



la generación de
células en el cerebro adulto

The importance of neurogenesis in the adult brain

Neurogenesis is the process by which new neurons are produced in the brain. While this process is most active during gestation and infancy, adults continue to generate neurons in specific zones of the brain.

Dr. Lorena Varela-Nallar, researcher for the Center for Biomedical Research (CIB), Faculty of Biological Sciences at Universidad Andrés Bello, is studying the mechanisms that regulate neurogenesis in the adult brain. Specifically, Dr. Varela-Nallar's research is focused on the hippocampus, the brain structure associated with learning and memory.

"In our laboratory, we are studying the role played by the WNT signaling pathway in the different stages of hippocampal neurogenesis. This signaling pathway plays diverse roles during the development of the nervous system and is also fundamental in the adult brain," explains Dr. Varela-Nallar.

Dr. Varela-Nallar highlights that this research has already resulted in fundamental milestones. "We have identified new components in the WNT signaling pathway that are relevant to the differentiation of neuronal stem cells and for the migration of new neurons in the dentate gyrus of the hippocampus."

According to Dr. Varela-Nallar, alterations in adult neurogenesis are associated with neurodegenerative and neuropsychiatric diseases. Due to this, the primary objective of her group's research is to identify new molecular targets that are relevant to neurogenesis. "Once we identify new molecules involved [in neurogenesis], we will be able to intervene with molecular or pharmacological tools to study the distinct aspects of this process. Likewise, we will be able to characterize in greater detail the role that WNT signaling pathway plays in the adult hippocampus."

Dr. Lorena Varela-Nallar concludes by saying, "We have developed new physiological and pharmacological stimuli able to promote neurogenesis in a model for Alzheimer's disease. These advances are highly significant as they could act as the basis for designing future therapies."