

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are

Part A. PERSONAL INFORMATION

First name	M ^a TERESA		
Family name	VILLALBA DÍAZ		
Gender (*)	Female	Birth date	20/05/1959
Social Security	01102058J		
e-mail	mvillalb@ucm.es		
Contributor ID (ORCID) (*)	0000-0002-0042-9953		
Google Scholar	XVP333YAAAAJ		
	URL web: https://www.ucm.es/gruposfunprot/alergenos-y-epitelio		

(*) Mandatory

A.1. Current position

Position	Full Professor		
Initial date	01/07/2011		
Institution	COMPLUTENSE UNIVERSITY OF MADRID		
Department/Center	Biochemistry and Molecular Biology	Chemistry Faculty	
Country	Spain	Teleph. N°	913944290
Key words	Protein purification and characterization, expression systems, allergen, food allergy, cell culture, epithelium, Component-Resolved Diagnosis		

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

Period	Position/Institution/Country/Interruption cause	
Sep 87-sep 89	Postdoctoral Position	Memorial Sloan Kettering Cancer Center
Oct 89	Assistant professor	Complutense University of Madrid
June-Oct 1991	Research Associate	Rockefeller University of New York
June-Oct 2005	Research Associate	Brandeis University (Massachusetts)
2011-to date	Full Professor	Complutense University of Madrid
2010-2014	Academic secretary of Dep.	Complutense University of Madrid
2014-2022	Vice-dean	Chemistry Faculty (UCM)
2022-to date	Dean	Chemistry Faculty

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bachelor Chemistry	Complutense University of Madrid	June 1981
PhD chemistry	Complutense University of Madrid	May 1987

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

General Indicators of Quality of Scientific Production. 215 articles. 7 book chapters, 50 articles as last author or corresponding author. Total cites: 9805 and 2311 in last 5 years) (Google Scholar).

H index: 55 in google scholar, and 25 in 5 years, i10 173.

N° 7 year-period research: 7 (the last in 2023); 1 six-year period of transference (2016) and 7 periods of teaching (the last in 2024). Professional category C in the use of experimental animals.

Research background. My PhD Thesis on *the metabolism of phospholipids* (Supervisor Dr. JM Mato); postdoctoral stay for 2 years at Memorial Sloan Kettering Cancer Center, on *the structure of the insulin receptor, insulin signal transduction and new intracellular messengers*. As assistant professor at UCM I worked on *structure/function relationship of allergens* in the Dep. Biochemistry and Molecular Biology. I have been Principal Investigator of 1 European Project, 10 institutional projects (5 National Plan, 2 CAM and 3 RETICs) and 14 contracts with private pharmaceutical companies. Supervisor of 23

Doctoral Theses, three in progress. Author of 7 national patents. **Teaching background.** I have taught in the Chemistry Faculty for 35 years, in bachelor's and master's Degrees. **Gestion background.**

Reviewer Allergy; FoodChem; Clin Exp Allergy; International Arch allergy and Clin Immunol, JIACI, BBA. Editorial rev: Frontiers in allergy, Molecular immunology, Scientific Reports.

Panel of evaluator of the ANEP and AEI since 1996; FIS projects since 2007; FPU Grants in 2009, 2010, 2011; AENOR Project Expert since 2007; panel of external experts ACADEMIA Programme for National Accreditation since June 2008; Expert panel of Eurobachelor and Eurace seals (ANECA); evaluation CSIC Grants (JAE); Jurado Margarita Salas Awards; Tribunal Calificador FSE 2022- 2025. **Member** of the Steering Committee of networks RIRAAF y ARADyAL. SEBBM, RSEQ, EAACI.

Academic secretary of Dep. Biochem & Mol Biol for 4 years (2010-14); **Vice-dean** of Research and International Relations (2014-2022) and **Dean** of Chemistry Faculty (2022-).

