STSM Abstract - Vesna Tesic

One of the hallmarks of Alzheimer's disease (AD) is the accumulation of amyloid plaques, composed of aggregated amyloid-β peptides (Aβ), mainly Aβ42. The peptides are formed by sequential proteolytic processing of the amyloid-precursor protein (APP). APP can be cleaved throughout two distinct pathways, the amyloidogenic and nonamyloidogenic pathway. Two important omega-3 fatty acids DHA and EPA are shown to influence both amyloidogenic and nonamyloidogenic processing of APP. The goal of the Short Term Scientific Mission was to examine the change in APP processing and generation of Aβ42 following omega-3 fatty acids maternal supplementation in the cortex and hippocampus of 5XFAD mouse model of AD.

The STSM facilitated this research by providing training in the design of appropriate experiments. The screening of key proteins involved in Aβ42 production by immunoblotting techniques and the determination of the level of Aβ42 by ELISA assay, using protocols developed in the host laboratory, were performed. Thereby, the guidelines for the future research are established. The STSM also allowed me to interact with experts in AD research and gave me the opportunity to work in a new and stimulating environment.