

# Curriculum Vitae

## EDUCATION AND WORK EXPERIENCE

- May 2016 – Present **Postdoctoral Researcher** in the lab of Prof. Markus Pauly, Heinrich Heine University, Dusseldorf, Germany.
- Maize Candy-leaf mutants: a tool for the study of grass-specific cell wall biology with potential applications in renewable energy production and cereal crop pathogen protection.
  - Understanding the molecular basis of the irregular xylem phenotype.
- May 2014 - May 2016 **IOF Marie Curie Fellow** in the lab of Prof. Markus Pauly, University of California Berkeley. Energy Biosciences Institute (EBI), Berkeley, USA.
- Maize Candy-leaf mutants: a tool for the study of grass-specific cell wall biology with potential applications in renewable energy production and cereal crop pathogen protection.
  - Understanding the molecular basis of the irregular xylem phenotype.
- Jul 2008 - May 2014 **Postdoctoral Researcher** in the lab of Prof. Pablo Vera, Universidad Politécnica de Valencia. Institute for Plant Molecular and Cell Biology (IBMCP) Valencia, Spain.
- *Control mechanisms for resistance/susceptibility to pathogens in Arabidopsis*
  - *Function and Biotech potential of transcriptional factors in plants*
  - *Euphorbia lathyris, a potential crop for 3rd- generation biofuels*
  - *CO2Funnels: capturing CO2 from industrial processes through the carbon fertilization of energy crops*
- Jul 2008 **PhD (cum laude) in Plant Molecular Biology**. Universidad Politécnica de Valencia. Institute for Plant Molecular and Cell Biology (IBMCP) Valencia, Spain.
- “Functional analysis of the *OCP3* gene” (Supervisor: Prof. Pablo Vera).
- Feb 2004 **MSc Agronomic Engineering**, Universidad Politécnica de Valencia.
- Final Project (Grade 10/10): “Isolation and characterization of the *Arabidopsis thaliana* suppressor of resistance mediated by *ocp3 1* (*sro1*) mutant.”

## PUBLICATIONS (H-INDEX: 11; TOTAL CITATIONS: 427; UPDATED OCT 2016)

11. Ramírez V, Gonzalez B, Castelló MJ, Gil MJ, Zheng B, Chen P, Vera P (2015) Loss of a Conserved tRNA Anticodon Modification Perturbs Plant Immunity. **PLoS Genetics** 11(10):e1005586. Citations: 2
10. García-Andrade J, Ramírez V, Lopez A and Vera P (2013) Mediated Plastid RNA Editing in Plant Immunity. **PLoS Pathogens** 9(10):e1003713. Citations: 13
9. Ramírez V, López A, Mauch-Mani B, Gil MJ, Vera P (2013) An Extracellular Subtilase Switch for Immune Priming in Arabidopsis. **PLoS Pathogens** 9(6): e1003445. Citations: 37
8. Lopez A, Ramírez V, García-Andrade J, Flors V and Vera P. (2011) The RNA silencing enzyme RNA polymerase V is required for plant immunity. **PLoS Genetics** 7(12): e1002434. Citations: 64
7. García-Andrade J, Ramírez V, Flors V and Vera P. (2011) Arabidopsis *ocp3* mutant reveals a mechanism linking ABA and JA to pathogen-induced callose deposition. **Plant Journal** 67(5): 783-94. Citations: 44
6. Ramírez V, García-Andrade J, Vera P. (2011b) Enhanced disease resistance to Botrytis cinerea in myb46 Arabidopsis plants is associated to an early down-regulation of CesA genes. **Plant Signaling and Behaviour** 6(6):911-3. Citations: 14
5. Ramírez V, Agorio A, Coego A, García-Andrade J, Hernández MJ, Balaguer B, Ouwerkerk PB, Zarra I, Vera P. (2011a) MYB46 modulates disease susceptibility to Botrytis cinerea in Arabidopsis. **Plant Physiology** 155(4):1920-35. Citations: 48
4. Ramírez V, Van der Ent S, García-Andrade J, Coego A, Pieterse CM, Vera P. (2010) OCP3 is an important modulator of NPR1-mediated jasmonic acid-dependent induced defenses in Arabidopsis. **BMC Plant Biology** 13;10:199. Citations: 23
3. Ramírez V, Coego A, López A, Agorio A, Flors V, Vera P. (2009) Drought tolerance in Arabidopsis is controlled by the OCP3 disease resistance regulator. **Plant Journal** 58(4):578-91. Citations: 44

2. Coego A, Ramírez V, Gil MJ, Flors V, Mauch-Mani B, Vera P. (2005) An Arabidopsis homeodomain transcription factor, OVEREXPRESSOR OF CATIONIC PEROXIDASE 3, mediates resistance to infection by necrotrophic pathogens. **Plant Cell** 17(7):2123-37. Citations: 78
1. Coego A, Ramírez V, Ellul P, Mayda E, Vera P. (2005) The H<sub>2</sub>O<sub>2</sub>-regulated Ep5C gene encodes a peroxidase required for bacterial speck susceptibility in tomato. **Plant Journal** 42(2):283-93. Citations: 43

#### BOOK CHAPTERS

Ramírez V, López A, García-Andrade J and Vera P. (2012) The OCP3 gene links drought tolerance and plant immunity. **Droughts: New Research**. Environmental Science, Engineering and Technology Series. ISBN: 978-1-62100-769-2. pp. 311-324

#### PATENTS

- 1 - Ramírez V, Coego A, Vera P. Use of the *ocp3* mutation to regulate drought resistance in plants. Patent application number: 20090328246. Publication date: 12/31/2009. Assignee: Calantia Biotech, S.L.
- 2 - Coego A, Vera P, Ramírez V, Gil-Morrió MJ. OCP3 gene of *Arabidopsis thaliana* and the *ocp3* recessive mutation thereof, and the use of same as a resistance regulator in plants with disease caused by necrotrophic fungal pathogens. Patent application number: US 2010115668. Publication date: 11/02/2006. Assignee: Calantia Biotech, S.L.
- 3 - Balaguer B, Castelblanque ML, Martí MC, Ramírez V, Vera P. Procedimiento para aumentar la síntesis y acumulación de hidrocarburos naturales derivados del metabolismo terpenoide en la planta *Euphorbia lathyris*. Patent approval pending.

