Secondment at Medical University of Innsbruck

Cristiana Dumbraveanu (ESR 10)

The secondment within the project number 10, entitled Assessment of medical marijuana bioactive substances in a mouse model of neuropathic pain and part of the TOBeATPAIN network, took place from September to December 2021. During the secondment at the Medical University of Innsbruck, hosted by Prof. Michaela Kress, I had the opportunity to perform *in vitro* experiments and learn how to perform gene expression analysis using reverse transcription quantitative polymerase-chain reaction (RT-qPCR).

The aim of the secondment was to investigate cannabinoid receptor expression changes in response to *Cannabis* compounds. In these experiments, I worked with BV2 cells, which are mouse microglia derived cells and represent an alternative model system for primary microglia studies. Previous experiments have shown that cannabinoids modulate neuroimmune responses in the SNI mouse model. Therefore, during the secondment, I was interested in evaluating the effect of cannabinoids, THC and CBD, on Cnr1, Cnr2, Gpr55, Gpr18 and Gpr119 gene expression. The results showed that THC and CBD do not induce significant changes in the expression of the investigated receptors. Interestingly, I determined differential expression of cannabinoid binding receptors in BV2 cells: Gpr119 exhibited the highest expression, followed by Gpr55, Cnr1 and Cnr2, whereas Gpr18 expression levels were not detected.

During the secondment, I was fortunate to be surrounded by a great team, dedicated and highly skilled researchers. The results obtained gave us information about the receptors expressed in the BV2 cell line, but also about the next experiments to be performed.