



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	28-10-2024
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First name	Eva		
Family name	Alés González de la Higuera		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	eales@us.es		URL Web
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-5536-4616		

(*) Mandatory

A.1. Current position

Position	Profesor Titular (Associate professor)		
Initial date	6/11/2010		
Institution	University of Seville		
Department/Center	Medical Physiology and Biophysics	Faculty of Medicine	
Country	Spain	Teleph. number	
Key words	Mast cell, microglia, exocytosis, endocytosis, calcium, neuroinflammation, neuron, histamine.		

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

Period	Position/Institution/Country/Interruption cause
2008-2010	“Contratado Doctor” Teacher/ University of Seville/Spain
2004-2007	“Ramón y Cajal”/ University of Seville/Spain
1999-2003	Posdoctoral/ Universidad Autónoma de Madrid/ Madrid/ Spain
1995-1998	Predocctoral Fellow (FPI)/ University of Seville/Spain
1993-1994	Contract in vitro fertilization clinic/Seville

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Biology	University of Seville	1991
PhD in Biology	University of Seville	1998

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

Since the beginning of her career, Dr. Eva Alés has focused on studying the mechanisms and functioning of the exo-endocytic machinery to understand the biological bases of alterations in the secretion of transmitters and inflammatory mediators. In her doctoral thesis, she developed and applied the patch amperometry technique to the study of exocytosis, enabling her to demonstrate the hypothesis of transmitter release through a transient fusion mechanism known as “kiss-and-run,” a finding published in the prestigious journal *Nature Cell Biology*. She conducted her



postdoctoral period at the Teófilo Hernando Institute of Pharmacology (UAM) and completed short research stays at foreign universities (University of Milano-Bicocca and University of Valparaiso), where she focused her research on the modulation of neurotransmission by calcium and potassium channels and modulators of the nicotinic receptor. She also gained experience in the preclinical study of drugs such as galantamine, which improves cognitive aspects in patients with dementia (a project in collaboration with Janssen Laboratories). Later, she obtained a Ramón y Cajal contract and returned to the University of Seville, where she formed a research group and contributed to significant work on the molecular machinery involved in vesicular fusion control, such as synaptotagmin, a calcium sensor for exocytosis; a study published in *PNAS* in collaboration with Dr. Thomas Südhof (Nobel Prize in Medicine, 2013).

In recent years, her research has focused on an immune cell, the mast cell, and the communication it establishes with neurons and microglia. This research line allowed her to determine the role of mast cells in microglial activation, neuronal synaptic function, and potential therapy derived from controlling the mast cell's secretory response in aberrant inflammatory states. Noteworthy is the study of the mast cell stabilizer, ketotifen, for its potential application as a low-grade inflammation inhibitor, using a murine aging model—a study that is part of Lorenzo Barrella's ongoing doctoral thesis. She has received funding as principal investigator (PI) for four national projects and has participated in over ten regional, national, and international projects. She is the co-author of 26 articles in prestigious scientific journals, mainly in the areas of cell biology, biochemistry, neuroscience, and physiology. She has written a review on the role of granule recycling in mast cell pathophysiology, two book chapters, 13 articles in medical outreach journals, and has participated in about fifty communications at national and international conferences. She has organized an international workshop and participated in the organization of two national congresses.

In parallel with her scientific career, Dr. Eva Alés has carried out intensive academic activity, teaching health sciences students (medicine, physiotherapy, nursing, podiatry) and graduate students (supervision of three doctoral theses, as well as master's and undergraduate theses). She has also served as a lecturer in postgraduate programs and courses at the Neuroscience Center of the University of Valparaíso, University of La Laguna, University of Seville, and the Autonomous University of Madrid.

Part C. RELEVANT MERITS

C.1. Publications (CA, corresponding author)

AUTHORS: Ramírez-Ponce, María Pilar; Flores, Juan Antonio; Barrella, Lorenzo; **Alés, Eva**.
TÍTULO: Ketotifen is a microglial stabilizer by inhibiting secretory vesicle acidification
JOURNAL: Life Sciences
VOLUME/PAGES/YEAR: 319-121537, pp.1-11, 2023.

