MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

CURRICULUM VITAE (maximum 4 pages)

CV date	18/09/2018

Part A. PERSONAL INFORMATION

First and Family name	María J. Recio		
ID number	07496017H		
Researcher numbers		Researcher ID	E-7256-2012
		Orcid code	0000-0002-6461-1586

A.1. Current position

Name of University	Universidad Complutense de Madrid (UCM)				
Department	Inmunología, Oftalmología y ORL / School of Medicine				
Address and Country	C/ Dr. Severo Ochoa 9, 28040, Madrid				
Phone number	+34913941631	E-mail	majoreho@med.ucm.es		
Current position	Associate Professor PCD			From	Sept 1, 2007
Espec. cód. UNESCO	2412, 3207.10, 2415				
Palabras clave	T lymphocyte, congenital immunodeficiencies, TCR, DNA Repair				

A.2. Education

PhD	University	Year
Biology	Complutense University	2003
Immunology	Complutense University	2004

A.3. JCR articles, h Index, thesis supervised…

Number of sexenios	2
Total number of citations Web of Science	816
Average citations per article	35,48
Total number of publications in Q1 / D1	12 / 6
h-index Web of Science / Google Scholar	8 / 9
Theses supervised (total / last 10 years)	3 / 3

Part B. CV SUMMARY *(max. 3500 characters, including spaces)*

Scientific trajectory

1995-8 FPU Predoctoral fellow at the Department of Immunology of the Hospital 12 de Octubre.
1998-2007 Assistant Professor of Immunology at the Faculty of Medicine of the Complutense University of Madrid, during this time she obtained a license for studies to perform a 16-month stay at the "Genome Damage and Stability Center", MRC Cell Mutation Unit, University of Sussex, United Kingdom.
2007-present. Associate Professor at the Department of Immunología, Oftalmología y ORL. 3 PhD theses supervised in the last 7 years, all with the highest rating, 1 with UCM and Doctor Europeus awards.
2015-present. Coordinator of the Research Máster in Immunology
2015-present. Co-IP of the Lymphocyte Immunobiology group evaluated in 2018 as excellent (91/100) by the AEI (https://www.ucm.es/grupos-de-investigacion).

Main scientific achievements

The study of CD3 immunodeficiencies has been one of the main lines of research of the group during the last 15 years. The main achievements in this field are the last works that have been published in prestigious scientific journals as the characterization first partial ID of CD3δ (Gil J 2011) and a new total ID of CD247 (Marin AV 2017).
The work developed during the license for studies (2003-2004) in the laboratory of Dr. Jeggo has been focused on the study of the main DNA repair pathways, for this purpose we have worked with samples from patients with immunodeficiency associated with radiosensitivity and defects in DNA damage proteins (RS-SCID). The results obtained have been published in the prestigious scientific Journal Molecular Cell (Riballo 2004).
In the last two years my current research interest has been focused on the association between immunodeficiencies and defects in DNA repair. I would like to extend the current knowledge

of DNA repair defects in the progression of various diseases associated with immunodeficiency and/or cancer with a special focus on XLF deficiency, Schimke Immunoosseous Dysplasia (SIOD) and Constitutional MisMatch Repair Deficiency (CMMRD), with the ultimate goal to define new diagnosis and treatment options. To achieve this goal we have established collaborations with other research groups and several national hospitals (Hospital October 12, Hospital Universitario La Paz and Hospital Gregorio Marañón) and international (Hospital of Ankara, Turkey), which send us patient samples for diagnostic and research purposes.

Part C. RELEVANT MERITS

C.1. Publications

Journal articles / Reviews (9 most relevant, *last, **co-last)

1. Marin AV, Jiménez-Reinoso A, Briones AC, Muñoz-Ruiz M, Aydogmus C, Pasick LJ, Couso J, Mazariegos MS, Alvarez-Prado AF, Blázquez-Moreno A, Cipe FE, Haskologlu S, Dogu F, Morín M, Moreno-Pelayo MA, García-Sánchez F, Gil-Herrera J, Fernández-Malavé E, Reyburn HT, Ramiro AR, Ikinciogullari A, **Recio MJ**, Regueiro JR, Garcillán B. *Primary T-cell immunodeficiency with functional revertant somatic mosaicism in CD247*. **J Allergy Clin Immunol** 139(1): 347-349 (2017). IF13 D1. *Mild lymphopenia and functional revertant somatic mosaicism should not confound the fact that CD247 deficiency is a very severe condition that requires urgent transplantation, but is easy to diagnose by intracellular flow cytometry or the surface TCR phenotype of obligate carriers.*

