Medical cluster of IFMB KFU

- Medical Departments
- Anatomical Museum
- Center of simulation and imitating training
- Center of biomedical microscopy
- Phantom dental training class
- Centre of cellular technologies
- Clinical base

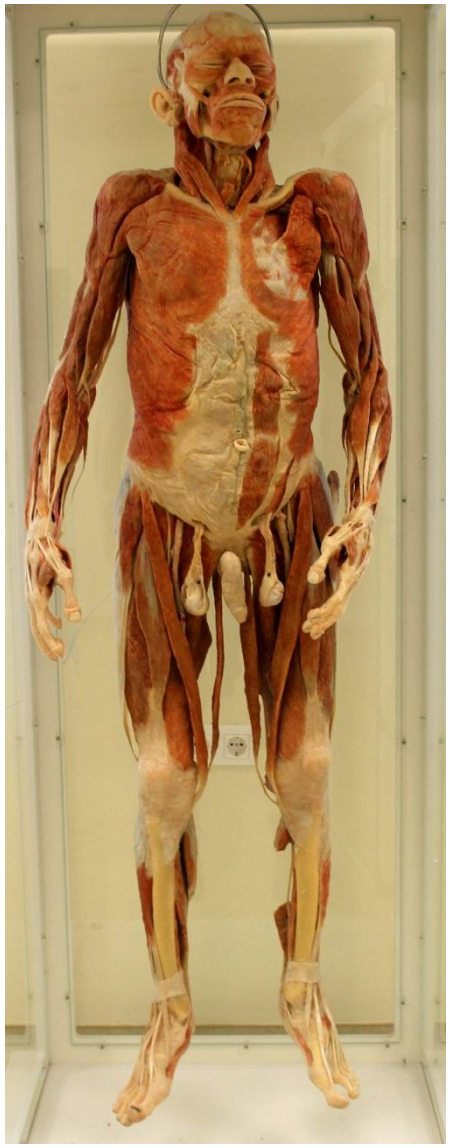
Anatomical Museum

211 audience
Department of morphology and General pathology

Currently, the Museum has more than 350 exhibits in all sections of human anatomy

The anatomical Museum plays an important role not only for the students enrolled in the medical professions, but also in the promotion of health knowledge among students of other specialities and other higher educational institutions, students of medical schools, high school gymnasiums, lyceums and schools, the population of the Republic of Tatarstan

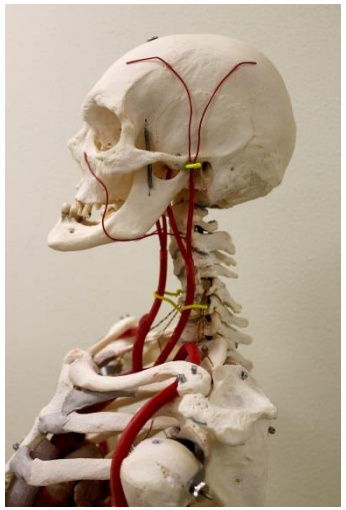
Karl Marx, 74.
Duration 20 min.
Contacts: Maxim S. Kaligin, 89050201714



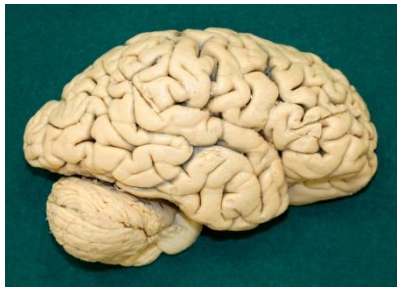
Anatomical Museum

201 audience
Department of morphology and General pathology

The pride of the collection are anatomical preparations of the human body in natural size - vascular and muscular



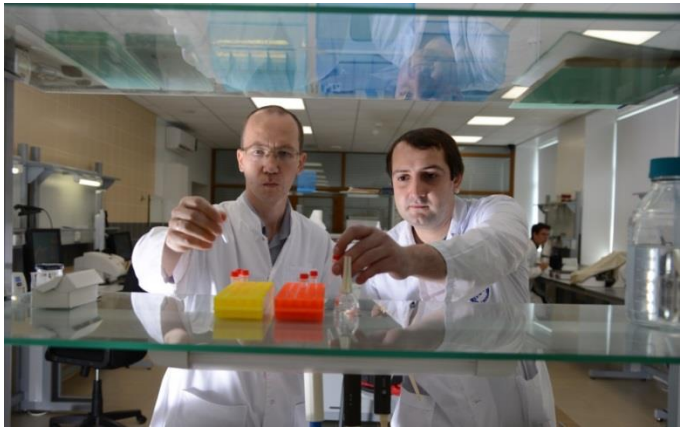
Among the exhibited specimens is fairly representative collection of all sorts of pathologies of the human body, both congenital and caused by illnesses



Karl Marx, 74.
Duration 20 min.
Contacts: Maxim S. Kaligin, 89050201714

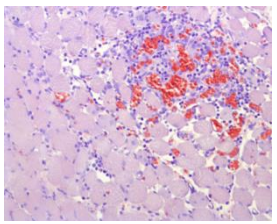
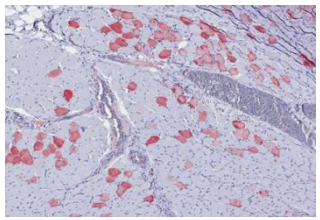
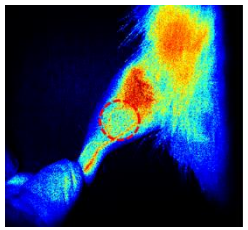
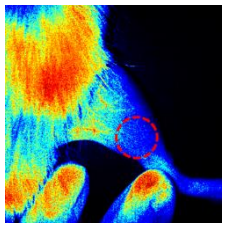
Center of biomedical microscopy

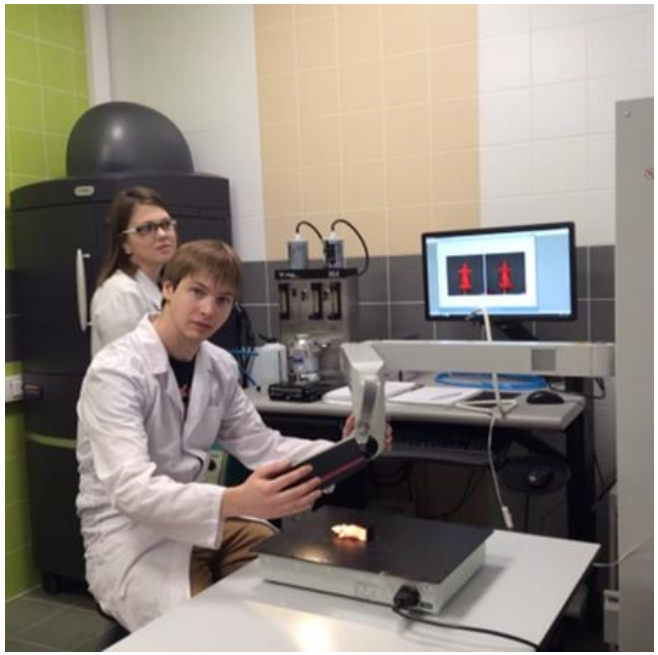
Audiences № 305 and 306, Karl Marx str., 74
Department of Morphology and General Pathology



The center is equipped with facilities of in vivo imaging of fluorescent markers (Molecular Imager IVIS Spectrum, Perkin Elmer), blood flow studies (a device for doppler laser diagnostics EasyLDI, a kit for the probe study of circulation, Moor)

The center has an operating-room for surgical interventions on small laboratory animals, a room for the temporary accommodation of animals

