

CURRICULUM VITAE (CVA)

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Part A. PERSONAL INFORMATION

		CV date	04/01/2025
First name	Younes		
Family name	Smani		
Gender (*)	Male	Birth date (dd/mm/yyyy)	
Social Security, ID number			
e-mail			
Open Researcher and Contributor ID (ORCID) (*)			

(*) Mandatory

A.1. Current position

Position	Professor		
Initial date	17/01/2022		
Institution	University of Pablo de Olavide (UPO)		
Department/Center	Microbiology	Andalusian Centre for Developmental Biology (CABD)	
Country	Spain	Teleph. number	
Key words	Bacterial infections, antimicrobial resistance, treatment		

A.2. Previous professional status

Period	Position/Institution/Country/Interruption cause
2021-2022	Miguel Servet II, Institute of Biomedicine of Seville, Spain (cause of the interruption: I got a Professor position)
2016-2021	Miguel Servet I, Institute of Biomedicine of Seville, Spain

A.3. Education

PhD	University/Country	Year
Drugs Sciences	Henri Poincaré University, Nancy, France	2006

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

I have a broad background in antimicrobial resistance, bacterial virulence and treatments, with specific training and expertise in molecular and cellular biology and in animal models of infection. During my doctoral studies, I investigated patterns of hemoglobin-based oxygen carrier (HBOC) side effects, and the interaction between HBOC and vascular reactivity mechanisms. As postdoc my research centered on the pathogenicity of Gram-negative bacilli (GNB), especially the study of cellular and molecular mechanisms involved in their interaction with host cell. I have also developed new projects resulting in the identification of new virulence factors of GNB, and the development of inhibitors that block these virulence factors, as a non-antimicrobial approach for multidrug-resistant bacteria therapy. In 2016 and 2021 I got Miguel Servet tipo I (MSI) and tipo II (MSII) grants (ISCIII) in the Institute of Biomedicine of Seville (IBiS) where I develop my research lines focused in the bacterial pathogenesis, new antimicrobial resistance mechanisms and antimicrobial and repurposing drugs treatment. Since 2022 I got a **Professor** position in the UPO and PI in the CABD where I continue with the development of my research lines. My research has been always interdisciplinary (infectious diseases, microbiology, molecular and cellular biology), and highly collaborative. My research activity thus far has resulted in successful funding of grants and projects, and the establishment of a network of collaborators worldwide. I have produced **76 publications**, 55 as first or last and/or corresponding author. My International experience is remarkable including **two post-doctoral stays**: one year at Nancy University (France), and 8 years postdoc at IBiS (Spain). In terms of Research projects, I have participated so far in **32 research projects** (EU OPENSURE, COST ACTION, FP7, JPIAMR, CYTED, ISCIII, AEI, Junta de Andalucía, UPO). I have been **PI in 18 research projects**, 5 internationals and 13 nationals. Since I started my research career in 2003, I have competed successfully and being awarded

by several regional and national research societies and governmental entities (SAEI, SEIMC, ISCIII). I got a REIPI postdoctoral Fellowship (ISCIII), as well as **MS I** and **MS II**. I am **member of the evaluation panel** of international (eCOST, EUREKA, EUROSTART, INNOWIDE, Innovation Fund Denmark, JPIAMR, UK Research & Innovation, ESCMID, Poland National Science Centre), national (ANEP, Cidi-Salud, European Quality Assurance, Fundación Profesor Nova Santos) and regional (Comunidad de Madrid, Junta de Andalucía) agencies. I am **Associate Editor** in Front. Pharmacol. and **Guest-Editor** in 7 different Research Topics and Special Issues in Front. Pharmacol., Front. Microbiol. and Antibiotics, and **Referee** for more than 200 articles in 48 different journals. In addition, I have reviewed different international communications (11th Int. Symp. of the Biology of *Acinetobacter* “ISBA”; ESCMID Conference on Coronavirus Disease 2020, 31st and 32nd ECCMID). In terms of **communicating research**, my contributions include 23 invited talks and >100 oral communications and posters in national and international congress. In terms of **organization and management**, I am the Director of the Cellular Biology and Biotechnology Department of the CABD (since 2023). I am member of the “Junta de Centro” of the CABD (since 2022). I have been member of **IBiS Scientific Board** (2017-22), member of **Spanish Network in Infectious Diseases** (2007-21), **CIBER of Infectious Diseases** (2022) and **PAI group** (Plan Andaluz de Investigación, since 2007), member of Ethical Commission for Experimentation with Genetically Modified Organisms and Biological Agents in Pablo de Olavide University (2021-24), member of the **Organized Committee** of the 11th ISBA (Seville, 2017) and the 3rd meeting of the CA21145 (Seville, 2025), **moderator in Scientific Congress** (27th ECCMID, Vienna 2017; XVI Foro de Investigadores of IBiS, Seville 2020), **scientific manager** of the IBiS Hypoxia Chamber Facility (2015-22), **coordinator of the seminars** of the IBiS Infectious Diseases Area (2018-22), **national ambassador** of the Reviewer Credits (Since 2018). In 2024, I have been nominated by the Vice-Rector for Research, Transfer and Doctorate of the UPO, as **candidate for membership of the Group of Chief Scientific Advisors to the European Commission**. In relation to **scientific dissemination in social networks**, I am member of “Grupo de *Divulgadores Científicos en twitter*” of the SEIMC (2021-2022) and Speed Dating of CAIXA FORUM (2023-24). In mentoring, I am supervising **3 PhD students** and I have supervised **6 PhD theses** (2017-24). One of them have obtained the “**Premio Extraordinario de Doctorado**” from Seville University (2019). Currently, these 6 PhDs are continuing their research carriers as postdoc in BioTech (Norten Biotechnology, LeitTAT Managing Technology) and in Academia (*Institut Hospital del Mar d’Investigacions Mèdiques*, Hospital Virgen del Rocío of Seville). In addition, I have directed 18 MSc theses, and 10 undergraduate Projects. Finally, I have registered **4 Patents**, and **co-founded a Spin-off** for antibacterial compounds development.

