

**BIOGRAPHICAL SKETCH**

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NAME: **UGALDE, Cristina**

eRA COMMONS USER NAME (credential, e.g., agency login): **cugalde**

POSITION TITLE: **Tenured Researcher**

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Autonomous University of Madrid (UAM). School of Biology. SPAIN.	B.S.	1988-1993	Fundamental Biology
Autonomous University of Madrid (UAM). School of Medicine. SPAIN.	Ph.D.	1993-1998	Mitochondrial Biogenesis in <i>Drosophila melanogaster</i>
Severo Ochoa Molecular Biology Centre (CBMSO). Madrid, SPAIN.	Post-doctoral fellow	1998-2001	Yeast Mitochondrial Genetics / Biochemistry
University of Amsterdam. THE NETHERLANDS.	Post-doctoral fellow	2001-2003	Mitochondrial Biogenesis in Health and Disease (human)
Nijmegen Centre for Mitochondrial Disorders. THE NETHERLANDS.	Post-doctoral fellow	2003-2005	Mitochondrial Biogenesis in Health and Disease
'Hospital 12 de Octubre' Research Institute (i+12). Madrid, SPAIN.	Principal Investigator	2005-2011	Mitochondrial Biogenesis in Health and Disease
'Hospital 12 de Octubre' Research Institute (i+12). Madrid, SPAIN.	Tenured Researcher	2011-present 2018	Mitochondrial Biogenesis in Health and Disease
Monash University. Melbourne, AUSTRALIA.	Guest Researcher		CRISPR-Cas9 Genome Editing / Mitochondrial Proteomics

**A. Personal Statement**

My main research interest focuses on the **biogenesis of the mitochondrial OXPHOS system in health and disease**. Over the last years my group has been extensively working on i) the study of the cellular and molecular pathophysiological mechanisms of primary enzymatic defects of the OXPHOS system, ii) the identification, validation and functional characterization of new biomarkers and/or therapeutic targets of mitochondrial respiratory chain disorders, and iii) the analysis of regulatory processes that modulate the biogenesis and function of the mitochondrial respiratory chain complexes and supercomplexes in health and disease, with the support of National Research Grants from the Spanish Ministry of Health (ISCIII) and Regional Government of Madrid (CAM), and internationally, from a NIH RO1 Grant (USA).

My group is part of the Mitochondrial and Neurometabolic Diseases Research Laboratory (LERMN Lab) at 'Hospital 12 de Octubre' Research Institute (i+12, Madrid), which is the main Spanish reference for diagnosis of mitochondrial diseases with >4000 patients' samples from European and Latin-American countries analyzed in our center. Overall, **my work combines basic science in the field of mitochondrial biogenesis with a clear translational orientation** to improve characterization, diagnosis and treatment of mitochondrial disorders. Since my incorporation at the LERMN Lab as independent researcher in 2005, I have published 39 articles on mitochondrial biogenesis and bioenergetics alterations in health and disease, 3 of them published in Cell Metabolism, 3 in Cell Reports, 2 in EMBO Journal, and others in Annals of Neurology, TIBS, Free Radical Biology and Medicine, Neurobiology of Ageing, Neurobiology of Disease, Human Molecular Genetics, Human Mutation, Biochimica et Biophysica Acta, etc. In total, **I have published 56 research articles and 5 book chapters, reaching a H-index of 32 and more than 3700 citations** (Google Scholar). Finally, I have mentored 9 PhD and 7 undergraduate students, and participated in a number of national and international Dissertation Committees.

**B. Positions, Scientific Appointments and Honors****Positions:**

**2011-until present. Tenured Research Scientist.** Laboratory of Neuromuscular and Mitochondrial Disorders. Research Institute 'Doce de Octubre' University Hospital (Madrid, Spain).

**2018. Guest Researcher.** Monash Biomedicine Discovery Institute. Monash University (Melbourne, Australia).

**2005-2011. Associate Research Scientist.** Laboratory of Neuromuscular and Mitochondrial Disorders. Department of Biochemistry. 'Doce de Octubre' University Hospital (Madrid, Spain).

**Honors:**

**2018.** Sabbatical Research Contract from the Spanish Ministry of Health - Carlos III Institute of Health (ISCIII, BA17/00006).

**2005-2011.** Research Contract from the Spanish Ministry of Health - Carlos III Institute of Health (ISCIII, Miguel Servet Program).

