



**CURRICULUM VITAE (CVA)**

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

CV date	4/07/2025
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**Part A. PERSONAL INFORMATION**

First name	EVA		
Family name	DE LAGO FEMIA		
Gender (*)	FEMALE	Birth date (dd/mm/yyyy)	24/12/1977
Social Security, Passport, ID number	05286905X		
e-mail	elagofem@ucm.es	URL Web:	<a href="http://bit.ly/44egsxx">http://bit.ly/44egsxx</a>
Open Research and Contributor ID (ORCID)(*)	<a href="https://orcid.org/0000-0002-6260-3777">https://orcid.org/0000-0002-6260-3777</a>		

(\*) Mandatory

**A.1. Current position**

Position	Associate Professor		
Initial date	20/06/2019		
Institution	Universidad Complutense de Madrid		
Department/Center	Dpto. Bioquímica y Biología Molecular/ Facultad de Medicina		
Country	Spain	Teleph. number	913941454
Key words	Neurodegenerative disorders, ALS, DFT, cannabinoids, neuroprotection		

**A.2. Previous positions (research activity interruptions, art. 14.2.b))**

Period	Position/Institution/Country/Interruption cause
01/2002-09/2006	Grantee of CAM (PhD student)
11/2006-12/2014	Assistant professor (PA, PAD)
12/2014-06/2019	Associate professor (PCD)
10/2007 and 11/2010	Two maternity leave (8 months interruption in total)
10/2017-until now	University Institute Director (IUIN)

**A.3. Education**

PhD, Licensed, Graduate	University/Country	Year
Biology Degree	Complutense University	2001
Biochemistry PhD	Complutense University	2006

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

My scientific career has been dedicated to investigating neurodegenerative diseases (NDs), with a particular focus on understanding pathogenic mechanisms and exploring therapeutic targets. A central axis of my research has been the role of the endocannabinoid system (ECS) in neurological disorders. Early on, my work contributed significantly to the preclinical characterisation of a novel ECS reuptake inhibitor patented by our group. I demonstrated its analgesic and neuroprotective effects in animal models and further explored its cytotoxicity profile during international research stays in leading laboratories. This research culminated in 13 peer-reviewed publications (7 as first author), establishing the basis for subsequent exploration of ECS modulation in NDs.

Throughout my career, I have established strong international collaborations with renowned experts, including Dr. Mechoulam (Israel), Dr. Di Marzo (Italy), Dr. Rothstein (USA), and Dr. Hillard (USA), which

have expanded both the technical capabilities and translational vision of my work. My research bridges molecular biology, pharmacology, and cellular neuroscience, with experience spanning animal models, patient-derived tissues, and human iPSC-based platforms. My group has provided pioneering evidence on the role of cannabinoid receptor CB2 in ALS and FTD. We showed that CB2 is upregulated during disease progression and that its genetic ablation exacerbates disease phenotype, reinforcing its therapeutic relevance. These findings have led to more than 15 publications on ECS involvement in ALS/FTD, positioning our lab as a reference in the field. Beyond the ECS, I have expanded my research lines toward the development and evaluation of novel protein kinase inhibitors (PKis) as therapeutic candidates for ALS. In collaboration with Dr. Martínez (an expert in kinase drug development), we have made substantial progress within a regional consortium funded by the Comunidad de Madrid, leading to several awards and preclinical advancements toward clinical trial readiness. I recently secured a competitive grant from “La Caixa” Foundation (international consortium) to study these compounds in ALS models, further consolidating this translational approach. I have consistently obtained competitive research funding (5 projects as PI, 3 as co-PI), including international support from the Alzheimer’s Association to study TDP-43 in FTD. I am also a member of SEED-ALS (*Synergizing Efforts to Develop and Accelerate Breakthroughs in ALS Research*), a national consortium funded by the Instituto de Salud Carlos III with a total budget of €4M, aimed at accelerating ALS research and drug development through interdisciplinary collaboration. My research has a strong translational and collaborative component, including contracts and partnerships with pharmaceutical companies such as GW Pharma, Emerald, and Roche. I am committed to training and mentoring young scientists, having supervised five Ph.D. theses (three of which led to continued international postdoctoral careers), ten master’s theses, and five undergraduate projects. I currently supervise 2 Ph.D. students and one postdoctoral researcher.

