MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

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

Part A. PERSONAL INFORMATION

CV date	20/07/2022

First name	Salvador		
Family name	Iborra Martín		
Gender (*)	Man	Birth date (dd/mm/yyyy)	30/06/1976
Social Security, Passport, ID number	51927107D		
e-mail	siborra@ucm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-1607-1749	

(*) Mandatory

A.1. Current position

Position	Ramon y Cajal Researcher		
Initial date	01/06/2018		
Institution			
Department/Center	Inmunología, Oftalmología y ORL / Facultad de Medicina		
Country	Spain	Teleph. number	+34 605 920 869
Key words	Immunity, vaccines, Leishmania, dendritic cells, memory lymphocytes, obesity		

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

Period	Position/Institution/Country/Interruption cause
1999-2000	Becario de colaboración (Student Fellowship)-Universidad Complutense de Madrid/Spain
2000-2005	PhD Student (FPI Program) Universidad Autónoma de Madrid / CBMSO / Spain. (Mentors: Manuel Soto/Carlos Alonso Bedate). Short Stay (2004) at David Sacks's Lab. NIH/Bethesda USA
2006-2011	Postdoc (Sara Borrell Program) / Centro Nacional de Microbiología-Instituto de Salud Carlos III/Spain (Mentor: Margarita del Val)
2011-2018	Postdoc / JIN / CNIC/ Spain (Mentor: David Sancho)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD, Molecular Biology	Universidad Autónoma de Madrid / Spain	2005
BSc Biological Sciences (Genetics)	Universidad Complutense de Madrid/ Spain	1999

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

-After graduating in Biology (Universidad Complutense de Madrid, 1999). I followed my interests to pursue a career in immunology. During my PhD, I developed experimental vaccines against leishmaniasis (Universidad Autónoma de Madrid, 2000-2005). I published several articles (Vaccine, Infection and Immunity), and co-authored a patent on the use of parasite histones to treat the disease.ñart of **this research was useful to confirm the feasibility to generate a vaccine for canine leishmaniasis**, based on these antigens (LETIFEND®). During this period, I spent a short stay in **David Sacks'** Lab at the National Institutes of Health. I later moved to the Division of Viral Immunology under the direction of **Margarita del Val** (ISCIII, 2005-2011). During this time, I co-supervised a PhD student, and published two articles as first author in collaboration with **Edgar Fernández-Malavé** (UCM). I studied the role of different Ras GTPases in T cell development (Blood. 2011). Subsequently, I showed that memory $CD8^+$ T lymphocytes requires N-Ras (J. Exp. Med. 2013). **These studies have helped to define that there is no functional redundancy between the different Ras isoforms in coupling TCR signaling**. Finally, I moved to **David Sancho's lab** (CNIC) to pursue my interests in dendritic cells (DC), antigen presentation, and innate immunity. I found that DNGR-1, a C-type lectin receptor (CLR) that recognizes damaged cells and is expressed in type 1 conventional DC (cDC1), is critical to activate CD8 T cells during viral infection (J. Clin. Invest. 2012). **This was a pioneering report demonstrating the physiological relevance of DNGR-1**. Next, we showed that cDC1 are critical to drive local Th1 immunity against *Leishmania* (Eur. J. Immunol. 2015) and to instruct the generation of resident memory $CD8^+$ T cells (T_{RM}) (Immunity, 2016), and we defined the cooperation between T_{RM} and cDC1 during tumor immunity (Nature Communications, 2017). **Together, these works defined key functions of this DC population during the generation of $CD8^+$ T cell responses and in the response against an intracellular parasite**. We have also shown that *Leishmania* secretes a ligand for a CLR expressed on DC (Mincle) that attenuates its activation and promotes parasite survival (Immunity, 2016). I am still involved in the development of vaccines against leishmaniasis in collaboration with Manuel Soto (UAM/CBMSO) (PLoS Negl. Trop. Dis., 2015; 2017; Front. Cell. Infect. Microbiol. 2018). In 2015, I was awarded with my first competitive project (**SAF2015-74561-JIN**) aimed at addressing the role of Mincle in the recognition of the commensal microbiota. We found that this receptor promoted the gut barrier by recognizing a ligand in *Lactobacillus*, limiting microbial translocation and liver inflammation (Immunity, 2019). In 2016, I obtained an **RyC fellowship** and joined the Department of Immunology at the Universidad Complutense de Madrid in 2018. Our research group obtained his first grant in 2018 (RTI2018-094484-B-I00). Related to this project, we recently published two articles. In the first one, we highlighted the **importance of Batf3 and cDC1 in *L. infantum* infection** (Front. Immunol. 2020). In the second one, we show **the crucial inhibitory role of SHP-1 in the cross-presentation of *Leishmania*-derived antigens to $CD8^+$ cytotoxic T lymphocytes (CTL)** (Cell Reports, 2020). We collaborated in a paper that shows how **the Fgr tyrosine kinase links reactive oxygen species (ROS) to proinflammatory macrophage polarization, and how Fgr-deficiency in macrophages prevents obesity** (Nat. Metabolism, 2020). Finally, I started new research on this field, aimed at understanding the role of cDC1 in the chronic inflammation associated to metabolic syndrome and obesity, we demonstrated that cDC1 are crucial regulators of the metabolic homeostasis (Cell Mol Immunol, 2022). Finally, I obtained a new grant in 2022 (PID2021-125415OB-I00; provisional).

