MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (CVA)

AGENCIA ESTATAL DE INVESTIGACIÓN

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

CV date	5/7/2024

Part A. PERSONAL INFORMATION

First name	Almudena		
Family name	Porras Gallo		
Gender (*)	Female		
[redacted]	[redacted]		
e-mail	maporras@ucm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-6495-3308	

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	July 21, 2017		
Institution	Universidad Complutense de Madrid (UCM)		
Department/Center	Bioquímica y Biología Molecular, F. Farmacia		
Country	Spain	[redacted]	[redacted]
Key words	C3G, cancer, liver, MAPKs, apoptosis, adipocytes		

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

Period	Position/Institution/Country/Interruption cause
2001/11/1-2017/7/20	Professor (Dpt. Biochemistry, UCM)
1992/10/1-2001/10/31	College Professor (Dpt. Biochemistry, UCM)
1990/09/1-1992/9/30	Fullbright postdoctoral fellowship (National Cancer Institute, NIH, USA)
1989/10/1-1992/10/1	LRU Assitant Professor (Dpt. Biochemistry, UCM)
1986-1989	Predoctoral FPU fellowship (Dpt. Biochemistry, UCM)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed in Pharmacy	UCM	1985
PhD in Pharmacy	UCM	1989

(Include all the necessary rows)

Publications in indexed peer review journals: 62 (**49 Q1 (79%)**, **18 D1 (29%)**

H Index: 30 (Research Gate).

Citaciones: **4518** (Research Gate).

Research 6 year-periods: 6 (1987-1992;1993-1998;1999-2004;2005-2010;2011-2016; 2017-2022).

Supervised Thesis: 11 (total), 5 with European or Internacional Mention.

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

Early career. I did my PhD in Biochemistry & Molecular Biology Dpt. (BBM) at UCM. My Thesis was focused on the study of **brown adipose tissue (BAT) embryonic development**. Then, I did a postdoctoral stay at Dr. E. Santos (National Cancer Institute, USA) supported by a Fullbright Fellowship, uncovering **a new function for Ras as a mediator of insulin-induced adipogenesis** (*Benito, Porras et al. (1991)* ***Science*** *253, 565*) and for Raf/ERK pathway, which led to 8 additional publications (*Porras et al. (1992). J. Biol. Chem. 267, 21124; Porras et al. (1994). J. Biol. Chem. 269, 12741,* etc). Then, I return to BBM Dpt. (UCM), where I applied my knowledge in cell signaling **to define the function of MAPKs in BAT** generating several publications, being responsible of the work (e.g. *Valladares..*Porras, A. (2000). Endocrinology 141, 4383; Porras et al., (1998). Mol. Endocrinol. 12, 825; *Porras et al. (2003). Endocrinology. 144(12):5390*). I also did short stays at Dr. A. R. Nebreda´s laboratory (1998-2000) at European Molecular Biology Laboratory (Germany), contributing **to characterize p38αMAPK**

knockout mice phenotype (*Adams, Porras et al. (2000)* ***Mol. Cell*** *6, 109*). My group also developed different studies in collaboration with Dr. Nebreda focused on the **characterization of p38α MAPK function in apoptosis and other cellular processes** *(****Porras*** *et al., (2004). Mol Biol Cell 15, 922; PNAS (2002) 99,12859;* *******Cell Signal. (2007) 19, 62*). I also contributed to write a **relevant review on p38** (*Nebreda, A.R. and* ***Porras, A.*** *(2000)TIBS 25,257 (697 citations)*.

Independent career. Since 2002, I have been the PI of several funded Grants (regional (2), national (7) and international (1) getting in total ≈1.101.500€), initiating my collaboration with Dra. Carmen Guerrero (CIC, Salamanca) in 2005. Our coordinated projects have been focused on **characterizing the function of C3G/p38α crosstalk** in the regulation of apoptosis, adhesion, migration/invasion and tumor growth using several cell and mouse models (*Cell Signal.(2009) 21,1229; Cell Signal.(2010) 22,533; Cell Commun Signal.(2013) 11, 9; BBA Mol Basis Dis. (2013), 1832, 2204; J Biol Chem.(2015) 290,4383*). Our coordinated group is a leader in the study of the **role of C3G in cancer** (e.g. colorectal cancer (CRC) (*Oncotarget (2016) 7, 45060)*, hepatocarcinoma (HCC) (*Cancers (2020) 12, E2282)* and glioblastoma (*Cell Death and Dis.(2021)12, 348)*), **and platelets**, having identified new functions in the **liver** (e.g., in liver progenitor cells (*Int J Biol Sci (2022) 18, 5873*)) and in megakaryocytes and platelets. We have demonstrated that C3G plays a role in platelet hemostasis, activation, aggregation and granule secretion. In addition, we have characterized C3G signaling pathways in platelets, obtaining 2 articles: *BBA Mol Cell Biol (*2012)*1823,1366*; *Signal Transduct Target Ther. (2020) 5,29*. C3G is also relevant for megakaryopoiesis (*Cell Commun Signal. (2018)16,101*) and participates in platelet functions beyond hemostasis, such as ischemia-induced angiogenesis and tumor metastasis through regulation of secretory machinery (*Oncotarget (2017) 8,110994; Front Cell Dev Biol. (2022)10,1026287*). Platelet C3G also regulates platelet levels.

It is also important to mention my collaboration with Dr. Flavio Maina at IBDM (Marseille, France), established years ago after being in his lab for short periods. I contributed to study some of the functions of HGF/Met pathway during embryonic development (*Development (2007)134, 1443*). In addition, in collaboration with him, we generated a conditional heart Met Knockout mouse model to study Met function in this organ (*BBA Mol. Basis Dis. (2013) 1832, 22*04). This collaboration continues for the studies aimed at characterizing C3G function in HCC (*Cancers (2020)12, 2282*) and other liver pathologies. During the last years, I have also maintained a collaboration with Dr. Pancione (Sannio University, Italy) to study different immune aspects of CRC, obtaining 5 publications (*Curr Med Chem. (2017) 24,1383;* *******J Exp Clin Cancer Res. (2019) 38, 28; *Cancers (2019) 11, 1089; Biomolecules (2021) 11, 629; *Cancer Cell Int. (2022) 22, 253*).

I also collaborate in projects leaded by Dr. A. Gutiérrez-Uzquiza and Dra. P. Bragado focused on prostate mestastasis and tumor dormancy, respectively (*Sci Rep.(2021)11,12287*). Additionally, we have a collaboration with physicists (*Sci Rep. (2022)12,7075*) to improve proton therapy for cancer treatment.

I am also committed to train students in early stages of their scientific career. I have directed 11 PhD thesis (5 with International/European Mention) and several Master Projects and Experimental Degree Projects (15 in total). 6 out of 10 doctors have continued their scientific career in prestigious institutions, and 2 in pharmaceutical companies. It is worth mentioning my position as Scientific Secretary of SEBBM (2014-2018), where I coordinated and participated in several actions to disseminate science to society such as European Night of Science.

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

C.1. Publications *(Selected)*

1-Rodrigo-Faus M, Vincelle-Nieto A, Vidal N, Puente J, Saiz-Pardo M, Lopez-Garcia A, Mendiburu-Eliçabe M, Palao N, Baquero C, Linzoain-Agos P, Cuesta AM, Qu HQ, Hakonarson H, Musteanu M, Reyes-Palomares A, **Porras A,** Bragado P, Gutierrez-Uzquiza A **(16/18).** (2024). CRISPR/Cas9 screenings unearth protein arginine methyltransferase 7 as a novel essential gene in prostate cancer metastasis. *Cancer Lett* 588:216776.

2-Martin-Morales L; Manzano S; Rodrigo-Faus M; Vicente Barrueco A; Lorca V; Núñez-Moreno G; Bragado P; **Porras A**; Caldés T; Garre P; Gutierrez-Uzquiza A. **(8/11)** (2023) Germline gain-of-function MMP11 variant results in an aggressive form of colorectal cancer. **Int J Cancer.** 152(2):283-297. doi: 10.1002/ijc.34289. IF: 7.316 Q1

3-Palao N, Sequera C, Cuesta AM, Baquero C, Bragado P, Gutierrez-Uzquiza A, Sánchez A, Guerrero C*, **Porras A* (9/9)**. (2022). C3G down-regulation enhances pro-migratory and stemness properties of oval cells by promoting an epithelial-mesenchymal-like process. *Int. J. Biol. Sci.* 18:5873-5884.
4- Hernández-Cano L, Fernández-Infante C, Herranz Ó, Berrocal P, Lozano FS, Sánchez-Martín MA, **Porras A***, Guerrero C*. **(7/8)** (2022). New functions of C3G in platelet biology: Contribution to ischemia-induced angiogenesis, tumor metastasis and TPO clearance. *Front Cell Dev Biol.* 10:1026287.
5-Manzano S, Gutiérrez-Uzquiza A, Bragado P, Sequera C, Herranz O, Rodrigo-Faus M, Jauregui P, Morgner S, Rubio I, Guerrero C*, **Porras A*** **(11/11)**. (2021). C3G downregulation induces the acquisition of a mesenchymal phenotype that enhances aggressiveness of glioblastoma cells. *Cell Death Dis* 12(4):348.
6-Sequera C, Bragado P, Manzano S, Arechederra M, Richelme S, Gutiérrez-Uzquiza A, Sánchez A, Maina F, Guerrero C*, **Porras A*** **(10/10)**. (2020). C3G is Upregulated in Hepatocarcinoma, Contributing to Tumor Growth and Progression and to HGF/MET Pathway Activation. *Cancers* 12(8): 2282.
7-Gutiérrez-Herrero S, Fernández-Infante C, Hernández-Cano L, Ortiz-Rivero S, Guijas C, Martín-Granado V, González-Porras JR, Balsinde J, **Porras A***, Guerrero C* **(9/10)**. (2020) C3G contributes to platelet activation and aggregation by regulating major signaling pathways. *Signal Transduct. Target. Ther.* 5(1):29.
8-Giordano G, Parcesepe P, Rosario D'Andrea M, Coppola L, Di Raimo T, Remo A, Manfrin E, Fiorini C, Scarpa A, Amoreo CA, Conciatori F, Milella M, Caruso FP, Cerulo L, **Porras A*** and Pancione M* **(15/16)**. (2019) JAK/Stat5-mediated subtype-specific lymphocyte antigen 6 complex, locus G6D (LY6G6D) expression drives mismatch repair proficient colorectal cancer. *Journal of Experimental & Clinical Cancer Research.* 38(1):28.
9-Sequera C, Vázquez-Carballo A, Arechederra M, Fernández-Veledo S, **Porras A* (5/5)**. (2018).TWEAK promotes migration and invasion in MEFs through a mechanism dependent on ERKs activation and Fibulin 3 down-regulation. *J Cell Physiol.* 233(2): 968-978.
10-Priego, N., Arechederra, M., Sequera, C., Bragado, P., Vázquez, A., Gutiérrez-Uzquiza, A., Martín-Granado, V., Ventura, JJ., Kazanietz, M., Guerrero, C*. and **Porras, A* (11/11)**. (2016). C3G knock-down enhances migration and invasion by increasing Rap1-mediated p38α activation, while it impairs tumor growth through p38α-independent mechanisms. *Oncotarget* 7:45060-45078.
11-Arechederra M, Priego N, Vázquez-Carballo A, Sequera C, Gutiérrez-Uzquiza Á, Cerezo-Guisado MI, Ortiz-Rivero S, Roncero C, Cuenda A, Guerrero C*, **Porras, A* (11/11).** (2015). P38 MAPK down-regulates Fibulin 3 Expression through Methylation of Gene Regulatory Sequences: ROLE IN MIGRATION AND INVASION. *J Biol Chem.* 290(7):4383-4397.
12-Gutierrez-Uzquiza A, Arechederra M, Bragado P, Aguirre-Ghiso JA, **Porras A* (5/5).** (2012). p38[alpha]mediates cell survival in response to oxidative stress via induction of antioxidant genes. Effect on the p70S6K pathway. *J Biol Chem.* 287: 2632-2642.
***Corresponding author**

