


<b>Part A. PERSONAL INFORMATION</b>		<b>CV date</b>	02/04/2026
First and Family name	Jesús Fernández Lucas		
Age	45		
Researcher codes	WoS Researcher ID	IYS-9070-2023	
	SCOPUS Author ID	6505498701	
	ORCID ID	0000-0001-7045-8306	

### **A.1. Current positions**

University/Institution	Universidad Complutense de Madrid, UCM (SPAIN)		
Department	Department of Biochemistry and Molecular Biology		
Phone number	+34 913944150	E-mail	<a href="mailto:jesusf08@ucm.es">jesusf08@ucm.es</a>
Current position	Associate professor	From	16/12/2014
Key words	Biocatalysis, enzymology, enzyme immobilization, bioinformatics		

### **A.2. Education**

PhD	University	Year
European PhD. in Pharmacy	Universidad Complutense de Madrid, UCM	2008
Degree in Chemistry	Universidad Autónoma de Madrid, UAM	2002

### **A.3. JCR articles, h Index, thesis supervised...**

- \* **Scientific publications:** 96 (83 indexed art., 45 in top journals). 40 as correspond. author, 14 as first, and 37 as last author. 2 conference papers, 4 Patents, 6 chapters, 1 edited book.
  - Citations: WOS (1634), SCOPUS (1867), GOOGLE SCHOLAR (2486)
  - H index: SCOPUS (25); WOS: (23); Google. Schol (29)
- \* **Projects:** PI 3 competitive/10 non-competitive projects. Participant 12 national/1 international (EU) competitive projects.
- \* **Research congresses:** 40 national/international (8 oral com)
- \* **Director of the Master's in Indust. Environm. Biotechnol. (UCM)**
- \* **Supervised theses:** 4 Phd, 6 Msc.
- \* **Scientific advisor for pharma companies.**
- \* **Editor in chief** at *AMB Express*, associate editor at *International Journal of Biological Macromolecules*
- \* **Awards and other merits:** PhD Award, UEM Research Award (2015/2018), Elsevier/Stanford Top 2% Scientist (2022/2025).
- \* **External evaluator of projects:** Plan Nacional I+D (Spain), UKRI (UK), DFG (Germany).

## **Part B. CV SUMMARY**

Chemist (UAM) with a Master Degree in Pharmacy. PhD in Pharmacy (2008 UCM, awarded *summa cum laude* and *PhD award UCM*) focused on the development of bioprocesses for the synthesis of APIs using immobilized enzymes. Several Phd and postdoc stages (Institute Pasteur; CBSMO-UAM), to deep into the role of salvage enzymes in metabolism. Founder and head of the "Applied Biotechnology Group" at the Universidad Europea de Madrid (UEM), and currently an associate professor at the Universidad Complutense de Madrid (UCM). Despite having only 10 years as IP of AGB-UEM, he has supervised 3 thesis, 6 master thesis and 10 final degree projects. He is also author of 78 indexed articles in collaboration with a great variety of different researchers. He got internal (PI of 9 projects funded by UEM) and external funding (co-PI of 1 project funded by SPANISH MINISTRY OF SCIENCE AND TECHNOLOGY-2021/2024-; PI of 1 project funded SANTANDER Foundation-2017/2021-; and PI of one project funded by ACS (American Chemical Society, 2023). He has also been included as a member of the work team in 7 other external scientific projects. Working experience in 3 different countries (Colombia, Spain, and France). Proficiency in English as a second language. Additionally, he advises pharma companies (MERCK, ALMAC GROUP, and WAVELIFE

SCIENCES), on industrial NDT-mediated bioprocesses. As a founding member of CALDOCK S.L., a spin-off from Universidad de la Costa (Colombia) specializing in computational chemistry, he contributes to advancements in the field. Lastly, he conducted a development cooperation project in Colombia, focusing on disseminating biotechnology to people at risk of poverty.