AUTHORS: Maldonado M^a Dolores; M^a Carmen; Flores, Juan Antonio; Ramírez-Ponce, María Pilar; **Alés, Eva**.
TÍTULO: Melatonin reduces exo-endocytosis in mast cells, making it a useful therapeutic tool in inflammatory diseases
JOURNAL: Ann Allergy Asthma Immunol.
VOLUME/PAGES/YEAR: 131-5, pp.670-672. 2023.



AUTHORS: Ramírez-Ponce, María Pilar; Sola-García, Alejandro; Balseiro-Gómez, Santiago; Maldonado, María Dolores; Acosta, Jorge; **Alés, Eva*** (CA); Flores, Juan Antonio.
TÍTULO: Mast Cell Changes the Phenotype of Microglia via Histamine and ATP
JOURNAL: Cellular Physiology and Biochemistry
VOLUME/PAGES/YEAR: 55(1):17-32, 2021.

AUTHORS: Martín-Sánchez, Carolina; **Alés, Eva**; Balseiro-Gómez, Santiago; Montiel, Carmen (position 2/9)
TÍTULO: The human-specific duplicated $\alpha 7$ gene inhibits the ancestral $\alpha 7$, negatively regulating nicotinic acetylcholine receptor-mediated transmitter release
JOURNAL: Journal of Biological Chemistry
VOLUME/PAGES/YEAR: 296:100341, 2021.

AUTHORS: Negrete, María; Romero-Ben, Elena; Gutiérrez-Valencia, Alicia; Muntané, Jordi (position 5/13)
TÍTULO: PDA-based glyconanomicelles for hepatocellular carcinoma cells active targeting via mannose and asialoglycoprotein receptors
JOURNAL: ACS Applied Bio Materials
VOLUME/PAGES/YEAR: 4(6): 4789 - 4799, 2021.

AUTHORS: Flores, Juan Antonio; Ramírez-Ponce, María Pilar; Montes, María Ángeles; Balseiro-Gómez, Santiago; Acosta, Jorge; Álvarez De Toledo, Guillermo; **Alés, Eva** (CA).
TÍTULO: Proteoglycans involved in bidirectional communication between mast cells and hippocampal neurons
JOURNAL: Journal of Neuroinflammation
VOLUME/PAGES/YEAR: 16(1): 107, 2019

AUTHORS: Flores, Juan A.; Balseiro-Gómez, Santiago; **Alés, Eva** (CA)
TÍTULO: Emerging Roles of Granule Recycling in Mast Cell Plasticity and Homeostasis
JOURNAL: Critical Reviews in Immunology
VOLUME/PAGES/YEAR: 36(6): 461-484, 2017

AUTHORS: Balseiro-Gomez, Santiago; Ramirez-Ponce, M. Pilar; Acosta, Jorge; **Ales, Eva*** ; Flores, Juan A*. (*Corresponding authors)
TÍTULO: Intestinal and peritoneal mast cells differ in kinetics of quantal release.
JOURNAL: Biochemical and Biophysical Research Communications
VOLUME/PAGES/YEAR: 469(3):559-564, 2016

AUTHORS: Balseiro-Gomez, Santiago; Flores, Juan A.; Acosta, Jorge; Ramirez-Ponce, M. Pilar; **Ales, Eva** (CA)
TÍTULO: Transient fusion ensures granule replenishment to enable repeated release after IgE-mediated mast cell degranulation
JOURNAL: Journal of Cell Science
VOLUME/PAGES/YEAR: 129(21):3989-4000, 2016