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1-Dual role of p38α MAPK in cell death. **Almudena Porras** (Invited speaker). International Cell Death Society. Fuengirola (Málaga). June 6-9 2013.
2-C3G down-regulation in glioblastoma induces a pro-invasive and glycolytic phenotype, accompanied by RTKs dysregulation. Manzano S, Herranz Ó, Bragado P, Jáuregui P, Rodrigo-Faus M, Sequera C, Baquero C, Palao N, Rubio I, Gutiérrez-Uzquiza Á, Guerrero C, **Porras A**.; AACR Annual Meeting 2021 (International); Philadelphia. April 2021. Cancer Res. DOI: 10.1158/1538-7445.AM2021-1974. Oral presentation (selected from Posters).
3-"Role of C3G in liver development and progenitor cell biology". VII workshop on mechanisms of cell adhesion, migration and invasion. Palao, N; Baquero, C; Sequera, C; Bragado, P; Gutierrez-Uzquiza, A; Cuesta, A; Sánchez, A; Guerrero, C; **Porras, A**. SEBC (National). Madrid. 2021. Oral presentation.
4-C3G in Glioblastoma: role in invasion, tumourigenesis and cell signalling. Manzano, S., Herranz, Ó., Bragado, P., Jauregui, P., Sequera, C., Baquero, C., Palao, N., Gutiérrez-

Uzquiza, Á., Guerrero, C. and **Porras, A**. 42 SEBBM Meeting (National). Madrid 2019. Oral presentation (selected from posters).
5-Role played by p38αMAPK and C3G in migration and invasion in normal and tumoral cells: Fibulin3 as a potential target. Arechederra, M., Priego, N., Vázquez-Carballo, A., Gutierrez-Uzquiza, A., Bragado, P., Gutierrez-Herrero, S., Guerrero C., **Porras, A.** Cell adhesion, migration and invasion Meeting (SEBC). Internacional Meeting. Aiguablava. November 2012.
6-Dual role of C3G in hepatocarcinoma tumor growth and progression. Implication in the HGF/c-Met signaling pathway. Sequera, C., Manzano, S., Arechederra, M., Bragado, P., Baquero, C., Palao, N., Hernández Cano L., Guerrero, C. and **Porras, A**. HCC Summit on Liver tumours. EASL meeting (International). Lisboa. February 2019. Poster.
7-Dual effects of C3G in the tumorigenic capacity of human hepatocarcinoma cells. Sequera, C., Manzano, S., Arechederra, M., Bragado, P., Baquero, C., Palao, N., Guerrero, C. and **Porras, A.** EASL HCC SUMMIT (International) Geneva. February 2017. Poster.
8-Dissecting the function of C3G in Glioblastoma: going from the U87 cell line to patient-derived cells. Manzano, S., Sequera, C., Baquero, C., Palao, N., Arechederra, M., Guerrero, C. and **Porras, A.** Young Scientific Forum (YSF) and The 43th FEBS Congress (International), Praga. July 2018. Poster.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

- Understanding how C3G regulates liver and cancer metabolism, and its impact on tumor microenvironment. Identification of mediators of platelet C3G effect on liver cancer. **PID2022-137717OB-C21.** Coordinated project. 01/09/2023-31/08/2026. **PI1 and coordinator : Almudena Porras Gallo (co-PI Angel Cuesta Martínez).** 243.750€

-Advanced Strategies and new Approaches for Protontherapy (ASAP-CM). Community of Madrid, Programas de actividades de I+D entre grupos de investigación de la Comunidad de Madrid en Biomedicina 2022. **P2022/BMD-7434.** Coordinator (8 groups): L.M. Fraile; PI of one group: **Almudena Porras Gallo**. 2023-2027. 824.000€ (A. Porras Group: 91.665€)

-Understanding FLASH radiotherapy with tissue-on-chip devices and hyperpolarisation-enhanced magnetic resonance: FLASHonChip. **PLEC2022-009256**. *AEI: Ayudas a proyectos en líneas estratégicas del plan estatal de investigación científica, técnica y de innovación 2021-2023, en el marco del plan de recuperación, transformación y resiliencia, 2022*. Coordinator (5 groups): I. Marco-Rius; PI of one group (IdISSC): **Almudena Porras Gallo**. December 2022-December 2025. 1.413.049,55€ (A. Porras group: 173.072€).

-New functions of C3G in tumor progression and liver physiology. Implication of platelet C3G in liver damage response. **PID2019-104143-RB-C22**. Coordinated project. 01/07/2020-30/6/2023. PI: **Almudena Porras Gallo**. 121.000€

-Function of C3G during tumoral development and in liver pathophysiology. Implication of platelet C3G in angiogenesis and liver and cardiovascular diseases. **SAF-2016-76588-C2-1-R** Coordinated project with Dra. Guerrero´s (CIC,Salamanca). 2017-2020. PI/Coordinator**: Almudena Porras.** 121.000€

-In vitro and in vivo analysis of C3G function in different cell types and its impact on cardiovascular diseases and metastasis. **SAF-2013-48210-C02-02** Coordinated project with Dra. Guerrero´s (CIC,Salamanca). 2014-2016. PI: **Almudena Porras Gallo.** 133.100€

-Analysis of the functional interaction between C3G and p38α MAPK incell adhesion and migration, and its impact on tumor invasion. Role of angiogenesis. **SAF-2010-20918-C02-01** Coordinated project with Dra. Guerrero´s (CIC,Salamanca). 2011-2013. PI and coordinator**: Almudena Porras Gallo.** 114.950€

-Molecular mechanisms involved in the regulation of apoptosis and cell adhesion by C3G/p38MAPK pathway. Immplication in tumor processes. **FIS PI070071-** Coordinated project with Dra. Guerrero´s (CIC,Salamanca). 2008-2010. PI and Coordinator**: Almudena Porras Gallo.** 178.600€

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

Fecha del CVA	8. jul. 2024

Parte A. DATOS PERSONALES

Nombre y apellidos	Luis del Peso Ovalle		
[redacted]	[redacted]	[redacted]	[redacted]
Núm. identificación del investigador		Researcher ID	K-9391-2014
		Código Orcid	0000-0003-4014-5688

A.1. Situación profesional actual

Organismo	Universidad Autónoma de Madrid		
Dpto./Centro	Departamento de Bioquímica		
Dirección	C/Arturo Duperier, 4. Madrid 28029		
[redacted]	[redacted]	correo electrónico	luis.peso@uam.es
Categoría profesional	Catedrático Universidad	Fecha inicio	22 Nov. 2021
Espec. cód. UNESCO	2403, 240993,240999 (genómica),240999 (transcripción), 2415, 2499(bioinformática), 240499 (bioinformática) , 230204		
Palabras clave	Hypoxia, transcription, HIF, bioinformatics, genomics		

A.2. Formación académica *(título, institución, fecha)*

Licenciatura/Grado/Doctorado	Universidad	Año
Máster en bioinformática y biología computacional	Universidad Complutense de Madrid	2006
Doctor en Ciencias	Universidad Autónoma de Madrid	1996
Licenciatura en Biología	Universidad Autónoma de Madrid	1991

A.3. Indicadores generales de calidad de la producción científica (véanse instrucciones)

Accredited research periods ("sexenios"): 5; 1992-1997, 1998-2003, 2004-2009, 2010 – 2015, 2016-2021 (last one awarded on 3 may 2022)
Doctoral thesis: **10** (3 con European mention, 1 Industrial Doctorate), **1** in progress
Total number of citations: **5444** (Web of Science) **/ 9661** (Google Scholar)
Publications: **67**
Research articles: **57**
Research articles as main author (first, last): **26**
Research articles as senior author (first and/or corresponding): **20**
Mean citations per year (Publons/ResearcherID): **200**
Mean citations per article (PublonsResearcherID): **86**
First quartile publications (Q1): **35/44**
h-index: **33** (Web of Science) **/ 41** (Google Scholar)
Google Scholar Public profile:
http://scholar.google.es/citations?user=TMkHSKsAAAAJ&hl=en
Web ofScience/Publons/ResearcherID public profile:
http://www.researcherid.com/rid/K-9391-2014
https://publons.com/researcher/2490083/luis-del-peso/

Parte B. RESUMEN LIBRE DEL CURRÍCULUM *(máximo 3500 caracteres, incluyendo espacios en blanco)*

I graduated in 1991 from Universidad Autónoma de Madrid with a B.Sc. in Biology, majoring in Biochemistry and Molecular Biology. Early in my career, I focused on the signal transduction pathways controlling cell proliferation and apoptosis. My Ph.D. (1991-1996) at Instituto de Investigaciones Biomedicas, CSIC, under Dr. Juan Carlos Lacal, focused on ras family proteins in cell proliferation, leading to significant publications on rho proteins in cancer metastasis. During my postdoctoral training (1996-1999) in Dr. Nunez's lab at the University of Michigan, I led seminal work that uncovered the central role of the PI3K/Akt/BAD axis in the regulation of apoptosis by extracellular signals. Subsequent work identified the transcription factor FKHR as an additional target of this pathway, shifting my focus to transcription regulation by environmental signals.

In 2000, I established my own research group at the Hospital de La Princesa, concentrating on the biology of hypoxia. Our initial studies analyzed the effect of hypoxia on apoptosis and determined the role of the PI3K/Akt pathway in the regulation of Hypoxia-Inducible Factors (HIFs). We advanced to computational prediction of HIF-binding sites, discovering the hypoxia-response element on EGLN3, a key oxygen sensor gene.

In 2003, I obtained a position as an associate professor in the Department of Biochemistry at Universidad Autónoma de Madrid (UAM) and moved my research team to the Instituto de Investigaciones Biomedicas UAM-CSIC, continuing our work on hypoxia biology. Recognizing the importance of computational biology, I completed a Master's in Bioinformatics and Computational Biology at Universidad Complutense de Madrid in 2005. Since then, combining computational and experimental methods, we have identified numerous HIF-target genes and novel hypoxia-regulated pathways.

From 2011-2012, I spent a sabbatical year as a visiting professor in Dr. Wyeth W. Wasserman's lab at the University of British Columbia, enhancing my expertise in bioinformatic and computational tools applied to the study of the genomics of hypoxia adaptation. This experience has shaped my current research on transcriptional adaptations in respiratory and metabolic diseases and cancer. It also allowed me to be actively involved in the development of the Master's degree in Bioinformatics and Computational Biology offered by UAM.