Main scientific achievements: *Production in Baculovirus of the cytosolic tyrosine kinase* of the insulin receptor (now commercial product) (PNAS 1989,1990) (at Memorial Sloan Kettering Cancer Center). *Cloning of the first allergens, in wasp species* (J Immunol 1993) (at Rockefeller University). Contribution to Molecular Diagnosis with *Recombinant Production of the first pollen allergen* (JBC 2001). Structural and immunological characterization *20 recombinant allergens from seeds and nuts and 13 out of 15 described for olive fruit and olive pollen* (New Engl J of Med 2008). *Epitope mapping and hypoallergenic mutants* (Clin Exp Allergy 2007). 14 allergens from ash, lilac, privet (JACI 2014) and Amaranthaceae (Biochim Biophys Acta. 2017). *First tissue-specific allergens* in fresh fruit seeds: kiwi, tomato, melon, pumpkin and flaxseed. Participation with 30 allergens in epidemiological studies (VEGETALIA, EXPO I and II) with 50 Spanish hospitals. *Allergen standardization* in a European Project (CREATE). Cross-reactivity analysis between food/pollen/latex allergens of great clinical interest to clarify the *diagnosis and role of panallergens* (ubiquitous allergens). Identification of *pollensomes* and *exosomes* as allergen carriers. *First mice models of olive allergy* and tests of *vaccines with allergenic derivatives*. Alterations in *respiratory epithelial barrier* as an entry mechanism for allergy trigger. *3D structure of 6 allergenic proteins*. Collaborative clinic studies with groups from Austria, France, Italy, and collaborations with national groups -both biochemical (Rocasolano, IIQ-CSIC, CIB) and of RETICS RIRAAF, ARADyAL, RICORS.

Contributions to Society. Dissemination of research activity

Dissemination Activities: The night of Researchers 2012 to 2015 and Semana de la Ciencia 2013-. Women and Science: Gallery of Portraits of Women in Biochemistry (Linda Brown Buck, 2012, SEBBM). Conferences for *Quality of Life, Health and Nutrition, Senses and food*. Participation in radio programs in the Círculo de Bellas Artes, 2012 *How many senses do we eat with? The biochemistry of the senses and Allergy* on Radio Círculo, A Hombros de Gigantes (RNE) and R Exterior España. RTVE (Objetivo Planeta *Alergias e intolerancias*). Imagen of May 2010 and 2014 at the SEBBM Art Gallery. Outreach activities organized on the Year of Chemistry 2011 by the Chemistry faculty, 50 anniversary of Chemistry faculty. Meet our scientists (SEBBM August 2019).

Prize the best scientific news in the 1st OTRI-UCM Scientific Dissemination Competition. Year 2008, 2016, 2020. "*Allergy: an epidemic of the 21st century*". Prize best opinion article UCM 2020.

Development Cooperation and Humanitarian Action Project. 2010. UCM. Amount of Grant: 31,229€

Research Training of young researchers

Twenty-three PhD as supervisor, 11 in the last 10 years, 3 in progress, 6 with Extraordinary Award, 8 with International mention. All with *Cum Laude*.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

Since 2020 I have published 29 articles, 25 in the first quartile. I have selected 6 publications in which I am the last author and I have selected one with a high IF, the result of a collaboration that is still active. Most of them are examples of collaborations with clinic groups of the Retics Network to which we belonged (n°1,5,9). Our national collaboration with Dr. campuzano n°4). Our international collaborations with Dr. L Willemsen (Utrecht) in n°2. The collaboration to Dr. Lacadena's group (coIP of this project) started with n°7. Both the project's PI and the research team members have highlighted contributions that correspond to the objectives for which each is responsible.

1. Alonso-Díaz de Durana MD, Pérez-Fernández E, **Villalba M**, Martín-Pedraza L, Fernández-Rivas M. Allergy to Cypress and Olive Pollen: Clinical Phenotypes and Allergen Recognition. J Investig Allergol Clin Immunol. 2024 Oct 23;34(5):313-322. doi: 10.18176/jiaci.0917 (**IF 6,5 Q1**).

