MINISTERIO
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AGENCIA
ESTATAL DE
INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	Juan Francisco		
Family name	Lopez Gimenez		
Gender (*)	[redacted]	Birth date (dd/mm/yyyy)	[redacted]
Social Security, Passport, ID number	[redacted]		
e-mail	jf.lopez.gimenez@csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0003-3021-6200	

(*) Mandatory

A.1. Current position

Position	Científico Titular		
Initial date	06/10/2009		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Instituto de Parasitología y Biomedicina “López-Neyra”		
Country	Spain	Teleph. number	958181657
Key words	Molecular Pharmacology, Receptors, Cell Signalling		

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

Period	Position/Institution/Country/Interruption cause
2016-2018	Visiting Investigator/ CIMUS (USC)/ Spain
2016-2016	Visiting Professor/ Virginia Commonwealth University/ USA
2010-2015	Científico Titular/ IBBTEC (CSIC)/ Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Biological Sciences	University of Barcelona	1993
PhD in Neurosciences	University of Barcelona	2001

(Include all the necessary rows)

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

A Career Committed to Advancing Molecular Pharmacology and Neuroscience

With a degree in Biological Sciences from the **University of Barcelona** (1993) and a PhD in Neurosciences from the same institution (2001), my research has focused on elucidating the molecular mechanisms underlying brain function. My doctoral work at the **Instituto de Investigaciones Biomédicas de Barcelona (IIBB-CSIC)** under Prof. Guadalupe Mengod and Dr. M. Teresa Vilaró culminated in the dissertation “Pharmacological and Molecular Characterization of Serotonin 5-HT2 Receptor Family in Primate Brain.” This research contributed significantly to the understanding of serotonin receptor subtypes, mapping their distribution using receptor autoradiography, immunohistochemistry, and in situ hybridization histochemistry.

From 2001 to 2003, I conducted postdoctoral research in Prof. Philip G. Strange's laboratory at the **University of Reading**, UK. I studied G-protein-coupled receptor (GPCR) oligomerization and pharmacological properties of ligands with negative intrinsic activity, with a focus on dopamine receptors. This research deepened my understanding of receptor pharmacology and laid the foundation for my work with the Molecular Pharmacology Research Group at the **University of Glasgow** (2003–2010) under Prof. Graeme Milligan.

At Glasgow, my research centered on GPCR oligomerization, receptor pharmacology, and signaling. Using cutting-edge techniques such as Förster Resonance Energy Transfer (FRET) and Bioluminescence Resonance Energy Transfer (BRET), I pioneered the use of FRET sequential technology with three fluorescent proteins to identify receptor complexes beyond dimers. This groundbreaking work revealed insights into higher-order GPCR oligomerization and its impact on receptor dynamics, ligand binding, and signaling pathways. I also explored serotonin 5-HT2A and mGluR2 receptor interactions in collaboration with Dr. González-Maeso (Icahn School of Medicine at Mount Sinai), highlighting their roles in neuropsychiatric disorders like schizophrenia. Additionally, my work advanced the characterization of allosteric modulators and biased agonists, offering new directions for GPCR-targeted drug discovery.

In 2008, I earned a permanent position as a Científico Titular at the Spanish National Research Council (CSIC). In 2010, I established my independent laboratory at the **Instituto de Biomedicina y Biotecnología de Cantabria (IIBTEC-CSIC)**. My team uncovered novel interactions between serotonin 5-HT2 and mu-opioid receptors, including the effects of citalopram on morphine tolerance. We also developed advanced fluorescence microscopy techniques to quantify GPCR-mediated endocytosis, furthering knowledge of receptor dynamics.

In 2016, I was awarded a Salvador de Madariaga sabbatical grant to join Dr. González-Maeso's lab at **Virginia Commonwealth University**. Our work focused on gene expression modulation in psychosis, validated through studies in schizophrenia patients treated with atypical antipsychotics, in collaboration with Dr. Benedicto Crespo at Hospital Marqués de Valdecilla. From 2017 to 2018, I joined the BioFarma Group at the **University of Santiago de Compostela** as a Visiting Investigator, where I gained expertise in early drug discovery and clinical translation.

In 2018, I transitioned to the **Instituto de Parasitología y Biomedicina "López-Neyra" (IPBLN-CSIC)** in Granada, where I currently lead a research group investigating the molecular mechanisms of serotonergic psychedelics and their influence on neuroplasticity. My lab developed an innovative in vitro model using cultured neurons from neural progenitors, advancing receptor pharmacology studies.