Throughout my career, I have published over 60 peer-reviewed papers, accumulating over 9,000 citations. I have mentored 10 predoctoral fellows, many of whom now lead independent research careers or academic departments globally. Additionally, I am actively involved in teaching undergraduate and postgraduate courses in computational biology at UAM, where I hold a full professor position since 2021.

Parte C. MÉRITOS MÁS RELEVANTES *(ordenados por tipología)*

C.1. Publicaciones (solo publicaciones en 2010-2020 como último/correspondencia)

1. Puente-Santamaría L, Del Peso L. SinglePointRNA, an user-friendly application implementing single cell RNA-seq analysis software. PLoS One. 2024 Jun 18;19(6):e0300567.
2. Puente-Santamaria L, Sanchez-Gonzalez L, Pescador N, Martinez-Costa O, Ramos-Ruiz R, Del Peso L. Formal Meta-Analysis of Hypoxic Gene Expression Profiles Reveals a Universal Gene Signature. Biomedicines. 2022 Sep 8;10(9):2229. PMID: 36140330 . DOI: 10.3390/biomedicines10092229
3. Puente-Santamaría L, Sanchez-Gonzalez L, Ramos-Ruiz R, Del Peso L. Hypoxia classifier for transcriptome datasets. BMC Bioinformatics. 2022 May23(1):204. PMID: 35641902. DOI: 0.1186/s12859-022-04741-8.
4. Tiana M, Acosta-Iborra B, Hernández R, Galiana C, Fernández-Moreno MÁ,Jimenez B, Del Peso L. Metabolic labeling of RNA uncovers the contribution oftranscription and decay rates on hypoxia-induced changes in RNA levels. RNA.2020 Aug;26(8):1006-1022. PMID: 3229586. DOI: 10.1261/RNA.072611.119
5. Acosta-Iborra B, Tiana M, Maeso-Alonso L, Hernández-Sierra R, Herranz G,Santamaria A, Rey C, Luna R, Puente-Santamaria L, Marques MM, Marin MC, Del PesoL, Jiménez B. Hypoxia compensates cell cycle arrest with progenitordifferentiation during angiogenesis. FASEB J. 2020 May;34(5):6654-6674. PMID: 32223018. DOI: 10.1096/FJ.201903082R
6. Puente-Santamaria L, Wasserman WW, Del Peso L. TFEA.ChIP: a tool kit fortranscription factor binding site enrichment analysis capitalizing on ChIP-seqdatasets. Bioinformatics. 2019 Dec 15;35(24):5339-5340. doi:10.1093/bioinformatics/btz573. PMID: 31347689. DOI: 10.1093/BIOINFORMATICS/BTZ573
7. Tiana M, Acosta-Iborra B, Puente-Santamaría L, Hernansanz-Agustin P, Worsley-Hunt R, Masson N, García-Rio F, Mole D, Ratcliffe P, Wasserman WW, Jimenez B,Del Peso L. The

SIN3A histone deacetylase complex is required for a completetranscriptional response to hypoxia. Nucleic Acids Res. 2018 Jan9;46(1):120-133.PMID: 29059365; DOI: 10.1093/NAR/GKX951

8. Roche O, Deguiz ML, Tiana M, Galiana-Ribote C, Martinez-Alcazar D, Rey-SerraC, Ranz-Ribeiro B, Casitas R, Galera R, Fernández-Navarro I, Sánchez-Cuéllar S,Bernard V, Ancochea J, Wasserman WW, García-Rio F, Jimenez B, Del Peso L.Identification of non-coding genetic variants in samples from hypoxemicrespiratory disease patients that affect the transcriptional response tohypoxia. Nucleic Acids Res. 2016 Nov 2;44(19):9315-9330. PMID: 27625398; DOI: 10.1093/NAR/GKW811
9. Jiménez B, Tiana M, Del Peso L. lnc RNAs, hypoxia and metastasis.Oncoscience. 2015 Sep 23;2(10):795-6. PMID:26682249 DOI: 10.18632/ONCOSCIENCE.247
10. Gómez-Maldonado L, Tiana M, Roche O, Prado-Cabrero A, Jensen L, Fernandez-Barral A, Guijarro-Muñoz I, Favaro E, Moreno-Bueno G, Sanz L, Aragones J, HarrisA, Volpert O, Jimenez B, del Peso L. EFNA3 long noncoding RNAs induced byhypoxia promote metastatic dissemination. Oncogene. 2015 May 14;34(20):2609-20.PMID: 25023702. DOI: 10.1038/ONC.2014.200
11. Villar D, Ortiz-Barahona A, Gómez-Maldonado L, Pescador N, Sánchez-Cabo F,Hackl H, Rodriguez BA, Trajanoski Z, Dopazo A, Huang TH, Yan PS, Del Peso L.Cooperativity of stress-responsive transcription factors in core hypoxia-inducible factor binding regions. PLoS One. 2012;7(9):e45708. doi:10.1371/journal.pone.0045708. Epub 2012 Sep 24. PMID: 23029193; DOI: 10.1371/JOURNAL.PONE.0045708
12. Tiana M, Villar D, Pérez-Guijarro E, Gómez-Maldonado L, Moltó E, Fernández-Miñán A, Gómez-Skarmeta JL, Montoliu L, del Peso L. A role for insulator elements in the regulation of gene expression response to hypoxia. Nucleic AcidsRes. 2012 Mar;40(5):1916-27. PMID:22067454. DOI: 10.1093/NAR/GKR842
13. B Martinez-Poveda , V Gomez, M Alcaide-German, S Perruca, S Vazquez, L E Alba, O Casanovas, M L Garcia-Bermejo, **L Peso**, B Jimenez. Non-invasive monitoring of hypoxia-inducible factor activation by optical imaging during antiangiogenic treatment in a xenograft model of ovarian carcinoma. Int J Oncol. 2011 Sep;39(3):543-52. PMID: 21667025. DOI: 10.3892/ijo.2011.1074
14. Pescador N, Villar D, Cifuentes D, Garcia-Rocha M, Ortiz-Barahona A, VazquezS, Ordoñez A, Cuevas Y, Saez-Morales D, Garcia-Bermejo ML, Landazuri MO,Guinovart J, del Peso L. Hypoxia promotes glycogen accumulation through hypoxiainducible factor (HIF)-mediated induction of glycogen synthase 1. PLoS One. 2010Mar 12;5(3):e9644. PMID: 20300197. DOI: 10.1371/JOURNAL.PONE.0009644
15. Ortiz-Barahona A, Villar D, Pescador N, Amigo J, del Peso L. Genome-wideidentification of hypoxia-inducible factor binding sites and target genes by aprobabilistic model integrating transcription-profiling data and in silicobinding site prediction. Nucleic Acids Res. 2010 Apr;38(7):2332-45. PMID: 20061373. DOI: 10.1093/NAR/GKP1205

C.2. Proyectos (periodo 2010-2020)

1. Identification of Mechanisms, biomarkers and interventions to prevent comorbilities in hypoxemic respiratory diseases by means of preclinic, clinic and computational approaches. CAM P2022/ BMD-7224. 01/01/23-12/31/27. 786.000 euros (Red). IP nodo: Luis del Peso
2. *Contribution of BHLHE40 to the transcriptional response to hypoxia and its implication in metabolic and respiratory diseases*. MICCIN PID2020-118821RB-I00. 1 sep 2022-31 ago 2025. 242000 euros. IP: Luis del Peso Ovalle
3. I*mplementation of pipelines for the analysis of next generation sequencing techniques*. CAM IND2019/BMD-17134. 1 febrero 2020-31 enero 2022. 96422 euros. IP: Luis del Peso Ovalle
4. *Hypoxia and angiogenesis: basic mechanisms in physiology and disease*. MINECO SAF2017-88771-R. 1 enero 2018-31 diciembre 2020. 200000 euros. IP: Luis del Peso Ovalle
5. *Genomic, Bioinformatic and Functional study of the role of hypoxia in angiogenesis and von Hippel-Lindau syndrome*. MINECO SAF2014-53819-R. 1 enero 2015-31 diciembre 2017. 230000 euros.IP: Luis del Peso Ovalle
6. *Regulation of gene expression by Hypoxia*. MiCIIN SAF2011-24225. 1 enero 2012-31 diciembre 2014.. 228.690 euros. IP: Luis del Peso Ovalle

7. *Inflammation and hypoxia: role in COPD and SAHS*. CAM S2010/BMD-2542. 1 enero 2012-31 diciembre 2015.. 753.750 euros (Red). IP nodo: Luis del Peso Ovalle (coordinador de la red Francisco José García del Río)

C.3 Dirección de tesis [(*) "European Doctorate"; (**) "Industrial Doctorate"]

2023	Laura Puente	Implementation and development of data analysis techniques for high throughput sequencing technologies **(**)**
2016	Maria Tiana	Mechanisms underlying gene repression in hypoxia **(*)**
2015	Laura Deguiz	Characterization of non-coding polymorphisms affecting the trancriptional response to hypoxia
2013	Laura Gómez	Regulation of EFNA3 expression by hypoxia through a novel lncRNA-mediated mechanism. A potential role in cancer metastasis **(*)**
2010	Amaya Ortíz	Computational identification ofnovel HIF-target genes
2010	Diego Villar	The role of binding selectivity within the HIF pathway**(*)**
2009	María L. Alcaide	A yeast three hybrid system to screen for small-molecule inhibitors of the HIF pathway
2007	Nuria Pescador	Identification of cis-regulatory elements in the EGLN3 locus
2006	Yolanda Cuevas	Development of a conditionally-replicative adenovirus to target tumors with elevated HIF activity
2006	Salvador Naranjo	Regulation of Hypoxia Inducible Factor 2 by NGF and effect of hypoxia on PC12 cell viability

C.4 Experiencia en gestión I+D+i

1. 2018-19 Experto en la comisión técnica para la valoración de proyectos de I+D+i del Programa Estatal de Innovación Científica
2. 2018 Adjunto de las Comisiones Técnicas de Evaluación del ISCiii
3. 2015 Experto en la comisión técnica para la valoración de proyectos de I+D+i del Programa Estatal de Innovación Científica
4. 2014 Experto en la comisión técnica para la valoración de proyectos de I+D+i del Programa Estatal de Innovación Científica
5. Evaluador ANEP desde 2006

Fecha del CVA	05/09/2024

Parte A. DATOS PERSONALES

Nombre *	Jose Manuel		
Apellidos *	Fuentes Rodriguez		
Sexo *	Hombre		
URL Web	www.grupo-park.org		
Dirección Email	jfuentes@unex.es		
Identificador científico	Open Researcher and Contributor ID (ORCID) *	0000-0001-6910-2089	
	Researcher ID	H-9490-2014	
	Scopus Author ID	7201832530	

* Obligatorio

A.1. Situación profesional actual

Puesto	Catedratico de Universidad		
Fecha inicio	2019		
Organismo / Institución	Universidad de Extremadura		
Departamento / Centro	Bioquimica y Biologia Molecular y Genetica / Facultad de Enfermería y Terapia Ocupacional		
País			
Palabras clave	Toxicología; Mecanismos moleculares de enfermedad; Cultivo celular; Genética médica		

