

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: CA18124

STSM title: - European Sexual Medicine Network

STSM start and end date: 04/06/2021 – 31/08/2021

Grantee name: Renata Androvicova

PURPOSE OF THE STSM:

The purpose of my traineeship was to learn the basics of epigenetics, i.e. the study of gene expression changes that are not linked to changes in the DNA sequence, and apply the new acquired knowledge to the study of compulsive sexual behaviour cohort from Hanover. We used CpG islands methylation of several gene targets as epigenetic markers which may distinguish between the compulsive sexual behaviour cohort and matched controls. We examined methylation of target genes coding for androgen, dopamine, serotonin, oxytocin and vasopressin receptor; in addition, methylation of the genes coding for dopamine and serotonin transporter was examined too. I learned a complete lab workflow for the assessment of methylation of CpG islands.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

We examined methylation of target genes coding for androgen, dopamine, serotonin, oxytocin and vasopressin receptor; in addition, methylation of the genes coding for dopamine and serotonin transporter was examined too. After I have finished the laboratory work, the analytical part commenced, during which I learnt statistical approaches to the analysis of complex data including genetic, sociodemographic and psychiatric data. Results were discussed and interpreted within the circle of co-authors during two scientific meetings. Apart from theoretical and practical skills, I have also learnt soft skills including coordination and communication of a complex research issues among three sites involved in this project (the Psychiatric Dept, the molecular laboratory and the I can change prevention project).

DESCRIPTION OF THE MAIN RESULTS OBTAINED

Currently a research paper is being drafted. We will target journals such as Molecular Psychiatry or Biological Psychiatry. I will also present preliminary results from this project at the COST ESMN Conference held in Salzburg in October 2021. This traineeship also inspired me to apply for a Marie Curie Skłodowska Fellowship of Horizon Europe and further pursue research into genetic determinants of sexual behavior.

FUTURE COLLABORATIONS (if applicable)

Me and my host Prof. Tillmann Krüger would like to continue collaboration on the study of biological determinants of various sexual pathologies. In the long term, we agreed to pursue a buildup of a common bio marker database, which would include data on genetics, epigenetics, brain data and sociodemographic and psychological variables.