MINISTERIO
DE CIENCIA, INNOVACIÓN
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AGENCIA
ESTATAL DE
INVESTIGACIÓN

**CURRICULUM VITAE ABREVIADO (CVA)**

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

## Part A. PERSONAL INFORMATION

| | | | |
|---|---|---|---|
| First name | Aránzazu | | |
| Family name | Cruz Adalia | | |
| Gender (*) | Female | Birth date (dd/mm/yyyy) | 29/06/1981 |
| Social Security, Passport, ID number | 53409216L | | |
| e-mail | arancruz@ucm.es | https://www.ucm.es/ioo/innate-lymphoid-cells | |
| Open Researcher and Contributor ID (ORCID) (*) | | https://orcid.org/ **0000-0001-7029-9472** | |

*(*) Mandatory*

### A.1. Current position

| | | | |
|---|---|---|---|
| Position | Profesor Permanente Laboral (PPL) Acreditada para Profesor Titular | | |
| Initial date | 03/04/2024 | | |
| Institution | Universidad Complutense de Madrid | | |
| Department/Center | | Inmunología, Oftalmología y ORL | |
| Country | Spain | Teleph. number | 91 394 1631 |
| Key words | Innate lymphoid cells, innate immunity, inflammation, metabolism, obesity | | |

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

| Period | Position/Institution/Country/Interruption cause |
|---|---|
| 2019-2024 | "Ramón y Cajal" Researcher/ UCM/ *Spain* |
| 2015-2018 | Investigator JIN/ CNB(CSIC); Hospital Timone; CIML/ *Spain; France* / **Maternity leave in 2016 (5 months)** |
| 2012-2015 | Post-doctoral-Juan de la Cierva/ CNB/(CSIC) / *Spain* / **Maternity leave in 2012 (5 months)** |
| 2010-2011 | Post-doctoral/ Hospital Santa Cristina / *Spain* |
| 2008-2010 | Pre-doctoral-FPU/ CNIC; RCAI (RIKEN)/ *Spain; Japan* |
| 2004-2007 | Pre-doctoral-FPU/ Hospital de la Princesa; Institute of Immunology at Medical Hospital of Vienna / *Spain; Austria* |

### A.3. Education

| PhD, Licensed, Graduate | University/Country | Year |
|---|---|---|
| Biochemistry | University Autónoma of Madrid (UAM)- 2,8 (8,8 up of 10) | 2004 |
| Biology | UAM – 3 (9 up of 10) | 2013 |
| PhD | UAM- Outstanding cum laude- Extraordinary Doctoral Thesis Award | 2010 |

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

### 1- Scientific Contributions

Dr. Cruz-Adalia has significantly advanced immunology through her research, contributing **25 ISI-indexed publications**, **80% of which are in Q1 journals**, and **38% in D1**, according to JCR. 48% of them as principal author. H-index of 15. Her early work on discovering the CD69 ligand addressed a 25-year knowledge gap, enhancing the understanding of autoimmune diseases, with publications in top journals such as *Circulation* and *Mol Cell Biol*. During her postdoctoral tenure, she uncovered that T cells can capture bacteria during antigen presentation, with findings published in the high-profile journal *Cell Host &Microbe*. Later, as a Principal Investigator (PI) at CNB/CSIC, she challenged existing paradigms by discovering that conventional $CD4^+$ T cells can generate memory $CD8^+$ T cells, with

results published in the top journal *Nature Commun*. These findings are the basis for an international patent on tpCD4$^{+}$ T cells as novel agents in anti-tumor immunotherapy. To date, she has published a total of **eight publications as corresponding author**, with her recent publications focusing on the molecular mechanisms regulating ILC3s and gut commensal tolerance. These works have been featured in top journals such as *Trends Cell Biol* and *Cell Reports*. She has also participated in international work as a co-author, such as the one conducted in Eric Vivier's group in France (*J Leukoc Biol*). Additionally, she is currently actively collaborating with international groups such as that of Dr. Gómez-Agüero.

