

Part A. PERSONAL INFORMATION

CV date 10/10/2019

First and Family name	Isabel Lastres Becker		
Social Security, Passport, ID number	50095589W	Age	45 years
Researcher codes	WoS Researcher ID (*)	R-3403-2018	
	SCOPUS Author ID(*)		
	Open Researcher and Contributor ID (ORCID) **	0000-0002-4968-2175	

(*) At least one of these is mandatory

(**) Mandatory

A.1. Current position

Name of University/Institution	Universidad Autónoma de Madrid		
Department	Biochemistry/ School of Medicine		
Address and Country	c/ Arturo Duperier 4, Instituto de Investigaciones Biomédicas "Alberto Sols", 28029, Madrid		
Phone number	91 585 44 49	E-mail	ilbecker@iib.uam.es
Current position	Associate professor	From	December 2015
Key words	Molecular mechanism of disease; neurodegeneration; neuroinflammation; proteostasis; oxidative stress; TAU; Alzheimer's disease; Parkinson's disease; amyotrophic lateral sclerosis		

A.2. Education

PhD	University	Year
Bs, Ms in Chemistry (Biochemistry)	Complutense (Madrid)	1997
PhD-European mention	Complutense (Madrid)	2003

A.3. JCR articles, h Index, thesis supervised

Her scientific contributions have been reflected to date in 49 scientific articles (4 articles published in non-SCI journals). First author and/or responsible author in 30 publications, having obtained to date around 3586 citations. Collaboration in 3 book chapters. Dr. Lastres Becker has an H index of 32 and an i10 index of 40. During her career she has also participated in 19 research projects, being the principal investigator in 5 of them. 96 communications to congress and 11 invited presentations. External collaborator of the CIBERNED group of Dr. Javier Fernández-Ruiz. Direction of 2 PhD theses and one in execution (2022). Participation in 9 doctoral thesis courts. Management of 2 diplomas of advanced studies, 5 Final Degree Projects and 3 Master's Final Projects. A reviewer of numerous SCI journals and reviewer of national evaluation agency (ANEP, since 2010) and international agencies (ANR, MCR and FWO). Guest editor for "Biomolecules" (IF 4.694) in the special issue "Role of Nrf2 in Disease: Novel Molecular Mechanisms and Therapeutic Approaches". Guest editor for "Neuroimmunology and Neuroinflammation" in the special issue "Microglia: from homeostasis to neuroinflammation". An also guest editor for "Frontiers in Cellular Neuroscience" (IF 3.900) in the special issue "TAU protein: mechanisms from health to degeneration".

Part B. CV SUMMARY

Dr. Lastres-Becker studied Chemistry, specializing in Biochemistry at the Complutense University of Madrid from 1992 to 1997. She completed her Grade Thesis at the Faculty of Veterinary Medicine of the Justus-Liebig University, Giessen, Germany, until September 1998. Subsequently, she joined the Department of Biochemistry and Molecular Biology of the Faculty of Medicine of the Complutense University of Madrid (with Dr. Javier Fernández Ruiz and Dr. José Antonio Ramos Atance), where she obtained the PhD title with European mention and Extraordinary Thesis Award in March of 2003. During this predoctoral period, she also won several awards for her work in national and international congresses, in addition to obtaining



the Juan Abello Pascual II award from the Royal Academy of Doctors. After completing the PhD Thesis, she joined the laboratory of Dr. Mario Vallejo in May 2003 with a postdoctoral fellowship associated with the project. In November 2004, Dr. Lastres-Becker was hired at J.W. Goethe, Frankfurt am Main, Germany, by Dr. Georg Auburger, where she also won a post-doctoral scholarship "Alexander von Humboldt". In 2008 she joined the group of Dr. Antonio Cuadrado Pastor of the Department of Biochemistry of the Faculty of Medicine of the Universidad Autónoma of Madrid and in 2009 she obtained a contract for the Ramón y Cajal Program and started in January 2010. In December 2015 she got the position of Associate Professor. In June 2017 she obtained her own laboratory with an independent career. Participation in teaching both undergraduate and postgraduate of the Department of Biochemistry of the Faculty of Medicine of the UAM since 2010. Coordinator of several subjects of degree and master, and coordinator of the Master of Molecular Biomedicine.

Part C. RELEVANT MERITS

C.1. Publications (including books) (from 2009-2019 and among 23)