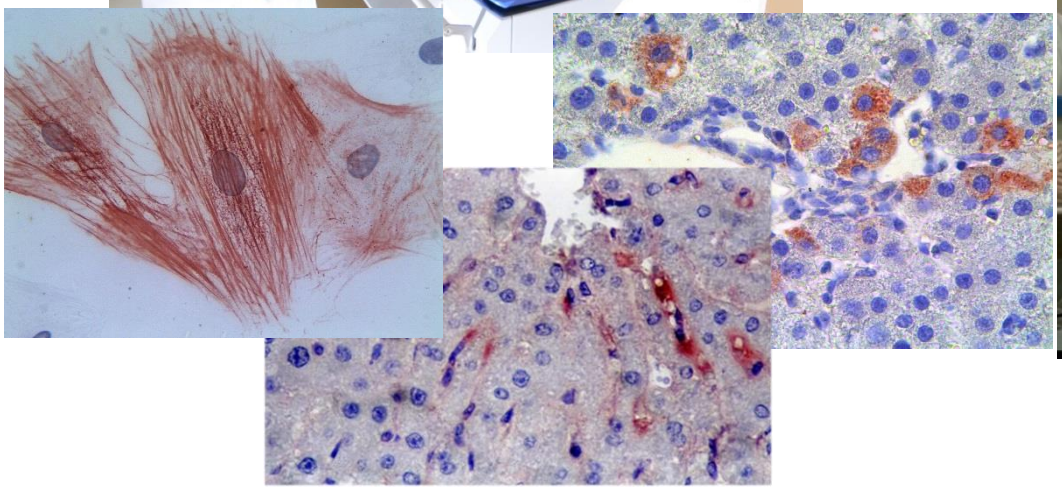


Karl Marx, 74. Duration 20 min.
Contacts: Maxim S. Kaligin, 89050201714

Center of biomedical microscopy

Audiences № 305 and 306, Karl Marx str., 74
Department of Morphology and General Pathology

The CBM has equipment for the taking histological material and its subsequent labeling, wiring, cutting and staining using histological, immunohistochemical, fluorescent methods



Karl Marx, 74. Duration 20 min.
Contacts: Maxim S. Kaligin, 89050201714

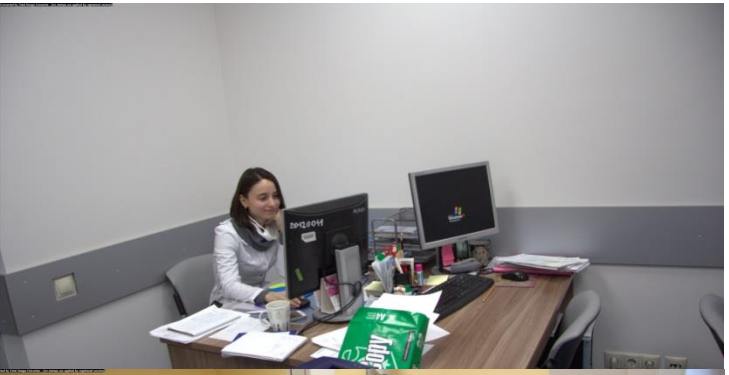
Clinical base of IFMB KFU

Department of fundamental bases of clinical medicine
located in one of the buildings of
University hospital
at the address: Kazan, Volkova str. , 18
Computer lab, spacious classrooms equipped with interactive multimedia hardware

Department of fundamental bases of clinical medicine

Volkova, 18 (first floor)
Duration 20 min.
Contacts: Gaifullina Raushaniya Faritovna, 890276726712

Clinical base of IFMB KFU

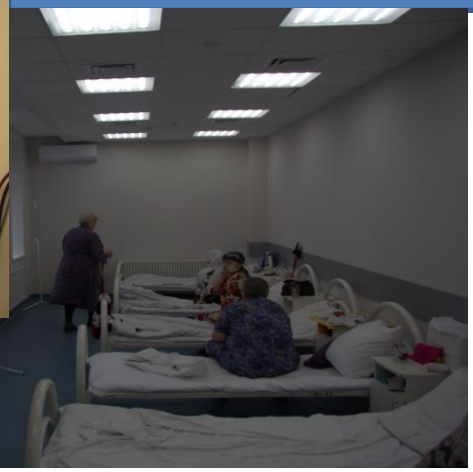


Clinical departments of the University Hospital

1. **Endocrinology**
2. **Neurology**
3. **Therapy**
4. **Functional diagnostics**

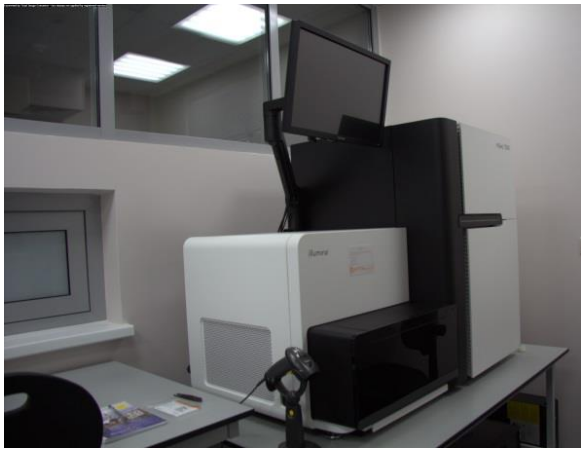
Work with patients – is a mandatory part of the educational process of students of medical directions

Department of fundamental bases of clinical medicine



Volkova, 18 (2nd floor)
Duration 20 min.
Contacts: Gaifullina Raushaniya Faritovna, 890276726712

The joint laboratory of the KFU-RIKEN Clinical PCR laboratory (experimental base of the IT clinic)



Conducting a genome-wide analysis of gene expression using the Illumina platforms (Miseq and Hiseq 2500). Decryption of the genomes of unique organisms and analysis of the genome of patients to optimize treatment.

PCR lab for the IT clinic. The identification of mutations determining predisposition to various diseases (including cancer) and that are responsible for interaction with drugs (personalized medicine)

Volkova, 18 (first floor) Duration 20 min.
Contacts: Gaifullina Raushaniya Faritovna, 890276726712

Clinical base of IFMB KFU Biobank. Centre of cellular technologies

Biobank stores databases of personalized samples of cord blood stem cell concentrate, progenitor cells from various human tissues, primary cell cultures, connective and other tissues, human germ cells in frozen state in the cryo-storage

Centre of cellular technologies
Cultivation of primary human cells
on the basis of the cell block IFMiB

Volkova, 18 (ground floor) Duration 20 min.
Contacts: Gaifullina Raushaniya Faritovna, 890276726712

Center for Simulation and Imitation Training

- The total area is 1851, including:
- Virtual hospital - 519
- Center of Medical Science - 300

- 8 classrooms
- The unit of learning basic practical skills
- "Educational virtual hospital"
- Virtual place of accident
- Computer class

Contacts:
Lenar Faridovich Rashitov rashlen@gmail.com Skype: rashlen

Plan of Sim center

Structure "Training virtual hospital"

- Hospital chambers for adult and children’s
- Hospital chamber of intensive care and children's
- Operating-room (classic and high-tech)
- Maternity hall
- Intraluminal endoscopy
- Ultrasound
- Gynecological office
- Office of the General practitioner
- Traumatology
- Cardiopulmonary resuscitation unit

