Fecha del CVA	30/09/2024

Parte A. DATOS PERSONALES

Nombre	JOSE ANTONIO		
Apellidos	RODRIGUEZ NAVARRO		
Sexo	No Contesta	Fecha de Nacimiento	12/07/1977
DNI/NIE/Pasaporte	45684893Q		
URL Web			
Dirección Email	jarn@ucm.es		
Open Researcher and Contributor ID (ORCID)	0000-0002-0741-6338		

A.1. Situación profesional actual

Puesto	PROFESSOR PERMANENTE LABORAL		
Fecha inicio	2024		
Organismo / Institución	Universidad Complutense de Madrid		
Departamento / Centro	BIOQUÍMICA Y BIOLOGÍA MOLECULAR / Facultad de Farmacia		
País		Teléfono	
Palabras clave			

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2020 - 2023	CONTRATO MIGUEL SERVET II / FIBIO HRYC
2014 - 2019	CONTRATO MIGUEL SERVET I / FIBIO HRYC
2012 - 2014	Research associate / Institute for Aging Research, AECOM
2010 - 2012	Research fellow / Albert Einstein College of Medicine, DMB
2010 - 2010	Research fellow / Marion Bessin Liver Center. Albert Einstein College of Medicine
2007 - 2010	Postdoctoral contract / Hospital Universitario Ramón y Cajal
2004 - 2007	Predoctoral fellowship / Hospital Universitario Ramón y Cajal
2004 - 2004	Predoctoral fellowship / Red CIEN
2001 - 2004	Graduate Research contract / Neuropharma SA Instituto Química-Física Rocasolano (CSIC)
2000 - 2001	Research collaborator / Hospital Universitario Ramón y Cajal,

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Biochemistry, Molecular Biology and Biomedicine	Universidad Autónoma Madrid	2007

Parte B. RESUMEN DEL CV

During my doctoral thesis we characterized the effects of the elimination of parkin, an E3 ubiquitin ligase implicated in Parkinson's disease, in cellular and animal models and the effects of different compounds in neuronal and glial cultures from parkin-KO mice. These mice had a lower life expectancy and mitochondrial defects, greater oxidative stress and accumulation of tau with age. The elimination of parkin increases the lesions in the dopaminergic system and spinal cord of mice that overexpress mutated human tau. With aging these mice show cerebral and systemic amyloidosis.

In my first postdoc (2007-2010), we found that trehalose, a sugar that stimulates autophagy, reverses much of the defects found in these mice. To deepen the study of autophagy I made a short posdoctoral Jose Castillejo stay of 4 months in the Marion Besin Liver Center (New York).

Afterwards I joined Dr. Cuervo laboratory as a postdoctoral focusing on chaperone-mediated autophagy (CMA) for 4 years. We found that diets high in fat and cholesterol and aging affect negatively, due to changes in the lipid composition of lysosome membranes that affect CMA activity. After joining the Ramón y Cajal Institute for Health Research (IRYCIS) in July 2014, we studied the role of different forms of autophagy in Parkinson's disease in taupatias, as well as in the function of glial cells.

We recently characterized the effect of elimination by the loxcre system of the receptor on the hippocampal and cortex neurons to study the effects on taupatias and Alzheimer's disease (Cell 2021) as well as in on dopaminergic neurons to study the effects on Parkinson's disease and on astrocytes (ongoing). We are studying with lipidomics and proteomics the changes in the autophagic vesicles and different lysosomal and mitochondrial populations in Parkinson's models with altered mitophagy. We handle animal models of Parkinson's, taupatias, Alzheimer's and Huntington. In collaboration with clinicians now integrated in our group, we plan to evaluate the efficacy and safety of trehalose as a treatment of patients with neurodegenerative diseases, and we study new biomarkers for the progression of chronic neurodegenerative diseases through - omic and novel technologies.

As director of the research group formed in 2014 we have directed 7 master students, trained 6 laboratory technicians, directed 2 PhD and secured funding for 2 predoctoral students of the CAM's youth guarantee fund. We mentored a young researcher with a MINECO-JIN (Dr Mansilla), which obtained a Ramón y Cajal and leads its own line. We have established numerous national and international collaborations. We have exchanged researchers with the KU Leuven University (Belgium), Bonn U. (Germany) and Queen Mary U. (London). With Dr Ologhlen we showed the anti-aging effects of small extracellular vesicles (Cell Metab 2020). With Dr Pastor (IRYCIS) and DR Thiele (U Bonn, Germany) we study the rolo of lipids, specially plasmalogens in autophagy. We have obtained 5 projects as IP in competitive public calls and participated in the European COST-Transautophagy network. In 2018 we instaurate and are responsible of a new scientific facility in the IRYCIS for metabolic characterization till 2023. We have a long lasting collaboration with Dr Bejarano studyng differents aspects of autophagy and aging.