A.4. Indicadores generales de calidad de la producción científica

Sexenios: 6 (último a 31/12/2022) . Incluye sexenio de transferencia a fecha 31/12/2018 Tesis doctorales : 26. Trabajos Fin de Master: 9. Trabajos Fin de Grado, DEAs: Mas de 50

Link a Tesis desde 2013.
http://dehesa.unex.es/handle/10662/27/browse?type=author&authority=58ccf308-fe41-40a0-b239-eac316f22c1d&sort_by=2&order=DESC&rpp=20&etal=0&submit_browse=Actualiza

Bibliometria SCOPUS: Citas totales: 15000 ; h-index: 35

Bibliometria Google Scholar: Citas totales: 20700 ; h-index:41

Bibliometria WOS: Citas totales: 15000; h-index: 36

Patentes:2

Premio Extraordinario de Licenciatura. Premio Extraordinario de Doctorado Premio Regional de Investigación en Ciencias de la Salud. Premio a la Excelencia Docente . Premio a la Trayectoria Investigadora de Excelencia. Premio a la Trayectoria Docente de Excelencia

Parte C. MÉRITOS MÁS RELEVANTES C.1. Publicaciones
AC: Autor de correspondencia; (n° x / n° y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 Artículo científico. Niso-Santano, Mireia; Fuentes, José M.; Galluzzi, Lorenzo. 2024. Immunological aspects of central neurodegeneration. Cell Discovery. 10-1, pp.41. https://doi.org/10.1038/s41421-024-00666-z
2 Artículo científico. Fuentes, José M.; Morcillo, Patricia. 2024. The Role of Cardiolipin in Mitochondrial Function and Neurodegenerative Diseases. Cells. MDPI. 13-7, pp.609.
3 Artículo científico. Ramírez-Pardo, Ignacio; Villarejo-Zori, Beatriz; Jiménez-Loygorri, Juan Ignacio; et al; Boya, Patricia. 2023. Ambra1 haploinsufficiency in CD1 mice results in metabolic alterations and exacerbates age-associated retinal degeneration. Autophagy. 19-3, pp.784 – 804-784 – 804.
4 Artículo científico. Corral Nieto, Yaiza; Yakhine-Diop, Sokhna M. S.; Moreno-Cruz, Paula; et al; Bravo-San Pedro, José M.2023. Changes in Liver Lipidomic Profile in G2019S-LRRK2 Mouse Model of Parkinson's Disease. Cells. 12-5.
5 Artículo científico. Giménez-Bejarano, Alberto; Alegre-Cortés, Eva; Yakhine-Diop, Sokhna M. S.; Gómez-Suaga, Patricia; Fuentes, José M.2023. Mitochondrial Dysfunction in Repeat Expansion Diseases. Antioxidants. 12-8.
6 Artículo científico. Martínez-Chacón, Guadalupe; Paredes-Barquero, Marta; Yakhine-Diop, Sokhna M.S; et al; Niso-Santano, Mireia. 2023. Neuroprotective properties of queen bee acid by autophagy induction. Cell Biology and Toxicology. 39-3, pp.751 – 770-751 – 770.
7 Artículo científico. Uribe-Carretero, Elisabet; Martinez-Chacon, Guadalupe; Yakhine-Diop, Sokhna M. S.; et al; Niso-Santano, Mireia. 2022. Loss of KEAP1 Causes an Accumulation of Nondegradative Organelles. ANTIOXIDANTS. 11. WOS (1) https://doi.org/10.3390/antiox11071398
8 Artículo científico. Alarcon-Gil, Jesus; Sierra-Magro, Ana; Morales-Garcia, Jose A.; et al; Perez-Castillo, Ana. 2022. Neuroprotective and Anti-Inflammatory Effects of Linoleic Acid in Models of Parkinson's Disease: The Implication of Lipid Droplets and Lipophagy. CELLS. 11. https://doi.org/10.3390/cells11152297
9 Artículo científico. Yakhine-Diop, Sokhna M. S.; Rodríguez-Arribas, Mario; Canales-Cortés, Saray; et al; González-Polo, Rosa A.2022. The parkinsonian LRRK2 R1441G mutation shows macroautophagy-mitophagy dysregulation concomitant with endoplasmic reticulum stress. Cell Biology and Toxicology. 38-5, pp.889 – 911-889 – 911.
10 Artículo científico. Yakhine-Diop, Sokhna M. S.; Morales-Garcia, Jose A.; Niso-Santano, Mireia; et al; Fuentes, Jose M.2020. Metabolic alterations in plasma from patients with familial and idiopathic Parkinson's disease. AGING-US. 12-17, pp.16690-16708. ISSN 1945-4589.
11 Artículo científico. Eva Alegre-Cortés; Alicia Muriel-González; Saray Canales-Cortés; et al; Sokhna M.S Yakhine-Diop. 2020. Toxicity of Necrostatin-1 in Parkinson's Disease Models. Antioxidants. MDPI. 9-6, pp.524. ISSN 2076-3921.
12 Artículo científico. Yakhine-Diop, Sokhna M. S.; Rodríguez-Arribas, Mario; Martínez-Chacón, Guadalupe; et al; Fuentes, José M.2018.

Acetylome in Human Fibroblasts From Parkinson's Disease Patients. Frontiers in Cellular Neuroscience. 12, pp.97-97. ISSN 1662-5102.

13 Artículo científico. García-Sanz, P.; Orgaz, L.; Fuentes, J.M.; Vicario, C.; Moratalla, R.2018. Cholesterol and multilamellar bodies: Lysosomal dysfunction in GBA-Parkinson disease. Autophagy. 14-4, pp.717-718. ISSN 1554-8627.

14 Artículo científico. Yakhine-Diop, S.M.S.; Niso-Santano, M.; Rodríguez-Arribas, M.; et al; Fuentes, J.M.2018. Impaired Mitophagy and Protein Acetylation Levels in Fibroblasts from Parkinson's Disease Patients. Molecular Neurobiology.

15 Artículo científico. Yakhine-Diop, Sokhna M. S.; Bravo-San Pedro, Jose M.; Gomez-Sanchez, Ruben; et al; Fuentes, Jose M.2014. G2019S LRRK2 mutant fibroblasts from Parkinson's disease patients show increased sensitivity to neurotoxin 1-methyl-4-phenylpyridinium dependent of autophagy. TOXICOLOGY. 324, pp.1-9. ISSN 0300-483X.

16 Artículo científico. Gomez-Sanchez, Ruben; Gegg, Matthew E.; Bravo-San Pedro, Jose M.; et al; Schapira, Anthony H. V.2014. Mitochondrial impairment increases FL-PINK1 levels by calcium-dependent gene expression. NEUROBIOLOGY OF DISEASE. 62, pp.426-440. ISSN 0969-9961.

17 Artículo científico. Bravo-San Pedro, Jose M.; Niso-Santano, Mireia; Gomez-Sanchez, Ruben; et al; Fuentes, Jose M.2013. The LRRK2 G2019S mutant exacerbates basal autophagy through activation of the MEK/ERK pathway. CELLULAR AND MOLECULAR LIFE SCIENCES. 70-1, pp.121-136. ISSN 1420-682X.

18 Artículo científico. Bravo-San Pedro, Jose M.; Gomez-Sanchez, Ruben; Niso-Santano, Mireia; et al; Fuentes, Jose M.2012. The MAPK1/3 pathway is essential for the deregulation of autophagy observed in G2019S LRRK2 mutant fibroblasts. AUTOPHAGY. 8-10, pp.1537-1539. ISSN 1554-8627. SCOPUS (3)

19 Artículo científico. Pizarro-Estrella, E.; Niso-Santano, M.; Bravo-San Pedro, J. M.; et al; Fuentes, J. M.2012. Study of the involvement of DJ-1 in autophagy. Importance of the Nrf2/Keap1 axis. FEBS JOURNAL. 279-1, SI, pp.201-201. ISSN 1742-464X.

20 Artículo científico. Criollo, Alfredo; Niso-Santano, Mireia; Malik, Shoaib Ahmad; et al; Kroemer, Guido. 2011. Inhibition of autophagy by TAB2 and TAB3. EMBO JOURNAL. 30-24, pp.4908-4920. ISSN 0261-4189.

21 Libro o monografía científica. Martínez-Chacón, Guadalupe; Yakhine-Diop, Sokhna M. S.; González-Polo, Rosa A.; Bravo-San Pedro, José M.; Pizarro-Estrella, Elisa; Niso-Santano, Mireia; Fuentes, José M.2023. Links Between Paraquat and Parkinson's Disease. Handbook of Neurotoxicity, Second Edition. 2, pp.1469 – 1487-1469 – 1487.

C.3. Proyectos y Contratos

1 Proyecto. PID2022-138854OB-I00, AUTOFAGIA Y METABOLISMO MITOCONDRIAL EN NEURODEGENERACIÓN. MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES. NIso Santano Santano. (Universidad de Extremadura). 01/10/202331/08/2026. 137.500 €. Miembro de equipo.

2 Proyecto. Papel de la autofagia en la neuroprotección mediada por compuestos bioactivos de cascabullo de bellota. Rosa A. González-Polo. (Universidad de Extremadura). 01/01/2022-31/12/2024. 164.802 €. Miembro de equipo.

3 Proyecto. 2020/1, CIBER-CALS: a CIBERned drug discovery network to test Calcium modulators as treatment for ALS. CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED). (CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED)). 01/01/2021-21/12/2022. 275.000 €. Miembro de equipo.

4 Proyecto. Título del proyecto o contrato: Rol del sistema autofágico-lisosomal en la neuroprotección mediada por la fracción lipídica de la jalea real en modelos de la enfermedad de Parkinson Entidad financiadora: Junta de Extremadura. Junta de Extremadura. Jose M Fuentes. (Universidad de Extremadura). 01/02/201930/12/2021. 149.975 €.

5 Proyecto. Rol patogénico de la disfunción autofágica/lisosomal en enfermedades neuromusculares. FUNDACION ISABEL GEMIO. (Universidad de Extremadura). 15/02/2018-15/12/2021. 150.000 €.

6 ProyectoPI15/00034, . Alteraciondpesmlrfeil taból ncod ucidpmaosur tacionpeast ogénicLdaResR cKo2mb i marcadeolnrdaefe es r meddaed
Parkinson. Instituto de Salud Carlos III. (Universidad de Extremadura). 01/01/201631/12/2018. 98.615 €. Investigador principal.

7 Proyecto. 2015/03, Perfiles metabólicos diferenciales en enfermedad de Parkinson. CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED). Jose M Fuentes. (CIBER ENFERMEDADES NEURODEGENERATIVAS (CIBERNED)). 01/10/2015-30/09/2017. 105.000 €. Investigador principal.

C.4. Actividades de transferencia y explotación de resultados

1 JOSÉ MANUEL FUENTES RODRÍGUEZ; Antonio Gragera; Alejandro Cristo; ELISA PIZARRO ESTRELLA; RUBEN GOMEZ SANCHEZ; JOSE MARÍA BRAVO SANPEDRO; MARIO RODRIGUEZ ARRIBAS; MIREIA NISO SANTANO; Sokhna MS Yakhine Diop; RAQUEL RONCO BARRANTES; Guadalupe Martinez Chacón; MARÍA PURA DELGADO LUCEÑO; ROSA ANA GONZALEZ POLO. CC-0109-20. IFDOTMETER
España. 24/07/2013.