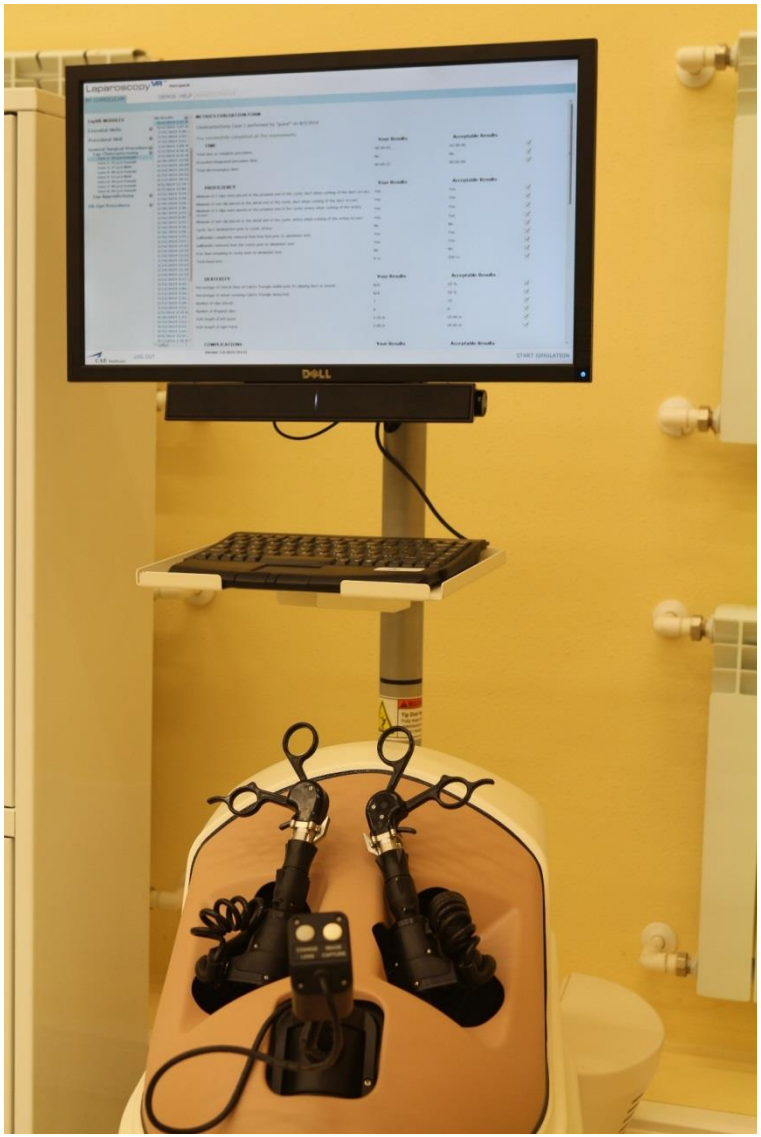
Contacts: Lenar Faridovich Rashitov
rashlen@gmail.com Skype: rashlen

Educational environment

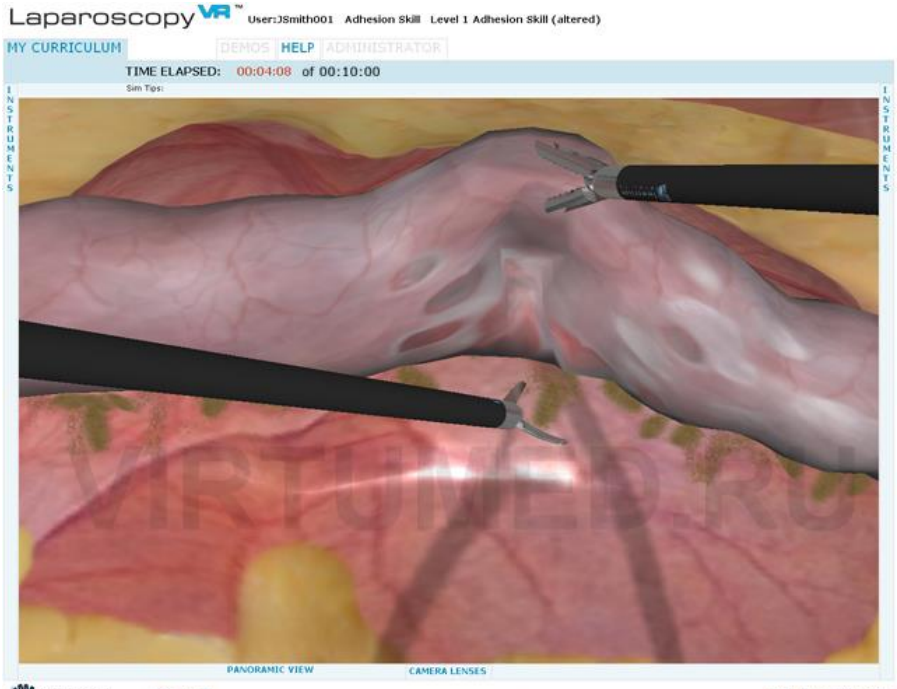
- Car, imitating the object of an accident with blocked doors, which will be base of training to assist in case of an accident

Multifunctional simulation of maternity (maternity and newborn) Noelle II

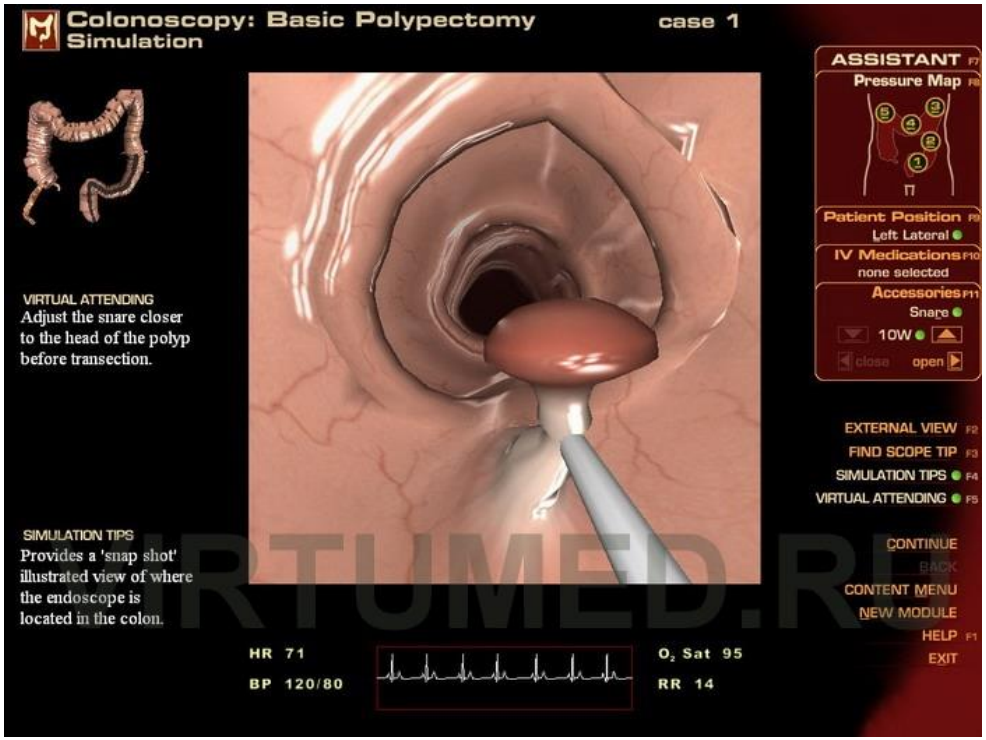
Contacts: Lenar Faridovich Rashitov
rashlen@gmail.com Skype: rashlen



- Virtual simulator for practical skills in laparoscopic surgery and gynecology



- Training intraluminal endoscopy in virtual reality
  - Bronchoscopy
  - Fibrogastroscopy
  - Colonoscopy



