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	Esperanza		
Family name	Rodríguez Matarredona		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
ID number			
e-mail	matarredona@us.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-2226-4686	

(*) Mandatory

A.1. Current position

Position	Full Professor			
Initial date	05/10/2022			
Institution	University of Seville			
Department/Center	Physiology	Faculty of Biology		
Country	Spain		Teleph. number	
Key words	Neural stem cells, subventricular zone, glia, gap junctions, cell therapy, extracellular vesicles, neurotrophic factors			

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

Period	Position/Institution/Country/Interruption cause
2010-2022	Senior Lecturer/University of Seville/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Pharmacy	University of Seville/Spain	1998
Bachelor in Pharmacy	University of Seville/Spain	1994

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

Throughout my research career, I have been **uninterruptedly involved in research projects**, having all in common the study of **brain damage** and **possible regenerative mechanisms**. During my Ph.D. studies (**University of Seville (US)**, January 1995- October 1998) I worked in projects analysing possible protective mechanisms for **Parkinson's Disease (**PD). We demonstrated that iron chelation protects against degeneration in a rat model of PD. Additionally, we reported for the first time that activation of group II metabotropic glutamate receptor reduces dopaminergic cell death in the PD model. I gained skills in cerebral microdialysis, HPLC, and immunohistochemistry. Eight articles were published on this subject. During this period, I did two short stays at the **University of Bern**, the result of which two articles were published reporting survival effects for dopaminergic neurons of a deprenyl-related compound and a combination of two neurotrophic factors. During my postdoctoral period (October 1998- March 2002) at the **University of Cádiz**, I was in charge of setting up a cell culture laboratory, and I gained experience in working with neural precursor cell cultures and tumor cell lines. We demonstrated that nitric oxide inhibits the proliferation of **neural progenitor cells from the subventricular zone**. These effects were demonstrated *in vitro* and *in vivo*, and we also explored the mechanisms by which this action is exerted. Five articles were published with these results. Two of them were awarded research prizes. Since March 2002, I have been working in the **Department of Physiology** at the **US**, collaborating with different research projects of members of this Department. I worked on projects that

elucidated the involvement of the Na^+/H^+ exchanger in **central chemoreception**, and the role of **neurotrophins** in different lesions of the oculomotor system by using *in situ* hybridization and immunohistochemistry techniques, which were complemented by two short stays in 20006 and 2007 at the **University of Bristol**. Since 2006 I have participated as a collaborator researcher in different projects funded by the Ministry of Education in Spain, Fundación Mutua Madrileña, and the Andalusian government, whose principal investigator is Dr Ángel M. Pastor. My contribution in these projects has been focused on the use of neural stem cells for cell therapy in different **lesions of the oculomotor system**. As a result of this collaboration, 11 articles have been published, as well as one patent on novel beneficial effects of the purinergic blocker suramin for neural precursor cell lifespan. In 2008, I got funding as principal investigator by the Fundación Eugenio Rodríguez Pascual for a project dealing with **implants of neural progenitor cells in a model of central axotomy**. I am collaborating with the group of Dra Arantxa Tabernero at the **University of Salamanca** (analysing antitumor effects of connexin43-based peptides), and with Dr Juan Carlos Sáez at the Institute of Neuroscience (**University of Valparaiso**, Chile) (studying effects of hemichannel blockers on neural progenitor cells). I have been guest editor for the journal *Frontiers in Oncology*, in a successful Research Topic entitled: Neural stem cells of the subventricular zone: from neurogenesis to glioblastoma origin, with 14 published articles and more than 71,000 views, and for *Biomedicines* with the Special Issue *"*Molecular Research of Glioblastoma". As quality indicators of my research activity, I have published **31 articles** in indexed journals, with an **H index of 18**, and a total number of citations of **1063** (Scopus). I have received **four six-year research recognition**.

I have **supervised the research** carried out in the Department of Physiology (US) by **five students** with Collaboration Fellowships, Research Initiation Fellowships, Research Practices or AECC (Spanish Association against Cancer) scholarships. I have co-supervised **two theses** (Drs Rocío Talaverón and Camilo J. Morado-Díaz), both of them awarded by the US with the Extraordinary Doctorate Award. Drs Talaverón and Morado-Díaz are currently postdoctoral researchers who have developed their activity in research centers of Cádiz, Salamanca, and Southampton (UK).

I have been secretary (for 6 years) and coordinator (for 1.5 years) of the **Doctoral Program** in Molecular Biology, Biomedicine, and Clinical Research at the US, and I am currently the **Academic Leader** of the Center for Learning and Research "Antonio de Ulloa" (US). I am also member of the **working team of the Research Vice-rectorate** of the US. I have reviewed articles for Q1 and Q2 journals and research projects for Fondo para la Investigación Científica y Tecnológica, (Argentina), and Graduate Women in Science. I have organized and/or participated in numerous **outreach activities** such as conferences (for high school, grade or post-grade students), exhibitions, documentaries, and workshops, and I am particularly concerned on activities trying to involve women in the research career.