**2003-2005.** Post-doctoral Research Contract from Princess Beatrix Fonds (The Netherlands).

**2001-2003.** Post-doctoral Research Contract from the European Union: Marie Curie Individual Fellowship Program. Contract QLGA-CT-2000-52003.

**1999-2001.** Post-doctoral Scholarship from the Spanish Ministry of Education and Science.

**Scientific Appointments:**

*Ad hoc* reviewer for: Science, Nature, Nature Structural and Molecular Biology, Nature Communications, Cell Metabolism, Cell Reports, Annals of Neurology, Human Molecular Genetics, Journal of Molecular Biology, Molecular and Cellular Proteomics, Biochimica et Biophysica Acta, Journal of Cellular Physiology, Neuromuscular Disorders, Journal of Neurological Sciences, Biochemical Journal, Biochimie, Mitochondrion, Plos One, Neurogenetics, Molecular Genetics and Metabolism.

Advisory panels for funding bodies, including the following: Spanish National Evaluation from the Spanish Ministry of Health – Carlos III Institute of Health (ISCIII) (permanent reviewer since 2006); Spanish National Evaluation and Foresight Agency (ANEP) from the Spanish Government Ministry of Education and Science -Secretary for Universities and Research (permanent reviewer since 2008); French National Agency for Research (Agence Nationale de la Recherche, ANR) (*ad hoc* reviewer since 2010); British Great Ormond Street Hospital Children's Charity (GOSHCC) - Neuroscience Research Project Grants (*ad hoc* reviewer since 2011); University of Bologna (Italy) (*ad hoc* reviewer since 2013); Prinses Beatrix Spierfonds (The Netherlands) (*ad hoc* reviewer since 2014); KNUT OCH ALICE WALLENBERGS STIFTELSE (KAW) (Sweden) (*ad hoc* reviewer since 2016)

**C. Contributions to Science**

**The public URL for my bibliography collection in Google Scholar is:**

[https://scholar.google.com/citations?user=\\_VggvsoAAAAJ&hl=en](https://scholar.google.com/citations?user=_VggvsoAAAAJ&hl=en)

My most notable contributions to the field of mitochondrial medicine and biology are:

- 1- Ugalde et al. (2003) Impaired complex I assembly in a Leigh syndrome patient with a novel missense mutation in the *ND6* gene. **Annals of Neurology** 54, 665-669.
- 2- Coenen et al. (2004) Mutant mitochondrial elongation factor G1 and combined oxidative phosphorylation deficiency. **New England Journal of Medicine** 351, 2080-2086.
- 3- Ugalde et al. (2004) Differences in assembly or stability of complex I and other mitochondrial OXPHOS complexes in inherited complex I deficiency. **Human Molecular Genetics** 13, 659-667.
- 4- Pello et al. (2008) Mitochondrial DNA background modulates the assembly kinetics of OXPHOS complexes in a cellular model of mitochondrial disease. **Human Molecular Genetics** 17, 4001-4011.
- 5- Moreno-Lastres et al. (2012) Mitochondrial Complex I Plays an Essential Role in Human Respirasome Assembly. **Cell Metabolism** 15, 324-335.
- 6- Pérez-Pérez, et al. (2016) COX7A2L is a mitochondrial complex III binding protein that stabilizes the III2+IV supercomplex without affecting respirasome formation. **Cell Reports** 16, 2387-2398.
- 7- Lobo-Jarne et al. (2020) Multiple pathways coordinate assembly of human mitochondrial complex IV and stabilization of respiratory supercomplexes. **The EMBO Journal**, e103912. doi: 10.15252/embj.2019103912.
- 8- Fernández-Vizarra et al. (2022). Two independent respiratory chains adapt OXPHOS performance to glycolytic switch. **Cell Metabolism** 34, 1792-1808.

**D. Scholastic Performance**

As a Tenured Researcher, I have mentored 3 Postdoctoral Researchers, and 9 PhD students -2 currently- all of whom obtained either Individual or Grant-associated Fellowships from ISCIII, CAM and NIH. In addition, I have been Member of the Dissertation Committee of 7 Spanish graduate students; Examiner of 3 Thesis manuscripts from University of Oulu (Finland), LaTrobe University (Australia) and University of Melbourne (Australia); Opponent at 2 Thesis Dissertations at University of Helsinki (Finland) and Stockholm University (Sweden); and finally, I have been mentor of 5 national and 2 international undergraduate students. In summary, I have large experience on mentoring students and clinical specialists, and I intend to continue contributing to the formation of new generations of scientists.