MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (maximum 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

CV date	12/05//21

Part A. PERSONAL INFORMATION

First and Family name	M. ROSARIO SEPÚLVEDA JUSTO		
Social Security, Passport, ID number		Age	
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-2375-5866	
	SCOPUS Author ID (*)		
	WoS Researcher ID (*)	L-4907-2014	

A.1. Current position

Name of University/Institution	UNIVERSITY OF GRANADA (UGR)		
Department	CELL BIOLOGY, FACULTY OF SCIENCES		
Address and Country	Avda. Fuentenueva, s/n 18071, Granada - Spain		
Phone number	+34 958 246334	E-mail	mrsepulveda@ugr.es
Current position	ASSOCIATE PROFESSOR (tenured)	From	24/11/2018
Key words	Calcium, brain, microglía, Golgi, neurodegeneration		

A.2. Education

PhD, Licensed, Graduate	University	Year
PhD in Biology	*University of Extremadura*	*2006*
Licensed in Biology	*University of Extremadura*	*2000*

A.3. General indicators of quality of scientific production

Number of six-year research: **2 (2015)**
Total publications (PubMed): **28** Total publications **D1: 5** /Total publications **Q1+D1: 23**
Total publications **fist author: 12** Total publications **last author: 5**
Sum of Times Cited: **643 (WoS)** Average number of cites/year (last 5 years): **52**
Average IF (last 10 years): **6.91** h-index: **16**

Part B. CV SUMMARY:

Multidisciplinary research activity in Molecular and Cell Biology:

Predoctoral stage:

Bachelor´s Degree in Biology (2000) at the University of Extremadura (UEx). I joined Dr Ana M. Mata´s group (Dept. Biochemistry and Molecular Biology and Genetics, UEx), supported by a Collaboration Scholarship from the Extremadura Government (JEX, 1999); a Research Fellowship from the UEx (2001); and a FPU Predoctoral Fellowship from the MEC (2002-2005). We studied *the distribution and function of Ca^{2+}-ATPases of sarco(endo)plasmic reticulum (SERCA) and plasma membrane (PMCA) in the adult and developing cerebellum*. The Doctoral Thesis was supervised by Dr Mata and Dr Matías Hidalgo (Dept. Cell Biology, UEx), combining techniques from both areas.

I completed my doctoral training with short stays in the laboratories of Dr Jesús Ávila (2002 and 2003) and of Dr Margarita Salas (2002) in the Centre of Molecular Biology "Severo Ochoa" (CSIC-UAM, Madrid); and the lab of Dr Frank Wuytack (2004) in the Khatolieke Universiteit Leuven (KUL, Belgium). We also collaborated with Dr María Gasset (Rocasolano Institute, CSIC, Madrid), to analyse *PMCA distribution in lipid rafts*. I obtained my PhD in Biology (2006) with the highest qualifications and awarded with the Extraordinary Doctorate Award of the UEx (2007) and the Prize of the Royal Academy of Doctors of Spain (2007).

Post-doctoral stage:

Postdoc in the lab of Dr Wuytack (KUL, Belgium), renowned expert in the Ca^{2+}-ATPases field. I was supported by the Flanders Research Foundation (FWO, 2007) and by KUL (2008). I started a research line with a *new Ca^{2+} pump located in the secretory pathway (SPCA) and recently identified in the nervous tissue*. We showed an *important role of this pump in neuronal polarity and Mn^{2+} toxicity*. In 2009 I returned to Spain to Dr Mata´s group

by the Reincorporation of Doctors Program (JEX, 2009-2012), to continue the SPCA research and working also in other projects of the group about Ca^{2+} pumps and Alzheimer's disease. I came back again to KUL in 2009 for a short stay to complete studies with the SPCA pump.

Current stage at UGR:

I got a position in 2012 as Assistant Professor in the Dept. of Cell Biology at UGR, becoming Associate Professor (2014) and tenured (2018). I joined the group of Dr Julio Navascués and I started a new research line on *microglia and Ca^{2+} signalling in neuropathologies* financed by (being PI): 1) Grant from CEI BioTic Granada (2014); 2) Competitive Grant for Young Researchers from UGR (2017); 3) Grant from FEDER-Andalucia Program (2020).

In summary, my professional career includes: regularity in scientific production since 2001; participation in 16 projects (3 as IP, and 4 internationals); 43 publications in Web of Science; 42 congress communications (28 internationals and 9 as oral communications); supervisor of 11 Final Degree/Master projects; guest reviewer of prestigious journals; and awarded with 2 six-year research periods (2015), 3 five-year teaching periods (2018) and 5 autonomic complements (2019).