Collaboration has been a cornerstone of my scientific philosophy. I maintain active partnerships with esteemed colleagues, including Dr. González-Maeso (Virginia Commonwealth University, USA), Dr. Cutillas (Queen Mary University of London), and Dr. Loza (University of Santiago de Compostela). Over two decades, I have published extensively in high-impact journals, contributed reviews and book chapters, and received several national and international awards for scientific excellence. Beyond research, I am committed to scientific communication and outreach. I have participated in press interviews, written articles, and contributed to public events to convey the importance of neuroscience and pharmacological research. These efforts aim to bridge the gap between academia and the public, fostering a greater appreciation of how advances in molecular pharmacology address critical health challenges. My career reflects a commitment to innovation, multidisciplinary collaboration, and advancing our understanding of the brain's pharmacological pathways, ultimately contributing to the development of novel therapeutic strategies.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

Martín-Guerrero SM, Martín-Estebané M, Lara Ordóñez AJ, Cánovas M, Martín-Oliva D, González-Maeso J, Cutillas PR, **López-Giménez JF (AC) (8/8).** Maternal Immune Activation imprints translational dysregulation and differential MAP2 phosphorylation in descendant neural stem cells. *Mol Psychiatry*. 2025 Feb 3. doi: 10.1038/s41380-025-02905-5.

Martín-Guerrero SM, Alonso P, Iglesias A, Cimadevila M, …, **López-Giménez JF (AC) (11/11) (AC).** His452Tyr polymorphism in the human 5-HT2A receptor affects clozapine-induced signaling networks revealed by quantitative phosphoproteomics. *Biochem Pharmacol.* 2021 Mar;185:114440.

López-Giménez JF and González-Maeso J (1/2). Hallucinogens and Serotonin 5-HT_{2A} Receptor-Mediated Signaling Pathways. *Curr Top Behav Neurosci.* 2018;36:45-73.

Varela MJ, Acanda de la Rocha AM, Díaz A, **Lopez-Gimenez JF (AC) (4/4).** Potentiation of morphine-induced antinociception and locomotion by citalopram is accompanied by anxiolytic-like effects. *Pharmacol Biochem Behav.* 2017 Dec;163:83-89.

Lopez-Gimenez JF (AC), de la Fuente Revenga M, Ruso-Julve F, Saunders JM, Moreno JL, Crespo-Facorro B, González-Maeso J (1/7). Validation of schizophrenia gene expression profile in a preclinical model of maternal infection during pregnancy. *Schizophr Res.* 2017 Nov;189:217-218.

Campa VM, Capilla A, Varela MJ, de la Rocha AM, Fernandez-Troyano JC, Barreiro RB, **Lopez-Gimenez JF (AC) (7/7).** Endocytosis as a biological response in receptor pharmacology: evaluation by fluorescence microscopy. *PLoS One*. 2015 Apr 7;10(4).

Lopez-Gimenez JF, Vilaró MT, Milligan G (AC) (1/3). Morphine desensitization, internalization, and down-regulation of the mu opioid receptor is facilitated by serotonin 5-hydroxytryptamine2A receptor coactivation. Mol Pharmacol. 2008 Nov;74(5):1278-91.

González-Maeso J (AC), Ang RL, Yuen T, Chan P, Weisstaub NV, **López-Giménez JF**, Zhou M, Okawa Y, Callado LF, Milligan G, Gingrich JA, Filizola M, Meana JJ, Sealfon SC (6/14). Identification of a serotonin/glutamate receptor complex implicated in psychosis. Nature. 2008 Mar 6;452(7183):93-7.

López-Giménez JF, Vilaró MT, Palacios JM, Mengod G (1/4). Mapping of 5-HT2A receptors and their mRNA in monkey brain: [3H]MDL100,907 autoradiography and in situ hybridization studies. J Comp Neurol. 2001 Jan 22;429(4):571-89.

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

I regularly attend national and international conferences, such as those organized by the Spanish Society of Pharmacology, IUPHAR, and the Gordon Research Conferences on specific topics.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. Project Reference: PID2021-125448OB-I00
Title: Serotonergic psychedelics and neuronal plasticity: unveiling pharmacological and signaling mechanisms at the cellular level.
Principal Investigator: Juan F. López Giménez
Funding Agency: Ministerio de Ciencia e Innovación.
Duration: 01/09/2022-01/09/2025
Funding: 195.463 €.

2. Project Reference: RTI2018-097344-B-I00
Title: Generation of a new cellular model of schizophrenia to advance on the knowledge of the mecanism of action of antipsychotics.
Principal Investigator: Juan F. López Giménez
Funding Agency: Ministerio de Ciencia, Innovación y Universidades.
Duration: 01/01/2019-31/12/2021
Funding: 133.100 €.

3. Project Reference: SAF2010-15663
Title: *In vivo* validation of the pharmacological interactions of mu opioid and serotonin 5-HT_{2A} receptors: involvement in the development of morphine tolerance and dependence.
Principal Investigator: Juan F. López Giménez
Funding Agency: MICINN
Duration: 01/01/2011-31/12/2013
Funding: 114.950 €

C.4. Contracts, technological or transfer merits, include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

Intellectual Property
Registro general de la propiedad intelectual.
Algoritmo para la detección de objetos puntuales en imágenes de epifluorescencia.
Título: Puncta Finder Toolset
Nº Asiento registral: 00/2013/3859

Contracts

1. **Psylo PTY LTD**. Evaluation of synaptic plasticity and 5-HT2A involvement in vitro. Technological support contract. From 23/07/2024 to 23/01/2025.

2. **PurMinds Neuropharma**. PurMinds 2A Agonist Program. Technological support contract. From 12/04/2024 to 12/10/2024.