

Part A. Personal Information

DATE	29/07/2019
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Surname(s)	Limón Mirón	
Forename	María del Carmen	
Social Security, Passport, ID number	28907536	
Sex	Female	
Age	49	
Researcher codes	WoS Researcher ID (*)	E-6582-2010
	SCOPUS Author ID(*)	7004053607
	Open Researcher and Contributor ID (ORCID)	0000-0002-9982-6480

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Professor assistant	
UNESCO Code	2409, 2415, 2407	
Key Words	Regulation-carotenoids-fungi-secondary metabolism Fusarium	
Name of the University/Institution	University of Seville	
	Department/Centre	Genetics/ Faculty of Biology
	Full Address	
	Email Address	carmenlimon@us.es
	Phone Number	34 954 555947
Start date	24/04/2012	

A.2. Education (title, institution, date)

Year	University	Degree	Title
1992	Seville	First degree	Biological Sciences
2000	Seville	PhD	Biology

A.3. Indicators of Quality in Scientific Production (See the instructions)

27 articles in JCR, of which 9 publications in Q1
Citations: 1310
h-index: 13
Doctoral Thesis directed: 4
Sexenios: 3

Part B. Free Summary of CV (Max. of 3.500 characters, including spaces)

I got a degree in Biology (1992) and did my doctoral Thesis at the Department of Genetics of the University of Seville (US) with a grant from Education & Science Ministry under the direction of Tahía Benítez and JA Pintor-Toro. I stayed at IRNA (CSIC, Seville) and VTT Biotechnology (Finland). I received my doctorate in Biology in US (1999) with outstanding cum Laude and European Doctorate mention. The Thesis was titled "Chitinases Chit33 and Chit42 of *Trichoderma harzianum*: Applications to Biological control and biotechnology". I completed a 3-year postdoctoral stay at VTT Biotechnology, hired by Academy of Finland (2000), grants from Education and Science Ministry and Marie Curie in the group of Dr M Penttilä (2001-2003). Since 2003, I work with Dr. Avalos in the D. Genetics (US). I got a Return Contract for researchers to Andalusian Univ (2004-2008). I received a Marie Curie Reintegration grant from FP6-Mobility (Oct 2004-Sep 2005) for the topic "Carbon regulation of terpenoid biosynthesis in *F. fujikuroi*". I was an invited research at VTT Biotechnology with a José Castillejo mobility grant (May-September, 2008). I was contratado doctor (2008-2012) and assistant professor (2012-present) in the D. Genetics, US. I teach Genetics in Biology Degree. I have participated in different subjects of Master of Molecular Genetics &

Biotechnology, Master of Advanced Biology (US). I directed 8 experimental Graduation projects, 7 Master Thesis and directed 4 Doctoral Thesis.

I carried out my research on regulation of genes for production of enzymes or metabolites produced by different fungi such as *Trichoderma*, *Fusarium*, *Neurospora*, and *Ustilago*. In addition, I study regulation at different levels: mRNA, and protein and in the search for effectors and in regulation mediated by non-coding RNA. The main research topic is regulation of carotenoid biosynthesis in *Fusarium*. Recently, I have started a new research topic for searching new antifungals. I published 27 journal articles with 1310 citations and 11 book chapters. I participated in 26 research projects and 4 contracts with companies. I have given seminars and talks at conferences, scientific meetings and Master. I reviewed a countless number of articles for international journals. I participated in 7 Dissertation Defence committees. I participated in 4 teacher recruitment committees. I have been secretary of Genetics Dep since February 2015 to April 2019 being in charge of the economical and teaching management of a Department with more than 70 members located in 3 different buildings.

Part C. Relevant accomplishments

C.1. Articles

- Ruger-Herreros M, Parra-Rivero O, Pardo-Medina J, Romero-Campero F, Limón MC, Avalos J. (2019) Comparative transcriptomic analysis unveils interactions between the regulatory CarS protein and light response in *Fusarium*. BMC Genomics 20:67 1-19. IF: 3,730. Position in Microbiology and Applied Biotechnology (2017) 40/161. **Q1**
- Castrillo M, Luque EM, Limón MC, Corrochano LM, Avalos J. (2018) Transcriptional basis of enhanced photoinduction of carotenoid biosynthesis at low temperature in the fungus *Neurospora crassa*. Res. Microbiol. 169: 78-89. IF: 2,372. Position 68/126 in Microbiology (2017). **Q3**.
- Avalos, J, Pardo-Medina J, Parra-Rivero O, Ruger-Herreros M, Rodríguez-Ortiz R, Hornero-Méndez, D, Limón MC. (2017) Carotenoid biosynthesis in *Fusarium*. J. Fungi. 3(3) pii: E39. New journal without IF.
- Ahrazem O, Gómez-Gómez L, Rodrigo MJ, Avalos J, Limón MC. (2016) Carotenoid cleavage oxygenases from microbes and photosynthetic organisms: features and functions, Inter J. Mol Sci. 17:11. IF: 3,226. Chemistry: 54/116. **Q2**.
- Díaz-Sánchez V, Limón MC, Al-Babili S, Avalos J (2016) A RALDH-like enzyme involved in *Fusarium verticillioides* development. Fungal Genet Biology. 86:20-32. IF: 3,317. Mycology: 8/30. **Q2**.
- Avalos J, Limón MC (2015) Biological roles of fungal carotenoids. Curr Genet 61:309-324
- Díaz-Sánchez V, F Estrada A, Limón MC, Al-Babili S, Avalos J (2013). The oxygenase CAO-1 of *Neurospora crassa* is a resveratrol cleavage enzyme. Eukaryot Cell. 12:1305-1314. IF: 3,179. Microbiology: 36/119. **Q2**.
- Rodríguez-Ortiz R, Limón MC. Avalos J (2013) Functional analysis of the carS gene of *Fusarium fujikuroi*. Mol Genet Genomics 288:157-173. IF: 2,831. Genetics & Heredity: 72/165. **Q2**.