2. Arnaiz-Villena A, Palacio-Grüber J, Muñiz E, Rey D, **Recio MJ**, Campos C, Martinez-Quiles N, Martin-Villa JM, Martinez-Laso J. *HLA-DMB in Amerindians: Specific linkage of DMB*01:03:01/DRB1 alleles.* **Hum Immunol** 77(5): 389-94 (2016) IF2,6 Q2. *The specific Amerindian HLA-DMB allele frequencies and their linkage disequilibrium with other MHC alleles may be crucial to determine HLA-DMB World wide variation, evolution and specific linkage to disease in Amerindians and other populations.*

3. Valés-Gómez M, Esteso G, Aydogmus C, Blázquez-Moreno A, Marín AV, Briones AC, Garcillán B, García-Cuesta EM, López Cobo S, Haskologlu S, Moraru M, Cipe F, Dobbs K, Dogu F, Parolini S, Notarangelo LD, Vilches C, **Recio MJ**, Regueiro JR, Ikinciogullari A, Reyburn HT. Natural killer cell hyporesponsiveness and impaired development in a CD247-deficient patient. **J Allergy Clin Immunol** 137(3):942-5 (2016) IF13 D1. *CD247 deficiency affects NK cell development and function both directy and indirectly. In particular an increased proportion of peripheral blood CD56^{bright} NK cells is observed in all CD3/CD247-deficient patients suggesting absence of functional T cells.*

4. Muñoz-Ruiz M, Pérez-Flores V, Garcillán B, Guardo AC, Mazariegos MS, Takada H, Allende LM, Kilic SS, Sanal O, Roifman CM, López-Granados E, **Recio MJ**, Martínez-Naves E, Fernández-Malavé E, and Regueiro JR. *Human CD3gamma, but not CD3delta, haploinsufficiency differentially impairs gammadelta versus alphabeta surface TCR expression* **BMC Immunol** 14(1): 3 (2013). IF2,2 Q2. *In this work we propose a modified version of the prevailing TCR assembly, there is differential structural constraints in the two human TCR isotypes regarding the incorporation of CD3$\gamma\varepsilon$ and CD3$\delta\varepsilon$ dimers, as revealed by their discordant surface expression behaviour when confronted with reduced amounts of CD3γ, but not of the homologous CD3δ chain.*

5. *Reiné J, Busto EM, Muñoz-Ruiz M, Rossi NE, Rodríguez-Fernández JL, Martínez-Naves E, Regueiro JR, **Recio MJ**. CD3 gamma independent pathways in TCR-mediated signaling in mature T and iNKT lymphocytes. **Cellular Immunology** 271(1):62-6 (2011). IF1,9 Q3. *CD3 proteins may have redundant as well specific contributions to the intracellular propagation of TCR-mediated signals. In this work we evaluate the roles of CD3γ chain in TCR signaling by analysing proximal and distal signaling events in human CD3γ(-/-) HVS-transformed T cells. We conclude that a TCR lacking CD3γ can propagate a number of signals through the remaining invariant chains, likely the homologous CD3δ chain.*

6. **Gil J, Busto EM, Garcillán B, Chean C, García-Rodríguez MC, Díaz-Alderete A, Navarro J, Reiné J, Mencía A, Gurbindo D, Beléndez C, Gordillo I, Duchniewicz M, Höhne K, García-Sánchez F, Fernández-Cruz E, López-Granados E, Schamel WW, Moreno-Pelayo MA, **Recio MJ/** Regueiro JR. *A leaky mutation in CD3D differentially affects $\alpha\beta$ and $\gamma\delta$ T cells and leads to a T$\alpha\beta^-$ T$\gamma\delta^+$ B$^+$ NK$^+$ human SCID.* **J Clin Invest** 121:3872-6 (2011). IF14 D1. *We report 2 unrelated cases of SCID with a leaky mutation in CD3D and a selective block in $\alpha\beta$ but not in $\gamma\delta$ T cell development in contrast to previous CD3δ-deficient patients described. The results demonstrate that human $\alpha\beta$ and $\gamma\delta$ T lymphocytes have differential CD3δ requirements for selection that have not been described for other invariant chains (Cd3γ, CD3ε or TCRζ).*

7. Mancebo E, **Recio MJ**, Martínez-Busto E, González-Granado LI, Rojo P, Fernández-Díaz E, Ruiz-Contreras J, Paz-Artal E, Allende LM. Possible role of Artemis c.512C>G polymorphic variant in Omenn syndrome. **DNA Repair** 10(1): 3-4 (2010). IF4,2 D1 *We describe a newborn patient with clinical and immunologic signs of Omenn syndrome and a Artemis polymorphic variant that could be associated with severe early-onset immunodeficiency.*

