

## Part A. PERSONAL INFORMATION

CV date

05-10-2021

First and Family name	JOSÉ L. CABALLERO-REPULLO		
Passport, ID number		Age	
Researcher numbers	Researcher ID	L-2067-2014	
	Orcid code	0000-0002-2678-4849	

### A.1. CURRENT POSITION

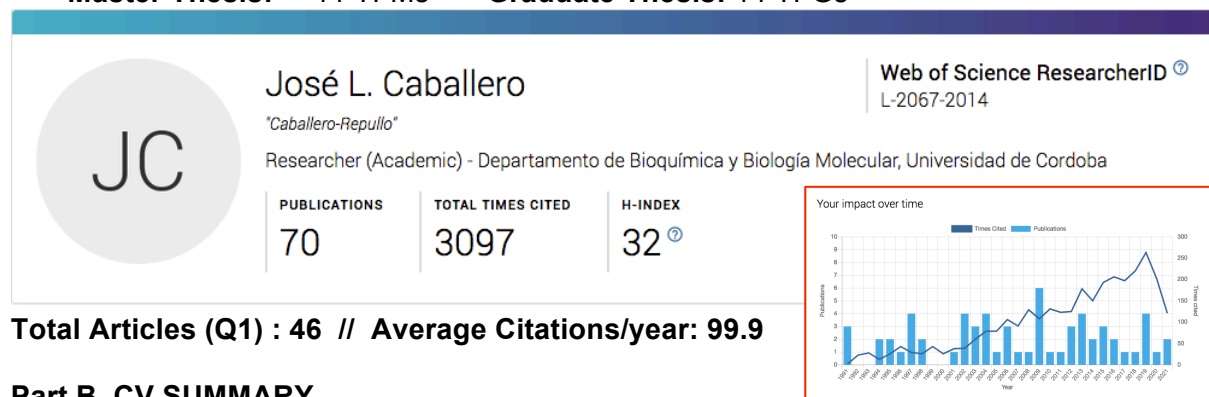
Name of University	Universidad de Córdoba		
Department	Bioquímica y Biología Molecular. Facultad de Ciencias		
Address and Country	Campus Rabanales. Severo Ochoa-C6. 14014 Córdoba-SPAIN		
Phone number		E-mail	
Current position	Full Professor	From	14.07.2010
Espec. cód. UNESCO	230221/241502		
Key words	Strawberry-C. acutatum Interacción / Strawberry ripening process / Elicitors of plant defenses		

### A.2. EDUCATION

PhD	University	Year
Doctor en Ciencias Biológicas	Universidad de Extremadura	1986

### A.3. JCR ARTICLES, H-INDEX, THESIS SUPERVISED...

- **Research-SEXENIOS:** 6 sexenios
- **Research-Component** (UCUA-Junta Andalucía): 5 tramos /out of 5 (máximo)
- **PhD Thesis:** 9 Tesis Doctorales + (*currently in process*): 2 Tesis Doctorales
- **Master Thesis:** 11 TFMs **Graduate Thesis:** 14 TFGs



## Part B. CV SUMMARY

•**RESEARCH FELLOWSHIPS:** INAPE(1977-79); FPI-MinistUniv/Invest (1979); Juan March (1980); PostdocFlemingMEC/BritishCouncil-UK (1987-89); John Innes Inst-UK (1989-91); PostDoct MEC (1991-93); BritishCouncil-UK (07-09/94); EMBO and FEBS (UK, 07-09/96).

•**PROFESSIONAL STAGES:** Univ.Extremadura (Predoct,1979-86); John Innes Inst-UK (Postdoct,1987-91); DptoBioquímica&Biología Molecular-Univ.Córdoba(Postdoct,1991-93; Assist.Prof,1993-98; Assoc.Prof,1998-2010; Full-Prof. from 2010).

