

David Roura Martínez, PhD

Research Scientist | Preclinical Neuroscience, Toxicology & Scientific Support

Croix, Hauts-de-France, France | Spanish, French, English



Summary

PhD-trained scientist with a background in biochemistry, physiology, health psychology, neuroscience, and toxicology. Extensive hands-on experience in preclinical research, animal experimentation, molecular biology, cell culture, assay optimization, data analysis, teaching, mentoring, and scientific communication.

Professional Experience

·Postdoctoral Researcher

NEUROSCIENCE, BIOTECHNOLOGY

Institut de Neurosciences de la Timone (INT) – UMR7289, CNRS / Aix-Marseille Université, Marseille, France

2021–2024 [3 years 10 months]

- Developed a CRISPR/Cas9-based *in vivo* tool to inactivate miR-124 loci in specific mouse brain regions.
- Development of *in vivo* fluorescent microRNA reporters.
- Optimized FANS workflows, RNA isolation, DNA purification, Western blot, stereotaxic surgery, and statistical analysis.
- Contributed to animal welfare and sustainability initiatives through INT-SBEA and INT-EcoLab responsibilities.

·2019: PhD defence (UNED), Madrid, Spain

Title: *A multiparametric study of the psychobiological mechanisms operating in the incubation of seeking of drugs and natural reinforcers in the laboratory rat.* **Committee:** Olga Valverde Granados, David Belin, César Venero Núñez.

Honours and distinctions: Cum laude; Extraordinary Doctorate Award; International Mention.

·Research Assistant

TOXICOLOGY, NEUROSCIENCE

Department of Toxicology, Universidad Complutense de Madrid (UCM), Spain

2017–2018 [1 year 8 months]

- Conducted neurotoxicity and hepatotoxicity studies (pesticides) in animal and *in vitro* models.
- Developed enzymatic assays, spectrophotometric determinations, RNA isolation, and RT-qPCR.
- Optimized HPLC, cell culture assays and animal handling.
- Trained undergraduate and Master's students conducting laboratory work.

·Predoctoral Researcher

NEUROSCIENCE

Department of Psychobiology, Universidad Nacional de Educación a Distancia (UNED), Madrid, Spain

2011–2016 [4 years 6 months] (2014: 3-month stay at Donders Institute, The Netherlands: Stress and memory)

- Investigated drug addiction and relapse, and psychobiological mechanisms in rat models.
- Developed a rat model of incubation of craving and a workflow for multiparametric analysis of tissue samples.
- Developed 2D electrophoresis and structural equation modeling.
- Optimized Western blot, RT-qPCR, IHC, and capillary electrophoresis.
- Supervised Master's final projects and trained undergraduate students in laboratory work.
- Contributed to the organization of scientific conferences.

·Research Assistant

TOXICOLOGY, NEUROSCIENCE

Department of Pharmacology, Universidad Complutense de Madrid (UCM), Spain

2008–2010 [3 years]

- Conducted neurotoxicity studies (drugs of abuse) in animal models.
- Developed cell fractionation, ELISA, and spectrophotometric and enzymatic assays.
- Supported practical classes for medical students.

·Early Research Experience

PHYSIOLOGY, TOXICOLOGY

Department of Physiology, Euskal Herriko Unibertsitatea – Universidad del País Vasco (EHU-UPV), Leioa, Spain

2004–2007 [2 years 3 months]

- Built a strong foundation in laboratory work, biochemistry, and biomarker research (oxidative stress).
- Developed genotyping and enzymatic assays in research including human samples.
- Gained experience in nucleic acid quantification, cell-based techniques, and experimental methodology development.

Education

- **PhD in Health Psychology**, Universidad Nacional de Educación a Distancia, Spain — 2019

- **DEA in Physiology**, Universidad del País Vasco, Spain — 2007

- **MSc in Biochemistry**, Universidad del País Vasco, Spain — 2005

- **BSc in Biology**, Universidad del País Vasco, Spain — 2003

Selected Scientific Competences

1. Research Lab Management

- Experimental planning, protocol optimization, safety, and waste management.
- Compliance with good practices, animal experimentation and 3Rs, GCP, and sustainability initiatives.
- Coordination of laboratory workflows, reagents, and technical procedures.
- Collaborator in numerous research projects in different laboratories, for a total value of over 800k euros.
- Involved in various laboratory reorganizations and relocations.