- I have carried out different **scientific dissemination activities**: First, I manage a Twitter account (@salva_iborra) aimed to stimulate interest, discussion and understanding of immunology amongst a wide range of audiences. Second, I have been writing articles on COVID19 and vaccination for The Conversation and for the Unidad de Cultura Científica Complutense. Third, I participated in Pint of Science 2019 edition.

- I have **co-supervised 2 PhD students**: 1. María Martínez López (2019). She published 5 collaborative articles (JCI, 2012; Eur J. Immunol 2013, Immunity 2016a, 2016b, 2019) and 2 reviews, received an EMBO grant and is currently working in the Veiga-Fernandes lab at the Champalimaud Centre for the Unknown (Lisbon). 2. Silvia Lázaro García (2011); currently working for UNIR (Universidad en Internet). 1 collaborative article (JEM, 2013), 1 review. I am

currently supervising 3 PhD Students, one of them co-supervised with David Sancho (CNIC). I have also supervised 3 Master Thesis and 2 Bachelor thesis.

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

C.1. Publications *(see instructions) (AC: Corresponding author)*

1. **Scientific paper**. Hernández-García, E.; Cueto, F.J.; Cook, E.C.L.; et al; **Iborra S.** (AC) (11/11)**.** (2022). Conventional type 1 dendritic cells protect against age-related adipose tissue dysfunction and obesity. **Cellular and Molecular Immunology** volume 19, pages 260–275
2. **Scientific paper**. Soto M.; Ramírez L.; Solana JC.; et al; **Iborra S.** (AC). (9/9). 2020. Resistance to experimental visceral leishmaniasis in mice infected with Leishmania infantum requires Batf3. **Frontiers in Immunology.**
3. **Scientific paper**. C. Khouili, S.; Cook, E. C. L.; Hernández-García, E; Conde, R.; Martínez-López, M.; **Iborra, S.** (AC). (6/6). 2020. SHP-1 regulates antigen cross-presentation and is exploited by Leishmania to evade immunity **Cell Reports.** Volume 33, ISSUE 9, 108468
4. **Scientific paper**. Acín-Pérez, Rebeca*; **Iborra, S***; Martí-Mateos, Yolanda; et al; Enríquez, José Antonio. (2/16). 2020. Fgr kinase is required for proinflammatory macrophage activation during diet-induced obesity **Nature metabolism.** 2-9, pp.974—988-974—988. ISSN 2522-5812. ***Equal contribution**
5. **Scientific paper**. Martínez-López, María; **Iborra, S***; Conde-Garrosa, Ruth; et al; **Sancho, David***. (2/23). 2019. Microbiota Sensing by Mincle-Syk Axis in Dendritic Cells Regulates Interleukin-17 and -22 Production and Promotes Intestinal Barrier Integrity **Immunity**. 50-2, pp.446—461.e9-446—461.e9. ISSN 1074-7613 ***Equal contribution**
6. **Scientific paper**. **Iborra, S** (AC); Martínez-López, María; Cueto, Francisco J.; et al; Sancho, David. (1/16). 2016. Leishmania Uses Mincle to Target an Inhibitory \{ITAM \} Signaling Pathway in Dendritic Cells that Dampens Adaptive Immunity to Infection **Immunity**. 45-4, pp.788-801. ISSN 1074-7613.
7. **Scientific paper**. **Iborra, S** (AC); Martínez-López, María; Khouili, Sofía C.; Enamorado, Michel; Cueto, Francisco J.; Conde-Garrosa, Ruth; del Fresno, Carlos; Sancho, David. (1/8). 2016. Optimal Generation of Tissue-Resident but Not Circulating Memory T Cells during Viral Infection Requires Crosspriming by DNGR-1+ Dendritic Cells **Immunity**. 45-4, pp.847-860. ISSN 1074-7613.
8. **Scientific paper**. **Iborra, S**.; Ramos, M.; Arana, D.M.; et al; Val, M.D.(1/9). 2013. N-ras couples antigen receptor signaling to eomesodermin and to functional cd8+ t cell memory but not to effector differentiation **Journal of Experimental Medicine**. 210-7, pp.1463-1479.
9. **Scientific paper**. **Iborra, S.;** Izquierdo, H.M.; Martínez-López, M.; Blanco-Menéndez, N.; Reis E Sousa, C.; Sancho, D.(1/6). 2012. The DC receptor DNGR-1 mediates cross-priming of CTLs during vaccinia virus infection in mice **Journal of Clinical Investigation**. 122-5, pp.1628-1643.
10. **Scientific paper:** **Iborra, S**; M. Soto; L. Stark-Aroeira; E. Castellano; B. Alarcón; C. Alonso; E. Santos; E. Fernández-Malavé (1/8). H-ras and N-ras are dispensable for T-cell development and activation but critical for protective Th1 immunity. **Blood**. 117 - 19, pp. 5102 - 5111. 2011.

