

## **Projekt 1.7. To investigate the interplay between metabolic and epigenetic factors in pathogenesis and inheritance of neuropsychiatric disorders**

**Supervisor:** Dr Ali Jawaid

**Laboratory:** BRAINCITY, Translational Research in Neuropsychiatric Disorders; TREND

### **Background:**

Jawaid lab (Translational Research in Neuropsychiatric Disorders; TREND) investigates molecular mechanisms underlying the pathogenesis and inheritance of neuropsychiatric and neurodegenerative disorders with a specific focus on epigenetics and metabolism. This theme is backed by strong clinical and translational research showing a disease modifying effect of metabolic perturbations in neurodegenerative disorders ALS and FTLD (reviewed in Jawaid et al. Molecular Neurodegeneration 2018), role of miRNAs in memory impairment in neurodegenerative disorders (Jawaid et al. Nature Communication 2016, Jawaid et al. Molecular Neurobiology 2018), role of metabolic and microglial sensing in Alzheimer disease (Paolicelli, Jawaid et al. Neuron 2017), and a role of brain/circulating microRNAs and lipid metabolites in epigenetic inheritance of the effects of early life trauma (Gapp, Jawaid et al. Nature Neuroscience 2014, Steenwyk et al. (pre-print available on biorxiv).

### **Aim:**

To investigate the interplay between metabolic and epigenetic factors in pathogenesis and inheritance of neuropsychiatric disorders

### **Requirements:**

- strong interest in the brain research and neuroepigenetics
- M.Sc. degree, or equivalent, in molecular biology, biochemistry, biotechnology, physics/biophysics, biology, psychology, medical or veterinary sciences
- exceptional motivation for the scientific research (demonstrated via publications, references of the candidate's thesis tutor)
- proficiency in English
- prior experience with iPSC derived neurons/ 3D cultures will be preferred