



CURRICULUM VITAE ABREVIADO (CVA)

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

CV date	23/10/2025
---------	------------

First name	MARÍA DEL CARMEN		
Family name	ACOSTA	BOJ	
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail:	mcarmen.acosta@umh.es	URL Web: https://in.umh-csic.es/en/author/mcarmen-acostaumh-es/	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-1759-068X	

Part A. PERSONAL INFORMATION(*) Mandatory

A.1. Current position

Position	Catedrática de Universidad (Full Professor)		
Initial date	30/10/2018		
Institution	Universidad Miguel Hernández de Elche (UMH)		
Department/Center	Departamento Fisiología / Instituto de Neurociencias (IN)		
Country	Spain	Teleph. number	
Key words	Sensory transduction, ocular sensitivity, sensory receptors, nociception		

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

Period	Position/Institution/Country/Interruption cause
December 2009-October 2018	Profesor Titular de Universidad/Departamento de Fisiología & IN /UMH-CSIC / Spain
October 2005-December 2009	Profesor Contratado Doctor/Departamento de Fisiología & IN /UMH-CSIC/Spain
February 2002-September 2005	Profesor Asociado/Departamento de Fisiología & IN /UMH-CSIC/Spain
December 1999-January 2002	Investigador Científico Contratado/IN/UMH-CSIC/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciada en Biología	Universidad de Alicante (UA), Spain	1994
Doctora en Neurociencias	UMH, Spain	1999

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

- 4 “sexenios de investigación” (last 2014-2019) + 1 “sexenio de transferencia”
- 4 PhD thesis supervised (last 10 years)
- Total indexed articles: 52; H index: 26

Since the beginning of my scientific career, I have been focused on the study of the sensory innervation activity (transduction mechanisms, reflex initiation, trophism, sensations evoked in humans), mainly from the ocular surface. During my predoctoral and postdoctoral training, I was in specialized research centers for the study of sensory transduction mechanisms: Dr. Elspeth McLaghlan (Stebbing et al., 1999) and Dr. James Brock (Brock et al., 2006) labs at the Price of Wales Medical Research Institute, University of New South Wales, Sydney, Australia; Dr. H.O. Handwerker and Dr. M. Schmelz (Belmonte et al., 1999) and Dr. Karl Messlinger labs in the Department of Experimental Physiology and Pathophysiology, Erlangen-Nuremberg University, Erlangen, Germany. I am specialized in



electrophysiological recording of sensory nerve endings and axons, behavioral experiments in animals and psychophysics in humans. The most important scientific contributions are:

- The description, for the first time, of the contribution of the different types of sensory receptors on the eye surface to the sensations evoked in humans its correlation with the activity of the corneal sensory innervation activity (Acosta et al., 2001a, b).
- The description of the role of the ocular surface sensory innervation in reflex (Acosta et al., 2004) and basal (Parra et al., 2010) tear production; in blink frequency (Acosta et al., 1999) and in vascular reflexes (Gallar et al., 2003).
- The study of the changes in the activity of the sensory innervation and the ocular surface sensitivity with age (Acosta et al., 2006); in different pathologies, such as amyloidosis (Rosemberg et al., 2001), diabetes (Neira-Zalentein et al., 2011), fibromyalgia (Gallar et al., 2009), ocular herpes (Gallar et al., 2009), dry eye disease (Bourcier et al., 2005; Benitez del Castillo et al., 2007; Dienes et al., 2015a and b; Kovacs et al., 2016), allergic keratoconjunctivitis (Acosta et al., 2013) and photokeratitis (Acosta et al., 2014); after nerve injury due to refractive surgery (Gallar et al., 2004, 2007; Luna et al., 2021a and b) and other corneal injuries (Joubert et al., 2019), during nerve regeneration (McLaughling et al., 2010) or contact lens use (Pastor-Zaplana et al., 2022 and 2023).
- The study of the effect of different drugs on the ocular surface innervation and sensitivity (Acosta et al., 2005 and 2007; Kovacs et al., 2016; Pereny et al., 2017; Joubert et al., 2020; Delicado-Miralles et al., 2021; Gyenes et al., 2023).

My scientific interests are still focused on the study of how the ocular surface sensory innervation is modified by dryness, inflammation or the use of contact lenses, not only from the point of view of their nerve activity electrical changes, but also looking for the molecular and ionic mechanisms (TRPs, Na⁺, K⁺ channels) that modulate their activity. In addition, we want to complete the knowledge of the sensory pathway from the ocular surface, at the level of the thalamus and the somatosensory cortex, something little studied, as well as to study in detail the role of the sensory innervation of the ocular surface in the control of the blinking and tearing mechanisms, as they are also affected in ocular pathologies. For this, we use pharmacological tools, psychophysical studies and electrophysiological recording techniques, among others.

Part C. RELEVANT MERITS (last 10 years)

C.1. Publications (10 selected from 22)

1. Velasco, E., Zaforas, M., Acosta, M. C., Gallar, J., & Aguilar, J. (2024). Ocular surface information seen from the somatosensory thalamus and cortex. *The Journal of physiology*, 602(7), 1405–1426. <https://doi.org/10.1113/JP285008>
2. Pastor-Zaplana JÁ, Gallar J, **Acosta MC**. Functional Changes of the Ocular Surface Sensory Nerves Due to Contact Lens Use in Young Symptomatic and Asymptomatic Users. *Invest Ophthalmol Vis Sci*. 2023 Nov 1;64(14):12. doi: 10.1167/iops.64.14.12. PMID: 37938935; PMCID: PMC10637199.
3. Frutos-Rincón L, Luna C, Aleixandre-Carrera F, Velasco E, Diaz-Tahoces A, Meseguer V, Gallar J, **Acosta MC**. The Contribution of TRPA1 to Corneal Thermosensitivity and Blink Regulation in Young and Aged Mice. *Int J Mol Sci*. 2023 Aug 9;24(16):12620. doi: 10.3390/ijms241612620. PMID: 37628800; PMCID: PMC10454529.
4. Pastor-Zaplana JÁ, Borrás F, Gallar J, **Acosta MC**. OSDI Questions on Daily Life Activities Allow to Detect Subclinical Dry Eye in Young Contact Lens Users. *J Clin Med*. 2022 May 6;11(9):2626. doi: 10.3390/jcm11092626. PMID: 35566752; PMCID: PMC9101005.
5. Frutos-Rincón L, Gómez-Sánchez JA, Íñigo-Portugués A, **Acosta MC**, Gallar J. An Experimental Model of Neuro-Immune Interactions in the Eye: Corneal Sensory Nerves and Resident Dendritic Cells. *Int J Mol Sci*. 2022 Mar 10;23(6):2997. doi: 10.3390/ijms23062997. PMID: 35328417; PMCID: PMC8951464.
6. Luna C, Mizerska K, Quirce S, Belmonte C, Gallar J, **Acosta MC**, Meseguer V. Sodium Channel Blockers Modulate Abnormal Activity of Regenerating Nociceptive Corneal Nerves After Surgical Lesion. *Invest Ophthalmol Vis Sci*. 2021 Jan 4;62(1):2. doi: 10.1167/iops.62.1.2.
7. Delicado-Miralles M, Velasco E, Díaz-Tahoces A, Gallar J, **Acosta MC**, Aracil-Marco A. Deciphering the action of perfluorohexyloctane eye drops to reduce ocular discomfort and pain. *Front. Med*. 2021;8:709712. <https://doi.org/10.3389/fmed.2021.709712>



8. Luna C, Quirce S, Aracil A, Belmonte C, Gallar J, **Acosta MC**. Unilateral corneal insult also alters sensory nerve activity in the contralateral eye. *Front Med*.2021;8:767967. <https://doi.org/10.3389/fmed.2021.767967>
9. Kovács I, Luna C, Quirce S, Mizerska K, Callejo G, Riestra A, Fernández-Sánchez L, Meseguer VM, Cuenca N, Merayo-Llodes J, **Acosta MC**, Gasull X, Belmonte C, Gallar J. 2016. Abnormal activity of corneal cold thermoreceptors underlies the unpleasant sensations in dry eye disease. *Pain*;157(2):399-417.
10. Callejo G, Castellanos A, Castany M, Gual A, Luna C, **Acosta MC**, Gallar J, Giblin JP, Gasull X. 2015. Acid-sensing ion channels detect moderate acidifications to induce ocular pain. *Pain*;156(3):483-95.

C.2. Congress (only invited conferences or oral presentations)

1. XXVI Biennial Meeting of the International Society for Eye Research, ISER 2023, Buenos Aires, Argentina. 20-24 October 2024. "Functional interactions between Dendritic Cells and sensory nerves in basal corneal conditions" in Ocular surface inflammation and immunity.
2. 26th EVER Congress, Valencia, October 2023. "Conscious sensations and protective reflexes driven by eye surface nerves in health and disease" in the Symposium EVER-CORONIS Foundation - Understanding ocular surface innervation: from sensory signaling and trophic interactions to clinical evaluation and therapeutic management
3. 26th EVER Congress, Valencia, October 2023. Organization of the Course "How corneal sensory nerves protect our eyes" and the talk "Role of corneal sensory nerves in tearing and blinking"
4. 23rd EVER Congress, Valencia, October 2022. Organizing the Symposium "Contralateral effects after unilateral eye damage: the fellow eye is not a control anymore"
5. XX Biennial Meeting of the International Society for Eye Research, ISER 2012, Berlin, Germany. 21-25 de Julio de 2014. Organizing the Session "Ocular Innervation in Ocular Pathologies"
6. 11th Biennial Meeting of the Association for Ocular Pharmacology and Therapeutics, AOPT 2013. Alicante, Spain, 7-10 Febrero 2013. Member of the Organizing Committee/Scientific Committee and Chair of the Session "Corneal and ocular surface pharmacology and therapeutics".

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

1. PID2023-147915OB-I00. Pathophysiological relevance of corneal nerves in health and disease: functional, morphological and molecular changes during inflammation and corneal nerve repair (PRECORN). MCI, AEI. Proyectos de Generación de Conocimiento, Investigación Orientada. 1. UMH. 01/09/2024-31/08/2027. 325.000 € + contrato FPI. IP1: J.Gallar, **IP2: MC Acosta**.
2. GA No. 101080611-2. Novel advanced and repurposed therapeutics for vision restoration in a group of severe rare ocular surface diseases: from validation to first clinical investigations-RESTORE VISION. EC, Horizon Europe Program. 10 participants, National University of Ireland Galway (Ireland), coordinator. PI UMH: J. Gallar. 01/05/2023-30/04/2027. 626.088,50€ (UMH), 7.999.851,75 (total). *Team member*.
3. CIPROM/2022/048. Conundrum on research in corneal nerve regeneration (CORNER2). Generalitat Valenciana (GV). Proyectos de I+D+i para Grupos de Investigación de Excelencia (PROMETEO) 2021. PI: J. Gallar; ISABIAL and UMH. 01/09/2022-31/12/2025. 525.006,93 €. *Team member*.
4. PID2020-115934RB-I00. Making SeNse Of Ocular surface Pain: studying the activity of trigeminal, thalamic and cortical neurons to understand dry eye disease (SNOOPY). MCI, AEI. Plan Nacional I+D+i-Retos (PN-Retos). PIs J. Gallar and **MC Acosta**, UMH. 01/09/2021-31/08/2024. 242.000 € + FPI fellowship.1. **PI 2**.
5. SAF2017-83674-C2-2-R. Mecanismos sensoriales periféricos implicados en la detección de la humedad. Plasticidad, envejecimiento y cambios tras la lesión y en condiciones patológicas. MINECO. AEI. Plan Nacional de I+D+I Orientada a los Retos de la Sociedad. UMH. 01/01/2018-31/12/2020. 133.100 €. IPs **MC Acosta** and C. Belmonte. **PI 1**
6. PROMETEO/2018/114. Regeneración de las fibras nerviosas sensoriales de la superficie ocular tras lesiones y cirugía. Generalitat Valenciana. Conselleria de Educació,



