

Part A. PERSONAL INFORMATION

Date of CV	05/02/2022
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Name and Surname	José Luis García López		
DNI/NIE/passport	05211033S	Age	66
Identification number of the researcher	Researcher ID	G-9139-2015	
	Orcid code	0000-0002-9238-2485	

A.1. Current Professional Status

Organism	Consejo Superior de Investigaciones Científicas		
Dpt./Centre	Centro de Investigaciones Biológicas		
Address	Ramiro de Maeztu 9, 28040 Madrid		
Tel	639361969	e-mail	jl Garcia@cib.csic.es
Professional Category	Research Professor	Starting Date	1986
UNESCO code	330203-230220-241408		
Key words	Biotechnology, Molecular Biology, Microbiology		

A.2. Academic training

Bachelor Degree/PhD	University	Year
Bachelor Degree Chemistry	Complutense de Madrid	1977
Bachelor Degree Pharmacy	Complutense de Madrid	1978
PhD Chemistry	Complutense de Madrid	1980

A.3. Indicators of Quality in Scientific Production

Number of Six Year Periods of Research Awarded: 6. (+1 Technology Award)
 Indexed publications (>285): Patents (37): Book chapters (37): Books (10): Nat./Internat. congresses. (> 300):
 Supervised Doctoral Thesis (25 + 2 pending of defense + 1 in course). Organization congresses Nat./Internat. (> 10). Courses / seminars (> 100).

Part B. Free Summary of CV

Until 1982 I worked as Associate Professor in the Dept. of Biochemistry and Molecular Biology of the UCM on the enzymes of the metabolism of cAMP in the nervous tissue of *Ceratitidis capitata* of nervous tissue. In 1982 I worked at the Dept. R & D of Antibióticos S.A. where I created the first R & D group in industrial biotechnology in Spain after a postdoctoral stage at U. Stony Brook (USA) where I worked in molecular oncology. I developed the first recombinant organisms of industrial interest in Spain, an *Escherichia coli* producer of penicillin G acylase and worked as a pioneer in the production of recombinant interferons and interleukins and in the production of amino acids in recombinant strains contributing to implant the new technologies of recombinant DNA in Spain in the 80s. In this period, I promoted the creation of the Spanish Society of Biotechnology (SEBIOT) where I was Vice President (2001-2006) and President (2006-2010). Since 1986 I was a member of the CSIC where I initially devoted himself to the study of the autolysins of *Streptococcus pneumoniae* that act as virulence factors and can be used as potent "enzymotics" and potential vaccine antigens. I was the first to clone the gene of a bacterial autolysin, the amidase LytA, a paradigm of the bacterial murein-hydrolases, opening the way to its genetic and molecular study throughout the world. In the CIB I was the leader of the Environmental Biotechnology group and developed my work in the field of biotechnology and biocatalysis, being a pioneer and world leader in the characterization of aromatic compound catabolism in *Escherichia coli*, where I discovered the path of degradation of phenylacetic acid, paradigm of the so-called hybrid routes of degradation of aromatic compounds and possibly the most ubiquitous route among known bacteria. I was also a pioneer in the study of the routes of bacterial degradation of sterols (cholesterol and phytosterol) in mycobacteria from which organisms have currently been derived for the pharmaceutical steroid industry (Projects BIOES, PROBIODES) or in the studies in the field of degradation of endocrine disruptors (Project ELISA). Today I develop my work in new fields such as in the study of bacterial polyextremophiles (Projects Helios, Seth), in the production of polyketides (Projects Bioketido, Despol), in the recycling of waste for the production of different materials (European projects Synpol, Celbicon, Refucoat, Afterlife, Biosfera, CO2SMOS, Frontsh1p) or in the use of microalgae with industrial interest (Projects INSPIRA1, A4HW, ALGATEC, FET-OPEN-LIAR). I am currently involved in the development of a new European ESFRI Infrastructure for accelerating biotechnological projects (Projects IBISBA 1.0, PREP-IBISBA). My work as a scientific manager has been of great importance for the development of Biotechnology in Spain: Manager of

the first Biotechnology National Program; Manager of the Explora Program, National Representative in the EU Biotechnology programs; Deputy Director General of Scientific Programming of the CSIC and Collaborator of the DGI-MICINN. I have been also collaborator of SEIDI-MINECO (2012-2018), and National Representative in the ERC (2007-2018; 2021-now). I am actually member of the Science, Technology and Innovation Advisory Council of Ministry of Science and Innovation and manager of Area 3 of CYTED. I have been the first director of Institute of Integrative System Biology (I2SysBio) (CSIC-UV) (2016-2020). Finally, I have been the founder of three biotechnology companies, Secugen SL, Lifesequencing SL and Darwin Bioprospecting Excellence S.L. dedicated to the sequencing of DNA and the screening of organisms of biotechnological interest. These companies were created because I was one of the pioneers in using and promoting the automatic sequencing of DNA in Spain, creating in 1995 at CIB-Margarita Salas (CSIC) the first automatic sequencing service. I have also been a pioneer in the implementation in Spain of new NGS mass-sequencing technologies.

