Beatriz Romero-Rodríguez, Rafael Fernández-Muñoz, Cristina Moyano, **Araceli G. Castillo**, Leandro de León and Enrique Moriones. Begomovirus tomato leaf curl New Delhi virus is seed-borne but not seed-transmitted in melon. **Plant Disease**, **2022**. DOI: 10.1094/PDIS-09-21-1930-RE. ISSN: 0191-2917. Impact factor: 4.614. Area: Plant Sciences. Journal position in the area: 42/238 (Q1).
- P. Cana-Quijada, B. Romero-Rodríguez, P. G Vallejo, **AG. Castillo**, ER. Bejarano. Cutting-edge technology to generate plant immunity against geminiviruses. **Current Opinion in Virology**, **2020**. 42. pp 58-64. DOI: 10.1016/j.coviro.2020.06.004. ISSN: 1879-6257. Impact factor: 4.985. Area: Virology. Journal position in the area: 5/37 (Q1).
- AP Luna, B Romero-Rodríguez, T Rosas-Díaz, L Cerero, EA Rodríguez-Negrete, **AG Castillo***, ER Bejarano* (*corresponding authors). Characterization of Curtovirus V2 Protein, a Functional Homolog of Begomovirus V2. **Frontiers in Plant Science**, **2020**. 11: 835. DOI: doi.org/10.3389/fpls.2020.00835. e-ISSN: 1664-462X. Impact factor: 4.402. Area: Plant Sciences. Journal position in the area: 19/234 (Q1).
- V. Pérez-Padilla, I. M. Fortes, B. Romero-Rodríguez, M. Arroyo-Mateos, **A.G. Castillo**, C. Moyano, L. de León and E. Moriones. Revisiting seed transmission of the type strain of Tomato yellow leaf curl virus in tomato plants. **Phytopathology**, **2020**. DOI: 10.1094/PHYTO-07-19-0232-FI. e-ISSN: 1943-7684. Impact factor: 3.264. Area: Plant Sciences. Journal position in the area: 40/228 (Q1).
- M. Corrales-Gutierrez, L Medina-Puche, Y Yu, L Wang, X Ding, AP Luna, ER Bejarano, **AG Castillo*** and R Lozano-Duran* (*corresponding authors). The C4 protein from the geminivirus Tomato yellow leaf curl virus confers drought tolerance in Arabidopsis through an ABA-independent mechanism. **Plant Biotechnology Journal**, **2020**. DOI: 10.1111/pbi.13280. ISSN: 1467-7652. Impact factor: 6.840. Area: Plant Sciences. Journal position in the area: 9/228 (Q1).

- A Piedra-Aguilera, C Jiao C, AP. Luna, F Villanueva, M Dabad, A Esteve-Codina, JA Díaz-Pendón, Z Fei, ER Bejarano and **AG Castillo**. Integrated single-base resolution maps of transcriptome, sRNAome and methylome of Tomato yellow leaf curl virus (TYLCV) in tomato. **Scientific Reports**. 2019. DOI: 10.1038/s41598-019-39239-6. ISSN: 2045-2322. Impact factor: 4.01. Area: Multidisciplinary Sciences. Journal position in the area: 15/69 (Q1).
- V. Amorim-Silva, A. García-Moreno, **A.G. Castillo**, N. Lakhssassi, A. Esteban del Valle, J. Pérez-Sancho, Y. Li, D. Posé, J. Pérez-Rodríguez, J. Lin, V. Valpuesta, O. Borsani, C. Zipfel, A.P. Macho, M.A. Botella. TTL Proteins Scaffold Brassinosteroid Signaling Components at the Plasma Membrane to Optimize Signal Transduction in Arabidopsis. **The Plant Cell**. 2019. DOI: 10.1105/tpc.19.00150. eISSN: 1531-298X. Impact factor: 8.631. Area: Plant Science. Journal position in the area: 6/228 (Q1).
- A.P. Luna, E.A. Rodríguez-Negrete, G. Morilla, L. Wang, R. Lozano-Durán, **A.G. Castillo** and E.R. Bejarano. V2 from a curtovirus is a suppressor of post-transcriptional gene silencing. **Journal of General Virology**. 2017. 98:2607–2614. DOI 10.1099/jgv.0.000933. ISSN: 0022-1317. Impact factor: 2,838. Area: Virology. Journal position in the area: 17/34 (Q2)
- E. Rodríguez-Negrete, R. Lozano-Durán, A. Piedra-Aguilera, L. Cruzado, E.R. Bejarano and **A.G. Castillo**. Geminivirus Rep protein interferes with the plant DNA methylation machinery and suppresses transcriptional gene silencing. **New Phytologist**, 2013. 199: 464–475. DOI: 10.1111/nph.12286. ISSN: 1469-8137. Impact factor: 6.736. Area: Plant Sciences. Journal position in the area: 6/195 (Q1).

