

Life Sciences Center of Vilnius University  
Core Facilities and Instrumentation

2021-05-27

	Instrumentation/method/resource	Description	Contact scientist
1.	<b>MICROSCOPY/IMAGING</b>		
1.1.	<b>Cryo-Transmission Electron Microscopy</b>	<p>200 kV Cryo-Transmission Electron Microscope Glacios™ (Cryo-TEM) for Life Sciences with Falcon 3EC Direct Electron Detector and Volta Phase Plate (ThermoFisher Scientific). The Galcios Cryo-TEM is dedicated for single particle analysis (SPA) workflow for pre-screening of sample quality before transferring to the 300 kV Krios Cryo-TEM for ultimate-resolution SPA data acquisition and for SPA data acquisition, and can be used for cryo-electron tomography. Sample preparation equipment available includes Vitrobot Mark IV (ThermoFisher Scientific) which is used for automatic vitrification of samples for SPA or cryo-tomography and Gloqube Plus glow discharger (Quorum).</p> <p><a href="https://assets.thermofisher.com/TFS-Assets/MSD/Technical-Notes/Glacios-datasheet.pdf">https://assets.thermofisher.com/TFS-Assets/MSD/Technical-Notes/Glacios-datasheet.pdf</a>  <a href="https://www.fei.com/products/vitrobot/#gsc.tab=0">https://www.fei.com/products/vitrobot/#gsc.tab=0</a></p> <p>On-site training available: no            Qualified users only are permitted to operate this equipment: yes            Personal user assistant available: no</p>	<p>Dr. Giedrė Tamulaitienė            +370 5 223 4357            giedre.tamulaitiene@bti.vu.lt</p>
1.2.	<b>Transmission electron microscope</b>	<p>FEI MORGAGNI 268</p> <p><a href="https://dresden-technologieportal.de/en/equipment/view/id/1243">https://dresden-technologieportal.de/en/equipment/view/id/1243</a></p> <p>On-site training available: no            Qualified users only are permitted to operate this equipment: yes            Personal user assistant available: yes</p>	<p>Dr. Justas Lazutka,            +370 5 223 9435            justas.lazutka@bti.vu.lt</p> <p>Aliona Avižinienė            +370 5 223 9435            aliona.aviziniene@bti.vu.lt</p>

1.3.	<b>High-Speed Atomic force microscopy</b>	<p>High speed AFM system – SS-NEX (RIBM, Japan): two available scanners: i) standard scanner for high-speed imaging such as enzyme reactions and structural changes of protein.</p> <p>Scan speed – 50 ms/frame (20 frames/sec), maximum scan range – XY: 0.7 <math>\mu\text{m}</math> x 0.7 <math>\mu\text{m}</math>, Z: 0.4 <math>\mu\text{m}</math>. ii) Wide scanner for large samples with a high scanning rate. Scan speed – 1 s/frame (1 frame/sec), maximum scan range – XY: 4 <math>\mu\text{m}</math> x 4 <math>\mu\text{m}</math>, Z: 0.7 <math>\mu\text{m}</math>.</p> <p><a href="https://www.ribm.co.jp/en/product/sub_ssnext_en">https://www.ribm.co.jp/en/product/sub_ssnext_en</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	Dr. Marija Jankunec +370 5 223 4400 marija.jankunec@gmc.vu.lt
1.4.	<b>Atomic force microscopy</b>	<p>Conventional AFM system – Dimension Icon (Bruker, USA) major technical characteristics: Scanner parameters: maximum scanning (XY) area 90 <math>\mu\text{m}</math>, Z range 10 <math>\mu\text{m}</math>. Available measurement methods: tapping mode, contact mode. Imaging: phase imaging, lateral force microscopy, force modulating, electrical field microscopy, magnetic force microscopy, piezo response force microscopy.</p> <p>Major areas of application: Surface analysis of solids, biomolecules, cell cultures in water or air. Single molecule or cell manipulation for their properties investigation</p> <p><a href="https://www.bruker.com/products/surface-and-dimensional-analysis/atomic-force-microscopes/dimension-icon/overview.html">https://www.bruker.com/products/surface-and-dimensional-analysis/atomic-force-microscopes/dimension-icon/overview.html</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	Dr. Marija Jankunec +370 5 223 4400 marija.jankunec@gmc.vu.lt
1.5.	<b>OLYMPUS IX70 cell imaging platform</b>	Light, fluorescence and phase contrast microscopy, 5 objectives, 4 fluorescence channels	Indrė Dalgėdienė +370 5 2239405 indre.dalgediene@bti.vu.lt