8. Recio MJ, Moreno-Pelayo MA, Kilic SS, Guardo AC, Sanal O, Allende LM, Perez-Flores V, Mencia A, Modamio-Hoybjor S, Seoane E, Regueiro JR. *Differential biological role of CD3 chains revealed by human immunodeficiencies*. **J Immunol** 178: 2556-64 (2007). IF6 Q1. *We have characterized two new patients with complete CD3 gamma deficiency and SCID symptoms and compared them with CD3gamma and CD3delta-deficient individuals previously reported. Our results propose a CD3delta >>CD3gamma hierarchy for the relative impact of their absence on the signaling for T cell production in humans.*

9. Enriqueta Riballo, Martin Kühne, Nicole Rief, Aidan Doherty, Graeme C.M. Smith, **María José Recio**, Caroline Reis, Kirsten Dahm, Andrea Fricke, Andrea Krempler, Anthony R. Parker, Stephen P. Jackson, Andrew Gennery, Penny A. Jeggo, Markus Löbrich. A pathway of double-strand break rejoining dependent upon ATM, Artemis, and proteins locating to γ-H2AX foci. **Molecular Cell** 16: 715-724 (2004). IF17 D1. *The hereditary disorder ataxia telangiectasia (A-T) is associated with striking cellular radiosensitivity that cannot be attributed to the characterized cell cycle checkpoint defects. By epistasis analysis, we show that ataxia telangiectasia mutated protein (ATM) and Artemis, the protein defective in patients with RS-SCID, function in a common double-strand break (DSB) repair pathway that also requires H2AX, 53BP1, Nbs1, Mre11 and DNA-PK.*

Selected books and chapters

1. Regueiro JR, **Recio MJ**. 11. T-Cell–Receptor Complex Deficiency. In: Primary immunodeficiency diseases, a molecular and genetic approach, 3rd edition. HD Ochs, CIE Smith, JM Puck eds. Oxford University Press pp 156-162 (2013). ISBN 9780195389838

2. Marín AV, **Recio MJ**, Briones AC, Regueiro JR. *Conceptos básicos de inmunopatología: inmunidad e infección*. En: Diagnóstico y monitorización inmunológica de las inmunodeficiencias primarias y secundarias. Ed. Elsevier España, Barcelona, pp 1-11 (2018). ISBN: 978-84-9022-885-2. eISBN: 978-84-9113-341-4

C.2. Research projects and grants (last 6)

1. Excellence network for complement in health and disease, MINECO, Univ. Complutense, 2/2017-2/2019, 20.000 €, Rodríguez de Córdoba S (Regueiro JR), Ref. SAF2016-81876-REDT
2. 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
3. Fisiopatología de la activación del linfocito T, MICINN 2011, Regueiro JR, Univ. Complutense, 2012-2015, 193.600 € + 1 FPI student, Ref. SAF2011-24235
4. Red de Investigación en Inflamación y Enfermedades Reumáticas (RIER), ISCIII 2008, Rodríguez-Fernández JL, CIB CSIC (2009-Nov 2011), Regueiro JR, UCM (43.512€ Dic 2011- Dic 2014), 2009-2014, total 144.320 €, Ref. RD08-0075-0002
5. Fisiopatología del TCR/CD3, ISCIII 2008, Regueiro JR, Univ. Complutense, 2009-2011, 164.000 €, Ref. PI080921
6. Fisiopatología del complejo TCR/CD3, MEC 2006, Regueiro JR, Univ. Complutense, 2007-2009, 110.000 €, Ref. BFU2005-01738/BMC

C.3. Contracts

Study to assess the pharmacokinetics, safety and immunogenicity of single doses of Belatacept (BMS-224818) administered subcutaneously to healthy subjects. Bristol-Myers Squibb. 2006-7. 46.000€

C.4. Patents

C.5. Positions, institutional responsibilities

2015-present. Co-IP of the Lymphocyte Immunobiology group (excellent by AEI, 91/100)
2015-present. Director Master in Immunology, School of Medicine, Universidad Complutense.
2015-present. Associate Professor of Immunology, School of Medicine, Universidad Complutense.
1998-2007. Assistant Professor of Immunology, School of Medicine, Universidad Complutense.

C.6. Memberships of scientific societies

2007-present: European Society for Immunodeficiencies (ESID).
1996-present: Sociedad Española de Inmunología (SEI).

C.7. Two PhD thesis

1. **Elena Martínez Busto.** Inmunodeficiencia selectiva de linfocitos Tαβ causada por una mutación en el gen *CD3D*, Complutense Univ. School of Medicine, 2007-2012. J Clin Invest 121:3872-6 (2011). **European mention** (stayed with Penny Jeggo, Sussex, UK) and **UCM PhD award.**
2. **Jesús Reiné Gutiérrez.** Estructura y función del complejo TCR/CD3 en las deficiencias congénitas y adquiridas (knock-down) de CD3, Complutense Univ. School of Medicine, 2004-2010. Cell Immunol 271:62-6 (2011).