Luisa Fernanda Bermúdez Salazar

Curriculum Vitae – February 2017

Personal Details:

Lab Address: Instituto de Biotecnología
Instituto Nacional de Tecnología Agropecuaria (INTA)
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Date of birth 03/08/1984 - Bogotá/ Colombia
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Employment details

1. CONICET

06/2014 – Actual Assistant researcher at Biotechnology Institute, INTA Castelar. Functional genomics group. Supervisor: Fernando Carrari.

2. Monsanto Company

2005 - 2007 Seeds quality control analyst for Andean Region (Colombia, Ecuador, Perú y Venezuela).

Academic Details

10/2012- 05/2014 Postdoctorate .
Instituto Nacional de Tecnologia Agropecuaria, INTA, Buenos Aires, Argentina
Fellowship from : Instituto MaxPlanck

10/2011 – 09/2012 Postdoctorate .
Universidade de São Paulo, São Paulo, Brasil
Advisor: Maria Magdalena Rossi – Fernando Carrari (INTA – Argentina)
Scolarship from: CNPq (Brasil).

2007 - 2011 PhD in Botany – Plant molecular genetics
Universidade de São Paulo, USP, Sao Paulo, Brazil
Title: Caracterização de determinantes genéticos envolvidos na qualidade industrial e nutricional do fruto de tomate, Year of degree: 2011
Advisor: Maria Magdalena Rossi
Coadvisor: Fernando Carrari

Scholarship from : Fundação de Amparo à Pesquisa do Estado de São Paulo

2001 - 2006 **Bachelor in Agronomic Engineering.**
Universidad Nacional de Colombia, Facultad de Agronomía.
Título: Efecto de la proteína Cry1A(c) del algodón Bt en *Spodoptera frugiperda* (Lepidoptera: Noctuidae) y su parasitoide *Chelonus insularis* (Hymenoptera: Braconidae)
Advisor: Dr. Miguel Santiago Serrano Ruiz

Fellowships

1. **Master fellowship – Institution:** Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brasil. 07/2007 – 06/2008.
2. **PhD Fellowship - Institution:** Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brasil. 07/2008 – 08/2011.
3. **Post doctorate fellowship - Institution:** Conselho Nacional de Desenvolvimento Científico e Tecnológico **(**CNPq) Brasil. 10/2011 – 09/2012.
4. **Post doctorate fellowship - Institution:** Max Planck Institute. 10/2012 – 05/2014.
5. **Fellowship for assistance and participation in Plant Metabolic Engineering Gordon Research Conference**, 2011. USA. **– Institution:** Gordon Research Conferences.
6. **Fellowship for assistance and participation in CABBIO course: Escola de estudos avançados em genômica: Decodificando o DNA não codificador,** 2013. Brasil. – **Institution:** Centro Argentino Brasileño de Biotecnología.

Publications

Full papers in indexed international journals:

1. Rossi M, **BERMÚDEZ L,**, Carrari F. (2015) **Crop yield: challenges from a metabolic perspective.** Curr Opin Plant Biol. 20;25:79-89. doi: 10.1016/j.pbi.2015.05.004.
2. M. G. López, M.I. Zanor, G.R. Pratta, G. Stegmayer, S.B. Boggio, M. Conte, **BERMÚDEZ L,**,, C. Coluccio Leskow, G.R. Rodríguez, L.A. Picardi, R. Zorzoli, A. Fernie, D. H. Milone, R. Asís, E.M. Valle, F. Carrari (2015). **Metabolic analyses of interspecific tomato recombinant inbred lines for fruit quality improvement**. Metabolomics. DOI: 10.1007/s11306-015-0798-3.
3. Quadrana L, Almeida J, Asís R, Duffy T, Dominguez PG, **BERMÚDEZ L,**, Conti G, Corrêa da Silva JV, Peralta IE, Colot V, Asurmendi S, Fernie AR, Rossi M, Carrari F (2014).**Natural occurring epialleles determine vitamin E accumulation in tomato fruits.** Nat Commun. 5:3027. doi: 10.1038/ncomms5027.
   Cited by: NATURE REVIEWS GENETICS | RESEARCH HIGHLIGHT: DNA METHYLATION
   Switching phenotypes with epialleles. Bryony Jones (2014) doi:10.1038/nrg3797
4. **BERMÚDEZ L,** de Godoy F, Baldet P, Demarco D, Osorio S, Quadrana L, Almeida J, Asis R, Gibon Y, Fernie AR, Rossi M, Carrari F (2014). **Silencing of the tomato Sugar Partitioning Affecting protein (SPA) modifies sink strength through a shift in leaf sugar metabolism**. Plant Journal Mar;77 (5):676-87.
5. de Godoy, F*., **BERMUDEZ, L.,*** Lira, B.S., de Souza, A.P., Buckeridge, M, Grigioni, G., Fernie, A.R., Carrari, F., Rossi, M (2013). **Galacturonosyltransferase 4 silencing alters carbon partitioning and fruit firmness in tomato**. Journal of Experimental Botany May;64 (8):2449-66.
6. Quadrana, LD., Almeida, J., Otaiza, S. N., Duffy, T., Correa da Silva, J. V., de Godoy, F., Asis, R., **BERMUDEZ, L**, Fernie, A. R., Carrari, F., Rossi, M. (2012) **Transcriptional regulation of tocopherol biosynthesis in tomato**. Plant Mol Biol. 2013 Feb;81(3):309-25.
7. Quadrana, LD., Rodriguez, MC., López, M., **BERMUDEZ, L**, Nunes-Nesi, A, Fernie, A. R., Descalzo, A., Asis, R., Rossi, M., Asurmendi, S., Carrari, F.**Coupling virus induced gene silencing to exogenous green fluorescence protein expression provides a highly efficient system for functional genomics, in Arabidopsis and across all stages of tomato fruit development**. Plant Physiology (Bethesda). , v.17, p.111 - , 2011.
8. Almeida, J., Quadrana, L., Asis, R., Setta, N., de Godoy, F., **BERMUDEZ, L**, Otaiza, S. N., Correa da

Silva, J. V., Fernie, A. R., Carrari, F., Rossi, M. **Genetic dissection of vitamin E biosynthesis in tomato.** Journal of Experimental Botany. , p.1 - 18, 2011.

9. Kamenetzky, L., Asis, R., BASSI, S., de Godoy, F., **BERMUDEZ, L,** Fernie, A. R., Van Sluys, M. A., Vrebalov, J., Giovannoni, J. J., Rossi, M., Carrari, F. **Genomic Analysis of Wild Tomato Introgressions Determining Metabolism- and Yield-Associated Traits**. Plant Physiology, v.152, p.1772 - 1786, 2010.
10. **BERMUDEZ, L,** Urias U, Milstein, D., Kamenetzky, L., Asis, R., Fernie, A. R., Van Sluys, M. A., Carrari, F., Rossi, M. **A candidate gene survey of quantitative trait loci affecting chemical composition in tomato fruit**. Journal of Experimental Botany. , v.59, p.2875 - 2890, 2008.

Research Grants and Awards

2017-2019 Research grant of the **National Agency of Science and Technology (ANPCyT)- PICT CABBIO, bilateral project between Brazil and Argentina**: Genome reprogramming associated with transgressive phenotypes of plant hybrids, a tomato insight.

2016-2018 Research grant of the **National Agency of Science and Technology (ANPCyT)**: Functional characterization of a SEC14 gene involved in synthesis and accumulation of Vitamin E in *Solanum lycopersicum.*

2015-2017 Research grant for international collaboration of **the Minsitry of Science and Technology and ECOS** (France): Genome reprogramming associated with transgressive phenotypes of plant hybrids. In collaboration with Dr. Mathilde Causse, INRA Avignon, France.

LUICEJOTA Award at Agronomic Faculty - National University of Colombia, the highest academic average in the semester I-2001 and I-2001 II - 2002 II-2002.

Patents

Método de obtenção de uma planta com elevada produtividade, I.N.P.I./S.P. nº. BR 10 2014 026349-7, Rossi M, Carrari F, Bermúdez L, 22/10/2014.