		<p><a href="https://www.fluorescencemicroscopes.com/olympus-ix70-inverted-fluorescence-research-microscope/">https://www.fluorescencemicroscopes.com/olympus-ix70-inverted-fluorescence-research-microscope/</a>  <a href="https://www.chroma.com/products/sets/61000v2-dapi-fitc-tritc-or-cy3">https://www.chroma.com/products/sets/61000v2-dapi-fitc-tritc-or-cy3</a>  <a href="https://www.tengrant.com/upLoad/file/20160304/14570564047777021.pdf">https://www.tengrant.com/upLoad/file/20160304/14570564047777021.pdf</a>  <a href="https://www.tengrant.com/upLoad/file/20160304/14570564038766890.pdf">https://www.tengrant.com/upLoad/file/20160304/14570564038766890.pdf</a></p> <p>Camera: EXI-AQA-R-F-M-14-C (monochrome)</p> <p><a href="http://www.adept.net.au/cameras/qimaging/exiaqua_mono_colour.shtml">http://www.adept.net.au/cameras/qimaging/exiaqua_mono_colour.shtml</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	
1.6.	<b>Automated cell imaging platform EVOS FL Auto</b>	<p>Light, fluorescence and phase contrast microscopy, 5 objectives, 3 fluorescence channels, onstage incubator for live cell imaging in culture dishes.</p> <p><a href="https://assets.fishersci.com/TFS-Assets/LSG/manuals/evos_fl_auto_man.pdf">https://assets.fishersci.com/TFS-Assets/LSG/manuals/evos_fl_auto_man.pdf</a></p> <p><b>Available cubes:</b></p> <p><a href="https://www.thermofisher.com/order/catalog/product/AMEP4650#/AMEP4650">https://www.thermofisher.com/order/catalog/product/AMEP4650#/AMEP4650</a>  <a href="https://www.thermofisher.com/order/catalog/product/AMEP4651#/AMEP4651">https://www.thermofisher.com/order/catalog/product/AMEP4651#/AMEP4651</a>  <a href="https://www.thermofisher.com/order/catalog/product/AMEP4652#/AMEP4652">https://www.thermofisher.com/order/catalog/product/AMEP4652#/AMEP4652</a>  <a href="https://www.thermofisher.com/order/catalog/product/AMEP4655#/AMEP4655">https://www.thermofisher.com/order/catalog/product/AMEP4655#/AMEP4655</a>  <a href="https://www.thermofisher.com/order/catalog/product/AMEP4656#/AMEP4656">https://www.thermofisher.com/order/catalog/product/AMEP4656#/AMEP4656</a>  <a href="https://www.thermofisher.com/order/catalog/product/AMEP4670#/AMEP4670">https://www.thermofisher.com/order/catalog/product/AMEP4670#/AMEP4670</a></p>	<p>Indrė Dalgėdienė  +370 5 2239405  indre.dalgediene@bti.vu.lt</p> <p>Asta Lučiūnaitė  asta.luciunaite@bti.vu.lt</p>

		<p>On-site training available: yes          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: yes</p>	
1.7.	<b>Fast scanning laser microscope system Carl Zeiss (live cell imaging)</b>	<p>LSM710/Duo and optical tweezer E3300 Elliott Scientific, UK for live cell fluorescent imaging and Nikon C1 microscope for confocal cell analysis. Flow cytometer Guava with 3 lasers and 6 detectors for individual cell fluorescent and shape analysis.</p> <p><a href="https://www.zeiss.com/microscopy/int/products/imaging-systems/celldiscoverer-7-automated-microscope-for-live-cell-imaging.html">https://www.zeiss.com/microscopy/int/products/imaging-systems/celldiscoverer-7-automated-microscope-for-live-cell-imaging.html</a></p> <p>On-site training available: yes          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: yes</p>	<p>Dr. Mindaugas Valius          +370 5 223 4410          mindaugas.valius@bchi.vu.lt</p> <p>Dr. Marija Ger          +370 5 223 4411          marija.ger@bchi.vu.lt</p>
1.8.	<b>LEICA Ultra-high resolution confocal microscopy</b>	<p>Super-resolution imaging facility has recently acquired a Leica TCS SP8 confocal scanning microscope, equipped with motorized xy-stage 12 kHz tandem scanner, field of view scanner, gated HyD™ detection system, white light laser as well as LIGHTNING, FALCON and STED 3x modules. The white light laser source (470–670 nm) perfectly matches the excitation wavelength of any fluorophore and enables simultaneous use of up to eight excitation lines. By tuning both excitation and AOTF-based detection, complete two dimensional excitation-emission spectra can be acquired. Integrated LightGate technology removes unwanted fluorescence by adjusting the time gate for data collection. The SP8 LIGHTNING module combines the benefit of super-resolution (up to 120 nm) and simultaneous high-speed imaging for multiple fluorescent markers with low photo toxicity. SP8 FALCON module is a truly integrated solution for fluorescence lifetime imaging (FLIM) throughout the SP8 platform. It enables imaging fast molecular interactions via FLIM-FRET and the use of fluorescent biosensors with minimal training. The fully integrated stimulated emission depletion STED 3X system with 775 nm pulsed STED laser provides fast, intuitive and purely optical access to structural details beyond the light diffraction limit (up to 30 nm).</p>	<p>Dr. Urtė Neniškytė          +370 5 223 4437          urte.neniskyte@gf.vu.lt</p>