- 1: Martin-Hurtado A, Martin-Morales R, Robledinos-Antón N, Blanco R, Palacios-Blanco I, **Lastres-Becker I**, Cuadrado A, Garcia-Gonzalo FR. NRF2-dependent gene expression promotes ciliogenesis and Hedgehog signaling. *Sci Rep.* 2019 Sep 25;9(1):13896. doi: 10.1038/s41598-019-50356-0. IF: 4.011; Citation: 0; Q1. Number/position of researcher: 6/8
- 2: **Lastres-Becker I.**, Nonis FD., Nowock J., Auburger G. NEW ALTERNATIVE SPLICING VARIANTS OF THE SCA2 TRANSCRIPT. *Neurological Research and Practice.* 2019 (accepted). IF: new journal; Citation: 1; Q?. Number/position of researcher: 1/4
- 3: Galán-Ganga M, Del Río R, Jiménez-Moreno N, Díaz-Guerra M, **Lastres-Becker I.** Cannabinoid CB(2) Receptor Modulation by the Transcription Factor NRF2 is Specific in Microglial Cells. *Cell Mol Neurobiol.* 2019 Aug 5. doi: 10.1007/s10571-019-00719-y. [Epub ahead of print]. IF: 3.811; Citation: 0; Q2. Number/position of researcher: 5/5
- 4: Galán-Ganga M, García-Yagüe ÁJ, **Lastres-Becker I.** Role of MSK1 in the Induction of NF- κ B by the Chemokine CX3CL1 in Microglial Cells. *Cell Mol Neurobiol.* 2019 Apr;39(3):331-340. doi: 10.1007/s10571-019-00664-w. Epub 2019 Mar 4. IF: 3.895; Citation: 1; Q2. Number/position of researcher: 3/3
- 5: Castro-Sánchez S, García-Yagüe ÁJ, Kügler S, **Lastres-Becker I.** CX3CR1-deficient microglia shows impaired signalling of the transcription factor NRF2: Implications in tauopathies. *Redox Biol.* 2019 Apr;22:101118. doi: 10.1016/j.redox.2019.101118. Epub 2019 Feb 6. IF: 7.126; Citation: 1; Q1. Number/position of researcher: 4/4
- 6: Castro-Sánchez S, García-Yagüe ÁJ, López-Royo T, Casarejos M, Lanciego JL, **Lastres-Becker I.** Cx3cr1-deficiency exacerbates alpha-synuclein-A53T induced neuroinflammation and neurodegeneration in a mouse model of Parkinson's disease. *Glia.* 2018 Aug;66(8):1752-1762. doi: 10.1002/glia.23338. Epub 2018 Apr 6. IF: 6.200; Citation: 8; Q1. Number/position of researcher: 6/6
- 7: Cuadrado A, Kügler S, **Lastres-Becker I.** Pharmacological targeting of GSK-3 and NRF2 provides neuroprotection in a preclinical model of tauopathy. *Redox Biol.* 2018 Apr;14:522-534. doi: 10.1016/j.redox.2017.10.010. Epub 2017 Nov 6. IF: 7.126; Citation: 26; Q1. Number/position of researcher: 3/3
- 8: **Lastres-Becker I.** Role of the Transcription Factor Nrf2 in Parkinson's Disease: New Insights. *J Alzheimers Dis Parkinsonism* 2017, 7:4. DOI: 10.4172/2161-0460.1000340. IF: 3.030; Citation: 12; Q2. Number/position of researcher: 1/1



9: **Lastres-Becker I***, Nonis D, Eich F, Klinkenberg M, Gorospe M, Kötter P, Klein FA, Kedersha N, Auburger G*. Mammalian ataxin-2 modulates translation control at the pre-initiation complex via PI3K/mTOR and is induced by starvation. *Biochim Biophys Acta*. 2016 Sep;1862(9):1558-69. doi: 10.1016/j.bbadis.2016.05.017. Epub 2016 May 27. IF: 5.158; Citation: 32; Q1. Number/position of researcher: 1/9

10: **Lastres-Becker I***, García-Yagüe AJ, Scannevin RH, Casarejos MJ, Kügler S, Rábano A, Cuadrado A*. Repurposing the NRF2 Activator Dimethyl Fumarate as Therapy Against Synucleinopathy in Parkinson's Disease. *Antioxid Redox Signal*. 2016 Jul 10;25(2):61-77. doi: 10.1089/ars.2015.6549. Epub 2016 Apr 27. IF: 7.093; Citation: 89; Q1. Number/position of researcher: 1/7

11: Cuadrado A, Martín-Moldes Z, Ye J, **Lastres-Becker I**. Transcription factors NRF2 and NF- κ B are coordinated effectors of the Rho family, GTP-binding protein RAC1 during inflammation. *J Biol Chem*. 2014 May 30;289(22):15244-58. doi: 10.1074/jbc.M113.540633. Epub 2014 Apr 22. IF: 4.573; Citation: 156; Q1. Number/position of researcher: 4/4

12: **Lastres-Becker I***, Innamorato NG, Jaworski T, Rábano A, Kügler S, Van Leuven F, Cuadrado A*. Fractalkine activates NRF2/NFE2L2 and heme oxygenase 1 to restrain tauopathy-induced microgliosis. *Brain*. 2014 Jan;137(Pt 1):78-91. doi: 10.1093/brain/awt323. Epub 2013 Nov 25. IF: 9.196; Citation: 71; Q1. Number/position of researcher: 1/7

13: García-Yagüe AJ, Rada P, Rojo AI, **Lastres-Becker I***, Cuadrado A*. Nuclear import and export signals control the subcellular localization of Nurr1 protein in response to oxidative stress. *J Biol Chem*. 2013 Feb 22;288(8):5506-17. doi: 10.1074/jbc.M112.439190. Epub 2013 Jan 2. IF: 4.600; Citation: 50; Q1. Number/position of researcher: 4/5

