

## 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

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| ARTIST PERSONAL INFORMATION                    |  |  |  |
| First name                                     | Carmelo  |  |  |
| Family name                                    | López del Rincón                                 |  |  |
| Gender (*)                                     | Man  |  |  |
| e-mail   | <a href="mailto:clopez@upv.es">clopez@upv.es</a> | URL Web<br><a href="http://www.upv.es/ficha-personal/clopez">http://www.upv.es/ficha-personal/clopez</a> |  |
| Open Researcher and Contributor ID (ORCID) (*) |  | 0000-0001-7459-1315  |  |

(\*) Mandatory

#### A.1. Current position

|                   |   |   |               |
|-------------------|---|---|---------------|
| Position          | Full Professor (CU)   |   |               |
| Initial date      | 20/12/2018  |   |               |
| Institution       | Universitat Politècnica de València (UPV)   |   |               |
| Department/Center | Biotechnology   | Institute for the Conservation and Breeding of Valencian Agrobiodiversity (COMAV) |               |
| Country           | Spain   | Teleph. number  | +34 963877267 |
| Key words         | Plant pathology, Plant breeding, Genetics, Cucurbits, viruses, Molecular markers, Germplasm evaluation, Sources of resistance |   |               |

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

| Period    | Position/Institution/Country/Interruption cause                      |
|-----------|--|
| 1988-1993 | Predocctoral researcher (FPU), University of Alcalá, Madrid-Spain    |
| 1994-2001 | Postdoctoral researcher, IBMCP-CSIC, Valencia-Spain                  |
| 2001-2003 | Full-time associate teacher, Biotechnology Dept. UPV, Valencia-Spain |
| 2003-2008 | Contracted Ramón y Cajal, COMAV-UPV, Valencia-Spain                  |
| 2008-2010 | Hired Doctor teacher (PCD), Biotechnology Dept. UPV, Valencia-Spain  |
| 2010-2018 | Associated Professor (TU), Biotechnology Dept. UPV, Valencia-Spain   |
| 2018-Act. | Full Professor (CU), Biotechnology Dept. UPV, Valencia-Spain         |

#### A.3. Education

| PhD, Licensed, Graduate       | University/Country            | Year |
|-------------------------------|-------------------------------|------|
| Degree in Biological Sciences | University of Alcalá (Madrid) | 1987 |
| PhD in Biological Sciences    | University of Alcalá (Madrid) | 1994 |

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

I earned a Degree in Biology and a Ph.D. in Biological Sciences at the University of Alcalá (Madrid). During this stage, I worked on the isolation, characterization and control of barley chloroplast DNA genes expressed during leaf aging and on the “editing” of the messenger RNAs, a process post-transcriptional to which numerous mRNAs from chloroplasts of higher plants are subjected. The editing of transcripts had been described for the first time in 1991 in the laboratory of Professor Hans Kössel (Freiburg, Germany), where I did a stay.

In the period 1994-2001, I worked as a postdoctoral researcher in the Institute of Plant Molecular and Cellular Biology in Valencia (IBMCP- CSIC-UPV). My research focused on the study of the citrus tristeza virus, which contributed to advance in: i) molecular diagnosis; (ii) virus evolution and epidemiology; iii) subcellular location, structure and function of the CTV-

unique p23 protein; and iv) development of resistance through pathogen-derived resistance (PDR).

Since 2001, I am an independent researcher at the COMAV-UPV. Currently, I am Full Professor of the Biotechnology Department (Genetics teaching unit) of the Universitat Politècnica de València (UPV), Secretary of the Department and I lead the COMAV Horticultural Virus Group. The objective of my work is to generate more efficient and long-term strategies for the control of plant diseases induced by emerging viruses in horticultural crops. My main goal is the development of plant material with virus resistance, by means of evaluation of germplasm of cultivated species and related wild species, and intra- and interspecific hybridization or by using the CRISPR/Cas technology. The genetic characterization of the sources of resistance to viruses, as well as the development of molecular markers to support selection and introgression of resistance into elite and landrace genetic backgrounds are also important objectives of my research.

As result of this trajectory, I have recognized 5 six-year research periods: 4 of research (period 1995-2018 and I just applied for the fifth period in the 2024 call) and 1 of transfer (period 2006-2016). This work has resulted in 65 articles in journals included in the Web of Science, the total number of citations is 2,142 (1,983 without self-citations, Web of science) and the h-index is 28. Furthermore, I had published 5 book chapters, 22 simplified articles (divulagation), and I have presented more than 120 communications at national and international congresses. During my scientific career, I had participated in 36 competitive projects (16 as principal researcher) and in 7 contracts with companies. Finally, I had been co-supervisor of three defended PhDs, 25 Master Final Dissertation (TFM) and 30 Bachelor Final Project (TFG).

