Summary

I obtained my Doctoral Degree from University of Seville (Spain) in 2014, for work conducted in the laboratory of Jose Lopez Barneo and Ricardo Pardal. My thesis is about the physiology of neurogenesis in the peripheral nervous system and describes a novel mechanism of communication between stem cells and their progeny. I have published five manuscripts in this subject, two of them as a first author (Platero-Luengo et al. ***Cell*** 2014; Navarro-Guerrero and Platero-Luengo et al. ***Stem Cell*** 2016). The work published in Cell was chosen "Paper of the Month" by the SEBBM and awarded with the "University of Seville Prize for Relevant Scientific Works". The relevance of the findings has given me the national "**Young Investigator Award**" by Biogen Idec Foundation in 2015. In 2014, I joined the Salk Institute for Biological Studies (San Diego, California) as a postdoctoral fellow in the laboratory of Juan Carlos Izpisua Belmonte. There, I specialized in **stem cell biology, cell reprogramming and their role in tissue regeneration and aging**, publishing papers in top scientific journals (Cell, Nature, Circulation Research). In 2018, I moved to King's College London to join the laboratory of Benedikt Berninger at the Centre for Developmental Neurobiology, where I investigated the production of new neurons by cellular reprogramming to implement regeneration in nervous system. In 2019, I was awarded a Marie Curie Individual Fellowship to work on reprogramming in the brain. In 2020, I obtained two grants from the *Junta de Andalucia* Government (FEDER and PAIDI) to join the University of Seville as Principal Investigator.

Personal information

Dr. Aida Platero Luengo
Born in Seville (Spain)

Academic education

PhD thesis
Biology - Seville Institute for Biomedicine (IBiS), Spain. Date of award: 02/07/2014
PhD thesis name: "Carotid body hypertrophy under chronic hypoxia: mechanisms of activation, proliferation and differentiation of the neural progenitor cells in the peripheral nervous system"
PhD supervisor: Prof. Ricardo Pardal and Prof. José López Barneo

Official Master of Biomedical Research
University of Seville, Spain.
2006 –2007

University Degree
Biology - University of Seville, Spain.
2001 –2006

Indicators of scientific research

Total Articles in Publication List: 11
Cumulative Journal Impact Factor (JIF): 171
Cumulative citations: 776
h-index: 8

Research Experience

01/09/2020-present
"Juan de la Cierva Incorporación" Investigator at Institute of Biomedicine of Seville (University of Seville)

21/03/2018-31/08/2020

Marie Curie Postdoctoral Fellow at Centre for Developmental Neurobiology at King's College London. Supervisor: Prof. Benedikt Berninger

15/09/2014- 30/11/2017
Research Associate in Gene expression Laboratory at Salk Institute for Biological Studies. La Jolla, California. Supervisor: Prof. Juan Carlos Izpisua Belmonte

01/10/2006 – 7/04/2014
PhD Student at Seville Institute for Biomedicine (IBiS). Seville, Spain.
Supervisor: Prof. Ricardo Pardal Redondo and Prof. José López Barneo.

Project: Carotid body hypertrophy under chronic hypoxia: mechanisms of activation, proliferation and differentiation of the neural progenitor cells in the peripheral nervous system
Founding: University of Seville contract (2006-2007/2011-2014) and "Spanish Education and Science Ministry" PhD fellow (2007-2011)

07/01/2013 – 07/04/2013
EMBO short-term fellow student in Prof. Berninger's laboratory. Mainz, German.
Supervisor: Dr. Benedikt Berninger and Ricardo Pardal.
Project: Studies of Cellular Division and Lineage Progression in Carotid Body Stem Cells.
EMBO short-term fellowship

01/09/2005 – 30/06/2006
Official Research Student in Microbiology Department in University of Seville. Spain.
Supervisor: Prof. Rosario Espuny.
Pre-graduate fellow of the "Spanish Education and Science Ministry"

01/03/2004 – 30/09/2005
Research Student in Microbiology Department in University of Seville. Spain.
Supervisor: Dr. Rosario Espuny.