		<p><a href="https://www.leica-microsystems.com/products/confocal-microscopes/p/leica-tcs-sp8-x/">https://www.leica-microsystems.com/products/confocal-microscopes/p/leica-tcs-sp8-x/</a>  <a href="https://www.leica-microsystems.com/products/confocal-microscopes/p/leica-tcs-sp8/">https://www.leica-microsystems.com/products/confocal-microscopes/p/leica-tcs-sp8/</a>  <a href="https://www.leica-microsystems.com/products/confocal-microscopes/p/leica-tcs-sp8-sted-one/">https://www.leica-microsystems.com/products/confocal-microscopes/p/leica-tcs-sp8-sted-one/</a>  <a href="https://www.leica-microsystems.com/products/confocal-microscopes/p/falcon/">https://www.leica-microsystems.com/products/confocal-microscopes/p/falcon/</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	
<b>2. STRUCTURAL BIOCHEMISTRY</b>			
2.1.	<b>Protein Crystallisation Unit</b>	<p>Two crystallisation robots: Oryx8 (Douglas Instruments) and Gryphon (Rigaku);  Screen making system Alchemist HT (Rigaku);  Two ultraviolet and visible light crystal imaging and protein crystal monitoring systems Minstrel DT UV (Rigaku) (RT and +4°C).</p> <p><a href="https://www.douglas.co.uk/oryx8.htm">https://www.douglas.co.uk/oryx8.htm</a>  <a href="https://www.artrobbins.com/gryphon">https://www.artrobbins.com/gryphon</a>  <a href="http://www.speciation.net/Database/Instruments/Rigaku-Corporation/Alchemist-II-automated-liquid-formulation-system-;i2655">http://www.speciation.net/Database/Instruments/Rigaku-Corporation/Alchemist-II-automated-liquid-formulation-system-;i2655</a>  <a href="https://www.youtube.com/watch?v=lvvgVdsPs00">https://www.youtube.com/watch?v=lvvgVdsPs00</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: no  Personal user assistant available: no</p>	<p>Dr. Giedrė Tamulaitienė  +370 5 223 4357  giedre.tamulaitiene@bti.vu.lt</p>
2.2.	<b>X-ray diffractometer</b>	<p>Rigaku X-ray diffractometer MicroMax-007HF with detectors Pilatus 3R 200K-A (Dectris) and Raxis IV++ (Rigaku)</p> <p><a href="https://www.rigaku.com/products/sources/mm007">https://www.rigaku.com/products/sources/mm007</a></p>	<p>Dr. Saulius Gražulis  +370 5 223 4353  saulius.grazulis@bti.vu.lt</p>

		<p><a href="https://www.dectris.com/products/pilatus3/pilatus3-r-for-laboratory/pilatus3-r-200k-a/">https://www.dectris.com/products/pilatus3/pilatus3-r-for-laboratory/pilatus3-r-200k-a/</a>  <a href="https://www.esrf.eu/UsersAndScience/Experiments/MX/About_our_beamlines/ID23-1/TechnicalOverview/ExperimentOverview/cryostream">https://www.esrf.eu/UsersAndScience/Experiments/MX/About_our_beamlines/ID23-1/TechnicalOverview/ExperimentOverview/cryostream</a></p> <p>(Oxford Cryostream 700 or SR beamlines)  <a href="https://www.oxcryo.com/product/cryostream-800">https://www.oxcryo.com/product/cryostream-800</a>          (newer model with similar functionality)</p> <p>On-site training available: yes          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: yes</p>	
<b>3.</b>	<b>PROTEIN PRODUCTION AND PURIFICATION</b>		
3.1.	<b>Automatic High-Protein Purification System with Refrigeration Function</b>	<p>ÄKTA avant 25 is a preparative chromatography system designed for fast and secure development of scalable methods and processes.</p> <p>This system allows us to purify small or large amounts of biological macromolecules (proteins, nucleic acids or their complexes). The instrument has a modular design, with all valves, monitors, and columns mounted on the side of the system for easy access. The built-in fraction collector with cooling functionality protects purified samples. UNICORN 7 control software gives real-time control of the chromatography system, and provides an intuitive interface for method editing and evaluation of results.</p> <p><a href="https://b3p.it.helsinki.fi/manuals/AVANT/Content/PDF/28991000AH.pdf">https://b3p.it.helsinki.fi/manuals/AVANT/Content/PDF/28991000AH.pdf</a></p> <p>On-site training available: no          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: no</p>	<p>Dr. Arūnas Šilanskas          +370 5 239 9426          arunas.silanskas@bti.vu.lt</p>
3.2.	<b>Plate reader Varioskan Flash (Thermo Scientific)</b>	<p>Plate reader Varioskan Flash (Thermo Scientific) includes 535 nm emission filter, one dispenser and luminescence measurement module.</p>	<p>Dr. Arnoldas Kaunietis          +370 5 239 8207</p>

		<p>The instrument incubates up to 45 C temperature.</p> <p><a href="https://assets.thermofisher.com/TFS-Assets/LCD/manuals/D01523~.pdf">https://assets.thermofisher.com/TFS-Assets/LCD/manuals/D01523~.pdf</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	arnoldas.kaunietis@gmc.vu.lt
3.3.	<b>Beckman Optima™ L-90K Ultracentrifuge</b>	<p>A wide variety of rotors: Ti 50, Ti 75, Ti 70.1, Ti 60, Sw 50.1, Sw 41, Sw 28</p> <p><a href="https://www.beckmancoulter.com/wsrportal/techdocs?docname=LXP-IM-7..">https://www.beckmancoulter.com/wsrportal/techdocs?docname=LXP-IM-7..</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Aliona Avižiniene,  +370 5 223 9435  aliona.aviziniene@bti.vu.lt</p> <p>Dr. Milda Norkienė,  +370 5 223 9434  milda.norkiene@bti.vu.lt</p> <p>Dr. Justas Lazutka  +370 5 223 9435  justas.lazutka@bti.vu.lt</p>
3.4.	<b>Bioreactor system</b>	<p>Bioreactor system Labfors 3 (Infors HT). It includes two 2 L vessels, gas analyser, pH meter and dissolved oxygen meter, antifoaming electrode, OD meter.</p> <p><a href="https://conquerscientific.com/cq-product/infors-ht-labfors-3-fermenter-bioreactor/">https://conquerscientific.com/cq-product/infors-ht-labfors-3-fermenter-bioreactor/</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Arnoldas Kaunietis  +370 5 239 8207  arnoldas.kaunietis@gmc.vu.lt</p>
3.5.	<b>Mass spectrometry system</b>	<p>Mass spectrometry system, LCMS-8050(010835170004), UHPLC Nexera series: CBM-20A (L20235277176), LC-30AD (L20555272102), LC-30AD (L20555272105), DGU-20ASR (L20705263742), DGU-20A3R (L20695261566), SIL-30AC (L20565271006), CTO-20AC (L20215276229),</p>	<p>Dr. Alius Ulevičius  +370 5 239 8299  alius.ulevicius@gf.vu.lt</p>

