

CURRICULUM VITAE

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Part A. PERSONAL INFORMATION		CV date	22/07/23
First name	Miguel		
Family name	Muñoz Ruiz		
Gender (*)	Male	Date of Birth (dd/mm/yyyy)	28/02/1985
Social Security, Passport, ID number	30983003W, PAF520963		
e-mail	Miguel.Munoz-Ruiz@crick.ac.uk	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-7986-3527		

(*) *Mandatory*

A.1. Current position

Position	Ramon y Cajal Researcher		
Initial date	01-01-2023		
Institution	Universidad Complutense de Madrid and Research Institute Hospital 12 de Octubre (i+12)		
Department/Centre	Department of Immunology, Ophthalmology and ENT. Faculty of Medicine		
Country	Spain	Phone number	+44 (0)20 3796 0000
Keywords	TCR, $\gamma\delta$ T cell differentiation, Immunosurveillance, T cell & Covid-19		

A.2. Previous positions (research activity interruptions)

Period	Position/Institution/Country/Cause of the interruption
19/06/2017 to 31/12/2022	Postdoctoral Training Fellow. The Francis Crick Institute
04/01/2017 to 18/06/2017	Research Associate / Kings College London (KCL) / UK
2016 (Sept-Oct)	Postdoctoral Orientation Period / Instituto de Medicina Molecular / Portugal.

A.3. Education

PhD (Cum laude with European mention). Official Doctoral Program in Biochemistry, Molecular Biology and Biomedicine.	Universidad Complutense de Madrid/Spain	2016
Master's Degree (M). Biochemistry, Molecular Biology and Biomedicine.	Universidad Complutense de Madrid/Spain	2012
Graduate Certificate (PGCert).	Universidad Complutense de Madrid/Spain	2009

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

I gained a Collaboration Grant (2.500€) during the last year of my Undergraduate studies in Biology Science at Universidad Complutense de Madrid (UCM). Completed a Master in Biochemistry, Molecular Biology and Biomedicine (BMBB) and developed a PhD in Immunology (**Cum laude with European mention, 2016. UCM**).

As PhD student, I acquired critical skills in immunology, molecular biology, and genetics with international expertise (**Adv Exp Med Biol 2012 & BMC Immunol 2013, 1st author**). As Visiting PhD Researcher at Instituto de Medicina Molecular (iMM) in Lisbon (9 months), I achieved a highly relevant outcome in relation to gamma-delta ($\gamma\delta$) T cell development, the prototype of 'unconventional' innate-like T cells (**Nat Immunol, 2016, 1st author**). B Silva-



Santos (iMM, Lisbon), Edgar Fernández-Malavé (UCM, Madrid) and JR Regueiro (UCM, Madrid) were co-directors of this work.

Conferred with competitive grants to develop this project (**UCM-PhD Fellowship, EFIS-Short Term Fellowship** [5000€]), with **The Extraordinary Doctorate Award** by the UCM and the Award for the **best doctoral thesis: Doctora Menéndez-L.A.I.R.** of 2017 (3000€).

I developed a two-month contract (Postdoctoral Orientation Period) with B Silva-Santos lab at iMM, Lisbon. A high-impact scientific review was written (**Trends Immunol, 2017. 1st author**). In 2017, I signed as a Research Associate in the Department of Immunology, at King's College London (KCL), UK. Currently completing a Postdoctoral Training Fellow at the Francis Crick Institute, London UK, in Adrian Hayday's Lab, and Visiting Research at KCL.

Awarded in 2018 with a competitive **Postdoctoral EMBO Long-Term Fellowship**. I have integrated skills in $\gamma\delta$ T cells, immunosurveillance, and gene editing (CRISPR-Cas, two mice line generated and established) with an outstanding international interaction (e.g., **J Autoimmun, 2020 1st author**, collaboration with F di Rosa, Institute of Molecular Biology and Pathology, Rome and **Semin Cell Dev Biol, 2019 Co-last author**, collaboration with JR Regueiro (UCM)).