Fellowships and Contracts Obtained

Marie Curie Individual Fellow (2019-2020)

Postdoctoral Fellow by The Hewitt Foundation at Salk Institute. (2015-2017)

Research Associate in Gene expression Laboratory at *Salk Institute for Biologial Studies*. (2014-2016)

European Molecular Biology Organisation (EMBO) short-term fellowship (2012)

PhD fellow by the Spanish Education and Science Ministry (2007-2011)

Pre-graduated fellow by the Spanish Education and Science Ministry (2005-2006)

Honors and prizes

Selected for the Interstellar Initiative mentoring program for early career scientists from the The New York Academy of Sciences and The Japanese Agency for Medical Research and Development (2020)

Outstanding Research Study Award by University of Seville (2015)

IX Young Investigator Award by Biogen Idec Foundation (18.000 €) (2015)

Travel Grant from Novo Nordisk Foundation to attend to Copenhagen Bioscience Conference "The Stem Cell Niche 2014"

PhD with "International" mention and with qualification of "Summa Cum Laude"(2014)

Award "Paper of the month" selected by "SEBBM (Spanish Society of Biochemistry and Molecular Biology)"(2014)

Travel Grant by (FEBS) to attend to 22nd IUBMB and 37th FEBS Congress and Young Scientist Program (2012)

Publications

Veronica Sobrino; Valentina Annese; Elena Navarro-Guerrero; Aida Platero-Luengo; Ricardo Pardal. (2019) **The carotid body: a physiologically relevant germinal niche in the adult peripheral nervous system**. *Cellular and Molecular Life Science*. 76(6)-1027-1039

Beyret E*, Martinez-Redondo P* and Platero-Luengo A* (2018) **Elixir of Life: Thwarting Aging With Regenerative Reprogramming - *Circ Research***. Jan 2018;122(1):128-141 * Equal contribution. Cited: 4

Wu J, Platero-Luengo A, Sakurai M, Sugawara A, Gil MA, Yamauchi T, Suzuki K, Bogliotti YS, Cuello C, Morales Valencia M, Okumura D, Luo J, Vilariño M, Parrilla I, Soto DA, Martinez CA, Hishida T, Sánchez-Bautista S, Martinez-Martinez ML, Wang H, Nohalez A,

Aizawa E, Martinez-Redondo P, Ocampo A, Reddy P, Roca J, Maga EA, Esteban CR, Berggren WT, Nuñez Delicado E, Lajara J, Guillen I, Guillen P, Campistol JM, Martinez EA, Ross PJ, Izpisua Belmonte JC (2017) **Interspecies Chimerism with Mammalian Pluripotent Stem Cells. - *Cell*,** Jan 26;168:473-486. Cited: 255

Ocampo A, Reddy P, Martinez-Redondo P, Platero-Luengo A, Hatanaka F, Hishida T, Li M, Lam D, Kurita M, Beyret E, Araoka T, Vazquez-Ferrer E, Donoso D, Roman JL, Xu J, Rodriguez Esteban C, Nuñez G, Nuñez Delicado E, Campistol JM, Guillen I, Guillen P, Izpisua Belmonte JC (2016) **In Vivo Amelioration of Age-Associated Hallmarks by Partial Reprogramming -** *Cell*, Dec 15;167:1719-1733. Cited: 248

Kang E, Wu J, Gutierrez NM, Koski A, Tippner-Hedges R, Agaronyan K, Platero-Luengo A, Martinez-Redondo P, Ma H, Lee Y, Hayama T, Van Dyken C, Wang X, Luo S, Ahmed R, Li Y, Ji D, Kayali R, Cinnioglu C, Olson S, Jensen J, Battaglia D, Lee D, Wu D, Huang T, Wolf DP, Temiakov D, Belmonte JC, Amato P, Mitalipov S. (2016). **Mitochondrial replacement in human oocytes carrying pathogenic mitochondrial DNA mutations - *Nature*** Dec 8; 540:270-275. Cited: 135

Wu J, Platero Luengo A, Gil MA, Suzuki K, Cuello C, Morales Valencia M, Parrilla I, Martinez CA, Nohalez A, Roca J, Martinez EA, Izpisua Belmonte JC. 2016**. Generation of human organs in pigs via interspecies blastocyst complementation - *Reprod Domest Anim*** Oct;51, 2:18-24. Cited: 15