In addition to my scientific achievements, I contribute actively to research management and evaluation. I have been Director of the Neurochemistry Research Institute (UCM) since 2017 and regularly act as a reviewer for national funding agencies, private foundations, and peer-reviewed journals. I serve on the editorial board of *Molecules* and am a Council Member of the Mediterranean Neuroscience Society. I also lead public engagement and outreach initiatives, including the development of an open online course on neurodegenerative diseases and science communication via social media.

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

#### **C.1. Most important publications in books and journals with "peer review" and in conferences**

- **Scientific paper:** Gómez-Almería M, Gonzalo-Consuegra C, Rodríguez-Cueto C, Cabañas-Cotillas M, Jiménez-Amor A, Machín-Díaz I, Wittwer MB, Dzygiel P, Clemente D, Grether U, Fernández-Ruiz J, **de Lago E**. Relevance of a peripheral site of action outside the brain-blood barrier for the beneficial effects of CB2 receptor activation in experimental ALS in male mice. *Cell Commun Signal*. 2025 Oct 10;23(1):427. doi: 10.1186/s12964-025-02418-2.
- **Scientific paper:** García-Toscano L, Rodríguez-Cueto C, Furiano A, Hind W, **de Lago E**, Fernández-Ruiz J. Preclinical evaluation of cannabidiolic acid as a neuroprotective agent in TDP-43 transgenic mice, an experimental model of amyotrophic lateral sclerosis. *Biomed Pharmacother*. 2025 189:118288. doi: 10.1016/j.biopha.2025.118288.
- **Book chapter:** **de Lago, E.**, Rodríguez-Cueto, C., Fernández-Ruiz, J. (2024). Mouse Models of Amyotrophic Lateral Sclerosis. In: Muñoz-Torrero, D. (eds) *Methods in Neurodegenerative Disease Drug Discovery*. *Neuromethods*, vol 216. Humana, New York, NY. doi: [https://doi.org/10.1007/978-1-0716-4232-0\\_14](https://doi.org/10.1007/978-1-0716-4232-0_14). ISBN: 978-1-0716-4232-0.
- **Scientific paper:** Javier Fernández Ruiz; **Eva De Lago**; Isabel Lastres-Becker. Beneficial Effect of Dimethyl Fumarate Drug Repositioning in a Mouse Model of TDP-43-Dependent Frontotemporal Dementia. 2024 *Antioxidants*. 13-1072. DOI: [10.3390/antiox13091072](https://doi.org/10.3390/antiox13091072)
- **Scientific paper.** Gonzalo-Consuegra, C.; Santos-García, I.; García-Toscano, L.; et al; Fernández-Ruiz,

J.; de Lago, E. 2024. Involvement of CB1 and CB2 receptors in neuroprotective effects of cannabinoids in experimental TDP-43 related frontotemporal dementia using male mice. *Biomedicine and Pharmacotherapy*. 174:116473. doi: [10.1016/j.biopha.2024.116473](https://doi.org/10.1016/j.biopha.2024.116473)