Capítulos de libros

- M. Wu, E.R. Bejarano, **A.G. Castillo** and R. Lozano-Duran. “Geminivirus DNA replication in plants” in “Geminiviruses: Detection, Diagnosis and Management”. Chapter 21. Editors: R.K. Gaur, Pradeep Sharma and Henryk Czosnek. 2022. Edited by: Elsevier. ISBN: 978-0-323-90587-9.

C.3. Proyectos o líneas de investigación en los que ha participado. Selección de los ULTIMOS 10 años.

- Proyecto 1:** *Concepción y mejora de resistencias a virus transmitidos por insectos en tomate: aproximaciones genéticas e innovadoras en interacciones huésped-patógeno-vector (VIRTOM-INNOVA).* Ministerio de Economía y Competitividad (PID2022-139376OB-C31). From 01/12/2023 to 30/11/2026 (36 months). 202.500 euros. **IPs: Araceli Castillo Garriga and Eduardo Rodríguez Bejarano.**
- Proyecto 2:** *Control of Whitefly-Transmitted Viruses in Tomato: Taking Advantage of Understanding the Basis of Plant-Virus Interaction.* Ministerio de Economía y Competitividad (PID2019-107657RB-C22). From 01/06/2020 to 30/11/2023 (36 months). 202.070 euros. **IPs: Araceli Castillo Garriga and Eduardo Rodríguez Bejarano.**
- Proyecto 3:** *Regulación mediante silenciamiento génico de la ruta del ácido jasmónico durante la interacción con patógenos biotrofos.* Programa Operativo FEDER JA-UMA (UMA20-FEDERJA-021). From 01/07/2021 to 30/09/2023. 61.485 euros. **IPs: Araceli Castillo Garriga and Carmen Beuzón López**
- Proyecto 4:** *EPIgenetic mechanisms of Crop Adaptation To Climate cHange (EPI-CATCH): COST Action CA19125.* (2020-2024). PI: Federico Martinelli. Araceli G Castillo (Member)
- Proyecto 5:** *Multitrophic interactions in the geminivirus/crinivirus-Bemisia tabaci-tomato pathosystem.* Ministerio de Economía y Competitividad (AGL2016-75819-C2-1-R). From 01/01/2017 to 31/12/2019 (36 months). 205.000 euros. **IPs: Araceli Castillo Garriga and Eduardo Rodríguez Bejarano.**

C.5. Tesis dirigidas.

Tesis 1: Natasa Hulak. Universidad de Málaga. Diciembre 2014.

Tesis 2: Alvaro Piedra Aguilera (Predoctoral FPU). Universidad de Málaga. Abril 2019.

Tesis 3: Miguel Angel Corrales Gutierrez. Universidad de Málaga. Enero 2022

Tesis 4: Beatriz Romero Rodríguez (Predoctoral FPU). Universidad de Málaga. Octubre 2023.

Tesis 5 (en proceso): Pablo Morales Martínez (Predoctoral FPU). Universidad de Málaga.
Fecha estimada: Abril 2026

Tesis 6 (en proceso): Verónica Pérez Rubio (Predoctoral FPI). Universidad de Málaga. Fecha
estimada: Marzo 2026

Tesis 7 (en proceso): Marta Alcalá Rey (Predoctoral FPI). Universidad de Málaga. Fecha
estimada: Enero 2028