2 José M Moran; José M Fuentes. P200930533. Procedimiento de obtención de un dispositivo para diagnóstico de mutaciones frecuentes de la proteína LRRK2 basado en PCR en tiempo real. España. 29/09/2009. Universidad de Extremadura/FUNDESALUD.

UNIVERSIDAD COMPLUTENSE MADRID

CURRICULUM VITAE ABREVIADO ÚLTIMOS 5 AÑOS (EXTENSIÓN MÁXIMA 4 PÁGINAS)

Fecha del CVA	Mayo-2024

Datos personales:

Nombre y apellidos	Javier Fernández Ruiz		
DNI/NIE/pasaporte		Edad	
Número de identificación del investigador	Researcher ID	S-3875-2018	
	Código Orcid	0000-0002-4490-0604	

Situación profesional actual

Organismo	Universidad Complutense			
Dpto./Centro	Bioquímica y Biología Molecular, Facultad de Medicina			
Dirección	Ciudad Universitaria s/n, 28040-Madrid			
Teléfono	913941450	Correo electrónico	jjfr@med.ucm.es	
Categoría profesional	Catedrático de Universidad		Fecha inicio	Febrero 2007
Espec. cód. UNESCO	2490.02			
Palabras clave	Cannabinoides, Neurodegeneración, Neuroprotección			

Formación académica *(título, institución, fecha)*

Licenciatura/Grado/Doctorado	Universidad	Año
Licenciatura en Biología	Universidad Complutense	1980
Doctorado en Biología (Bioquímica)	Universidad Complutense	1986

Indicadores generales de calidad de la producción científica

- Número de artículos de investigación o revisión publicados: 305
- Citaciones totales: 18293 a 15/6/2024 (fuente: Scopus)
- Índice H: 78 a 15/6/2024 (fuente: Scopus)

1. RESUMEN LIBRE DEL CURRÍCULUM

Javier Fernández Ruiz es Doctor en Bioquímica por la UCM desde 1986. En la actualidad es Catedrático de Universidad del Departamento de Bioquímica y Biología Molecular de la Facultad de Medicina de dicha universidad. Junto con su actividad docente en asignaturas del área de Neuroquímica y Neurobiología, tanto en Licenciatura/Grado como en Máster, ha trabajado durante los últimos 43 años en diferentes enfermedades del Sistema Nervioso Central, siendo autor de 259 artículos de investigación y 46 artículos de revisión en revistas internacionales. Ha publicado también 42 capítulos en libros nacionales e internacionales y ha participado en 8 patentes internacionales. Ha dirigido 24 tesis doctorales a lo largo de 32 años y ha impartido conferencias en diferentes universidades y centros de investigación nacionales e internacionales, así como numerosas ponencias por invitación en congresos nacionales e internacionales. Actualmente es el IP del grupo de investigación "Cannabinoides y Trastornos Neurológicos" de la Facultad de Medicina de la UCM, que es también miembro del Instituto Universitario de Investigación en Neuroquímica de la UCM, así como de dos redes cooperativas de investigación de excelencia en España: del CIBER de Enfermedades Neurodegenerativas (CIBERNED) y del Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS). La principal actividad de este grupo es el estudio del potencial terapéutico de los cannabinoides en diversas enfermedades neurológicas, principalmente neurodegenerativas, aunque también en alguna encefalopatía epiléptica infantil como el síndrome de Dravet. Esta actividad investigadora está dirigida

al diseño, síntesis y caracterización biológica de nuevos cannabinoides con perfil neuroprotector, y, sobre todo, a la evaluación de su eficacia terapéutica a nivel preclínico y clínico. También han realizado investigaciones dirigidas a determinar como la desregulación del sistema endocannabinoide contribuye en la patogénesis de estas enfermedades. En su investigación, colaboran con varios grupos nacionales e internacionales, y con diferentes compañías farmacéuticas o biotecnológicas: Jazz Pharmaceuticals (antes GW Pharma), Emerald Health Pharmaceuticals, VivaCell Biotechnology Spain, ANKAR Pharma, Symrise, Roche Pharmaceuticals y Pharmactive Biotech Products. Javier Fernández Ruiz ha participado en numerosos proyectos de investigación internacionales, nacionales o locales, actuando como IP en muchos de ellos, incluidos 8 contratos de investigación con empresas farmacéuticas. También ha participado en proyectos de otros IPs. Ha sido miembro, en representación de la UCM, en el Consejo Rector del IRYCIS (2011-2017), miembro del Consejo Editorial de la revista "British Journal of Pharmacology (hasta 2023), y miembro del Comité Científico Asesor de las empresas farmacéuticas VivaCell Biotecnology-España y Linneo Health SL. Ha sido presidente de la "International Cannabinoid Research Society (ICRS)" (2002-2003) y miembro de su Comité Ejecutivo (2001-2004), así como miembro fundador de la Sociedad Española de Investigación sobre Cannabinoides (SEIC) y miembro de su Comité Ejecutivo (2000-2013), desempeñando el cargo de presidente durante 2007-2011. Ha recibido el Premio Especial de la "International Association for Cannabinoid Medicines" en 2019 y el premio Raphael Mechoulam de la ICRS en 2021 por sus contribuciones relevantes en el campo de la investigación con cannabinoides.

4.a) Experiencia investigadora, méritos más relevantes *(ordenados por tipología):*

4.a).1. Publicaciones: Selección de las más relevantes en los últimos 5 años sobre un total de 305

- **Fernández-Ruiz, J.** The biomedical challenge of neurodegenerative disorders: an opportunity for cannabinoid-based therapies to improve on the poor current therapeutic outcomes**.** British Journal of Pharmacology 176, 1370-1383 (2019)
- Espejo-Porras F, García-Toscano L, Rodríguez-Cueto C, Santos-García I, de Lago E, **Fernández-Ruiz J.** Targeting glial cannabinoid CB2 receptors to delay the progression of the pathological phenotype in TDP-43 (A315T) transgenic mice, a model of amyotrophic lateral sclerosis. British Journal of Pharmacology 176, 1585-1600 (2019)
- Palomares B, Garrido-Rodríguez M, Gonzalo-Consuegra C, Gómez-Cañas M, Saen-Oon S, Soliva R, Collado JA, **Fernández-Ruiz J**, Morello G, Calzado MA, Appendino G, Muñoz E. Δ9-Tetrahydrocannabinolic acid alleviates collagen-induced arthritis: Role of PPAR-γ and CB1 receptors. British Journal of Pharmacology 177, 4034-4054 (2020)
- Espadas I, Keifman E, Palomo-Garo C, Burgaz S, García C, **Fernández-Ruiz J**, Moratalla R. Beneficial effects of the phytocannabinoid Δ9-THCV in L-DOPA-induced dyskinesia in Parkinson's disease. Neurobiology of Disease 141, 104892 (2020)
- Rodríguez-Cueto C, García-Toscano L, Santos-García I, Gómez-Almería M, Gonzalo-Consuegra C, Espejo-Porras F, **Fernández-Ruiz J**, de Lago E. Targeting the CB receptor and other endocannabinoid elements to delay disease progression in amyotrophic lateral sclerosis. British Journal of Pharmacology 178, 1373-1387 (2021)
- Rodríguez-Cueto C, Gómez-Almería M, García-Toscano L, Romero J, Hillard CJ, de Lago E, **Fernández-Ruiz J**. Inactivation of the CB2 receptor accelerated the neuropathological deterioration in TDP-43 transgenic mice, a model of amyotrophic lateral sclerosis. Brain Pathology 13, e12972 (2021)
- González-Mariscal I, Carmona-Hidalgo B, Winkler M, Unciti-Broceta JD, Escamilla A, Gómez-Cañas M, **Fernández-Ruiz J**, Fiebich BL, Romero-Zerbo SY, Bermúdez-Silva FJ, Collado JA, Muñoz E.

(+)trans-Cannabidiol-2-hydroxypentyl is a dual CB1R antagonist/CB2R agonist that prevents diabetic nephropathy in mice. Pharmacological Research 169, 105492 (2021)

- Galán-Ganga M, Rodríguez-Cueto C, Merchán-Rubira J, Hernández F, Ávila J, Posada-Ayala M, Lanciego JL, Luengo E, López MG, Rábano A, **Fernández-Ruiz J**, Lastres-Becker I. Cannabinoid receptor CB2 ablation protects against TAU induced neurodegeneration. Acta Neuropathology Communications 9, 90 (2021)
- Santos-García I, Rodríguez-Cueto C, Villegas P, Piscitelli F, Lauritano A, Shen CKJ, Di Marzo N, **Fernández-Ruiz J**, de Lago E. Preclinical investigation in FAAH inhibition as a neuroprotective therapy for frontotemporal dementia using TDP-43 transgenic male mice. Journal of Neuroinflammation 20, 108 (2023)
- Gonzalo-Consuegra C, Santos-García I, García-Toscano L, Martín-Baquero R, Rodríguez-Cueto C, Wittwer MB, Dzygiel P, Grether U, de Lago E, **Fernández-Ruiz J**. Involvement of CB_1 and CB_2 receptors in neuroprotective effects of cannabinoids in experimental TDP-43 related frontotemporal dementia using male mice. Biomedicine & Pharmacotherapy 174, 116473 (2024)

4.a).2. Proyectos: Selección de los más relevantes en los últimos 5 años y solo como IP

- Investigación en el sistema endocannabinoide en patologías relacionadas con desregulación de TDP-43 (esclerosis lateral amiotrófica y demencia frontotemporal). Ministerio de Ciencia, Innovación y Universidades. Plan Nacional I+D+i – Biomedicina (RTI2018-098885-B-I00). 266.200 euros para el periodo 2019-2022
- Investigating GPR55 as a novel neuroprotective target in experimental Parkinson's disease. Michael J. Fox Foundation (USA) (MJFF-022552). 207.000 USD para el periodo 2023-2024
- Investigación en terapias dirigidas a reducir la agregación proteica en la demencia frontotemporal. CIBERNED-Proyectos Colaborativos 2022 (PI2022/02). Instituto de Salud Carlos III. Ministerio de Ciencia e Innovación (2023-2024)
- Potential of the endocannabinoid system against pathogenic mechanisms associated with neurodegeneration: emphasis on glial reactivity and protein aggregation. Ministerio de Ciencia e Innovación. Plan Nacional I+D+i – Biomedicina (PID-2021-128906O-B-I00). 296.450 euros para el periodo 2022-2025

4.a).3. Contratos, méritos tecnológicos o de transferencia: últimos 5 años y siempre como IP

- Investigation in the anti-inflammatory and neuroprotective properties of the phytocannabinoid derivative VCE-003.2 in Parkinson's disease using LPS-lesioned α-synuclein transgenic mice. Financiado por VivaCell Biotechnology-Spain (2017-2019)
- Investigation in the anti-inflammatory and neuroprotective properties of the phytocannabinoid derivatives VCE-004.8, VCE-003.2 and its analogs CBG-Q-Salt and CBGA-Q in Parkinson's disease using 6-OHDA-lesioned mice. Financiado por Emerald Health Pharmaceuticals (2018-2019)
- Investigation in the therapeutic properties of different neuroprotectant synthetic agents in preclinical models of amyotrophic lateral sclerosis. Financiado por ANKAR Pharma (2020)
- VI Premio de Transferencia de Tecnología y Conocimiento de la Universidad Complutense a Javier Fernández Ruiz y su grupo de investigación (2021)
- Investigation in the anti-inflammatory and neuroprotective properties of the phytocannabinoid derivative VCE-003.2 in Parkinson's disease using AAV9-mediated overexpression of mutant A53T α-synuclein in mice. Financiado por Emerald Health Pharmaceuticals (2022)
- Actividad de diferentes extractos de origen vegetal o fúngico sobre los receptores CB1 y/o CB2 del sistema endocannabinoide. Financiado por Pharmactive Biotech Products (2022-2023)

4.a).4. Patentes

- Use of cannabinoids in the treatment of a neurodegenerative disease or disorder. Gray R, Hind W, Whalley B, de Lago E, Rodríguez-Cueto C, García-Toscano L, Santos-García I, **Fernández-Ruiz J** (WO2019/012267A1). GW Research Ltd
- Antidyskinetic potential of the phytocannabinoid Δ^9-THCV. Whalley B, **Fernández-Ruiz J**, Moratalla R (WO2021/038219A1). GW Research Ltd

4.a).5. Sexenios posibles, concedidos y en activo, se considerarán los sexenios relativos de toda la carrera investigadora, comprobación en www.ucm.es/pdi-1.