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

C.1. Publications *((last 10 years, in reverse chronological order)*

1. Matarredona, E.R., N. Zarco, C. Castro, H. Guerrero-Cazares." Editorial: Neural stem cells of the subventricular zone: from neurogenesis to glioblastoma origin". (2021) *Frontiers in Oncology* 11:750116.
2. Herrera, A., Morcuende, S., Talaverón, R., Benítez-Temiño, B., Pastor, A.M., **Matarredona, E.R**. "Purinergic receptor blockade with suramin increases survival of postnatal neural progenitor cells *in vitro*". (2021*) International Journal of Molecular Sciences* 22 (2), 713.
3. Talaverón, R., **Matarredona, E.R.**, Herrera, A., Medina, J.M., Tabernero, A. "Connexin43 region 266-283, via Src inhibition, reduces neural progenitor cell proliferation promoted by EGF and FGF-2 and increases astrocytic differentiation". (2020) *International Journal of Molecular Sciences* 21:8852.
4. **Matarredona, E.R.,** Pastor, A.M. "Extracellular vesicle-mediated communication between the glioblastoma and its microenvironment". (2020). *Cells* 9: 96.

5. Fontán-Lozano, A., Morcuende, S., Davis-López de Carrizosa, MA, Benítez-Temiño, B., Mejías, R., **Matarredona, E.R**. "To become or not to become tumorigenic: subventricular zone versus hippocampal neural stem cells". (2020) *Frontiers in Oncology* 27;10:602217.
6. Matarredona, E.R., Pastor, A.M. "Neural stem cells of the subventricular zone as the origin of human glioblastoma stem cells. Therapeutic implications". (2019). *Frontiers in Oncology* 9:779.
7. Matarredona, E.R., Talaverón, R., Pastor, A.M. "Interactions between neural progenitor cells and microglia in the subventricular zone: physiological implications in the neurogenic niche and after implantation in the injured brain". (2018). *Frontiers in Cellular Neuroscience* 12: 268.
8. Talaverón, R., Fernández, P., Escamilla, R., Pastor, A.M., **Matarredona, E.R.*,** Sáez, J.C.*. *Corresponding authors**.** "Neural progenitor cells isolated from the subventricular zone present hemichannel activity and form functional gap junctions with glial cells". (2015). *Frontiers in Cellular Neuroscience* 9:411.
9. Morado-Díaz, C.J., **Matarredona, E.R**., Morcuende, S., Talaverón, R., Davis-López de Carrizosa, M.A., de la Cruz, R.R., Pastor, A.M.. Neural progenitor cell implants in the lesioned medial longitudinal fascicle of adult cats regulate synaptic composition and firing properties of abducens internuclear neurons. (2014). *Journal of Neuroscience* 34(20):7007-7017.
10. Talaverón, R.*, **Matarredona, E.R.***, de La Cruz, R.R., Macías, D., Gálvez, V., Pastor, A.M.. *equal contribution. "Implanted neural progenitor cells regulate glial reaction to brain injury and establish gap junctions with host glial cells". (2014). *GLIA* 62: 623-638.
11. Talaverón, R., **Matarredona, E.R**., de la Cruz, R.R., Pastor, A.M. "Neural progenitor cell implants modulate vascular endothelial growth factor and brain-derived neurotrophic factor expression in rat axotomized neurons". (2013). *PLOS ONE* 8(1): e54519. doi:10.1371/journal.pone.0054519.

C.2. Congress (last 10 years)

1. E. Jiménez-Madrona, E. Alés, A.M. Pastor, **E.R. Matarredona**. "Effect of hemichannel inbibition on neural progenitor cells". II Congreso Internacional de Jóvenes por la Investigación. Tenerife 17-18 noviembre 2022. POSTER.
2. R. Talaverón, **E.R. Matarredona**, A. Herrera, J.M. Medina, A. Tabernero. "Connexin43 region 266-283 reduces neural progenitor cell proliferation promoted by EGF and FGF-2 and increases astrocytic differentiation". 43rd Annual Meeting of the Spanish Society of Biochemistry & Molecular Biology, Barcelona 19-22 julio 2021. POSTER.
3. R. Talaverón, **E.R. Matarredona**, A. Herrera, J.M. Medina, A. Tabernero. "Connexin43 region 266-283 is involved in neural progenitor cell proliferation and differentiation through Src and β-catenin". XIV European Meeting on Glial Cells in Health and Disease. Oporto (Portugal), 13-15 julio 2019. POSTER.
4. **E.R. Matarredona**, R. Talaverón, V. Gálvez, A.M. Pastor. "Gap junction blockade increases neural precursor differentiation to astrocytes in vitro and after implantation in the lesioned tissue". XIII European Meeting on Glial Cells in Health and Disease. July 7-11, 2017, Edimburgo, Gran Bretaña. POSTER.
5. R. Talaverón, P. Fernández, R. Escamilla, A.M. Pastor, J.C. Sáez, **E.R. Matarredona**. "Dye coupling between cells from subventricular zone neurospheres and glia". 16 Congress of the Spanish Society of Neuroscience, September 23-25, 2015, Granada. Spain. POSTER.
6. R. Talaverón, P. Fernández, R. Escamilla, A.M. Pastor, J.C. Sáez, **E.R. Matarredona**. "Dye coupling between cells from subventricular zone neurospheres and glia". XII European Meeting on Glial Cells in Health and Disease. July 15-18, 2015, Bilbao, Spain. POSTER.
7. R. Talaverón, A.M. Pastor, R.R. de la Cruz, **E.R. Matarredona**. "Neural progenitor cells implanted in the lesioned brain form gap junctions with host glial cells". 9th FENS Forum of Neuroscience. Milan 5-9 julio 2014. POSTER.
8. R.Talaverón, A.M. Pastor, R.R. de la Cruz, **E.R. Matarredona**. "Neural progenitor cells implanted in the lesioned brain form gap junctions with host glial cells". VIII Cajal Winter Conference. La Alberca, Salamanca, 19-21 mayo 2014. POSTER (Awarded with BEST POSTER of the conference).
9. **E.R. Matarredona**, R. Talaverón, R.R. de la Cruz, A.M. Pastor. Glial response to neural progenitor cell implant in a CNS lesión. 8th FENS Forum of Neuroscience, Barcelona 10-14 julio 2012. POSTER.