Part C. Relevant accomplishments

C.1. Publications (10 pub. 5 last years) Only publications related to the project

1. FERNÁNDEZ-CABEZÓN L, GARCÍA-FERNÁNDEZ E, GALÁN B, GARCÍA JL. (2017) Molecular characterization of a new gene cluster for steroid degradation in *Mycobacterium smegmatis*. *Environ Microbiol.* 7: 2546-2563.
2. GARCÍA-FERNÁNDEZ J, PAPAVIDASUNDARAM K, GALÁN B, SASSETTI CM, GARCÍA JL. (2017) Unraveling the pleiotropic role of the MceG ATPase in *Mycobacterium smegmatis*. *Environ Microbiol.* 7: 2564-2576.
3. GARCÍA-FERNÁNDEZ J, PAPAVIDASUNDARAM K, GALÁN B, SASSETTI CM, GARCÍA JL. (2017) Molecular and functional analysis of the mce4 operon in *Mycobacterium smegmatis*. *Environ Microbiol.* 9: 3689-3699.
4. FERNÁNDEZ-CABEZÓN L, GALÁN B, GARCÍA JL. (2018) Unraveling a new catabolic pathway of C-19 steroids in *Mycobacterium smegmatis*. *Environ Microbiol.* 20: 1815-1827.
5. FERNÁNDEZ-CABEZÓN L, GALÁN B, GARCÍA JL. (2018) New insights on steroid biotechnology. *Front Microbiol.* 9: 958.
6. FELPETO-SANTERO C, GALÁN B, LUENGO JM, FERNÁNDEZ-CAÑÓN JM, DEL CERRO C, MEDRANO FJ, GARCÍA JL. (2019) Identification and expression of the 11 β -steroid hydroxylase from *Cochliobolus lunatus* in *Corynebacterium glutamicum*. *Microb Biotechnol.* 12: 8.
7. IBERO J, GALÁN B, DÍAZ E, GARCÍA JL. (2019) Testosterone Degradative Pathway of *Novosphingobium tardaugens*. *Genes (Basel)* 10(11). pii: E871.56-868.
8. IBERO J, GALÁN B, RIVERO-BUCETA V, GARCÍA JL. (2020) Unraveling the 17 β -Estradiol Degradation Pathway in *Novosphingobium tardaugens* NBRC 16725. *Front Microbiol.* 11:588300.
9. FELPETO-SANTERO C, GALÁN B, GARCÍA JL. (2021) Engineering the Steroid Hydroxylating System from *Cochliobolus lunatus* in *Mycolicibacterium smegmatis*. *Microorganisms* 9(7):1499.
10. FELPETO-SANTERO C, GALÁN B, GARCÍA JL. (2021) Production of 11 α -hydroxysteroids from sterols in a single fermentation step by *Mycolicibacterium smegmatis*. *Microb Biotechnol.* 14(6):2514-2524.

C.2. Projects (last 5 years)

- 2015-2017 ELISA. Elimination of endocrine disruptors to improve food safety. XVII National Contest for the award of Research Aids in Life Sciences and Matter. Ramón Areces Foundation. IP. J.L. García (90000 €)
- 2016-2018 LIAR. Living Architecture FET-OPEN 686585. H2020 (European Commission). (3.2 M€) PI. Rachel Armstrong (Subproject Co-PIs. J. Nogales and J. L. García) (€ 975000)
- 2016-2018 HELIOS. Biotechnological applications of bacteria and fungi resistant to desiccation and irradiation. BIO2015-66960-C3-3-R. MINECO. IP. J.L. García (181000 e).
- 2016-2019 DESPOL. Biotechnology applied to the genetic unsilencing of polyketides and bioactive non-ribosomal peptides in marine bacteria. RTC-2016-4892-1. MINECO. IP. J.L. García (137344 €)
- 2016-2019 A4HW. Production of Healthy Bio-compounds of Microalgae with Food Applications. AlgaeForHealthyWorld. RTC-2016-4860-2. MINECO. IP. J.L. García (48140 €).
- 2016-2019 CELBICON. Efficient conversion of CO₂ into chemical products through the combination of capture, electrochemical and biochemical conversion technologies. EU-H2020-ISIB-2015-2 (REF 679050) (5.4 M€) PI. Guido Saracco (Subproject I M.A. Prieto and J.L. García).
- 2017-2020 REFUCOAT. Full recyclable food package with enhanced gas barrier properties and new functionalities by the use of high performance coatings. EU-H2020-BBI-JTI-2016. (REF 745791) (2.3 M€) PI. AIMPLAS (Subproject M. A. Prieto and J. L. García).

