

CURRICULUM VITAE

Dr. Susana Minguet García,
Born in Madrid 01.08.1974
University of Freiburg, Faculty of Biology
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ACADEMIC BACKGROUND

- 2002** Ph-D degree in Sciences (Biochemistry and Molecular Biology). U.A.M. Madrid. Spain
1997 Bachelor Degree in Chemical Sciences (Biochemistry and Molecular Biology). U.A.M.

PROFESIONAL AND SCIENTIFIC BACKGROUND

University of Freiburg, Faculty of Biology (Germany)

Since July 2011- Junior group Leader T-lymphocyte signalling laboratory
Department for Immunology (Prof. W.W. Schamel)

Centro Nacional de Investigaciones Cardiovasculares Carlos III · CNIC (Madrid, Spain).

2008-2011 Senior Postdoctoral Researcher (Ramón & Cajal Program)
Dr. Miguel Ángel del Pozo group.

Project: Role of caveolin-1 in the Immune System. Homeostasis and hyperactivation.

Max Planck-Institute for Immunobiology and Epigenetics (Freiburg, Germany).

2003-2007 Postdoctoral Researcher. Prof. Michael Reth Department. Prof. Wolfgang Schamel group.
Project: Optimal antigen structure for the activation of B and T cells. Activation of Multichain Immune Recognition Receptors: BCR and TCR

Centro de Biología Molecular Severo Ochoa (Madrid, Spain).

Sep. 1997 – Dec. 2002 Dr. Miguel A. Rodríguez Marcos laboratory.
Pre-Doctoral Fellowship by the Ministerio de Educación y Ciencia.
PhD project: Characterization of a population of hepatic stem cells in the emerging mouse liver.

Amgen, Ontario Cancer Institute (Toronto, Canada).

August - December 1998 – Scientific collaboration. Dr. Tak Mak laboratory.
Project: Role of Notch signaling in the mouse embryo.

Instituto de Catálisis y Petroquímica del CSIC – Biocatalysis section (Madrid, Spain).

September 1996 - March 1997 - Student. Dr. Víctor M. Fernández laboratory.
Project: Kinetic of chemistry equilibrium of deshydrogenases enzymes by using infrared spectroscopy.
Assembled enzymes on gold monolayers to use in biosensors.

REPSOL QUÍMICA S.A. – I&D Center (Madrid, Spain).

July / August 1996 - Student at the Chromatography laboratory.
Project: Statistic studies for the calibration of equipment and analytic methods. GPC. HPLC.

TEACHING EXPERIENCE

- 2015** “Promotionsrechts der Fakultät für Biologie”
2012-2017 Lecturer within the “Vertiefungsmodul Immunologie I”, Bachelor of Biology, University of Freiburg.
2014-2017 Co-organization and Lecturer of the “Orientierungsmodul Immunology”, Master of Immunobiology, University of Freiburg.
2012-2013 Co-organization and Lecturer of the “Orientierungsmodul Immunology & Microbiology”, Master of Biology, University of Freiburg.

2004, 2005 Co-organized of the Advanced Immunology experimental courses, University of Freiburg.

GRANTS (FUNDING ID).

- 2016 Baden-Württemberg Stiftung Eliteprogramm.
- 2016 Member of the European Network on Anti-Cancer Immuno-Therapy (EU 721358 - EN_ACTI2NG).
- 2015 Individual grant for the project "The role of the biophysical properties of the tumor stroma in T-cell infiltration and anti-tumoral responses", DFG MI 1942/2-1.
- 2015 Member of the "SFB-1160 "Immune-mediated pathology as a consequence of impaired immune reactions (IMPATH)", TP5, DFG.
- 2014 "Innovationsfonds Forschung Grant" for the project "Light-inducible T-cell immunotherapy of cancer", University of Freiburg.
- 2013 Co-applicant of the grant "The role of Caveolin-1 in the activation and lymph node egress of pathogenic T cells during graft-versus-host disease", Else Kröner-Fresenius-Stiftung.
- 2013 Co-applicant of the "91b Großgeräteantrag grant", DFG.
- 2012 "Innovationsfonds Forschung Grant" for the project "Impact of micro-organization and biophysical properties of the Thymus in T-cell differentiation", University of Freiburg.
- 2009 Awarded a 5-year tenure track position from the Ramón y Cajal International Program of the Spanish Ministry of Science and Innovation.
- 1997-2001 PhD Fellowship from the Spanish Ministry of Science and Innovation.