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

### C.1. Publications

1. Sáez, C., Hernández, G., Sifres, A., **López C.** (9/11), Picó, B. Gómez, G. (2024). The regulatory module miR395 - Primase controls the resistance to ToLCNDV infection in melon. PLANT AND CELL ENVIRONMENT, in second round of review.
2. Sáez, C., Kheireddine, A., García, A., Sifres, A., Moreno, A., Font-San-Ambrosio, I., Picó, B. and **López, C.** (AC) (2023). Further molecular diagnosis determines lack of evidence for real seed transmission of tomato leaf curl New Delhi virus in cucurbits. PLANTS, 12(21): 3773.
3. Sáez, C., Flores-León, A., Montero -Pau, J., Sifres, A., Dhillon, N.P.S., **López, C.** (AC), and Picó, B. (AC). (2022). RNA-seq transcriptome analysis provides candidate genes for resistance to *Tomato leaf curl New Delhi virus* in melon. FRONTIERS IN PLANT SCIENCE 12: 798858.
4. Sáez, C., Ambrosio, L.G.M. Miguel, S.M., Valcárcel, J.V., Díez, M.J., Picó, B. and **López, C.** (AC). (2021). Resistant sources and genetic control of resistance to ToLCNDV in cucumber. MICROORGANISMS, 9 (5): 913.
5. Sáez C, Martínez C, Montero-Pau J, López C. (8/9) and Picó B. (2020). A major QTL located in chromosome 8 of *Cucurbita moschata* is responsible for resistance to *Tomato leaf curl New Delhi virus* (ToLCNDV). FRONTIERS IN PLANT SCIENCE 11: 207.
6. Carbonell A, **López C.**, and Darós J.A. (2019). Fast-forward identification of highly effective artificial small RNAs against different *Tomato spotted wilt virus* Isolates. MOLECULAR PLANT-MICROBE INTERACTIONS 32: 142-156.
7. Román, B., Gómez, P., Picó, B., **López, C.** and Janssen, D. (2019). Candidate gene analysis of *Tomato leaf curl New Delhi virus* resistance in *Cucumis melo*. SCIENTIA HORTICULTURAE 243: 12-20.
8. Kheireddine, A., Sifres, A., Sáez, C., Picó, B. and **López, C.** (AC). (2019). First Report of *Tomato leaf curl New Delhi virus* infecting Cucurbit Plants in Algeria. PLANT DISEASE, 103: 3291

9. Sáez, C., Esteras, C., Martínez, C., Ferriol, M., Narinder, P.D., **López, C.** and Picó, B. (2017). Resistance to *Tomato leaf curl New Delhi virus* in melon is controlled by a major QTL located in chromosome 11. *PLANT CELL REPORTS* 36: 1571-1584.
10. **López C.**, Ferriol, M. and Picó, B. (2015). Mechanical transmission of *Tomato leaf curl New Delhi virus* to cucurbit germplasm: selection of tolerance sources in *Cucumis melo*. *EUPHYTICA* 24: 679-691.

## C.2. Congress

1. Sáez, C., Hernández, G., Sifres, A., Aragonés, V., Darós, J.A., López, C., Picó, B. and Gómez, G. (2024). The regulatory module miR395 - Primase control the resistance to ToLCNDV infection in melon in an environment dependent manner. XXI Congreso de la Sociedad Española de Fitopatología (Córdoba). *Oral communication*
2. Sáez, C., Villalba-Bernell, P., Aragonés, V., Sifres, A., Picó, B., Darós, J.A., López, C. y Gómez, G. (2022). Identification and functional validation of a candidate gene linked to Tomato leaf curl New Delhi virus resistance in melon. XX Congreso de la Sociedad Española de Fitopatología (Valencia). *Oral communication*
3. Kheireddine, A., Sifres, A., Sáez, C., Hadjeb, A., Picó, B. and **López, C.** (2021). Genetic Variability of *tomato leaf curl New Delhi virus* in Algeria. XII<sup>th</sup> Eucarpia Meeting on Cucurbit Genetics and Breeding. Spain-online (24-28<sup>th</sup> May 2021). *Poster*. p 65. ISBN 978-84-1351-090-3.
4. Sáez, C., Esteras, C., Sifres, A., Martínez, C., Flores-León, A., Ferriol, M., **López, C.** and Picó, B. (2021). Syntenic regions control resistance to *tomato leaf curl New Delhi virus* (ToLCNDV) in cucurbit crops. XII<sup>th</sup> Eucarpia Meeting on Cucurbit Genetics and Breeding. Spain-online (24-28<sup>th</sup> May 2021). *Oral communication*.
5. Picó, B., Houhou, F., Cordero, T., and Darós J.A. (9/12) (2021). A potyvirus-based vector for transient gene expression in cucurbit plants and fruits. XII<sup>th</sup> Eucarpia Meeting on Cucurbit Genetics and Breeding. Spain-online (24-28<sup>th</sup> May 2021). *Oral communication*.
6. García, A., Kheireddine, A., Sifres, A., Moreno, A., Font-San Ambrosio, A., Picó, B., **López, C.** and Sáez, C. (2021). Further assessment of ToLCNDV-ES seed transmission in cucurbits. XII<sup>th</sup> Eucarpia Meeting on Cucurbit Genetics and Breeding. Spain-online (24-28<sup>th</sup> May 2021). *Poster*. p 74. ISBN 978-84-1351-090-3.
7. Sáez, C., Martínez, C., Esteras, ... and Picó, B. (8/9). (2018). A mayor QTL located in chromosome 8 of *Cucurbita moschata* is responsible of resistance to *Tomato leaf curl New Delhi virus* (ToLCNDV). Cucurbitaceae 2018. Davis, California, USA (12-15<sup>th</sup> November 2018). *Poster*. p61.