		<p>SPD-M30A (L20775170033), Labsolutions Program setup, Genius 105 (A14-12-488)</p> <p><a href="https://www.shimadzu.com/an/products/liquid-chromatograph-mass-spectrometry/triple-quadrupole-lc-msms/lcms-8050/index.html">https://www.shimadzu.com/an/products/liquid-chromatograph-mass-spectrometry/triple-quadrupole-lc-msms/lcms-8050/index.html</a>  <a href="https://www.shimadzu.eu/specifications">https://www.shimadzu.eu/specifications</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	
3.6.	<b>Isothermal Titration Calorimeter</b>	<p>The ITC instrument is used to determine interactions of purified proteins with low-molecular-weight compounds, ligands, cofactors, etc.</p> <p>It is widely used in drug discovery and design and determination of protein interaction thermodynamics.</p> <p><a href="https://www.malvernpanalytical.com/en/products/technology/microcalorimetry/isothermal-titration-calorimetry/">https://www.malvernpanalytical.com/en/products/technology/microcalorimetry/isothermal-titration-calorimetry/</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Prof. Daumantas Matulis  +370 5 223 4364  daumantas.matulis@bti.vu.lt</p>
3.7.	<b>Protein chromatography system</b>	<p>Protein chromatography system „BioLogic DuoFlow“ (Bio-Rad). It includes UV/Vis detector for measurements of absorption at 190–740 nm range, pH meter, conductometer, automatic fraction collector, mixer with two pumps (each 40 mL/min.), ion exchange and hydrophobic interaction columns.</p> <p><a href="https://www.bio-rad.com/webroot/web/pdf/lsr/literature/4006229.pdf">https://www.bio-rad.com/webroot/web/pdf/lsr/literature/4006229.pdf</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Arnoldas Kaunietis  +370 5 239 8207  arnoldas.kaunietis@gmc.vu.lt</p>



3.8.	<b>Bioreactor Sartorius C plus and CEPA Z41 continuous flow laboratory centrifuge</b>	<p>Culture vessel with operating volume of 30 L</p> <p><a href="https://www.sartorius.com/download/9612/10/broch-biostat-cplus-sbi1505-e-data.pdf">https://www.sartorius.com/download/9612/10/broch-biostat-cplus-sbi1505-e-data.pdf</a></p> <p><a href="https://www.dia-m.ru/upload/iblock/903/597-cepa.pdf">https://www.dia-m.ru/upload/iblock/903/597-cepa.pdf</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Evaldas Čiplys  +370 5 223 9432  evaldas.ciplys@bti.vu.lt</p>
3.9.	<b>XYZ3060™ DISPENSE PLATFORM</b>	<p>The XYZ3060 system is a production tool for rapid test development and manufacturing. The XYZ3060 is a flexible XYZ motion/dispense system, with a motorized Z-axis and fully programmable motion and dispense parameters. The XYZ3060 is designed for simultaneous dispensing or individually dispensing lines and dots The system is supplemented with the programmable strip cutter (CM5000™) and laminator (LM5000).</p> <p><a href="https://www.biodot.com/portfolio/xyz3060-dispense-platform/">https://www.biodot.com/portfolio/xyz3060-dispense-platform/</a></p> <p><a href="https://www.biodot.com/portfolio/cm5000-guillotine-cutter/">https://www.biodot.com/portfolio/cm5000-guillotine-cutter/</a></p> <p><a href="https://www.biodot.com/portfolio/lm5000-clamshell-laminator/">https://www.biodot.com/portfolio/lm5000-clamshell-laminator/</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Justas Lazutka  +370 5 223 9435  justas.lazutka@bti.vu.lt</p> <p>Dr. Paulius L. Tamošiūnas  +370 5 223 9435  paulius.tamosiunas@bti.vu.lt</p>
3.10.	<b>Microbial biotechnology unit</b>	<p>Shimazu Prominence U(H)PLC system with MS, laboratory fermenter R'ALF Plus Solo, Bioengineering, liquid chromatography system for protein purification ÄKTApurifier, Innova 44 incubator shakers, etc.</p> <p><a href="https://www.ssi.shimadzu.com/products/liquid-chromatography/prominence-hplc-specifications.html">https://www.ssi.shimadzu.com/products/liquid-chromatography/prominence-hplc-specifications.html</a></p> <p><a href="https://www.cytivalifesciences.co.jp/catalog/pdf/18111948af_aktapurifier.pdf">https://www.cytivalifesciences.co.jp/catalog/pdf/18111948af_aktapurifier.pdf</a></p>	<p>Dr. Rolandas Meškys  +370 5 223 4386  rolandas.meskys@bchi.vu.lt</p>

