

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

		CV date	3/11/2025
First name	Oscar		
Family name	Palomares Gracia		
Gender (*)	Male	Birth date	25/11/1977
ID number	52349049z		
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ORCID code	0000-0003-4516-0369		

A.1. Current position

Position	Associate Professor UCM (Profesor Titular de Universidad)		
Initial date	06/06/2018		
Institution	Universidad Complutense de Madrid (UCM)		
Department/Center	Biochemistry and Molecular Biology / School of Chemistry		
Country	Spain	Teleph. number	+34913944159
Key words	Allergy, asthma, food allergy, dendritic cells, epithelial cells, Tregs, therapeutic targets, vaccines, bacterial modulators, biologicals, AIT		

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

Period	Position/Institution/Country/Interruption cause
2011-continue	Invited Researcher/SIAF-Zürich University/Switzerland
2012-2018	RyC researcher/UCM/Spain
2010-2011	Assistant Professor / UCM / Spain
2008-2010	Postdoctoral researcher/SIAF-Zürich University/Switzerland
2006-2008	Assistant Professor/UCM/Spain
2005-2006	Postdoctoral researcher/UCM/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Biochemistry	School of Chemistry, UCM	2000
PhD in Biochemistry with European Mention, Extraordinary prize	School of Chemistry, UCM	2005

Part B. CV SUMMARY

Doctorate in Biochemistry with European mention (2005); Extraordinary Prize. Dpto. Bioquímica y Biología Molecular (BBM), UCM. Implementation of the component-resolved diagnosis (CRD) concept in allergy (11 publications, 8 as first author). **Postdoc and Assistant Professor at UCM (2006-08).** My main findings were the discovery of the first allergen from olive fruit involved in occupational allergy (*New Engl J Med*, 2008) and the identification of Sin a 2 as a major food allergen triggering anaphylactic reactions (*J Allergy Clin Immunol*, 2007). **Postdoctoral researcher (2008-10).** Swiss Institute of Allergy and Asthma Research (SIAF), Zurich University, Davos, Switzerland. We showed tonsils as organs where tolerance induction to allergens occur by generation of FOXP3⁺ Tregs and that viral factors break allergen-specific tolerance (*J Allergy Clin Immunol*, 2012 & 2013). These studies were recognized with the 2 most prestigious awards from the European and American Academies to young researchers: EAACI ("Allergopharma Award") and AAAAI ("Young Investigation Award").

Ramon y Cajal Scholar and Group Leader of the Vaccines and Dendritic Cells Lab. (Jan 2012- May 2018). In April 2010, I turned back to my position as Assistant Professor. In January 2012, I obtained a RyC contract at BBM, UCM. Since then, I have obtained public and private funding to create and consolidate an independent research group (www.oscarpalomaresgroup.com). **Associate Professor at BBM, UCM (June 2018- continue).** My lines of research are focus on the study of human DCs and ECs in allergy and other inflammatory conditions to identify novel therapeutic targets for the development of innovative vaccines. We have contributed to the better understanding on the role of cannabinoids in allergy: the CB1 mRNA and protein levels are upregulated in human tonsils and peripheral blood of allergic patients (*J Allergy Clin Immunol*, 2014; *Bioconjug Chem*, 2018), the synthetic cannabinoid WIN55212-2 generates human tolerogenic DCs via autophagy and metabolic reprogramming (*Mucosal Immunol*, 2022), impairs peanut allergic sensitization *in vivo* (*Clin Exp Allergy*, 2022), suppress inflammatory tonsil T cells (*Allergy*, 2022), reprogram monocytes and macrophages to inhibit inflammation (*Front Immunol*, 2023) and restore viral- and type 2-mediated epithelial bronchial damage (*J Allergy Clin Immunol*, 2025). I was invited to write an editorial on the potential of cannabinoids as therapeutic tools for asthma (*Exp Rev Clin Immunol*, 2023). We also demonstrated that allergoid-mannan conjugates are next generation vaccines targeting DCs promoting tolerance to allergens via metabolic and epigenetic rewiring (*J Allergy Clin Immunol*,