Part C. RELEVANT MERITS (in the last 10 years*)*

C.1. Publications *(selected 10)*

1. J.M. Morales-Ropero, S. Arroyo-Urea, V.E. Neubrand, D. Martín-Oliva, J.L. Marín-Teva M.A. Cuadros, P. Vangheluwe, J. Navascués, A.M. Mata and **M.R. Sepúlveda.** (2021) The endoplasmic reticulum Ca^{2+}-ATPase SERCA2b is upregulated in activated microglia and its inhibition causes opposite effects on migration and phagocytosis. *Glia.*69:842-857 **(I.F. 5.984, *Q1)***
2. J. Chen, A. Sitsel, V.Benoy, **M.R. Sepúlveda*** and P. Vangheluwe* (2020) Primary active Ca^{2+} transport systems in health and disease. *Cold Spring Harbor Perspectives in Biology,* 12:a035113.* ***Shared last author* (I. F. 9.110*, D1).***
3. M. Berrocal, I. Corbacho, **M.R. Sepúlveda**, C. Gutiérrez-Merino and A.M. Mata (2017) Phospholipids and calmodulin modulate the inhibition of PMCA activity by tau. *BBA-Molecular Cell Research,* 1864:1028-35 **(I.F. 4.651, *Q1*).**
4. M. Berrocal, I. Corbacho, M. Vázquez-Hernández, J. Ávila, **M.R. Sepúlveda** and A.M. Mata (2015) Inhibition of PMCA activity by tau as a function of aging and Alzheimer's neuropathology. *BBA-Molecular Basis of Disease*,1852:1465-76 **(I.F. 5.158, *Q1*).**
5. **M.R. Sepúlveda**, F. Wuytack and A.M. Mata (2012) High levels of Mn^{2+} inhibit secretory pathway Ca^{2+}/Mn^{2+}-ATPase (SPCA) activity and cause Golgi fragmentation in neurons and glia. *Journal of Neurochemistry*, 123:824-36 **(I.F.3.973, *Q1*).**
6. **M.R. Sepúlveda**, T. Dresselaers, P. Vangheluwe, W. Everaerts, U. Himmelreich, A.M. Mata and F. Wuytack (2012) Evaluation of manganese uptake and toxicity in mouse brain during continuous $MnCl_2$ administration using osmotic pump. *Contrast Media and Molecular Imaging*, 7:426-34 **(I.F. 2.872, *Q1*).**
7. S. Baron, P. Vangheluwe, **M.R. Sepúlveda**, F. Wuytack, L. Raeymaekers, and J. Vanoevelen (2010) The secretory pathway Ca^{2+}-ATPase 1 is associated with cholesterol-rich microdomains of human colon adenocarcinoma cells. *BBA-Biomembranes,* 1798:1512-21 **(I.F. 4.647, *Q1*).**
8. P. Vangheluwe*, **M.R. Sepúlveda***, L. Missiaen, L. Raeymaekers, F. Wuytack and J. Vanoevelen (2009) Intracellular Ca^{2+}- and Mn^{2+}-transport ATPases. *Chemical Reviews*, 109:4733-59. * ***Shared first author* (I.F. 35.957, *D1*).**
9. **M.R. Sepúlveda**, J. Vanoevelen, L. Raeymaekers, A.M. Mata and F. Wuytack (2009) Silencing the Secretory Pathway Ca^{2+}-ATPase 1 (SPCA1) impairs Ca^{2+} homeostasis in the Golgi and neural polarity. *Journal of Neuroscience*, 29:12174-82 **(I.F. 7.178, *D1*).**
10. M. Berrocal, D. Marcos, **M.R. Sepúlveda**, M. Pérez M, J. Avila, A.M. Mata (2009) Altered Ca^{2+} dependence of synaptosomal plasma membrane Ca2+-ATPase in human brain affected by Alzheimer's disease. *FASEB Journal,* 23:1826-34 **(I.F. 6.401, *D1).***

C.2. Research projects:

Principal Investigator:

1. Reference: **A1-CTS-324-UGR18**
Title: Contribution of intracellular calcium stores in the functional modulation of microglia. Implication in neuropathologies.
Grant: R+D+I Projects of the Feder Andalucía Operational Program 2014-2020.
Principal investigator and affiliation entity: **M. Rosario Sepúlveda**, UGR.
Duration: January 2020 / June 2021

2. Reference: **PP2016-PJI05.**
Title: Modulation of microglial activation by Ca2+ in Alzheimer's disease.
Grant: Pre-competitive Projects for Young Researchers. Own Research Plan 2016 UGR.
Principal investigator and affiliation entity: **M. Rosario Sepúlveda**, UGR.
Duration: January 2017 / December 2017

3. Reference: **MP.BS.35**
Title: Signaling by calcium and microglia in Alzheimer's disease.
Grant: CEI Biotic Granada
Principal investigator and affiliation entity: **M. Rosario Sepúlveda**, UGR.
Duration: May 2014 / December 2014

Participation as Researcher:

4. Reference: **BFU2014-53641-P**
Title: Deregulation of calcium and redox transport systems associated with 'rafts' in neurons by molecular markers of brain degeneration and neuroprotective search.
Grant: Ministry of Economy and Competitiveness 2014.
Principal investigator and affiliation entity: Ana M. Mata and Carlos Gutierrez, UEx.
Duration: January 2014 / December 2017