Elena Navarro-Guerrero*, Aida Platero-Luengo*, Jose Lopez-Barneo and Ricardo Pardal. (2016) **Gene expression profiling identifies CD10 as a marker for mesenchyme-committed neural crest progenitors in the adult mammalian carotid body - *Stem Cells*** Jun;34:1637-50 * Equal contribution. Cited: 13

José López-Barneo, David Macías, Aida Platero-Luengo, Patricia Ortega-Sáenz and Ricardo Pardal (2016) **Carotid body oxygen sensing and adaptation to hypoxia - *Pflügers Archiv-European Journal of Physiology*** Jan; 468:59-70. Cited:18

Aida Platero-Luengo, Susana González-Granero, Rocío Durán, Blanca Diaz-Castro, José I. Piruat, José Manuel García-Verdugo, Ricardo Pardal, and José López-Barneo (2014) **An O2-sensitive glomus cell-stem cell synapse induces carotid body growth in chronic hypoxia. – *Cell*** Jan 16; 156:291-303. Cited: 70

Ricardo Pardal. & Aida Platero-Luengo (2011) **A pathophysiological view of the neural stem cell niche**. Stem Cell, Regenerative Medicine and Cancer. Shree Ram Singh. ***Ed.Nova Science*** Publishers, Inc. New York. **Chapter**

Ricardo Pardal, Patricia Ortega-Sáenz, Rocio Durán, Aida Platero-Luengo & Jose López-Barneo. (2010) **The carotid body, a neurogenic niche in the adult peripheral nervous system**. *Archives Italiennes de Biologie*. Vol. 148; 95-105. Cited:15

Participation in Funded Projects

"**Ingenieria de la neurogenesis aplicada a la regeneracion del tejido cerebral**"
Principal Investigator: Dr. Aida Platero Luengo
Funded by: *Plan Andaluz de Investigación, Desarrollo e Innovación* (PAIDI)
Affiliation: University of Seville
Period: 2020-2023

"**Ingenieria de la neurogenesis y regeneracion cerebral: desarrollo de una tecnología basada en la reprogramación celular para activar la formación de nuevas neuronas en el cerebro adulto**"
Principal Investigator: Dr. Aida Platero Luengo
Funded by: *Proyectos de I+D+I en el marco del programa operativo FEDER Andalucia*
Affiliation: University of Seville

Period: 2020-2022

"**Lineage reprogramming of glia into subtype-specific cortical neurons**"
Principal Investigator: Prof. Benedikt Berninger
Funded by: Wellcome Trust
Affiliation: King's College London
Period: 2018-2023

"Physiology of the adult carotid body stem cell niche"
Principal Investigator: Prof. Ricardo Pardal
Funded by: European Research Council (ERC)
Affiliation: Seville Institute for Biomedicine (IBiS). University of Seville.
Period: 2010-2015

"**Regulating the physiology of adult stem cells specific carotid body"**
Principal Investigator: Dr. Ricardo Pardal
Funded by: Ministry of Science and Innovation & European Regional Development Fund (FEDER)
Affiliation: Seville Institute for Biomedicine (IBiS). University of Seville.
Period: 2010-2012

"Obtaining glomus cells from cultured stem cells for cell therapy against Parkinson's disease."
Principal Investigator: Dr. Ricardo Pardal
Funded by: Conserjería de Salud. Junta de Andalucía.
Affiliation: Seville Institute for Biomedicine (IBiS). University of Seville.
Period: 2009-2011

"Regulation of adult carotid body stem cell biology (CBSCs)"
Principal Investigator: Dr. Ricardo Pardal
Funded by: OTRI (University of Seville) & FEDER
Affiliation: Seville Institute for Biomedicine (IBiS). University of Seville.
Period: 2009

"Parkinson's disease, Huntington's disease and other movement disorders"
Principal Investigator: Prof. José López Barneo
Funded by: Instituto de Salud Carlos III. CIEN Foundation
Affiliation: University of Seville.
Period: 03/2009-12/2013

"Sensitivity to oxygen and neurodegeneration"
Principal Investigator: Prof. José López Barneo
Funded by: Marcelino Botín Foundation
Affiliation: Seville Institute for Biomedicine (IBiS). University of Seville.