Part C. RELEVANT MERITS

C.1. Publications. List includes a selection of 10 out of 76 full list is available in <https://pubmed.ncbi.nlm.nih.gov/?term=smani+y&sort=date>. **CA:** corresponding author.

1. Boulaamane Y, et al., **Smani Y (CA)**. (8/8). 2024. Antibiotic discovery with artificial intelligence for the treatment of *A. baumannii* infections. **mSystems** 9:e0032524. IF: 5-Q1.
2. Gálvez-Benítez L, de la Rosa JMO, et al., **Smani Y (CA)**. (12/12). 2023. Role of *bla*_{TEM} and *OmpC* in the piperacillin-tazobactam resistance evolution by *E. coli* in patients with complicated intra-abdominal infection. **J. Infect.** 87: 220-9. IF: 28.2-D1.
3. Rodríguez Villodres A, et al., **Smani Y (CA)**. (8/8). 2022 Ultrasensitive and rapid identification of ESRI developer- and piperacillin/tazobactam-resistant *Escherichia coli* by the MALDIptaz test. **Emerg. Microbes Infect.** 2022 11:2034-44. IF: 13.2-D1.
4. Miró-Canturri A, Vila-Domínguez A, Carretero-Ledesma M, Ayerbe-Algaba R, Pachón J, Jiménez-Mejías ME, **Smani Y (CA)**. (7/7). 2021. Repurposing of the tamoxifen metabolites to treat methicillin-resistant *Staphylococcus epidermidis* and vancomycin-resistant *Enterococcus faecalis* infections. **Microbiol. Spectr.** 9: e0040321. IF: 9.073-Q1.
5. Rodríguez-Villodres Á, Gutiérrez Linares A, Gálvez-Benítez L, Pachón J, Lepe JA, **Smani Y (CA)**. (6/6). 2021. Semirapid detection of piperacillin/tazobactam resistance and extended-spectrum resistance to β -lactams/ β -lactamase inhibitors in clinical isolates of *Escherichia coli*. **Microbiol. Spectr.** 9: e0080121. IF: 9.073-Q1.
6. Rodríguez-Villodres Á, Gil-Marqués ML, Álvarez-Marín R, et al, **Smani Y (CA)**. (11/11). 2020. Extended-spectrum resistance to β -lactams/ β -lactamase inhibitors evolved from low-level resistant *Escherichia coli*. **J. Antimicrob. Chemother.** 75:77-85. IF: 5.79-D1.