		<a href="https://www.eppendorf.com/product-media/doc/en/140652_Operating-Manual/New-Brunswick_Shakers_Operating-manual_Innova-44_44R.pdf">https://www.eppendorf.com/product-media/doc/en/140652_Operating-Manual/New-Brunswick_Shakers_Operating-manual_Innova-44_44R.pdf</a>  On-site training available: yes/no Qualified users only are permitted to operate this equipment: yes/no Personal user assistant available: yes/no	
<b>4.</b>	<b>DNA PURIFICATION &amp; ANALYSIS</b>		
4.1.	<b>Agilent G4900DA SureScan Microarray Scanner System</b>	<p>The Agilent SureScan Scanner provides a precise and efficient microarray scanner system for many research applications. Designed for research using microarrays, the scanner system provides a laser-induced fluorescence scanning solution designed to read microarrays printed on standard 1 inch by 3 inch glass slides.</p> <p>The microarray instrumentation measures the fluorescence intensity of two dyes simultaneously from labeled sample nucleic acid bound to microarrays. The system also enhances productivity with continuous loading from a 24-slide cassette and automatic loading of data files into Feature Extraction Software. It also features built-in ozone protection to minimize signal degradation.</p> <p><a href="https://www.agilent.com/cs/library/usermanuals/public/G4900-90000_SureScan_User.pdf">https://www.agilent.com/cs/library/usermanuals/public/G4900-90000_SureScan_User.pdf</a></p> On-site training available: no Qualified users only are permitted to operate this equipment: yes Personal user assistant available: yes	Prof. Sonata Jarmalaitė +370 5 223 4442 Sonata.jarmalaitė@gf.vu.lt
4.2.	<b>Automated DNA and RNA purification equipment</b>	Automated DNA purification system (Norddiag Arrow), automated DNA/RNA purification system (Bioneer ExiPrep 16), Tecan Freedom EVO 100 liquid handling robot, Nanodrop 2000 Spectrophotometer  <a href="https://www.isogen-lifescience.com/product/8.31.01/">https://www.isogen-lifescience.com/product/8.31.01/</a> <a href="https://us.bioneer.com/pdf/brochure/2011/brochure-ExiPrep%2016Plus.pdf">https://us.bioneer.com/pdf/brochure/2011/brochure-ExiPrep%2016Plus.pdf</a>	Dr. Julija Armalytė +370 5 239 8230 julija.armalyte@gf.vu.lt

		<a href="https://ww3.tecan.com/platform/content/element/3150/BR_Freedom_EVO_392956_V6.2.pdf">https://ww3.tecan.com/platform/content/element/3150/BR_Freedom EVO_392956_V6.2.pdf</a> <a href="https://www.thermofisher.com/order/catalog/product/ND-2000#/ND-2000">https://www.thermofisher.com/order/catalog/product/ND-2000#/ND-2000</a>	
		<p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	
4.3.	<b>High resolution image analyzers</b>	<p>Fuji FLA-5100 fluorescent and radioisotope image analyser (473 and 635 nm wavelength lasers), Bio Rad Gel Doc XR+ CCD high-resolution, high-sensitivity detection with UV and white light illuminators.</p> <p><a href="http://www.raytek.co.uk/Brochures/FLA5100%20UK-IE%20Brochure.pdf">http://www.raytek.co.uk/Brochures/FLA5100%20UK-IE%20Brochure.pdf</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	<p>Dr. Julija Armalytė,  +370 5 239 8230  julija.armalyte@gf.vu.lt</p> <p>Dr. Algirdas Mikalkėnas  +370 5 239 8241  algirdas.mikalkenas@gf.vu.lt</p>
4.4.	<b>Pulsed Field Electrophoresis system</b>	<p>Bio Rad CHEF MAPPER XA pulsed field electrophoresis system (resolution from 100 bp to 10 Mb)</p> <p><a href="https://www.bio-rad.com/en-lt/product/chef-mapper-xa-system">https://www.bio-rad.com/en-lt/product/chef-mapper-xa-system</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	<p>Dr. Julija Armalytė  +370 5 239 8230  julija.armalyte@gf.vu.lt</p>
<b>5.</b>	<b>BIOSPECTROSCOPY / BIOSENSORS / BIOELECTROCHEMISTRY</b>		
5.1.	<b>Raman microscope/vibrational spectroscopy</b>	<p>LabRAM HR2/399 (HORIBA Jobin Yvon) Raman microscopy unit with excitation wavelengths (and power at a sample, mW) of <b>229, 266, 405 (2), 475 (3,8), 532 (22), 633, and 785 (22)</b> nm equipped with 600, 1800, and 2400 lines/mm gratings and 10x, 50x, and 100x objective lenses. Raman spectra can be collected from solids, powders, and liquid phases in 180° scattering geometry in 100–3600 cm<sup>-1</sup> spectral range.</p>	<p>Dr. Martynas Talaikis  +370 5 223 4400  martynas.talaikis@gmc.vu.lt</p>