•**ACADEMIC/TEACHING EXPERIENCE IN:** Biotech&Advanced Biochemistry (1991-95); Regulation of Metabolism, and Molecular Methods in Biochemistry (1993-98); Advanced Molecular Biology, Molecular Bases for Metabolic Regulation, and Biochemistry (1997-2002). Since 2002: full responsible for teaching Plant Molecular Biotechnology, Basic Biotechnology, Advanced Molecular Biology&Biomedicine, and Biochemistry.

•**PHD. PROGRAMS/MASTERS:** Since 2000 is responsible for the courses "Genomic/cDNA Libraries&Other Methods for Gene Identification/Técnicas Avanzadas Genómica Funcional" within the Master in Biotecnología Molecular, Celular y Genética, and the PhD Program in Food&Agriculture Biosciences/Univ.Córdoba. Also, "Methods&Techniques in Biotechnology for the Isolation/Characterization of Target Genes of Agronomic Interest", in previous PhD-Program in Advance Molecular Biology/Univ.Córdoba (1991-2000).

•**MASTER COORDINATOR:** "Gene regulation", "Genomic-cDNA Libraries&Other Methods for Gene Identification" within Master in Plant Biotechnology/Univ.Internacional Andalucía (1998-

2008). Also, I am enrolled in a wide variety of activities for providing guidance and training within PhD Programs (Ingeniería Agraria, Alimentaria, Forestal&Desarrollo Rural Sostenible; Biociencias&Ciencias Agroalimentarias) and Masters (Master Food&Agriculture Biosciences; Master Biotecnología Molecular, Celular&Genética) from UCO and the Escuela Internacional Doctorado/Campus Excelencia Agroalimentación (CeIA3). Thus, PhD, Master and Graduate Theses are frequently taking place under my supervision.

•**RESEARCH TEAM/TOPIC:** Since 1994, together with Prof. J. Muñoz-Blanco, coordinates the Research Team “Group BIO278” (Biotecnología&Farmacognosia Vegetal) from Junta Andalucía, mainly involved in the molecular events underlying the ripening process and plant defense mechanisms to pathogens in strawberry and olive.

•**RELEVANT GOALS ACHIEVED:** 1)first time identification of genes related to the biosynthesis of actinorhodin antibiotic in *S. coelicolor*; 2)characterization of control, transport and resistance genes to this antibiotic as a model system for polyketide antibiotics; 3)first time identification of strawberry genes related to ripening process and defence to *C. acutatum*, causing anthracnose (quarantine pest UE); 4)functional characterization of fruit cell wall softening and defense genes to this pathogen.

•**RES. SEXENIOS: 6; PHD THESIS: 11; TFMS: 11; TFGs: 14**

•**RESEARCH IMPACT: H-index=32, and 46 out of 81 articles (Q1).**

•**KNOWLEDGE TRANSFER: 11 (I+D+I) contracts** with agricultural companies.

•**INTERNATIONAL COLLABORATIONS:** prestigious researchers such as B. DENOYES-ROTHAN (INRA-FR); I. SOMSSICH (M.Planck-Inst/Plant-MicrobeInteractions-DE), X. DONG (BiologyDept/DukeUniv-USA); K.A. FOLTA (Univ. Florida/HorticulturalSciencesDept-USA); W. SCHWAB (TechUniv.München-DE); E. BARALDI (Scie-Tecnologie Agro-Alimentari/Univ.Bologna-IT), BRUNO MEZZETTI (Univ\_Politech\_delle Marche, Ancona-IT). Projects&research are often carried out together and published in high impact Journals.

## **Part C. RELEVANT MERITS**

### **C.1. PUBLICATIONS (INCLUDING BOOKS)**

• **A total of 81 publications**, mostly in International Journals (indexed); and **154 communications and conferences** in National and International Congresses.

