

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	María Jesús		
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A.1. Current position

Position	Científica Titular CSIC (Promoted to Investigadora Científica 13/12/2024)		
Initial date	7/06/2007		
Institution	CSIC		
Department/Center	Dpt. Food Biotechnology	Instituto de Agroquímica y Tecnología de Alimentos (IATA)	
Country	Spain	Phone	96 03 08 222 Ext 162012
Key words	Bioactive compounds; Carotenoids, Citrus, Cold storage, Fruit quality, Gene Expression, Metabolic pathways; Postharvest		

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

Period	Position/Institution/Country/Interruption cause
1992-1995	Predoc FPI fellowship (MEC) in Instituto de Biología Molecular y Celular de Plantas (IBMCP, CSIC-UPV), Valencia, Spain.
1996 (Jan, Sept-Oct)	UPV fellowship in IBMCP (CSIC-UPV), Spain
1996 (Nov.)-1998 (Jun)	Postdoc. fellowship MEC (Spain) in Max-Planck Institute for Plant Breeding Research (Cologne, Germany)
1998(Jul)-2000 (Feb)	Marie Curie Postdoc contract (EU) in Max-Planck Institute for Plant Breeding Research (Cologne, Germany) .
2000(Mar)-2002	Postdoc. contract (reincorporación)(MEC) in Instituto de Agroquímica y Tecnología de Alimentos (Valencia, Spain)
2003(Feb)-2004	Postdoc. contract I3P (CSIC) in IATA (Valencia, Spain)
2005-2007(Jun)	Postdoc. Contract Ramon y Cajal (MEC) in IATA (Valencia, Spain)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Biological Science (Biochemistry) . MScs (Tesina)	University of Valencia	1991-92
PhD Biological Science. IBMCP (CSIC-UPV), Valencia	University of Valencia	1996

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

I obtained the PhD. in Plant Biology (1996, University of Valencia) (Institute for Plant Molecular and Cell Biology (IBMCP, Valencia) investigating the role of plant hormones (ABA, IAA and GAs) in pea fruit-set and fruit development. My formation at IBMCP was accompanied by several stays (6 months) at the laboratory of Dr. Hedden (LARS, Bristol). From 1996-2000 I was postdoctoral fellow in the Lab. Prof. D. Bartels at the Max-Planck Institute for Plant Breeding Research in Cologne (Germany) (fellowship MEC and Marie Curie EU contract) working on the molecular bases of plant dehydration tolerance. During this period, I worked in different international projects (EU, NATO, DFG-UAMexico) that resulted in more than 5 SCI publications and 2 book chapters, contributing to understand the plant responses to water stress and providing new evidence of novel genes/proteins involved in protection against water deficit and their regulation by ABA. In 2000 I joined the

