

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

<b>Part A. PERSONAL INFORMATION</b>		<b>CV date</b>	22/01/2023
First name	María Magdalena		
Family name	Leiva Arjona		
Gender (*)	Female	Birth date (dd/mm/yyyy)	27/08/1980
Social Security, Passport, ID number	79016992D		
e-mail	Mleiva02@ucm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-7735-2459		

(\*) Mandatory

### A.1. Current position

Position	PhD assistant professor		
Initial date	01/09/2022		
Institution	Complutense University of Madrid		
Department/Center	Immunology	Faculty of Medicine	
Country	Spain	Teleph. number	686829297
Key words	Molecular mechanism of disease; Laboratory animals; Cell culture; Molecular, cellular and genetic biology;		

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

Period	Position/Institution/Country/Interruption cause
1/01/2017-31/08/2022	Postdoctoral researcher/CNIC
1/02/2021-1/10/2021	Postdoctoral researcher/CNIC/Sick leave+maternity leave (8 months)
1/11/2012-31/01/2016	Postdoctoral researcher/CNIC
1/10/2008-31/10/2012	Postdoctoral researcher/Paris Diderot Paris 7 University
1/02/2008-30/08/2008	Postdoctoral researcher/University of Granada

### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD programme in microbiology	University of Granada	2008
Pharmacy Degree	Faculty of Pharmacy	2003

(Include all the necessary rows)

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

I am **graduated in Pharmacy** (2003) with honours (Outstanding Graduation Award), and **PhD in Microbiology** (2008) by the University of Granada. I joined the laboratory of **Microbial Immunology**, under the supervision of Prof. Ruiz-Bravo, for my graduate programme (2003), where I described the role of the gut microbiota in the immunomodulation by antimicrobial agents (Leiva et al. Int J Antimicrob Agents, 2005). After, I got a **FPU fellowship** for my PhD project; I described how telithromycin can contribute to limit the ability of LPS activated macrophages to damage tissue in systemic and lung inflammation models. The results of this study constituted my **PhD (Cum Laude, European Doctorate Mention, awarded)**, **one invited seminar**, **numerous communications in meetings**, **two** of them



**selected talk** and **two** of them **awarded**, and **four publications as first author** (Int J Antimicrob Agents 2007; Crit Care 2007; Chest 2008; FEMS Immunol Med Microbiol 2008). During this period, I made **two stages in other research centers** (CIMA, in Pamplona; Protrakan, in Paris), to improve my skills in cell biology. After that, to satisfy my scientific interest on myeloid leukemias I moved to Paris, at the **laboratory of Prof. de Thé at the IUH**, one of the world leaders in onco-hematology. There, I spent more than **four years** investigating the **pathogenesis of Acute Promyelocytic Leukemia**. In this postdoctoral period, I have been the recipient of various **competitive funding schemes (Marie Curie IEF and Ramón Areces fellowships)**. **Two papers as first author** (Leukemia 2012; J Exp Med 2013) and **one collaboration** (Blood 2009), **several communications to scientific meetings** and **one patent** derived from my work at the IUH. In 2012, because of my expertise in leukemia, I joined the laboratory of Dr. Hidalgo at CNIC to investigate the determinant factors affecting the invasion of B-cell malignancies in the hematopoietic niche. The results of this project were published in **Leukemia** (2016 **co-first**); at the same time, **I characterized a new signalling axis required for the homeostatic proliferation of hematopoietic stem cells (HSC)**, and I described, for the first time, how HSC can modulate their own pool and niche. I **managed independently this last project**, and I am **corresponding author** of the paper (**Nat Commun 2016**). Moreover, **I was invited to write a review** about the topic (**Cell Cycle, 2016; corresponding**). Later, I joined Dr. Sabio's laboratory at CNIC where I was **principal investigator** of a competitive project (**SAF2015-74112-JIN**). This project has allowed me to demonstrate that neutrophils can control the liver metabolism through the regulation of the circadian clock (**eLife 2020; corresponding and EMBO Workshop selected talk**). Because of this paper I obtained a grant from the AECC (**Investigador AECC 2020**) to investigate the role of myeloid cells in hepatic steatosis and liver cancer. I have just demonstrated a new axis controlled by IL-12 produced by liver macrophages that controls thermogenesis by brown adipose tissue (**Hepatology 2022, corresponding**). I have taken part in **national and international meetings** and thanks to my expertise I have established **productive collaborations** in other important studies (Blood 2013; Leukemia 2017; PLOS Bio 2018; J Exp Med 2018; J Hepatol 2022). In addition, I was **invited** to submit a **revision** in the prestigious journal **Nature Reviews Endocrinology** (2020). Due to the quality of my research work I have just been awarded with the **I3 certification** (2023). Besides, I have **evaluated** several **scientific projects** for the scientific spanish agency and I have actively participated in **dissemination activities** ("El CNIC se acerca al cole" with experiments and talks from Infantile to Secondary students and "One-day in the CNIC" with talks, theatre and experiments for parents and kids up to 14 years old). On the other hand, during my scientific career, I have acquired a strong **teaching experience (ANECA Certificate of Accreditation for Profesor Contratado Doctor)**, I have successfully **supervised interns, TFGs and TFM students**, and now I **am co-supervising a PhD** student that will present her PhD defense next month of march.