• **Worth mentioning:** 1-CELL (IF- 37,297); 1-Nature Biotech (IF-17,721); 1-Trends Genet (IF-9,978); 1-Plant Cell (IF-9,866); 1-J Biol Chemist (IF-6,963); 7-Plant Physiol (IF-6,11); 1-Mol Microbiol (IF-5,832); 2-Plant Cell Physiol (IF-4,77); 1-Plant, Cell & Environ (IF-4,666); 2-Front Plant Sci (IF-4,298); 1-Scientific Reports-Nature (IF-4,122); 9-J Exp Bot (IF-4,001); 1-BMC Genomics (IF-3,964); 1-Theor Appl Genet (IF-3,926); 1-BMC Plant Biol (IF-3,670); 2-PlosOne (IF-3,534); 4-Plant Mol Biol (IF-3,510); 1-Planta (IF-3,323); 1-Mol Plant Pathol (IF-2,963); 1-MGG (IF-2,749); 1-Funct Int Genom (IF-2,265) 1-J Agri Food Chemist-USA (IF-2,53); 1-Trans Res (IF-2,32); 2-Physiol Planta (IF-2,16); 2-Anal Biochem (IF-2,017); 1-Physiol Mol Plant Pathol (IF-1,63); 7-Plant Sci (IF-1,38); 1-JForestRes (IF-1,39); 1-RevFishSci&Aqua (IF-3,91).

• **Relevant publications (last 10 years):**

Medina-Puche L, Martínez-Rivas FJ, Molina-Hidalgo FJ, Mercado JA, Caballero JL, Muñoz-Blanco J, Blanco-Portales R (2021) *Ectopic expression of the atypical HLHFaPRE1 gene determines changes in cell size and morphology.* **Plant Sci** doi.org/10.1016/j.plantsci.2021.110830 (IF-3,591;Q1:37/234)

Medina-Puche L, Martínez-Rivas FJ, Molina-Hidalgo FJ, Mercado-Carmona JA, Moyano E, Rodríguez-Franco A, Caballero JL, Muñoz-Blanco J, Blanco-Portales R (2019) *An atypical HLH transcriptional regulator plays a novel and important role in strawberry ripened receptacle.* **BMC Plant Biol** doi.org/10.1186/s12870-019-2092-4 (IF-3,670;Q1:4/44)

Higuera JJ, Garrido-Gala J, Lekhou A, Arjona-Girona I, Amil-Ruiz F, Mercado, JA, Pliego-Alfaro F, López-Herrera CJ, Muñoz-Blanco J, Caballero JL (2019) *The strawberry FaWRKY1 transcription factor negatively regulates resistance to Colletotrichum acutatum in fruit upon infection.* **Front Plant Sci** 10,doi:10.3389/fpls.2019.00480 (IF-3,677; Q1:24/223).

• Garrido-Gala J, Higuera JJ, Muñoz-Blanco J, Amil-Ruiz F, Caballero JL (2019) *The VQ motif-containing proteins in the diploid and octoploid strawberry.* **Scientific Reports-Nature** (9): doi.org/10.1038/s41598-019-41210-4 (IF-4,122; Q1:5/116).

• Moyano E, Martínez-Rivas FJ, Blanco-Portales R, Molina-Hidalgo FJ, Ric-Varas P, Matas-Arroyo AJ, Caballero JL, Muñoz-Blanco J, Rodríguez-Franco A (2018) *Genome-wide*

