

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	FRANCISCO JAVIER		
Family name	LACADENA GARCÍA-GALLO		
Gender (*)	Male	Birth date	03/08/1969
ID number	33504723W		
e-mail	jlacaden@ucm.es	URL Web: https://www.ucm.es/grupo.esfunprot/ /alergen-y-epitelio	
ORCID (*): 0000-0002-7314-0333			
ResearcherID (WoS): H-7101-2015 / SCOPUS: ID: 36475099200			
Google Scholar: http://scholar.google.es/citations?user=YwDKu6wAAAAJ&hl=es			

(*) Mandatory

A.1. Current position

Position	Assistant Professor / PhD Program Coordinator		
Initial date	02/02/2008 / 15/09/2020		
Institution	Complutense University of Madrid		
Department/Center	Biochemistry and Molecular Biology	Faculty of Chemistry	
Country	Spain	Teleph. number	+34 913944266
Key words	Immunotoxins, allergy, immunotherapy, colon cancer, expression systems, protein engineering, nanobiotechnology, ribotoxins		

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

Period	Position/Institution/Country/Interruption cause
1997-1998	Postdoctoral Severo Ochoa fellow (Research Ferrer Foundation) / UCM / Spain
1998-2001	Assistant Professor Private University / SEK University / Spain
2001-2005	Research Associate (Ramón y Cajal) / UCM / Spain
2005-2008	Associate Professor (PCD-I3 Program) / UCM / Spain
2008-	Assistant Professor / Complutense University Madrid / Spain
2017-2018	Biomedicine Area Coordinator (for PFU fellowships) / ANECA / Spain
2020-	PhD Program Coordinator / UCM / Spain
2023-	Member of the Doctoral School Steering Committee / UCM / Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed B.Sc and M.Sc Biology	Universidad Complutense de Madrid	1992
PhD Biology (Biochemistry)	Universidad Complutense de Madrid	1997

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

1.- General Indicators of Quality of Scientific Production:

- **Total publications (D1/Q1/T1): 65 (3/28/9). Preferent author: 6 first author and 11 last or correspondence author. Citations: 1755 (2428 Google Scholar). Average citation/year (last 5 years, not current): 73 (116 Google Scholar).**
- **H index (WOS): 26; H index (Google Scholar): 32; i10 Index (Google Scholar): 54**
- **Nº 6-year period research: 5 (Last, 2022); 4 5-year periods of teaching (last, 2021) and 1 6-year period of Excellent DOCENTIA. Professional category B in the use of experimental animals.**

2.- Research background. Member of ESFUNPROT UCM-Group (Allergy-Epithelial subgroup). My research activity has focused mainly on the study of toxic proteins. My PhD Thesis and postdoctoral period at UCM focus on *the molecular bases of the structure-function relationship of ribotoxins*; during

my time at SEK University *on the genotoxic effect of nitrosocompounds*. Back at UCM as Ramón y Cajal researcher and later as Assistant Professor, leading my own research line, *on the biomedical and biotechnological application of ribotoxins*, initially in the *design of antitumor immunotoxins* as immunotherapeutic tools. Currently, we have expanded our aim towards their *application in the immunomodulation of the allergic response*. Represent a proof of concept for their potential therapeutic application in both fields.

During this period, I have been PI of 3 UCM and 1 Ramón y Cajal projects, and researcher member of 9 National Plan, 1 European Funding project, 2 CAM and 1 RETIC. Two scientific collaboration agreements with private companies: Research Corporation Technologies (2013-2016), for the development of immunotoxin-based chimeric proteins; and ALK-Abelló (2015-2016) for the development of chimeric proteins in cell-free expression system. Author of 1 national patent.

3.- Teaching background. I taught for more than 25 years in 12 subjects, distributed in 5 Bachelor and 2 Master Degrees. EXCELLENT qualification in the DOCENTIA evaluation program for the last 9 academic years.

4.- Gestion background. Coordinator of the UCM PhD Program on Biochemistry, Molecular Biology and Biomedicine (2020-). Member of the Steering Committee of UCM PhD School (2023-) and of the Coordination Committee (2018-) of the Master's in Health Biology. **Reviewer:** Biomolecules; Sci Reports; Toxins, Curr Pharm Des; PlosOne; IJMS; Eur J Pharm. **Panel Evaluation:** Coordinator of the ANECA Biomedicine Area in 2017 and 2018 calls for FPU fellowships. Scientific evaluator for different agencies (ANEP; FIS, ACyL; AJA) and ANEP FPU grants (2014-2016).