- **Scientific paper.** Santos-Garcia, Irene; Rodriguez-Cueto, Carmen; Villegas, Patricia; et al; de Lago, Eva. 2023. Preclinical investigation in FAAH inhibition as a neuroprotective therapy for frontotemporal dementia using TDP-43 transgenic male mice. *J Neuroinflammation*. 2023 May 6;20(1):108. doi: [10.1186/s12974-023-02792-z](https://doi.org/10.1186/s12974-023-02792-z).
- **Scientific paper.** Lastres-Becker, Isabel; de Lago, Eva; Martinez, Ana; Fernandez-Ruiz, Javier. 2022. New Statement about NRF2 in Amyotrophic Lateral Sclerosis and Frontotemporal Dementia. *Biomolecules*. 12-9:1200. doi: [10.3390/biom12091200](https://doi.org/10.3390/biom12091200).
- **Scientific paper.** Rodriguez-Cueto, Carmen; Gomez-Almeria, Marta; Garcia Toscano, Laura; Romero, Julian; Hillard, Cecilia J.; de Lago, Eva; Fernandez-Ruiz, Javier. 2021. Inactivation of the CB2 receptor accelerated the neuropathological deterioration in TDP-43 transgenic mice, a model of amyotrophic lateral sclerosis. *Brain Pathology*. 31-6. doi: [10.1111/bpa.12972](https://doi.org/10.1111/bpa.12972).
- **Scientific paper.** Rodriguez-Cueto, Carmen; Garcia-Toscano, Laura; Santos-Garcia, Irene; Gomez-Almeria, Marta; Gonzalo-Consuegra, Claudia; Espejo-Porras, Francisco; Fernandez-Ruiz, Javier; de Lago, Eva. 2021. Targeting the CB2 receptor and other endocannabinoid elements to delay disease progression in amyotrophic lateral sclerosis. *British Journal of Pharmacology*. 178-6, pp.1373-1387. doi: [10.1111/bph.15386](https://doi.org/10.1111/bph.15386).
- **Scientific paper.** Martinez-Gonzalez, Loreto; Rodriguez-Cueto, Carmen; Cabezudo, Diego; et al; de Lago, Eva. 2020. Motor neuron preservation and decrease of in vivo TDP-43 phosphorylation by protein CK-1 delta kinase inhibitor treatment. *Scientific Reports*. 10, 4449. <https://doi.org/10.1038/s41598-020-61265-y>
- **Scientific paper.** Espejo-Porras F; García-Toscano L; Rodríguez-Cueto C; Santos-García I; De Lago E (AC); Fernández-Ruiz J. 2019. Targeting glial cannabinoid CB2 receptors to delay the progression of the pathological phenotype in TDP-43 (A315T) transgenic mice, a model of amyotrophic lateral sclerosis. *British Journal of Pharmacology*. 176, pp.1585-1600.

## C.2. Congress.

More than 125 communications submitted to national and international conferences. Only invited presentations and talks are listed below.

- Eva de Lago Femia. Endocannabinoids in amyotrophic lateral sclerosis. 10th Mediterranean Neuroscience Society Conference. Chania Crete, Greece. 7-11 June 2025. Invited/Keynote talk.
- Eva de Lago Femia. Organizer of MNS Symposium title “Endocannabinoid signalling dysregulation in CNS-related disorders”. Chania Crete, Greece. 7-11 June 2025.
- Eva de Lago and Carmen Rodríguez Cueto. Precinical development of cannabinoid-based therapies in pathologies related to TDP-43 dysregulation: Amyotrophic lateral sclerosis and frontotemporal dementia. 9th International Mediterranean Neuroscience Society. invited/keynote talk and symposium organizer, 14-18 October. Tunis, Tunisia.
- Eva De Lago Femia. Relevance of CB2 receptors in motor neuron disease. 23rd ESN Biennial Meeting - 7th Conference on Molecular Mechanisms on Regulation in Neuron System. 2019. Italy. Participatory - invited/keynote talk. Conference.
- Eva De Lago Femia. Development of cannabinoid-based therapies for amyotrophic lateral sclerosis/frontotemporal dementia. MNS Meeting 2015. Italy. Participatory - invited/keynote talk. Conference.

## C.3. Projects or research lines in which you have participated.

- **Project.** SEED-ALS: Synergizing Efforts to Develop and Accelerate Breakthroughs in ALS Research.

PMPER24/0017. Instituto Salud Carlos III. Convocatoria misiones conjuntas para concesión de subvenciones a proyectos de investigación en enfermedades raras. IP Coordinator: Adolfo López Munain. IP group: Eva de Lago. 2025-2026. Dotación proyecto: 4.000.000 €.