In 2020, the Covid-IP project (<https://www.immunophenotype.org/>) launched the first common immune signature in the blood of patients with COVID-19 (**Nat Med 2020 co-1st author**), where my contribution was critical by leading the analysis of blood T cells. In 2021, we developed the first immune-efficacy study of COVID-19 vaccine for cancer patients (**Lancet Oncol 2021 co-1st author & Cancer Cell 2021 co-1st author**). As a result, I was invited to an international congress (**Invited Conference, 2020**) and to worldwide events e.g., "Coronavirus Virtual Webinar Series-LabRoots" and "NanoString Europe Summits 2021" sponsored by Nanostring. Moreover, I won the distinction of **2020 Sir David Cooksey Prize** in translation in recognition of efforts in response to Covid-19.

I have generated 22 research articles (eight of them as a first or co-first author and one as a co-last author) in the highest impact journals in the immunology and medicine fields. Sum of times cited: 753. Average citations per year (2017-2021, Postdoctoral Period): 131. Publications in the first quartile (Q1):17. H-Index (Scopus): 13.

These findings were selected for several oral presentations (e.g., ECI-Vienna, ThymusMeeting-Venice, $\gamma\delta$ T Conference-Chicago and China. Scholarship in all of them) and for poster presentation (e.g., Keystone Symposium (2015&2020). In addition, I was Invited speaker at 44th Spanish Society of Immunology Congress. Bilbao. (**Invited Conference, 2023**)

I also had the opportunity to increase my awareness of dissemination strategies by publishing a scientific and **technical-book chapter (1st author**, Print ISBN: 978-1-4614-2097-2) and several open access publications (LymphoSign J. 2015, Inmunología- Spanish society of Immunology journal- 2009&2013, etc.).

Likewise, I acted as Thesis Committee Board member in July 2017 at UCM and I was three times an external evaluator of a UCM-European Thesis in 2018-2021. Member of the "Immunology" journal peer-review board in 2019 and since May 2021 I am **Review Editor** on the Editorial Board of Immunological Memory (section of Frontiers in Immunology IF: 6.8).

I have obtained skills in mentoring and leadership supervising a master's Thesis of BMBB program (UCM), an Immunology master's program (FAU Erlangen, Germany) and a Master's Thesis MSc Immunology (KCL, UK. A bench fee of £1500 was provided for this project). Thanks to my expertise in T cells, I am **Co-supervisor of an European PhD Thesis** which will be defended in 2023 (Rebeca Fernandez Megino-UCM). I have already started to develop my own line of research, in relation to which I am supervising a research scientist at The Francis Crick Institute (**Line supervisor of the Research scientist** Anna Mavrigiannaki). In addition, I am mentoring an undergraduate student via the Black in Cancer Mentorship Programme 2021 (<https://www.blackincancer.com/mentorship>).

Also, I have achieved a broad experience as a University Teaching Assistant at UCM (60h), I was named Honorary Research Fellow at UCL (2018-2022) developing teaching activities (20h) and active member of the Postdoctoral Training Programme at KCL (20h).



I have been selected for the Postdoctoral Junior Leader – Incoming programme 2022 from “La Caixa” with the project “Tissue resident-T cell interactions: a transformative approach for cancer immunotherapy (La Caixa JL_116480)” to be allocated at the “Instituto de Investigación Hospital 12 de Octubre (i+12)”. The amount of this project is 300.000 € including salary and consumables. I rejected this position because of incompatibility issues with my present position.

In Dic 2022 I have signed a "**Ramón y Cajal 2021**" contract after been ranked in the number 9 position on the Biomedicine panel. I joined the the Department of Immunology, Ophthalmology and ENT, Faculty of Medicine, Universidad Complutense de Madrid and I am also member of the Lymphocyte immunobiology group, Ref 920631 (imas12 Institute-associated, Ref IBL-6).

Part C. RELEVANT MERITS (11 most relevant out of 23)

C.1. Publications

1. Miguel Muñoz-Ruiz, Miriam Llorian, Rocco D'Antuono, Anna Pavlova, Anna Maria Mavrigiannaki, Duncan McKenzie, Bethania García-Cassani, Maria Luisa Iannitto, Yin Wu, MD, Robin Dart, Daniel Davies, Mariam Jamal-Hanjani, Anett Jandke, Dmitry S. Ushakov, Adrian C Hayday. Interferon- γ -dependent interactions between tissue-intrinsic $\gamma\delta$ T cells and tissue-infiltrating CD8 T cells limit acute contact dermatitis. **JACI**. 2023 Online ahead of print. **IF: 14.2**