Contacts: Lenar Faridovich Rashitov
rashlen@gmail.com Skype: rashlen

Phantom dental class

Contacts: Lenar Faridovich Rashitov rashlen@gmail.com Skype: rashlen

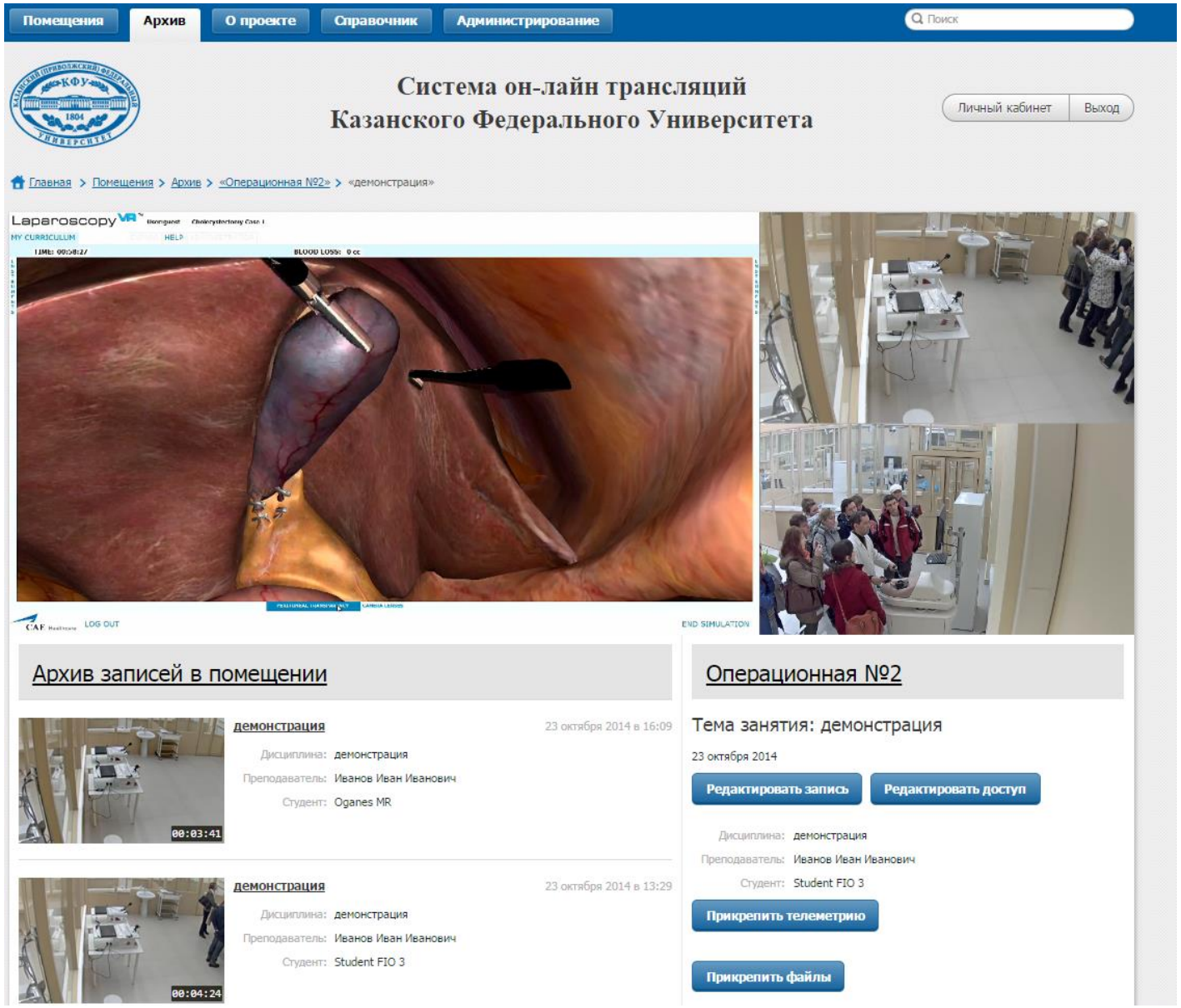
Educational environment

The system of educational video and video portal

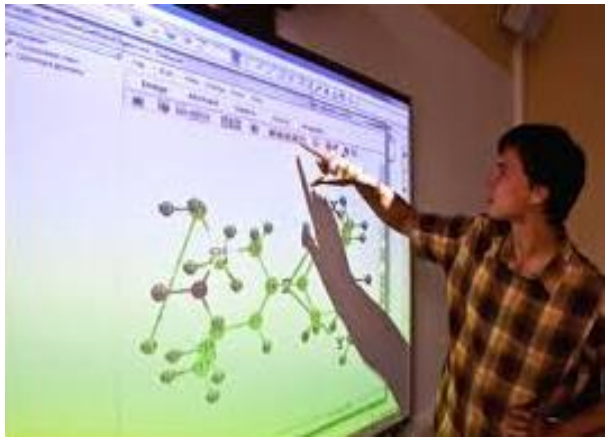
All academic classrooms are equipped with video surveillance, producing a record of classes, tests and examinations.
Viewing the recorded sessions by students allows to fix common errors, objectify assessment and allows to create own portfolio

Contacts: Lenar Faridovich Rashitov
rashlen@gmail.com Skype: rashlen

Educational environment



Department of medical chemistry



The Department was opened in December 2015

Since September 1, 2016, the department has opened a magistracy on the profile of "Medical Chemistry"

The subject of medicinal chemistry - the discovery and development of medicines. It is an interdisciplinary science, located in the border areas of organic chemistry, biotechnology, biochemistry, pharmacology, technology of drugs, computer modeling, etc. Specialist in medical chemistry is a developer of medicines, confidently wielding a wide arsenal of modern chemical, biological, medical, computer and technological knowledge and skills.

Kremlin str., 29/1
Responsible officer: Balakin Konstantin, 89661194454

Started on September 1, 2016

Master's degree in "medical chemistry"

- Task: training of qualified specialists in the field of development of innovative drugs
- The first set (2016-2017) – 10 undergraduates
- Localization – aud. 712-718 Chemical Institute named A.M.Butlerov (Department of medical chemistry).
- Equipment – modern teaching and research laboratory equipment for practical work in the field of organic synthesis and biological testing.
- Teachers: 7 employees (Kazan, Moscow, Saint Petersburg, Kaliningrad), Russia-leading experts in their relevant fields.
- For the Master's program "Medical chemistry" in 2016, 4 new working curricula of disciplines were developed (medicinal chemistry, computer-aided methods in medicinal chemistry, biological screening, organic synthesis in medicinal chemistry).

Kremlin str., 29/1
Responsible officer: Balakin Konstantin, 89661194454

Laboratory of Medical Physics, Institute of Physics, KFU

507 audience Department of Medical Physics

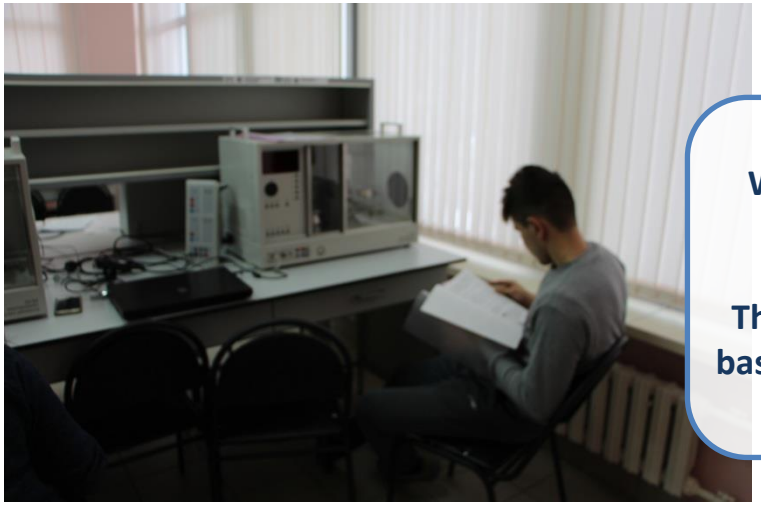
The laboratory is intended to support the course "Medical Physics" of students of IFMaB, as well as the "Specialized Workshop" of undergraduates at the Institute of Physics in the direction of "Medical Physics".

The laboratory is equipped with facilities for studying the biomechanics, ultrasound, ECG, x-ray, CT, etc., as well as facilities for mastering sections of general physics important for biomedicine

Kremlevskaya,16a Responsible officer: Evstifeev Alexander Ivanovich

Laboratory "Specialized Workshop" of the Physics Institute of KFU

603 audience Department of General Physics

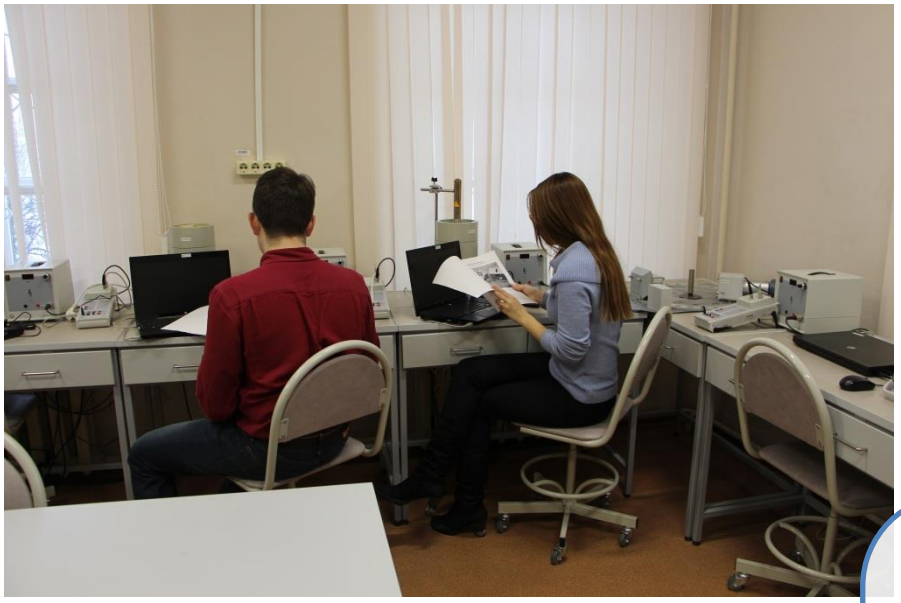


The laboratory conducts classes on the discipline "Specialized Workshop“ for undergraduates and bachelors of the Institute of Physics in the direction of "Medical Physics".

