MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	19/12/2025

First name	María Pilar		
Family name	Cano Barquilla		
Gender (*)	Female	Birth date (dd/mm/yyyy)	28/06/1972
Social Security, Passport, ID number	ID number	52366308T	
e-mail	canobarquilla@med.ucm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-8770-2723	

(*) Mandatory

A.1. Current position

Position	Profesor Titular de Universidad		
Initial date	08/05/2018		
Institution	Universidad Complutense de Madrid		
Department/Center	Bioquímica y Biología Molecular	Facultad de Medicina	
Country	Spain	Teleph. number	91-3941678
Key words	obesity, metabolism, type 2 Diabetes, inflammation melatonin, chronobiology		

A.2. Previous positions (research activity interuptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD	Universidad Complutense de Madrid/Spain	2003
Licensed	Universidad Complutense de Madrid/Spain	1997

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

My scientific training began in 1998 in the Department of Biochemistry and Molecular Biology at the Faculty of Medicine, Complutense University of Madrid (UCM), after graduating with a degree in Biological Sciences from the same university. Five months later, I received a pre-doctoral fellowship from UCM (1999-2002), culminating in the defense of my doctoral thesis in 2003, for which I was awarded the highest distinction, cum laude. During this pre-doctoral period, I gained expertise in biochemical techniques and various rat models. A month later, I secured a postdoctoral fellowship associated with a research project (PR201/02-11474, National Drugs Plan), allowing me to continue my research in chronobiology within the same department. In 2006, I received a grant from the UCM's "Help for Professors Abroad" program to spend two months in Dr. Bartke's laboratory at the School of Medicine, Southern Illinois

University (SIU) in Springfield, USA. This experience allowed me to learn advanced molecular biology techniques using a dwarf mouse model. That same year, I began my teaching career as an assistant professor in the Department of Biochemistry and Molecular Biology at the Faculty of Medicine (UCM), while continuing my research. I served as Assistant Professor (Doctor) from 2010 to 2014, and as Contracted Professor (Doctor) from 2014 to 2018. I am currently a University Professor. During these years I have contributed to the training of future graduates in medicine and odontology, with enormous satisfaction in my teaching career.

My research focuses on the chronobiological impact of various disruptors, such as diet-induced obesity, on the coordination of the immune and endocrine systems. I have investigated the restoration of homeostasis and the prevention of related alterations using treatments such as melatonin. This work has involved extensive experience with diverse animal models, including rats, mice, and rabbits, encompassing both wild-type and genetically modified (knockout) animals, under experimental conditions mimicking obesity, caloric restriction, alcoholism, and aging. My research group has specifically studied the effects of melatonin administration in rats fed a high-fat diet since 2009 (funded by the Ministry of Education and Science project SAF2008-00424). Developing this diet-induced obesity model in experimental animals, in addition to facilitating the collection of relevant chronobiological data for future research, fostered collaborations with other research groups at UCM, which has significantly enriched my professional career.

I was a member of the UCM Research Group "Chronobiological Molecular Mechanisms" and, from 2017 to 2021 and currently, I am a member of the IdISSC Research Group "Chronobiological Molecular Mechanisms."

After 22 years dedicated to research, primarily in chronobiology and its interaction with dietary changes, my most significant achievements include: participation in 12 competitive research projects; 63 scientific publications (4 D1 and 16 Q1; see ORCID reference), with 1032 total citations and H-index of 18; and 5 book chapters. These scientific results have been consistently presented at national and international congresses.

Additionally, I have contributed to the training of young researchers with the codirection of one doctoral thesis, 10 master's thesis in the Human Nutrition and Dietetics Master (UCM), one final degree project with a master's mention at the School of Medicine (UCM) and one final degree project at the Nutrition and Dietetics Faculty (UCM).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

- Jiménez-Ortega V, **Cano MP**, Pagano ES, Fernández-Mateos MP, Esquifino A, Cardinali PD (2012). "Melatonin Supplementation Decreases Prolactin Synthesis and Release in Rat Adenohypophysis. Correlation with Anterior Pituitary Redox State and Circadian Clock Mechanisms". Chronobiology Int.: 29(8):1021-35.

- Fernández-Mateos P, Rios Lugo J, **Cano MP**, Jiménez-Ortega V, Esquifino AI, Larrad A. (2012). "Effect Of Subtotal Colectomy On Body Weight And Food Intake In An Experimental Model Of Obesity In Male Wistar Rats". Open Obesity Journal, 4: 51-54.

- **Cano Barquilla P**, Pagano ES, Jiménez-Ortega V, Fernández-Mateos P, Esquifino AI, Cardinali DP (2014). "Melatonin normalizes clinical and biochemical parameters of mild inflammation in diet-induced metabolic syndrome in rats". Journal Pineal Res., 57(3):280-90. 2014.

- Virto L, **Cano P**, Jiménez-Ortega V, Fernández-Mateos P, González J, Esquifino AI, Sanz M (2018). Obesity and Periodontitis. An Experimental Study to Evaluate the Periodontal and Systemic Effects of the Co-Morbidity. J Periodontol. 89(2):176-185.

- Virto L, Haugen HJ, Fernández-Mateos P, **Cano P**, González J, Jiménez-Ortega V, Esquifino AI, Sanz M (2018). Melatonin expression in periodontitis and obesity: An experimental in-vivo investigation. J Periodontal Res.;53(5):825-831.

- Virto L, **Cano P**, Jiménez-Ortega V, Fernández-Mateos P, González J, Haugen HJ, Esquifino AI, Sanz M (2018). Melatonin as adjunctive therapy in the treatment of periodontitis associated with obesity. J Clin Periodontol.; 45(11):1336-1346.