Sexenios concedidos: 6 (1982-1987, 1988-1993, 1994-1999, 2000-2005, 2006-2011, 2012-2017)

4.b) Capacidad de formación doctoral:

4.b).1. Número de tesis dirigidas y defendidas, especificando nombre doctorando, fecha, calificación y lugar: en los últimos 5 años sobre un total de 24

- Caracterización de los efectos neuroprotectores del CBD en el daño cerebral hipóxico-isquémico neonatal. María Ceprián Costoso. UCM, Facultad de Medicina, 2019. Sobresaliente *cum laude* y Mención Internacional
- Desarrollo de estrategias terapéuticas basadas en cannabinoides para el tratamiento de la esclerosis lateral amiotrófica. Laura García Toscano. UCM, Facultad de Medicina, 2021. Sobresaliente *cum laude* y Mención Internacional
- Potencial terapéutico del sistema endocannabinoide en el espectro ELA-DFT. Irene Santos-García Sanz. UCM, Facultad de Medicina, 2021. Sobresaliente *cum laude*.
- Towards new therapeutic strategies based on cannabinoids for Dravet syndrome. Cristina Alonso Gómez. UCM, Facultad de Medicina, 2021. Sobresaliente *cum laude* y Mención Internacional
- CB2, PPAR-γ and GPR55 as pharmacological targets for an anti-inflammatory and neuroprotective treatment of Parkinson's disease. Sonia Burgaz García-Oteyza. Universidad Complutense, Facultad de Medicina, 2022. Sobresaliente *cum laude*.

4.b).2. Número de doctorandos a los que dirige actualmente su tesis doctoral y, de éstos los que han obtenido una beca en concurrencia competitiva.

- Santiago Rodríguez Carreiro, contrato predoctoral FPU 2019
- Raquel Martín Baquero, contrato predoctoral UCM 2021
- José Antonio Guimaré Ortiz, contrato predoctoral FPU 2021
- Alberto Jiménez Amor, contrato predoctoral FPI 2023

CV date	17-07-2024

Part A. PERSONAL INFORMATION

First name	Arantxa		
Family name	Tabernero		
Gender (*)	F	[redacted]	[redacted]
[redacted]	[redacted]		
e-mail	ataber@usal.es	URL Web: https://diarium.usal.es/neurobiochemistry	
Open Research and Contributor ID (ORCID)		0000-0001-6302-6134	
Research evaluation (**sexenios**)		5 (last one in 2020)	

A.1. Current position

Position	Full Professor		
Initial date	11-02-2016		
Institution	University of Salamanca		
Department/Center	Biochemistry and Mol. Biology/ Institute of Neuroscience Castilla y Leon (INCyL)		
Country	Spain	[redacted]	[redacted]
Key words	Connexin, glioma, Src, astrocytes, glia, neuron, brain		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
2002-2016	Associate professor/ University of Salamanca/Spain
1996-2002	Postdoc/ Hospital and University of Salamanca/Spain
1994-1996	Postdoc/ UCL, London, UK
1990-1993	Predoc/ University of Salamanca/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
1989	Univ of Salamanca	First degree
1993	Univ of Salamanca	PhD

A.4. Research evaluation (sexenios)

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

Arantxa Tabernero is a Full Professor of Biochemistry and Molecular Biology of the University of Salamanca (Usal). She leads the research group "Neurobiochemistry" at INCyL, which has been recognized as a consolidated research group by the Junta de Castilla y León (UIC 013), IBSAL and GIR by Usal. Arantxa Tabernero has been principal investigator on 20 funded research projects. The results of her research have been communicated to the scientific community via more that 65 research articles in high-impact JCR journals (most of them Q1 and several D1) that have been cited 3964 times with an H index of 40 (Google Scholar). In addition, she has delivered over 100 presentations in international and national congress and lectures in prestigious institutions worldwide. Arantxa Tabernero and her research group actively participate in the dissemination of their scientific activities to the general public via social media and events, such as Brain awareness week, the international day of women and girl in science, Conócelas (ASEICA), INCyL visiting day, media and press interviews, etc. Prof. Tabernero research focuses on the role played by glial cells within the nervous system in health and disease. She studied the molecular basis underlying the relationship between direct gap junctional

communication mediated by connexin43 and cell proliferation. This basic research has been translated in the design of connexin43 mimetic peptides (TAT-Cx43) with the ability to inhibit the activity of Src, an important oncoprotein involved in several signaling pathways related to cancer. Indeed, the work developed by her research group over the last years, has demonstrated that TAT-Cx43 exerts important anti-oncogenic effects against glioblastoma, the main and more aggressive type of brain tumor. These peptides designed with antitumor properties against malignant primary brain tumors have been patented (patent: PCT/EP2023/051210). Due to the positive results in glioblastoma patient ex vivo samples and in in vivo immunocompetent mice, the interest of this molecule as a therapy for glioblastoma is increasing.

Arantxa Tabernero studied Pharmacy and obtained her PhD in 1993, supervised by Prof. J.M. Medina at Usal, obtaining the PhD extraordinary award for her work on the differential metabolism of neurons and astrocytes. As a postdoc, she joined the Department of Anatomy and Developmental Biology of the "University College London" led by Prof. Rhona Mirsky and Kristjan Jessen. In addition, she worked in the laboratory of Neuropharmacology "Collège de France" of INSERM in Paris led by Dr. Christian Giaume with whom she has had a fruitful collaboration. Arantxa Tabernero has an extensive network of national and international collaborators.

She has successfully supervised 22 PhD Theses and is currently supervising 3 more. In addition, she has supervised more than 50 master and undergraduate students including high school students belonging to the baccalaureate of research and excellence. The scientific and professional carriers developed by those Doctors and students formed in her research group is brilliant, indicating an excellent formative capacity of this environment for new researchers.

Prof. Tabernero is currently Vice director of the Institute of Neuroscience Castilla y León (INCYL), one of the research Institutes of the International Excellence Campus of the Universidad de Salamanca (Usal) and Director of the PhD program of Neuroscience (INCYL, Usal). Arantxa Tabernero has served as member of the SEBBM board and the International Union of Biochemistry and Molecular Biology (IUBMB) Nominations Committee. She is the president of the Spanish Glial Network, Federation of European Biochemical Societies (FEBS) education ambassador, and member of the EANO, ASEICA, SEBBM and SENC. She is referee for many Q1 and D1 journals and commonly evaluates research projects belonging to international and national agencies. She has obtained five six-year positive research evaluations (5 sexenios de investigación), two excellent teaching level awards (Docentia) and the University of Salamanca excellence scientific award “María de Maeztu”.

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

C.1. Publications *(most recent and relevant)*

- S. G. Pelaz, R. Flores-Hernández, T. Vujic, D. Schvartz, A. Álvarez-Vázquez, Y. Ding, L. García-Vicente, A. Belloso, R. Talaverón, J-C Sánchez and A. Tabernero. A proteomic approach supports the clinical relevance of TAT-Cx43$_{266-283}$ in glioblastoma. **Translational Research** 2024. 12:272:95-110. IF: 6,4 D1
- A. Álvarez-Vázquez, L. San-Segundo, P. Cerveró-García…A. Tabernero. EGFR amplification and EGFRvIII predict and participate in TAT-Cx43$_{266-283}$ antitumor response in preclinical GBM models. **Neuro-Oncology**. 2024. 26:1230-1246. IF: 16.4. D1
- S. G. Pelaz and A Tabernero. Src: coordinating metabolism in cancer. **Oncogene** 2022. Nov;41(45):4917-4928. IF: 8.756. D1.
- S. G. Pelaz, C. Ollauri-Ibáñez, C. Lillo, and A. Tabernero. Impairment of autophagic flux participates in the antitumor effects of TAT-Cx43$_{266-283}$ in glioblastoma stem cells. **Cancers** 2021, 13, 4262. I.F.: 6.639. Q1.
- S. G. Pelaz, M. Jaraíz-Rodríguez, A. Álvarez Vázquez…and A. Tabernero. Targeting metabolic plasticity in glioma stem cells in vitro and in vivo through specific inhibition of c-Src by TAT-Cx43$_{266-283}$. **EBioMedicine** (published by the Lancet) 2020, 62: 103134. IF: 8.143. Q1
- R. Talaverón, E.R. Matarredona, A. Herrera, J.M. Medina and A. Tabernero. Connexin43 region 266-283, via Src inhibition, reduces neural progenitor cell proliferation promoted by EGF and FGF-2 and increases astrocytic differentiation. **Int. J. Mol. Sci**. 2020, 21: 8852. IF: 5.923. Q1