5.- Main scientific achievements: First recombinant protein produced in BBM (Gene 1994). Development of targeted mutagenesis to obtain recombinant variants of ribotoxins (Biochem J 1995). Determination of their structure-function relationship and cytotoxic mechanism (Febs Lett 1998; Proteins 1999; FEMS Microb 2007). Production of stable isotope-labelled proteins for NMR (Prot Sci 1996; J Mol Biol 2000). Production of immunotoxins and Ab derivatives in *P. pastoris* (Prot Eng Des Sel 2012; Micro Cell Fact 2014; FEBS J 2015a,b). *In vivo* functional characterization of ribotoxin-based immunotoxins (SpringerPlus J 2015; Toxins 2019; Biomedicines 2021). Proof of concept potential therapeutic application against cancer (Toxins 2019; Cancers 2023). Design of the first trimeric (Sci.Rep 2019) and bispecific immunotoxins (Biomolecules 2023; Oncoimmunology 2024). First immunotoxin directed against mite allergy, based on Der p 1 allergen (Sci.Rep 2020). More than 15 recombinant immunotoxins produced and characterized. Collaborations established with international (Dr. Carl Batt, Ithaca Univ USA) and national (Dr. Sanz-HPH; Dr. Mayorga-IBIMA HRU Málaga) groups.

6.- Contributions to Society. Dissemination of research activity: European Chemistry Thematic Network Association (ECTN), 2021. Pichia Protein Expression Conference, 2014. The night of Researchers (2011, 2013, 2019) and Semana de la Ciencia (2013, 2015). IX Update Course on Translational Research, Fundación Investigación Hospital Puerta de Hierro, 2015. GlaxoSmithKline Lecture Series, 2013. Articles published in Notiweb, OTRI or Tribuna Complutense (UCM). Best Scientific Image of the Year Certest-Biotec-SBBM Award 2013. More than 20 outreach lectures and workshops in schools and institutes in Madrid. Participation in 8 (PI in one) scientific outreach projects with European (1), national (2) or regional (5) funding.

7.- Research Training of young researchers. Five PhD Theses supervised, all with *Cum Laude*. One more in progress. Current professional status: Associate professors at UCM and UPM; Postdoctoral researcher in Clinical Research Unit in Cancer Immunotherapy H12O-CNIO; Product Manager Monitoring Controls, Matachana Group and the last one is a trainer and elite athlete. I have also supervised more than 15 research works since 2009: TFM (8), Bachelor Thesis (1) and TFG (7).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

The 10 selected articles appear numbered according to my publication list numbering. I have selected 9 articles among those published in the last ten years, except for a review in FEMS Microbiology 2007 (IF 9.25 D1 (5th best journal in the field) that reviews the results and previously published papers on ribotoxins and in which I appear as first author.

In 7 of them I appear as the last author or correspondence author and they cover the main results obtained with the different types of immunotoxins characterized, including the first immunotoxin against allergy, in which Dr. Villalba IP1 of the project also appears.

The other 2 publications also with high IF are examples of the close collaboration with the groups of Dr. Sanz and Dr. Alvarez-Vallina.

