

	Institute	Laboratory	Title of the research project ongoing or planned in the laboratory	Preliminary topic of foreign student's scientific practice	Timing of the scientific practice
1	Institute of Cardiology	Preclinical Research Laboratory for Medicinal Products	Application of plant nanoparticles to reduce ischemic damage	Isolation, characterization and analysis of plant derived extracellular vesicles	2024-07-20 – 2024-08-20
2			Development of mitochondria-targeted nanotherapy for cardiomyocyte protection during surgical intervention	Work with cardiomyocyte cell cultures, cardiomyocyte contraction analysis	2024-07-20 – 2024-08-20
3			Application of plant nanoparticles to reduce ischemic damage	Work with neuronal-glia cell cultures, analysis of results, analysis of mitochondrial functions, ischemia/reperfusion and inflammatory models in vitro	2024-07-20 – 2024-08-20
4			Data analysis of extracellular vesicles cross species compatibility	Data analysis of proteins and miRNA in extracellular vesicles	2024-07-20 – 2024-08-20
5			Application of extracellular vesicles to reduce UV/inflammatory damage and increase wound healing in skin	In vitro experiments with skin cell lines, UV and inflammatory models, in vitro scratch test.	2024-07-20 – 2024-08-20
6			The effect of blood pressure medications on cardiac connexin gap junction channels and hemichannels	Electrophysiological measurements of conductance through gap junction channels in cell pairs	2024-06-17 – 2024-07-19

7		Laboratory of Intercellular Communication	The effect of blood pressure medications on cardiac connexin gap junction channels and hemichannels	Electrophysiological measurements of conductance through connexin hemichannels	2024-06-17 – 2024-07-19
8			The effect of blood pressure medications on cardiac connexin gap junction channels and hemichannels	Permeability measurements of connexin gap junction channels and hemichannels using fluorescence microscopy	2024-06-17 – 2024-07-19
9			Study of structure-function relationship of cardiac connexins	Preparation of cell line for electrophysiological experiments using cell culture and molecular biology methods	2024-06-17 – 2024-07-19
10		Laboratory of Intercellular Communication	Biophysical properties of connexin channels and hemichannels	Mathematical modeling of biophysical properties of gap junctions and hemichannels	2024-06-17 – 2024-07-19
11		Laboratory of Molecular Cardiology	Effects of arachidonic acid derivatives and RAAS inhibitors on cell metabolism and viability	Metabolism of arachidonic acid in cell cultures	2024-06-17 – 2024-07-19 Or 2024-08-01–2024-08-31
12			Effects of arachidonic acid derivatives and RAAS inhibitors on cell metabolism and viability	Metabolism of arachidonic acid in cell cultures	2024-06-17 – 2024-07-19 Or 2024-08-01–2024-08-31
13	Neuroscience Institute	Neurophysiology laboratory	Optogenetic modulation of visual responses in the rat visual cortex	Data analysis or/and computer simulations of visual responses, participation in experiments (virus injections, recordings)	2024-06-15 – 2024-08-31

14		Laboratory of Behavioral Medicine	The Association of Genetic and Personality Factors with Internet Gaming Disorder (IGD) in Lithuania	<p>The research aims to examine whether there is a potential link between personality traits, internet gaming disorder (IGD), and specific genetic variations in the Catechol-O-methyltransferase (COMT) and Oxytocin receptor (OXTR) genes. Additionally, the study will analyze how personality traits such as depression, anxiety, and early traumatic experiences may play a role in young adults and affect the risk of internet gaming disorder. To accomplish this, students will contribute to the adaptation and validation of psychometric instruments, analyzing psychometric data by the IBM SPSS program. Students also extract DNA from individuals' buccal cells, and their genotypes will be determined by analyzing single nucleotide polymorphisms (SNPs) using TaqMan chemistry.</p>	2024-07-01 – 2024-08-31
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15		Laboratory of Pharmacological Regulation of Pathological Processes and Drug Metabolism	Investigation of viral RNA mimetics and amyloidogenic proteins on brain cell cultures.	This study aims to investigate the potential synergistic effect of viral RNA mimetics with amyloidogenic proteins on primary rat brain cultures: whether the addition of viral RNA mimetics and amyloidogenic proteins leads to neurotoxicity and inflammatory responses in brain cell cultures. This involves measuring cell viability and cell number changes, microglia activation, and cellular morphology. The object of this study – primary neuronal-glial co-cultures (CGC) or/and primary microglia cell monocultures prepared from the cerebellum and cortex, respectively, of 5–7-day-old Wistar rats pups (both genders). The fluorescence microscopy method will be used in the research.	2024-07-01 – 2024-08-31
16		Laboratory of Molecular Neurobiology	Oxidative Damage in Brain	Effects of Selenium on <i>MsrB1</i> , <i>Caspase-3</i> and <i>GADD45</i> genes expressions in mouse liver and brain samples	2024-06-17 – 2024-07-19

17		Laboratory of Molecular Neurobiology	Studies of circulating miRNAs in patients with demyelinating pathologies	Studies of circulating miRNAs in patients with inflammatory neuropathy	2024-06-17 – 2024-07-19
18		Laboratory of Ophthalmology	Role of ryanodine receptors in neuroendocrine tumour development: implications in electrophysiological and molecular tumorigenesis mechanisms (No. P-LLT-23-16; PI: prof. Arimantas Tamašauskas)	Molecular Insights in Pituitary Adenoma Tumorigenesis Mechanisms	2024-06-17 – 2024-07-19
19		Laboratory of Ophthalmology	Search for microbiome and novel metabolomic and immunogenetic markers in patients with age-related macular degeneration (No. P-MIP-23-126; PI: prof. Dalia Žaliūnienė)	New Molecular Marker Complexes and Treatment Response in Exudative Age-Related Macular Degeneration	2024-06-17 – 2024-07-19
20		Laboratory of Biochemistry	The effect of imeglimin on heart mitochondria functions	The effect of imeglimin on heart mitochondria functions	2024-06-17 – 2024-07-19
21	Institute for Digestive Research	Laboratory of Clinical and Molecular Gastroenterology	Single-cell transcriptome analysis of gastrointestinal diseases	Sample preparation for single-cell analysis: tissue dissociation and quality control	2024-07-01 – 2024-08-31
22		Laboratory of Clinical and Molecular Gastroenterology	Diet-microbiome-gut axis: the effect of microbiome derived nutrition associated metabolites on inflammatory processes in the gut (grant. no. S-MIP-23-101; PI: prof. Jurgita Skieceviciene)	"Evaluation of the effect of bacterial metabolites on inflammatory processes in gut epithelial barrier using colonic organoid culture system"	2024-07-01 – 2024-08-02

23		Laboratory of Bioinformatics	Analysis of the bacterial microbiome in samples from patients with microscopic colitis.	Engage in bioinformatics and statistical analysis of the bacterial microbiome, with the chance to participate in sequencing sample preparation	2024-07-01– 2024-07-31
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