- Investigación, Cultura y Deporte. Proyectos de I+D+i para Grupos de Investigación de Excelencia (PROMETEO 2018). IP: Juana Gallar, ISABIAL (Fisabio y UMH). 01/01/2018 a 31/12/2021. 347.095. *Team member*.
7. ARREST BLINDNESS. Advanced Regenerative and REStorative Therapies to combat corneal BLINDNESS. European Commission, Horizon 2020. GA N° 667400-1. Participantes: Linköping University (Suecia, coordinador), Aeon Astron Europe BV (Holanda), Netherlands Institute for Innovative Ocular Surgery, Antwerp University Hospital (Bélgica), University of Cologne (Alemania), Universidad Miguel Hernández, Aarhus University (Dinamarca), Austrian Red Cross (Austria), Linkocare AB (Suecia), OptoMedical Technologies GMBH (Dinamarca), Novaliq GMBH (Dinamarca), AMAKEM Therapeutics (Bélgica). IP(UMH): J Gallar 01/02/2016-31/01/2020. (397.656 € UMH, 5.993.178 €. *Team member*
 8. SAF2014-54518-C3-1-R. Regulación neural de la humedad de las mucosas del ojo y la boca: Mecanismos moleculares y celulares de transducción, regulación refleja y cambios con la edad. Plan Nacional de I+D+I Orientada a los Retos de la Sociedad. IPs: J Gallar; **MC Acosta**, UMH. 01/01/2015-31/12/2017 (266.200 €). **PI 2**
 9. RTC-2015-4066-1. Desarrollo y validación clínica de la proteína TRPM8 como nueva diana terapéutica para el tratamiento del síndrome de ojo seco mediante un ensayo clínico de prueba de concepto en pacientes con AVX-012 (AVXDREYEYE). Plan Nacional de I+D+I Orientada a los Retos de la Sociedad. Convocatoria Retos-Colaboración. Entidades participantes: Avizorex Pharma SL, Fundación para la Investigación Hospital Clínico San Carlos, UMH. IPs: J Gallar. 24/02/2015-31/12/2017 (193.624 €). *Team member*.
 10. SAF2011-22500. Bases neurales fisiopatológicas del ojo seco: canales iónicos implicados en la alteración de la actividad de los nervios sensoriales y las sensaciones oculares anormales. Programa Nacional de Biomedicina, Plan Nacional de I+D+I. IP: J Gallar, UMH. 01/01/2012-31/12/2014. (175.450 €). *Team member*
 11. PT-2011-1110-900000. Desarrollo e innovación de una bioprótesis activa de cristalino que evite la opacidad de la capsula posterior y de un instrumento diagnóstico de la sensibilidad de la superficie ocular - PROCUSENS SUBPROGRAMA INNPACTO- MICINN 2011; SUBPROGRAMA INNPACTO 2011 (PROYECTOS COLABORATIVOS), MINISTERIO DE CIENCIA E INNOVACION. IP: C Belmonte, UMH. 24/10/2011-31/12/2014. (205.295,00 €). *Team member*.

C.4. Contracts, technological or transfer merits.

Contracts.

1. Confidential title. Novaliq GmbH. 20/12/2018 al 19/12/2019. PI: J. Gallar (70.200 €).
2. Neurobiological mechanisms of discomfort evoked by tear hyperosmolarity during contact lens wearing. CooperVision. 24/10/2018 al 31/12/2018. IP: J. Gallar (100.000\$).
3. Neurobiological mechanisms of discomfort resulting of contact lens wearing. CooperVision. 28/10/2016 al 30/09/2017. IP: C. Belmonte (100.000 €).
4. Effect of Lacrimera® on the impulse activity of single corneal sensory nerve fibers innervating intact and dry-eye guinea pig eyes. CROMA-Pharma Gesellschaft m.b.H., Austria. 02/12/2014 al 01/02/2015. IP: C. Belmonte (45.000 €).
5. Acuerdo de prestación de servicios de investigación. Allergan Sales LLC. IP. C. Belmonte, Universidad Miguel Hernández. 3/6/2014 a 31/9/2014. (38.778, 64€).

Patents.

1. C. Belmonte, J. Gallar y **M.C.Acosta**. Método para aliviar los síntomas de sequedad de la superficie ocular humana derivados de la cirugía fotorrefractiva. N°: Referencia: 200302898 (España) N°: Referencia: ESA2004000549 (Extensión internacional, Europa); Extensión internacional también para: EEUU, Canadá, China, India, Chile, Argentina y Brasil. Entidad titular: Universidad Miguel Hernández
2. **M.C. Acosta**, J. Gallar, A. Sesto, MaC. Giménez, C. Belmonte, A. Jiménez. EP1937281B1, US8354385B2, CA2626181C, JP5677721B2, AU2006305657B2. Modulation of TRPV1 expression levels. Europe, USA, Canada, Japan, Australia. 15/01/2011 to 25/02/2015. Sylentis, S.A.U. Clinical Trial Phase III finished.
3. C. Belmonte, J. Gallar, **M.C. Acosta**, M.L. Merino. ES2837548A1; WO2021136820A1. Procedimiento y dispositivo para producir una secreción lagrimal refleja y un kit para la medición de la magnitud de flujo lagrimal generado. Spain; PCT. 31/12/2019; 30/12/2020. UMH. Licensed to the company Tearful S.L., Spain.



Part A. PERSONAL INFORMATION			CV date		15/05/2025
First and Family name		Gema Concepción Martínez Navarrete			
Social Security, Passport, ID number			Age		
Researcher numbers			Researcher ID	O-5915-2017	
			Orcid code	0000-0002-9795-2846	

A.1. Current position			
Name of University/Institution		University Miguel Hernández	
Department		Dpto Histología y Anatomía. Instituto de Bioingeniería. Unidad de Neuroingeniería Biomédica	
Address and Country		Avd. Universidad s/n. Edificio Vinalopó	
Phone number		E-mail	gema.martinezn@umh.es
Current position	Profesora Titular. Subdirectora académica de la Escuela de Doctorado UMH	From	15/11/2024
Espec. cód. UNESCO	2407		
Key Words	Cell Biology		

A.2. Education		
PhD	University	Year
B.S. in Biology	University of Alicante	2002
PhD in Biology	University of Alicante	2008

Part B. CV SUMMARY

I am an Associate Professor in the Department of Histology and Anatomy at Miguel Hernández University (UMH) and a Senior Researcher in the Neural Engineering Division of the Bioengineering Institute. I hold a Ph.D. in Experimental and Molecular Biology from the University of Alicante, and my research has been primarily focused on the visual system, particularly on the characterization of retinal diseases and the development of advanced therapies for their treatment.

Throughout my career, I have led and collaborated on multiple national and international research projects. My work began with the discovery of retinal neurogenesis in primates, a finding that sparked my interest in understanding neuroregeneration and neuroprotection mechanisms. Over the years, I have expanded my research into pioneering studies on gene and molecular therapies for retinal disorders, always aiming to translate basic science into clinical applications. I have also coordinated preclinical trials in collaboration with pharmaceutical companies, contributing to the development and validation of innovative therapeutic strategies.

Beyond the visual system, my research has encompassed the study of stem cells in the adult mammalian brain, the development of novel therapies for glioblastoma and neuroblastoma, and the morphometric and structural analysis of peripheral nerves subjected to different types of electrical stimulation using neuroprostheses, establishing the boundaries of therapeutic neural stimulation. This interdisciplinary approach has allowed me to contribute to various fields, always with a strong focus on translational research and patient-oriented solutions.

I have authored more than 50 scientific publications in indexed journals, primarily in the first and second quartiles of the Journal Citation Reports, and have presented my findings at more than a hundred national and international scientific conferences. My research contributions have had a meaningful impact on the field of visual diseases, and my work has been recognized with prestigious awards, including the National Award from the Caser Foundation (XV Edition of the Dependence and Society Awards, First Prize in the R&D&I category) and the 2024 Research Award from the Eurocaja Rural Social Grants. These accolades highlight my ability to lead innovative projects that aim to prevent and treat visual impairment.

In addition to my research, I have extensive experience in academic training. I have supervised Ph.D. theses, Master's and Bachelor's final projects, and have been actively involved in mentoring young researchers. As Deputy Director of the UMH Graduate School (EDUMH), I play a key role in managing and organizing academic programs, fostering the development of future scientists, and ensuring high standards in doctoral education.

My career integrates a strong trajectory as a Principal Investigator, a deep commitment to education, and a significant role in academic management. I am passionate about developing innovative solutions that improve the quality of life of individuals affected by visual disorders and contribute to advancing biomedical research. My goal is to continue pushing the boundaries of science, always seeking new opportunities for collaboration and knowledge transfer to maximize the impact of my work.

Part C. RELEVANT MERITS

C.1. Publications in the last 5 years

PAPERS IN Q1 JOURNALS

- Al Qtaish N., Gallego I., Villate-Beitia I., Sainz-Ramos M., López-Méndez T.B., Grijalvo S., Eritja R., Soto-Sánchez C., Martínez-Navarrete G., Fernández E., Puras G., Pedraz J.L. Niosome-Based Approach for In Situ Gene Delivery to Retina and Brain Cortex as Immune-Privileged Tissues. *Pharmaceutics*. 2020.
- Gallego I., Villate-Beitia I., Soto-Sánchez C., Menéndez M., Grijalvo S., Eritja R., Martínez-Navarrete G., Humphreys L., López-Méndez T., Puras G., Fernández E., Pedraz J.L. Brain Angiogenesis Induced by Nonviral Gene Therapy With Potential Therapeutic Benefits for Central Nervous System Diseases. *Molecular Pharmaceutics*. 2020.
- Checa-Chavarria E., Rivero-Buceta E., Sanchez Martos M.A., Martinez Navarrete G., Soto-Sanchez C., Botella P., Fernandez E. Development of a prodrug of camptothecin for enhanced treatment of glioblastoma multiforme. *Molecular Pharmaceutics*, 18, 1558-1572. 2021.
- Duarri A.; Rodriguez-Bocanegra E.; Martinez-Navarrete G.; et al; Monés J.2021. Transplantation of Human Induced Pluripotent Stem Cell-Derived Retinal Pigment Epithelium in a Swine Model of Geographic Atrophy. *International Journal of Molecular Sciences*. MDPI. 22-19, pp.1-21. ISSN 1422-0067.
- Al Qtaish N.; Gallego I.; Villate-Beitia I.; et al; Pedraz J.L.2021. Sphingolipid extracts enhance gene delivery of cationic lipid vesicles into retina and brain. *European Journal of Pharmaceutics and Biopharmaceutics*. ScienceDirect. 169, pp.103-112. ISSN 0939-6411.
- Al Qtaish N.; Gallego I.; Paredes A.J.; et al; Pedraz J.L.2022. Nanodiamond Integration into Niosomes as an Emerging and Efficient Gene Therapy Nanoplatfrom for Central Nervous System Diseases. *ACS Applied Materials & Interfaces*. AMER CHEMICAL SOC. 14-11, pp.13665-13677. ISSN 1944-8244.
- Farrando-Pérez J; Martinez-Navarrete G; Gandara-Loe J; Reljic S; Garcia-Ripoll A; Fernandez E; Silvestre-Albero J. 2022. Controlling the Adsorption and Release of Ocular Drugs in Metal-Organic Frameworks: Effect of Polar Functional Groups. *Inorganic Chemistry*. ACS. 28-61, pp.18861-18872.
- Du J; Morales A; Kosta P; Bouteiller JC; Martinez-Navarrete G; Warren DJ; Fernandez E; Lazzi G. 2023. Electrical Stimulation Induced Current Distribution in Peripheral Nerves Varies Significantly with the Extent of Nerve Damage: A Computational Study Utilizing Convolutional Neural Network and Realistic Nerve Models. *International Journal of Neural System*. 33-4.
- Al Qtaish NH, Villate-Beitia I, Gallego I, Martínez-Navarrete G, Soto-Sánchez C, Sainz-Ramos M, Lopez-Mendez TB, Paredes AJ, Javier Chichón F, Zamarreño N, Fernández E, Puras G, Pedraz JL. Long-term biophysical stability of nanodiamonds combined with lipid nanocarriers for non-viral gene delivery to the retina. *Int J Pharm*. 2023 May 25;639:122968.
- Celdrán JD, Humphreys L, González D, Soto-Sánchez C, Martínez-Navarrete G, Maldonado I, Gallego I, Villate-Beitia I, Sainz-Ramos M, Puras G, Pedraz JL, Fernández E. Assessment of Different Niosome Formulations for Optogenetic Applications: Morphological and Electrophysiological Effects. *Pharmaceutics*. 2023 Jul 1;15(7):1860.
- Garcés-Garcés J, Sánchez-Martos M, Martinez-Navarrete G, Fernández-Jover E, Encheva M, León M, Ortiz J, Sastre-Santos Á, Fernández-Lázaro F. New Highly Fluorescent Water Soluble Imidazolium-Perylenediimides: Synthesis and Cellular Response. *Pharmaceutics*. 2023 Jul 5;15(7):1892.
- Morales, A. W., Du, J., Warren, D. J., Fernández-Jover, E., Martinez-Navarrete, G., Bouteiller, J. C., McCreery, D. C., & Lazzi, G. (2024). Machine learning enables non-Gaussian investigation of changes to peripheral nerves related to electrical stimulation. *Scientific reports*, 14(1), 2795.
- Parra-Sanchez A, Zorrilla-Muñoz V, Martinez-Navarrete G, Fernandez E. Technological Perception with Rural and Urban Differentiation and Its Influence on the Quality of Life of Older People with Age-Related Macular Degeneration. *Eur J Investig Health Psychol Educ*. 2024 May 20;14(5):1470-1488.
- Martinez-Navarrete G, Castaño-Castaño S, Morales-Navas M, Nieto-Escámez F, Sánchez-Santed F, Fernandez E. Impact of transcranial Direct Current Stimulation on stereoscopic vision and retinal structure in adult amblyopic rodents. *Eye Brain*. 2024 Oct 31;16:75-88.
- Parra-Sánchez Á, Martínez-Navarrete G, Accomasso G, Chindamo G, Chirio D, Peira E, Sapino S, Bernabeu-Zornoza A, Gombau-García A, Gallarate M, Fernández E. A novel bevacizumab delivery system using solid lipid nanoparticles for potential wet age-related macular degeneration treatment: An in vivo study. *Int J Pharm*. 2025 Mar 30;673:125379.
- Dominguez-Pinilla N, González-Granado LI, Gonzaga A, López Diaz M, Castellano Yáñez C, Aymerich C, Freire X, Ordoñez O, Díaz de Aauri ÁG, Albi Rodríguez MS, Martínez López E, Iñiguez R, Serrano