2. Bueno-Díaz C, Zuurveld M, Ayechu-Muruzabal V, Korsten SGPJ, Martín-Pedraza L, Parrón-Ballesteros J, Redegeld F, Garssen J, **Villalba M**, Willemsen LEM. Mustard seed major allergen Sin a 1 activates intestinal epithelial cells and also dendritic cells that drive type 2 immune responses. *Food Funct.* 2024 Jun 17;15(12):6488-6501. doi: 10.1039/d4fo01980f (**IF 5.1 Q1**).
3. Parrón-Ballesteros J, Martín-Pedraza L, Gordo RG, Mayorga C, Pastor-Vargas C, Titaux-Delgado GA, **Villalba M**, Batanero E, Pantoja-Uceda D, Turnay J. Long-chain fatty acids block allergic reaction against lipid transfer protein Sola 1 7 from tomato seeds. *Protein Sci.* 2024 Sep;33(9):e5154. doi: 10.1002/pro.5154 (**IF 5 Q1**).
4. Gamella M, Laza A, Parrón-Ballesteros J, Bueno C, Ruiz-Valdepeñas Montiel V, Pedrero M, Bertolino FA, Pingarrón JM, **Villalba M***, Campuzano S. First PCR-free electrochemical bioplatfrom for the detection of mustard Sin a 1 protein as a potential "hidden" food allergen. *Bioelectrochemistry.* 2023 Apr;150:108357. doi: 10.1016/j.bioelechem.2022.108357 (**IF 4.8 Q2**).
5. Castromil-Benito ES, Betancor D, Parrón-Ballesteros J, Bueno-Díaz C, Gutiérrez-Díaz G, Turnay J, Heras ML, Cuesta-Herranz J, **Villalba M**, Pastor-Vargas C. Walnut Jug r 1 is Responsible for Primary Sensitization among Patients Suffering Walnut-Hazelnut 2S Albumin Cross-Reactivity. *J Agric Food Chem.* 2024 Aug 14;72(32):18162-18170. doi: 10.1021/acs.jafc.4c03603 (**IF 5.7 Q1**).
6. Bueno-Díaz C, Biserni C, Martín-Pedraza L, de Las Heras M, Blanco C, Vázquez-Cortés S, Fernández-Rivas M, Batanero E, Cuesta-Herranz J, **Villalba M***. Association Between the Seed Storage Proteins 2S Albumin and 11S Globulin and Severe Allergic Reaction After Flaxseed Intake. *J Investig Allergol Clin Immunol.* 2022 Oct 11;32(5):375-382. doi: 10.18176/jiaci.0713 (**IF 6.5 Q2**).
7. Lázaro-Gorines R, López-Rodríguez JC, Benedé S, González M, Mayorga C, Vogel L, Martínez del Pozo, Á, Lacadena J, **Villalba M***. Der p 1-based immunotoxins potential tool for the treatment of dust mite respiratory allergy. *Sci Rep* 23 July 2020. <https://doi.org/10.1038/s41598-020-69166-w> **IF 4.1 Q1**).
8. Bueno-Díaz C, Martín-Pedraza L, Leon L, Hauron-Díaz E, Pastor C, Muñoz-García E, de las Heras M, Batanero E, Cuesta-Herranz J, **Villalba M***. 2S albumins and 11S globulins are responsible for pumpkin seeds allergy. *Allergy* 24 July 2020. <https://doi.org/10.1111/all.14518> (**IF 6.28 Q1**).
9. Oeo-Santos C, Navas A, Benedé S, Ruíz-León B, Díaz-Perales A, Vogel L, Moreno-Aguilar C, Jurado A, **Villalba M***, Barderas R*. New insights into the sensitization to nonrelated nsLTPs from pollen and food: New role of the allergen Ole e 7. *Allergy* 2019 75(4):798-807 (**IF 6.28 Q1**).
10. López-Rodríguez JC, Manosalva J, Cabrera-García JD, Escribese MM, **Villalba M**, Barber D, Martínez-Ruiz A, Batanero E. Human glutathione-S-transferase pi potentiates the cysteine-protease activity of the Der p 1 allergen from house dust mite through a cysteine redox mechanism. *Redox Biol.* 2019 26;101256 (**IF 9.99 Q1**).