2016 & 2022; Allergy, 2020), which are currently on Phase III RCTs. Regarding biologicals, we showed that omalizumab and ligelizumab, anti-IgE mAbs for asthma, CRSwNP & CSU, restore the capacity of pDCs to generate Tregs (*Eur Resp J, 2021; Allergy 2023; Allergy 2025*). We also elucidate the mode of action of mucosal bacterial vaccines for recurrent respiratory (MV130) and genitourinary tract (MV140) infections. These vaccines act on DCs enhancing their capacity to polarize proper T cell responses and also induce innate trained immunity (*Mucosal Immunol, 2017; Eur J Immunol, 2018; Front Immunol, 2021 & 2022; Nat Commun 2025*). Our findings contributed to set up the concept of trained-immunity based vaccines for infections and allergy (i.e. *J Allergy Clin Immunol, 2024; Allergy, 2024*). In cancer, we have shown that a novel tumor-associated heparan sulfate promotes Tregs generation, which may open new avenues of research to improve immunotherapy (*Cell Mol Immunol, 2023*).

My work generated **166 publications** in world leading peer-reviewed international journals, **10 book chapters and 4 patents**. I have directed **8 Doctoral Thesis** and supervised **8 postdocs**. I have been **PI of 9 public projects** and **11 research contracts** (Inmunotek, Novartis & AstraZeneca). I gave more than **100 invited conferences** in congresses and prestigious centers and **organized 35 international congresses**. Our network of **national/international collaborators** will be of utmost important for this proposal (see memory). We also keep ongoing collaborations with Dr. Real (CNIO), Drs. Netea & Domínguez (Radboud Univ, Holland), Rebane (Tartu Univ, Estonia), Sánchez-Ramón and Taxonera (HCSC, Spain). I am the Vice-President of Science of EAACI (elected for 2024-26) and Editor-in-Chief of EAACI Knowledge Hub. I have **co-authored 19 EAACI Task Forces** and **co-chaired the elaboration of Clinical Guidelines on the use of biologicals in allergic diseases** (shared last authorship in 7 systematic reviews and 4 clinical guidelines published in *Allergy*). I participated in **highly cited reviews** related to our research (last 3 years: *JACI, 2024; Allergy, 2024; Nat Rev Drug Discov, 2023; or Allergy, 2022*). In June 2021, I received the **EAACI PhARF award** in recognition to my scientific trajectory and key contributions to the field of Allergy. In November 2023, I obtained the accreditation to **Full Professor** by ANECA.

Part C. RELEVANT MERITS

C.1. Selected PUBLICATIONS in the last 5 years as lead PI (*last senior & corresponding author). IF: Impact factor, publication year; **Q1**: quartile 1; **D1**: decil 1 in JCR category.