Garrote O, Frontiñán AC, Andreu E, Gutierrez-Vilchez AM, Anton-Bonete M, Martinez-Navarrete G, Castillo-Flores N, Prat-Vidal C, Blanco M, Morante Valverde R, Fernandez E, Querol S, Hernández-Blasco LM, Belda-Hofheinz S, Soria B. Consecutive intrabronchial administration of Wharton's jelly-derived mesenchymal stromal cells in ECMO-supported pediatric patients with end-stage interstitial lung disease: a safety and feasibility study (CIBA method). *Stem Cell Res Ther.* 2025 Apr 5;16(1):164. doi: 10.1186/s13287-025-04289-3.

- Bermúdez-Gómez P, Muñoz-Tébar N, Martínez-Navarrete G, Lucas-Gonzalez R, Pérez-Clavijo M, Fernández E, Fernández-López J, Viuda-Martos M. Effect of sodium and starch reduction on nutritional, physicochemical, and sensorial properties of mortadella added with *Agaricus bisporus* and *Pleurotus ostreatus* by-products. *Meat Sci.* 2025 Oct;228:109888.
- Gonzaga, A.; Martinez-Navarrete, G.; Macia, L.; Anton-Bonete, M.; Cahuana, G.; Tejedo, J.R.; Zorrilla-Muñoz, V.; Fernandez-Jover, E.; Andreu, E.; Eguizabal, C.; et al. Non-Viral Therapy in COVID-19: Where Are We Standing? How Our Experience with COVID May Help Us Develop Cell Therapies for Long COVID Patients. *Biomedicines* 2025, 13, 1801. *streatus by-products. Meat Science. Elsevier.* 109888.

PAPERS IN Q2 JOURNALS

- Sanchez Martos M., Martinez Navarrete G., Bernabeu-Zornoza A., Humphreys L., Fernandez E. Evaluation and Optimization of Poly-d-Lysine as a Non-Natural Cationic Polypeptide for Gene Transfer in Neuroblastoma Cells. *Nanomaterials*, 11(7):1756. 2021.
- Parra-Sánchez Á, Antequera-Zambrano L, Martínez-Navarrete G, Zorrilla-Muñoz V, Paz JL, Alvarado YJ, González-Paz L, Fernández E. Comparative Analysis of CRISPR-Cas Systems in *Pseudomonas* Genomes. *Genes (Basel)*. 2023 Jun 25;14(7):1337.
- Du J, Morales A, Kosta P, Martinez-Navarrete G, Warren DJ, Fernandez E, Bouteiller JC, McCreery DC, Lazzi G. Toward Safety Protocols for Peripheral Nerve Stimulation (PNS): A Computational and Experimental Approach. *Bioelectromagnetics*. 2025 Jan;46(1):e22533.
- Antequera-Zambrano, L.; Parra-Sánchez, Á.; González-Paz, L.; Fernandez, E.; Martinez-Navarrete, G.2025. Distribution of Genetic Determinants Associated with CRISPR-Cas Systems and Resistance to Antibiotics in the Genomes of Archaea and Bacteria. *Microorganisms*. 13-6, pp.1-21

PAPERS PUBLISHED IN PRESTIGIOUS JOURNALS RECOGNIZED BY YOUR PEER

- Angulo A., Martínez-Navarrete G., Martín-Nieto J., Cuenca N. Alteraciones visuales en la enfermedad de Parkinson. *Ver y Oír*. Vol. 21, n. 190 (Nov. 2004). ISSN 0212-4394, pp. 539-545.
- Martín Nieto J., Angulo A., Martínez Navarrete, G.C., Cuenca N. Neurogénesis en la retina de mamíferos adultos. *Ver y Oír*. ISSN 0212-4394. Vol. 26: 134-139. 2009.

CHAPTERS IN BOOKS

- Du J.; Kosta P.; Bouteiller J.-C.; Martinez G.; Warren D.; Fernandez E.; Lazzi G.2022. Electrical Stimulation Induced Current Distribution in Peripheral Nerves Varies Significantly with the Extent of Nerve Damage: A Computational Study Utilizing Convolutional Neural Network and Realistic Nerve Models. *Lecture Notes in Computer Science*. pp.526.
- Parra-Sanchez, Á., Zorrilla-Muñoz, V., Martinez-Navarrete, G., Fernandez, E. (2024). Agent-Based Modeling: Investigating Technological Perception's Impact on Quality of Life in Older Adults with Age-Related Macular Degeneration. *Proceedings of the Third International Conference on Innovations in Computing Research (ICR'24)*. ICR 2024. *Lecture Notes in Networks and Systems*, vol 1058. Springer, Cham.
- Benedicto Rodriguez, G., Zorrilla-Muñoz, V., Agulló-Tomás, M.S., Martinez-Navarrete, G., Lillo-Navarro, C., Fernandez, E., Ferrandez-Vicente, J.M. (2024). Use of Technologies to Improve Quality of Life and Well-Being in People with Autism (ASD) and Chronic Anxiety and/or Depression from a Gender Perspective. In: Stephanidis, C., Antona, M., Ntoa, S., Salvendy, G. (eds) *HCI International 2024 Posters*. *HCI 2024. Communications in Computer and Information Science*, vol 2115. Springer, Cham.

C.2. Ongoing Research projects and grants (last 5 years)

- 2019-2022 Development of a new generation of cortical prosthesis with the visual system. 242.000 € (Ministry of Science, Spain).
- 2019-2022 Clinical validation of a cortical visual neuroprosthesis for the blind based on intracortical microelectrodes. 300.000 € (Generalitat Valenciana, Spain).
- 2020-2027 Innovative Neurotechnology for Society. 500.000 € (Netherlands Organisation for Scientific Research).
- 2020-2024 Neural Active Visual Prosthetics for Restoring Function. 601.000 € (European Commission, H2020, Spain).



- 2020-2022 Light-regulated drugs to restore sight (HR18-00501). 110.000 € (Foundation La Caixa, Spain).
- 2021-2023 Lentes Intraoculares Inteligentes para Implantes Ópticos de Alto Rendimiento. OCULUS. 123.000 € (Ministry of Science, Spain).
- 2022-2024 Oligofastx; Inducción y optimización de un modelo de DMAE, y estudios de la eficacia de diversos tratamientos para revertir las lesiones a nivel de la retina. 500.000 €. Spain, CDTI
- 2023-2025 Films containing nanolipid complexes for the sustained release of timolol drug on the surface of the eye: project extension. CIBER-BBN. 40.000 €.
- 2023-2027 Desarrollo de una Neuroprótesis Visual Cortical Avanzada para personas ciegas. Agencia Estatal de Investigación. PID2022-141606OB-I00. 370.625 €
- 2024-2028 Towards an Advanced Cortical Visual Neuroprosthesis for the Blind (Hacia una Neuroprótesis Visual Avanzada para Personas Ciegas. Programa PROMETEO para grupos de Excelencia. Referencia CIPROM/2023/25. 600.000 €.

Principal Investigator

- 2022-2023 NANOFTal: Estudio con nanocarriers para la DMAE. University Miguel Hernandez. *Principal Investigator*. 2.225 €
- 2023-2024 ARA Assay. University Miguel Hernandez. *Principal Investigator*. 2.225 €
- 2023 Envejecimiento Activo: Nuevas Terapias para la Degeneración Macular Asociada a la Edad. ICAR, International Center for Aging Research. *Principal Investigator*. 20.000 €.
- 2023-2025 Nuevos enfoques en el tratamiento de la Degeneración Macular Asociada a la Edad basados en nanoterapia. Ayudas 2023 del Patronato de la FUNDACIÓN BIENVENIDA NAVARRO LUCIANO TRIPODI. *Principal Investigator*. 10.796 €.
- 2024-2025 Premios Fundación Caser para el mejor proyecto en I+D+I "Nanoterapia innovadora para el tratamiento de la Degeneración Macular asociada a la Edad. *Principal Investigator*. 20.000 €.
- 2024-2025 Impacto de la tecnología en la calidad de vida de personas con DMAE. Premio en la convocatoria de Ayudas Sociales 2024 en el campo de la Investigación. Fundación EUROCAJA RURAL. *Principal Investigator*. 4.000 €.
- 2025- 2027 VisionAI: algoritmos de visión artificial para el diagnóstico precoz de la Degeneración Macular Asociada a la Edad (Referencia FERP-2024-226). *Principal Investigator*. 25.000,00 €.

C.3. Ongoing contracts with companies (art. 60 LOSU) (last 5 years)

- 2023-2024 Desarrollo de modelos animales y evaluación de la eficacia de nuevos compuestos para el tratamiento de enfermedades de la retina. SYLENTIS2.23I SYLENTIS S.A. 137.066 €.
- 2023-2024 Contrato para la realización, desarrollo y caracterización de modelos animales para el estudio de enfermedades raras oculares y enfermedades de piel relacionadas con alteraciones en el matrisoma para la caracterización de dianas terapéuticas y validación de nuevas terapias basadas en oligonucleótidos SYLENTIS S.A. 535.000 €.
- 2023-2026 Contrato para la realización de los trabajos de investigación en el marco del programa de financiación de proyectos de investigación y desarrollo individuales (CDTI), de título "Calidad Asistencial en oncología a través de IoT e Inteligencia Artificial" Bienzobas Salud S.L.U. 70.000 €.
- 2021-2024 Caracterización de modelos animales comerciales de retinosis pigmentaria (RP), amaurosis congénita de Leber (LCA) y síndrome de Alström (SA), validación de dianas terapéuticas y estudios de dosis respuesta de la eficacia de diversos tratamientos para revertir las lesiones a nivel de la retina en el proyecto: Oligofastx. SYLENTIS2.21CC Sylentis SAU. 391.190,5 €.

C.4. Conference Papers and Presentations

- 70 international conference papers and presentations.
- 34 national conference papers and presentations.

C.5. Scientific Awards (last 5 years)

- 2022 Best paper Award ("José Mira" Best Engineering paper). 9th International Work-Conference on the Interplay between Natural and Artificial Computation (IWINAC).
- Best Poster Award: Bay-substituted perylenediimides as photo therapeutic agents. Real Sociedad Española de Química. 2022
- 2022 Research Award: Outstanding Research 2021. Diario Información. ES
- X Premios Onda Cero Elche-Comarcas del Vinalopó. 2022.



- Segundo Premio al mejor artículo de ámbito internacional XXIII Jornadas de Investigación e Innovación profesionales BIOARABA. 2022.
- Mejor trabajo de Investigación en la modalidad de póster digital en el VI Congreso Internacional de Investigación estudiantil Universitaria REDIELUZ. 2022.
- 2024 Premio Fundación Caser para el mejor proyecto en I+D+I.
- 2024 Premio Ayudas Sociales 2024 en el campo de la Investigación.
- 2025 Ophtalmology Star Award 2025. First Prize. European Society of Cataract and Refractive Surgeons (ESCRS)

C.6. Scientific technical reports or expert panel evaluator

- Execution of 27 scientific and technical reports for DNV Business Assurance.
- Expert Evaluator – European Commission (Marie Skłodowska-Curie Actions, 2024).

C.7. Web of Science H index: 20.



CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	José		
Family name	Ferran Bertone		
Gender (*)	Male	Birth date	
Social Security, Passport, ID number		PAF276569	
e-mail	jl ferran@um.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-3413-9452	

(*) Mandatory

A.1. Current position

Position	Associate Professor (Profesor Titular)		
Initial date	31/07/2018		
Institution	University of Murcia		
Department/Center	Human Anatomy and Psychobiology	Faculty of Medicine	
Country	Spain	Teleph. number	
Key words	Brain and Exercise, Comparative neurobiology, Neuroanatomy,		

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

Period	Position/Institution/Country/Interruption cause
2009-2018	Tenured Full-time Lecturer/Univ. of Murcia.
2007-2009	Postdoctoral research/CIBERER ENF. RARAS/Univ. Murcia.
2006-2006	Research Contract. Network of neurological diseases research /Univ. Murcia.
2004-2006	Postdoctoral fellowship Caroline Foundation/Univ. Murcia.
2002-2004	Postdoctoral fellowship “Ministerio de Asuntos Exteriores de España MAE/Univ. Murcia.
1999-2002	Senior Teaching Assistant, Embryology. Faculty of Medicine, University of Buenos Aires, Argentina.
1998-2002	Predoctoral fellowship by Argentine National Research Council (CONICET)/Univ. of Buenos Aires, Argentina.
1997-1997	Student fellowship introduction to research/University Buenos Aires. Argentina

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bachelor of Medicine	University of Buenos Aires (Homologated 2006)	1997
PhD in medicine, biostructural sciences area	University of Buenos Aires (Homologated 2007)	2002

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

My research training **begins at the University of Buenos Aires (UBA, Argentina)**, obtaining a thesis in Neurosciences that was awarded as the best thesis in Basic Sciences (2002). During this period, I obtained a fellowship from the National Council for Scientific Research (CONICET). I also worked as a postgraduate teaching assistant in the first Chair of Cell Biology, Histology, and Embryology of the Faculty of Medicine of the UBA. This period of teaching-research experience allowed me to acquire solid theoretical bases on basic concepts in the field of embryology, histology and neurosciences that were fundamental for my later



stage in Murcia. My research focused on the avian optic tectum and my main contribution was to determine the developmental distribution of the fifth cranial nerve neurons and orientation of the spindle mitotic axes during tectum development (4 papers). During this training I did a short stay (Murcia), seven training courses (Argentina, Chile, USA) and participated in five national grants (CONICET and Ubacyt).

I started my **post-doctorate** at the **end of 2002** in the L Puelles laboratory of the University of Murcia. Until 2009 I was linked to the laboratory through a postdoctoral grant from the Ministry of Foreign Affairs of Spain, a grant from the Carolina Foundation, grants associated with projects and a contract from the CIBER Rare diseases. Finally, as of 2009, I re-linked my research activity with teaching. I became Associated Professor (Titular) at the University of Murcia and I was Head of the Department of Human Anatomy at the Faculty of Medicine (2016-2020). In relation to my research activity, during my post-doctorate I have acquired a solid research training in both theoretical and experimental aspects in evolutionary neurodevelopment. In relation to my research training, I improved my skills in molecular biology with a research stay in the Marion Wassef's laboratory at the Ecole Normal (Paris). I acquired skills for the cloning of genes of interest, used for the ISH technique in our descriptive and experimental studies. Other experiences developed in Belgium (Balthazar), Portsmouth (F. Schubert), Extremadura (Hidalgo-Sánchez), Barcelona (García-Fernández), San Francisco (Rubenstein), Chicago (Tseng) and South Africa (Manger) allowed me to acquire training for comparative studies, work with transgenic lines, stereotaxic experiments in rats, as well as in ISH fluorescent, alternative splicing and qPCR. As a result, during this period I have published 38 indexed articles and 6 book chapters. I was focused on genoarchitectural studies, of which I highlight those that I performed on the pretectal region, covering development, postnatal stages and comparative aspects (6 papers). In addition, I have conducted the first study to define a brain bauplan in amphioxus (3 papers). During this period, I was involved in eight national and international grants (Mineco, Seneca from SPAIN and NIH from USA), but also co-directed my first national grant (Mineco). Eleven national and international courses endorse my skills and my theoretical training during this period, but also 47 national and international conferences (courses, meetings, laboratories).

However, **from 2014** with a contract (Mapfre) I began to develop my **current multidisciplinary line of research that focuses on understanding the mechanisms that determine the positive effects in physical and mental health of forced physical activity during adolescence in the brain of rodents**. I directed the project to obtain a model to study the effects of physical activity with the same training in all animals that also provides all the preliminary data to obtain a national grant (Mineco 2019-2021) and a Mapfre grant (2019). I developed this project to determine the dopaminergic effect in the motor control and design a model to determine metabolic changes during forced exercise. These data led to six published and two submitted papers from my laboratory and an international published collaboration related with the project. I did **a long research stay** in Dr. Tseng's laboratory at the **University of Illinois at Chicago** (September 2022-August 2023) acquiring preliminary data and technical skills for this project.

In addition, I coordinated the **BRAINACTIVITY network** granted by the Higher Sports Council of Spain (2019-2021). This network brings together national and international experts interested in brain function under physical activity. I had published two divulgation articles related with my project (<https://theconversation.com/por-que-nos-sienta-tan-bien-hacer-ejercicio-fisico-156985>). Furthermore, I reviewed articles (JCR) and also evaluated research project from Argentina and Spain. I am reviewer board of Frontiers in Neuroanatomy and Journal of integrative Neuroscience. Finally, I have three six-year period of research activity, directed five doctoral theses (summa cum laude) and directed six master's theses. H index Wos: 24.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1. Bilbao, M. G., Garrigos, D., Martínez-Morga, ... & **Ferran, J. L. (10/10)** (2022). Prosomeric hypothalamic distribution of tyrosine hydroxylase positive cells in adolescent rats. **Frontiers in Neuroanatomy**, 16:868345 doi: 10.3389/fnana.2022.868345. **I.F:3.543, Q1.**

2. Kutsenko Y, Barreda A, Toval A, Garrigos D, Martínez-Morga M, Ribeiro B, **Ferran JL (7/7)** (2021). Sex-dependent effects of forced exercise in the body composition of adolescent rats. **Scientific Reports** 11:10154. doi:10.1038/S41598-021-89584-8. **I.F:4.379, Q1.**



3. Toval A, Garrigos D, Kutsenko Y, Popović M, Ribeiro Do Couto B, Morales-Delgado N, Tseng KY, **Ferran JL (8/8)** (2021). Dopaminergic modulation of forced running performance in adolescent rats: Role of striatal D1 and extra-striatal D2 dopamine receptors. **Molecular Neurobiology** 58 (4): 1782-1791. doi:10.1007/s12035-020-02252-2. **I.F: 5.682- Q1.**
4. Garrigos D, Martínez-Morga M, Toval A, Kutsenko Y, Barreda A, Ribeiro Do Couto B, Navarro-Mateu F, **Ferran JL (8/8)**. (2021). A Handful of Details to Ensure the Experimental Reproducibility on the FORCED Running Wheel in Rodents: A Systematic Review. **Frontiers in Endocrinology** 12:638261. doi: 10.3389/FENDO.2021.638261. **I.F: 6.055- Q1.**
5. Navas-Pérez E, Vicente García C... **Ferran JL**, ..., Jordi García Fernández **(6/22)** (2020). Characterization of an eutherian gene cluster generated after transposon domestication identifies Bex3 as relevant for advanced neurological functions. **Genome Biology** 21:267 (1-27). doi: 0.1186/s13059-020-02172-3. **I.F: 13.583- Q1.**
6. Lipiec AM, Bem J, ... **Jose Ferran**... Marta Barbara Wisniewska **(10/12)** (2020). TCF7L2 regulates postmitotic differentiation programs and excitability patterns in the thalamus. **Development**. 147:16. doi: 10.1242/dev.190181. **I.F: 6.868- Q1.**
7. Toval A, Vicente-Conesa F, Martínez-Ortega P,... **Ferran JL (10/10)** (2020). Hypothalamic Crh/Avp, plasmatic glucose and lactate remain unchanged during habituation to forced exercise. **Frontiers in Physiology**, 11: 410. doi: 10.3389/fphys.2020.00410. **I.F: 4.566- Q1.**
8. Trotta M, Bello E, Alsina R, Tavella MB, **Ferran JL**, Rubinstein M, Bumashny VF **(5/7)** (2020). Hypothalamic Pomc expression restricted to GABAergic neurons suppresses Npy overexpression and restores food intake in obese mice. **Molecular Metabolism** 37: 100985. doi: 10.1016/j.molmet.2020.100985. **I.F: 7.422- Q1.**
9. Albuxech-Crespo B, López-Blanch L, Burguera D, ...**Ferran JL (14/14)** (2017). Molecular regionalization of the developing amphioxus neural tube challenges major partitions of the vertebrate brain. **PLoS Biology** 15(4): e2001573. doi: 10.1371/journal.pbio.2001573. **I.F: 9.163- Q1.**
10. Silberberg SN, Taher L,...**Ferran JL**,...Rubenstein JL. **(11/18)** (2016). Subpallial Enhancer Transgenic Lines: a Data and Tool Resource to Study Transcriptional Regulation of GABAergic Cell Fate. **Neuron** 92(1):59-74. doi: 10.1016/j.neuron.2016.09.027. **I.F: 14.024- Q1.**

C.2. Congress

- D. Garrigos, A. Barreda, M. Martínez-Morga, A. Toval, Y. Kutsenko, B. Ribeiro Do-Couto, K.Y. Tseng, **J. L. Ferran**. *A forced physical exercise maintenance model to study the role of the dopaminergic system in adolescent rats*. **Society for Neuroscience Meeting (SFN). San Diego, USA. 12-16 November 2022. Póster.**
- Y. Kutsenko, L. P. Iñiguez, A. Barreda, L. Pardo, A. Toval, D. Garrigos, M. Martínez-Morga, S. Pujante, B. Ribeiro Do-Couto, J. Ceron, M. Garaulet, M.B. Wisniewska, M. Garaulet, M. Irímia, **J. L. Ferran**. *Reduced adipose tissue contents after evening but not morning exercise and the role of the hypothalamus*. **Society for Neuroscience Meeting (SFN). San Diego, USA. 12-16 November 2022. Póster. Póster**
- A. Toval, Y. Kutsenko, **J. L. Ferran**. Dopaminergic effects and metabolic changes during an exercise program in a forced running wheel system in adolescent rats. Simposio: Neurobiology of exercise: what have we learned from animal models? **7th Mediterranean Neuroscience Society Conference, Marrakech, Marruecos. 23-27 JunE 2019. Invited simposio (oral).**
- **J. L. Ferran**. *Exploring Brain Genoarchitecture by Chromogenic In Situ Hybridization in Whole-Mount, Cryostat or Floating sections*. **In Situ Hybridisation Symposium: Applications of In Situ Hybridization in Research and Disease. Cancer Research. UK Cambridge Institute Cambridge, UK 7-8 May 2015. Selected talk** from submitted abstracts.



- **J. L. Ferran.** *The early CNS bauplan of amphioxus reveals a common evolutionary origin for the caudal diencephalon and mesencephalon of vertebrates.* **II EVO-DEVO WORKSHOP.** Department of Zoology, University of Oxford, UK. **12 June 2013.** Invited oral presentation.

C.3. Research projects

1) 21903/PI/22

Title: **¿PUEDE EL EJERCICIO FORZADO REVERTIR UN TRASTORNO MADURATIVO DE LA CORTEZA PREFRONTAL?** Entity: Fundación Seneca. **Start-End date:** 01/01/2023-31/12/2025 (36 months). **PI:** José Luis Ferran. **Total amount:** 126.500 euros.

2) PGC2018-098229-B-I00

Title: **Neural bases of resistance to fatigue and reduction of adipose tissue in an exercise forced program (BRAINEXERCISE).** Entity: Ministerio de Ciencia, Innovación y Universidades (I+D Generación de Conocimiento). **Start-End date:** 01/01/2019-31/12/2021 (36 months). **PI:** José Luis Ferran. **Total amount:** 145.000 euros.

3) Creación Redes de Investigación 18/UPB/21

Title: **Network Neurobiology of the physical activity (BRAINACTIVITY).** Entity: National Sport Council. **Start-End date:** 01/01/2021-12/11/2021 (11 months). **Coordinator:** José Luis Ferran. **Total amount:** 8.000 euros.

4) Creación Redes de Investigación 28/UPB/20

Title: **Network Neurobiology of the physical activity (BRAINACTIVITY).** Entity: National Sport Council. **Start-End date:** 21/06/2020-30/10/2020 (4 months). **Coordinator:** José Luis Ferran. **Total amount:** 8.000 euros.

5) MAPFRE H. LARRAMENDI-2019

Title: **Physical activity during the evening but not in the morning prevents adolescent obesity.** Entity: Fundación Mapfre. **Start-End date:** 02/06/2020-02/06/2021 (12 months). **PI:** José Luis Ferran. **Total amount:** 30.000 euros.

