

TOBeATPAIN E-Seminar 24th of March 2020

Joana Lama (ESR2) presented the paper “Block of A1 astrocyte conversion by microglia is neuroprotective in models of Parkinson’s disease” authored by Yun and colleagues. The paper was published in Nature Medicine in 2018 and is focused on neuroprotective role of NLY01, a GLP1R agonist, in Parkinson disease. The mechanism of action is microglia mediated and leads to the conversion of astrocytes from an A1 neurotoxic phenotype.

The selected paper of the E-Seminar is comprehensive, including *in vitro* experiments (microglia, astrocytes and neurons primary cell culture), *in vivo* experiments working with two animal models of Parkinson disease (*Mouse strain for stereotaxic  $\alpha$ -syn PFF injection* and *hA53T  $\alpha$ -synuclein transgenic mice*) and behavioral tests (pole test, rotarod, cylinder test).

The conclusion of the first set of experiments was that NLY01 reduces the pathology in the hA53T and PFF mouse models and reduces the motor deficits in PFF treated mice.

In the second set of experiments they show that GLP1R is highly expressed in regions affected by Parkinson disease, being mostly present in microglia and astrocytes. The neuroprotective role of NLY01 is mediated by microglia. The NYL01 acts on microglia, which consecutively downregulates the A1 neurotoxic phenotype of astrocytes.

The paper presentation concluded with a couple of questions from the audience. The questions that are raised and the discussions are always a good way of expressing our knowledge and understanding. More important, enhancing our scientific skills.

I appreciate the opportunity of hearing Joana’s talk and I am looking forward for the next ones.

Review by Cristiana Dumbrăveanu