7. Parra-Millán R, Vila-Farrés X, Ayerbe-Algaba R, et al, **Smani Y (CA)**. (13/13). 2018. Synergistic activity of an OmpA inhibitor and colistin against colistin-resistant *Acinetobacter baumannii*: mechanistic analysis and in vivo efficacy. **J. Antimicrob. Chemother.** 73(12):3405-12. IF: 5.113-D1.
8. Vila-Farrés X, Parra-Millán R, Sánchez-Encinales V, et al, **Smani Y (CA)**. (15/15). 2017. Combating virulence of Gram-negative bacilli by OmpA inhibition. **Sci. Rep.** 7:14683. IF: 4.847-Q1.
9. Pachón-Ibáñez ME, **Smani Y[#]**, Pachón J, Sánchez-Céspedes J. Perspectives for clinical use of engineered human host defense antimicrobial peptides. **FEMS Microbiol. Rev.** 2017;41(3):323-42. IF: 11.392-D1. # co-first author.
10. Sánchez-Encinales V, Álvarez-Marín R, Pachón-Ibáñez ME, et al, Pachón J (CA), **Smani Y**. (14/14). 2017. Overproduction of outer membrane protein A by *Acinetobacter baumannii* as a risk factor for nosocomial pneumonia, bacteremia, and mortality rate increase. **J. Infect. Dis.** 215(6):966-74. IF: 5.186-D1.

C.2. Congress List includes a selection of 10 out of 23 invited conferences.

1. Innovative antimicrobial strategy for the treatment of MDR bacterial infection. International Bioinformatics Conference IBC'2023; Tangier, Morocco, 2023.
2. Innovative antimicrobial strategy for the treatment of MDR bacterial infection. COST ACTION CA21145; Lisboa, Portugal, 2022.
3. *Acinetobacter baumannii* infections: new targets and new treatment strategies. Instituto de Investigación Biomédica de Cádiz, Cadiz, Spain, 2021.
4. Infections by multidrug-resistant bacteria: new strategies for prevention and treatment. II-Reunión Académica de la Red para la "Búsqueda y Desarrollo de Péptidos Antivirales y Antimicrobianos para cepas Multirresistentes", Mexico, Mexico, 2020.
5. Anti-Virulence drugs. B-Debate "Reversing a dystopian future. New strategies to discover antibacterial agents". CosmoCaixa Barcelona, Spain, 2019.
6. Infección por bacterias multirresistentes: nuevas dianas y nuevas estrategias de prevención y tratamiento. Instituto de Parasitología y Biomedicina López Neira. Grenade, Spain, 2018.
7. Estrategias para el diseño de nuevos antimicrobianos. 1era Escuela de Verano de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC). Barcelona, Spain, 2018.
8. Non-antimicrobial strategies for the prevention and treatment of infections by multidrug-resistant GNB. 11th Int. Symposium on the Biology of *Acinetobacter*, Seville, Spain, 2017.
9. Biostars. The Startups Accelerator. Oxford Biotech. Oxford, United Kingdom, 2016.
10. Role of oxy-radicals and endothelin in HBOC-mediated vasoconstriction. XIth International Symposium on Blood Substitutes, Vasoactivity Forum, Beijing, China, 2007.

C.3. Research projects (1,715,607€ of competitive funding as PI and 710,918€ of competitive Human Resources recruitment in the last 10 years)

1. European Network for diagnosis and treatment of antibiotic-resistant bacterial infections (2022-26). Ref. CA21145; 400.000€; COST ACTION, Europe. **WG2 leader**.
2. Estrategia antimicrobiana innovadora para el tratamiento de infecciones por bacterias multirresistentes (2023-26). Ref. PID2022-136357OB-100; 140.000€; AEI. **PI**.
3. Validación de un modelo celular de interacción patógeno-huésped basado en células iPSCs para el cribado de fármacos que bloquean esta interacción (2022-25). Ref. ProyExcel_00116; 175.869€; Junta de Andalucía. **PI**.
4. Estudio de interacción patógeno-huésped (2024-25). Ref. PPI2405; 12.000€. VI Plan Propio UPO. **PI**.
5. Fosfolipasa A2 y factor de transcripción EB (TFEB): Papel en la interacción patógeno-huésped y posibles dianas terapéuticas (2023-24). Ref. PPI2303; 4.000€; UPO. **PI**.
6. Estudio clínico y microbiológico del impacto del tratamiento con piperacilina/tazobactam (P/T) en pacientes con infecciones intraabdominales por *Escherichia coli* portadores de beta-lactamasas (2020-22). Ref. PI19/01009; 93,170€, ISCIII. **PI**.
7. Red temática para el desarrollo de péptidos antimicrobianos para cepas multirresistentes(2019-22). Ref. 219RT0573; 80,000€. Programa Iberoamericano de Ciencia y Tecnología para el Desarrollo (CYTED). **PI of WP2**.

