Fellowship programme to strengthen international network

Collaborations with international partners are key elements for the success of an interdisciplinary research centre. As part of its internationalisation strategy, the LCSB launched the International Fellowship Programme in 2023 to foster exchanges between its groups and research institutions in Europe and beyond, and to further establish itself as a sought-after collaboration partner worldwide. For the LCSB research groups, this is an additional source of funding for projects with selected institutions that fit within the centre's key strategic objectives.

"We launched the first international fellowship call at the beginning of 2023 with the aim of consolidating the already existing links with the Institute of Biomedicine of Seville (IBiS) in Spain," explains Dr Françoise Meisch, strategic advisor at the LCSB. "After careful consideration of the three proposals submitted and based on external reviews, the project of Dr Santiago López-Begines was selected for funding. He has now joined the LCSB as a postdoctoral researcher but will also spend some time at IBiS, where he has worked before."

The project 'Molecular mechanisms of neurodegeneration in zebrafish models of neuronal ceroid lipofuscinosis' aims to combine the expertise of the Enzymology and Metabolism group led by Prof. Carole Linster at the LCSB and of the Molecular Physiology of the Synapse group led by Dr Rafael Fernández-Chacón at IBiS. Both teams conduct research in the field of lysosomal storage disorders, a group of rare genetic diseases in which a specific digestion and recycling pathway is disrupted, leading to the accumulation of waste products that damage cells and tissues. They focus on neuronal ceroid lipofuscinosis, a subset of these disorders caused by defects in 14 different CLN genes, at least 8 of which cause the accumulation of lipopigments in neuronal cells.

"IBIS and the LCSB have developed different models of gene deficiencies involving the CLN3, CLN4 and CLN13 genes. We hope to be able to combine our technical expertise and knowledge of each model to advance



the understanding of the different diseases and move towards the discovery of pharmacological interventions," explains Dr López-Begines.

In addition, the project combines several strategic objectives of the LCSB. "CLN genes are also associated with Parkinson's disease and tau progression in Alzheimer's disease, so it brings together our evolving focus on rare childhood diseases with our cornerstone research focus on age-related neurodegeneration," comments Prof. Michael Heneka, head of the LCSB. "All this while consolidating our links with this leading institute in Sevilla."

The LCSB will continue the International Fellowship Programme with at least one call per year. Each call will be tailored to a selected partner institution, with the aim of fostering a long-term strategic collaboration and establishing the LCSB as a household name in the field of neurodegenerative diseases research worldwide.