- Jaraíz-Rodríguez M, Talaverón R, García-Vicente L, …and Tabernero A. Connexin43 peptide, TAT-Cx43266-283, selectively targets glioma cells, impairs malignant growth and enhances survival in mouse models in vivo. **Neuro-Oncology** 2020, 22: 493–504. IF: 12.300. D1
- Tabernero A, Koulakoff A, Roux L, Venance L, Leybaert L, Sáez JC, Naus CC. Christian Giaume (November 1951-July 2019). **Glia** 2020, 68:1321-1328. IF: 5.984. Q1
- T Aasen, E Leithe, S Graham, P Kameritsch, M Mayán, M Mesnil, K Pogoda and A Tabernero. Connexins in Cancer: Bridging the Gap to the Clinic. **Oncogene** 2019, 38: 4429-4451. IF: 7,971. D1
- M Varela-Eirín, A Varela-Vázquez, C Paíno, A Casado-Díaz, A Continente, V Mato, T Aasen, A Tabernero, E Fonseca, M Kandouz, J R Caeiro, and M Mayán. Targeting of chondrocyte plasticity via connexin43 modulation attenuates cellular senescence and fosters a pro-regenerative environment in osteoarthritis. **Cell Death and Disease** 2018, 9:1166. IF: 5.959. Q1
- M Mesnil; T Aasen; …; A Tabernero; H Yamasaki; E Yen; M-L Zaidan-Dagli; C Naus. An update on minding the gap in cancer. **BBA – Biomembranes** 2018, 1860: 237-243. IF: 3.790. Q1
- M Jaraíz-Rodríguez, MD Tabernero, M González-Tablas, A Otero, A Orfao, J M Medina and A Tabernero. A short region of connexin43 reduces human glioma stem cell migration, invasion and survival through Src, PTEN and FAK. **Stem Cell Reports** 2017, 9:451-463. IF: 6.537. Q1
- E Gangoso, R Talaverón, M Jaraíz-Rodríguez, M Domínguez-Prieto, P Ezan, A Koulakoff, J M Medina, C Giaume and A Tabernero. A c-Src inhibitor peptide based on Connexin43 exerts neuroprotective effects through the inhibition of glial hemichannel activity. **Frontiers in Molecular Neuroscience** 2017, 10:418. doi: 10.3389/fnmol.2017.00418. IF: 3.902. Q2
- Domínguez-Prieto M, Velasco A, Vega L, Tabernero A, Medina JM. Aberrant Co-localization of Synaptic Proteins Promoted by Alzheimer's Disease Amyloid-β Peptides: Protective Effect of Human Serum Albumin. **J Alzheimers Dis** 2017, 55:171-182. IF: 3.476. Q2
- A González-Sánchez, M Domínguez-Prieto, M Jaraíz-Rodríguez, S Herrero-González, J M Medina and A Tabernero. Connexin43 recruits PTEN and CSK to inhibit c-Src in glioma cells and astrocytes. **Oncotarget** 2016, 7: 49819-49833. doi: 10.18632/oncotarget. 10454 IF: 5.168. Q1
- A Tabernero, E Gangoso, M Jaraíz-Rodríguez and J M Medina. The role of connexin43-Src interaction in astrocytomas: a molecular puzzle. **Neuroscience** 2016, 323:183-94. IF: 3.277. Q2
- Gangoso E, Thirant C, Chneiweiss H, Medina JM and Tabernero A. A cell-penetrating peptide based on the interaction between c-Src and connexin43 reverses glioma stem cell phenotype. **Cell Death and Disease** 2014, 5, e1023; doi:10.1038/cddis.2013.560. IF: 5,014.

For a full record of publications and citations, see the link.

C.2. Congress.

Arantxa Tabernero has participated in more than 200 national and international congress. Most relevant communications and organization activities carried out during the last 4 years are included.

- Chair. XIII GEINO symposium. Virtual meeting. 2-3 December 2021.
- Keynote Lecture. Therapeutic applications of Src inhibitory peptides based on connexin43. Arantxa Tabernero. Second PANACHE workshop. November, 22. 2021. On-line meeting.
- Scientific Committee. 19th meeting of SENC. November, 3-5. 2021. Lleida. Spain. SENC
- Conference. Targeting metabolic plasticity and autophagy in glioma stem cells with TAT-Cx43$_{266-283}$. Role of cellular communication via connexin/pannexin channels and extracellular vesicles in health and disease. Science Xpression 2021. A Coruña, 29 September 2021.
- Organizer. International Gap Junction Conference Webinars. 1-1-2021 to 16-7-2022. https://sites.google.com/view/gapjunctionwebinars/
- Organizer. University of Seville and Salamanca PhD students conference. Virtual meeting. 8-9 July 2021.
- Member of the Executive Committee. International Gap Junction Conference. A Coruña. Spain July, 16-20, 2022.
- Conference. Mimicking specific protein functions to fight against brain tumors. 44 Congreso SEBBM. Málaga 6-9 Spetember 2022.
- Scientific Committee. 20th meeting of SENC. Granada, Spain. 9-13 September 2023.

- Scientific Committee. 46 Congreso SEBBM. A Coruña.Spain. 3-6 September 2024.
- Keynote Lecture. International Gap Junction Conference. July, 27-31, 2024. Arlington, Virginia. USA.

C.3. Projects.

Arantxa Tabernero has obtained financial support as principal investigator from regional and national and international calls on a continued manner for the last 22 years. Last research Projects as Principal Investigator.

- Estudio del efecto de péptidos penetrantes basados en la conexina-43 en neuronas, astrocitos y células de glioma. Consejería de Educación y Cultura. Junta de Castilla y León. FEDER. Ref: SA026U16 (22-03-2016/30-06-2018). P.I.: Aránzazu Tabernero Urbieta.
- Efectos de la región de la conexina-43 que interacciona con c-Src en células de glioma, neuronas y astrocitos. Ministerio de Economía y Competitividad. Ref: BFU2015-70040-R. (1-1-2016/31-12-2019). P.I.: Aránzazu Tabernero Urbieta.
- Contribución de los astrocitos y la microglía a los efectos antitumorales de péptidos basados en la conexina43 usando modelos de glioma in vitro e in vivo. Ministerio de Ciencia, Innovación y Universidades. Ref: RTI2018-099873-B-I00. (1-1-2019/31-12-2021). P.I.: Aránzazu Tabernero Urbieta.
- Dotación de un microscopio confocal espectral con láser blanco y súper-resolución, con posibilidad de ser ampliado a multifotón espectral, para el INCYL. Subprograma estatal de infraestructuras de investigación y equipamiento científico-técnico. Ministerio de Ciencia, Innovación y Universidades. Referencia: EQC2019-006546-P. P.I.: Aránzazu Tabernero Urbieta.
- Aproximación multidisciplinar para el estudio del mecanismo de acción y optimización de péptidos antitumorales basados en la conexina-43 en modelos de glioma in vitro e in vivo. Consejería de Educación y Cultura. Junta de Castilla y León. FEDER. Ref: SA125P20 (6-11-2020/5-11-23). P.I.: Aránzazu Tabernero Urbieta.
- Estudio de la relación del microambiente cerebral y el glioblastoma para mejorar su terapia. Ministerio de Ciencia e Innovación (MCIN). Ref: PID2021-128549OB-I00. (1-9-2022/31-8-25). P.I.: Aránzazu Tabernero Urbieta.
- Péptidos inhibidores de Src basados en la conexina43 contra el glioblastoma. Avances desde la investigación básica hacia la clínica. Ministerio de Ciencia e Innovación. Ref: PDC2022-133652-I00. (1-12-2022/30-11-2024). P.I.: Aránzazu Tabernero Urbieta.
- Exploring microenvironment changes driven by TAT-Cx43 peptide in the neurovascular unit to target glioblastoma (GlioTarget). H2020-MSCA-COFUND-2020. European Union. 08/07/2024 - 07/01/2027. co-P.I.: Myriam Jaraíz Rodríguez, María Aránzazu Tabernero Urbieta.

C.4. Participation in technology/knowledge transfer activities and exploitation of results.

- Péptido y composición farmacéutica para el tratamiento del cáncer. INVENTORES/AS: A. Tabernero, J. M Medina, E. Gangoso y M. Jaraíz. Nº DE CONCESIÓN: 201330793 (4). PAÍS: España. FECHA DE PRIORIDAD: 30/05/2013. ENTIDAD TITULAR: Universidad de Salamanca
- Peptides and pharmaceutical composition for the treatment of tumours. INVENTORES/: A. Tabernero, C. Ollauri, A. Álvarez, S. G. Pelaz, M. Jaraíz, M. Paniagua y R. Flores. Número de solicitud: PCT/EP2023/051210. Referencia de solicitud: PCT1367.115. PAÍS: países del tratado PCT. FECHA DE PRIORIDAD: 19/01/2022. ENTIDAD TITULAR: Universidad de Salamanca.

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	CRISTINA		
Family name	MURGA		
Gender (*)	Female	[redacted]	[redacted]
[redacted]	[redacted]		
e-mail	cristina.murga@uam.es cmurga@cbm.csic.es	URL Web https://www.cbm.uam.es/cmurga	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-8964-4077	

A.1. Current position

Position	Full Professor of Biochemistry and Molecular Biology		
Initial date	2021		
Institution	Universidad Autónoma de Madrid (UAM)		
Department/Center	Departamento de Biología Molecular/ Centro de Biología Molecular Severo Ochoa (UAM-CSIC)		
Country	Spain	[redacted]	[redacted]
Key words	Cell signalling; pathophysiology; murine models of disease; GPCR		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
2010-2021	Associate Professor of Biochemistry, Universidad Autónoma de Madrid
2001-2010	Ramón y Cajal Fellow, and PCD Professor, Universidad Autónoma de Madrid
1996-2001	Postdoctoral Fellow, National Institutes of Health, Bethesda, Maryland, USA

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
B.S., M.S. Biological Sciences	Autonoma de Madrid, Spain	1991
PhD in Biochemistry	Autonoma de Madrid, Spain	1996

Part B. CV SUMMARY

Prof. Cristina Murga is natural from Spain and graduated in Biochemistry and Molecular Biology by the Universidad Autónoma de Madrid (UAM). She received a National Graduation award in 1992, and obtained her PhD in 1996 working on the mechanisms of cell signalling by G proteins and the subcellular localization G protein-coupled Receptor Kinase 2.

Prof. Murga performed a postdoctoral stay of 5 years at the National Institutes of Health in Bethesda (Maryland, USA) where she characterized the activation of Akt by G protein-coupled receptors (GPCR), and also described novel roles of several phosphoinositide 3´kinase (PI3K) isoforms in the transduction of G protein-dependent signals. She returned to Spain in 2001 with a Ramón y Cajal contract and, next, PCD and Associate Professorships at the UAM until 2021 when she obtained and the Full Professorship she currently holds. Her main research achievements of this period are the discovery of a novel modulatory mechanism for inhibiting p38MAPK activity through phosphorylation of its docking site (that derived in the design of patented inhibitors of this kinase with analgesic and anti-inflammatory properties), the characterization of new molecular players activating cell survival based on the connection of G protein intracellular signalling routes with the PI3K/Akt pathway, and the identification of GRK2 as a regulatory protein of insulin and glucagon signalling as well as of incretin receptors in vivo and in situ. She has published results about the impact of GRK2 levels in the

development or outcomes of different pathologies such as liver steatohepatitis, obesity, cardiac hypertrophy and insulin resistance both in mouse models of disease and in human samples from patients. Also, she described the effects of GRK2 in physiological processes such as fasting and insulin secretion, or on the sexual dimorphism observed during aging, insulin resistance and obesity. Her current research interests relate to the study of the pathophysiological implications of altered signalling routes with particular focus on the molecular bases of sterile inflammation after Western Diet feeding using murine models and also cellular systems and molecular tools.

Scientific contributions: Prof. C. Murga has been principal Investigator in 17 national research projects since 2001, both from the Ministry of Health and of Science, collaborator in more than 19 national and international projects and member of 10 research networks (three EU grants, one COST action, and one national (CIBER-CV) research network). She is co-author of more 63 indexed scientific papers (more than half in Q1) and senior author of most of them in the last 20 years. She has published 8 book chapters in national and international books, and 5 articles on scientific or educational dissemination journals. Prof. Murga has participated in more than 50 national and international scientific and teaching meetings, and has been invited to 3 international talks.

Other scientific activities. Ad hoc reviewer for research projects of the ANEP/AEI (Spain), reviewer for articles in JCR journals and for teaching innovation projects.

