

### Molecular Biology, Bachelor Studies Programme, 2023

Institution		Department/Laboratory	Themes
<b>VU Life Sciences Center</b>	<b>Institute of Biosciences</b>	Department of Biochemistry and Molecular Biology	Molecular Mechanisms of Fluoroquinolone and Carbapenem Resistance in <i>Acinetobacter baumannii</i>  Prevalence of Aminoglycoside Resistance Genes in <i>Acinetobacter baumannii</i> Isolates from the National Cancer Institute  Investigation of Notch Signaling Pathway in Endometrial Cancer Cells KLE
		Department of Neurobiology and Biophysics	Use of Recombinant Endoplasmic Reticulum Chaperones for the Treatment of Neurodegenerative Diseases  Characterization of Neuronal Glycocalyx and Modulation of Sialylation in Ex Vivo and In Vivo Systems  The Metabolism of Sialic Acid and Sialidase Enzymatic Activity Evaluation in the Developing Mouse Hippocampus  Diet - Microbiota - Brain: The Impact of Maternal High Fat Diet on Offspring Neurodevelopment
		Department of Botany and Genetics	DNA Polymorphism Study in Alfalfa Populations of Different Species Composition
		Center of Ecology and Environment	Studies of Bivalve Mussels <i>Unio pictorum</i> (Nemunas River) Using Biochemical Biomarkers Analysis
		Department of Microbiology and Biotechnology	Application of Recombinant GD-95RM and GDEst-lip Lipolytic Enzymes for Polycaprolactone Degradation and Simultaneous Ester Synthesis
	<b>Institute of Biochemistry</b>	Department of Bioelectrochemistry and Biospectroscopy	Pro-inflammatory S100A9 Protein Effect on Lipid Bilayer Integrity
		Department of Molecular Cell Biology	Therapeutic Potency of PBMCs on Ovarian Function in an Animal Model of Premature Ovarian Failure  JNK as a Possible Molecular Target in Lung Cancer Treatment

		Department of Molecular Microbiology and Biotechnology	Investigation of Potential Guanine-modifying Proteins of Pantoea Bacteriophages Analysis of $\alpha$ -L-Fucosidases from a Metagenomic Library
		Department of Biological Models	<i>In vivo</i> Study of Indole Pharmacokinetics
	<b>Institute of Biotechnology</b>	Department of Protein – DNA Interactions	Characterization and Functional Analysis of a Bacterial Defense System QatABCD
		Department of Bioinformatics	Computational Analysis of PAM Recognition Domains in Cas9 Proteins
			Computational Analysis of Protein Interactions in Cytochrome P450 Systems
		Department of Biological DNA Modification	Identification of RNA-RNA Interaction Partners in Lactococcus lactis MG1363 Bacteria Using Modified MAPS Method
			Search and Study of sRNAs Regulating the Expression of 5'-NAD-RNA Hydrolase NudC
		Department of Biothermodynamics and Drug Design	Production of Mutant Carbonic Anhydrase II Proteins and Study of Their Interaction with Sulfonamides
	Department of Eukaryote Gene Engineering	Generation of a Transgenic Zebrafish Strain with Inducible Expression of HA-Tagged Tcf21	
Search of New Polyomaviruses in Common Hamster ( <i>Cricetus cricetus</i> ) Kidney Samples and Analysis of Their Characteristics			
Department of Immunology	Characterization of Monoclonal Antibodies to Human Chaperone ERp57		
<b>LSC-EMBL European Molecular Biology Laboratory Partnership Institute</b>	Laboratory of Dr. Jonathan Arias	Improving the Fitness of Immune Cells	
<b>Botanical Garden of Vilnius University</b>		Search of Mutations in Genes Involved in Hormonal Activity and Determining Unusual Stem Branching in <i>Lolium perenne</i>	

<b>Nature Research Centre</b>		Laboratory of Molecular Ecology	<p>Studies of Interspecific and Intraspecific Genetic Diversity of the Genus <i>Chionea</i> Based on Cytochrome C Oxidase I Gene Sequencing</p> <p><i>Rubus chamaemorus</i> Genetic Diversity Study in the Southeastern Baltic Region Using Microsatellite Markers</p> <p>The Molecular Identification of <i>Sarcocystis</i> Species Transmitted via Predators of the Family Mustelidae</p>
		Laboratory of Ecotoxicology	<p>Quantum dots toxic effects on brown trout (<i>Salmo trutta fario</i>)</p> <p>Study of the Cytogenetic Status of Atlantic Salmon (<i>Salmo salar</i>) Reproductors During Spawning Migration Period (2019-2022)</p>
<b>Center for Physical Sciences and Technology</b>	<b>Department of Functional Materials and Electronics</b>	Bioelectrics Laboratory	<p>Impact of Plasma and Pulsed electric Field Treatment on <i>Chlorella vulgaris</i> Algae</p> <p>Adhesion Studies of Mammalian Cell Lines on Polycarbonate Membrane</p>
<b>National Cancer Institute</b>	<b>Research Departments</b>	Laboratory of Molecular Oncology	<p>Knockout of Potentially to Cancer Cell Metastasis Related miR-30a in LLC1 Cell Line</p> <p>Evaluation of PARP Gene Expression in Clinical Rectal Cancer Samples</p>
<b>Centre of Innovative Medicine</b>	<b>Department of Regenerative Medicine</b>		<p>Effect of Hypoxia Inducible Factor HIF-1<math>\alpha</math> inhibitor LW6 on Human Bone Marrow Mesenchymal Stem Cells and Their Chondrogenic Differentiation Using Cell Sheet Technique in Hypoxic Conditions</p>
<b>University of Bergen</b>	<b>Department of Biological Sciences</b>	Centre for Deep Sea Research	<p>Genome-Based Assessment of Uncultured Archaeoglobi as Microbial Cell Factories</p>
<b>Thermo Fisher Scientific Baltics</b>			<p>Analysis of New Methods for Isothermal Amplification</p>