PUBLICATIONS (publications as corresponding author are highlighted in blue)

As Principal Investigator:

- Rauch KS, Hils M, Lupar E, **Minguet S**, Sigvardsson M, Rottenberg ME, Izcue A, Schachtrup C, Schachtrup K. Id3 Maintains Foxp3 Expression in Regulatory T Cells by Controlling a Transcriptional Network of E47, Spi-B, and SOCS3. **Cell Rep**. 2016 Dec 13;17(11):2827-2836
- Swamy, M., Beck-Garcia, K., Beck-Garcia, E., Hartl, F.A., Morath, A., Yousefi, O.S., Dopfer, E.P., Molnar, E., Schulze, A.K., Blanco, R., *Borrito A, Martín-Blanco N, Alarcon B, Höfer T, Minguet S*[§] and Schamel WWA[§]. A Cholesterol-Based Allosteric Model of T Cell Receptor Phosphorylation. **Immunity** 2016 44, 1091-1101. [§]Corresponding authors.
- Schönle A, Hartl FA, Mentzel J, Rauch KS, Wohlfeil SA, Nöltner T, Hechinger AK, Melchinger W, Fehrenbach K, Guadamillas MC, Prestipino A, Follo M, Prinz G, Ruess AK, Pfeifer D, Pozo MA, Schmitt-Graeff A, Duyster J, Blazar BR, Schachtrup K, **Minguet S**[§] and Zeiser R[§]. "Caveolin-1 regulates TCR signal strength and regulatory T cell differentiation into alloreactive T cells" **Blood**. 2016 Apr 14;127(15):1930-9 [§]Corresponding authors.
- Paensuwan P, Hartl FA, Yousefi OS, Ngoenkam J, Wipa P, Dopfer EP, Khamsri B, Sanguansermisri D, **Minguet S**, Schamel WWA and Pongcharoen S. "Nck binds to the T cell antigen receptor using its SH3.1 and SH2 domains simultaneously promoting TCR functioning". **J Immunol**. 2016 Jan 1;196(1):448-58
- Fiala GJ, Janowska I, Prutek, F, Hobeika E, Satapathy A, Sprenger A, Plum T, Seidl M, Dengjel J, Reth M, Cesca F, Brummer T, **Minguet S**[§] and Schamel WWA[§]. "Kidins220/ARMS binds to the B cell antigen receptor and regulates B cell development and activation". **Journal of Experimental Medicine** 2015 Aug31. [§]Corresponding authors.
- Strippoli R, Loureiro J, Benedicto I, Perez-Lozano ML, Moreno V, Barreiro O, Pellinen T, **Minguet S**, Foronda M, Osteso MT, Lopez-Cabrera M and Pozo MAP. "Caveolin-1 deficiency induces a MEK-ERK1/2-

Snail-dependent epithelial-mesenchymal transition in the peritoneum." **EMBO Mol Med.** 2014 Dec 30;7(1):102-23

-Dopfer EP, Oberg HH, Siegers GM, Fiala GJ, Garcillán B, Regueiro JR, Kabelitz D, Adams EJ, **Minguet S**, Wesch D, Fisch and Schamel WWA. "The CD3 conformational change is not required for $\gamma\delta$ T cell receptor activation, but enhances tumor killing". **Cell Rep.** 2014 (5):1704.

-Ngoenkam J, Paensuwan P, Preechanukul K, Khamsri B, Yiemwattana I, Beck-García E, **Minguet S**, Schamel WW, Pongcharoen S. Non-overlapping functions of Nck1 and Nck2 adaptor proteins in T cell activation. **Cell Commun Signal.** 2014 (1):21

-Dopfer EP, **Minguet S**, Schamel WW. A new vampire saga: the molecular mechanism of T cell trogocytosis. **Immunity.** 2011 (35):151-3.

As Postdoctoral Researcher:

-Goetz JG*, **Minguet S***, Navarro I, Samaniego R, Tello M, Calvo E, Lazcano JJ, Osteso T, Pellinen T, Echarri A, Cerezo A, Garcia R, Keely PJ, Sánchez-Mateos P, Cukierman E, Del Pozo MA. Biomechanical remodeling of the microenvironment by stromal caveolin-1 favors tumor invasion and metastasis. **Cell.** 2011 (146):148-63. *Shared first authorship.

-**Minguet S**, Dopfer EP and Schamel WWA. Low valency, but not monovalent, antigens trigger the B cell antigen receptor (BCR). **Int Immunol** 2010 (22): 205-212.

-**Minguet S**[§], Huber M, Freudenberg MA, Pollmer C, Reth M, Schamel WW. Enhanced B cell activation mediated by TLR4 and BCR crosstalk. **Eur J Imm** 2008 (38): 2475-2487. [§]Corresponding author.

-**Minguet S**, Swamy M, Dopfer EP, Dengler E, Alarcón B, Schamel WW. The extracellular part of zeta is buried in the T cell antigen receptor complex. **Immunol Lett** 2007 (116): 203-210.

-**Minguet S**, Swamy M, Schamel WW. The short length of the extracellular domain of zeta is crucial for T cell antigen receptor function. **Immunol Lett** 2007 (116):195-202.

-Siegers, GM, Swamy M, Fernández-Malavé E, **Minguet S**, Rathmann S, Guardo AC, Pérez-Flores V, Regueiro JR, Alarcón B, Fisch P, Schamel WW. Different composition of the human and the mouse $\gamma\delta$ T cell receptor CD3 explains different phenotypes of CD3 γ - and CD3 δ -immunodeficiencies. **Journal of Experimental Medicine** 2007 (11):2537-44.