- 2017-2021 AFTERLIFE. Advanced filtration technologies for the recovery and later conversion of relevant fractions from wastewater. H2020-EU.3.2.6. (REF 745737) (4.18 M€) PI. OPTIMIZACION ORIENTADA A LA SOSTENIBILIDAD SL (Subproject M. A. Prieto and J. L. García).
- 2017-2021 IBISBA 1.0. Industrial Biotechnology Innovation and Synthetic Biology Accelerator. H2020-EU.1.4.1.2. INFRAIA-02-2017. (REF 730976) (Total 5 M€) PI. Michael J. O'Donohue (Subproject CSIC (CIB-CNB) M. J. Martínez, J. L. García, and J. Nogales) (121000 €).
- 2018-2018 PROFERTILITY. Agencia Valenciana de Innovación. Ref. INNEST00/18/010. Proyecto Coordinado entre I2Sysbio (UV-CSIC), Igenomix y Biopolis S.L. (subproyecto I2Sysbio J. Peretó y J.L. García) (147483 €).
- 2019-2021 SETH. Chasis xerotolerantes y aplicaciones biotecnológicas. RTI2018-095584-B-C44. Ministerio de Ciencia, Innovación y Universidades. IP. J.L. García. (169400 €)
- 2019-2021 ALGATEC. Desarrollo de tecnologías avanzadas de microlagas para una economía circular. S2018/BBA-4532. Comunidad de Madrid. TEC18 (Total 327750 € anualidades 1º y 2º) (Subproyecto CIB-CSIC IP. J. L. García) (57500 € anualidades 1º y 2º).
- 2020-2024 PREP-IBISBA. H2020-INFRADEV-2019-2. (REF. 871118) (4 M€) PI. Michael J. O'Donohue (Subproject CSIC (CIB-CNB) PI J. L. García) (50000 €).
- 2020-2024 BIOSFERA. H2020-LC-SC3-2019-NZE-RES-CC. (REF. 884208) (5 M€) PI. Konstantinos Atsonios. (Total 5 M€). (Subproject PI. J. L. García) (310000 €)
- 2020-2021 SINNBIOISIS. Soluciones innovadoras de la Biología de Sistemas. Ref. INNTA1/2020/9. Agencia Valenciana de Innovación. IP. J.L. García. (49000 €)
- 2021-2024 CO2SMOS. Advanced chemicals production from biogenic CO2 emissions for circular bio-based industries. H2020-EU.3.2.4.2. Ref. 101000790. IP. Raul Piñero (Total 6.918.240 €). Subproyecto: IPs CSIC. CIB J Barriuso (J.L. García). ITQ J.M Serra (1.1 M€).
- 2021-2025 FRONTSH1P. A FRONTrunner approach Transition to a circular & resilient future: deployment of systemic solutions with the support of local clusters and the development of regional community-based innovation schemes. H2020-LC-GD-2020-3. Ref. 101037031. IP. Michele Andolfo (Total 16.112.118 €) Subproyecto: IP CSIC. CIB J.L. García. (296.698 €).

C.3. Contracts, technology transfer activities (last 5 years)

- 2015-2016 Contract with VITAE-CAPS S.A. Study of capacity to produce steroid through biotransformation of phytosterols. IP. J. L. García (33922 €).
- 2017-2019 Contract with Biopolis S.L. Construction, analysis and exploitation of genome-scale microbial metabolic models for the overproduction of microbial metabolites. IP J. L. García (58080 €).

C.4. Patents (last 5 years)

- García JL, Díaz E, Durante, G (2016) Cluster COX and its use to provide a cell the capacity to metabolize carbon monoxide. Spanish Patent P201630314.
- Felpeto C, Galán B, García JL (2016) Production of 11-alpha hydroxylated steroids by biotransformation with recombinant bacteria. Spanish Patent P201630701.
- Martínez Sánchez I, García López JL, Nogales Enrique, J. (2020) Recombinant cyanobacteria sucrose overproducer. Spanish Patent P202030042.

