

Fecha del CVA	01/10/2025
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Parte A. DATOS PERSONALES

Nombre	Ana V.		
Apellidos	Marin		
Sexo	Mujer	Fecha de Nacimiento	08/07/1987
DNI/NIE/Pasaporte	06275286N		
URL Web	https://www.ucm.es/ioc//t-cell-physiopathology		
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A.1. Situación profesional actual

Puesto	Profesora contratada doctora		
Fecha inicio	2022		
Organismo / Institución	Universidad Complutense de Madrid		
Departamento / Centro	Inmunología, Oftalmología y ORL / Facultad de Medicina		
País		Teléfono	
Palabras clave			

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2022 - 2022	Profesora contratada doctora en régimen de interinidad / Universidad Complutense de Madrid / España
2021 - 2022	Investigadora posdoctoral contratada con cargo a proyecto / Universidad Complutense de Madrid
2016 - 2020	Personal Investigador en Formación (Beca UCM-Harvard) / Universidad Complutense de Madrid
2013 - 2015	Personal Asociado Proyecto / Universidad Complutense de Madrid

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Master Universitario de Investigación en Inmunología	Universidad Complutense de Madrid	2012
Licenciatura en Bioquímica	Universidad Complutense de Madrid	2011

Parte B. RESUMEN DEL CV

1. **Scientific trajectory / technical achievements a) Scientific contributions, relevance, and contribution to knowledge generation.** Together with José R. Regueiro's lab team at Complutense University, we described the third pediatric CD247 deficient patient with somatic mosaicism that partially restored the TCR function (Marin 2017), and later define different CD247 variants in patients that showed immune dysregulation that exhibited a dominant-negative effect on TCR expression and signaling (Briones 2024). We contributed with the knowledge of CD3delta (Garcillan 2021) and CD3gamma implication on TCR expression and signaling (Garcillan 2022, co-last author). We developed multiple in vitro approaches to produce T and B cell lines derived from patients with genetic immune system defects essential for the report of the first patients deficient for Erzin (García-Solis 2023) or IRF-4 (Bravo García-Morato 2018), unique to unravel TCR signaling relevance of enzymes associated to DNA repair like SMARCAL-1 (Marin 2022), indispensable for the understanding of the relevance of C3 in the development of T and B lymphocytes (Jiménez- Reinoso 2018). Together with George Tsokos' lab team at Harvard University, we described a CD38-based molecular mechanism implicated

in the frequent infections of a subset of systemic lupus erythematosus patients (Katsuyama 2020). Currently, we are working on the creation of in vitro T-cell models and patient-tailor TCR directed immunotherapies for Sézary Syndrome, a very aggressive ultrarare T-cell lymphoma that lacks specific therapy (unpublished).

In a more independent way, our efforts are focused on the understanding of human gd T cells biology. We have generated multiple VD1 and VD2 cell lines from healthy donors and checked that their TCR and cytolytic capacity remains untouched (unpublished). We aim to deeply describe human TCRgd signaling and take advantage of them for immunotherapy preclinical tool.

b) **Dissemination.** 15 indexed scientific articles published in international JCR journals including J Allergy Clin Immunol, Cell Rep, Oncogene and Front Immunol. >40 national and international communications shared to date, 1st author of 19.

c) **Grants obtained, scientific and technical capacities acquired.** 12 research projects funded by national agencies, as a research team member in 8 of them. 3 consecutive National Plan grants since 2015, 1 private foundation grand and several local networks. After >10 years of research TCR, our expertise lies in T lymphocyte, TCR and complement physiopathology, especially of their congenital inborn errors of immunity (IEI). We study primary and in vitro models (human cell lines) IEI using cellular biology techniques (flow cytometry, cell culture), genomics (Sanger sequencing of germinal mutations from IEI or full TRA and TRB from Sézary Syndrome patients), proteomics (western blot or immunoprecipitation), cell engineering (selected protein or complete TCR expression using 3rd generation lentivirus or Piggy Bac system) to understand the pathophysiology of T lymphocytes.

d) **International collaborations** (researcher, city, country, topic, collaboration papers)

George C. Tsokos, Boston, USA, immune pathology, 1

Jean-L Casanova, New York, USA, IEI, 1

Wolfgang W Schamel Freiburg, Germany, TCR biochemistry, 1

Stuart G Tangye, Darlinghurst, Australia, complement system, 1

2. CONTRIBUTIONS TO SOCIETY

a) **Divuligation and industry inputs.** Divuligation. Yearly participation in the CAM science week at UCM. Eventually participation in AECC recruitment partners events. R&D. Material Transfer Agreement with Step Pharma to test a potential drug for Sézary Syndrome patients.

