LINEA DI RICERCA BORSA AGGIUNTIVA 39° CICLO – Ex D.M.117/2023

Supervisor: Dott.ssa *Marzia Soligo, Istituto di Farmacologia Traslazionale (IFT)-CNR, marzia.soligo@ift.cnr.it*

Tutor: Prof.ssa Maria Egle De Stefano, egle.destefano@uniroma1.it

Host Institution: *Istituto di Farmacologia Traslazionale (IFT)-CNR, Via del Fosso del Cavaliere 100, 00133 Roma*

Title of the research

Intranasal delivery of human recombinant NGF in a young-rat model of traumatic brain injury: evaluation of behavioral, molecular, biochemical and morphological outcomes.

Abstract

Traumatic brain injury (TBI) occurs with the transient application of mechanical force to the brain damaging cell membranes, axons, and the vasculature. After this primary injury, secondary molecular, biochemical, and cellular events cause further neuronal, glial, and vascular injury with progressive decrease in cognitive, motor and sensory functions. Nerve growth factor (NGF) is involved in the development and survival of neurons of the peripheral and central nervous system. Several preclinical and clinical evidence indicate that NGF has an important role in TBI and its intranasal administration to the brain parenchyma has been poited as a possible effective therapy in improving the outcome of TBI. The project aims to explore the efficacy of NGF in the treatment of TBI-induced cortico-striatal and hypothalamic dysfunctions using the rat model that best matches the impact trauma dynamics so as to be able to mimic the primary and secondary injuries that occur in a child after TBI.