C.3. Research projects (last 10 years).

1. Project: Plasticity of the oculomotor system in response to the lesion: role of neurotrophic factors and progenitor cells (P20_00529). **Financial support:** Consejería de Economía, Conocimiento, Empresas y Universidades (Junta de Andalucía). 65,000€. **Programme:** PAIDI 2020: Proyectos I+D+i. **Period:** 5/10/21-31/12/22. **PI:** Dr Ángel M. Pastor. **Contribution:** researcher.
2. Project: Multidisciplinar approach for the study of mechanism of action and optimization of antitumoral peptides based on connexin43 in glioma models in vitro and in vivo (SAP125P20). **Financial support:** Consejería de Educación (Junta de Castilla y Léon). 264,000€. **Programme:** Proyectos I+D+i. **Period:** 2021-2023. **PI:** Dra Aránzazu Tabernero Urbieta. **Contribution:** researcher.
3. Project: Lesion and regeneration: a neurotrophic evaluation of oculomotor function and plasticity (PGC2018-094654-B-100). **Financial support:** Ministerio de Ciencia, Innovación y Universidades (Spain). 145,200€. **Programme:** Plan Estatal 2017-2020 Generación Conocimiento - Proyectos I+D+i. **Period:** 0/1/2019-31/12/2021. **PI:** Dr. Ángel M. Pastor. **Contribution:** researcher.
4. Project: Reparative strategies in the SNC after lesion: VEGF administration and neural progenitor cell implant (BFU2015-64515-P). **Financial support:** Ministerio de Economía y Competitividad (Spain). 196,746€. **Programme:** Plan Estatal 2013-2016 Excelencia - Proyectos I+D. **Period:** 1/1/2016-31/7/2019. **PI:** Dr. Ángel M. Pastor. **Contribution:** researcher.
5. Project: Synaptotrophic dependence in the oculomotor system (P10-CVI-6053). **Financial support:** Consejería de Innovación, Ciencia y Empresas **(**Junta de Andalucía). 294,527€. **Programme:** Proyectos de Excelencia de la Junta de Andalucía. **Period:** 15/3**/**2011-30/4/2016. **PI:** Dr. Ángel M. Pastor. **Contribution:** researcher.
6. Project: Mechanisms involved in the recovery of physiological properties of lesioned motoneurons and interneurons after treatment with neurotrophic factors and neural progenitor cell implants (BFU2012-33975). **Financial support:** Ministerio de Economía y Competitividad, Spain. 128,700€. **Programme:** Plan Nacional 2012. **Period:** 1/1/2013-31/12/2015. **PI:** Dr. Ángel M. Pastor. **Contribution:** researcher.
7. Project: Throphic dependences in the oculomotor system. Effect of target-derived factors in the regulation of functional properties in central and in peripheral lesion models (BFU2009-07121). **Financial support:** Ministerio de Ciencia e Innovación, Spain. 181,500€. **Programme**: Plan Nacional 2009. **Period:** 1/1/2010-31/12/2013. **PI:** Dr. Ángel M. Pastor. **Contribution:** researcher.
8. Project: Neuronal basis for decision making and for movement codification (P09-CVI-4617), **Financial support:** Consejería de Innovación, Ciencia y Empresas (Junta de Andalucía). 204,445€. **Programme:** Proyectos de Excelencia de la Junta de Andalucía **Period:** 3/2/2020-3/12/2013. **PI:** Dr Rosario Pásaro Dionisio. **Contribution:** researcher.

C.4. Contracts, technological or transfer merits,

Inventors: Herrera, A., Pastor, A.M., Matarredona, E.R. **Title:** Method to increase lifespan of neonatal neural progenitors with suramin. **Number:** P201830557. **Entity holder of rights**: University of Seville. Spain. Date of register: 07/06/2018. Conferral date: 14/05/2020. PCT: no.