Book chapters

- Niehaus E-M, Díaz-Sánchez V, von Barga K, Kleigrew K, Humpf H-U, Limón MC Tudzynski B (2014) Biosynthesis of the Mycotoxins Fusarins and Fusaric Acid in Fusaria. En: Biosynthesis and Molecular Genetics of Fungal Secondary Metabolites. En: Martín JF, García-Estrada C, Zeilinger S (eds) Springer, pp. 239-262.
- Avalos J, Nordzieke S, Parra O, Pardo-Medina J, Limón MC (2017). Carotenoid production by filamentous fungi and yeasts. En: Sibirny AA, "Biotechnology of Yeasts and Filamentous Fungi". Springer. pp. 225-279.
- Marente, J, Ortega P, Pardo-Medina J, Avalos J, Limón MC. Modulation of activity of a carotenoid pathway through the use of the TET-on regulatory system: application in the fungus *Fusarium fujikuroi*. Chapter 26. In: Plant and Food Carotenoids: Methods and Protocols. Ed: Manuel Rodríguez-Concepción, and Ralf Welsch. In press.

C.2. Research Projects and Grants

Molecular mechanisms governing the synthesis of xanthophylls and apocarotenoids in *Fusarium* (FusCar). RTI2018-101902-B-I00. Plan Estatal 2013-2016. Retos - Proyectos I+D+i. From: 1.01.2019 to: 31.12.2022.

Mecanismos moleculares de control de la síntesis de carotenoides en *Fusarium*. Financiado por Ministerio de Economía y Competitividad. From 1.01.2016 to 31.12.2018. IP1: Javier Ávalos Cordero. IP2: M. Carmen Limón Mirón.

Control de la síntesis de carotenoides en *Fusarium*: mecanismo de acción del sistema CarS y regulación por microARN. BIO2012-39716. Financiado por Ministerio de Economía y Competitividad. 1.01.2013 to 31.12.2015. IP: Javier Ávalos Cordero

Producción de neurosporaxantina en hongos y análisis de su potencial biotecnológico como colorante natural beneficioso para la salud. Proyecto de Excelencia. Junta de Andalucía. July 2011 a June 2015. CTS-6638. IP: Javier Ávalos Cordero

Marie Curie Reintegration Grant MERG-CT-2004-006378. FP6-Mobility. Role of *creA* on the regulation of terpenoid biosynthesis in *Fusarium*. From 01-10-2004 to 30-09-2005. VTT Biotechnology (Espoo, Finland).

Mobility Grants for young doctors to stay abroad. José Castillejo Program. 4 months (1.05.2008-31.08.2008) VTT Biotechnology (Espoo, Finland).

C.3. Contracts

"Puesta a punto de una estirpe productora de metabolitos con acción bioestimulante y productoras de neurosporaxantina y bicaverina". Grupo Agrotecnología Biotech. April 2018-July 2019. IP: M. Carmen Limón Mirón. 33.023 €

C.4. Direction of Doctoral Thesis

Obdulia Parra Rivero. "Nuevos mecanismos moleculares de regulación de la carotenogénesis en *Fusarium oxysporum*". Defended on 13th December 2018.

Macarena Ruger Herreros. "Participación de la proteína CarS en la regulación de la carotenogénesis y el estrés en *Fusarium fujikuroi*". Defended on 18th July 2016.

Violeta Díaz Sánchez. Enzimas fúngicas implicadas en la síntesis y modificación de compuestos de interés aplicado. 23th July 2013.

Luis Roberto Rodríguez-Ortiz. Análisis genético y molecular del fenotipo CarS en *Fusarium*. 2nd March 2012.

C.5 Participation in scientific networks

"CARED: Spanish Carotenoid Network". Funding entity: Ministerio de Economía, Industria y Competitividad. Call: PN I+D+i 2017. Ref: BIO2017-90877-REDT. PI: Manuel Rodríguez Concepción (Centre de Recerca en Agrigenómica CSIC-IRTA-UAB-UB, CRAG). From 1.1.2019/31 to 31.12.2020.

"Carotenoids in network: from microorganisms and plants to food and health". Funding entity: Ministerio de Economía y Competitividad. Call: PN I+D+i 2015. Ref: BIO2015-71703-REDT. PI: Manuel Rodríguez Concepción (Centre de Recerca en Agrigenómica CSIC-IRTA-UAB-UB, CRAG). From 1.12.2015 to 30.11.2017.

C.6 Organization of congresses and scientific meetings

Member of the Local and National Committees of the 12th European Conference on Fungal Genetics (ECFG12) Seville, March 2014.

Fusarium Workshop, Seville, March 2014.