- Perez-Miguelsanz J, Jiménez-Ortega V, **Cano-Barquilla P**, Garaulet M, Esquifino AI, Varela-Moreiras G and Fernández-Mateos P (2021). Early Appearance of Epicardial Adipose Tissue through Human Development. Nutrients, 13, 2906.

- Fernández-Mateos P, **Cano-Barquilla P**, Jiménez-Ortega V, Virto L, Pérez-Miguelsanz J, Esquifino AI (2023). Effect of Melatonin on Redox Enzymes Daily Gene Expression in Perirenal and Subcutaneous Adipose Tissue of a Diet Induced Obesity Model. Int J Mol Sci. 2023 Jan 4;24(2):960.

- **Cano-Barquilla, P**; Jiménez-Ortega, V; Fernández-Mateos, P; Virto, L; Maldonado Bautista, E.; Perez-Miguelsanz, J.; Esquifino, AI (2025). Daily Lipolysis Gene Expression in Male Rat Mesenteric Adipose Tissue: Obesity and Melatonin Effects. Int. J. Mol. Sci. 2025, 26, 577.

C.2. Congress

- Póster. **Cano P**, Fernández- Mateos MP, Jiménez-Ortega V, Spinedi E, Rios Lugo J, Esquifino Parras A. 24-Hour Variation in the Relative Expression of Heme Oxygenase 1 and 2 Genes on Perirenal Fat in Normal and High-Fat-Fed Rats: Effect of Melatonin Treatment. 29th Annual Scientific Meeting of the Obesity Society. 1-5 October. 2011. Orlando, EEUU.

- Póster. **Cano P**, Jimenez-Ortega V, Fernández-Mateos MP, Larrad A., Esquifino A. 24-Hour Variation in the Relative Expression of Inducible and Neural Nitric Oxide Synthase Genes on Perirenal Fat in Normal and High-Fat-Fed Rats: Effect of Melatonin Treatment. 29th Annual Scientific Meeting of the Obesity Society. 1-5 October. 2011. Orlando, EEUU.

- Póster. Fernández-Mateos MP, Esquifino AI, **Cano P**, Jiménez-Ortega V. Effect of subtotal colectomy on body weight and food intake in an experimental model of obesity in male wistar rats. 53 Congreso de la Sociedad Española de Endocrinología. 18-20 May. 2011. Santiago, Spain.

- Póster. Rios J, **Cano P**, Jiménez-Ortega V, Fernández-Mateos P, Esquifino AI. Melatonin and Obesity in male rats: Plasma PYY, Grhelin and Leptin Changes and expression of Leptin receptor at the hypothalamus. 2nd International Congress on Abdominal Obesity. 24-26 February. 2011. Buenos Aires, Argentina.

- Póster. **Cano P**, Jiménez-Ortega V, Rios J, Fernández-Mateos P, Cardinali DP, Esquifino AI. Melatonin and Obesity: Insulin regulatory mechanism. 2nd International Congress on Abdominal Obesity. 24-26 February. 2011. Buenos Aires, Argentina.

- Póster. Rios Lugo J, Jiménez-Ortega V**, Cano P**, Fernández- Mateos MP, Esquifino Parras A. Prevention efficacy of exogenous melatonin for deleterious neuropeptide regulation in obese male rat. ISN-ASN (International Society of Biochemistry-American Society of Biochemistry).20-24 April, 2013. Cancún, Méjico.

- Póster. Fajardo D, Jiménez-Ortega V, **Cano P**, Cano-Gil A, Virto L, Pérez de Miguelsanz J, Esquifino A, Fernández-Mateos P. Efectos de la dieta sobre la expresión génica diaria de las enzimas redox en la grasa subcutánea de la rata macho Wistar. XXII Jornadas de nutrición práctica-XII Congreso internacional de Nutrición, alimentación dietética. 11-12 april. 2018 Madrid, Spain.

- Póster. Fajardo D, Jimenez-Ortega V, Caballero P, **Cano-Barquilla P**, Perez de Miguelsanz MJ, Esquifino AI and Fernandez-Mateos P. Effect of melatonin on the peripheral insulin resistance through its hepatic signaling on a diet induced obesity experimental model. World Congress on Diabetes and Endocrinology. 22-23 of August. 2018. Rome, Italy.

- Póster. Fajardo D, **Cano-Barquilla P**, Virto Ruiz L, Perez de Miguelsanz MJ, Jimenez-Ortega V, Esquifino AI and Fernandez-Mateos P. High fat diet induced obesity and changes mesenteric fat lipolysis. World Congress on Diabetes and Endocrinology. 23-23 of August, 2018. Rome, Italy.

C.3. Research projects

- Programa de fortalecimiento de la comunidad de Startups basadas en la ciencia de la Comunidad de Madrid: Proyectos emprendedores Deep tech 2025. Septiembre 2025-Diciembre 2025. 5.000 €. Investigador.

- Fundación Médica Mutua Madrileña. “Papel del colon en el mecanismo de adaptación intestinal, en ratas obesas sometidas a by-pass biliopancreático”. 01.10.2009-30.09.2012. 14.000€. Investigador.

- PR26/16-20317. “Contribución del metabolismo lipídico a la resistencia hepática a la insulina asociada a obesidad”. Convocatoria UCM-Santander 2016. IP: Ana I Esquifino Parras. 22/12/2016 al 30/07/2018. 7.000€. Investigador.

- PR87/19-22548. “Abordaje de sensores de nutrientes (PASK/AMPK) para controlar la obesidad. Implicaciones del tejido adiposo y los genes del reloj”. Proyectos de Investigación Santander-UCM. Convocatoria 2019. IP.: Mª Carmen Sanz Miguel. 13/12/2019 al 12/09/2021 12000 €. Investigador.