- analysis of the NAC transcription factor family and their expression during the development and ripening of the *Fragaria x ananassa* fruits. **PLOS ONE** 13(5): e0196953. <https://doi.org/10.1371/journal.pone.0196953> (IF-2.806; Q1:15/64).
- Molina-Hidalgo FJ, Medina-Puche L, Cañete-Gómez C, Franco-Zorrilla JM, López-Vidriero I, Solano R, Caballero JL, Rodríguez-Franco A, Blanco-Portales R, Muñoz-Blanco J, Moyano E (2017) The fruit-specific FaDOF2 transcription factor regulates the production of eugenol in ripen fruit receptacle. **J. Exp. Bot.** 68:4529-4543 (IF-5,830; Q1:14/211).
  - Medina-Puche L, Blanco-Portales MR, Molina FJ, Cumplido-Laso G, García-Caparros N, Moyano-Cañete E, Caballero JL, Muñoz-Blanco J, Rodríguez-Franco A (2016) Extensive transcriptomic studies on the roles played by abscisic acid and auxins in the development and ripening of strawberry. **Funct & Integrative Genomics**, 16:671-692 (IF-2,26; 95/166)
  - Amil-Ruiz F, Garrido-Gala J, Gadea J, Blanco-Portales R, Muñoz-Mérida A, Trelles O, de los Santos B, Arroyo FT, Aguado A, Romero F, Mercado JA, Pliego-Alfaro F, Muñoz-Blanco J, Caballero JL (2016) Partial Activation of SA-and JA-Defensive Pathways in Strawberry upon *C. acutatum* Interaction. **Frontiers Plant Science** 7:1036- 1058 (IF-4,49; Q1:15/208)
  - Medina-Puche L, Molina-Hidalgo FJ, Boersma M, Robert C, Schuurink RC, López-Vidriero I, Solano R, Franco-Zorrilla JM, Caballero JL, Blanco-Portales R, Muñoz Blanco J (2015) A R2R3-MYB transcriptional factor (FaEOBII) regulates the production of eugenol in strawberry (*Fragaria ananassa*) fruit ripe receptacles. **Plant Physiol**, 168: 598-614 (7,39; Q1:6/196).
  - Medina-Puche L, Cumplido-Laso G, Amil-Ruiz F, Hoffmann T, Ring L, Rodríguez-Franco A, Caballero JL, Schwab W, Muñoz-Blanco J, Blanco-Portales MR (2014) MYB10 plays a major role in the regulation of flavonoid/phenylpropanoid metabolism during ripening of *Fragaria x ananassa* fruits. **J. Exp. Bot.**, 65: 401-417. (IF-5,79; Q1:11/196)
  - Amil-Ruiz F, Garrido-Gala J, Blanco-Portales R, Folta KM, Muñoz-Blanco J, Caballero JL (2013) Identification & Evaluation of Superior Reference Genes for Transcript Normalization in Strawberry Plant Defense Responses. **PlosONE**: e70610-27 (3,533; Q1:8/55).
  - Molina-Hidalgo F, Rodríguez-Franco A, Villatoro C, Medina-Puche L, Mercado-Carmona JA, Hidalgo MA, Monfort A, Caballero JL, Muñoz-Blanco J, Blanco-Portales MR (2013) The strawberry (*Fragaria x ananassa*) fruit-specific rhamnogalacturonate lyase 1 (FaRGLyase1) gene encodes an enzyme involved in the degradation of the cell wall middle lamella. **J. Exp. Bot**, 64: 1471-1483 (IF-5,36; Q1:11/189).
  - Cumplido-Laso G, Medina-Puche L, Moyano E, Hoffmann T, Sinz Q, Ring L, Studart-Wittkowski C, Caballero JL, Schwab W, Muñoz-Blanco J, Blanco-Portales R (2012) The fruit ripening-related gene FaAAT2 encodes an acyltransferase involved in strawberry aroma biogenesis. **J. Exp. Bot.**, 63: 4275-4290 (IF-5,30; Q1:11/189).
  - Amil-Ruiz F, Blanco-R, Muñoz-Blanco J, Caballero JL (2012) The Strawberry Plant Defence Mechanism: A Molecular Review. **Plant&Cell Physiol**.52:1873-1903 (IF-4,7; Q1:14/189).
  - Encinas-Villarejo S, Maldonado AM, Amil-Ruiz F, de los Santos B, Romero F, Pliego-Alfaro F, Muñoz-Blanco J, Caballero JL (2009) Evidence for a positive regulatory role of strawberry (*Fragaria x ananassa*) FaWRKY1 and Arabidopsis AtWRKY75 proteins in resistance. **J. Exp. Bot**, 60: 3043-3065 (IF-4,271; Q1:11/189).

