

## **DESCRIPTION FOR THE GENERAL PUBLIC**

One of the basic disorders in persons suffering from fragile X syndrome is hypersensitivity to sounds. In addition, in a mouse model of this disease a similar phenomenon occurs, animals in response to high tones may develop epileptic seizures. The auditory cells (inner hair cells) grouped in the Corti's organ in the inner ear play a key role in the correct processing of acoustic information. Preliminary results of our research points at the differences in a structure of synapses through which information from sensory cells is transmitted to the brain. To check whether the inner hair cells and their synapses differ structurally in the mouse model of the fragile X syndrome, we planned the experiments enabling their very detailed imaging in a confocal microscope and in an electron microscope. In addition, we plan to investigate the effect of antibiotic - minocycline, which is currently in the clinical trial phase as a potential drug for fragile X chromosome, for the reception of acoustic stimuli and the structure of synapses in the mouse model of human disease.