Postharvest Physiology, Pathology and Biotechnology group (IATA-CSIC), first as a postdoc and since 2007 as permanent Researcher-CSIC, developing a new research line focused on the characterization and regulation of metabolic pathways of quality compounds in fruits during ripening and postharvest conditions. My research activity uses physiological, biochemical, genetic and molecular approaches, including -omics, and it is mainly focused on citrus fruits, but not exclusively. My team is internationally recognized as leader in the carotenoid research in citrus. Specifically, I have led several works uncovering new enzymes controlling citrus fruit pigmentation and carotenoids composition, and the effect of postharvest treatments on carotenoids, and their role in the development of chilling injury during cold storage. Currently, I am responsible of the IATA group in the National Carotenoid Network (CaRed) and I was involved in two international carotenoid networks (Ibercarot 2012-15 and Eurocaroten 2016-2020), having an active participation and establishing national and international collaborators (see full record of publications at ORCID). I would like to remark my role as organizer of the first Spanish Symposium (2017) dedicated to Carotenoids, Organizing Chair of an International Workshop on Carotenoids and the Eurocaroten COST MC Meeting (2018) and Organizing Committee of the 20th International Symposium on Carotenoids (2026). Complementary, I led or participated in projects focused on the regulation of the metabolism of volatiles, vitamins C and E, as well as hormones (ABA and ethylene), and their relationship with fruit quality and postharvest physiological disorders due to water loss and cold storage. Overall, my research activity has been published in more than 100 SCI articles and participated in 15 book chapters, as well as in other specialized and technical journals. I have regularly presented the research results in international and national symposiums, and in technical workshops resulting in more than 100 communications. My activity in the postharvest group has been funded by 16 research grants: international, national and regional (Generalitat Valenciana), being the PI or co-PI in 9 grants. I have participated or been responsible of 11 technological contracts with industry (national and international), most of them focused on analysis of fruit bioactive compounds and postharvest fruit quality. Regarding my contribution to students' formation, I have co-supervised 8 PhD students (one extraordinary award-International Doctorate), and currently I am co-supervising 3 additional PhDs. All my former PhD students are working as postdoctorals, in I+D departments of private companies, or are permanent researchers at international institutions or CSIC. I have supervised more than 12 Master Thesis (two with extraordinary award), and trained more than 20 undergraduate students (practicum/TFG) in Food Science and Technology Area. Our laboratory hosted a significant number of international students and professors (sabbatical or STSM) due to our active international collaborations. I have been invited to take part in different national and international workshops (University of London, Centro Citricultura-Brasil, University of Costa Rica, UIMP etc) for postgraduate students. I was associated lecturer in 'Novel Foods' at the University of Valencia (2005-07). I regularly review manuscripts in the Food Science and Plant Science areas, and I have reviewed national research projects or postdoctoral contracts (ANEP/AEI), regional and international projects (several agencies). From Nov 2015-Feb 2017 I was the Head of Food Science Department at IATA-CSIC. I was member (2015-19) of the Outreach Committee at IATA-CSIC and I am involved in outreach activities, science workshops for Schools and undergrad students (since 2015), Exposcience (Scientific Park, UV), participating in invited conferences (e.g. Casa Ciencia CSIC), blogs, interviews and in activities related to the 11F International Day of Women and Girls in Science.

Part C. RELEVANT MERITS (ONLY LAST 10 YEARS)

C.1. Selected Publications. © indicates corresponding author

García-Martínez C, Moncholi-Estornell A, Pescador-Dionisio S, Cendrero-Mateo MP, Rodrigo MJ, Moreno J, Van Wittenberghe, S. Canopy imaging spectroscopy reveals a stepwise redshifted energy redistribution in the antenna under drought stress. *Scientific Reports* May 18;15(1):17241. (2025)

Zacarías-García J., Rambla, J.L., Granell, A., Zacarías, L., Rodrigo, M.J. © A comparative analysis of the volatile profiles in the pulp of red-fleshed and standard orange varieties during fruit maturation. *Journal of Food Composition and Analysis* ; Vol. 136 pp. 1-10 (2024)

Zacarias-Garcia J, Cronje PJ, Diretto G, Zacarias L, Rodrigo, M.J©.A comprehensive analysis of carotenoids metabolism in two red-fleshed mutants of Navel and Valencia sweet oranges (*Citrus sinensis*).Frontiers in Plant Science 13:1034204 (2022).

Rey F, Rodrigo MJ, Zacarias L©. Accumulation of tocopherols and transcriptional regulation of their biosynthesis during cold storage of mandarin fruit. Postharvest Biol Technol. 180: 111594 (2021)

Rey F, Rodrigo MJ, Diretto G, Zacarías L©. Effect of fruit shading and cold storage on tocopherol biosynthesis and its involvement in the susceptibility of Star Ruby grapefruit to chilling injury. Food Chemistry :Molecular Science Dec;3:100037 (2021).

Rey F, Zacarías L, Rodrigo MJ©. Carotenoids, vitamin C, and antioxidant capacity in the peel of mandarin fruit in relation to the susceptibility to chilling injury during postharvest cold storage. Antioxidants 9(12):1296 (2020).DOI: 10.3390/antiox9121296

Lado, J, Gurrea, A., Zacarías L, Rodrigo, M.J©. Influence of the storage temperature on volatile emission, carotenoid content and chilling injury development in Star Ruby red grapefruit. Food Chemistry 225:72-91 (2019)

Romero P, Lafuente MT, Rodrigo, M.J©. A sweet orange mutant impaired in carotenoid biosynthesis and reduced ABA levels results in altered molecular responses along peel ripening. Scientific Reports 9(1):9813 (2019).