5. Reference: **BFU2011-23313**
Title: Alterations in the buffering capacity of cytosolic Ca2+ in the human brain and in other model systems and their relationship with the molecular markers of Alzheimer's disease.
Grant: MICINN.
Principal investigator and affiliation entity: Ana M. Mata, UEx.
Duration: January 2012 / December 2014

6. Reference: **BFU2008-00182**
Title: Calcium pumps and their functional alteration as targets for pharmacological intervention in neuropathologies.
Grant: Ministry of Education and Science.
Principal investigator and affiliation entity: Ana M. Mata, UEx.
Duration: January 2009 / December 2011

7. Reference: **GOA/2009/12**
Title: Calcium-transport proteins: mechanisms of function and their role in disease.
Grant: K.U.Leuven (Bélgica)
Principal investigator and affiliation entity: Ludwig Missiaen, K.U. Leuven (Belgium)
Durationn: January 2008 / December 2013

8. Reference: **P6/28**
Title: Signal integration mechanisms in health and disease.
Grant: InterUniversity Attraction Poles (Belgian Science Policy)
Principal investigator and affiliation entity: Frank Wuytack, K.U. Leuven (Belgium)
Duration: January 2007 / December 2011

C.5. Supervisor of Student´s Research Projects:

MASTER THESIS at UGR *(all were marked as outstanding):*
1. *Study of the Secretory Pathway Ca^{2+}-ATPase (SPCA1) and the Golgi during Mn^{2+} toxicity in microglia*. Aysha Bhojwani, Master in Biotechnology, 2019.
2. *Analysis of SERCA2 in the activation of microglial cells.* Juan Manuel Morales, Master in Regenerative Biomedicine, 2018.

BACHELOR THESIS: *Tissue and functional analysis of Ca^{2+}-transporting ATPases in Tau knockout mice brain.* Maria Vázquez. Bachelor´s Degree in Biology (UEx) 2010. Excellent.

COLLABORATION SCHOLARSHIPS:
1. Aysha Bhojwani (MECyD). UGR, 2018/2019.
2. Juan Manuel Morales (MECyD). UGR, 2016/2017.
3. Nazaret López (MEC). UEx, 2011/2012.

FINAL DEGREE PROJECTS at UGR *(all were marked as outstanding):*
1. *Golgi fragmentation as an early event in degenerative pathologies.* J Sánchez, 2020.
2. *Analysis of intracellular Ca^{2+} pumps in microglial activation by β-amyloid peptide*. S. Arroyo, Biochemistry, 2019.
3. *Overexpression and silencing of SPCA in a microglial cell line.* A.Bhojwani, Biology, 2018.
4. *Implication of Ca^{2+} transporters in the activation of microglia.* J.M. Morales-Ropero, 2017. **Awarded as the best Final Degree Projects in Biology of Andalusia 2017**.
5. *Role of microglia in neurodegenerative diseases.* A. Molina; Biochemistry, 2016.
6. *Golgi fragmentantion in neurodegeneration*. M. Soriano, Biology, 2014.

C.6. Management (member of):
- Board of the Department of Cell Biology at the UGR (since 2019) and of Commissions of Infrastructure and Research (since 2014).
- Board of the Faculty of Sciences at the UGR (2012-2017).
- Commission of Degree in Biology and Degree in Biochemistry (both since 2012).
- Subcommittee on Final Degree Projects in Biology (since 2014).

C.8. Participation in assessment tasks:

MEMBER OF THESIS COMMITTEE:
Internationals*:* Jialin Chen, KUL (Belgium) 2019; Pilar Rivero, IPLN-CSIC, Granada 2019; Jesús Madero, IPLN-CSIC, Granada 2018, Susanne Smaardijk, KUL (Belgium) 2017.
Nationals*: Alexa Prescilla, UGR, 2021; Lissette Retana, UGR, 2019;* María Martín Estebané, UGR, 2017; Patricia Tomás, UEx, 2016; Rosa M. Ferrer, UGR, 2013; Daniel Marcos, UEx, 2013; Ruth M. Bejarano, UEx, 2012.

GUEST REVIEWER OF RESEARCH ARTICLES:
J. Neuroscience, Carcinogenesis, J. Physiology and Biochemistry, Cell Biology and Toxicology, Toxins, J. Neurophysiology.

C.9. Main teaching activities:
UGR: *Microscopic Organography* (Degrees in Biology and Biochemistry, since 2012), *Cell and organism cultures* (Degree in Biotechnology, since 2016), *Techniques and methodologies* (Master in Biology and Aquaculture, since 2014), *Developmental mechanisms in the central nervous system* (Master in Biotechnology, since 2017).
KUL (Belgium): *Molecular, Cellular and System Physiology*, Biomedical Sciences, 2008.

C.10. Scientific divulgation to society:
Science Week in Andalusia (since 2012), *International Day of Women and Girls in Science* (since 2019); *Permanent Scientific Classroom*, UGR (since 2017); *Science Week in CEIP Fuentenueva* (since 2014).