In 2020 we were appointed head of the Experimental Neurology group of IRYCIS. (https://www.irycis.org/es/irycis/memorias/ year 2021 page 89). Since April 2021, I teach in the Complutense U. as Associate Professor. I am the IP of the grant PID2020-113014 entitled "PLASMALOGENS, EXOSOMES AND AUTOPHAGY IN AGING AND NEURODEGENERATION" from the AEI.

In conclusion, my 22 years of scientific career have been focused in finding new therapies in neurodegenation. Specifically the role of autophagy, intercelular comunication and different lipid species in the physopathology of aging and neurodegeneration.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

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

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

1 **Artículo científico**. Pascual-Guerra, Jorge; Rodriguez-Navarro, Jose. A.; Paino, Carlos L.2023. Generating oligodendroglia from adult mesenchymal cells for transplantation: cell reprogramming or direct lineage conversion?. NEURAL REGENERATION RESEARCH. 18. ISSN 1673-5374. https://doi.org/10.4103/1673-5374.360278

2 **Artículo científico**. Bejarano, Eloy; Whitcomb, Elizabeth A.; Pfeiffer, Rebecca L.; et al; Rowan, Sheldon. 2023. Unbalanced redox status network as an early pathological event in congenital cataracts. REDOX BIOLOGY. 66. ISSN 2213-2317. https://doi.org/10.1016/j.redox.2023.102869

3 **Artículo científico**. Vellosillo, Lara; Pascual-Guerra, Jorge; Munoz, Maria Paz; Rodriguez-Navarro, Jose Antonio; Gonzalez-Nieto, Daniel; Barrio, Luis Carlos; Lobo, Maria del Val Toledo; Paino, Carlos Luis. 2022. Oligodendroglia Generated From Adult Rat Adipose Tissue by Direct Cell Conversion. FRONTIERS IN CELL AND DEVELOPMENTAL BIOLOGY. 10. ISSN 2296-634X. https://doi.org/10.3389/fcell.2022.741499

4 **Artículo científico**. Bourdenx M; Martín-Segura A; Scrivo A; et al; Cuervo AM; (4/23) Rodriguez-Navarro JA. 2021. Chaperone-mediated autophagy prevents collapse of the neuronal metastable proteome.Cell. ISSN 0092-8674. WOS (18) https://doi.org/10.1016/j.cell.2021.03.048

5 **Artículo científico**. Caballero B; Bourdenx M; Luengo E; et al; Cuervo AM; (13/21) Rodriguez-Navarro JA. 2021. Acetylated tau inhibits chaperone-mediated autophagy and promotes tau pathology propagation in mice.Nature communications. 12, pp.2238. https://doi.org/10.1038/s41467-021-22501-9

6 **Artículo científico**. Gemma Aragonès; Kalavathi Dasuri; Olukorede, O; et al; Taylor, A. 2020. Autophagic receptor p62 protects against glycation-derived toxicity and enhances viability. Aging Cell .ISSN 1550-4131. https://doi.org/10.1111/acel.13257

7 **Artículo científico**. Rodríguez-Navarro JA; Fafián-Labora JA; O'Loghlen A. 2020. Extracellular vesicles as potential tools for regenerative therapy. MOLECULAR AND CELLULAR ONCOLOGY. ISSN 1550-4131. https://doi.org/10.1080/23723556.2020.1809958

8 **Artículo científico**. Fafián-Labora JA; Rodríguez-Navarro JA (A/C); O'Loghlen A. 2020. Small Extracellular Vesicles Have GST Activity and Ameliorate Senescence-Related Tissue Damage.CELL METABOLISM. 32, pp.71-86.e5. ISSN 1550-4131. https://doi.org/10.1016/j.cmet.2020.06.004

9 **Artículo científico**. Gaudioso A; Garcia-Rozas P; Casarejos MJ; Pastor O; (5/5) Rodríguez-Navarro JA (AC). 2019. Lipidomic Alterations in the Mitochondria of Aged Parkin Null Mice Relevant to Autophagy. Lipidomic Alterations in the Mitochondria of Aged Parkin Null Mice Relevant to Autophagy. Frontiers in Neuroscience. 13, pp.329. ISSN 1662-453X. https://doi.org/10.3389/fnins.2019.00329. eCollection 2019

10 **Artículo científico**. Fafian-Labora J; Carpintero-Fernandez P; Jordan SJD; et al; O'Loghlen A; (7/9) Rodriguez-Navarro JA. 2019. FASN activity is important for the initial stages of the induction of senescence. FASN activity is important for the initial stages of the induction of senescence. Cell Death & Disease. 10-4, pp.318. ISSN 2041-4889. https://doi.org/10.1038/s41419-019-1550-0

11 **Revisión bibliográfica**. Pascual-Guerra, Jorge; Rodriguez-Navarro, Jose Antonio; Paino, Carlos Luis. 2022. Oligodendroglia Generated From Adult Rat Adipose Tissue by Direct Cell Conversion. neural regenereation research. 10. https://doi.org/10.4103/1673-5374.360278