- 65.- Tapia-Galisteo A, Sánchez-Rodríguez I, Narbona J, et al., *Sanz L (2024) Combination of T cell-redirecting strategies with a bispecific antibody blocking TGF- β and PD-L1 enhances antitumor responses. *Oncoimmunology* 13;13(1):2338558. doi: 10.1080/2162402X.2024.2338558. **IF 7.2 Q1 Position (11/13)**
- 64.- Narbona J, Hernández-Baraza L, Gordo RG, Sanz L, ***Lacadena J.** (2023) Nanobody-Based EGFR-Targeting Immunotoxins for Colorectal Cancer Treatment. *Biomolecules*. 13(7):1042. doi: 10.3390/biom13071042. **IF 4.8 Q1**
- 63.- Narbona J, Gordo RG, Tomé-Amat J, ***Lacadena J.** (2023) A new optimized version of a colorectal cancer-targeted immunotoxin based on a non-immunogenic variant of the ribotoxin α -sarcin. *Cancers* (Basel)15(4):1114. doi: 10.3390/cancers15041114. **IF 6,575 Q1**
- 62.- Tapia-Galisteo A, Sánchez Rodríguez Í, Aguilar-Sopeña O, et al., *Sanz L (2022) [Trispecific T-cell engagers for dual tumor-targeting of colorectal cancer](#). *Oncoimmunology*. 11 (1): 2034355. doi: 10.1080/2162402X.2022.2034355. **IF 7.71 Q1. Position: (11/16)**
- 60.- Lázaro-Gorines R, López-Rodríguez JC, Benedé S, et al., ***Lacadena J** and *Villalba M (2020) Der p 1-based immunotoxin as potential tool for the treatment of dust mite respiratory allergy. *Sci Rep*. 10 (1):12255. doi: 10.1038/s41598-020-69166-w. **IF 3,998 Q1. Position (8/9. Corresponding Author)**
- 59.- Ruiz-de-la-Herrán J, Tomé-Amat J Lázaro-Gorines R, Gavilanes JG and ***Lacadena J** (2019) Inclusion of a Furin Cleavage Site Enhances Antitumor Efficacy against Colorectal Cancer Cells of Ribotoxin α -Sarcin- or RNase T1-Based Immunotoxins. *Toxins*, 11, 593; doi:10.3390/toxins11100593. **IF 3.531 Q1**
- 58.- Lázaro-Gorines R, Ruiz-de-la-Herrán J, Navarro R, Sanz L, Álvarez-Vallina L, Martínez-del-Pozo A, Gavilanes JG and ***Lacadena J.** (2019) A novel Carcinoembryonic Antigen (CEA)-Targeted Trimeric Immunotoxin shows significantly enhanced Antitumor Activity in Human Colorectal Cancer Xenografts. *Sci. Reports*. 9: 11680. doi: [10.1038/s41598-019-48285-z](#). **IF 3,998 Q1**
- 53.- Tomé-Amat J, Olombrada M, Ruiz de la Herrán J, et al. and ***Lacadena J** (2015) Efficient *in vivo* antitumor effect of an immunotoxin based on ribotoxin α -sarcin in *nude* mice bearing human colorectal cancer xenografts. *SpringerPlus Journal (Medicine)* 4:168. doi: 10.1186/s40064-015-0943-5. **IF 0.98 Q2. Position (10/10)**
- 51.- Tomé-Amat, J; Ruiz de la Herrán, J; Martínez del Pozo, A; Gavilanes, JG and ***Lacadena, J** (2015) α -Sarcin and RNase T1 based immunoconjugates: the role of intracellular trafficking in cytotoxic efficiency. *FEBS Journal* 282: 673-684. **IF 4.237 Q1**
- 38.- **Lacadena J (1/9)**, Álvarez-García E, Carreras-Sangrà N, et al. A. Martínez del Pozo (AC) (2007) "Fungal ribotoxins: Molecular dissection of a family of natural killers". *FEMS Microbiology Reviews* **31**(2), 212-237. DOI: 10.1111/j.1574-6976.2006.00063.x. **IF 9.250. D1** (*Corresponding author)

I include a list of non-selected articles that are also part of the publications of my group related to toxins and immunotoxins in the last 10 years: **Microbial Cell Factories** 2014 IF 4.25 Q1. **Toxicon** 2015 IF 2.3 Q2. **FEBS J.** 2015 IF 4.2 Q1. **Biol Chem** 2016 IF 2.7 Q2. **J Biol Chem** 2016 IF 4.24 Q1. **Prot Eng Des Sel** 2016 IF 2,36 Q2. **Toxins** 2017 IF 3,57 Q1. **Biomedicines** 2021 IF 6.08 Q1.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

Invited conferences in different workshops and meetings: -Pichia Protein Expression Conference, 2014. *Efficient production of human anti-CEA scFv-based N-terminal trimerbodies in Pichia pastoris*.- Seminario Actualización Científico-Didáctica e Interdisciplinariedad, 2018. *Toxinas como herramientas Biomédicas*. -IX Curso de Actualización en investigación traslacional. Fundación Investigación Hospital Puerta de Hierro, 2015. *Convirtiendo toxinas en tratamientos frente al cáncer de colon*. -Ciclo de Conferencias GlaxoSmithKline, 2014. *Immunotoxins based on fungal RNases aimed against colon cancer cells*.