		<p>On-site training available: yes          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: yes</p>	
5.2.	<b>Fast kinetics spectroscopy unit</b>	<p>Stopped-flow spectrometer SX20, Applied Photophysics; laser flash photolysis spectrometer LKS60, Applied Photophysics</p> <p><a href="https://www.photophysics.com/systems/stopped-flow-spectrometry/sx20-stopped-flow/system-information/?gclid=EAlaIqobChMIy-m1vf-a7QIVAyF7Ch0PGw5VEAAYASAAEglQWfd_BwE">https://www.photophysics.com/systems/stopped-flow-spectrometry/sx20-stopped-flow/system-information/?gclid=EAlaIqobChMIy-m1vf-a7QIVAyF7Ch0PGw5VEAAYASAAEglQWfd_BwE</a></p> <p>On-site training available: no          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: yes</p>	<p>Habil. dr. Narimantas Čėnas          +370 5 223 4392          narimantas.cenas@bchi.vu.lt</p>
5.3.	<b>Fluorescence spectrometer</b>	<p>Varian Cary Eclipse with thermostated 4-cuvette holder.</p> <p><a href="https://www.agilent.com/cs/library/brochures/Cary-Eclipse_FLR-brochure.pdf">https://www.agilent.com/cs/library/brochures/Cary-Eclipse_FLR-brochure.pdf</a></p> <p>On-site training available: yes          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: no</p>	<p>Dr. Vytautas Smirnovas          +370 5 223 9420          vytautas.smirnovas@bti.vu.lt</p> <p>Mantas Žiaunys          mantas.ziaunys@gmc.vu.lt</p>
5.4.	<b>Plate-reader</b>	<p>BMG Labtech Clariostar Plus with long-term shaking, Bottom optic, Incubation up to 65°C, and Ultra-fast UV/Vis Absorbance Spectrometer upgrades.</p> <p><a href="https://www.bmglabtech.com/clariostar-plus/">https://www.bmglabtech.com/clariostar-plus/</a></p> <p>On-site training available: yes          Qualified users only are permitted to operate this equipment: yes          Personal user assistant available: no</p>	<p>Dr. Vytautas Smirnovas          +370 5 223 9420          vytautas.smirnovas@bti.vu.lt</p> <p>Mantas Žiaunys          mantas.ziaunys@gmc.vu.lt</p>

5.5.	<b>Analytic/preparative HPLC</b>	<p>Shimadzu UFLC, include two low volume (&lt;10ml/min) pumps and one high volume (&lt;150 ml/min) 4-channel pump, fraction collector, autosampler, column oven, UV/Vis and DAD detectors.</p> <p><a href="https://www.ssi.shimadzu.com/sites/ssi.shimadzu.com/files/Products/literature/hplc/C196-E070C.pdf">https://www.ssi.shimadzu.com/sites/ssi.shimadzu.com/files/Products/literature/hplc/C196-E070C.pdf</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: no</p>	<p>Dr. Vytautas Smirnovas  +370 5 223 9420  vytautas.smirnovas@bti.vu.lt</p> <p>Andrius Sakalauskas  andrius.sakalauskas@gmc.vu.lt</p>
5.6.	<b>Electrochemistry including Electrochemical Impedance Spectroscopy</b>	<p>Multiple electrochemical workstations including Zahner model Zennium Pro, a modular electrochemical workstation including a potentiostat / galvanostat and a frequency response analyzer (FRA) unit with a frequency range up to 8 MHz at <math>\pm 3</math> A and at a compliance voltage of up to <math>\pm 28</math> V. With an input impedance of more than <math>10\ T\Omega</math>    5 pF. Also, an extension module RMUX is available, allowing up to 16 separate measuring channels. Moreover, a PalmSens model PalmSens4 instrument is available. PalmSens4 is a USB powered Potentiostat, Galvanostat, and a Frequency Response Analyser (FRA) for Electrochemical Impedance Spectroscopy (EIS). The PalmSens4 has a large potential range (-5V to 5V or -10V to 10V) and current range (100 pA to 10 mA) with a high resolution and low noise. Multiple choice of reference and/or counter electrodes and custom made measuring set-ups is also available.</p> <p><a href="http://zahner.de/products/electrochemical-workstation.html">http://zahner.de/products/electrochemical-workstation.html</a>  <a href="https://www.palmsens.com/product/palmsens4/">https://www.palmsens.com/product/palmsens4/</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Tadas Penkauskas  +370 5 223 4390  tadas.penkauskas@bchi.vu.lt</p>
5.7.	<b>Surface Plasmon Resonance</b>	<p>Surface Plasmon Resonance Spectroscopy (Autolab, Twingle) - protein-Ligand association, proteins (peptides) interaction with phospholipids bilayers, biomolecules adsorption investigation. Major characteristics: baseline noise &lt; 0.0001 degere. Refractive index interval from 1.30 to</p>	<p>Dr. Tadas Ragaliauskas  +370 5 223 4401  tadas.ragaliauskas@gmc.vu.lt</p>

