

Molecular Biotechnology, Bachelor Studies Programme, 2025

Institution		Departments, Laboratories	Themes		
VU Life Sciences Center	Institute of Biochemistry	Department of Bioelectrochemistry and Biospectroscopy	Effects of Statin Treatment on PCSK9 and LDLR Levels: Potential Use in Combinatory Treatment with CRISPR-Cas9 Methodologies Berberine, a Natural Inhibitor of PCSK9, as a Potential Adjuvant in Cancer Therapy		
		Department of Bioanalysis	Development of a Disposable Colorimetric Urea Biosensor Using pH Indicator Dyes Synthesis of Short Glucose-6-Ester Derivatives and Their Potential Application for Esterase Activity Determination Biosynthesis, Purification and Applications of Aldonic Acids Development and Research of a Bienzymatic Second-Generation Biosensor for the Determination of Oxidase Activity Bioconjugation of Glucose Oxidase and Myoglobin Using Electrochemically Active Groups and Their Application in Bioelectronics		
			Department of Biological Models	A Mouse Cardiac Fibroblast Model for the Study of Fibrosis Mechanisms	
			Department of Molecular Microbiology and Biotechnology	Thermostability and Substrate Specificity Study of <i>Bos taurus</i> Terminal Deoxynucleotidyl Transferase Variants	
			Institute of Biotechnology	Sector of Amyloid Research	Alpha-Synuclein Purification and Liquid-Liquid Phase Separation Analysis
				Department of Biothermodynamics and Drug Design	Application of Various Fluorophores for Determining Protein Stability by Thermal Shift Assay

			Production of Recombinant Beta-Carbonic Anhydrases from <i>Pseudomonas aeruginosa</i> and Screening of Compuonds for the Discovery of Enzymes Inhibitors
		Department of Biological DNA Modification	Specific DNA Labeling in Mouse Lung Cancer LLC1 Cells Under Normoxia and Hypoxia
		Department of Eukaryote Gene Engineering	Wuhan Mosquito Virus 6 Splicing Analysis
			Synthesis of Recombinant <i>Apis mellifera</i> Allergens Api m 7 and Api m 10 in <i>E. coli</i> Bacteria
			Analysis of Common Vole Polyomavirus Protein Expression and Effects in <i>Saccharomyces cerevisiae</i>
			Investigation of Vertical Transmission of Wuhan Mosquito Virus 6 (WuMV-6) in <i>Culex pipiens</i> Mosquitoes
		Department of Immunology	Biosynthesis of Recombinant <i>Honey Bee</i> Allergens Api m 1, Api m 4, and Api m 9 in the <i>E. coli</i> Expression System and Analysis of Their Antigenic Properties
		Sector of Applied Biocatalysis	Investigation of Recombinant Urethanase Synthesis and Application for Polyurethane Hydrolysis
	Institute of Biosciences	Department of Microbiology and Biotechnology	Investigation of the Application of Lipolytic Enzymes Synthesized by <i>Geobacillus</i> sp. 95 for the Synthesis of Menthol Esters
State Scientific Research Institute Nature Research Centre			Optimization of <i>Halobacterium salinarum</i> Cultivation Conditions and Bacterioruberin Extraction
		Laboratory of Algology and Microbial Ecology	Analysis of Virus Resistance Systems in the Cyanobacterium <i>Aphanizomenon flos-aquae</i>
		Laboratory of Biodeterioration Research	Physiological Properties of Fungi Isolated from Linseed Oil-Based Cross-Linked Polymer Composites Filled with Industrial Waste Materials
			Metabolites Produced by Actinobacteria and Their Dependence on pH

		Laboratory of ecotoxicology	Investigation of the Effects of Water and Bottom Sediments in Water Bodies Affected by the War in Ukraine Using the Autotrophic Organisms <i>Lepidium sativum</i> and <i>Desmodesmus communis</i> Studies on the Toxic Effects of Magnetic Chitosan and Cobalt on <i>Danio rerio</i>
Thermo Fisher Scientific Baltics			Denatured Recombinant Albumins Impact for the Efficiency of Enzymatic Reactions Recombinant Ribonuclease Inhibitor Protein Biosynthesis and Purification Optimisation
Center for Physical Sciences and Technology	Department of Electrochemical Material Science	Laboratory of Nanostructure	Electrogenicity of Medically Relevant Bacterial Biofilms