She has worked in four high-performance research centers: two in Spain -CNIC and CNB-and two international institutions: the RIKEN Research Center for Allergy and Immunology (RCAI) in Japan and the Centre d'Immunologie de Marseille-Luminy (CIML) in France. Additionally, she has gained experience in four hospitals: two in Spain—Hospital de la Princesa and Hospital Santa Cristina—and two internationally: Vienna Medical Hospital - Institute of Immunology in Austria and Hôpital de la Timone in France. Currently, she is affiliated with the Complutense University of Madrid (UCM) in Spain as "Profesor Permanente Laboral" (PPL). She has obtained the i3 Researcher Quality Certificate.

Dr. Cruz-Adalia has secured competitive national and international funding, including the **FPU, Juan de la Cierva**, **Ramón y Cajal programs** as well as a short-term EMBO fellowship. Currently, she serves as the **coordinator of the** Lymphocyte Immunobiology Research Group at UCM, officially recognized for its excellence, and **her leadership of the** "Innate Lymphoid Cells" (ILC) subgroup since 2019 highlights her ability to build robust research teams and foster interdisciplinary collaboration. She is an active participant in the "**ILC Consortium**" (*ILCollnet*), an EFIS-ILC Study Group under the European Federation of Immunological Societies (EFIS). Additionally, she has proposed a COST Action grant titled "*ILCquest*" to enhance collaboration in innate lymphoid cell research, serving as a Secondary Proposer alongside 23 participants from leading European groups in this field.

## 2- Societal Contributions

Dr. Cruz-Adalia actively bridges research and societal impact. She collaborates with international industry leaders, such as BenevolentAI, and contributes to public understanding through outreach events, including the "Day of the Woman Scientist", "Science Week" and mentoring programs such as the STEM Talent Girl Foundation. Additionally, she is a member of the European and National Immunology Societies (SEI, EFIS), ASEICA, the European Association for Cancer Research (EACR) and the National Hypoxia Network, which strengthens research dissemination and fosters innovation.

## 3- Training and Mentorship

Currently, Dr. Cruz Adalia leads a research team of four members at UCM (FPI, FPU, postdoc Juan de la Cierva, technician). She has supervised two doctoral theses; both awarded the highest distinction of "Sobresaliente Cum Laude" and is currently supervising two more. Over the past five years, she has mentored seven students (1 undergraduate thesis and 6 master's theses). As PI, she is actively involved in **talent acquisition** and team building, successfully recruiting highly competitive team members: a predoctoral **FPU** (L. Sancho) and a postdoctoral "**Juan de la Cierva**"(Dr. RA Castillo). Additionally, her team has been awarded two FPI positions in national projects, along with funding for two technicians and two predoctoral positions each funded for one year through project grants while securing additional funding. Furthermore, a technician funded by the Community of Madrid (CAM) has been integrated into her team in May 2024.

## 4- Editorial and Scientific Committee Activities

Dr. Cruz-Adalia is currently serving as Guest Editor for a Special Issue on Innate Lymphoid Cells, which will be launched in *Immunology Letters* in 2025. In addition, she has been invited to join the Scientific Committee for the upcoming **World ILC Congress**, to be held in **Vancouver in June 2026**, reflecting her recognized expertise in the field. She is also involved in the organization of a satellite meeting on ILCs within the **European Congress of Immunology (ECI)**, to take place in **Florence in 2027**, where she will also serve as a member of the Scientific Committee.

## 5- Project evaluations and teaching

Dr. Cruz-Adalia actively contributes to the scientific community through her editorial work and her extensive experience **evaluating competitive research projects**. Since 2017, she has served as a

reviewer for the *Spanish State Research Agency*, and in 2024 she was appointed **commissioner in the National Commission for Knowledge Generation Projects**. At the international level, she has acted as an evaluator for the *French National Research Agency (ANR)* and for the *Czech Science Foundation* (GAČR) in 2025, further underscoring her recognition as an expert in her field. In the **teaching field**, she coordinates the "Molecular Immunology" course in English for the Master's in Immunology and has been responsible for preparing all theoretical class materials from 2019 to 2026 on topics such as Immunology, Basic-Clinical Cases, and Immuno-nutrition for the Medicine degree, as well as Pathophysiology of Chronic Diseases in the Master's in Translational Medicine and the Master's Sanitary Biology at UCM. Furthermore, she has served as **PI for 3 Teaching Innovation Projects**. Additionally, she contributed to the fifth edition of the textbook *Inmunología. Biología y Patología del Sistema Inmunitario* (Editorial Médica Panamericana, 2021), revising the chapter on NK cells.