*Corresponding author

Incluyo una relación de los artículos que no se han metido en la lista y que pertenecen a las publicaciones del grupo en los últimos cinco años. **Allergy**, 2020, 2021a, 2021b **IF 7.0 Q1**; **Biochem Biophys Acta** 2020 **IF 3.41 Q1**; **Biosens. Bioelectron.** 2019 **IF 10.26 Q1**; **Clin Exp Allergy** 2019 **IF 4.22 Q1**; **Clin Trans Allergy** 2021 **IF 5.1 Q1**; **Curr Allergy Asthma Rep** 2015 **IF 3.58 Q2**; **Food Chem** 2020, 2021 **IF 6.31 Q1**; **Foods** 2021 **IF 4.7 Q1**; **Front Allergy** 2023 **IF 3.3 Q2**; **Front Immunol** 2019 **IF 6.4 Q1**; **Int Arch Allergy Immunol** 2018 **IF 2.667 Q2**; 2015 **IF 4.72 Q1**; **Int J Mol Sci** 2017 **IF 4.56 Q1**; **J Invest Allergy Clin Immunol** 2016, 2016, 2017, 2017, 2021, 2023 **IF 3.094 Q2**; **J Proteomics** 2018 **IF 3.54 Q1**; **J Proteome Res** 2019a, 2019b **IF 5 Q1**; **J Asthma Allergy** 2022 **IF 3.69 Q2**; **Molec Pharmacol.** 2019, 2020 **IF 3,6 Q1**; **Nutrients** 2017,2019, 2024a,2024b **IF 4.21 Q1**; **Oncotarget** 2018 **IF 4.79 Q1**; **Plos One** 2015, 2020 **IF 2.87 Q1**; **Sensors and Actuators, B:** 2018 **IF 6.39 Q1**; **Sci Rep** 2019 **IF 4.6 Q1**; **Talanta** 2020 **IF 5.34 Q1**.

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

Invited conferences in different workshops and meetings: XXVI reunión Asociación Aragonesa Alergología "debates sobre alergología" 2022.

curso "MPL – MultiPerspective Lectures" 6 y 7 de octubre de 2023.

From 2014 a 2024: Nacionales, 16 aportaciones (6 como Poster y 10 ponencias); Internacionales, 46 aportaciones (30 como Poster y 16 ponencias).

Teaching experience

23 Thesis and in the last 10 years: Ana Agulló (2024); 2. Cristina Bueno-Diaz (2021); 3. Rodrigo Lázaro Gorines (2020); 4. Pablo Sansegundo Acosta (2020); 5. Carmen Oeo Santos (2019); 6. Laura Martín-Pedraza (2019); 7. Juan Carlos López Rodríguez (2019). Bachelor and Master Theses supervised. Five

Bachelor Theses, eight TFG supervised 2011-12 y 2013-14, 2014-15, 2015-16, 2016-17 (2), 2017-18 y three TFM 2013-14, 2014-15, 2018-19.

Practical or theoretical teaching in 17 subjects, with 1800 hours of laboratory classes and 4000 hours of theory for 32 years. In a Master in "BIOINFORMATICS AND COMPUTER BIOLOGY" from 2002-3 to 2016-17. Qualification title of Doctorate "IN VITRO TECHNIQUES IN ALLERGOLOGY" UCM-ALK-Abelló 1998-2017. Participation in summer schools: *Sensory journey through the Mediterranean diet*. University of Castilla-La Mancha. Sep 2015 and Sep 2016. *The Five senses and wine* (UCM). *The advances of Chemistry* 2015, 2016, 2017.

C.3. Research projects, indicating your personal contribution.