1. Sevilla-Ortega C, Angelina A, Martín-Cruz L, Pérez-Diego M, Maldonado A, Lavín B, Marcos-Ramiro B, Pérez de Llano L, Gayá A, Real FX, Conejero L, Subiza JL, **Palomares O***. A mucosal vaccine prevents eosinophilic allergic airway inflammation by modulating immune responses to allergens in a murine model of airway disease. *Nat Commun* 2025; 3;16(1):7129. IF: 15.7, D1 (10/137, Multidisciplinary Science).
2. Pérez-Diego M, Angelina A, Pat Y, Maldonado A, Sevilla-Ortega C, Martín-Cruz L, Yazici D, Rückert B, Sokolowska M, Martín-Fontecha M, Akdis M, Akdis CA, **Palomares O***. Cannabinoid WIN55,212-2 restores bronchial epithelium by regulating oxidative stress and STAT6 phosphorylation. *J Allergy Clin Immunol* 2025; 16:S0091-6749(25)00551-2. IF: 11.2, D1. (11/184, Immunology).
3. de la Rocha-Muñoz A, Benito-Villalvilla C, Olivares D, Sirvent S, García-Brenes MA, Angelina A, Martín-Cruz L, Cuesta J, Tassinari P, Jaumont X, Taxonera C, **Palomares O***. The Role of IgE in Crohn's Disease by Impairing the Capacity of Plasmacytoid Dendritic Cells to Generate FOXP3+ Tregs. *Allergy* 2025; doi: 10.1111/all.16517. IF: 12.6, D1.(9/184, Immunology).
4. Martín-Cruz L, Benito-Villalvilla C, Angelina A, Subiza JL, **Palomares O***. Trained Immunity-based vaccines for infections and allergy. *J Allergy Clin Immunol*. 2024. 154:1085-1094. IF: 11.4, D1 (11/181, Immunology).
5. Martín-Cruz L, Viñuela M, Kalograiaki I, Angelina A, Oquist-Phillips P, Real-Arévalo I, Cañada FJ, Tudela JI, Moltó L, Moreno J, Subiza JL, **Palomares O***. A tumor-associated heparan sulfate-related glycosaminoglycan promotes the generation of functional regulatory T cells. *Cell Mol Immunol*. 2023. 20:1499-1512. IF: 21.8, D1 (5/181, Immunology).
6. Kolkhir P, Akdis CA, Akdis M, Bachert C, Bieber T, Canonica GW, Guttman-Yassky E, Metz M, Mullol J, **Palomares O**, Renz H, Ständer S, Zuberbier T, Maurer M. Type 2 chronic inflammatory diseases: targets, therapies and unmet needs. *Nat Rev Drug Discov*. 2023. 22:743-767. IF: 122.7, D1 (1/354, Pharmacology).
7. Benito-Villalvilla C, de la Rocha A, López J, Eggel A, Bottoli I, Severin T, Woisetschläger M, **Palomares O***. Ligelizumab impairs IgE-binding to plasmacytoid DCs more potently than omalizumab and restores IFN- α production and FOXP3+ Treg generation. *Allergy*. 2023. 78:1060-1072. IF: 12.6, D1 (10/181, Immunology).
8. Angelina A, Pérez-Diego M, López-Abente J, Rückert B, Nombela I, Akdis M, Martín-Fontecha M, Akdis C, **Palomares O***. Cannabinoids induce functional Tregs by promoting tolerogenic DCs via autophagy and metabolic reprogramming. *Mucosal Immunol*. 2022. 15:96-108. IF: 8.0, Q1 (29/181, Immunology).
9. Benito-Villalvilla, C., Pérez-Diego, M., Angelina, A., Kisand, K., Rebane, A., Subiza, J. L., **Palomares, O***. Allergoid-mannan conjugates reprogram monocytes into tolerogenic DCs via epigenetic and metabolic rewiring. *J Allergy Clin Immunol*. 2022. S0091-6749(21)00968-4. FI: 14.2, D1 (11/181, Immunology).



10. López-Abente J, Benito-Villalvilla C, Jaumont X, Pfister P, Tassinari P, **Palomares O***. Omalizumab restores the ability of human plasmacytoid dendritic cells to induce Foxp3⁺Tregs. *Eur Respir J.* 2022. 57(1):2000751. FI: 24.9, D1 (2/66, Respiratory System).

C.2. Selected contributions (10) as invited speaker to relevant CONGRESSES in the last 4 years.

1. Invited speaker "EAACI summer symposium on Epithelial Cell Biology", (Davos, 25-26/07/2024).
2. Invited speaker "International Severe Asthma Forum (ISAF)", (Rome, 5-7/10/2023).
3. Invited speaker "XVII World Immune Regulation Meeting (WIRM)", (Davos, 5-8/07/2023).
4. Invited speaker "23rd Annual Meeting of the FOCIS 2023", (Boston, 20-23/06/2023).
5. Invited speaker "XLII Annual EAACI Congress", (Hamburg, 9-11/06/2023).
6. Invited speaker "ERS research Seminar: Preventing asthma" (Berlin, 17-18/04/2023).
7. Invited speaker "World Allergy Congress 2022" (Istanbul, 13-15/10/2022).
8. Invited speaker for EFIS-IL Lecture Award "2022 DGfi & ÖGAI" (Hannover, 7-10/09/2022).
9. Invited speaker "LIV Congreso anual de la SEPAR" (Sevilla, 4-6/11/2021).
10. Invited speaker "XXXIII Congreso anual de la SEAIC" (Zaragoza, 20-23/10/2021).

C.3. Selected competitive RESEARCH PROJECTS (7) as lead PI active in the last 10 years

