

Short biography

Helena Sofia Domingues graduated in Biochemistry from University of Porto (Portugal) in 2003. She worked for 2 years as an assistant researcher in the field of immunology of infection at the Life and Health Sciences Research Institute (ICVS, University of Minho, Portugal). In 2005, Sofia joined the PhD program in Experimental Biology and Biomedicine (PDBEB) at the Center of Neuroscience and Cell Biology of the University of Coimbra (Portugal) and did her PhD training with Prof. Hartmut Wekerle and Gurumorthy Krishnamoorthy in the Max-Planck Institute of Neurobiology (Germany) in the field of neuroimmunology and animal models for multiple sclerosis. In 2011, Sofia was awarded with a Marie Curie Intra-European Fellowship and returned to Portugal for a post-doc with João Relvas at the Institute for Molecular and Cell Biology (IBMC, Porto, Portugal) to identify new cytoskeleton molecules important for oligodendrocyte differentiation and myelination. In 2017, Sofia joined Inês Pinto's Cell Mechanics lab at INL with the final goal of combining super-resolution microscopy techniques and biosensing into computational models able to predict oligodendrocyte cell differentiation towards myelination. The process of myelination is essential for a healthy nervous system and is often compromised after injury, such as trauma and stroke, and in various neurological disorders such as multiple sclerosis, schizophrenia and age-related cognitive decline. It is becoming increasingly recognized the importance of combining studies of cell mechanics and predictive computational modeling to understand cell behavior. In oligodendrocyte-based myelination, this knowledge can be used to explore drug discovery programs aimed at enhancing remyelination and/or modulation of myelin protection in demyelinating clinical conditions.