2. Duncan R. McKenzie, Rosie Hart, Nouridine Bah, Dmitry S. Usjakov, **Miguel Muñoz-Ruiz**, Regina Feederle and Adrian C. Hayday. Normality sensing licenses local T cells for innate-like tissue surveillance. **Nat Immunol**. 2022. 23:411–422. **IF: 25**

3. Duncan R. McKenzie, **Miguel Muñoz-Ruiz (co-1st author)**, Leticia Monin [...] Adrian C. Hayday, Sheeba Irshad. Humoral and cellular immunity to delayed second dose of SARS-CoV-2 BNT162b2 mRNA vaccination in patients with cancer. **Cancer Cell**. 2021 Nov 8;39(11):1445-1447. **IF: 31.7**

4. Leticia Monin, Adam G Laing, **Muñoz-Ruiz M (co-1st author)** [...] Adrian C. Hayday, Sheeba Irshad. Safety and immunogenicity of one versus two doses of the COVID-19 vaccine BNT162b2 for patients with cancer: interim analysis of a prospective observational study. **Lancet Oncol**. 2021 Jun;22(6): 765-778. **IF: 33.7**

5. Sultan Abdul-Jawad, Luca Baù, Thanussuyah Alaguthurai [...] Sheeba Irshad (**3/51**). Acute immune signatures and their legacies in severe acute respiratory syndrome coronavirus-2 infected cancer patients. **Cancer Cell**. 2021 Feb 8;39(2):257-275.e6. **IF: 31.7**

6. Laing AG, Lorenc A, Del Molino Del Barrio I, Das A, Fish M, Monin L, **Muñoz-Ruiz M (co-1st author)** [...] Hayday AC. A dynamic COVID-19 immune signature includes associations with poor prognosis. **Nat Med**. 2020 Oct;26(10):1623-1635. **IF: 36.1**

7. **Muñoz-Ruiz M**, Pujol-Autonell I, Rhys H, Long HM, Greco M, Peakman M, Tree T, Hayday AC, Di Rosa F. Tracking Immunodynamics by identification of S-G2/M-phase T cells in human peripheral blood. **J Autoimmun**. 2020 Aug; 112:102466. **IF: 7.5**

8. Marin AV, Cárdenas PP, Jiménez-Reinoso A, **Muñoz-Ruiz M (co-last author)**, Regueiro JR. Lymphocyte integration of complement cues. **Semin Cell Dev Biol**. 2019 Jan; 85:132-142 **IF: 6.14**

9. **Muñoz-Ruiz M**, Sumaria N, Pennington DJ, Silva-Santos B. Thymic Determinants of $\gamma\delta$ T Cell Differentiation. **Trends Immunol**. 2017 May;38(5):336-344. **IF: 10.48**

10. **Muñoz-Ruiz M**, Julie C. Ribot, Ana R. Grosso, Natacha Gonçalves-Sousa, Ana Pamplona, Daniel J Pennington, José R. Regueiro, Edgar Fernández-Malavé and Bruno Silva-Santos. TCR signal strength controls thymic differentiation of discrete proinflammatory $\gamma\delta$ T cell subsets. **Nat Immunol**. 2016 Jun;17(6):721-7. **IF: 25**

11. **Muñoz-Ruiz M**, Verónica Pérez-Flores, Beatriz Garcillán [...] José R. Regueiro. Human CD3g, but not CD3d, haploinsufficiency differentially impairs $\gamma\delta$ versus $\alpha\beta$ surface TCR expression. **BMC Immunology**. 2013, 14(1):3. **IF: 2.6**