## C.2. RESEARCH PROJECTS AND GRANTS

• PROJECTS FINANCED: 42 Proyectos (12 of them, as PI). LAST 10 YEARS:

### 1• MED-BERRY

Title: Developing new strategies to protect strawberry crop in Mediterranean countries.

Funding Agency: PRIMA-European Union/ Spanish AEI (Call 2019) Start-End: 2019-2022

Principal Investigator: JL CABALLERO (UCO) Funding: Total 1.238.545€ - Engagement: PI

### 2• PID2020-118468RB-C22

Title: Keeping Strawberry Fruit Production and Quality in Mediterranean Climatic Change Scenarios (Resilientfraberry).

Funding Agency: AEI (Call 2020) Start-End: 2021-2023

Principal Investigator: J.MUÑOZ-BLANCO (UCO) Funding: 222.640€ - Engagement: Res

### 3• FEDER-1256148-R

Title: Caracterización de promotores de genes específicos de fruto de Fresa como herramienta Biotecnológica en Programas de Mejora.

Funding Agency: Deder-Junta Andalucía (Call 2019) Start-End: 2020-2022

Principal Investigator: JOSÉ\_L.CABALLERO (UCO) Funding: 35.000€ - Engagement: Res

### 4• AGL2017-86531-C2-2-R

**Title:** Aplicaciones Biotecnológicas del sistema CRISPR-Cas9 a genes reguladores y mecanismos epigenéticos de la maduración del fruto de fresa..

**Funding Agency::** Ministerio Economía y Competitividad (Call 2014) **Start-End:** 2018-2020

**Principal Investigator:** J.MUÑOZ-BLANCO(UCO) **Funding:** Total 120.000€ **Engagement:** Res 5• AGL2014-55784-C2-2-R

**Title:** Identificación y caracterización funcional de factores transcripción y proteínas reguladoras de calidad fruto de fresa. Estudios de regulación epigenética de la maduración.

**Funding Agency::** Ministerio Economía y Competitividad (Call 2014) **Start-End:** 2015-2017

**Principal Investigator:** J.MUÑOZ BLANCO (UCO) **Funding:** Total 187.550€ **Engagement:**Res 6• Proyecto Excelencia AGR-2174

**Title:** Defensa de la fresa a patógenos: evaluación funcional de genes asociados a rutas de resistencia sisémica adquirida (SAR) de interés para la mejora de la resistencia

**Funding Agency:** Junta de Andalucía (JA) (Call 2012) **Start-End:** 2014-2019

**Principal Investigator:** JL CABALLERO (UCO) **Funding:** Total 273.894€ - **Engagement:** PI 7• MICINN- IPT-2011-1153-060000

**Title:** Bioproducción Industrial de Inductores Naturales de Defensa para su Utilización en Agricultura Sostenible y Ecológica

**Funding Agency:** MICINN (Call 2011) **Start-End:** 2011-2014

**Principal Investigator:** JL CABALLERO (UCO) **Funding:** Total 847.361€ - **Engagement:** PI 8• BIO2010-19322

**Title:** Caracterización funcional de genes reguladores y genes no descritos en plantas a lo largo del proceso de desarrollo-maduración del fruto de fresa. Aproximaciones a la cisgenia

**Funding Agency:** Ministerio de Educación y Ciencia (MEC) (Call 2010) **Start-End:** 2011-2014

**Principal Investigator:** J.MUÑOZ BLANCO-(UCO) **Funding:** Total 211.750€ **Engagement:**Res 9• EUJ2008-03668

**Title:** Genetical Genomics for strawberry fruit quality and health (FraGenomics)

**Funding Agency:** Minist Educación y Ciencia (MEC) (Call KBB-2008) **Start-End:** 2009-2011

**Principal Investigator:** J.MUÑOZ BLANCO-(UCO) **Funding:**Total 277.000€ -**Engagement:**Res 10• PET-2007-0224-01

**Title:** Obtención y evaluación del mecanismo de acción de compuestos naturales inductores de defensas de la planta de fresa para uso en agricultura ecológica y sostenible.