C.5. R&D Policy making experience

- 2002-2003 National Expert in Priority I of the 6th Framework Program of the EU.
- 2003-2004 Deputy Director General of Programming, Monitoring and Scientific Documentation of the CSIC.
- 2003-2006 Member of the Scientific Committee of the Spanish Agency for Food Safety.
- 2005-2010 Member of the Scientific Committee of the European Program of Systems Biology (SysMo).
- 2007-2008 Advisor to the Directorate General of Research of the MEC.
- 2008-2009 National Delegate in the Working Party of Biotechnology (WBP) of the OECD.
- 2008-2010 Advisor to the General Directorate of International Cooperation of the MICINN.
- 2009-2010 National Delegate High Level Group of the CREST-GPC for the EU Joint Programming Initiative.
- 2009-2010. National Delegate Working Group on Research Institutions & Human Resources (RIHR). OECD.
- 2007-2013. National Representative of the IDEAS Program of the VII Framework Program of the EU.
- 2013 National Representative of the Committee elaborating Excellence Science Programs of the EU H2020.
- 2014-2017 Manager of the Explora program of MINECO.
- 2007-2018 Member of the Subcommittee of Bioethics and Biosafety of the CSIC.
- 2012-2018 Collaborator-Advisor of the Secretary of State of R + D + I of MINECO.

2014-2018 National Representative of ERC Program of EU H2020.
2017-2018. Member of Area 0 of Technological Transfer of CNEAI.
2016-2020 Director of the Institute of Integrative Systems Biology (I2SysBio) University of Valencia-CSIC.
2017-2021 Member of the Science, Technology and Innovation Advisory Council. MINECO
2017-Act. Member of the Scientific Committee of the Bioeconomy Observatory. MINECO.
2014-Act. Member of the Advisory Committee of the CAIXA INNVIERTE BIOMED II FCR Program Committee (CDTI-INNVIERTE, Caixa Capital Risk, LETI, ICF, Criteria Caixa Holding).
2017-Act. Manager of Area 3 of Industrial Development of CYTED.
2021-Act. National Representative of ERC Program of the EU Horizon Europe.

C.6. Scientific committees, advisor, scientific societies

- 1.- Member of the Spanish Society of Biochemistry since 1983.
- 2.- Member of the Spanish Society of Microbiology since 1985.
- 3.- Member of the Spanish Biotechnology Society since 1988. Vice President (2001-2006) and President (2006-2010).
- 4.- Member of the European Environmental Research Organization EERO since 1996.
- 6.- Member of the Bioethics Commission of the CSIC.
- 7.- Member of the Editorial Board of the Journal of Bacteriology since January 1999-2007.
- 8.- Member of the Biology and Biomedicine Area Commission of the CSIC from 2001-2003.
- 9.- Member of the Editorial Board of Microbial Biotechnology since 2007.
- 10.- Member of the Advisory Commission for Innovation of the Madrid Science Park since 2007.
- 11.- Member of the Advisory Commission Biotechnology Degree of the U. Francisco de Vitoria since 2007.
- 12.- Member of the International Scientific Committee of the National Biotechnology Center since 2015.

C.7. Teaching activities

- 1.- Year 1978-1979 Assistant Professor Biochemistry (U.C.M.)
- 2.- Year 1979-1981 Professor Level B (U.C.M.)
- 3.- Year 1987. Professor of the 5th Practical Course of Genetic Engineering of CSIC.
- 4.- Year 1989-1995. Professor-Manager of the Clinical and Pharmaceutical Biotechnology Course of the Biotechnology Master of the U.C.M.
- 5.- Year 2002-2003. Open Teaching Program of the UNED. Course on Genes à la Carte: Biotechnology and Food. Director E. Cortés. Collaborators: G. Morcillo and J. L. García.
- 6.- Year 2005-2015. Professor of Genetic Engineering Module of the Biotechnology Master of ALITER.
- 7.- Year 2011. Member of the working group for the preparation of the title of Higher Technical Professional Training in the Manufacture of Pharmaceutical, Biotechnological and Related Products of the National Catalog of Initial Vocational Training Titles of the Professional Chemistry Family. MECD.
- 8.- Year 2013 Member of the working group for the preparation of the Specialization Title in "Cell Cultures" for Vocational Training. MECD.
- 9.- Supervisor. Thesis (24 + 4 in course): Bachelor's theses (2): Master's theses (12): Final projects (2).
- 10.- Member of Thesis Courts (> 80).
- 11.- Courses and Seminars (> 100).

C.8. Awards

- Extraordinary degree award in Chemical Sciences
- Extraordinary doctorate award in Chemical Sciences
- National Biotechnology Award 2008. ALITER-MERCK
- Medal of Honor Award for the Promotion of Invention 2010. García Cabrerizo Foundation

C.9. Entrepreneurship activities

2007-2016. Founding partner of the biotechnology company Lifesequencing S.L.
2017-2020. Founding partner of the biotechnology company Darwin Bioprospecting Excellence S.L.
2005-Act. Founding Partner of the biotechnology company Secugen S.L.