**Part C. RELEVANT MERITS** *(sorted by typology)*
**C.1. Publications** *(see instructions): A maximum of the **14 most relevant contributions** obtained **at any point during the scientific career up to the application deadline** may be included.*

1- López-Estévez AM, Portela MG, Piñeiro-Alonso L, Castillo-González R, Sancho-Temiño L, Gómez-Lado N, Codesido J, García-Otero X, Medel M, Vicent MJ, Castellanos M, Aguiar P, Fernández-Messina L, Fernández-Aceñero MJ, Cruz-Adalia A, Alonso MJ. Nanoassemblies for oral protein delivery - The case of monoclonals for inflammatory bowel disease. *J Control Release*. 2026 Jan 10;389:114455. *IF: 11,5* (in 2025). *First decile*

2- Seguí-Pérez A, Castillo-González R, Sancho-Temiño L, Cruz-Adalia A (CA). Newly identified cell types crucial for gut commensal tolerance. *Trends Cell Biol.* 2025 Mar;35(3):186-189. doi: 10.1016/j.tcb.2024.12.008. *IF: 19* (in 2022). *First decile*

3- Raquel Gomez-Bris; Pilar Rodriguez-Rodriguez; Marina Ortega-Zapero; Santiago Ruvira; Raquel Castillo-González; María Jesús Fernández-Aceñero; Cruz-Adalia A; Angela Saez; Silvia Magdalena, José María González-Granado. Segmental regulation of intestinal motility by colitis and the adaptive immune system in the mouse ileum and colon**.** *Am J Pathol.* 2025. Feb;195(2):204-220. doi: 10.1016/j.ajpath.2024.10.020. *IF: 6* (2022). *First quartil.*

4- Valle-Noguera A, Sancho-Temiño L, Castillo-González R, et al., Cruz-Adalia A (CA) (13/13). IL-18-induced HIF-1α in ILC3s ameliorates the inflammation of *C. rodentium*-induced colitis. *Cell Rep*. 2023 Dec 26;42(12):113508. *IF: 8,8*. *First quartile*

5- Martín-Adrados B, Wculek SK, Fernández-Bravo S, Torres-Ruiz R, Valle-Noguera A, Gomez-Sánchez MJ, Hernández-Walias JC, Ferreira FM, Corraliza AM, Sancho D, Esteban V, Rodriguez-Perales S, Cruz-Adalia A, Nakaya HI, Salas A, Bernardo D, Campos-Martín Y, Martínez-Zamorano E, Muñoz-López D, Gómez Del Moral M, Cubero FJ, Blumberg RS, Martínez-Naves E. Expression of HMGCS2 in intestinal epithelial cells is downregulated in inflammatory bowel disease associated with endoplasmic reticulum stress. *Front Immunol.* 2023 Jun 30;14:1185517. doi: 10.3389/fimmu.2023.1185517. eCollection 2023. *IF: 8,7. First quartile*

6- Castillo-González R, Valle-Noguera A, Gómez-Sánchez MJ, Xia P, Cruz-Adalia A (CA). Innate lymphoid cells type 3 in cancer. *Front Immunol*. 2022 Oct 13;13:1033252. *IF: 7,3* (in 2022). *First quartile*

7- Calatayud DG, Jardiel T, Cordero-Oyonarte E, Caballero AC, Villegas M, Valle-Noguera A, Cruz-Adalia A, Peiteado M. Biocompatible Probes Based on Rare-Earth Doped Strontium Aluminates with Long-Lasting Phosphorescent Properties for In Vitro Optical IMAGING. *Int J Mol Sci.* 2022 Mar 21;23(6):3410. doi: 10.3390/ijms23063410. PMID: 35328831; PMCID: PMC8954243. *IF: 6,2. First quartile*

8- Valle-Noguera A, Ramos-Ochoa A, Gómez-Sánchez MJ, Cruz-Adalia A (CA). Type 3 innate lymphoid cells as regulators of the host-pathogen interaction. *Front Immunol*. 2021. Sep 29;12:748851. *IF: 8,787* (in 2021). *First quartile*