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

### **C.1. Publications** (*see instructions*)

- 1** Scientific paper. Crespo, M; Nikolic, I; Mora, A; et al; Leiva, M (AC); Sabio, G. (14/15). 2022. Myeloid p38 activation maintains macrophage-liver crosstalk and BAT thermogenesis through IL-12-FGF21 axis. HEPATOLOGY. <https://doi.org/10.1002/hep.32581>
- 2** Scientific paper. da Silva Lima, N; Marcos F; Eva; et al; Magdalena; Nogueiras R. (16/40). 2022. Inhibition of ATG3 ameliorates liver steatosis by increasing mitochondrial function Journal of Hepatology. 76-1, pp.11-24. <https://doi.org/10.1016/j.jhep.2021.09.008>
- 3** Scientific paper. Crespo, M; González-Terán, B; Nikolic, I; et al; Leiva, M (AC); Sabio, G. (25/26). 2020. Neutrophil infiltration regulates clock-gene expression to organize daily hepatic metabolism. eLIFE. <https://doi.org/10.7554/eLife.59258>
- 4** Review. N; Nikolic, I; Leiva, M; Sabio, G. (2/3). 2020. The role of stress kinases in metabolic disease. Nat Rev Endocrinol. 16-12, pp.697-716. <https://doi.org/10.1038/s41574-020-00418>
- 5** Scientific paper. Casanova-Acebes, M; Nicolás-Ávila, JA; Li, JL; et al; Leiva, M; Hidalgo, A. (15/24). 2018. Neutrophils instruct homeostatic and pathological states in naive tissues. J EXP MED. 215-11, pp.2778-2795. <https://doi.org/10.1084/jem.20181468>



- 6 Scientific paper. Leiva, M (AC); Quintana, JA; Ligos, JM; Hidalgo, A. (1/4). 2016. Hematopoietic ESL-1 enables stem cell proliferation in the bone marrow by limiting TGF $\beta$  availability NAT COMMUN. <https://doi.org/10.1038/ncomms10222>
- 7 Scientific paper. Martínez-Moreno, M; Leiva, M; Aguilera-Montilla, N; et al; Teixidó, J(1/15). 2016. In vivo adhesion of malignant B cells to bone marrow microvasculature is regulated by  $\alpha$ 4 $\beta$ 1 cytoplasmic-binding proteins LEUKEMIA. 30-4, pp.861-872. <https://doi.org/10.1038/leu.2015.332>
- 8 Scientific paper. Sreeramkumar, V; Leiva, M; Stadtmann, A; et al; Hidalgo, A (2/8). 2013. Coordinated and unique functions of the E-Selectin Ligand ESL-1 during inflammatory and hematopoietic recruitment in mice BLOOD.114, pp.5499-5511. <https://doi.org/10.1182/blood-2013-07-514497>
- 9 Scientific paper. Ablain, J; Leiva, M; Peres, L; Fonsart, J; Anthony, E; de Thé, H(1/6). 2013. Uncoupling RARA transcriptional activation and degradation clarifies the bases for APL response to therapies J EXP MED. 210, pp.647-653. <https://doi.org/10.1084/jem.20122337>
- 10 Scientific paper. Leiva, M; Moretti, S; Soilihi, H; et al; de Thé, H (1/9). 2012. Valproic acid induces differentiation and transient tumour regression, but spares leukemia-initiating activity in mouse models of APL LEUKEMIA. 26, pp.1630-1637. <https://doi.org/doi:10.1038/leu.2012.39>

### C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

- 1 4th EMBO Immunology Sectoral meeting; Málaga, España; 02/2020. Magdalena Leiva (ORAL PRESENTATION); Role of Stress kinases in macrophages during obesity.
- 2 EMBO Workshop: Organ crosstalk in energy balance and metabolic disease; Chiclana, España; 04/2019. Magdalena Leiva (ORAL PRESENTATION); Neutrophils synchronize the circadian clock with the liver metabolism.
- 3 EMBO Workshop: Translational Immunometabolism; Basilea, Suiza; 06/2018. Magdalena Leiva et al. (POSTER); Neutrophils couple the circadian clock to the liver metabolism.
- 4 ISSCR 2015 Annual Meeting; Estocolmo, Suecia; 06/2015. Magdalena Leiva et al. (POSTER); ESL-1 is a hematopoietic-borne regulator of the bone marrow microenvironment.
- 5 EACR 22 - 22nd Biennial Congress of the European Association for Cancer Research; Barcelona, Spain; 07/2012; Magdalena Leiva et al. (POSTER); Pharmacological approach of the role of transcriptional activation and degradation in acute promyelocytic leukemia.
- 6 EMBO Conference "Cellular Signaling & Molecular Medicine"; Cavtat-Dubrovnik, Croacia; 05/2012. Magdalena Leiva et al. (POSTER); Pharmacological approach of the role of transcriptional activation and degradation in Acute Promyelocytic Leukemia.
- 7 GDRI France-Japan-Cancer; Montpellier, France; 11/2011. Magdalena Leiva et al. (POSTER); Valproic acid induces differentiation increasing leukemia-initiating activity in mouse models of APL.
- 8 Marie Curie Researcher Symposium "SCIENCE – Passion, Mission, Responsibilities"; Warsaw, Poland; 09/2011. Magdalena Leiva (POSTER); Understanding Acute Promyelocytic Leukemia Pathogenesis.
- 9 XXI Congreso Nacional de Microbiología; Sevilla, Spain; 09/2007. Magdalena Leiva (ORAL PRESENTATION); Actividad de telitromicina en un modelo in vitro de respuesta inflamatoria en el tracto respiratorio.
- 10 Sepsis 2007, an Internacional Symposium; Paris, France; 09/2007. Magdalena Leiva et al. (POSTER); Inhibition by telithromycin of systemic and respiratory inflammation induced by endotoxin in mice.