2. Neuroscience and Toxicology Consulting

- Scientific support in behavioral neuroscience, addiction, toxicology, and neuroprotection.
- Experimental design, literature review, and scientific reasoning.
- Interpretation of preclinical results in translational contexts.

3. Data Analysis and Interpretation

- Statistical analysis using R, SPSS, GraphPad Prism, Excel, G*Power, and WebPlotDigitizer.
- Data cleaning, visualization, descriptive and inferential statistics (univariate, bivariate, multivariate).
- Multilevel experimental interpretation and reporting.

4. Teaching Content and Scientific Outreach

- Qualification CNU: section 69 – Neurosciences (2025).
- >4000 h / >150 ECTS of teaching experience (online) from 2012 to 2026.
- Teaching materials, online tutoring, practical classes, and scientific communication.
- Development of pedagogical content for university-level courses.

5. Thesis, Project, and Student Support

- Co-supervision of Master's final projects and mentoring of junior researchers.
- Support for project design, experimental planning, and analysis.
- Hands-on training of undergraduate and Master's students.

6. Scientific Reviewing and Editing

- Review of theses, articles, and scientific manuscripts (reviewer in PubPeer and Frontiers).
- Reference management and formatting (Mendeley, Zotero).
- Editorial support, revision of content, structure, and methodological clarity.

7. Laboratory Technical Skills

- **Molecular biology:** RNA isolation, RT-qPCR, nucleic acid purification, CRISPR/Cas9, transfection, transformation.
- **Cell and tissue methods:** Cell culture, tissue sectioning, staining, microscopy, immunohistochemistry.
- **Animal work:** Behavioral tests, invasive procedures, stereotaxic surgery, euthanasia, handling.
- **Protein and biochemical assays:** Western blot, 2D electrophoresis, ELISA, enzymatic assays, spectrophotometry, HPLC.

Publications and Communications

- Author of 20 peer-reviewed publications, of which 6 as a lead author and 1 review article.
- Co-author of 7 reports (*Toxicology Letters*, etc.) and 19 presentations at international conferences (*FENS*, etc.).

Selected peer-reviewed publications

- Roura-Martínez, D., et al. (2026). Shared and reinforcer-specific alterations in the CRH and noradrenergic systems following withdrawal from cocaine, heroin, and sucrose self-administration. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*. doi: [10.1016/j.pnpbp.2026.111688](https://doi.org/10.1016/j.pnpbp.2026.111688)

- Roura-Martínez, D., et al. (2025). Combination of Cas9 and adeno-associated vectors enables efficient *in vivo* knockdown of precise miRNAs in the rodent brain. *PNAS*. doi: [10.1073/pnas.2513076122](https://doi.org/10.1073/pnas.2513076122)

- Atucha, E., et al. (2025). Noradrenergic activation of the basolateral amygdala facilitates memory specificity for similar events experienced close in time. *Nature Neuroscience*. doi: [10.1038/s41593-025-02014-0](https://doi.org/10.1038/s41593-025-02014-0)

- Roura-Martínez, D., et al. (2020). Central nucleus of the amygdala as a common substrate of the incubation of drug and natural reinforcer seeking. *Addiction Biology*. doi: [10.1111/adb.12706](https://doi.org/10.1111/adb.12706)

- Martínez, M. A., et al. (2018). Pyrethroid insecticide lambda-cyhalothrin induces hepatic cytochrome P450 enzymes, oxidative stress and apoptosis in rats. *Science of the Total Environment*. doi: [10.1016/j.scitotenv.2018.03.030](https://doi.org/10.1016/j.scitotenv.2018.03.030)

References from my last three employers are available upon request.