The laboratory is equipped with facilities for studying the physical basis of X-ray tomography, fluoroscopy, NMR and EPR spectroscopy, aero-hydrodynamics, and others.

Kremlevskaya,16a

Training Laboratory "Nuclear Physics" Institute of Physics KFU



Aud. 7 NP
Laboratory
Department SSP IP

The laboratory conducts practical exercises on the course of radiobiology and radiotherapy for students of IFMaB, as well as practical exercises on the course "Nuclear Physics", necessary for mastering the educational trajectory "Nuclear Medicine" of the Master's program "Medical Physics" of Institute of Physics . The laboratory is equipped with devices for studying the technique and methodology for detecting penetrating radiation, alpha radiation, beta radiation, gamma radiation, neutron radiation, Mossbauer spectroscopy, PET

Kremlevskaya, 18

The main directions of research in the magistracy in the direction of "Medical Physics"

EPR spectroscopy of biological objects

Dep. of Quantum Electronics and Radiospectroscopy

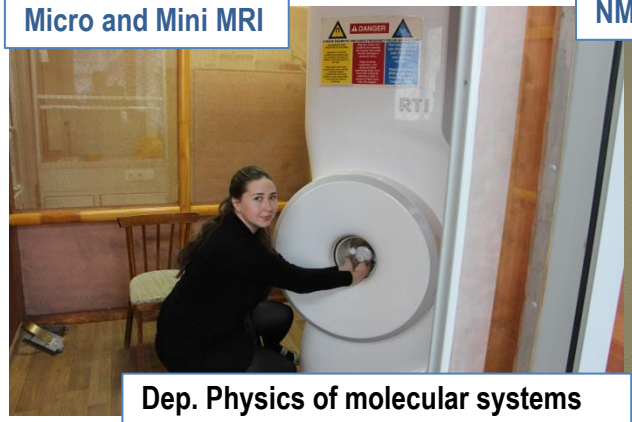
Nuclear medicine

Dep. of SSP IP and RCOC MH RT

Neurobiology

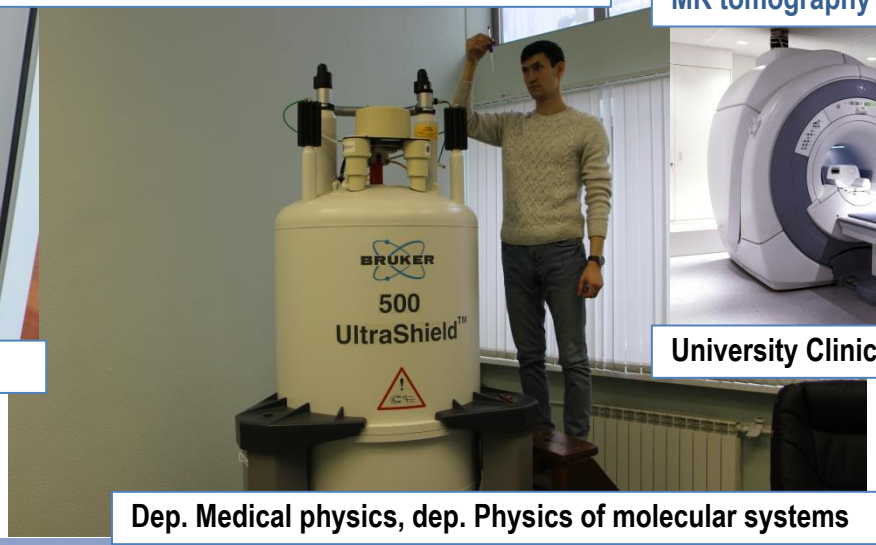
IFMaB

Micro and Mini MRI



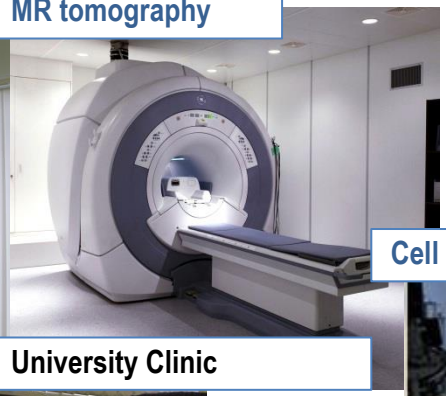
Dep. Physics of molecular systems

NMR spectroscopy of biomolecules and drugs



Dep. Medical physics, dep. Physics of molecular systems

MR tomography



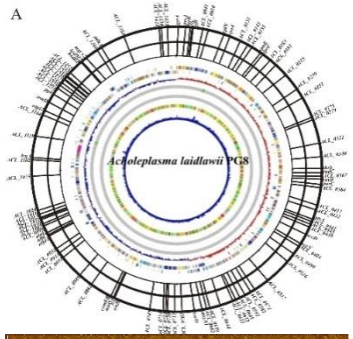
University Clinic

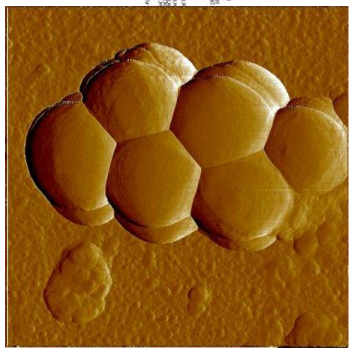
Cell Biophysics

Dep. Medical physics

Department of Medical Physics

Department of Genetics



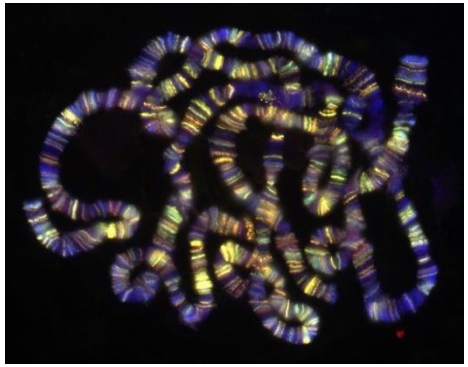


Located in the eastern wing of the main building of KFU

Department has modern equipment for sequencing and analysis of the primary nucleotide sequence of both short DNA fragments and whole genomes of various organisms, proteomic analysis, identification of individual proteins and peptides, genetic transformation of cells of higher eukaryotes, etc.

These opportunities are realized on the basis of the department, the laboratory Omix technologies (head V.Chernov) and the laboratory Genetic and cellular technologies (head A.Rizvanov).

