Depression is a widely distributed and very severe mental disorder. In spite of many years of intensive research, we still do not know enough about neuronal mechanisms responsible for the pathophysiology of depression to successfully treat it with available drugs. The current generation of antidepressants are not universal drugs, each one of them only helps a small group of patients. Therefore there is still need for scientific research into new therapeutic strategies.

Affective disorders such as depression influence many neuronal mechanisms responsible for the homeostasis of the central nervous system. Serotonin is a classical neurotransmiter involved in antidepressant action and pathophysiology of depression. It is supposed that affective disorders caused by chronic stress induce structural and functional changes the areas of the limbic system, e.g. hippocampus, frontal cortex and amygdala, which are strongly innervated by serotonin-producing neurons.

This project aims to investigate the interactions between two serotonin receptors, 5-HT1A and 5-HT7. Recent studies suggest that the crosstalk between these receptors is essential for mood regulation and is responsible for the therapeutic potential of antidepressants.