Lado, J., Cronje, PJR, Rodrigo, M.J. and Zacarias L©. Postharvest Physiological Disorders in Citrus. Postharvest Physiological Disorders of Fruits and Vegetables, Tonetto de Freitas, S. and Pareek S. Eds. Chapter 17, pp 321-342 (2019) CRC Press, Boca Raton, Florida, USA. DOI:10.1201/b22001

Lado J., Rodrigo M.J, López-Climent, M,Gómez-Cadenas A, Zacarías L.©. Implication of the antioxidant system in the tolerance to chilling injury in the red peel of grapefruit. Postharvest Biology and Technology 111:214-223. (2016)

Lado J, Zacarías L, Gurrea A, Page A, Stead A, Rodrigo, MJ©. Exploring the diversity in Citrus fruit coloration to decipher the relationship between plastid ultrastructure and carotenoid composition. Planta 242: 645-661 (2015)

Lado J, Cronje P, Alquézar B, Page A, Manzi M, Gómez-Cadenas A, Stead AD, Zacarías L, Rodrigo MJ©. Fruit shading enhances peel colour, carotenes accumulation and chromoplast differentiation in red grapefruit. Physiologia Plantarum 154: 469-484. (2015)

Lado J., Cronje P, Rodrigo M.J., Zacarías L©., Involvement of lycopene in the induction of tolerance to chilling injury in grapefruits. Postharvest Biology and Technology 100: 176-186 (2015)

Rodrigo, M.J©. , Alquézar B, Alós, E, Medina, V., Carmona L., Bruno M., Al-Babili, S., Zacarías, L. A novel carotenoid cleavage activity involved in the biosynthesis of Citrus fruit-specific apocarotenoid pigments. Journal of Experimental Botany (2013). 64(14):4461-4478

C.2. Selected Congress

Fortuna S., Zacarias-Garcia J., Zacarias L., Maria Jesús Rodrigo.A transcriptomic and structural approach to decipher coating-induced chilling tolerance in cold storage Lanelate orange . Comunicación oral. 9° Convegno Nazionale GdL SOI Postharvest Management of Mediterranean Crops; Palermo (Italy) 17–19 September, 2025

Cronje, P.J.R , North-Dewing,J., Zacarías-García,J. Zacarías,L., Rodrigo,M.J. The development of chilling injury during cold storage in ancestral and commercial citrus fruit and the relationship to carotenoid content. Póster. 15th International Citrus Congress (ICC 2024). Jeju, Korea in 10–15/11/2024.

Zacarias-Garcia J, González-Araúz AP, Rodrigo MJ, Cronje PJ, y Zacarías L Degreening and chilling tolerance in mandarin fruits. Oral Communication.12th CITRUS RESEARCH SYMPOSIUM. Drakensberg (South Africa)18-21 Agosto 2024

Fortuna, S. J. Zacarías-García, L. Zacarías y Rodrigo M.J. Aproximación transcriptómica al estudio del control de los daños por frío por recubrimiento postcosecha origen vegetal en naranjas Lanelate. Póster.XIV Congreso Nacional y XII Ibérico de Maduración y Postcosecha. Madrid, 12-14/06/2024

Rodrigo MJ, Zacarias, L., Zacarias-Garcia, J., Tadeo, F.R., Terol, J., and Talón, M. Color diversity in fruits of ancestral Citrus species: A comparative study of carotenoid metabolism during

maturation.Oral communication. 19th International Symposium on Carotenoids. International Carotenoid Society.Toyama (Japan).9-14 July 2023.

Lozano-Omeñaca, A., Rodrigo M.J., Zacarías L Estudio de la desaturación de ácidos grasos durante la conservación refrigerada en frutos de mandarina. Presentación oral. XIII Congreso Nacional y XI Ibérico de Maduración y Postcosecha. Zaragoza. 14-17/06/2022

C.3. Research projects, indicating your personal contribution.