The main building of KFU. Duration 20 min.
Contacts: Babynin Eduard Viktorovich, 233 78 49



Educational environment

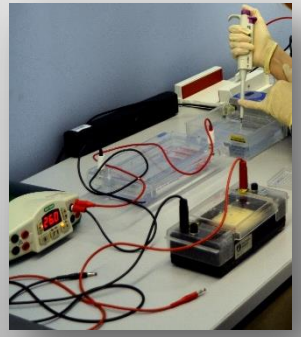
Department of Genetics

Educational and scientific laboratory of a large workshop (aud 210v)

The laboratory is equipped with a full set of equipment for modern research molecular-genetic methods : from the performance of the polymerase chain reaction (PCR) to obtain transgenic organisms

Fluorescent microscope for visualization of chromosomes, expression of fluorescent reporter proteins, cell viability estimates

Devices for the reaction of PCR



Department of Genetics

Laboratory of genomic and proteomic research (aud. 204v)

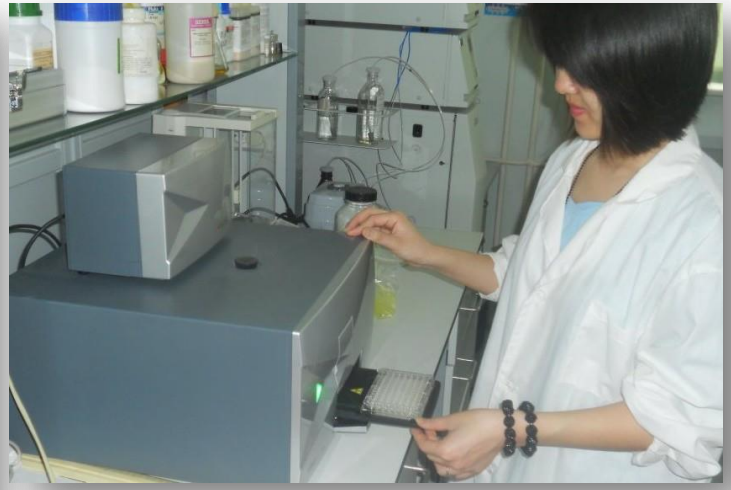
The laboratory is equipped with equipment for separation of biomolecules of electrophoresis and liquid chromatography.

The gel-documentation system Bio-Rad ChemiDoc XRS + allows to view samples in the ultraviolet, detect luminescence and fluorescence

System of high pressure liquid chromatography (HPLC) Breeze 2 allows to separate substances in preparative amounts with the possibility of detection in the visible and ultraviolet spectrum (230-1100 nm) and equipped with a refractometer for the detection of compounds that are not visible in the indicated wavelength spectrum

Department of Genetics

Scientific laboratories of genetics of microorganisms (aud. 201b) and mutational analysis (aud. 202c)



Laboratories are equipped with a full set of equipment for modern molecular genetic methods of research.

Multifunctional microtiter plate reader Tecan Infinite 200 PRO series is a modern highly sensitive equipment for measuring in a tablet format using the basic analysis methods (light absorption, luminescence, fluorescence intensity and polarization).

Department of Microbiology

**Aud. 309, IFMiB , Department of Microbiology,
Educational and scientific laboratory of chromatography**

The study of physicochemical and biological properties of enzymes, as well as their supramolecular organization

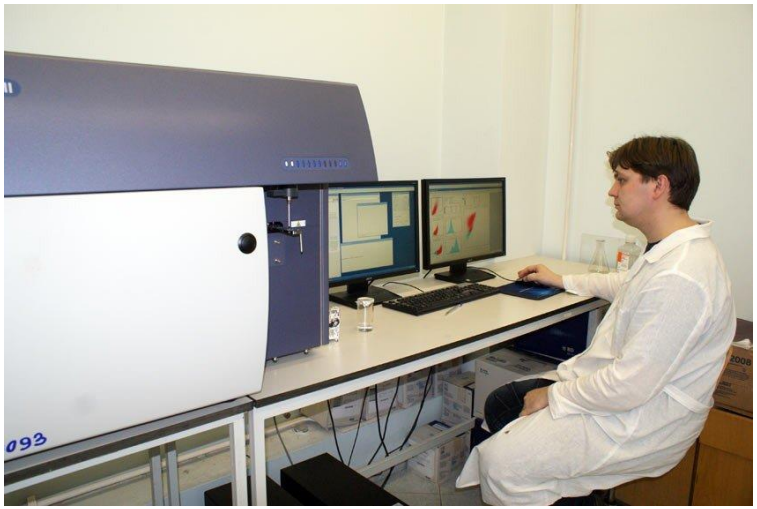
Chromatographic System Bio Rad Biologic Duo-flow Maximizer 20
Development of effective methods for chromatographic purification of proteins

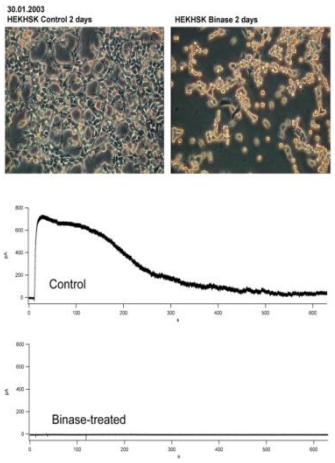
Shaker-incubator Infors HT Multitron
It is intended for cultivation of cells according to the program specified by the operator

**The main building of KFU.
Duration 15 min.**
**Contacts: Ulyanova Vera Vladimirovna, 233-78-65,
Vera.Uljanova@kpfu.ru**

Educational environment

Aud.208, Department of Microbiology
Educational and scientific laboratory of cytometry





Flow-through cytofluorometer BD FACSCanto II with a workstation

Determining the parameters of cell viability, registration of ROS, DNA, RNA, visualization of intracellular localization of components

Maintenance of viability and storage of cell culture

Laminar boxing Kojair type CAT-V-1000IGO 150
Incubator CO2 IGO 150
Microscope MS 300

The main building of KFU.
Duration 15 min.
Contacts: Zelenihin Pavel Valerievich, 233-78-84, Pavel.Zelenikhin@kpfu.ru

Educational environment

Aud.313, Department of Microbiology, Educational and scientific laboratory of biotechnology

Fermentor Labfors Luh, Infors with controlled illumination intensity and the choice of spectrum for cultivation of microalgae and cyanobacteria

The main building of KFU.
Duration 15 min.
Contact: Ziganshin Ayrat Mansurovich,
233-78-72,
ayrat_ziganshin@bk.ru

Fermentor Biostat Aplus 2L MO 230 VAC has all the potential for the cultivation of microorganisms and cell cultures with the aim of obtaining useful products

Bactron-300 anaerobic station. Insulated glove box with a built-in incubator and stereomicroscope. Used for isolation and cultivation of anaerobic psychrophilic, mesophilic and thermophilic microorganisms

Department of Biochemistry and Biotechnology

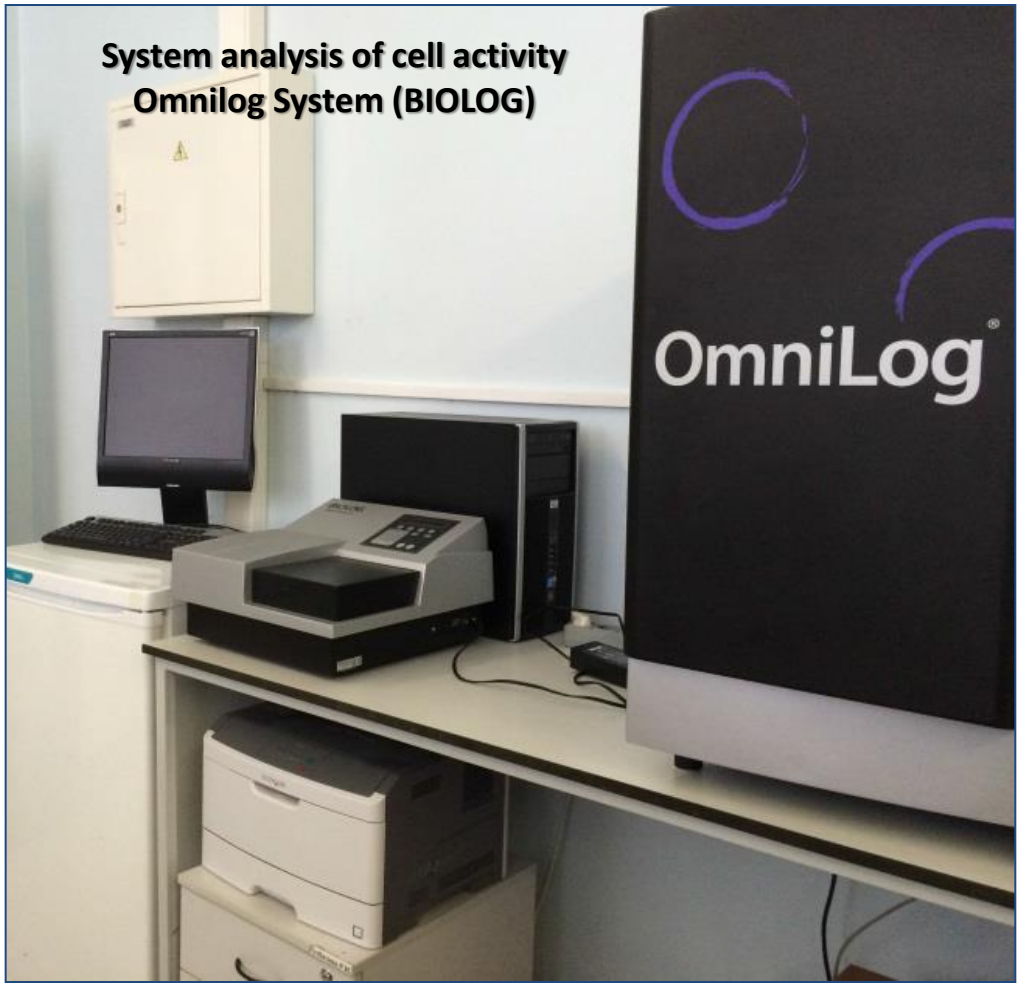
SRL "Structural Biology"