C.2. Congress

1. SHP1-mediated inhibition of antigen cross-presentation in Dendritic Cells prevents CD8 T cell priming by Leishmania.**5th Workshop on Dendritic Cell Biology: Anti-tumoral immunotherapy, from biology to the clinic**. Lisboa, Portuga. Dates: 27/03/2019-30/03/2019 Organising entity: Institut (Paris, France "Institut Curie"). **Poster**.
2. Microbiota sensing by a Mincle-Syk axis in dendritic cells promotes intestinal immune barrier via the steady-state regulation of IL-17 and IL-22. **Mucosal Immunology Course**

& Symposium (MICS) 2018 City of event: Oxford, United Kingdom. Dates: 17/07/2018-20/07/2108.Organising entity: Society for Mucosal Immunology. **Poster**.

3. **Invited speaker** at the 6th World Congress on Leishmaniasis (Toledo, Spain; https://dndi.org/events/2017/worldleish6/)
4. Division of labour between DC subsets: Instructing CD8+ T lymphocytes to become tissue-resident or circulating memory cells.**39 Congreso de la Sociedad Española de Inmunología**. Alicante, Spain 07/05/2016-03/07/2015. **Invited speaker.**
5. Division of labour between DC subsets: Instructing CD8+ T lymphocytes to become tissue-resident or circulating memory cells Name of the conference: Dendritic Cell MACS Day 2015 **Invited speaker**. Barcelona, Catalonia, Spain. 03/07/2015

C.3. Research projects

1 Conventional type 1 dendritic cells as circadian-driven gatekeepers and modulators of metabolic homeostasis. Convocatoria 2021-«Proyectos de Generación de Conocimiento» Reference: **RTI2018-094484-B-I00** PI: **Salvador Iborra Martín**. (Universidad Complutense de Madrid). 01/09/2022- 31/08/2025. 399.300 €.

2 Crosstalk between Dendritic Cells and Lymphocytes in tissues and its physiopathological consequences. Proyectos I+D+i «Retos Investigación» 2018. Reference: **RTI2018-094484-B-I00** PI: **Salvador Iborra Martín**. (Universidad Complutense de Madrid). 01/09/2019- 31/08/2022. 181.500 €.

3 Funcion de mincle en la modulacion de la respuesta a los comensales de la microbiota proyectos de i+d+i, para jóvenes investigadores sin vinculación o con vinculacion temporal. (Fundación CNIC). 01/11/2016- 01/11/2019. 170.000 €. Reference: **SAF2015-74561-JIN**, Principal investigator: **Salvador Iborra Martín**

4 Functional characterisation of mitochondrial metabolic adaptations to innate sensing in dendritic cell subsets ERC-2016-COG - ERC Consolidator Grant. PI: David Sancho. (FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III). 01/12/2017-30/11/2022. 1.995.000 €.

C.4. Contracts, technological or transfer merits

Contract: Bavarian Nordic (Art. 83) (Test of prophylactic efficacy of recombinant MVA vectors against *Leishmania major* OVA infection) (pre-agreement)

Title registered industrial property: Use of specific histones for the treatment of parasitic diseases

Inventors/authors/obtainers: Manuel Soto Álvarez; Salvador Iborra; José María Requena; Carlos Alonso Bedate

Entity holder of rights: Laboratorios Leti, S.L.

Nº of application: EP20040799038

Date of register: 04/11/2004

Conferral date: 04/11/2004

Companies: Laboratorios Leti, S.L.