6) Creación Redes de Investigación 32/UPB/19

Title: **Network Neurobiology of the physical activity (BRAINACTIVITY).** Entity: National Sport Council. **Start-End date:** 27/06/2019-30/10/2019 (4 months). **Coordinator:** José Luis Ferran. **Total amount:** 4.000 euros.

7) BFU2014-57516-P

Title: **Modelos genoarquitectónicos causales del prosencéfalo del ratón.** Entity: Plan Nacional de Investigación Científica (I+D Excelencia) BFU2014-57516-P **Start-End date:** 01/01/2015-31/12/2017 (36 months). **PI:** Luis Puelles and José Luis Ferran. **Total amount:** 375.000 euros.

8) BFI2008-04156

Title: **Regionalización cerebral embrionaria.** Entity: Plan Nacional de Investigación Científica (I+D Excelencia) BFU2008-04156/BFI. **Start-End date:** 01/01/2009-31/12/2014 (72 months). **PI:** Luis Puelles. Researcher: **J.L. Ferran.** **Total amount:** 773.190 euros.

C.4. Contracts, technological or transfer merits

Contracts: Title: Impacto de la actividad física en la maduración de los circuitos inhibitorios corticales durante la adolescencia. Entity: Fundación Mapfre. **PI:** José Luis Ferran. **Start-End date:** 27/01/2014-27/01/2015 (12 months). **Total amount:** 15.000 euros.

Patents: Title registered: Sistema info-optico para la monitorización del movimiento de roedores de laboratorio. **Inventors:** A. Arenas Dalla-Vecchia, **J. L. Ferran**, M. Popovic Popovic, J. Toval Alvarez, D. Escribano Martinez, J. A. Toval Sanchez.

Refence/registry code: ES 2596879 A1. **Nº of application:** P201600601 **Date:** 12/07/2016



Fecha del CVA	07/09/2025
---------------	------------

Parte A. DATOS PERSONALES

Nombre *	Ana Isabel		
Apellidos *	Rodríguez Pérez		
Sexo *	Mujer	Fecha de Nacimiento *	
DNI/NIE/Pasaporte *		Teléfono *	
URL Web	https://investigacion.usc.gal/investigadores/60200/detalle?lang=es		
Dirección Email	anai.rodriguez@usc.es		
Identificador científico	Open Researcher and Contributor ID (ORCID) *	0000-0003-1354-8799	
	Researcher ID	AAM-1198-2021	
	Scopus Author ID	36341109400	

* Obligatorio

A.1. Situación profesional actual

Puesto	Associate Professor		
Fecha inicio	2022		
Organismo / Institución	University of Santiago de Compostela		
Departamento / Centro	Morphological Sciences / Faculty of Medicine		
País	España	Teléfono	
Palabras clave	Ciencias naturales y ciencias de la salud		

A.2. Situación profesional anterior

Periodo	Puesto / Institución / País
2016 - 2022	Associate Professor (Contracted) / University of Santiago de Compostela / España
2014 - 2016	Interim Substitute Teacher / University of Santiago de Compostela / España
2009 - 2014	Ph. D. Assistant Professor / University of Santiago de Compostela / España

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Drug Research and Development	University of Santiago de Compostela	2006
Degree in Pharmacy	University of Santiago de Compostela	2001

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

General Indicators

Total number of scientific articles in international journals: 84, of which 65 are Q1 (nearly 82% of the total) and 30 are D1 (46%). No. theses supervised and defended (last 10 years): 4; No. thesis under supervision: 4; Final year projects and master’s degree defended: 24. **Associate Professor**(Prof. Titular) in the Dept. of Morphological Sciences, Faculty of Medicine of the USC where I am also the academic Secretary (from 2015-today). H-Number: 37.

Parte B. RESUMEN LIBRE DEL CURRÍCULUM



I am PI of the “Cellular and Molecular Neurobiology of Parkinson's Disease Group” at CiMUS, where I have been studying the role of the nigral Renin-Angiotensin System (RAS) in promoting oxidative stress and neuroinflammation in Parkinson's Disease (PD) for the last years.

Participation in Research Projects

I have participated in 24 research projects at both national and regional levels. In 2017 when I became the PI of project **PI17/00828**. Key achievements in this project include a) **the development of an Animal Model for PD** (PMID: 29987762) We found that **PD patients have increased serum levels of antibodies against RAS**, which disrupt the BBB and promote neuroinflammation and dopaminergic neuronal death. This process is partially reversible with RAS-blocking drugs (PMID: 35701430).

During the COVID-19 pandemic, **as Co-PI of the Galician Innovation Agency-financed project IN845D 2020/20**, we made several important discoveries: a) **Impact of Antihypertensive Drugs**: We demonstrated that antihypertensive drugs such as ARBs, ACEIs, and anti-inflammatory drugs should be maintained in at-risk populations. Despite increasing lung ACE2 expression, these drugs decrease the activity of key SARS-CoV-2 cell entry enzymes, thereby reducing virus internalization (PMID: 33479758; PMID: 33931961); b)

Identification of Risk Biomarkers: We identified biomarkers of disease progression in serum samples from COVID-19 patients, facilitating their integration into the National Health System (PMID: 34144328; PMID: 35355599).

In 2021, I was awarded project **AES PI20/00345**. This project revealed for the first time the relationship between peripheral RAS hyperactivation and cerebral RAS, linked through antibodies against RAS components developed by patients with Metabolic Syndrome (MetS). These findings were published (PMID: 36535607). **Additionally, we discovered that RAS extracellular vesicle (EV) cargo might be a mechanism connecting MetS and high-risk suffering from PD** (PMID: 38136164).

Currently, as part of **Project PID2023-150743OB-I00** (for which I am the PI), we are working on the development of a panel of early and progression biomarkers for PD. Several of these biomarkers, related to RAS, will be determined in plasma **EVs derived from brain cells** and correlated with more classical but less specific biomarkers.

Other Professional Activities Editorial Roles: I serve as the Associate Editor for Cellular and Molecular Neurobiology and as a guest editor for special issues in prestigious journals like the International Journal of Molecular Sciences and Antioxidants. **Journal**

Reviewer: I review manuscripts for several high-impact journals in neuroscience and molecular biology. **Committee Memberships**: I am a secretary and member of the Scientific-Technical

Committee Commission in the “Neurosciences and Diseases of the Nervous System” area for project evaluations, having evaluated over 50 projects. I am also an associated member of various research networks and institutes, including CIBERNED, RICORS-TERAV, RETIC-TERCEL, and IDIS. **Management Roles**: I serve as the Scientific Director of the Body Donation Service for research and teaching at the Department of Morphological Sciences, the only such service in Galicia.

Conference Organization: I have been involved in organizing several conferences and symposia, including: **I Jornadas de Personal Científico Joven del CIBER (May 2024)** **6th Geivex Symposium (2022)** **TerCel Annual Meeting (2019)** **VI International Congress on Research and Innovation in Neurodegenerative Diseases (CiiiEN) (2018)**

Public Outreach and Dissemination: I actively participate in outreach activities to educate the public about neurodegenerative diseases, including **World Parkinson's Day**: I organized events in 2019 and 2023. **UnistemDay**: Participated annually since 2013. **Exhibitions**: Organized picture exhibitions such as “Alzheimer: The Path of Memory” (2018) and “Cajal: Those Butterflies of the Soul” (2022). **Public Seminars**: Engaged in initiatives like “Pint of Science” and seminars to share research findings with Galician patient associations, especially ACEM.

My career has been dedicated to understanding molecular mechanisms involved in the onset and progression of PD through rigorous research, collaboration, and public dissemination of our findings. We believe that our work has contributed to the fields of neurobiology and neurodegenerative diseases, with ongoing projects aimed at uncovering new therapeutic targets and biomarkers. I am a tenured Associate Professor (Profesora Titular) in the

Department of Morphological Sciences at the Faculty of Medicine of the University of Santiago de Compostela (USC), and I hold national accreditation for Full Professor (Catedrática).

Parte C. MÉRITOS MÁS RELEVANTES

C.1. Publicaciones

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

- 1 **Artículo científico.** Pineiro-Alonso L; Rubio-Prego I; López-Estévez AM; et al; Alonso MJ; (8/9) Rodríguez-Pérez AI (AC). 2025. Delivery of monoclonal antibodies to the brain: the impact of nanocarrier structure. Drug Deliv Transl Res. Springer. ISSN 2190-3948. <https://doi.org/10.1007/s13346-025-01957-y>
- 2 **Artículo científico.** Zurrón M; Pereiro AX; (3/13) Rodriguez-Perez AI; et al; Díaz F. 2025. Plasma and neurostructural biomarkers in the clinical-biological characterization of early stages of the Alzheimer's disease continuum: findings from the Compostela Aging Study. JPAD-J PREV ALZHEIM. Elsevier. ISSN 2426-0266. <https://doi.org/10.1016/j.tjpad.2025.100331>
- 3 **Artículo científico.** Labandeira CM; Camacho-Meño L; Aracil-Pastor P; Suárez-Quintanilla JA; Labandeira-García JL; (6/6) Rodríguez-Pérez AI (AC). 2025. Renin-Angiotensin System Autoantibody Network in Parkinson's Disease Patients. Antioxidants (Basel). MDPI. 14-6. ISSN 2076-3921. <https://doi.org/10.3390/antiox14060706>
- 4 **Artículo científico.** (1/11) A I Rodriguez-Perez; G Serrano-Heras; C M Labandeira; et al; José L Labandeira-Garcia. 2025. Serum angiotensin type-1 receptor autoantibodies and neurofilament light chain as markers of neuroaxonal damage in post-COVID patients. Front Immunol. [Lausanne : Frontiers Research Foundation]. 16, pp.1571027. ISSN 1664-3224. <https://doi.org/10.3389/fimmu.2025.1571027>
- 5 **Artículo científico.** Lage L.; (2/4) Rodríguez-Perez A.I.; Labandeira-García J.L.; Dominguez-Meijide A.2025. Fasudil inhibits α -synuclein aggregation through ROCK-inhibition-mediated mechanisms. Neurotherapeutics. Elsevier Inc. 22-2, pp.e00544. ISSN 1878-7479. <https://doi.org/10.1016/j.neurot.2025.e00544>
- 6 **Artículo científico.** Rivas-Santiesteban R.; Muñoz A.; Lillo J.; Raich I; (5/8) Rodríguez-Pérez AI; Navarro G; Labandeira-García JL; Franco R. 2024. Cannabinoid regulation of angiotensin II-induced calcium signaling in striatal neurons. NPJ Parkinsons Dis .NATURE PORTFOLIO. 10-1, pp.220. ISSN 2373-8057. <https://doi.org/10.1038/s41531-024-00827-7>
- 7 **Artículo científico.** Lage L; (2/4) Rodríguez-Pérez AI; Labandeira-García JL; Dominguez-Meijide A. 2024. Angiotensin type-1 receptor autoantibodies promote alpha-synuclein aggregation in dopaminergic neurons. Frontiers in immunology. [Lausanne : Frontiers Research Foundation]. 11-15, pp.1457459. ISSN 1664-3224. <https://doi.org/10.3389/fimmu.2024.1457459>
- 8 **Artículo científico.** Quijano A; (2/7) Rodríguez-Pérez AI; Costa-Besada MA; López-López A.; Guerra MJ; Labandeira-García JL; Valenzuela R. 2024. Modulation of Mitochondrial Dynamics by the Angiotensin System in Dopaminergic Neurons and Microglia. Aging Dis .INT SOC AGING & DISEASE. ISSN 2152-5250. <https://doi.org/10.14336/AD.2024.0981>
- 9 **Artículo científico.** Borrajo M L; Quijano A; Lapuhs P; (4/8) Rodríguez-Pérez AI; Anthiya S; Valenzuela R; Labandeira-Garcia JL; Alonso MJ. 2024. Ionizable nanoemulsions for RNA delivery into the central nervous system - importance of diffusivity. J Control Release. 372, pp.295-303. ISSN 1873-4995. <https://doi.org/10.1016/j.jconrel.2024.06.051>
- 10 **Artículo científico.** (1/7) Rodríguez-Pérez, Ana I.; Garrido-Gil, Pablo; García-Garrote, Maria; Muñoz, Ana; Parga, Juan A.; Labandeira-García, Jose Luis; Rodríguez-Pallares, Jannette. 2024. Non-HLA angiotensin-type-1 receptor autoantibodies mediate the long-term loss of grafted neurons in Parkinson's disease models. Stem Cell Research and Therapy. 15-1. ISSN 1757-6512. <https://doi.org/10.1186/s13287-024-03751-y>