NGC ™ 10 Medium-Pressure Chromatography System installed in a cold room with a constant temperature of 5 ° C (room 212).

The system is intended for preparative purification of proteins.

Ultracentrifuge OPTIMA XPN-80 (max speed up to 80000 rpm, max acceleration up to 548 300g) for sample preparation (room 213)

Paris Commune str., 9 (SEC of pharmaceuticals).
Duration 10 minutes.
Contacts: Ayupov Rustam Khasanovich, tel. 890446734850



System analysis of cell activity
Omnilog System (BIOLOG)

Department of Biochemistry and Biotechnology

103v aud. Educational and Scientific Laboratory of Agricultural Biochemistry and Biotechnology

Gen III OmniLog Combo Plus System
System for automated express identification of microorganisms of different groups. Detects the development of cultures in the presence of various chemical test substrates using a redox indicator that reacts to the metabolic activity of cells.

This system allows to determine the functions of important genes; to obtain stable phenotypes of cell cultures; to optimize growth conditions, germination and sporulation for cell cultures and product output; to determine the enzymatic activity and metabolic properties of cells.

The main building of KFU. Duration 10 min.
Contacts: Tukhbatova Rezeda Ilgizovna, tel. 233-78-47

Department of Biochemistry and Biotechnology

Low pressure chromatographic system "BiologicLPSyst"

118v aud. Educational and Scientific Laboratory of Molecular Pharmacology

Chromatographic system of low pressure "BiologicLPSyst" allows to carry out purification of proteins and Nucleic acids

Mechanical rotary microtomes HM 550 and NM-315 allow to produce high-quality cuts and a series of tissue sections from blocks filled in paraffin

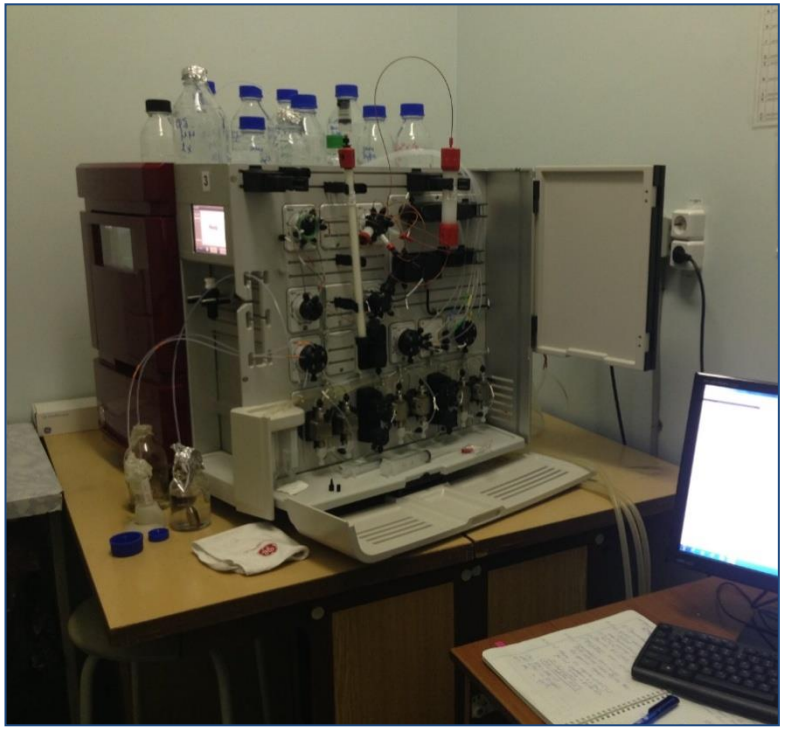
Rotary microtome HM 315

Cryostat HM 550

The main building of KFU. Duration 10 min.
Contacts: Fattakhova Alfiya Nurimanova, tel 233-78-45

Department of Biochemistry and Biotechnology

111b aud.
Chromatography system AKTA Avant 25 (GE Healthcare, Sweden).
The system is designed to analyze (detection of absorption at three wavelengths, conductivity and pH simultaneously), isolation and purification of proteins, peptides, nucleic acids and other biomolecules (analytically and preparative), separated by the liquid chromatography method. Chromatographic system and software comply with GLP requirements.



Aud. 008v. CentriVap is a biomolecular concentrator with cooling (Labconco, USA). The device is intended for the concentration of solutions of biomolecules sensitive to temperature, such as RNA, DNA, proteins, biocompatible materials based on them, etc. This is the only biomolecule concentrator that includes a cooling system up to -4 ° C.

The main building of KFU. Duration 10 min.
Contact: Tatyana Aleksandrovna Nevzorova, tel. 233-74-40

Department of Biochemistry and Biotechnology

BioRad CFX96 thermocycler

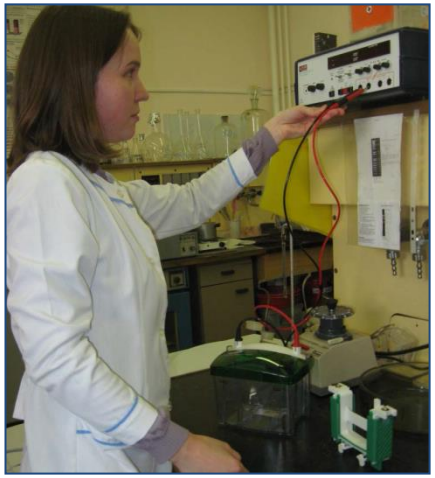
System of gel-documentation ChemiDoc

107v aud. Educational and scientific laboratory of molecular genetic analysis

RT PCR thermocycler for nucleic acid amplification, ChemiDoc gel-documentation system, systems for electrophoresis and blotting allow to reveal genetic markers of predisposition to cardiovascular and autoimmune diseases; to study the structure of the gene pool of people, to conduct paleogenetic studies of DNA from the bone remains of ancient burials.