1. Ref: PID2024-156862OB-I00. "Nuevos conocimientos en inmunomodulación inducida por cannabinoides: hacia nuevas vacunas basadas en cannabinoides para modificar las enfermedades alérgicas". Ministerio de Ciencia, Innovación y Universidades (MICIU). Participation: **Principal Investigator**. Start and end dates: **01/09/2025 to 30/05/2028**. Total cost (euros): **337.500**.
2. Ref: CPP2024-011282. "Desarrollo avanzado y validación clínica de sistemas de diagnóstico y pronóstico del cáncer basados en Ca10 (CA10ADVANCE)". Ministerio de Ciencia, Innovación y Universidades (MICIU). Participation: **Principal Investigator**. Start and end dates: **01/01/2026 to 31/12/2028**. Total cost (euros): **358.869**.
3. Ref: CPP2023-010425. "Análisis del potencial antiinflamatorio de MV130: un enfoque prometedor contra el asma y la enfermedad inflamatoria intestinal (THERMVAB)". Ministerio de Ciencia, Innovación y Universidades (MICIU). Participation: **Principal Investigator**. Start and end dates: **01/01/2025 to 31/12/2027**. Total cost (euros): **511.155**.
4. Ref: PID2020-114396RB-I00. "Cannabinoides y mecanismos moleculares implicados en la regulación de células dendríticas y epiteliales humanas: Nuevas estrategias basadas en cannabinoides para la alergia". Ministerio de Ciencia e Innovación (MCIIN). Participation: **Principal Investigator**. Start and end dates: **01/09/2021 to 30/05/2025**. Total cost (euros): **275.000**.
5. Ref: RTC2019-007097-1. "Nuevas vacunas contra alergias alimentarias". Retos Colaboración. Ministerio de Ciencia, Innovación y Universidades. Participation: **Principal Investigator**. Start and end dates: **01/01/2019 to 31/12/2024**. Total cost (euros): **435.137**.
6. Ref: IND2019/BMD-17182. "Estudio de los mecanismos moleculares asociados a la inmunomodulación de vacunas bacterianas en asma alérgica." Comunidad de Madrid (CAM). Ayudas destinadas a la realización de doctorados industriales. Participation: **Principal Investigator**. Start and end dates: **01/01/2020 to 31/12/2022**. Total cost (euros): **87.500**.
7. Ref: SAF2017-84978-R. "Cannabinoides y reprogramación metabólica en células dendríticas humanas: Nuevas terapias para la prevención y tratamiento del asma grave". Participation: **Principal Investigator**. Ministerio de Economía y Competitividad (MINECO). Start and end dates: **01/01/2018 to 31/12/2020**. Total cost (euros): **205.700**.

C.4. Contracts, technological or transfer merits

Selected research projects with companies (9) as lead PI active in the last 10 years.

1. Ref: Art. 83. 4195602_424/2023. "A phase I/II randomized, prospective, double-blind, placebo controlled, single-centre study to evaluate the ability of sublingual MV130 to induce the expression of trained immunity in peripheral blood cells". Company: **Inmunotek S.L.** Total cost (in euros): **197.230**. Start and end dates: **20/07/2023 to 20/01/2026**. Principal Investigator: **Oscar Palomares**.
2. Ref: Art. 83. 4195207_584-2022. "Study of the capacity of TSLP to promote metabolic & epigenetic reprogramming in human DCs subsets and their functional consequences in the development of pathological immune responses". Company: **AstraZeneca**. Total cost (in euros): **159.500**. Start and end dates: **30/11/2022 to 30/11/2025**. Principal Investigator: **Oscar Palomares**.
3. Ref: Art. 83. 4158287_137/2021. "In vitro assessment of the capacity of omalizumab to generate Treg cells in patients with Crohn's disease". Company: **Novartis Pharma AG**. Total cost (in euros): **147.396**. Start and end dates: **12/05/2021 to 15/10/2024**. Principal Investigator: **Oscar Palomares**.



