

BIOSKETCH

CV SUMMARY

I initiated my scientific career in 2003 at the Department of Cell Biology and Anatomy of the University of Salamanca, secured through a competitive "Collaborative fellowship" (Ministry of Education and Science). Since then, I have successfully obtained several competitive fellowships, including the "FPU" fellowship (Ministry of Education and Science; 2005) and a Postdoctoral fellowship (Alfonso Martin Escudero Foundation; 2015). In 2009, I successfully defended and obtained my PhD degree from the Institute for Neuroscience of Castilla y Leon. During this period, I was awarded the Doctorate Extraordinary and the "Charo Armas" awards by the University of Salamanca and the Spanish Cell Biology Society, respectively. I also completed two short-term stays (four months each) in the Department of Anatomy and Cell Biology at the University of Cantabria. My early research focused on neurodegenerative processes occurring in the cerebellum of the Purkinje Cell Degeneration mouse. I successfully identified the predegenerative hallmarks of both Purkinje cells and mitral cells, two neuronal types affected in this model. Additionally, I characterized two types of inflammatory responses under different degenerative states. From 2010 to 2014, I joined the Cancer Research Center (Salamanca, Spain) as a postdoctoral fellow under the supervision of Dr. Eugenio Santos. My research shifted to the functional role of the SOS family of RasGEF activators under physiological and pathological conditions. A key achievement during this time was the generation of the first available mouse model allowing examination of the functional effects of full-body expression of a SOS1/2 null mutation in adult animals. In 2015, I undertook a second postdoc at the University of California-San Diego (USA). Subsequently, from 2017 to the end 2021, I secured different competitive postdoctoral contracts (ISCIII or Univ. of Salamanca) to continue investigating the functional relevance of SOS in health and disease. My research has fostered several national and international collaborations. These include: Dr. Xosé Bustelo, Dr. Jesús Paramio, and Dra. Esther Castellano (National). Dr. Giorgio Scita (Milan), to examine the effect of SOS depletion in BCR/ABL-dependent chronic myeloid leukemia. Dr. Sabine Suire (UK), to unveil the role of SOS in neutrophils activation upon injury. Dra. Chiara Ambrogio (Torino), to evaluate the effect of SOS depletion in KRAS-driven lung adenocarcinoma. In January 2022, I obtained a permanent position as "Profesor Contratado Doctor" at the Department of Medical Physiology and Biophysics at the University of Seville. Most recently, in September 2025, I obtained the position of "Profesor Titular de Universidad" at the same Department.

I have participated in more than 20 scientific projects, serving as Principal Investigator (PI) on four. In addition, I have attended more than 60 conferences, including presentations as an invited speaker, and have served as a member of PhD and grant evaluation committees (AEI, FECyT, ISCIII in the TRASCAN call and Italian Ministry of Health). I am also an active reviewer for various journals in the cancer research field, such as Science Signaling, iScience, Molecular Oncology, Molecular Cancer Therapeutics, or J Med Chem, among others. My scientific production comprises 33 scientific papers (13 as first author and 7 as corresponding author), 1 editorial, 1 encyclopedia article, and 2 book chapters. The bibliometric analysis of my published papers includes: D1 (8), Q1 (11), Q2 (9), Q3 (3), and Q4 (2). I possess the accreditation to design and supervise experimental approaches (D) using animal models and belong to scientific organizations including ASEICA, CIBERONC, EACR and AACR.

Regarding my teaching responsibilities, I successfully directed one PhD student, who presented her thesis in July 2017 and I am currently supervising to another PhD student. Furthermore, I have supervised four undergraduate students and directed three Master's thesis students. I believe the skills acquired throughout my career demonstrate my capacity to function as a fully independent and successful researcher.

RELEVANT MERITS

Publications

1. **Baltanás FC**, Kramer-Drauberg M, García-Navas R, Ambrogio C*, Santos E*. (1/16). SOS1 inhibitor BI-3406 shows in vivo antitumor activity akin to genetic ablation and synergizes with a KRAS^{G12D} inhibitor in KRAS LUAD. PNAS. 122(11):e2422943122. 2025. 10.1073/pnas.2422943122. Cites: 3. Mean: 3/year. *CA (Corresponding Author)

2. Liceras-Boillos P, García-Navas R, Llorente-González C, Santos E*, **Baltanás FC***. (14/14). Sos1 ablation alters focal adhesion dynamics and increases Mmp2/9-dependent gelatinase activity in primary mouse embryonic fibroblasts. *Cell Commun Signal*. 23(1):116. 2025. 10.1186/s12964-025-02122-1. Cites: 0. *CA
3. **Baltanás FC***, García-Navas R, Rodríguez-Ramos P, Santos E*. (1/11). Critical requirement of SOS1 for tumor development and microenvironment modulation in KRAS^{G12D}-driven lung adenocarcinoma. *Nature Communications*. 14(1):5856. 2023. 10.1038/s41467-023-41583-1. Cites: 21. Mean: 10.5/year. *CA.
4. **Baltanás FC***, García-Navas R, Santos E (1/3). Sos2 come to the fore: Differential functionalities in physiology and pathology. *International Journal of Molecular Sciences*. 22(12):6613. 2021. 10.3390/ijms22126613. Cites: 31. Mean: 7.75/year. *CA
5. **Baltanás FC***, Mucientes-Valdivieso C, Lorenzo-Martin LF, Santos E* (1/11). Functional Specificity of the Members of the Sos Family of Ras-GEF Activators: Novel Role of Sos2 in Control of Epidermal Stem Cell Homeostasis. *Cancers*. 13(9):2152. 2021. 10.3390/cancers13092152. Cites: 14. Mean: 3.5/year. *CA
6. García-Navas R, Liceras-Boillos P, Gómez C, **Baltanás FC**, Nuevo-Tapioles C, Cuezva J, Calzada N, Santos E* (4/8). Critical requirement of SOS1 RAS-GEF function for mitochondrial dynamics, metabolism and redox homeostasis. *Oncogene*. 40:4538-4551. doi: 10.1038/s41388-021-01886-32021. Cites: 25. Mean: 6.25/year.
7. **Baltanás FC**, Zarich N, Rojas-Cabañeros JM, Santos E (1/4). SOS GEFs in health and disease. *Biochimica et Biophysica Acta-Reviews on Cancer*. 1874:188445. 2020. 10.1016/j.bbcan.2020.188445. Cites: 98. Mean: 19.6/year.
8. Liceras-Boillos P, García-Navas R, Ginel-Picardo A, **Baltanás FC***, Santos E* (10/11). Differential role of the rasgefes Sos1 and Sos2 in mouse skin homeostasis and carcinogenesis. *Molecular Cellular Biology*. 38: e00049-18. 2018. 10.1128/MCB.00049-18. Cites: 34. Mean: 4.85/year. *CA
9. Gerboth S, Frittoli E, Palamidessi A, Scita G* (4/17). Phosphorylation of SOS1 on tyrosine 1196 promotes its RAC GEF activity and contributes to BCR-ABL leukemogenesis. *Leukemia*. 32:820-827. 2018. 10.1038/leu.2017.267. Cites: 38. Mean: 5.42/year.
10. Liceras-Boillos P, García-Navas R, Ginel-Picardo A, **Baltanás FC***, Santos E* (10/11). Sos1 disruption impairs cellular proliferation and viability through an increase in mitochondrial oxidative stress in primary MEFs. *Oncogene*. 35:6389-6402. 2016. 10.1038/onc.2016.169. Cites: 50. Mean: 5.55/year. *CA