b) **Contribution to training of young researchers and development of their careers.** Directed or co-directed 4 PhD students (1 under defense), 3 master's thesis (1 this academic year, 1 working as a researcher for a public entity, 1 continue the PhD in a different lab), 3 final degree project (2 of them work as researcher now, 1 under training for scientific police). All trained students obtained high score.

c) **Publishing activities.** Editorial Board. System and synthetic immunology, Frontiers in Systems Biology. 2023-, Review Editor.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico.** Briones AC; (2/10) Marin AV; Chaparro-García R; et al; Regueiro JR. 2025. Discordant restoration of TCR expression and function by CD247 somatic reversions. Journal of Clinical Immunology. <https://doi.org/10.1007/s10875-025-01908-9>

2 **Artículo científico.** Briones AC; Megino RF; (3/13) Marin AV; et al; Regueiro JR. 2024. Nonsense CD247 mutations show dominant-negative features in T-cell receptor expression and function. The Journal of Allergy and Clinical Immunology. 24. <https://doi.org/10.1016/j.jaci.2024.06.019>

- 3 **Artículo científico.** Garcia-Solis B.; Van Den Rym A.; Martinez-Martinez L.; et al; Pérez de Diego R.2023. Inherited human ezrin deficiency impairs adaptive immunity. The Journal of Allergy and Clinical Immunology. <https://doi.org/10.1016/j.jaci.2023.05.022>
- 4 **Artículo científico.** Molina E.; García-Gutiérrez L.; Junco V.; et al; León J.2023. MYC directly transactivates CR2/CD21, the receptor of the Epstein-Barr virus, enhancing the viral infection of Burkitt lymphoma cells. Oncogene. <https://doi.org/10.1038/s41388-023-02846-9>
- 5 **Artículo científico.** Marin A.V.; Jimenez-Reinoso A.; Mazariegos M.S.; Roman-Ortiz E.; Regueiro Jose R.2022. T-cell receptor signalling in Schimke immuno-osseour dysplasia is SMARCAL1-independent. Frontiers in Immunology. <https://doi.org/10.3389/fimmu.2022.979722>
- 6 **Artículo científico.** Garcillan B.; Megino R.F.; Herrero-Alonso M.; et al; (*co-last authors). 2022. The role of different CD3gamma domains in TCR expression and signalling. Frontiers in Immunology. <https://doi.org/10.3389/fimmu.2022.978658>
- 7 **Artículo científico.** Garcillan B.; Fuentes P.; Marin A.V.; et al; Regueiro J.R.2021. CD3G or CD3D Knockdown in Mature, but Not Immature, T Lymphocytes Similarly Cripples the Human TCRαβ Complex. Frontiers in Cell and Developmental Biology. <https://doi.org/10.3389/fimmu.2022.978658>
- 8 **Artículo científico.** Katsuyama E.; Suarez-Fueyo A.; Bradley S.J.; et al; Tsokos G.C.2020. The CD38/NAD/SIRTUIN1/EZH2 Axis Mitigates Cytotoxic CD8 T Cell Function and Identifies Patients with SLE Prone to Infections. Cell Reports. <https://doi.org/10.1016/j.celrep.2019.12.014>

C.3. Proyectos o líneas de investigación

- 1 **Proyecto.** Human T lymphocyte physiopathology. Ministerio de Ciencia e Innovación. Universidades. (Universidad Complutense de Madrid). 2025-2028. 350.000 €.
- 2 **Proyecto.** El sistema de complemento en salud y enfermedad (COMPLEMENTO CM-III) (P2022/BMD-7278). (CIB-CSIC, UCM, HULP, ISCIII). 2023-2026. 828.000 €.
- 3 **Proyecto.** Personalized preclinical models for rare human T cell malignancies: an unmet need for targeted therapy (PID2021-125501OB-I00). Ministerio de Ciencia e Innovación. Universidades. (Universidad Complutense de Madrid). 2022-2025. 393.250 €.
- 4 **Proyecto.** Novel comprehensive immunotherapy to specifically target the malignant clone in Sézary syndrome, an ultra-rare cancer of mature T lymphocytes (PROYE20084REGU). Asociación Española Contra el Cáncer. (Universidad Complutense de Madrid). 2021-2023. 300.000 €.
- 5 **Proyecto.** Anticipación y Prevención de COVID-19 en la Comunidad de Madrid (REACT-ANTICIP-UCM). Fondo Europeo de Desarrollo Regional, Recursos REACT-UE Programa Operativo de Madrid 2014-2020, línea de actuación de proyectos de I+D+i en materia de respuesta a COVID 19. (Universidad Complutense de Madrid). 2020-2022. 176.000 €.