**Funding Agency:** Ministerio de Educación y Ciencia (MEC) (Call 2007) **Start-End:** 2008-2010

**Principal Investigator:** JL CABALLERO (UCO) **Funding:** Total 198.440€ - **Engagement:** PI 11• Proyecto Excelencia AGR-07-02482

**Title:** Identificación de “dianas genéticas” en la interacción fresa-*Colletotrichum acutatum* útiles en Programas de Mejora Genética.

**Funding Agency:** Junta de Andalucía (JA) (Call 2007) **Start-End:** 2008-2011

**Principal Investigator:** JL CABALLERO (UCO) **Funding:** Total 344.668€ - **Engagement:** PI

## C.3. CONTRACTS

**1• Contract I+D+I /Title:** Estudios analíticos bioquímicos y moleculares sobre diferentes tipos de bioproductos desarrollados por la empresa GENBIOGEN, S.L.

**Funding Company:** AGROMÉTODOS S.A. **Start-End:** 2016-2017 **Funding:** Total 10.000€

**Principal Investigator:** JOSÉ LUIS CABALLERO y Juan Muñoz Blanco (UCO)

**2• Contract I+D+I /Title:** Evaluación de la capacidad elicitora de defensa de la planta de productos para uso ecológico, utilizando suspensiones celulares de fresa y genes biomarcadores de las rutas de defensa en fresa

**Funding Company:** ALFARÍN QUÍMICA S.A. **Start-End Date:** 2013-2015 **Funding:** 23.595€

**Principal Investigator:** JOSÉ LUIS CABALLERO y Juan Muñoz Blanco (UCO)

**3• Contract I+D+I /Title:** Evaluación del mecanismo de acción y la dosis de uso apropiada, de productos ecológicos como posible elicitores de defensa de la planta

**Funding Company:** AGROLABORATORIOS NUTRICIONALES S.A **Start-End:** July-Dec2011

**Principal Investigator:** JOSÉ LUIS CABALLERO y Juan Muñoz Blanco\_\_ **Funding:** 13.570€

**4• Contract I+D+I /Title:** Evaluación del mecanismo de acción y la dosis de uso apropiada, de productos ecológicos como posible elicitores de defensa de la planta.

**Funding Company:** ALFARÍN QUÍMICA S.A. **Start-End:** July-Dec 2011 **Funding:** 20.355€

**Principal Investigator** JOSÉ LUIS CABALLERO y Juan Muñoz Blanco (UCO)

**5• Contract I+D+I /Title:** Evaluación de la acción sinérgica de compuestos naturales elicitores de defensa en la planta de fresa y productos de interés de la empresa Agrométodos, para uso en agricultura ecológica y sostenible.





*Funding Company:* AGROMÉTODOS S.A. *Start-End:* Jan-June 2011 *Funding:*16.000€  
*Principal Investigator:* JOSÉ LUIS CABALLERO y Juan Muñoz Blanco (UCO)

**C.5. MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

Society for General Microbiology, U.K.(SGM) (from 1988).  
Sociedad Española de Bioquímica y Biología Molecular (SEBBM) (from 1993)  
International Society for Plant Molecular Biology (ISPMB) (from 1993)  
Sociedad Española de Microbiología (SEM) (from 1995)  
International Society for Horticultural Science (ISHS) (from 1998)  
American Society of Plant Biologists (ASPB) (from 2011)

**OTHER ACADEMIC MERITS AND INSTITUTIONAL RESPONSABILITIES:**

Master Coordinator of five 2-years consecutive Masters in Biotechnology (from 1998-2009)  
(Universidad Internacional de Andalucía-La Rábida-Spain)