9- Valle-Noguera A, Gómez-Sánchez MJ, Girard-Madoux MJH, Cruz-Adalia A (CA). Optimized Protocol for Characterization of Mouse Gut Innate Lymphoid Cells. *Front Immunol*. 2020. Nov 30;11:563414. *IF: 7,561* (in 2020). *First quartile*

10- Cruz-Adalia A*, Ramírez-Santiago G; Osuna Pérez J et al., Veiga E* (*CA) (1/13). 2017. Conventional CD4+ T cells present bacterial antigens to induce cytotoxic and memory CD8+ T cell responses. *Nat Commun*. 8(1) – 1591. *IF: 12,353* (in 2017). *Corresponding authors. *First decile*

11- Cruz-Adalia A* and Veiga E*. (*CA). Close encounters of lymphoid cells and bacteria. *Front Immunol*. 2016. Oct 7;7:405. Review. *IF: 6,429* (in 2016). *Corresponding authors. *First quartile*

12- Cruz-Adalia A, Ramírez-Santiago G; Calabia-Linares C, Veiga E (1/16). 2014. T cells kill bacteria captured by transinfection from dendritic cells and confer protection in mice. *Cell Host Microbe*. 15 (5): 611-33. *IF: 12,328* (in 2014). *First decile*

13- Cruz-Adalia A*; de la Fuente H*; Del Hoyo GM, Sánchez Madrid F (1/12). 2014. The leukocyte activation receptor CD69 Controls T cell differentiation through its interaction with Galectin-1. *Mol Cell Biol*. 34(12): 2479-2566. *IF: 4,777* (in 2014). * Co-authors. *First quartile*

14- Cruz-Adalia A, Jiménez-Borreguero, Ramírez-Huesca M, Martín P. (1/9). 2010. CD69 limits the severity of cardiomyopathy after autoimmune myocarditis. *Circulation*. 22(14):1396-404. *IF: 14,93* (in 2010). *First decile*

**C.2. Congress**

49 communications, 21 as **senior author**: 14 oral presentations and 35 posters. 7 conferences as invited speakers, 3 awards for the best communication.

**Conferences as invited speaker:**

- **Invited speaker** at the **European meeting** for standardizing ILC classification held at the Institute for Biological Research, IBISS, Belgrade, Serbia on April 25th, 2025.
- Oral presentation at the "Spanish Hypoxia Group" meeting in Bilbao, Spain (November 28-29, 2024).
- Invited speaker at the Meeting of the Spanish Network for Antigenic Presentation (REPA) at *Nacional Congress of Immunology*. City of event: Sevilla, Andalucía, Spain; Date of event: 31/05/2019.
- Invited speaker at seminars at national institutions: Fundación de Investigación del Hospital 12 de Octubre (13/03/2017), IIB-UAM (19/09/2018), CNB/CSIC (23/03/2022), Hospital de la Princesa (07/04/2022), CIB/CSIC (12/05/2022), idiPAz (24/02/2023). City of event: Madrid, Spain.

**Most important selected international talks in the last years:**

- Authors: Sancho-Temiño L, Castillo- Gonzalez R, Valle-Noguera A, Villa C, Cruz-Adalia A. Name of the conference: 7th European Congress of Immunology. City of event: Dublin; Ireland. Date of the event: 01/09/2024- 04/09/2024; Organizing entity: The European federation of Immunological societies.
- Speaker: Cruz-Adalia A. Title of the conference: IL-18-induced HIF-1a in ILC3s ameliorates the inflammation of C. *rodentium*-induced colitis. Name of the conference: *Organizing Tissue Homeostasis and Immunity NK cell & ILC Meeting.* City of event: Würzburg; Germany. Date of event: 20/06/2023-23/06/2023; Organizing entity: German Society of Immunology.

**Presentations awarded for the best communications:**

- Authors: Sancho-Temiño L, Castillo- González R, Valle-Noguera A, Seguí-Pérez A, Cruz-Adalia A. Name of the conference: PhDay. City of event: Madrid, Spain. Date of the event: 08/11/2024; Organizing entity: Faculty of Medicine, UCM. * Awarded for the best poster

- Authors: Cruz-Adalia A and Veiga E. Name of the conference: *IV Foro de Inmunología Traslacional e Inmunoterapia del Cáncer*. City of event: Madrid, Community of Madrid, Spain Date of event: 08/03/2018- 10/03/2018. Organizing entity: Grupo Español de Terapias Inmuno-Biológicas en Cáncer.