-Swamy M, **Minguet S**, Siegers, GM, Alarcón B, Schamel WW. A native antibody-based mobility-shift technique (NAMOS-assay) to determine the stoichiometry of multiprotein complexes. **J Immunol Methods.** 2007 (31): 74-83.

-**Minguet S**, Swamy M, Alarcon B, Luescher IF, Schamel WW. Full activation of the T cell receptor requires both clustering and conformational changes at CD3. **Immunity.** 2007 (1): 43-54.

-Pracht C, **Minguet S**, Leitges M, Reth M, Huber M. Association of protein kinase C-delta with the B cell antigen receptor complex. **Cell Signal.** 2007 (4): 715-22.

-Lessmann E, Ngo M, Leitges M, **Minguet S**, Ridgway ND, Huber M. Oxysterol-binding protein-related protein (ORP) 9 is a PDK-2 substrate and regulates Akt phosphorylation. **Cell Signal.** 2007 (2): 384-92.

-Swamy M, Siegers GM, **Minguet S**, Wollscheid B, Schamel WW. Blue native polyacrylamide gel electrophoresis (BN-PAGE) for the identification and analysis of multiprotein complexes. **Sci STKE.** 2006 (345): pl4.

-Schamel WW, Risueno RM, **Minguet S**, Ortiz AR, Alarcon B. A conformation- and avidity-based proofreading mechanism for the TCR-CD3 complex. **Trends Immunol.** 2006 (4): 176-82.

-**Minguet S**, Huber M, Rosenkranz L, Schamel WW, Reth M, Brummer T. Adenosine and cAMP are potent inhibitors of the NF-kappa B pathway downstream of immunoreceptors. **Eur J Immunol.** 2005 (1):31-41.

As PhD student:

- Minguet S**, Gonzalo P, Martínez-M JA, de Andrés B, Salas C, Gaspar ML, Marcos MAR. A population of c-Kit^{low}(CD45/TER119)⁻ hepatic cell progenitors of 11-dpc mouse embryo liver reconstitutes cell-depleted liver organoids. **J. Clin. Invest.** 2003 (8): 1152.
- de Andrés B, Gonzalo P, **Minguet S**, Martínez-M JA, Gómez-S P, Marcos MAR, Gaspar ML. The first three days of B cell development in the mouse. **Blood** 2002 (12):4074.
- Martín P, Duran A, **Minguet S**, Gaspar ML, Díaz-Meco MT, Rennert P, Leitges M, Moscat J. Role of δ PKC in B cell signaling and function. **EMBO J.** 2002 (21):4049-57.
- Izcue A, Morales G, **Minguet S**, Sánchez-Movilla A, Morales P, Martínez JA, Gaspar ML, Marcos MAR. Both B and $\gamma\delta$ TCR⁺ lymphocytes regulate superantigen specific V β lymphocytes. **Eur. J. Immunology** 2001 (31): 2811-2817.
- Martínez JA, **Minguet S**, Gonzalo P, Soro PG, de Andrés B, Marcos MAR, Gaspar ML. Long-lived polyclonal B cell lines derived from midgestation mouse embryo lymphohematopoietic progenitors reconstitute adult immunodeficient mice. **Blood** 2001 (6):1862-1871.

Reviews:

- Schamel WW, Alarcon B, Höfer T, **Minguet S**. The Allosteric Model of TCR Regulation. **J Immunol.** 2017 Jan 1;198(1):47-52
- Minguet S**, Schamel WW. A permissive geometry model for TCR-CD3 activation. **Trends Biochem Sci.** 2008 (2):51-7.
- Minguet S** and Schamel WWA. Permissive Geometry Model. **Adv Exp Med Biol** 2008 (640): 113-120.
- Morales-Alcelay S, Copin S, Martínez JA, Morales P, **Minguet S**, Gaspar ML, Marcos MAR. "Developmental hematopoiesis". **Crit. Rev. Immunol** 1998 (18): 485-501.

OTHER ACHIEVEMENTS

- Book chapter:** "Permissive geometry model" by **S. Minguet** and W.W. Schamel. Multichain Immune Recognition Receptor Signaling: From Spatiotemporal Organization to Human Disease. Dr. Alexander Sigalov. Landes Bioscience 2007.
- International and National Congresses.**
- Languages:** Spanish (native), English (fluent) and German (fluent).
- VIII Prize of Health Sciences from the Fundación Caja Rural de Granada for the best original investigation and the publication Goetz JG*, Minguet S* et al, Cell 2011 (*Shared first authorship).
- Awarded 5-year tenure track position of the Ramón y Cajal International Program of the Spanish Ministry of Science and Innovation (2009).
- Prize to the best scientific publication 2003 from Fundación Médica Mutua Madrileña to the publication **Minguet et al.** Journal of Clinical Investigation 2003 (8): 1152.
- Didactics courses:** "Fit für die Lehre: Hochschuldidaktische Grundlage I and II". HDZ-Baden-Württemberg.

Freiburg, 17.01.2017