- 11 **Artículo científico.** Lage, Lucia; (2/5) Rodriguez-Perez, Ana I.; Villar-Cheda, Begoña; Labandeira-Garcia, Jose L.; Dominguez-Meijide, Antonio. 2024. Angiotensin type 1 receptor activation promotes neuronal and glial alpha-synuclein aggregation and transmission. npj Parkinson's Disease. 10-1. ISSN 2373-8057. <https://doi.org/10.1038/s41531-024-00650-0>
- 12 **Artículo científico.** Espinosa-Oliva, Ana M.; Ruiz, Rocío; Soto, Manuel Sarmiento; et al; de Pablos, Rocío M.; (5/24) Rodriguez-Perez, Ana I. 2024. Inflammatory bowel disease induces pathological α -synuclein aggregation in the human gut and brain. Neuropathology and Applied Neurobiology. Oxford, Blackwell Scientific Publications. 50-1, pp.e12962. ISSN 1365-2990. <https://doi.org/10.1111/nan.12962>
- 13 **Artículo científico.** Chocarro J; Rico AJ; Ariznabarreta G; et al; Lanciego JL; (9/12) Rodríguez-Pérez AI. 2023. Neuromelanin accumulation drives endogenous synucleinopathy in non-human primates. Brain : a journal of neurology. Oxford : Oxford University Press. 146, pp.5000-5014. ISSN 0006-8950. <https://doi.org/10.1093/brain/awad331>
- 14 **Artículo científico.** Pedrosa MA; Labandeira CM; Lago-Baameiro N; Valenzuela R; Pardo M; Labandeira-Garcia JL; (7/7) Rodriguez-Perez AI (AC). 2023. Extracellular Vesicles and Their Renin-Angiotensin Cargo as a Link between Metabolic Syndrome and Parkinson's Disease. Antioxidants (Basel, Switzerland). 12-12, pp.2045. ISSN 2076-3921. <https://doi.org/10.3390/antiox12122045>
- 15 **Artículo científico.** Rivas-Santisteban, Rafael; Rico, Alberto José; Muñoz, Ana; et al; Franco, Rafael; (4/9) Rodríguez-Pérez, Ana I. 2023. Boolean analysis shows a high proportion of dopamine D2 receptors interacting with adenosine A2A receptors in striatal medium spiny neurons of mouse and non-human primate models of Parkinson's disease. Neurobiology of Disease. San Diego, CA : Academic Press. 188, pp.106341. ISSN 1095-953X.
- 16 **Artículo científico.** Lopez-Lopez A; Valenzuela R; (3/6) Rodriguez-Perez AI; Guerra MJ; Labandeira-Garcia JL; Muñoz A. 2023. Interactions between Angiotensin Type-1 Antagonists, Statins, and ROCK Inhibitors in a Rat Model of L-DOPA-Induced Dyskinesia. Antioxidants (Basel, Switzerland). MDPI. 12-7, pp.114319. ISSN 2076-3921. <https://doi.org/10.3390/antiox12071454>
- 17 **Artículo científico.** Rivas-Santisteban R.; Lillo J.; Raich I.; et al; Franco R.; (6/9) Rodríguez-Pérez A.I. 2023. The cannabinoid CB₁ receptor interacts with the angiotensin AT₂ receptor. Overexpression of AT₂-CB₁ receptor heteromers in the striatum of 6-hydroxydopamine hemilesioned rats. Experimental Neurology. Orlando FL : Academic Press. 362. ISSN 00144886. <https://doi.org/10.1016/j.expneurol.2023.114319>
- 18 **Artículo científico.** Pedrosa MA; Labandeira CM; Valenzuela R; et al; (9/9) Rodriguez-Perez AI (AC). 2023. AT1 receptor autoantibodies mediate effects of metabolic syndrome on dopaminergic vulnerability. Brain, behavior, and immunity. Elsevier. 108, pp.255-268. ISSN 0889-1591. <https://doi.org/10.1016/j.bbi.2022.12.009>
- 19 **Artículo científico.** Garrido-Gil P.; Pedrosa M.A.; Garcia-Garrote M.; Pequeño-Valtierra A.; Rodríguez-Castro J.; García-Souto D.; (7/8) 0000-0003-1354-8799 (AC); 0000-0002-8243-9791. 2022. Microglial angiotensin type 2 receptors mediate sex-specific expression of inflammatory cytokines independently of circulating estrogen. GLIA. Wiley-Liss. 70, pp.2348-2360. ISSN 08941491. <https://doi.org/10.1002/glia.24255>
- 20 **Artículo científico.** Labandeira C.M.; Pedrosa M.A.; Quijano A.; et al; Labandeira-Garcia J.L.; (8/9) 0000-0003-1354-8799 (AC). 2022. Angiotensin type-1 receptor and ACE2 autoantibodies in Parkinson's disease. npj Parkinson's Disease. NATURE PUBLISHING GROUP. 8. ISSN 2373-8057. <https://doi.org/10.1038/s41531-022-00340-9>
- 21 **Artículo científico.** Labandeira, Carmen M.; Pedrosa, Maria A.; Suarez-Quintanilla, Juan A.; Cortes-Ayaso, Maria; Labandeira-Garcia, Jose Luis; (6/6) Rodriguez-Perez, Ana I. (AC). 2022. Angiotensin System Autoantibodies Correlate With Routine Prognostic Indicators for COVID-19 Severity. FRONTIERS IN MEDICINE. 9. <https://doi.org/10.3389/fmed.2022.840662>

- 22 Artículo científico.** Quijano A.; Diaz-Ruiz C.; Lopez-Lopez A.; Villar-Cheda B.; Muñoz A.; (6/7) Rodriguez-Perez A.I.; Labandeira-Garcia J.L.2022. Angiotensin Type-1 Receptor Inhibition Reduces NLRP3 Inflammasome Upregulation Induced by Aging and Neurodegeneration in the Substantia Nigra of Male Rodents and Primary Mesencephalic Cultures. *Antioxidants*. MDPI. 11. ISSN 2076-3921. <https://doi.org/10.3390/antiox11020329>
- 23 Artículo científico.** Garrido-Gil, Pablo; (2/4) Rodriguez-Perez, Ana, I; Lage, Lucia; Labandeira-Garcia, Jose L.2021. Estrogen Deficiency and Colonic Function: Surgical Menopause and Sex Differences in Angiotensin and Dopamine Receptor Interaction. *JOURNALS OF GERONTOLOGY SERIES A-BIOLOGICAL SCIENCES AND MEDICAL SCIENCES*. 76-9, pp.1533-1541. ISSN 1079-5006. <https://doi.org/10.1093/gerona/glaa244>
- 24 Artículo científico.** Valenzuela, Rita; (2/10) Rodriguez-Perez, Ana, I; Costa-Besada, Maria A.; et al; Labandeira-Garcia, Jose L.2021. An ACE2/Mas-related receptor MrgE axis in dopaminergic neuron mitochondria. *REDOX BIOLOGY*. 46. ISSN 2213-2317. <https://doi.org/10.1016/j.redox.2021.102078>
- 25 Artículo científico.** (1/8) Rodriguez-Perez, Ana, I; Labandeira, Carmen M.; Pedrosa, Maria A.; Valenzuela, Rita; Suarez-Quintanilla, Juan A.; Cortes-Ayaso, Maria; Mayan-Conesa, Placido; Labandeira-Garcia, Jose L.2021. Autoantibodies against ACE2 and angiotensin type-1 receptors increase severity of COVID-19. *JOURNAL OF AUTOIMMUNITY*. Elsevier. 122. ISSN 0896-8411. <https://doi.org/10.1016/j.jaut.2021.102683>
- 26 Artículo científico.** Pedrosa M.A.; Valenzuela R.; Garrido-Gil P.; Labandeira C.M.; Navarro G.; Franco R.; Labandeira-Garcia J.L.; (8/8) Rodriguez-Perez A.I. (AC). 2021. Experimental data using candesartan and captopril indicate no double-edged sword effect in COVID-19. *Clinical Science*. 135-3, pp.465-481. ISSN 01435221. <https://doi.org/10.1042/CS20201511>
- 27 Artículo científico.** Rivas-Santisteban, Rafael; Lillo, Jaume; Munoz, Ana; (4/7) Rodriguez-Perez, Ana, I; Luis Labandeira-Garcia, Jose; Navarro, Gemma; Franco, Rafael. 2021. Novel Interactions Involving the Mas Receptor Show Potential of the Renin-Angiotensin system in the Regulation of Microglia Activation: Altered Expression in Parkinsonism and Dyskinesia. *NEUROTHERAPEUTICS*. 18-2, pp.998-1016. ISSN 1933-7213. <https://doi.org/10.1007/s13311-020-00986-4>
- 28 Artículo científico.** Rivas-Santisteban, R.; (2/7) Rodriguez-Perez, A.I.; Muñoz, A.; Reyes-Resina, I.; Labandeira-García, J.L.; Navarro, G.; Franco, R.2020. Angiotensin AT₁ and AT₂ receptor heteromer expression in the hemilesioned rat model of Parkinson's disease that increases with levodopa-induced dyskinesia. *Journal of Neuroinflammation*. 17-1, pp.243. <https://doi.org/10.1186/s12974-020-01908-z>
- 29 Artículo científico.** (1/8) Rodriguez-Perez, A.I.; Garrido-Gil, P.; Pedrosa, M.A.; Garcia-Garrote, M.; Valenzuela, R.; Navarro, G.; Franco, R.; Labandeira-Garcia, J.L.2020. Angiotensin type 2 receptors: Role in aging and neuroinflammation in the substantia nigra. *Brain, Behavior, and Immunity*. 87, pp.256-271. ISSN 1090-2139. <https://doi.org/10.1016/j.bbi.2019.12.011>
- 30 Artículo científico.** Cruces-Sande A; (2/7) Rodríguez-Pérez AI; Herbello-Hermelo P; Bermejo-Barrera P; Méndez-Álvarez E; Labandeira-García JL; Soto-Otero R. 2019. Copper Increases Brain Oxidative Stress and Enhances the Ability of 6-Hydroxydopamine to Cause Dopaminergic Degeneration in a Rat Model of Parkinson's Disease. *Molecular neurobiology*. Clifton, NJ : Humana Press, c1987-. 56-4, pp.2845-2854. ISSN 0893-7648. <https://doi.org/10.1007/s12035-018-1274-7>
- 31 Artículo científico.** Parga JA; (2/5) Rodriguez-Perez AI; Garcia-Garrote M; Rodriguez-Pallares J; Labandeira-Garcia JL. 2018. Angiotensin II induces oxidative stress and upregulates neuroprotective signaling from the NRF2 and KLF9 pathway in dopaminergic cells. *Free radical biology and medicine*. New York : Pergamon, c1987-. 129, pp.394-406. ISSN 0891-5849. <https://doi.org/10.1016/j.freeradbiomed.2018.10.409>