## **Part C. RELEVANT MERITS (last 10 years)**

### **C.1. Publications (including books) \*CORRESPONDING AUTHOR**

#### **C.1.1. Selected publications (10 RELEVANT publications, last 10 years)**

1. Del Arco, J., Acosta, J., **Fernández-Lucas, J.\*** Biotechnological applications of purine and pyrimidine deaminases. *Biotechnol. Adv.* **2024**, 108473. (3/3). doi: [10.1016/j.biotechadv.2024.108473](https://doi.org/10.1016/j.biotechadv.2024.108473)
2. Acosta, J., Nguyen, K., Spitale, R.C., **Fernández-Lucas, J.\*** Taylor-made production of pyrimidine nucleoside-5'-monophosphate analogues by highly stabilized mutant uracil phosphoribosyltransferase from *Toxoplasma gondii*. *Bioresour. Technol.*, **2021**, 339, 125649. doi: [10.1016/j.biortech.2021.125649](https://doi.org/10.1016/j.biortech.2021.125649)
3. Del Arco, J. Acosta, J., **Fernández-Lucas, J.\*** New trends in the biocatalytic production of nucleosidic active pharmaceutical ingredients using 2'-deoxyribosyltransferases. *Biotechnol. Adv.* **2021**, 51, 107701. doi: [10.1016/j.biotechadv.2021.107701](https://doi.org/10.1016/j.biotechadv.2021.107701)
4. Del Arco, J., Alcántara, A. R., Fernández-Lafuente, R., **Fernández-Lucas, J.\*** Magnetic micro-macro biocatalysts applied to industrial bioprocesses. *Bioresour. Technol.*, **2021**, 322, 124547. doi: [10.1016/j.biortech.2020.124547](https://doi.org/10.1016/j.biortech.2020.124547)
5. **Fernández-Lucas, J.**, Acebrón, I., Wu, R.Y et al. Biochemical and structural studies of two tetrameric nucleoside 2'-deoxyribosyltransferases from psychrophilic and mesophilic bacteria: Insights into cold-adaptation. *Int. J. Biol. Macromol.*, **2021**, 192:138-150. (11/11). doi: [10.1016/j.ijbiomac.2021.09.164](https://doi.org/10.1016/j.ijbiomac.2021.09.164)
6. Rinaldi, F., **Fernández-Lucas, J.**, et al. Immobilized enzyme reactors based on nucleoside phosphorylases and 2'-deoxyribosyltransferase for the in-flow synthesis of pharmaceutically relevant nucleoside analogues. *Bioresour. Technol.*, **2020**, 307, 123258. doi: [10.1016/j.biortech.2020.123258](https://doi.org/10.1016/j.biortech.2020.123258)
7. Del Arco, J., Jordaan, J., Moral-Dardé, V., **Fernández-Lucas, J.\*** Sustainable production of nucleoside analogues by a high-efficient purine 2'-deoxyribosyltransferase immobilized onto Ni<sup>2+</sup> chelate magnetic microparticles. *Bioresour. Technol.*, **2019**, 289, 121772. (4/4). doi: [10.1016/j.biortech.2019.121772](https://doi.org/10.1016/j.biortech.2019.121772)
8. Del Arco, J., Pérez, E., Naitow, H., Kunishima, N., **Fernández-Lucas, J.\*** Structural and functional characterization of thermostable biocatalysts for the synthesis of 6-aminopurine nucleoside-5'-monophosphate analogues. *Bioresour. Technol.* **2019**, 276:244-252. doi: [10.1016/j.biortech.2018.12.120](https://doi.org/10.1016/j.biortech.2018.12.120)
9. **Fernández-Lucas, J.\***, Castañeda, D., Hormigo, D. New trends for a classical enzyme: Papain, a biotechnological success story in the food industry. *Trends. Food Sci. Tech.*, **2017**, 68, 91-101. (1/3). doi: [10.1016/j.tifs.2017.08.017](https://doi.org/10.1016/j.tifs.2017.08.017)
10. Del Arco, J., Cejudo-Sanches, J., Clemente-Suárez, V, Hormigo, D., Perona, A., **Fernández-Lucas, J.\*** Enzymatic production of dietary nucleotides from low-soluble purine bases by an efficient, thermostable and alkali-tolerant biocatalyst. *Food Chem.*, **2017**, 237, 605-611. doi: [10.1016/j.foodchem.2017.05.136](https://doi.org/10.1016/j.foodchem.2017.05.136)

#### **C1.2. Edited books and book chapters (in the last 10 years)**

- **Fernández Lucas, J., Camarasa Rius M.J.** Enzymatic and Chemical Synthesis of Nucleic Acid Derivatives. Ed. Wiley. **2018**. ISBN: 978-3-527-81209-7
- Cecchini, D. A., Sánchez-Costa, M., Orrego, A. H., **Fernández-Lucas, J.**, & Hidalgo, A. (2022). Ultrahigh-Throughput Screening of Metagenomic Libraries Using Droplet Microfluidics. In *Enzyme Engineering* (pp. 19-32). Humana, New York, NY.
- **Fernandez-Lucas, J.**; Arroyo M. "Enzymatic synthesis of nucleic acid derivatives by immobilized enzymes" in *Enzymatic and Chemical Synthesis of Nucleic Acid Derivatives*. Ed. Wiley. **2018**.
- Oroz I., Hormigo D., **Fernández-Lucas, J.**, García-Junceda E. "Designed enzymatic cascades". *Biocatalysis in Organic Synthesis*. E. Thieme Chemistry. **2014** ISBN-13: 978-3131746610

#### **C.2. Selected Congress (in the last 10 years)**

- **Oral communication.** 9th International Forum on Industrial Bioprocessing (IBA-IFIBIOP-2020) (Sattillo, Mexico) 12-15/09/2021

- **Oral communication.** International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BASEH-2021). (Rajasthan, India) 4-6/04/2021
- **Oral communication.** International Conference on New Horizons in Biotechnology (NHBT-2019) (Trivandrum, India). 20-24/11/2019