4. Ref: Art. 83. 4157786_140/2020. "Study of the potential stronger capacity of ligelizumab to induce functional regulatory T (Treg) cells in comparison to omalizumab".
Company: **Novartis Pharma AG.** Total cost (in euros): **145.200.**
Start and end dates: **27/05/2020 to 27/11/2023.** Principal Investigator: **Oscar Palomares.**
5. Ref: Art. 83. 4156705_414/2017. "Study of the capacity of omalizumab to promote the induction of functional regulatory T (Treg) cells in comparison to corticosteroids".
Company: **Novartis Pharma AG.** Total cost (in euros): **130.438.**
Start and end dates: **01/04/2018 to 31/12/2020.** Principal Investigator: **Oscar Palomares.**
6. Ref: Art. 83. 4156611_272/2017. "Inmunomoduladores bacterianos y fúngicos: efectos en células del sistema inmunológico de pacientes con vulvovaginitis candidiásica recurrente".
Company: **Inmunotek S.L.** Total cost (in euros): **34.485.**
Start and end dates: **30/09/2019 to 06/02/2021.** Principal Investigator: **Oscar Palomares.**
7. Ref: Art. 83. 4155462_223/2014. "Estudio de los mecanismos inmunológicos inducidos por nuevas vacunas para el tratamiento de la alergia en células dendríticas humanas".
Company: **Inmunotek S.L.** Total cost (in euros): **93.073.**
Start and end dates: **01/01/2015 to 20/05/2017.** Principal Investigator: **Oscar Palomares.**
8. Ref: Art.83. 4153049_132/2013. "Determination of medium and long chain free fatty acids in plasma from healthy subjects and asthmatic patients".
Company: **SIAF Davos, Switzerland** Total cost (in euros): **67.272.**
Start and end dates: **01/04/2014 to 31/12/2016.** Principal Investigator: **Oscar Palomares.**
9. Ref: Art. 83 4154605_138/2013, 24/2013. "Estudios fenotípicos y funcionales inducidos por nuevas vacunas en células dendríticas humanas"
Company: **Inmunotek S.L.** Total cost (in euros): **127.772.**
Start and end dates: **01/09/2012 hasta 31/12/2014.** Principal Investigator: **Oscar Palomares.**

3 active patents in the last 5 years.

- Inventors:* Subiza JL, Tudela JI, Moltó M, Fernández M, Viñuela M, Cañadas FJ, Kalograiaki I, **Palomares O**, Martín-Cruz L, Angelina A. *Title:* An *in vitro* method for detecting cancer. *Reference #:* EP23383183.3. *Priority country:* EU. *Entity:* Inmunotek, S.L. and Fundación Investigación HCSC. *Date:* 20/11/2023.
- Inventors:* **Palomares O**, Jaumont X, Tassinari, P, Pfister P. *Title:* methods of treatment using omalizumab. *Reference #:* EP19197285A. *Priority country:* EU. *Entity:* Transferred to Novartis Pharma AG. *Date:* 13/09/219.
- Inventors:* **Palomares O**, Jaumont X, Tassinari, P, Pfister P. *Title:* methods of treatment using omalizumab. *Reference #:* WO2021/048678A1. *Priority country:* Rest of the world. *Entity:* Transferred to Novartis Pharma AG. *Date:* 18/03/2021.

8 Educational/knowledge transfer activities as director/professor and Editor-in-Chief in the last 8 years

- **Co-director and professor:** First "Título de Experto Universitario" created in Spain in "*Inmunología e inmunoterapia de las enfermedades alérgicas*" by **UCM** in collaboration with **Inmunotek**. Curses 2022-23, 2023-24 and 2024-25. Directed to allergists specialized in AIT.
- **Director and professor:** "Alarminas epiteliales y papel de TSLP: Desde la investigación básica hasta la aplicación clínica en asma grave": 5 sessions (January 2023-December 2023) directed to pulmonologists and allergists. Organized by **UCM** in collaboration with **AstraZeneca**.
- **Director and professor:** "Alarminas epiteliales y papel de TSLP: Desde la investigación básica hasta la aplicación clínica en asma grave": 3 sessions (April 2022-December 2022) directed to pulmonologists and allergists. Organized by **UCM**, sponsored by **AstraZeneca**.
- **Director and professor:** "Foro MIDAS: Mecanismos Inmunológicos en Dermatitis Atópica": 4 sessions (March 2022-December 2022) directed to dermatologists & allergists. Organized by **UCM**, sponsored by **Sanofi-Genzyme**.
- **Director and professor:** "Escuelas inmunidad T2: papel de la IL-4 e IL-13 en enfermedades tipo 2": 10 sessions (January 2021-March 2022) directed to dermatologists, pulmonologists, ENTs & allergists. Organized by **UCM**, sponsored by **Sanofi-Genzyme**.
- **Director and professor:** "Papel de la IL-4 e IL-13 en dermatitis atópica": 13 sessions (September 2018-September 2020) directed to dermatologists & allergists. Organized by **UCM**, sponsored by **Sanofi-Genzyme**.
- **Co-director and professor:** "Inmunoterapia específica de alérgenos: desde Leonard Noon hasta las nuevas vacunas dirigidas a células dendríticas". Organized by **UCM** and sponsored by **Inmunotek S.L.** 20 sessions directed to allergists and pediatricians (June 2017-September 2019).
- **Editor-in-Chief of EAACI Knowledge Hub** (<https://hub.eaaci.org/>). January 2022-Continue.