- **Project** “Targeting TDP-43 with protein kinase inhibitors: an effective and measurable therapy for ALS (Drugs4ALS)”. Source: La Caixa Research (LCF/PR/HA21/52350003). Funding: 500,000€ Period: 01/11/2021-2024. PI: Eva de Lago (PI Consortium: Ana Martínez).
- **Project**. Potencial del sistema endocannabinoide frente a mecanismos patogénicos asociados con la neurodegeneración: énfasis en la reactividad glial y la agregación proteica. Ministerio de Ciencia e Innovación. Javier Fernández Ruiz. (Universidad Complutense de Madrid). 01/09/2022-31/08/2026. 257.250 €. Principal investigator.
- **Project**. Inhibidores de TTBK1 como posible tratamiento innovador para la demencia frontotemporal. Instituto de Salud Carlos III. Ana Martínez Gil. (Centro de Investigaciones Biológicas). 01/01/2023-31/12/2024. 134.200 €. Principal investigator.
- **Project**. Investigación en terapias dirigidas a reducir la agregación proteica en la demencia frontotemporal (Tau+ o TDP-43+). José Javier Fernández Ruiz. (Universidad Complutense de Madrid). 01/01/2023-31/12/2024. 96.000 €. Principal investigator.
- **Project**. HR21-00931, Targeting TDP-43 with protein kinase inhibitors: an effective and measurable therapy for ALS. Fundación La Caixa. Coordinador: Ana Martínez. IP grupo: Eva De Lago (Centro de Investigaciones Biológicas). 01/11/2021-01/11/2024. 500.000 €.
- **Project**. Investigación en el sistema endocannabinoide en patologías relacionadas con desregulación de TDP-43 (esclerosis lateral amiotrófica y demencia frontotemporal). Ministerio Ciencia, Innovación Y Universidades. I P : Jose Javier Fernandez Ruiz/Eva de Lago. 01/01/2019-30/06/2022. 266.200 €.
- **Project**. Diseño y Desarrollo De Fármacos Innovadores para el Tratamiento de la Esclerosis Lateral Amiotrófica. Comunidad de Madrid. IP: Eva De Lago. 01/01/2018-31/12/2021. 767.395 €.
- **Project**. Dianas en el sistema endocannabinoide para el desarrollo de terapias frente a la neurodegeneración: énfasis en la esclerosis lateral amiotrófica y otras enfermedades neurodegenerativas. Ministerio de Economía y Competitividad. IP: Jose Javier Fernandez Ruiz/Eva de Lago. 01/01/2016-30/04/2019. 302.500 €.
- **Project**. Role of the endocannabinoid system in TDP-43-related dementia. Alzheimer Association. IP: Eva De Lago Femia. 01/01/2013-31/12/2014. 89.100 €.

#### C.4. Participation in technology/knowledge transfer activities and exploitation of results.

**Patent of invention.** Jose Javier Fernandez Ruiz; Laura Garcia Toscano; R Gray; Willian Hind; Eva De Lago Femia; Carmen Aurora Rodriguez Cueto; Irene Santos-Garcia Sanz; B Whalley. Use of cannabinoids in the treatment of a neurodegenerative disease or disorder WO2019/012267 United Kingdom. GW RESEARCH LIMITED.

#### Research contract:

- **Contract**. Inhibidores de TTBK1 como nuevo enfoque terapéutico para la demencia frontotemporal y otros trastornos relacionados Ankar Pharma SLU. Eva de Lago Femia. 24/05/2023-24/05/2024. 40.000 €.
- **Contract**. Investigation in the anti-inflammatory and neuroprotective properties of VCE-005.1, in experimental models of amyotrophic lateral sclerosis. Emerald Health Biotechnology España. Jose Javier Fernandez Ruiz/Eva De Lago. 01/09/2018- 30/11/2019. 30.000 €.
- **Contract**. Investigation in the anti-inflammatory and neuroprotective properties of VCE-005.1, in experimental models of amyotrophic lateral sclerosis; Entidad financiadora: Emerald health Biotechnology España. Duración: 01/09/2018; IP: Javier Fernández Ruiz /Eva de Lago