8. Análisis epidemiológico, microbiológico y clínico del brote de listeriosis de Andalucía. Estudio LISMOAN (2020-22). Ref. PI-0001-2020; 114,954€. Consejería de Salud y Familias, Junta de Andalucía. **co-PI of WP2.**
9. Stem cells of marine/aquatic invertebrates: from basic research to innovative (2017-20). Ref. CA16203; 186,500€. COST ACTION, Europa. **co-PI of WP4.**
10. Eficacia terapéutica de la oxiclozanida como terapia combinada con colistina *in vitro* y en modelos experimentales murinos de infecciones graves (2017-19). Ref. PI16/01378; 64,735€, ISCIII. **PI.**
11. Overexpression of OmpA as a risk factor for mortality in bacteremia by *E. coli* and *K. pneumoniae* (2016-18). Ref. CP15-00132; 121,500€, ISCIII. **PI.**
12. Eficacia terapéutica de la lisofosfatidilcolina como terapia combinada con antibióticos en modelos experimentales murinos de infecciones graves (2014-16). Ref. PI13/01744; 67.155€. ISCIII. **co-PI.**
13. Estudio de la eficacia terapéutica de los inhibidores de OmpA en modelos murinos de infección por *A. baumannii* multiresistente y panresistente (2013-15). Ref. PI-0069; 52,496.50€. Junta de Andalucía. **PI.**
14. Caracterización de la respuesta inflamatoria inducida por *A. baumannii* y eficacia terapéutica de la lisofosfatidilcolina en modelos murinos de infección por este patógeno nosocomial (2011-15). Ref. CTS/6317; 203,227.50€. Junta de Andalucía. **co-PI.**
15. Cell interactions in microbial communities “Ayudas para contratos predoctorales para la formación de doctores” (A. Moreno Rodríguez. 2023-26). Ref. CEX2020-001088-M-20-5; 111.758€, AEI. **PI.**
16. Ayuda B2 “Ayudas para Investigación Tutorizada” (C. Atalaya Rey 2023-24). Ref. PPI2205; 21.760€; UPO. **PI.**
17. Contrato pFIS (A. Vila, 2021-24). Ref. FI20/00160; 82,400€, ISCIII. **PI.**
18. Contrato MSII (2021-23). Ref. CPII20/00018; 195,000€. ISCIII. **PI.**
19. Contrato MSI (2016-20). Ref. CP15-00132; 300,000€. ISCIII. **PI.**

C.4. Contracts, technological or transfer merits

Contracts

1. Screening of the antibacterial activity of 2500 diverse compounds (2020-2021). Ref. PID12737, EU-OPENSREEN, EU. **PI.**
2. Detection of piperacillin-tazobactam-resistant *Escherichia coli* using MALDI-TOF mass spectrometry (2020-22). Clover Bioanalytical Software. **PI.**
3. Determinar las concentraciones y los parámetros PK/PD de P/T en el líquido peritoneal y en sangre después de la administración prolongada de P/T en pacientes sometidos a cirugía abdominal (2020-22). Ref. FIS-PIP-2020-22, FISEVI. **PI.**
4. *In vivo* studies of Ceragenin (CSA-97) and its derivatives against colistin-resistant Gram negative bacteria (2014-15). 67.687,50 €. N8 Medical, Inc. PI: J. Pachón.
5. Efficacy of ceftaroline vs. vancomycin in the treatment of experimental foreign body infection by methicillin-resistant *S. epidermidis* (2013). 48.300 €. AstraZeneca. PI: J. Pachón.

Patents

1. Nuevos derivados útiles como agentes antibacterianos. C. Gil, A. Martínez, **Y. Smani**. Ref. PCT/P202330628. 2024. UPO and CSIC.
2. Desarrollo de un sistema de detección rápida de resistencia de espectro extendido a los betalactámicos en combinación con inhibidores de betalactamasas. **Y. Smani**, Á. Rodríguez Villodres, JA. Lepe, J. Pachón. Ref. PCT/EP2020/070406. 2020. Servicio Andaluz de Salud y Univ. Sevilla.
3. Péptidos anti-proteína de la membrana externa A para el tratamiento de las infecciones causadas por patógenos Gram negativos. **Y. Smani**; J. Pachón, E. Giralt, M. Teixidó, N. Bayó, J. Vila, X. Vila. Ref. PCT/EP2015/072166. 2015. SAS, Fundació Institut De Recerca Biomédica, Hospital Clinic De Barcelona, IDIBAPS, Univ. Sevilla, Univ. Barcelona.
4. Uso de lisofosfatidilcolina como tratamiento profiláctico frente a infección nosocomial causada por *Acinetobacter baumannii*. **Y. Smani**; J. Pachón. Ref. P201331715. España, 2015. Hospital Virgen del Rocío, FISEVI.
5. Spin-Off DrugID BioTech, S.L. **Y. Smani**; J. Sánchez; ME. Pachón; S. Arriaza; C. García; O. Peces; JC. Rubio; D. Meron. Ref. B90252701. España, 2016.