C.2. Congresses



1. **Miguel Muñoz-Ruiz.** Understanding Tissue-Resident T cell ecology: from inflammation to cancer. **Invited Conference.** 44th Spanish Society of Immunology Congress. Bilbao. 2023.
2. **Miguel Muñoz-Ruiz,** Duncan R. McKenzie, Anett Jandke and Adrian C. Hayday. Intraepithelial $\gamma\delta$ T cells critically regulate the ecology of Tissue-Resident Memory T cells. **Oral presentation.** 9th International $\gamma\delta$ T Cell Conference, China, 2021.
3. **Miguel Muñoz-Ruiz.** The Immunology behind the vaccine. **Invited Conference.** International Congress of Bioethics, Córdoba, Spain, 2020.
4. **Miguel Muñoz-Ruiz,** Anett Jandke, Dmitry Ushakov, Adrian Hayday. Intraepithelial $\gamma\delta$ T cells critically regulate the ecology of Tissue-Resident Memory T cells. **Poster presentation.** Tissue Immunity (A6). Keystone Symposia. Boulder, CO USA. 2020.
5. **Miguel Muñoz-Ruiz,** Duncan R. McKenzie, Anett Jandke and Adrian C. Hayday. Intraepithelial $\gamma\delta$ T cells critically regulate the ecology of Tissue-Resident Memory T cells. **Best poster presentation award.** T cell memory Ceppellini course, Capri, Italy. 2019.
6. **Miguel Muñoz-Ruiz,** Julie C. Ribot, José R. Regueiro, Bruno Silva-Santos and Edgar Fernández-Malavé. T Cell Receptor expression levels and downstream signalling control the functional differentiation of gd T cells in the murine thymus. **Oral presentation.** 4th European Congress of Immunology, Vienna, Austria, 2015.
7. **Miguel Muñoz-Ruiz,** Julie C. Ribot, José R. Regueiro, Bruno Silva-Santos and Edgar Fernández-Malavé. TCR/CD3 signaling requirements for thymic $\gamma\delta$ T cell effector differentiation. **Oral presentation.** Venice Thymus Meeting, Venice, Italy, 2015.
8. **Miguel Muñoz-Ruiz,** Julie C. Ribot, José R. Regueiro, Bruno Silva-Santos and Edgar Fernández-Malavé. TCR/CD3 signaling requirements for thymic $\gamma\delta$ T cell effector differentiation. **Oral presentation.** 6th International $\gamma\delta$ T Cell Conference, Chicago, USA, 2014.

C.3. Research projects and grants.

1. Ramón y Cajal programme, Awarded. Ramon y Cajal is the most prestigious fellowship for young researcher in Spain. 42.000 € starting package plus salary. **Principal Investigator: Miguel Muñoz-Ruiz.** Success rates are below 10%.
2. La Caixa incoming Junior Leader program, 2022-2025, 300.000 €, Muñoz-Ruiz M, Ref. JL357. Awarded. I rejected it because of incompatibly issues with my current position. **Principal Investigator: Miguel Muñoz-Ruiz.** Highly competitive call, with a success rate of 10%.
3. Master's Thesis MSc Immunology supervisor (King's College London, UK. A bench fee of £1500 was provided for this project) 2020-2021. **Supervisor.**
4. Covid-IP study (<https://www.immunophenotype.org/>) The King's-Together fund and the Rosetrees Trust. **Researcher.**
5. Immunosurveillance Laboratory, Francis Crick Institute Crick Institute by the edical. Research Council, the Wellcome Trust; and Cancer Research UK. Hayday A. 2017-01/01/2023. 2.000.000 €. **Researcher.**
6. EMBO Long-Term Fellowship (ALTF 198-2018). 59.824,9GBP. 2018-2020. **Awarded.**
7. Intraepithelial Lymphocytes- lessons in immunoregulation from landlocked T cells WellcomeTrust. Hayday A. (<http://dx.doi.org/10.13039/100004440>) 2015-07 to 2020-06. 2.045.187 €. **Researcher.**
8. Surface and intracellular T lymphocyte activation physiopathology, MINECO 2014, Regueiro JR & Fdez-Malavé E, Univ. Complutense, 01/2015-12/2018, 275.000€, Ref. SAF2014-54708-R. **Investigator.**
9. 3-month EFIS-Immunology- Short Term Fellowship Award- 2013-2014 (5000€). **Awarded.**
10. Ph.D. fellowship by Complutense University, Madrid, Spain. 2012-2016. **Awarded.**
11. T lymphocyte activation physiopathology, MICINN 2011, Regueiro JR, Univ. Complutense, 2012-2015, 193.600 € + 1 FPI student, Ref. SAF2011-24235. **Investigator.**
12. TCR physiopathology, ISCIII 2008, Regueiro JR, Univ. Complutense, 2009-2011, 164.000 €, Ref. PI080921. **Investigator.**