1. Título: **Alérgenos y eje intestino-pulmón: nuevas aproximaciones al diagnóstico y tratamiento de la alergia**. MICINN (PID2020-116692RB-I00). 01-09-2021 hasta 31-08-2024. IP: Mayte Villalba Díaz/Eva Batanero Cremades. Funds: 189.000,00 €
2. **Red de Asma y Reacciones Adversas y alérgicas (ARADyAL)**. Entidad: MEC/Instituto de Salud Carlos III (RD16/0006/0014). 01/01/2017 hasta 31/12/2021. WP leader: M Villalba Funds: 135.000€
3. **Alérgenos y epitelio: Nuevos conceptos y metodologías emergentes en el escenario de la alergia**. SAF2017-86483-R Entidad: MEC Ministerio de Economía y Competitividad. RETOS 2017. Duración: 01-01-2018 hasta 30-09-2021. IP: Mayte Villalba. Número de investigadores: 4. Funds: 115.500,00 €
4. **Alérgenos, disfunción de la barrera epitelial y marcadores específicos de alergia: hacia conceptos y metodologías emergentes**. Entidad: Plan Nacional MINECO. SAF2014-53209-R. Entidades participantes: UCM. 01-01-2015. Hasta: 31-12-2017. IPs: M Villalba y R Barderas.
5. **Alérgenos de pólenes y alimentos vegetales. Aplicaciones de nuevas tecnologías en diagnóstico e inmunoterapia**. Entidad: Plan Nacional MINECO. SAF2011-26716. Participants: UCM. Duración, Desde: 01-01-2012 hasta: 31-12-2014. IP: Mayte Villalba.
6. **Red de Investigación de Reacciones Adversas a Alérgenos y fármacos (RIRAAF)**. Entidad: MEC/Instituto de Salud Carlos III (RD12/0013/0015). Participants: 13. Universidad Complutense de Madrid. Desde: 01-01-2013 hasta 31-12-2016. Cuantía: 55.000 euros/año. IP: Mayte Villalba.
7. **Red de Investigación de Reacciones Adversas a Alérgenos y fármacos (RIRAAF)**. Entidad Financiadora: Ministerio de Sanidad y Consumo, RD07/0064/0009. Entidades Participantes: UCM. Desde: 01-11-2012. Hasta: 31-10-2015. IP del grupo: Mayte Villalba. Cuantía: 50.000€/año.
8. **Development of certified reference materials for allergenic products and validation of methods for their quantification (CREATE)** Entidad Financiadora: European Union. Ref. GGRD-CT-2001-00582. Desde: Noviembre 2001 Hasta: Abril 2005. Funds: 31.000 euros. Work Package IP: M Villalba. Collaboration in **8 competitive projects as external collaborator**.

C.4. Contracts, technological or transfer merits.

Since 2000 we have maintained uninterrupted contracts, a total of 23 art. 83 and art.60, with companies such as ALK-Abelló, Indoor Biotech, Genoma España, ASAC S.A, Inmunal, Probelte Pharma, Allergopharma and Allergy Therapeutics. Participation in the elaboration of the two Allergy Treaties published by the SEAIC, 2007 and 2015.

1. Alérgenos y anticuerpos específicos de estos alérgenos, *Allergy Therapeutics SL* 2023 IP: C. Pastor
2. *Allergy Therapeutics S.L.* venta de alérgenos. 2021 y 2022 IP Mayte Villalba 5000€/year
3. Suministro de 100 ug del alérgeno Ole e 1 purificando a partir del polen de olivo y 100 ul anticuerpo. *ASAC PHARMACEUTICAL IMMUNOLOGY, S.A.* (163-2019). Año 2019. IP: M Villalba.
4. Suministro de alérgenos purificados de los pólenes de olivo y Salsola. Empresa Financiadora: *ALK-Abelló*. Desde 2012 hasta 2013. 10.000€ IP: M Villalba.
5. Suministro de alérgenos purificados de los pólenes de olivo y Salsola, y de la especia mostaza. Administración Financiadora: *FIMABIS*. Artículo 83 Entidad: UCM. 2012. 5.000 euros. IP: M Villalba.
6. Transferencia de los clones que codifican Ole e 1. Empresa Financiadora: *Indoor Biotechnologies Limited*. Artículo 83 de la Ley Orgánica de Universidades. Año 2011. 6000€ IP: M Villalba.
7. Molecular and cellular mechanisms in Chronic Inflammatory and Autoimmune diseases (MEICA). *Genoma España*. Artículo 83. From: 1-01-2009 To: 31-12-2011. 180.960€ IP: MV.

Patents

DNA que codifica el alérgeno de mostaza amarilla (*Sinapis alba*) Sin a 3, y sus aplicaciones (N. de solicitud: 200900744). Rodríguez R, Villalba M, **Batanero E**, Palomares O & Sirvent S. País de prioridad: España. Fecha de prioridad: Marzo, 2009. Entidad titular: Universidad Complutense