Teaching experience

Agronomy Faculty - Buenos Aires University (2013 - Actual)
Assistant Professor at Buenos Aires University. "Genetics and Breeding" cathedra of Agronomical Engineering program.
Responsible Professor: Gustavo Schrauf.
Plant Physiology department – Universidad Federal de Viçosa – Brasil (08/ 2012)
Invited professor.
Responsible Professor: Adriano Nunes-Nesi.
Agronomy Faculty - Buenos Aires University (07/2011)
Invited professor.
Responsible Professor: Gustavo Schrauf.
Agronomy Faculty - Buenos Aires University (06/2010)
Invited professor.
Responsible Professor: Gustavo Schrauf.
University of São Paulo – Botany Department (01-07 2008)
Lab responsible in subject "Laboratory I" of Molecular Sciences Program.
Responsible Professor: Marie Anne Van Sluys

Human capacities building

Fellows supervision

Undergraduate

(2012): Co-direction of Rigel Salinas (Universidad Autónoma Metropolitana de México). Fellowship JIMA (Jóvenes de Intercambio México - Argentina). Project: Functional characterization of a tomato gen involved in synthesis and accumulation of Vitamin E.

PhD Student

(2016-2020): Co-direction of Maria Belén de Luca (Universidad de Buenos Aires). Fellowship ANPCyT. Project: Genetic and epigenetic determinants involved in synthesis and accumulation of Vitamin E.

Publications in events (Last five years)

6 presentations in national research conferences.

10 presentations in international research conferences.

(2016) Environmental effects on epigenetic regulation of vitamin e metabolism in tomato fruits. De Luca, Belén; Burgos, Estanislao; Conte, Mariana; Quadrana, Leandro ; Asís Ramón; Rossi, Magdalena**; Bermúdez, Luisa**; Carrari, Fernando. XXX Reunión Argentina de Fisiología Vegetal, 13 a 16 de Noviembre, Ciudad de Corrientes, Provincia de Corrientes, Argentina.

(2016) Genetic and environmental modulation of nutritional traits in tomato. E. Burgos, M. De Luca, M. Conte, L. Quadrana, **L. Bermudez**, F. Carrari.. IX Encuentro REDBIO 2016-PERÚ" "Biotecnología para el Desarrollo y Uso Sostenible de la Biodiversidad" Junio 27 – Julio 1, 2016, Lima – Perú.

(2015) Genome reprogramming associated with transgressive phenotypes in tomato hybrids. **Bermudez L,** Burgos E, Hopp HE, Pascual L, Sauvage C, Albert E, Stevens R, Causse M, Rossi M, Carrari F. XI International Plant Molecular Biology (IPMB) Congress. 25-30 Octubre de 2015. Iguazú, Brazil. Poster

(2014): Analyses of the genetic bases underlying vitamin E contents in tomato fruits. Burgos E, Quadrana L, Almeida J, **Bermudez L,** Insani M, Asis R, Rossi M, Carrari F. XXX Reunión Argentina de Fisiología Vegetal, 21 a 24 de September, Mar del Plata, Provincia de Buenos Aires, Argentina.

(2012): SEC14 de tomate, un transportador de tocoferol en plantas? **Bermúdez L**, de Godoy F, Salinas R, Demarco D, Almeida J, Quadrana L, Asis R, Pérez-Flores L, Carrari F, Rossi. XXIX Reunión Argentina de Fisiología Vegetal, 17 a 20 de septiembre,, Mar del Plata, Provincia de Buenos Aires, República Argentina.

(2012): Galaturonosyltransferase 4 silencing alters carbon partitioning and fruit firmness in tomato. De Godoy F, **Bermúdez L**, Lira BS, de Souza AP, Buckeridge M, Grigioni G, Carrari F, Rossi M. Plant Metabolism Conference, 28 de junho-2 de julho de 2012, Banff, Alberta, Canada.

(2011): A Sec14-like protein regulates tocopherol content in transgenic tomato plants. **Bermúdez L**, de Godoy F, Almeida J, Otaiza S, Asis R, Carrari F, Rossi M. Plant Metabolic Engineering, GRC, July 24-29, Waterville Valley, USA.

(2010): Functional characterization of a Sec14-like protein involved with tomato fruit tocopherol content. **Bermúdez L**, De Godoy F, Otaiza S, Asis R, Carrari F, Rossi M. XLVI Reunión Anual de la Sociedad Argentina de Investigación en Bioquímica y Biología Molecular. 30/11-3/12, Puerto Madryn, Argentina.

(2010): Tackling the metabolism of tomato fruits by genetical-genomics approaches. Kamenetzky Laura, Quadrana Leandro, Lichtenstein Gabriel, **Luisa Bermúdez**, Fabiana de Godoy, Guadalupe Dominguez, Juliana Almeida, Mariana Lopez, Ramon Asis, Magdalena Rossi e Fernando Carrari. XLVI Reunión Anual de la Sociedad Argentina de Investigación en Bioquímica y Biología Molecular. 30/11-3/12, Puerto Madryn, Argentina.