## C.3. Research projects

1. PID2021-125787OR-C33 (Agencia Estatal de Investigación). Resistencia genética a los virus ToLCNDV y CGMMV en cucurbitáceas. **IP: Carmelo López** (COMAV 01-09-2022 - 31-08-2025; 181.500 €). Investigadores participantes: 5
2. CPP2021-008712 (Agencia Estatal de Investigación). Edición genómica para la incorporación de resistencias a enfermedades en melón (RESISTMELO). **IP: Carmelo López**, (01-09-2022 - 31-08-2025; 46.215,95 €). Investigadores: 3
3. TED2021-131949B-I00 (Agencia Estatal de Investigación). Prácticas agrícolas respetuosas con el ambiente para el monitoreo y obtención de resistencias a enfermedades virales en cucurbitáceas (ENVIRBITS). **IP: Vicente Pallás/Jesús Ángel Sánchez** (01-12-2022 - 30-11-2024; 230.000 €). Investigadores: 5. Participación: investigador.
4. PROMETEO/2021/072 (GENERALITAT VALENCIANA). Mejora genética en cucurbitáceas para su transición al cultivo ecológico, los retos del cambio climático global y revitalización

- de la economía agraria local. **IP: Belén Picó y M<sup>a</sup> José Díez** (COMAV: 01/01/2021 - 31/12/2024; 474.199,38 €). Investigadores: 8. Participación: investigador.
5. RTA2017-00061-C03-03 (AEI-INIA). Avances en el control de los virus ToLCNDV y CGMMV en cucurbitáceas mediante mejora genética. **IP: Carmelo López**, (01/01/2018 - 31/12/2021; 120.213 €). Investigadores: 7.
  6. RTC-2017-6023-2 (AEI). Edición genómica para la introducción de resistencias a enfermedades y plagas en melón. **IP: Belén Picó**, (01/01/2018 - 01/11/2022; 127.727,44 €). Investigadores: 4. Participación: investigador.
  7. PROMETEO/2017/078 (GENERALITAT VALENCIANA). Selección de variedades tradicionales y desarrollo de nuevas variedades de cucurbitáceas adaptadas a la producción ecológica. **IP: Belén Picó** (COMAV: 01/11/2017 - 01/11/2021; 346.733,94 €). Investigadores: 11. Participación: investigador.
  8. RTA2013-00047-C02-02 (INIA). Búsqueda de nuevas fuentes de resistencia y desarrollo de microRNAs artificiales para el control del virus del bronceado del tomate (TSWV). **IP: Carmelo López**, (COMAV: 02/10/2014-01/10/2017; 80.022 €).
  9. E-RTA2013-00020-C04-03 (INIA). Identificación de resistencias a ToLCNDV en Cucurbitáceas y análisis genético de las mismas. **IP: Belén Picó** (COMAV: 02/10/2014-01/10/2017; 100.000 €). Participación: investigador.
  10. RTA2008-00010-C03-03 (INIA). Estudio de los determinantes genéticos de TSWV implicados en la superación de las resistencias de tomate y pimiento. Desarrollo de nuevas variedades resistentes. **IP: Carmelo López**, (COMAV: 22/07/2008-31/12/2011).

#### C.4. Contracts, technological or transfer merits

1. Germinación de semillas en suelos infectados con el hongo *Rhizoctonia*. **IP: Carmelo López**. EUROFIN AGROSCIENCE SERVICES S.L. (COMAV: 08/05/2017-31/08/2017: 4.550 €)
2. Research activities in the field of tomato leaf curl New Delhi virus (ToLCNDV) resistance on squash varieties. **IP: Belén Picó**. RIJK ZWAAM IBÉRICA, S.A. (COMAV: 12/02/2015-12/10/2015: 23.460 €)
3. Producción de un inóculo comercializable de la cepa avirulenta ATCC PV-593 del potyvirus del mosaico amarillo del calabacín para su uso en protección cruzada de cucurbitáceas frente a cepas virulentas. **IP: José Antonio Darós**. INVESTIGACIONES Y APLICACIONES BIOTECNOLÓGICAS S.L. (IBMCP: 23/09/2013-19/03/2014: 20.000 €)
4. Introgresión de resistencia a las nuevas poblaciones aparecidas en Almería y Murcia del virus del bronceado del tomate (*Tomato Spotted Wilt Virus*, Tswv) en líneas de pimiento dulce (*Capsicum Annuum* L.) tipos California, Lamuyo e Italiano. **IP: Fernando Nuez**. RAMIRO ARNEDO S.A. (COMAV: 15/07/09-15/07/14: 175.000 €).