Training capacity, mentoring and teaching: Prof. Murga has directly supervised 6 PhD Thesis, and 4 postdoctoral fellows. Past trainees are currently working in science-related jobs including Biotechnology supply companies, Editorial publishers, and research centers or universities. She has supervised more than 10 end of master or end of degree dissertations. Regarding teaching, Prof. Murga has obtained several distinctions of quality of teaching in Spanish (Docentia) and English (Doing). Her teaching duties involve 125 hours per academic course in, for instance, Health Biotechnology (degree in Biochemistry, 4th year), Biochemistry (degree in Biology, and degree in Sciences 2nd year), Molecular Pharmacology and Cell Signaling (Masters). Prof. Murga is also director and teacher of the course Molecular Biology at the UAM Senior University Program since 2017-18.

Management of scientific or academic organizations: Dr. Murga has been deputy director of the Centro de Biología Molecular "Severo Ochoa" from 2014 to 2019. She is a member of the Consejo Rector of the Instituto de Investigación Sanitaria La Princesa. She is currently, since 2021, Director of the Senior University Program at the UAM with more than 1200 students and 200 teachers.

Transfer activities and outreach: Prof. Murga is co-inventor in 3 patents (2 PCT), 2 of them licensed to firms, and has acted as Coordinator of 6 grants in collaboration with industry that have generated 4 technological contracts. She has also coordinated, apart from the University for the Seniors outreach activities performed on a yearly basis, one Scientific Dissemination Project funded by FECYT. She holds 1 scientific transfer and 5 research accredited periods (6 “sexenios”, the last one in 2022).

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

C.1. Publications *(selected articles and reviews since 2015, signature position is indicated between parenthesis, * corresponding author)*

60 international publications. Circa 3,200 citations, h index of 27. *(https://www.webofscience.com/wos/author/record/E-1965-2014)*

1. Arcones AC, Vila-Bedmar R, Mirasierra M, Cruces-Sande M, Vallejo M, Jones B, Tomas A, Mayor F Jr, **Murga C*** (8/8). GRK2 regulates GLP-1R-mediated early phase insulin secretion in vivo. **BMC Biol.** 2021;19(1):40. doi: 10.1186/s12915-021-00966-w.
2. Arcones AC, Martínez-Cignoni MR, Vila-Bedmar R, Yáñez C, Lladó I, Proenza AM, Mayor F Jr, **Murga C*** (8/8). Cardiac GRK2 Protein Levels Show Sexual Dimorphism during Aging and Are Regulated by Ovarian Hormones. **Cells.** 2021;10(3):673. doi: 10.3390/cells10030673.
3. González-Amor M, Vila-Bedmar R, Rodrigues-Díez R, Moreno-Carriles R, … **Murga C***(10/10). Myeloid GRK2 Regulates Obesity-Induced Endothelial Dysfunction by Modulating Inflammatory Responses in Perivascular Adipose Tissue. **Antioxidants** (Basel). 9(10):953. (2020). doi: 10.3390/antiox9100953

4. Vila-Bedmar R, Cruces-Sande M, Arcones AC, …**Murga C*** (15/15). GRK2 levels in myeloid cells modulate adipose-liver crosstalk in high fat diet-induced obesity. **Cell Mol Life Sci**. 2020 77(23):4957-4976. doi: 10.1007/s00018-019-03442-5
5. Cruces-Sande M, Arcones AC, Vila-Bedmar R, **Murga C*** (9/9). Autophagy mediates hepatic GRK2 degradation to facilitate glucagon-induced metabolic adaptation to fasting. **FASEB J.** 2020 34(1):399-409. doi: 10.1096/fj.201901444R.
6. Arcones AC, Cruces-Sande M, Ramos P, Mayor F Jr, **Murga C**. Sex Differences in High Fat Diet-Induced Metabolic Alterations Correlate with Changes in the Modulation of GRK2 Levels. **Cells**. 2019;8(11):1464. doi: 10.3390/cells8111464.
7. Cruces-Sande M, Vila-Bedmar R, Arcones AC, … **Murga C*** (16/16). Involvement of G protein-coupled receptor kinase 2 (GRK2) in the development of non-alcoholic steatosis and steatohepatitis in mice and humans. **Biochim Biophys Acta Mol Basis Dis.** 2018 1864(12):3655-3667. doi: 10.1016/j.bbadis.2018.09.027.
8. Lucas E, Vila-Bedmar R, Arcones AC, Cruces-Sande M, Cachofeiro V, Mayor F Jr, **Murga C*** (7/7) Obesity-induced cardiac lipid accumulation in adult mice is modulated by G protein-coupled receptor kinase 2 levels. **Cardiovasc Diabetol.** 2016;15(1):155. doi: 10.1186/s12933-016-0474-6.
9. Singhmar P, Huo X, Eijkelkamp N, **Murga C,…** (11/13), Heijnen CJ, Kavelaars A. Critical role for Epac1 in inflammatory pain controlled by GRK2-mediated phosphorylation of Epac1. **Proc Natl Acad Sci U S A.** 2016 113(11):3036-41. doi: 10.1073/pnas.1516036113.
10. Vila-Bedmar R, Cruces-Sande M, Lucas E, Willemen HL, Heijnen CJ, Kavelaars A, Mayor F Jr, **Murga C*** (8/8). Reversal of diet-induced obesity and insulin resistance by inducible genetic ablation of GRK2. **Science Signaling** 2015 8(386):ra73 doi: 10.1126/scisignal.aaa4374

REVIEWS:

11. **Murga C**, Arcones AC, Cruces-Sande M, Briones AM, Salaices M, Mayor F Jr.(1/6) G Protein-Coupled Receptor Kinase 2 (GRK2) as a Potential Therapeutic Target in Cardiovascular and Metabolic Diseases. **Front Pharmacol.** 2019;10:112. doi: 10.3389/fphar.2019.00112.
12. Mayor F Jr, Cruces-Sande M, Arcones AC, Vila-Bedmar R, Briones AM, Salaices M, **Murga C** (7/7). G protein-coupled receptor kinase 2 (GRK2) as an integrative signalling node in the regulation of cardiovascular function and metabolic homeostasis. Cell Signal. 2018;41:25-32. doi: 10.1016/j.cellsig.2017.04.002.

C.2. Congress. Participated in circa 50 national and international scientific meetings, more than 5 teaching meetings, and > 25 teaching courses. More than 20 invited talks or conferences, symposiums or courses, 3 of them in international Scientific Meetings.

C.3. Research projects

- **Projects as PI since 2013:**

Integrated GRK2 signaling networks and molecular mechanisms of disease PID2020-117218RB-I00
Funding Entity: **Ministerio de Ciencia, Innovación y Universidades. Programa Estatal de Investigación** 01/09/2021- 30/04/2025.
PI-2: Cristina Murga (PI-1: Federico Mayor) 363.000€

GRK2 como nodo de señalización integrador en situaciones fisiopatológicas (SAF2017-84125-R).
Funding Entity: **MINECO Programa Estatal de Investigación** 1/12018-31/82021
PI-2: Cristina Murga (PI-1: Federico Mayor) 363.000€

Integración fisiológica e implicaciones patológicas de las interacciones funcionales de GRK2 en diferentes tipos y contextos celulares (SAF2014-55511-R en 2015).
Funding Entity: **MINECO Programa Estatal de Investigación** 1/1/2015-31/12/2017
PI-2: Cristina Murga (PI-1: Federico Mayor) 375.100€

Estudio del interactoma tejido-específico del nodo GRK2 implicado en la resistencia a insulina y obesidad: repercusiones fisiopatológicas.
Funding Entity: **Fundación Ramón Areces** (XVII Convocatoria CC Vida y Materia) 2015-2018
PI: Cristina Murga 118.692 €

Joint collaborative effort in the identification of novel therapeutic targets for the treatment of diabetes and obesity.
Funding Entity: **UNIVERSIDAD AUTONOMA DE MADRID** (Proyectos de Cooperación Interuniversitaria UAM – Banco Santander con Estados Unidos). 1-7-2013- 31-12-2014
PI: Cristina Murga 11.900 €

- **Relevant public competitive projects as collaborator since 2014:**

ONCOgenic Receptor Network of Excellence and Training (ONCORNET), ID number SEP-210154954 (ETN-ITN, EU Horizon 2020) 247.873 €
Funding Entity: **European Commission- Research Executive Agency** 2015 – 2018
PI: Federico Mayor Menéndez

GRK2 como nodo central en la transducción de redes de señalización. Papel en fisiopatología. (SAF2011-23800) 240.000 €
Funding Entity: **Ministerio de Innovación y Ciencia** 2012 – 2014
PI: Federico Mayor Menéndez

C.4. Contracts, technological or transfer merits,

-Evaluación de nuevos compuestos neuroprotectores. Convenio de colaboración suscrito entre la Fundación Severo Ochoa y la empresa Neuron Biopharma SA 94.879 €
Funding Entity: NEURON BIOPHARMA SA 9/4/2013 - 9/9/2015 **PI: Cristina Murga**

-Scientific Dissemination Proyect to produce the video documentary "Inside the cell / Dentro de la célula" 27.320,60 €. **PI: Cristina Murga**
Funding Entity: FECYT (Fundación Española para la Ciencia y la tecnología) 1-1-2016- 15-1-2017

-Contrato para realización del Análisis de la patente europea EP1 308 455 B9 y de la documentación relacionada con la misma y elaboración de una opinión técnica sobre su ámbito de protección, entre otros aspectos. 9.000€ **PI: Cristina Murga**
Funding Entity: Hogan Lovells International LTD 13/07/2018 - 15/11/2019

Patents:

▪ **WO/2007/028430** (PCT/EP2006/005542): "New phosphorylation site of mitogen-activated protein kinases, modified proteins and applications" International Filing Date 10.06.2005 Priority date: 09.06.2006. (P200501404) Applicant entity: UAM

→ licensed contract with FINA Biotechnology

▪ **WO/2012/062953** (PCT /ES2011/070774): "p38 inhibitor peptide and uses thereof"
International Filing Date 11.11.2011 Priority date: 12.11.2010 (ES2382289B1) Applicant entity: UAM

▪ **WO/2013/064714** (PCT/ES2012/070762): "Drugs for inhibiting p38 and uses thereof"
International Filing Date 31.10.2012 Priority date: 2.11.2011. Applicant entity: UAM

→ licensed contract with Spherium Biomed

Additional merits

- Director, Senior University Program at the UAM (september 2022-)
- Vicedirector, Centro de Biología Molecular "Severo Ochoa" (joint center between the Spanish Research Council –CSIC- and the UAM. http://www.cbm.uam.es) 2014 -2018
- Assessing Board member ("Consejo de Gobierno"), UAM 2008-2010.
- Member of the Consejo Rector of the IIS La Princesa since 2019.
- Coordinator, Master in Molecular Biomedicine, UAM. 2012-2014.
- Research Board member ("Comisión de Investigación"), UAM 2004 - 2008.
- Faculty of Sciences Board member, UAM 2006 - 2010.
- Member of the Sociedad Española de Bioquímica y Biología Molecular since 1998.
- Organizer in >15 courses and scientific or training events
- Co-author in 8 scientific book chapters and 5 scientific dissemination articles