- 32 Artículo científico.** (1/7) Rodríguez-Perez AI; Sucunza D; Pedrosa MA; Garrido-Gil P; Kulisevsky J; Lanciego JL; Labandeira-García JL. 2018. Angiotensin Type 1 Receptor Antagonists Protect Against Alpha-Synuclein-Induced Neuroinflammation and Dopaminergic Neuron Death. *Neurotherapeutics*. New York : Springer. 15-4, pp.1063-1081. ISSN 1933-7213. <https://doi.org/10.1007/s13311-018-0646-z>
- 33 Artículo científico.** Garrido-Gil P; (2/5) Rodríguez-Perez AI; Dominguez-Meijide A; Guerra MJ; Labandeira-Garcia JL. 2018. Bidirectional Neural Interaction Between Central Dopaminergic and Gut Lesions in Parkinson's Disease Models. *Mol Neurobiol*. Springer Link. 55-9, pp.7297-7316. ISSN 0893-7648. <https://doi.org/10.1007/s12035-018-0937-8>
- 34 Artículo científico.** Navarro G; Borroto-Escuela D; Angelats E; et al; Franco R.; (7/14) Rodríguez-Pérez AI. 2017. Receptor-heteromer mediated regulation of endocannabinoid signaling in activated microglia. Role of CB1 and CB2 receptors and relevance for Alzheimer's disease and levodopa-induced dyskinesia. *Brain Behav Immun*. <2000- > : Amsterdam : Elsevier. S0889-1591(17), pp.30403-30408. ISSN 0889-1591. <https://doi.org/10.1016/j.bbi.2017.08.015>.
- 35 Artículo científico.** Dopeso-Reyes IG; Sucunza D; Rico AJ; et al; Lanciego JL.; (7/9) Rodríguez-Pérez AI. 2017. Glucocerebrosidase expression patterns in the non-human primate brain. *Brain Struct Funct*. Berlin : Springer-Verlag, c2007-. 223, pp.343-355. ISSN 1863-2653. <https://doi.org/10.1007/s00429-017-1504-1>
- 36 Artículo científico.** (1/5) Dominguez-Meijide A; Rodríguez-Pérez AI; Díaz-Ruiz C; Guerra MJ; Labandeira-García JL. 2017. Dopamine modulates astroglial and microglial activity via glial renin-angiotensin system in cultures. *Brain Behav Immun*. <2000- > : Amsterdam : Elsevier. 62, pp.277-290. ISSN 0889-1591. <https://doi.org/10.1016/j.bbi.2017.02.013>
- 37 Artículo científico.** Garrido-Gil P; (2/5) Rodríguez-Pérez AI; Fernández-Rodríguez P; Lanciego JL; Labandeira-García JL. 2017. Expression of angiotensinogen and receptors for angiotensin and prorenin in the rat and monkey striatal neurons and glial cells. *Brain Struct Funct*. SPRINGER HEIDELBERG. 222-6, pp.2559-2571. ISSN 1863-2653. <https://doi.org/10.1007/s00429-016-1357-z>
- 38 Artículo científico.** Rodriguez Pallares, J.; (2/6) Rodriguez Perez, AI.; Muñoz, A.; Parga, JA.; Toledo Aral, JJ.; Labandeira Garcia, JL. 2016. Effects of Rho Kinase Inhibitors on Grafts of Dopaminergic Cell Precursors in a Rat Model of Parkinson's Disease. *Stem cells translational medicine*. 5-6, pp.804-815. ISSN 2157-6564. <https://doi.org/10.5966/sctm.2015-0182>
- 39 Artículo científico.** (1/5) Rodriguez-Perez, Ana I.; Borrajo, Ana; Rodriguez-Pallares, Jannette; Guerra, Maria J.; Labandeira-Garcia, Jose L. 2015. Interaction between NADPH-oxidase and Rho-kinase in angiotensin II-induced microglial activation. *GLIA*. John Wiley and Sons Inc. 63-3, pp.466 – 482. ISSN 08941491.
- 40 Artículo científico.** (1/5) Rodriguez-Perez, Ana I.; Borrajo, Ana; Valenzuela, Rita; Lanciego, Jose L.; Labandeira-Garcia, Jose L. 2015. Critical period for dopaminergic neuroprotection by hormonal replacement in menopausal rats. *Neurobiology of Aging*. New York : Elsevier. 36-2, pp.1194 – 1208. ISSN 0197-4580. <https://doi.org/10.1016/j.neurobiolaging.2014.10.028>
- 41 Capítulo de libro.** Labandeira-Garcia J.L.; Garrido-Gil P.; Pedrosa M.A.; Labandeira C.M.; (5/5) Rodríguez-Perez A.I. 2020. Interaction between brain angiotensin and dopaminergic systems and Parkinson's disease. *Genetics, Neurology, Behavior, and Diet in Parkinson's Disease: The Neuroscience of Parkinson's Disease, Volume 2*. Academic Press, Elsevier.. 2, pp.463-477. ISBN 9780128159507. <https://doi.org/10.1016/B978-0-12-815950-7.00029-1>
- 42 Edición científica.** Valenzuela, Rita; Pedrosa, Maria A.; Garrido-Gil, Pablo; Labandeira, Carmen M.; Navarro, Gemma; Franco, Rafael; (7/8) Rodríguez-Perez, Ana I. (AC); Labandeira-Garcia, Jose L. 2021. Interactions between ibuprofen, ACE2, renin-angiotensin system, and spike protein in the lung. Implications for COVID-19. *CLINICAL AND TRANSLATIONAL MEDICINE*. Wiley. 11. ISSN 2001-1326. <https://doi.org/10.1002/ctm2.371>

- 43 Revisión bibliográfica.** Labandeira-Garcia, Jose Luis; Labandeira, Carmen M.; Guerra, Maria J.; (4/4) Rodriguez-Perez, Ana I. (AC). 2024. The role of the brain renin-angiotensin system in Parkinson's disease. Translational Neurodegeneration. [London] : BioMed Central, 2012-. 13-1. ISSN 2047-9158. <https://doi.org/10.1186/s40035-024-00410-3>
- 44 Revisión bibliográfica.** Labandeira-Garcia, Jose L.; Labandeira, Carmen M.; Valenzuela, Rita; Pedrosa, Maria A.; Quijano, Aloia; (6/6) Rodriguez-Perez, Ana I. (AC). 2022. Drugs Modulating Renin-Angiotensin System in COVID-19 Treatment. BIOMEDICINES. 10. <https://doi.org/10.3390/biomedicines10020502>
- 45 Revisión bibliográfica.** Labandeira, Carmen M.; Fraga-Bau, Arturo; Arias Ron, David; Munoz, Ana; Alonso-Losada, Gema; Koukoulis, Antonio; Romero-Lopez, Jesus; (8/8) Rodriguez-Perez, Ana, I. 2021. Diabetes, insulin and new therapeutic strategies for Parkinson's disease: Focus on glucagon-like peptide-1 receptor agonists. FRONTIERS IN NEUROENDOCRINOLOGY. Elsevier. 62. ISSN 0091-3022. <https://doi.org/10.1016/j.yfrne.2021.100914>
- 46 Revisión bibliográfica.** Labandeira-Garcia, Jose L.; Valenzuela, Rita; Costa-Besada, Maria A.; Villar-Cheda, Begona; (5/5) Rodriguez-Perez, Ana, I. 2020. The intracellular renin-angiotensin system: Friend or foe. Some light from the dopaminergic neurons. PROGRESS IN NEUROBIOLOGY. Elsevier. 199. ISSN 0301-0082. <https://doi.org/10.1016/j.pneurobio.2020.101919>
- 47 Revisión bibliográfica.** Labandeira Garcia, JL.; (2/5) Rodriguez Perez, Al.; Valenzuela, R.; Costa Besada, MA.; Guerra, MJ.2016. Menopause and Parkinson's disease. Interaction between estrogens and brain renin-angiotensin system in dopaminergic degeneration.Frontiers in neuroendocrinology. New York, Raven Press [etc.]. 43-., pp.44-59. ISSN 1095-6808. <https://doi.org/10.1016/j.yfrne.2016.09.003>

C.3. Proyectos y Contratos

- 1 Proyecto.** PID2023-150743OB-I00, PID2023-150743OB-I00_ VESICULAS EXTRACELULARES COMO MECANISMO DE PROGRESION DE LA DEGENERACION NEURONAL DOPAMINERGICA Y BIOMARCADORES DE NEURODEGENERACION. Proyectos de Generación de Conocimiento 2023. Rodríguez-Perez Al. (Universidad de Santiago de Compostela). 01/09/2024-31/08/2027. 225.000 €. Investigador principal.
- 2 Proyecto.** ED431C 2022/41, CONSOLIDACIÓN 2022 GRC GI-1337-Grupo de Neurobiología Molecular e Celular da Enfermidade de Parkinson -Parkinson Neurobiol. Consolidación de Grupos de Referencia Competitiva. José Luis Labandeira García. (University of Santiago de Compostela). 01/01/2022-20/11/2025. 200.000 €. Miembro de equipo.
- 3 Proyecto.** RD21/0017/0031.Red de Investigación en Terapias Avanzadas. Instituto de Salud Carlos III. José Luis Labandeira García. (Health Research Institute of Santiago de Compostela (IDIS)). 01/01/2022-31/12/2024. 89.997,6 €. Miembro de equipo.
- 4 Proyecto.** PI20/00345, PI20/00345_ SÍNDROME METABÓLICO Y RIESGO DE ENFERMEDAD DE PARKINSON: ESTUDIO EXPERIMENTAL Y CLÍNICO DE LOS MECANISMOS IMPLICADOS. Instituto de Salud Carlos III. Ana Isabel Rodríguez Pérez. (Health Research Institute of Santiago de Compostela (IDIS)). 01/01/2021-31/12/2023. 179.080 €. Investigador principal.
- 5 Proyecto.** PI2020/09 Neurodegeneración ligada a la neuromelanina en la enfermedad de Parkinson: Implicaciones mecanísticas, diagnósticas y terapéuticas.. Proyectos colaborativos,CIBERNED, Instituto de Salud Carlos III, Ministerio Economía y Competitividad. Miquel Vila. (University of Santiago de Compostela). 01/01/2021-31/12/2022. 315.000 €. Miembro de equipo.
- 6 Proyecto.** RD16/0011/0016 Red de Terapia Celular (TerCel) (RD16/0011/0016). Instituto de Salud Carlos III. José Luis Labandeira García. (Health Research Institute of Santiago de Compostela (IDIS)). 01/01/2017-30/09/2022. 240.245,5 €. Miembro de equipo.



- 7 Proyecto.** IN845D 2020/20 Clarificación do efecto beneficioso ou prexudicial dos tratamentos con Sartanes, IECAS e Ibuprofeno sobre a vulnerabilidade á infección e o agravamento da enfermidade Covid-19. Agencia Gallega de Innovación. Ana Isabel Rodríguez Pérez. (Health Research Institute of Santiago de Compostela (IDIS)). 01/11/2020-30/04/2022. 121.878 €. Investigador principal.
- 8 Proyecto.** (2018-PG033). Ref.ED431C 2018/10 Consolidación e estruturación 2018 GRC GI1337 Grupo de Neurobioloxía Molecular e Celular da Enfermidade de Parkinson. José Luis Labandeira García. (University of Santiago de Compostela). 01/01/2019-31/12/2021. 280.000 €. Miembro de equipo.
- 9 Proyecto.** PI17/00828, ESTUDIO EXPERIMENTAL Y CLINICO PARA IDENTIFICACION DE MARCADORES DE MECANISMOS DE PROGRESION DE LA ENFERMEDAD DE PARKINSON Y POSIBLES DIANAS TERAPEUTICAS PARA NEUROPROTECCION.. Instituto de Salud Carlos III. (Instituto de investigación sanitaria de Santiago de Compostela). 01/01/2018-31/12/2020. 179.080 €. Investigador principal.
- 10 Proyecto.** PI17/00828, PI17/00828. Estudio experimental y clínico para la identificación de marcadores de mecanismos de progresión de la Enfermedad de Parkinson y posibles dianas terapéuticas para neuroprotección.. Instituto de Salud Carlos III. Ana Isabel Rodríguez Pérez. (Health Research Institute of Santiago de Compostela (IDIS)). 01/01/2018-31/12/2020. 105.270 €. Investigador principal.
- 11 Proyecto.** (2016-PG013) Ref.ED431G/05, Research Center in Molecular Medicine and Chronic Diseases (CiMUS). Consellería de Educación e Ordenación Universitaria. Carlos Dieguez González. (University of Santiago de Compostela). 01/01/2016-29/02/2020. 2.482.289,47 €. Miembro de equipo.
- 12 Proyecto.** PI2017/02. Glucocerebrosidasa y Proteinopatías Neurodegenerativas. Proyectos colaborativos, CIBERNED, Instituto de Salud Carlos III, Ministerio Economía y Competitividad. José Luis Lanciego Pérez. (University of Santiago de Compostela). 01/01/2018-31/12/2019. 210.000 €. Miembro de equipo.
- 13 Proyecto.** REDES 2016 GI-1233 (2016-PG102) Ref. R2016/036. Consolidación e estruturación.. Consellería de Cultura, Educación e Ordenación Universitaria. Carlos Dieguez González. (University of Santiago de Compostela). 01/01/2017-31/12/2018. 120.000 €. Miembro de equipo.
- 14 Proyecto.** Validación de nuevas dianas terapéuticas y nuevos biomarcadores en la enfermedad de Parkinson. PI2015/02-1. Proyectos colaborativos, CIBERNED, Instituto de Salud Carlos III. Ministerio de Economía y Competitividad. JL Labandeira-García. (University of Santiago de Compostela). 01/10/2015-31/12/2017. 240.000 €. Miembro de equipo.



CURRICULUM VITAE ABREVIADO (CVA)

AVISO IMPORTANTE – El Curriculum Vitae abreviado no podrá exceder de 4 páginas. Para rellenar correctamente este documento, lea detenidamente las instrucciones disponibles en la web de la convocatoria.