Research projects:

-Factores fisiológicos, estructurales y moleculares implicados en la respuesta de los frutos cítricos a la conservación postcosecha refrigerada. PID2024-156551OB-I00. Proyectos de Generación de Conocimiento 2024. Investigación Orientada Tipo B. Agencia Estatal de Investigación. Ministerio de Ciencia Innovación ;2025-2028. Subvención: 169.000 €+Contrato predoc PIF2025. IPs: Dr. M.J. RODRIGO. / Co IP Dr.L. ZACARÍAS

-Mecanismos implicados en la tolerancia de los frutos cítricos a las bajas temperaturas de conservación postcosecha: diversidad genética y tratamientos de control (PID2021-127634OB-I00). Investigación Orientada Tipo B. AEI, MICINN. 2022-2025. Subvención: 165.000 €. IPs: L. ZACARÍAS /M.J. RODRIGO

-Lúpulo ecológico 'Alto Turia': introducción en la 'Reserva de la biosfera del Alto Turia'. 16-B97887848-PA-06. Constitución de Grupos Operativos de innovación y la realización de proyectos piloto innovadores en la producción primaria agrícola y ganadera (Programa de Desarrollo Rural de Castilla-La Mancha, Dirección General de Agricultura y Ganadería, Castilla-La Mancha). 2022 -2024. Subvención: 204.387,79 €. TIPO DE PARTICIPACIÓN: IP del socio participante IATA-CSIC_Dr. M.J. RODRIGO. COORDINADOR GRUPO OPERATIVO: Ing. R. Poza (Tecnos Ingenieros obra civil, hidráulica e instalaciones, S.L.L.)

-Origen y domesticación del color del fruto de los cítricos: análisis genómico y molecular de sus componentes nutraceuticos y comerciales. (PROMETEO/2020/027). Subvenciones Para Grupos De Investigación De Excelencia- Programa PROMETEO. Generalitat Valenciana. 2020-2024. Subvención:169.319 €. PARTICIPACIÓN: Equipo Investigador. IP: M. Talón (IVIA, Valencia).

-Calidad y conservación de frutos cítricos: caracterización de variedades de naranja con licopeno y estudio de las respuestas a la conservación postcosecha. (RTI2018-095131-BI00). Programa estatal I+D+i orientada a los Retos de la Sociedad. Ministerio de Ciencia Innovación y Universidades.2019-2022. Subvención: 182.000 €+ Contrato FPI. IPs: Dr. M.J. RODRIGO /Dr. L. ZACARÍAS

-Carotenoides en frutos cítricos: evaluación de su papel en la conservación postcosecha y mecanismos de síntesis y regulación (AGL2012-34573). Subprograma De Proyectos De Investigación Fundamental,MEC . 2013- 2015 SUBVENCIÓN: 105.300 €. IP:Dr. M.J. RODRIGO

-Calidad postcosecha de los frutos cítricos: aproximaciones fisiológicas y genómicas. (AGL2006-09496). CICYT 2006- 2009. SUBVENCIÓN: 118.000 € + Contrato FPI. IP: M.J. RODRIGO

-Vitamin C Biosynthesis in Citrus Species (ref 303652). Marie Curie-Career Integration Grant Programa: FP7-PEOPLE, EU. 2012-13. Subvención: 50.000 €. PARTICIPACIÓN: Supervisora. IP:E. ALOS.

Networks:

-Red Española De Carotenoides CaRed (vigente desde el 2015).RED2022-134577-T. Red temática. AEI MICINN España .2023- 2024. SUBVENCIÓN: 21.000 €. MJ RODRIGO IP IATA-CSIC. IP Red: L. Gómez Gomez (Instituto Botánico, Universidad de Castilla-La Mancha)

-European Network to advance Carotenoid Research and Applications in Agro-food and Health. EUROCARTEN. CA15136 .COST Action (EU).2016-2020. SUBVENCIÓN: 140.000€ año 2016/17-175.000€ año 18/19/20. MJ RODRIGO Management Committee (Substitute), Spain. Participant WP1. IP Dr. A. MELENDEZ-MARTINEZ (Universidad Sevilla)