#### CONFERENCE TALKS

- 2016** The role of xylem morphology on freezing tolerance as indicated by the Arabidopsis Xylan O-acetyltransferase mutant *tb129/esk1* and its suppressor *ess1*. XIV Cell Wall Meeting, Chania, Greece
- 2011** Two Arabidopsis subtilases involved in plant immunity. Conference on plant proteases, Hemavan, Sweden.
- 2007** A disease resistance regulator determines drought tolerance in *Arabidopsis*. International Workshop on "PR-Proteins" and "Induced Resistance Against Pathogens and Insects", Doorn, The Netherlands.
- 2006** An Arabidopsis homeodomain transcription factor, OVEREXPRESSOR OF CATIONIC PEROXIDASE 3, mediates resistance to infection by necrotrophic pathogens. VIII Reunión de Biología Molecular de Plantas, Pamplona, Spain.
- 2005** OCP3, un nexo de unión entre la resistencia a patógenos y la sequía. Reunión REDIPP, Cercedilla, Spain.

#### CONFERENCE POSTER PRESENTATIONS

- 2012 XI Reunión de Biología Molecular de Plantas, Segovia, Spain.
- 2011 FEBS Conference on Plant Organellar Signaling, Primosten, Croatia.
- 2010 5<sup>th</sup> EPSO Conference, Olos (Lapand), Finland.
- 2010 X Reunión de Biología Molecular de Plantas, Valencia, Spain.
- 2010 3<sup>rd</sup> International Symposium on Tomato Diseases, Ischia, Italy.
- 2010 XVII FESPB, Valencia, Spain.
- 2009 MPMI, Quebec, Canada.
- 2009 5<sup>th</sup> Meeting of the IOBC Working Group. "Induced Resistance in Plants against Insects and Diseases". Granada, Spain
- 2008 IX Reunión de Biología Molecular de Plantas, Santiago de Compostela, Spain.
- 2007 MPMI, Sorrento, Italy.
- 2007 Reunión REDIPP, Cercedilla, Spain.
- 2007 International Workshop on "PR-Proteins" and "Induced Resistance Against Pathogens and Insects", Doorn, The Netherlands.
- 2006 VIII Reunión de Biología Molecular de Plantas, Pamplona, Spain.
- 2005 MPMI, Mérida, Mexico.

#### INVITED TALKS

- 2016 Energy Biosciences Institute, Berkeley, CA, USA, hosted by Prof. Chris Somerville

2015 Joint Bioenergy Institute, Emeryville, CA, USA, hosted by Prof. Henrik V Sheller  
2014 Energy Biosciences Institute, Berkeley, CA, USA, hosted by Prof. Markus Pauly  
2012 The Sainsbury Laboratory, Norwich, UK, hosted by Dr. Brande Wulff.  
2011 Universitat Jaume I, Castellon, Spain, hosted by Dr. Victor Flors  
2010 IBMCP, Valencia, Spain, hosted by Prof. Pablo Vera  
2008 Calantia Biotech, Valencia, Spain, hosted by Ms M<sup>a</sup> Carmen Lladró.

### **SUPERVISORY EXPERIENCE**

2006-2010 PhD Supervisor, Javier García-Andrade, IBMCP, Valencia, Spain (co-supervised with Prof. Pablo Vera).  
2006-2010 PhD Supervisor, David Pascual, IBMCP, Valencia, Spain (co-supervised with Prof. Pablo Vera).  
2006-2007 MSc Supervisor, Luis Fuster, IBMCP, Valencia, Spain. (co-supervised with Prof. Pablo Vera).

### **SELECTED SKILLS**

**Modell organisms:** Fungi, bacteria, yeast and plants.

**Molecular biology:** RNA and DNA isolation, PCR, RT-PCR, Real time PCR, cDNA synthesis, cloning by restriction or gateway or Gibson, cells transformation (Bacteria, Yeast, plant), recombinant protein assays, protein-protein interactions, SDS-PAGE, Western blot, Protein purification, Antibody production (Rabbit, Mouse), DNA methylation profiling, Plant tissue culture, plant transformation and regeneration, over-expression and RNAi, heterologous expression incl. Agrobacterium-mediated transient expression in *N. benthamiana*, Virus Induced Gene Silencing (VIGS).

**Microcopy:** light, fluorescent, confocal, SEM, resin embedding, sectioning staining and immunolabeling of thin sections, ...

**Biochemistry:** Carbohydrate analyses using HPLC, HPAE-PAD, GC-MS, ...

**Plant Genetics,** including experience in map-based cloning of Arabidopsis and corn mutants and NGS Sequence analysis (e.g. CLC, Galaxy).

### **TEACHING EXPERIENCE**

I was a graduate teaching assistant on the Molecular Biology course (2004/05 and 2005/06) Agronomic Engineering degree at the Polytechnic University of Valencia. My task was to give an overview of signal transduction pathways involved in plant immunity. In addition I taught genetic manipulation of Arabidopsis and basic lab techniques, such as DNA and protein extraction and blotting.