### **C.3. Selected research projects and grants (in the last 10 years)**

- **2023.** “Enzymatic synthesis of C-nucleosides”. Funded by ACS. **Jesús Fernández (IP). 25,000 €**
- **2021-2024.** “Ultrahigh-throughput discovery and engineering of 2'-deoxyribosyltransferases for the biocatalytic synthesis of next-generation therapeutic nucleoside analogues. (ULTRANDTs)”. Project funded by MICINN. PID2020-117025RB-I00. **Aurelio Hidalgo (IP), Jesús Fernández (co-IP). 121,000 €**
- **2020-2021.** “Diseño racional de enzimas mutantes con aplicación en el marcaje metabólico del ARN”. Project funded by UEM, Ref. 2021 UEM 09, led by **Jesús Fernández. 3,500 €**
- **2016-2021.** “New suicide gene therapy strategies for Cancer treatment”. Project funded by Fundación Banco Santander, Ref. SAN 151610, led by **Jesús Fernández. 77,000 €**
- **2018-2019.** “Novel strategies for the treatment of infectious diseases by *Pseudomonas aeruginosa* species”. Project funded by UEM, Ref. 2019 UEM 16, led by **Dr. Jesús Fernández Lucas. 4,600 €**
- **2017-2018.** “Sustainable Multi-enzymatic Processes for the Industrial development of Nucleic Acid Derivatives with Application in Pharmaceutical and Food Industries”. Ministerio de Economía, Ciencia y Competitividad, Ref. CTQ2015-70348-C2-1-R, led by Jose Manuel Guisán. **103,000 €**
- **2017-2018.** “Novel strategies for the treatment of antibiotic resistant bacteria”. Project funded by UEM, Ref. 2018 UEM 14, led by **Jesús Fernández. 4,500 €**
- **2016-2017.** “Multi-enzymatic platform for the development of bioprocesses for the synthesis of nucleic acid derivatives with application in pharmaceutical and food industry (SPIN project)”. Project funded by UEM, Ref. 2017 UEM 23, led by **Jesús Fernández. 4,500 €**
- **2015-2016.** “Novel strategies for the treatment of tropical diseases by prodrug activation”. Project funded by UEM, Ref. 2016 UEM 08, led by **Jesús Fernández. 4,000 €**

### **C.4. Contracts, technological or transfer merits (in the last 10 years)**

- **April 2021.** Scientific Assessor of Merck KgaA (<https://www.merck.com/>)
- **Jan 2019- Jan 2020.** Scientific Assessor of Wave Life Sciences (<https://www.wavelifesciences.com/>)
- **Jan 2019- Jan 2020.** Scientific Assessor of Almac Group (<https://www.almacgroup.com/>)
- **September 2018-Jan 2020.** Scientific Assessor of Plasmia SL (<https://www.almacgroup.com>)
- **Feb 2019-today.** Co-founder of “CALDOCK SAS”(University SPIN-OFF) in Colombia

### **C.5. Patents (in the last 10 years)**

- **Fernández-Lucas, J\*.,** Acosta, J., Del Arco., J., Clemente-Suarez, V., Pisabarro, V., Solera, M. (2020) Enzima y procedimiento para la obtención de nucleótidos en una sola etapa mediante un biocatalizador bifuncional. Spanish patent number: ES 2854296\_A1. Applicant: UEM
- **Fernández-Lucas, J\*.,** Clemente Suarez VJ., Del arco J. Álvarez R., Martínez M. Galindo J., Acosta J. (2018) Procedimiento de obtención de nucleósidos en un solo paso en presencia de una enzima nucleósido 2'-desoxirribosiltransferasa termoestable tipo II procedente de *Chroococcidiopsis thermalis* PCC 7203. Spanish patent number: ES 2689244. Applicant: UEM
- **Fernández-Lucas, J.,** Harris, R., de la Mata, I., Acebal, C., Mata, I., Heras, A., Arroyo, M. (2013) Biocatalizador con actividad nucleósido 2'-desoxirribosiltransferasa inmovilizado sobre partículas magnéticas de quitosano. . Spanish patent number: ES 2425997. Applicant: UCM
- Sinisterra, J.V., **Fernández-Lucas, J.** (2006). Procedimiento para la síntesis de nucleósidos mediante la utilización de microorganismos psicrótrofos o psicotolerantes. Spanish patent number: ES 2241487A1.

### **C.6. Other merits and awards (in the last 10 years)**

- PhD Award, UCM (2009–2010); Best Research Award, UEM (2015, 2018)
  - 1st Prize, “X Jornadas Internacionales de Innovación Universitaria”, UEM
  - Elsevier/Stanford Top 2% Scientist (2022–2025)
- Editorial roles: Guest editor of 8 special issues in leading journals, including *Bioresource Technology*, *Biotechnology Advances*, *ACS Sustainable Chemistry & Engineering*, *Biomolecules*, and *International Journal of Molecular Sciences*, among others