Since 2014: National, 6 contributions (2 poster and 4 short communications); International, 8 contributions (5 Poster and 3 short communications).

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

Projects corresponding to the last 10 years have been included. Our group has had continuous funding since I joined it. I have been PI of 3 UCM and 1 Ramón y Cajal projects, and researcher member of 9 National Plan, 1 European Funding project, 2 CAM and 1 RETIC.

1.- ALLERGENS AND THE GUT-LUNG AXIS: NEW APPROACHES TO ALLERGY DIAGNOSIS AND THERAPY (ALLERGLA). I+D+i Retos Research Project. 2020 Call Proposals. Project N° PID2020-116692RB-I00. Period: 2020-2023 (extension until may 2025). Funding: 190.000€ **Type of participation: Researcher**

2.- REACT-ANTICIPA-UCM. Research I+D REACT-UE Investigación Madrid. European funds. Group research “**Immunogens production**” (SP5; group PR38/21-23). Period: 01/02/2020-31/12/2023. Funding: 8.490.000,00€(Group SP5 155.106,01€). Lead researcher: José M^a Bautista Santa Cruz (group SP5 Álvaro Martínez del Pozo). **Type of participation: Researcher.**

3.- FUNCTIONALIZATION OF FUNGAL RIBOTOXINS FOR BIOTECHNOLOGICAL APPLICATION IN CANCER AND ALLERGY. Santander-UCM Research Projects 2019. Project No. PR87/19-22627. Period: 2020-May 2021. Funding: 12.000€ **Type of participation: Lead researcher (IP)**

4.- FUNCTIONALIZATION OF FUNGAL RIBOTOXINS FOR BIOTECHNOLOGICAL APPLICATIONS. Santander-UCM Research Projects 2018. Project No. PR75/18-21563. Period: 2019-december 2020. Funding: 10.000€ **Type of participation: Lead researcher (IP)**

5.- FUNCTIONALIZATION OF RIBOTOXINS FOR APPLICATION IN CANCER AND ALLERGY. Santander-UCM Research Projects 2017. Project No. PR41/17-21004. Period: 2018. Funding: 7.000€ **Type of participation: Lead researcher (IP)**

6.- RED Nacional de Alergia ASMA Y REACCIONES ADVERSAS Y ALÉRGICAS (ARADyAL). Funding entity: MEC/Instituto de Salud Carlos III (RD16/0006/0014). From: 01/01/2017 to 31/12/2021. Funding: 27,000 €/year. Lead researcher: M^a Teresa Villalba. **Type of participation: Researcher**

7.- MOLECULAR DISSECTION OF TWO FAMILIES OF TOXIC PROTEINS AND THEIR MECHANISMS OF ACTION: RIBOTOXINS AND ACTINOPORINS. Ministry of Economy and Competitiveness. Non-Oriented Fundamental Research Project. Project BFU2012-32404. Amount of the subsidy: 100000 euros. From 2013 to 2016. Lead researcher: Álvaro Martínez del Pozo. **Type of participation: Researcher.**

C.4. Contracts, technological or transfer merits

Contracts, technological or transfer merits: I participate in two scientific collaboration and confidentiality agreements with private companies

- **ALK-Abelló:** On February 9, 2015, a scientific collaboration agreement was signed with the company ALK-Abelló. Period: 2015-2016
- **Research Corporation Technologies:** On June 16, 2013, a confidentiality agreement was signed with Research Corporation Technologies (Tucson, Arizona, USA). Period: 2013-2016.

Patents

- **INVENTORS** (signature p.o.): Gavilanes Franco, José G., Oñaderra Sánchez, Mercedes, **Lacadena García-Gallo, Fco. Javier**, Martínez del Pozo, Álvaro. **TITLE:** Method of production and applications of a hypoallergenic variant of the main allergen of "Aspergillus fumigatus" Asp f 1. **APPLICATION N.:** P200301352; **PRIORITY COUNTRY:** Spain. **FE13CHA OF PRIORITY:** 6, July 2003. **HOLDER ENTITY:** Universidad Complutense de Madrid. **CONCESSION DATE:** 5, May 2007.