- Authors: Cruz-Adalia A, Ramirez-Santiago G, Osuna-Perez G, Torres-Torresano M, Sánchez-Madrid F, Veiga E. Title of the work: Transphagocytic $CD4^+$ T cells cross-prime cytotoxic $CD8^+$ T cell inducing anti-tumor response. Name of the conference: *Nacional Congress of Immunology.* City of event: Zaragoza, Aragon, Spain. Date of event: 24/05/2017-27/05/2017. Organizing entity: Sociedad Española de Inmunología. *Awarded for the best oral presentation.

**C.3. Research projects**

1- Reference: PID2024-155584OB-I00. Title: Metabolic Impact of RORγt+ cell innate Responses in Obesity Regulation. Financial entity: Ministry of Science and Innovation. Date: Sept 2025-Sept 2028. Amount: € 312.500. FPI associated. Participation type: **PI: Aránzazu Cruz Adalia**

2- Reference: OC-2024-1-27351-**COST Action European Proposal**. Title: A quest for uniform innate lymphoid cells identification and novel cancer therapies. Financial entity: European Cooperation in Science and Technology. **PI: Aránzazu Cruz Adalia** as"**Secondary Proposer**" and Vice Chair in the Management Committee" (MC). Date: 2025-2029

3-Reference: CNS2022-135365. Title: Study of the regulatory mechanisms of the induction of $RORt\gamma^+$ Tregs cells relevant in the immunological tolerance of the intestinal mucosa. Financial entity: Ministry of Science and Innovation. Date: Sept 2023-Sept 2025. **PI: Aránzazu Cruz Adalia**. Amount: €200,000

4-Reference: PID2021-122780OB-I00. Title: Type 3 innate lymphoid cells as potential targets to unravel the complexity of the transition from inflammatory bowel diseases to colorectal cancer. Financial entity: Ministry of Science and Innovation. Date: Sept 2022-Sept 2025. Amount: €284,350. FPI associated. Participation type: **PI: Aránzazu Cruz Adalia**

5-Reference: RTI2018-093647-B-I00. Title: Control of metabolic and molecular regulation mediated by HIF-1α in innate lymphoid cells. Financial entity: MINECO. Date: 01-01-2019- 31/12/2021. Amount: 145.200 €. FPI associated. Participation type: **PI: Aránzazu Cruz Adalia**

6- Reference: RYC-2017-21837. Title: Innate lymphoid cells. Financial entity: MINECO. Date: 01-01-2019- 31/12/2023. Amount: 40.000 €. Participation type: **PI: Aránzazu Cruz Adalia**

7- Reference: EIN2019-103067. Title: Impacto de las células linfoides innatas en la fisiopatología de las enfermedades. Financial entity: MINECO. Date: 01/09/2019- 31-12-2020. Amount: 1.990 €. Participation type: **PI: Aránzazu Cruz Adalia.**

8- Reference: SAF2014-58895-JIN. Title: Functional characterization of the T cells as antigen presenting cells and its possible use in biomedicine. Financial entity: MINECO. Date: 01/09/2015-22/12/2018. Amount: 169.000 €. Participation type: **PI: Aránzazu Cruz Adalia.**

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

1- **Type of contract:** Artículo 83. Title: Senescent T cells and COVID-19 patients' response. Company or entity: BenevolentAi Cambridge Limited. Date: 01-10-2020- 20-02-2023. Amount: 52.516 €. **PI: Aránzazu Cruz Adalia.**

2- **Inventors of the patent:** Esteban Veiga; **Aránzazu Cruz Adalia**; Guillermo Santiago Ramírez; Balbino Alarcón; Francisco Sánchez Madrid. Application number: P201531177. Title: Transinfected lymphocytes for anti-tumoral therapy Spain. Date: 07/08/2015. Entity: CNB/CSIC. Extension of the international patent: PCT/ES2016070597 (4/07/2017): Japan, USA, Europe, Canada, Australia. The CSIC is in the process of negotiation to carry out a spin off.