		<p>1.55, Refractive index resolution <math>10^{-6}</math>; Sensor material - BK-7; Dynamic range 4 degrees.</p> <p><a href="https://keiint.com/page/our-products">https://keiint.com/page/our-products</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	
5.8.	<b>Thin Film Deposition System</b>	<p>The KJLC PVD 75 is a magnetron sputter deposition tool for depositing conductive metallic films under pressure control. <b>Major technical characteristics:</b> chamber volume is 75 liters; sampler holder - 30 cm in diameter; magnetron target size (diameter) 50.8 mm wit the deposition chimney; heating up to 350 °C; basic chamber pressure <math>2 \times 10^{-7}</math> Torr.</p> <p><a href="https://www.lesker.com/newweb/vacuum_systems/deposition_systems_pvd_prolinepvd75.cfm">https://www.lesker.com/newweb/vacuum_systems/deposition_systems_pvd_prolinepvd75.cfm</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Tadas Ragaliauskas  +370 5 <a href="tel:+37052234401">223 4401</a>  tadas.ragaliauskas@gmc.vu.lt</p>
5.9.	<b>Contact Angle Measuring System</b>	<p>Contact angle measuring system (EasyDrop, Kruss) is used to measure the contact angle of a droplet contact with a solid surface. Major technical characteristics: contact angle measurements in 1-180 degree range. Angle resolution 0.1 degree. Positioning - mechanical.</p> <p><a href="http://www.surfchem.co.kr/product/angle/easydrop_en.pdf">http://www.surfchem.co.kr/product/angle/easydrop_en.pdf</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: no  Personal user assistant available: yes</p>	<p>Dr. Tadas Ragaliauskas  +370 5 223 4401  tadas.ragaliauskas@gmc.vu.lt</p>

6.	CELL & MOLECULAR BIOLOGY		
6.1.	<b>King Fisher Duo Magnetic Particle Processor for nucleic acid purification</b>	<p>Automated DNA and RNA purification from up to 12 samples.</p> <p><a href="https://assets.fishersci.com/TFS-Assets/LCD/Specification-Sheets/D02518~.pdf">https://assets.fishersci.com/TFS-Assets/LCD/Specification-Sheets/D02518~.pdf</a></p> <p>On-site training available: no            Qualified users only are permitted to operate this equipment: yes            Personal user assistant available: no</p>	<p>Dr. Rūta Navakauskienė            +370 5 223 4409            ruta.navakauskiene@bchi.vu.lt</p> <p>Dr. Aida Vitkevičienė            +370 5 223 4412            aida.vitkeviciene@gmc.vu.lt</p>
6.2.	<b>BIO-RAD ChemiDoc XRS+ System with Image Lab Software</b>	<p>Gel and blot imaging and analysis system, includes darkroom, UV transilluminator, epi-white illumination, camera.</p> <p><a href="https://www.bio-rad.com/en-uk/sku/1708265-chemidoc-xrs-system-with-image-lab-software?ID=1708265">https://www.bio-rad.com/en-uk/sku/1708265-chemidoc-xrs-system-with-image-lab-software?ID=1708265</a></p> <p>On-site training available: yes            Qualified users only are permitted to operate this equipment: yes            Personal user assistant available: yes</p>	<p>Dr. Rūta Navakauskienė            +370 5 223 4409            ruta.navakauskiene@bchi.vu.lt</p> <p>Dr. Aida Vitkevičienė            +370 5 223 4412            aida.vitkeviciene@gmc.vu.lt</p>
6.3.	<b>TECAN Infinite M200 plate reader</b>	<p>Monochromator based absorbance reader. Absorbance detector: silicon photodiode; wavelength range: 230 – 1000 nm in 1nm steps; measurement range: 0-3 OD; shaking: linear, orbital; accommodates 6- to 384-well plates.</p> <p><a href="https://lifesciences.tecan.com/plate_readers/infinite_200_pro">https://lifesciences.tecan.com/plate_readers/infinite_200_pro</a></p> <p>On-site training available: yes            Qualified users only are permitted to operate this equipment: yes            Personal user assistant available: yes</p>	<p>Dr. Rūta Navakauskienė            +370 5 223 4409            ruta.navakauskiene@bchi.vu.lt</p> <p>Dr. Aida Vitkevičienė            +370 5 223 4412            aida.vitkeviciene@gmc.vu.lt</p>
6.4.	<b>Partec CyFlow Space flow cytometry platform</b>	<p>Up to 3 lasers (375 nm, 488 nm, 638 nm), automatic sample loading from 96 well plates, cell sorting</p>	<p>Indrė Dalgėdienė            +370 5 2239405            indre.dalgediene@bti.vu.lt</p>