Period: 06/2008- 12/2012

Participation in Meetings

07/2019: XIV European Meeting on Glia Cells in Health and Disease. Porto, Portugal. Poster Presentation.

06/2019: International Society for Stem Cell Research 2019, Los Angeles, USA. Poster Presentation

02/2019: EMBO workshop: Molecular neuroscience. Bangalore, India. Poster presentation

06/2018: 5th Biennial Meeting of the Rhine-Main Neuroscience Network (rmn²). Oberwesel, Germany. Poster presentation

09/2014: XXXVII Spanish Society of Biochemistry and Molecular Biology Conference (SEBBM). Granada, Spain. **Invited speaker**.

05/2014: Copenhagen Bioscience Conferences: The Stem Cell Niche. Copenhagen, Denmark. Oral presentation

07/2012: 8th Federation of European Neuroscience Societies (FENS) Forum of Neuroscience. Barcelona, Spain. Poster presentation.

06/2011: International Society for Stem Cell Research (ISSCR) 9th Annual Meeting. Toronto, Canada. Poster presentation

10/2010: Workshop "Cell Replacement For Regeneration In The Nervous System: Lessons From Adult Neurogenesis". International University of Andalusia. Baeza, Spain
Oral and Poster presentation

06/2010: ISSCR 8th Annual Meeting. San Francisco, California. Poster presentation

10/2009: Workshop "Developmental Origins of Neurological Disorders: From Neurogenesis To Circuit Formation". International University of Andalusia. Baeza, Spain. Poster presentation

05/2009: 2nd International PhD student meeting on European Neuroscience Institutes Network (ENInet). Creta, Grece. Oral and Poster presentation

Advanced Courses and Training

"Single Cell Omics". **Neuroscience School of Advanced Studies**. Venice, Italy (25/05/2018-01/06/2018)

"Leadership in Action". King's College London (17-19/12/2018)

"Limbic Brain Anatomy Course". King's College London & Neurocourses UK (17-18/08/2018)

"CRISPR Genome Editing: From Zero to Hero"'. CamBioScience. Cambridge, UK (13-14/08/2018)

"Cell Reprogramming Technology in Neuroscience". **Neuroscience School of Advanced Studies**. Venice, Italy (19-26/05/2018)

"Academic Laboratory Management & Leadership Symposium" Torrey Pines Training Consortium (TPTC) of San Diego, USA (23/02/2017)

Ingenuity Pathways Analysis (IPA) Certified Analyst Training. Andalusia Bioinformatics Platform. Malaga, Spain (2013)

Specialized Course on Animal Protection and Experimentation for Biomedical Researchers. Pablo de Olavide University. Seville, Spain (2011)

Introduction to Bioinformatics: Sequence Analysis with BLAST. University of Seville. Seville, Spain (2009)

Teaching Experience

University of Seville. Dept. Medical Physiology and Biophysics (2009-2011):

- Human Physiology at Dentist School; 15 hours
- Human Physiology at Traumatology School; 3.5 hours
- Physiology at Nurse School; 16 hours

King's College London, The Institute of Psychiatry, Psychology & Neuroscience (2019)

- Neuroanatomy; 8 hours

King's College London, The Institute of Psychiatry, Psychology & Neuroscience (2020)

- Neuroanatomy; 8 hours
- Neuroscience workshop on neural stem cells to 4th year MSci Neuroscience students; 12 hours.

Outreach activities

Participation in the activity "Explore Salk", the annual open house. (2017 and 2016)

Participation in the "High School Science Day" at Salk (2017)

Participation in the short-documentary "Enviado Especial" for the Spanish TV channel La Sexta (2017)

Participation in the episode about human-pig chimeras for the TV program "VICE" for the American channel HBO (2017)

Interview for the scientific dissemination digital journal from “Fundación Descubre” (2016) https://idescubre.fundaciondescubre.es/2016/03/10/la-ciencia-es-el-motor-de-una-economia-y-progreso-sostenibles/

Interview for the Spanish newspaper “El Correo de Andalucía” (2015) http://www.elcorreoweb.es/sevilla/para-mejorar-nuestra-ciencia-acaben-con-la- endogamia-y-el-amiguismo-BB773003