14: **Lastres-Becker I***, Ulusoy A, Innamorato NG, Sahin G, Rábano A, Kirik D, Cuadrado A*. α -Synuclein expression and Nrf2 deficiency cooperate to aggravate protein aggregation, neuronal death and inflammation in early-stage Parkinson's disease. *Hum Mol Genet*. 2012 Jul 15;21(14):3173-92. doi: 10.1093/hmg/dds143. Epub 2012 Apr 18. IF: 7.692; Citation: 146; Q1. Number/position of researcher: 1/7

15: Granado N*, **Lastres-Becker I***, Ares-Santos S, Oliva I, Martin E, Cuadrado A, Moratalla R. Nrf2 deficiency potentiates methamphetamine-induced dopaminergic axonal damage and gliosis in the striatum. *Glia*. 2011 Dec;59(12):1850-63. doi: 10.1002/glia.21229. Epub 2011 Aug 31. IF: 4.820; Citation: 68; Q1. Number/position of researcher: 1-2/7

C.2. Research projects and grants

1: "Análisis del transporte de gránulos de RNA y traducción de proteínas in situ en ELA: ¿implicación de SATUFEN y TDP-43?" This work was supported by FundELA (2019-2020). PI: Isabel Lastres-Becker.

2: Fundación Tatiana Pérez de Guzmán el Bueno (2019-2021) "Alteraciones de la mitofagia en la enfermedad de Parkinson". PI: Patricia Boya. Co-investigador: Isabel Lastres-Becker.

3: European network of centers of excellence-COEN (2018-2020) Developing preclinical and clinical biomarkers of NRF2 pathway activation for therapeutic application in neurodegenerative diseases. PI: Pamela Shaw. Co-investigador: Isabel Lastres-Becker.

4: Diseño y desarrollo de fármacos innovadores para el tratamiento de la esclerosis lateral amiotrófica. Conserjería de educación e investigación de la Comunidad de Madrid B2017/BMD-3813 ELA-Madrid (2018-2021). PI: Ana Martínez/Isabel Lastres-Becker



5: Papel de NRF2 en la función y el destino del cerebro con Alzheimer. This work is supported by Spanish Ministerio de Ciencia e Innovacion Grant SAF2016-76520-R (2017-2020). PI: Antonio Cuadrado/Isabel Lastres-Becker.

6: Targeting NRF2 with BG-12 to modify Parkinson's disease progression in the AAV6-alpha-synuclein mouse model founded by Biogen Iberica (2013-2015). PI: Antonio Cuadrado. Co-investigator: Isabel Lastres-Becker.

7: European network of centers of excellence-COEN (2013-2015) Wnt signaling: biomarker and target evaluation in Alzheimer's disease. PI: Antonio Cuadrado. Co-investigator: Isabel Lastres-Becker.

8: Advanced theranostic approach in cancer combining photodynamic therapy and nanoparticles. This work was supported by M.ERA-NET (01-06-2016-31-05-2020). PI: Antonio Cuadrado. Co-investigator: Isabel Lastres-Becker.

9: NRF2 role as an antioxidant modulator neuroinflammation in Alzheimer's disease. This work was supported by Spanish Ministerio de Ciencia e Innovacion Grant SAF2013-43271-R (2013-2016). PI: Antonio Cuadrado/Isabel Lastres-Becker.

10: Health Research Foundation 2000 in neurodegenerative diseases (2013) for the project: Characterization of the proteasome and autophagy degradation system in an AAV6-alpha-synuclein model of Parkinson's disease: involvement of the transcription factor Nrf2 (2013-2014). PI: Isabel Lastres-Becker.

C.3. Contracts

C.4. Patents

“Nuevos derivados de ácido araquidónico con afinidad por el transportador de anandamide” López-Rodríguez, ML., Viso, A., Ortega, S., Lastres-Becker, I., González, S., Fernández-Ruiz, JJ., Ramos, JA. Universidad Complutense de Madrid. P200001920 (2000), Spain.

C.5. (memberships of scientific societies)

Currently, member of the SEBBM (Sociedad Española de Bioquímica y Biología Molecular).

C.6 Awards

2019: prize of the more cited article published 5 year ago of IdiPAZ

2018: Award I Congress of International community of ALS to the best poster.

2015: prize of the most relevant publication of IdiPAZ area 1

2012: prize of the most relevant publication of IdiPAZ area 1

2012: prize for the best oral presentation at the 6th European Congress of Pharmacology.

2010: L'Oreal-Unesco Research Exchange for women in science in November 2010

2004: IBRO travel award for the FENS-meeting

2003: Prize of the Spanish Cannabinoid Research Society (SEIC) for the best publication on cannabinoids published in Journal of Neurochemistry 84, 1097-1109 (2003).

2003: Extraordinary award for the PhD Thesis (2002-2003) in the Complutense University.

2003: Award Juan Abelló Pascual II for the PhD thesis.

2002: Scientific Achievement Award for the oral presentation. 12th International Cannabinoid Research Society, Symposium on the Cannabinoids, Pacific Grove, CA, USA