12 Bejarano, Eloy; Antonio Rodriguez-Navarro, Jose; Filograna, Roberta; Calvo-Garrido, Javier. 2022. Defective macroautophagy in organelle turnover: From basic mechanisms to human disease. FRONTIERS IN CELL AND DEVELOPMENTAL BIOLOGY. 10. ISSN 2296-634X. https://doi.org/10.3389/fcell.2022.1018778

13 Caballero, Benjamin; Bourdenx, Mathieu; Luengo, Enrique; et al; Cuervo, Ana Maria. 2021. Acetylated tau inhibits chaperone-mediated autophagy and promotes tau pathology propagation in mice. NATURE COMMUNICATIONS. 12. ISSN 2041-1723. WOS (38) https://doi.org/10.1038/s41467-021-22501-9

14 Gomez, Olga; Perini-Villanueva, Giuliana; Yuste, Andrea; Rodriguez-Navarro, Jose Antonio; Poch, Enric; Bejarano, Eloy. 2021. Autophagy and Glycative Stress: A Bittersweet Relationship in Neurodegeneration. FRONTIERS IN CELL AND DEVELOPMENTAL BIOLOGY. 9. ISSN 2296-634X. https://doi.org/10.3389/fcell.2021.790479

15 Bourdenx, Mathieu; Martin-Segura, Adrian; Scrivo, Aurora; et al; Cuervo, Ana Maria. 2021. Chaperone-mediated autophagy prevents collapse of the neuronal metastable proteome. CELL. 184. ISSN 0092-8674. WOS (63) https://doi.org/10.1016/j.cell.2021.03.048

16 Blazquez, Cristina; Ruiz-Calvo, Andrea; Bajo-Graneras, Raquel; et al; Guzman, Manuel. 2020. Inhibition of striatonigral autophagy as a link between cannabinoid intoxication and impairment of motor coordination. ELIFE. 9. ISSN 2050-084X. WOS (4) https://doi.org/10.7554/eLife.56811

C.3. Proyectos o líneas de investigación

1 **Proyecto**. PLASMALOGENS, EXOSOMES AND AUTOPHAGY IN AGING AND NEURODEGENERATION. mineco PID2020-113014RB-I00. 1. (Hospital Universitario Ramón y Cajal). 01/09/2021-31/12/2024. 150.000 €. LA INSTITUCIÓN FIBIO-HRC RENUNCIÓ AL PROYECTO EN 2023 AL FINALIZAR MI CONTRATO MIGUEL SERVET II

2 **Proyecto**. Papel de la autofagia glial en neurodegeneración y envejecimiento.. SAF2016-78666 r. JOSE ANTONIO RODRIGUEZ NAVARRO. (Hospital Universitario Ramón y Cajal). 21/01/2017-21/12/2019. 150.000 €. PI

3 **Proyecto**. CHAPERONE MEDIATED AUTOPHAGY AND MACROAUTOPHAGY IN PARKIN MEDIATED PARKINSON'S DISEASE AND TAUOPATHIES. NEW THERAPEUTICAL APPROACHES. FIS CP13/00234 ms13 00234. JOSE ANTONIO RODRIGUEZ NAVARRO. (Hospital Universitario Ramón y Cajal). 21/07/2014-21/07/2017. 240.000 €. PI, INCLUDES SALARY OF THE PI AND 60000 PROJECT

4 **Proyecto**. NEW AUTOPHAGY RELATED LIPID MODIFICATIONS IN AGING AND PARKINSON DISEASE. SAF2013-45570. JOSE ANTONIO RODRIGUEZ NAVARRO. (Hospital Universitario Ramón y Cajal). 21/07/2014-21/07/2017. 160.000 €. PI

5 **Proyecto**. THE UBIQUITIN LIGASE PARKIN AND CHAPERONE-MEDIATED AUTOPHAGY. REVSON FOUNDATION. Jose Rodriguez Navarro. (DMB and Institute for Aging Research, AECOM). 01/07/2012-01/07/2014. 181.955 €. Coordinador. The applicant wrote the project, aplied for the grant, and is developing the project. http://www.revsonfoundation.org/programs_biomed.html

6 **Proyecto**. Ubiquitin-proteasome in protein degradation in parkin null mice. Role of glutathione. rosa solano. (Hospital Universitario Ramón y Cajal,). 2008-2010. Otros. Establised colaboration with Dr Castaño group. Performed some experiments, analized results, reviewed manuscript: Maria J. Casarejos1, Rosa M. Solano1, José A. Rodriguez-Navarro, Ana Gómez1, Juan Per...

7 **Proyecto**. Decreased Protein Degradation in Aging. NIN/NIA. (Institute for Aging Research, AECOM). Desde 01/04/2010. 195,08 €. Otros. Performed experiments leading to characterize the mechanisms for the decreased in CMA activity with aging, describing the biochemical changes in LAMP 2A and the changes in the lipid composition of th...

8 **Contrato**. UNIDAD DE CARACTERIZACIÓN METABÓLICA FIBIO-HRC. 01/03/2018-01/03/2023. 10.000 €.