		<p><a href="https://us.sismex-flowcytometry.com/instruments/cyflow-space/1390/cyflow-space">https://us.sismex-flowcytometry.com/instruments/cyflow-space/1390/cyflow-space</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Asta Lučiūnaitė  asta.luciunaite@bti.vu.lt</p>
6.5.	<b>ClonePix 2 automated system for screening and objective selection of high-value mammalian clones</b>	<p>White light and fluorescence imaging of the colonies, picking from 6 well plates to 96 well plates</p> <p><a href="https://www.moleculardevices.com/products/clone-screening/mammalian-screening/clonepix-2-mammalian-colony-picker#gref">https://www.moleculardevices.com/products/clone-screening/mammalian-screening/clonepix-2-mammalian-colony-picker#gref</a></p> <p>On-site training available: no  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Indrė Dalgėdienė  +370 5 2239405  indre.dalgediene@bti.vu.lt</p> <p>Martynas Simanavičius  +370 5 234 9406  martynas.simanavicius@bti.vu.lt</p> <p>Dr. Dovilė Stravinskienė  +370 5 234 9404  dovile.stravinskiene@gmc.vu.lt</p>
6.6.	<b>High definition mass spectrometer for proteomics</b>	<p>Proteomics analysis starting from sample preparation by 1D and 2D electrophoresis as well as chromatography and subsequent mass spectrometry protein identification and quantitation. SYNAPT G2 high definition mass spectrometer (HDMS) system, Waters, coupled with nano-liquid chromatographer nanoACQUITY UPLC system, Waters, for large scale label-free differential proteomic analysis and identification of their PTMs</p> <p><a href="https://www.waters.com/waters/en_US/SYNAPT-G2-Si-High-Definition-Mass-Spectrometry/nav.htm?cid=134740622&amp;locale=en_US">https://www.waters.com/waters/en_US/SYNAPT-G2-Si-High-Definition-Mass-Spectrometry/nav.htm?cid=134740622&amp;locale=en_US</a></p> <p><a href="https://www.waters.com/waters/en_US/Original-UPLC-UHPLC-system-with-sub-2-micron-particle-technology-for-separations/nav.htm?locale=en_US&amp;cid=514207">https://www.waters.com/waters/en_US/Original-UPLC-UHPLC-system-with-sub-2-micron-particle-technology-for-separations/nav.htm?locale=en_US&amp;cid=514207</a></p> <p>On-site training available: no</p>	<p>Dr. Mindaugas Valius  +370 5 223 4410  mindaugas.valius@bchi.vu.lt</p> <p>Dr. Algirdas Kaupinis  +370 5 223 4411  algirdas.kaupinis@gf.vu.lt</p>



		Qualified users only are permitted to operate this equipment: yes Personal user assistant available: yes	
<b>7.</b>	<b>ANIMAL LABORATORY</b>		
7.1.	<b>Laboratory animal facility</b>	<p>The facility is designed with key components for animal laboratory, including small laboratory animals holding rooms for mice, rats and rabbits, procedure room, sterile operating room (equipped with operating table and surgical lighting, breathing apparatus Inspira ASV, electrosurgical generator (surgical blade) Aaron 950, a pulse oximeter LifeSenseVet, an ultrasound system Hitachi EUB 7000, hematology analyser Exigo EOS, etc.) and all other necessary animal laboratory areas.</p> <p><a href="https://www.harvardapparatus.com/media/harvard/pdf/Inspira_557058_9.pdf">https://www.harvardapparatus.com/media/harvard/pdf/Inspira_557058_9.pdf</a>  <a href="https://pdf.medicalexpo.com/pdf/bovie-medical/aaron-950/67895-64013.html">https://pdf.medicalexpo.com/pdf/bovie-medical/aaron-950/67895-64013.html</a>  <a href="https://www.nonin.com/products/lifesense-vet/">https://www.nonin.com/products/lifesense-vet/</a>  <a href="https://www.medwrench.com/documents/view/13617/hitachi-medical-systems-eub-7000hv-7000-hv-brochure-pdf">https://www.medwrench.com/documents/view/13617/hitachi-medical-systems-eub-7000hv-7000-hv-brochure-pdf</a>  <a href="https://labtronic.eu/produkt/gematologicheskiy-analizator-exigo">https://labtronic.eu/produkt/gematologicheskiy-analizator-exigo</a></p> <p>On-site training available: no Qualified users only are permitted to operate this equipment: yes Personal user assistant available: yes</p>	Dr. Virginija Bukelskiene +370 5 223 4408 virginija.bukelskiene@bchi.vu.lt
<b>8.</b>	<b>COMPUTATIONAL RESOURCES AND DATABASES</b>		
8.1.	<b>High performance computer cluster (HPC)</b>	<p>HPC cluster contains 76 computing nodes with total 1772 cpu cores (without hyper-threading) and 8500 GB of RAM. All parts of cluster are connected to master node and 2 storage arrays (20 TB + 40 TB) via OmniPath 100Gb technology which generates around 77 TFLOPS of computing power (System administrator: Rytis Dičiūnas)</p> <p>On-site training available: no Qualified users only are permitted to operate this equipment: yes</p>	Dr. Česlovas Venclovas +370 5 223 4368 ceslovas.venclovas@bti.vu.lt

		Personal user assistant available: no	
8.2.	<b>COD database and high availability computer cluster</b>	<p>Multiport data storage unit with two redundant Web server nodes.</p> <p><a href="http://www.hp.com/hpinfo/newsroom/press_kits/2014/ComputeEra/HP_ProLiantDL160Gen9_DataSheet.pdf">http://www.hp.com/hpinfo/newsroom/press_kits/2014/ComputeEra/HP_ProLiantDL160Gen9_DataSheet.pdf</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Saulius Gražulis  +370 5 223 4353  saulius.grazulis@bti.vu.lt</p>
8.3.	<b>SOLSA SMP multicore (super)computer</b>	<p>240 CPU, shared memory 1.1T</p> <p>System datasheet:  <a href="http://itamindia.com/wp-content/uploads/2017/09/SGI-UV-20-Servers.pdf">http://itamindia.com/wp-content/uploads/2017/09/SGI-UV-20-Servers.pdf</a>  Certification notes:  <a href="https://access.redhat.com/articles/42548">https://access.redhat.com/articles/42548</a></p> <p>On-site training available: yes  Qualified users only are permitted to operate this equipment: yes  Personal user assistant available: yes</p>	<p>Dr. Saulius Gražulis  +370 5 223 4353  saulius.grazulis@bti.vu.lt</p>