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

Fecha del CVA 30/09/2025

Parte A. DATOS PERSONALES

Nombre	Miroljub		
Apellidos	Popovic Popovic		
Sexo (*)	Varón	Fecha de nacimiento (dd/mm/yyyy)	
DNI, NIE, pasaporte			
Dirección email	miroljub@um.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)			0000-0002-1326-3876

* datos obligatorios

A.1. Situación profesional actual

Puesto	Profesor Titular		
Fecha inicio	30/04/2012		
Organismo/ Institución	Universidad de Murcia		
Departamento/ Centro	Departamento Anatomía Humana y Psicobiología		
País	España	Teléfono	
Palabras clave	Demencia, Memoria, Ansiedad, Estrés, Envejecimiento, Cronobiología, Diferencias sexuales		

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora, de acuerdo con lo indicado en la convocatoria, indicar meses totales)

Periodo	Puesto/ Institución/ País / Motivo interrupción
2007-2012	Profesor Contratado Doctor/Universidad de Murcia/España
2002-2006	Becario/Universidad de Murcia/España
2001	Becario Postdoctoral Instituto de Investigaciones Citológicas/Valencia/España
2000	Research Associate/Waisman Institute/University of Madison/Estados Unidos
1995-1999	Assistant Research Professor/ Immunology Research Center "Branislav Jankovic"/Serbia
1993-1995	Research Fellow/ Immunology Research Center "Branislav Jankovic"/Serbia
1992-1993	Researcher/Laboratory for Experimental Medicine, University Clinical Center of Serbia/Belgrade/Yugoslavia
1989-1992	Research Fellow of the Scientific Foundation of Belgrade/ Department for Medical Protection, Military Technical Institute/ Belgrade/Yugoslavia.

(Incorporar todas las filas que sean necesarias)

A.3. Formación Académica

Grado/Master/Tesis	Universidad/Pais	Año
Licenciado en Veterinaria	Universidad de Belgrado/Yugoslavia	1988
Master en Neurociencias	Universidad de Belgrado/Serbia/Yugoslavia	1992
Doctor en Neurociencias	Universidad de Belgrado/Serbia/Yugoslavia	1995



Master en Clínica de Pequeños Animales	Universidad de Murcia/España	2002
Master en Etología Clínica Veterinaria y Bienestar Animal	Universidad Complutense de Madrid/España	2004

(Incorporar todas las filas que sean necesarias)

Parte B. RESUMEN DEL CV (máx. 5.000 caracteres, incluyendo espacios): **MUY IMPORTANTE: se ha modificado el contenido de este apartado para progresar en la adecuación a los principios DORA. Lea atentamente las “Instrucciones para cumplimentar el CVA”**

El solicitante comenzó su trayectoria investigadora en el año 1989, como becario de la Fundación Científica de Belgrado, trabajando en el Department for Medical Protection, Military Technical Institute, Belgrado, Yugoslavia. Después de una estancia de 3 años en el citado Instituto, fue contratado por un periodo de 7 meses en el Laboratory for Experimental Medicine, University Clinical Center of Serbia, Belgrado, Yugoslavia. Desde septiembre de 1993 hasta marzo de 1999 trabajó en el Immunology Research Center "Branislav Jankovic". Durante el periodo posdoctoral, la mayor parte de las estancias de investigación en el extranjero fueron realizadas en España (Universidad de Murcia e Instituto de Investigaciones Citológicas en Valencia) con una duración de más de 8 años. Además, realizó estancias en el Rudolf Magnus Institute for Neuroscience, Utrecht University, Países Bajos (1997, 1999), Waisman Institute, University of Madison, Estados Unidos (2000), Vrije Universiteit de Amsterdam, Países Bajos (2004) y The Kavli Institute for Systems Neuroscience, Center for the Biology of Memory, NTNU, Trondheim, Noruega (2012) con duración total de 14 meses. Desde mayo 2007 hasta marzo 2012 trabajó como Profesor Contratado Doctor en el Departamento de Anatomía Humana y Psicobiología, Facultad de Medicina, Universidad de Murcia y a partir de marzo 2012 hasta la actualidad como Profesor Titular en dicho Departamento.

Ha dirigido una Tesis Doctoral y seis Tesis de Master. Ha participado en el desarrollo de 11 proyectos y contratos de investigación, 9 de carácter nacional y 2 de carácter regional. Es autor de 51 publicaciones científicas y de 84 participaciones en Congresos y Conferencias Científicas. Ha participado en la evaluación de artículos para varias revistas indexadas en el Journal Citation Reports y también ha sido evaluador de proyectos de investigación en convocatorias públicas del Health Research Board Ireland. La investigación en la Universidad de Murcia la ha realizado como miembro del Grupo de Investigación en Neurobiología (2001-2006) y Envejecimiento cerebral y demencias (2006-actualidad). Es miembro del Instituto Murciano de Investigación Biosanitaria.

Tiene reconocido cuatro sexenios de investigación (1999-2006 y 2007-2012; 2013-2018; 2019-2024).

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES - Pueden incluir publicaciones, datos, software, contratos o productos industriales, desarrollos clínicos, publicaciones en conferencias, etc. Si estas aportaciones tienen DOI, por favor inclúyalo.

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias (ver instrucciones).

AC: autor de correspondencia; (nº x / nº y): posición / autores totales

Si aplica, indique el número de citas y promedio por año

1. Popović N, Baño Ojalora B, Rol MA, Venero C, Madrid JA, Popović M. (AC) (6/6) (2023). Effects of long-term individual housing of middle-aged female Octodon degus on spatial learning and memory in the Barnes maze task. Frontiers in Behavioral Neuroscience, Volume 17 - 2023 doi: 10.3389/fnbeh.2023.1221090. Q2 (16/52). No. Citaciones 2
2. Popović N, Morales-Delgado N (AC), De la Cruz-Sánchez E, Popović M. (4/4) (2023). Rats conserve passive avoidance retention level throughout the light phase of diurnal cycle.



Physiology & Behavior. 10;268:114234. doi: 10.1016/j.physbeh.2023.114234. Q2 (17/52). No. citaciones 2

3. Toval A., Garrigos D., Kutsenko Y., Popović M., Ribeiro Do Couto B., Morales-Delgado N, Tseng K.Y., Ferran J.L (AC); (4/(8). (2021). Dopaminergic modulation of forced running performance in adolescent rats: Role of striatal D1 and extra-striatal D2 dopamine receptors. Molecular Neurobiology. 58 (4): 1782-1791. doi:10.1007/s12035-020-02252-2. Q1 (61/273). No. Citaciones 16

4. Van Groen, T, Kadish I, Popović N, Caballero Bleda M, Baño-Otalora B, Rol M.A., Madrid J.A., Popović M. (AC) (8/8) (2021). Widespread doublecortin expression in the cerebral cortex of the Octodon degus. Frontiers in Neuroanatomy. 15: 656882. doi: 10.3389/fnana.2021.656882. Q1 (2/21). No citaciones 2

5. Pérez-Sánchez J, Carrillo de Gea JM, Rodríguez Barceló S, Toval Á, Fernández-Alemán JL, García-Berná JA, Popović M, Toval A. (AC) (8/8) (2021). Intracranial pressure analysis software: A mapping study and proposal. Comput Methods Programs Biomed. 2021 Sep;209:106334. doi: 10.1016/j.cmpb.2021.106334. Q1(15/111) No. Citaciones 3

6. Toval A., Vicente-Conesa F, Martinez-Ortega P., Kutsenko Y, Morales-Delgado N, Garrigos D., Alonso A, Ribeiro Do Couto, B, Popović M, Ferran J.L.(AC) (9/10) (2020). Hypothalamic Crh/Avp, plasmatic glucose and lactate remain unchanged during habituation to forced exercise. Frontiers in Physiology, 11: 410. doi: 10.3389/fphys.2020.00410. Q1 (14/81). No. citaciones 7

7. Meseguer Henarejos A.B., Popović N., Bokonjić D., Morales-Delgado N., Alonso A., M., Caballero Bleda M., Popović M. (AC) (7/7) (2020). Sex and time-of-day Impact on anxiety and passive avoidance memory strategies in mice. Frontiers in Behavioral Neuroscience, 14:68. doi: 10.3389/fnbeh.2020.00068. Q1 (13/53). No. citaciones 14

8. Poveda, C.M, Popović N., Bokonjić D., Morales-Delgado N., Alonso A., M., Caballero Bleda M., Popović M. (AC) (7/7) (2020). The diurnal variation of open-field habituation in rats. Behavioural Processes, 158:104186. doi: 10.1016/j.beproc.2020.104186. Q2 (71/175). No. Citaciones 12

9. Popović N, Morales-Delgado N, Vidal Mena D, Alonso A, Pascual Martínez M, Caballero Bleda M, Popović M. (AC) (7/7) (2020). Verapamil and Alzheimer's Disease: Past, Present and Future. Frontiers in Pharmacology. 11:562. doi: 10.3389/fphar.2020.00562. Q1 (47/357). No citaciones 20

10. Morales-Delgado N, Popović N, De la Cruz-Sánchez E, Caballero Bleda M, Popović M. (AC) (5/5) (2018). Time-of-day and age impact on memory in elevated plus-maze test in rats. Front Behav Neurosci. 12:304. doi: 10.3389/fnbeh.2018.00304. Q2 (15/51). No citaciones 31

C.2. Congresos, indicando la modalidad de su participación (conferencia invitada, presentación oral, póster)

1. Toval A., Kutsenko Y., Garrigós D. Popović M., Ribeiro do Couto B., Tseng K., Ferran J.L. Role of dopamine D1/D2 receptors on motor performance during habituation to forced exercise. 18th National Meeting of the Spanish Society of Neuroscience (SENC). 04-06.09.2019. Santiago de Compostela, Spain. POSTER

2. Poveda C.M, Popović N., De la Cruz-Sánchez, Morales Delgado N., Caballero-Bleda M., Popović M. Daytime effects on open-field behaviour, habituation and passive avoidance



learning in rats. 18th National Meeting of the Spanish Society of Neuroscience (SENC). 04-06.09.2019. Santiago de Compostela, Spain. POSTER

3. Giménez de Béjar V., Caballero Bleda M., Popović N., Popović M. Task and dose-dependent effect of verapamil on memory consolidation in rats. BMI-AGALMA-NCCR SYNAPSY JOINT SYMPOSIUM: Mechanisms of Memory Consolidation, Reconsolidation and Extinction and their Relevance to Psychiatry. 21-22.12.2015 Lausanne, Switzerland. POSTER 12

4. Morales Delgado N., Popović N., Caballero Bleda M., Popović M. Time-of-day impact on spatial memory in young and aged rats. 47th Congress of the European Brain and Behaviour Society 08-11.09.2017 Bilbao, Spain. POSTER 179

C.3. Proyectos o líneas de investigación en los que ha participado, indicando su contribución personal. En el caso de investigadores jóvenes, indicar líneas de investigación de las que hayan sido responsables .

1. BFU2014-57516-P

TÍTULO: MODELOS GENOARQUITECTÓNICOS CAUSALES DEL PROSENCÉFALO DEL RATÓN

ENTIDAD: MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD

COMIENZO: 01/01/2015, **FIN:** 31/12/2017

INVESTIGADORES PRINCIPALES: LUIS V. PUELLES LOPEZ, JOSÉ LUIS FERRAN

IMPORTE: 375 000 euros

2. PGC2018-098229-B-I00

TÍTULO: NEURAL BASES OF RESISTANCE TO FATIGUE AND REDUCTION OF ADIPOSE TISSUE IN AN EXERCISE FORCED PROGRAM (BRAINE-EXERCISE

ENTIDAD: MINISTERIO DE CIENCIA, INNOVACION Y UNIVERSIDADES

COMIENZO: 2019, **FIN:** 2021

INVESTIGADORES PRINCIPALES: JOSÉ LUIS FERRAN

IMPORTE: 145 000 euros

3. MAPFRE H.LARRAMENDI-2019

TÍTULO: PHYSICAL ACTIVITY DURING THE EVENING BUT NOT IN THE MORNING PREVENTS ADOLESCENT OBESITY

ENTIDAD: FUNDACIÓN MAPFRE

COMIENZO: 2020, **FIN:** 2021

INVESTIGADORES PRINCIPALES: JOSÉ LUIS FERRAN

IMPORTE: 145 000 euros

4. 21903/PI/22

TÍTULO: ¿PUEDE EL EJERCICIO FORZADO REVERTIR UN TRASTORNO MADURATIVO DE LA CORTEZA PREFRONTAL?

ENTIDAD: FUNDACIÓN SENECA

COMIENZO: 2023, **FIN:** 2025

INVESTIGADORES PRINCIPALES: JOSÉ LUIS FERRAN

IMPORTE: 126 500 euros

C.4. Participación en actividades de transferencia de tecnología/conocimiento y explotación de resultados *Incluya las patentes y otras actividades de propiedad industrial o intelectual (contratos, licencias, acuerdos, etc.) en los que haya colaborado. Indique: a) el orden de firma de autores; b) referencia; c) título; d) países prioritarios; e) fecha; f) entidad y empresas que explotan la patente o información similar, en su caso.*