AUTHORS: Balseiro-Gomez, Santiago; Flores, Juan A.; Acosta, Jorge; Ramirez-Ponce, M. Pilar; **Ales, Eva** (CA)
TÍTULO: Identification of a New Exo-Endocytic Mechanism Triggered by Corticotropin-Releasing Hormone in Mast Cells
JOURNAL: Journal of Immunology
VOLUME/PAGES/YEAR: 195(5):2046-2056, 2015

AUTHORS: Flores, Juan A.; Balseiro-Gomez, Santiago; Cabeza, Jose M.; Acosta, Jorge; Ramirez-Ponce, Pilar; **Ales, Eva** (CA)
TÍTULO: A New Role for Myosin II in Vesicle Fission
JOURNAL: Plos One
VOLUME/PAGES/YEAR: 9(6):e100757-e100757, 2014



C.2. Congress

1. Lorenzo Barrella, Juan Antonio Flores, Victoria Vázquez, Marta San Millán-Huang, M^a Dolores Maldonado, Pilar Ramírez-Ponce, Eva Alés. Exploring Ketotifen's impact on Age-Related Neuroinflammation. 4^o Harvard European Alumni Training Network. Universidad de Cádiz. 2024.
2. M^a Dolores Maldonado, Lorenzo Barrella, M^a Pilar Ramírez-Ponce; Juan Antonio Flores, Eva Alés. Effect of the antihistaminic drug ketotifen on microglial response. 45^o Congress of the Spanish Society of Biochemistry and Molecular Biology. Spanish Society of Biochemistry and Molecular Biology. 2023.
3. M^a Dolores Maldonado. M^a Carmen, Juan Ramón Calvo; Juan Antonio Flores, Eva Alés. Melatonin stabilises mast cell activity by a calcium-independent mechanism. 45^o Congress of the Spanish Society of Biochemistry and Molecular Biology. Spanish Society of Biochemistry and Molecular Biology. 2023.
- 4 Juan Antonio Flores; M^a Pilar Ramírez-Ponce; José M^a; Inés; Lucia; Victoria Vázquez, Eva Alés. Role of Mast Cells in Alzheimer's disease. XXI Congreso de la sociedad española de histología e ingeniería tisular, IX International congress of histology and tissue engineering y VIII Congreso iberoamericano de histología. SEHIT. 2022.

C.3. Research projects

REFERENCE: BFU2017-85832-R

TÍTULO: "Papel del mastocito en la activación microglial y función sináptica neuronal. Potencial efecto terapéutico de la estabilización del MC en la enfermedad de Alzheimer"

FUNDING ENTITY: Ministerio de Economía, Industria y Competitividad

DURATION: from January 2018 to September 2021

PRINCIPAL INVESTIGATOR: **Eva Alés**

AMOUNT OF THE GRANT: 96.800 -€

REFERENCE: PI011257

TÍTULO: "Regulación molecular del poro de fusión: implicaciones en la liberación de mediadores de la inflamación"

FUNDING ENTITY: Instituto de Salud Carlos III. Ministerio de Ciencia e Innovación

DURATION: from January 2012 to July 2015

PRINCIPAL INVESTIGATOR: **Eva Alés**

AMOUNT OF THE GRANT: 75.141 -€

REFERENCE: PI081246

TÍTULO: "Regulación de la liberación de neurotransmisores: implicación de canales de calcio y neurotrofinas"

FUNDING ENTITY: Ministerio de Ciencia e Innovación

DURATION: from January 2009 hasta December 2011

PRINCIPAL INVESTIGATOR: **Eva Alés**

AMOUNT OF THE GRANT: 84.579-€

REFERENCE: PP09-CVI-4862

TÍTULO: "Medida de Ca y Liberación de Neurotransmisores Mediante el Uso de Nanopartículas Fluorescentes"

FUNDING ENTITY: Consejería de Innovación, Ciencia y empresas. Junta de Andalucía

DURATION: from february 2010 to february 2013

PRINCIPAL INVESTIGATOR: Guillermo Álvarez de Toledo.

AMOUNT OF THE GRANT: 160.412 -€

TYPE OF PARTICIPATION: Investigator