### C.3. Research projects

- 1 **Project. INVES20026LEIV**, DECIPHERING THE ROLE JNK PATHWAY IN CHOLANGIOCARCINOMA DEVELOPMENT: MOLECULAR BASIS AND CELLULAR NETWORK. INVESTIGADOR AECC 2020. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 01/10/2020-30/09/2022. 100.000 €. Principal investigador.



2 Project. B2017/BMD-3733, Inmunidad tumoral e Inmunoterapia del cancer. Convocatoria Ayudas para la realización de Programas de Actividades de I+D entre Grupos de Investigación de la Comunidad de Madrid en Tecnologías y en Biomedicina, cofinanciado con Fondos Estructurales. Comunidad de Madrid. Santos Mañés. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III; CENTRO NACIONAL DE BIOTECNOLOGÍA-CSIC; IDIPAZ, FUNDACIÓN CENTRO NACIONAL DE INVESTIGACIONES ONCOLÓGICAS CARLOS III; UAH). 07/02/2018-06/02/2022. 952.472 €.

3 Project. EFSD and Sanofi european Pilot Research Grants for Innovative Measurement of Diabetes Outcomes. European Foundation for the Study of Diabetes. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 01/07/2019-30/06/2020. 100.000 €.

4 **Project. SAF2015-74112-JIN**, Hematopoietic niche regulation by innate immune system. Proyectos de I+D+I para jóvenes investigadores sin vinculación o con vinculación temporal. M<sup>a</sup> Magdalena Leiva Arjona. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 16/01/2017-15/01/2020. 169.000 €. Principal investigator.

5 Project. Inhibición de P38gamma como posible diana terapéutica para el cancer hepático. Convocatoria Becas Leonardo a Investigadores y Creadores Culturales Fundación BBVA. Guadalupe Sabio. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 15/09/2017-14/09/2018.

6 Project. The key role of muscle in obesity-induced diabetes: a new function for p38 family. EFSD Lilly Research Fellowship Programme. Guadalupe Sabio. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 01/02/2017-31/01/2018. 99.900 €.

7 Project. Cell Competition in the Hematopoietic Stem Cell compartment (Reference: SAF2013-49662-EXP). Andrés Hidalgo Alonso. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 2014-2016. 45.000 €.

8 Project. Imaging, genomic and proteomic analyses of progression in hematological tumors of B Cells (Reference: S2010/BMD-2314 NEOPLASBIM). María Angeles García Pardo. (Biological Research Centre (CSIC), Complutense University of Madrid, and the Spanish National Centre for Cardiovascular Research). 2012-2015. 621.000 €.

9 **Project**. Analysis of PML/RARA oncogenic complex in acute promyelocytic leukemia (Reference: **254256-APL**). María Magdalena Leiva Arjona. (Paris-Diderot-Paris 7 University-Universitary Institute for Hematology). 01/11/2010-31/10/2012. 166.145,6 €. Principal investigator.

10 Project. EPITRON (Epigenetic treatment of neoplastic disease) (Reference: LSHC-CT-2005-518417). Hinrich Gronemeyer. (CERBM-GIE, EIO, RU, EVIGO, SUNAP, CNRS, UNIMI, UCAM/WCRUK, U Turku, Congenia, BSP, Diagenode). 2005-2010. 10.904.474 €.

#### **C.4. Contracts, technological or transfer merits**

Patent: Hugues de Thé; Julien Ablain; Magdalena Leiva. PCT/EP2013/060450. "Methods for screening a candidate compound for its pharmacology on a nuclear receptor" France. 22/05/2013. INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE (INSERM) [FR] and PARIS DIDEROT-PARIS 7-UNIVERSITY [FR], CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) [FR], ASSISTANCE PUBLIQUE - HÔPITAUX DE PARIS [FR] and UNIVERSIDAD DE GRANADA [ES]