(2010): Functional characterization of a lysine decarboxylase associated with changes in amino acids content in tomato fruit. De Godoy F, **Bermúdez L**, Carrari F, Rossi M. 7th Solanaceae Genome Workshop 05/11/10-09/11/10, Dundee, Scotland.

Events

Participation and presentations

1. **XI International Plant Molecular Biology (IPMB) Congress,** 2015. (Congress) .Iguazú, Brasi
2. **XXX Reunión Argentina de Fisiología Vegetal,** 2014. (Congress) Argentina.
   Analyses of the genetic bases underlying vitamin E contents in tomato fruits.
3. **XXIX Reunión Argentina de Fisiología Vegetal,** 2012. (Congress) Argentina.
   SEC14 de tomate, un transportador de tocoferol en plantas?
4. **O Pós-doutorado e a pesquisa no Departâmento de Botânica, Universidade de São Paulo** (SP, Brasil). 2011 Speaker – Caracterización de determinantes genéticos relacionados con caracteres de importancia agronómica en tomate.
5. **Plant Metabolic Engineering Gordon Research Conference**, 2011. (Congress) USA.
   A Sec14-like protein regulates tocopherol content in transgenic tomato plants.
6. **Reunión Anual de la Sociedad Argentina de Investigación en Bioquímica y Biología Molecular (SAIB)**, 2010. (Congress) Argentina.
   Functional characterization of a Sec14-like protein involved with tomato fruit tocopherol content.
7. **5th EU-SOL Project Meeting EU-SOL & Lat-SOL Joint Symposium**, 2010. (Congress) Brazil.
8. **The 6th Solanaceae Genome Workshop**, 2009. (Congress) India.
   Functional characterization of a chaperone DnaJ-like protein from *S. lycopersicum* and *S. pennellii*, associated with changes in sugars, aminoacids, and carotenoids contents in tomato fruit.
9. **XXXII Congreso de la Sociedad Colombiana de Entomología SOCOLEN**, 2005. (Congress) Colombia.
   Efecto de la proteína Cry1A(c) del algodón Bt sobre *Spodoptera frugiperda* (Lepidoptera: Noctuidae) y su parasitoide *Chelonus insularis* (Hymenoptera: Braconidae).

Meeting organization
5th EU-SOL Project Meeting EU-SOL & Lat-SOL Joint Symposium, 2010. Brasil. (Congress)

Internships

(2016) July
Boyce Thompson Institute – Cornell University
Collaborator: Dr. Jim Giovannoni
Internship within the collaboration project: Genome reprogramming associated with transgressive phenotypes of plant hybrids, a tomato insight.
Task: Methylome data analysis.

(2015) October
INRA- Avignon (France)
Collaborator: Dr. Mathilde Causse
Internship within the collaboration project: Genome reprogramming associated with transgressive

phenotypes of plant hybrids, a tomato insight.
Task: RNAseq, sRNAseq data analysis.

(2014) October
INRA- Avignon (France)
Collaborator: Dr. Mathilde Causse
Internship within the collaboration project: Genome reprogramming associated with transgressive phenotypes of plant hybrids, a tomato insight.
Task: RNAseq, sRNAseq data analysis.

(2012) November-December
INRA- Bordeaux (France)
Collaborator: Dr. Christophe Rothan
Internship within the framework of MINCYT-ECOS project, training in techniques of transmission electron and confocal microscopy. Adaptation of protocols for extraction of chloroplast fractions in tomato.

(2012) August-September
Universidad Federal de Viçosa (Brasil)
Collaborator: Dr. Adriano Nunes-Nesi
Training in software for metabolomics data analysis generated by GCMS.

(2012) May-June
Instituto de Nutrición y Tecnología de los Alimentos, Universidad de Chile.
Collaborator: Dr. Mauricio González
Training and collaboration in microarray experiments and data analysis.

(2005) March – June
Centro Internacional de Agricultura Tropical – CIAT
Collaborator: Miguel S. Serrano
Visitant researcher: Training in protocols for risk assessment of genetically modified organisms (GMO).

Languages

Spanish	Native.
English	Understanding Fluent, Speaking Fluent, Writing Fluent, Reading Fluent.
Portuguese	Understanding Fluent, Speaking Fluent, Writing Fluent, Reading Fluent.