The main building of KFU. Duration 10 min.
Contacts: Kravtsova Olga Alexandrovna, tel. 233-78-31

Centrifuge 5804



Equipment for vertical electrophoresis and blotting

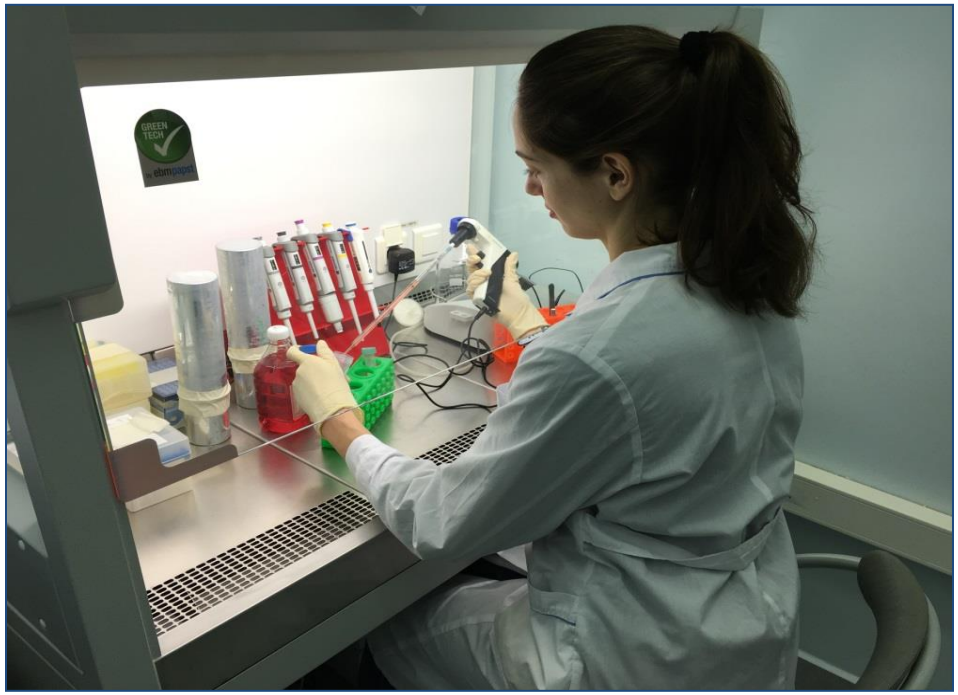
Real-Time PCR

Educational environment

Department of Biochemistry and Biotechnology

104v and 105v aud. SRL "Molecular basis of pathogenesis and therapy of neoplastic diseases"

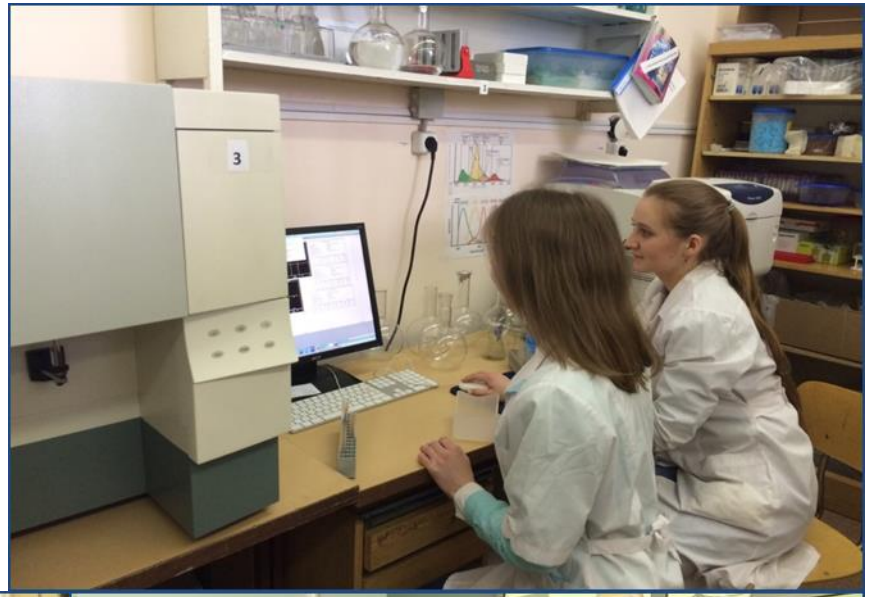
The laboratory is engaged in the research of mechanisms and the development of therapy of oncological diseases. The project is implemented using modern cellular and molecular biological technologies.
The main instruments: spectrophotometers NanoDrop Lite, Genesys 10SUV-Vis, inverted microscope Carl Zeiss Primo Vert, laminar box LamSystems.



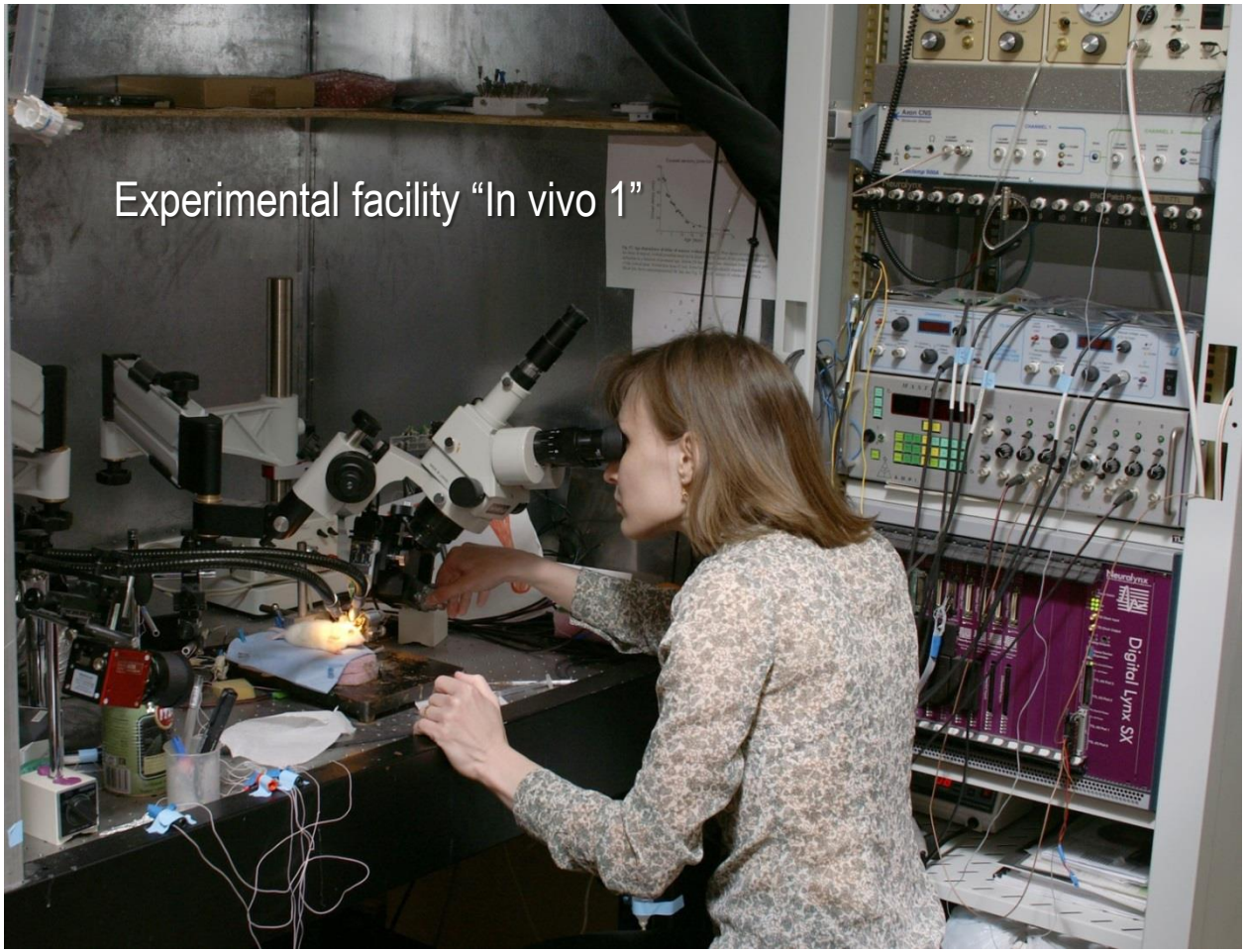
Department of Biochemistry and Biotechnology

104v and 105v aud. SRL "Molecular basis of pathogenesis and therapy of neoplastic diseases“

CO2-incubators Sanyo, multiparameter system BD FACSCalubur, Trans Blot Turbo Transfer System, centrifuges Eppendorf 5810R, Eppendorf 5415R



Department of Human and Animal Physiology

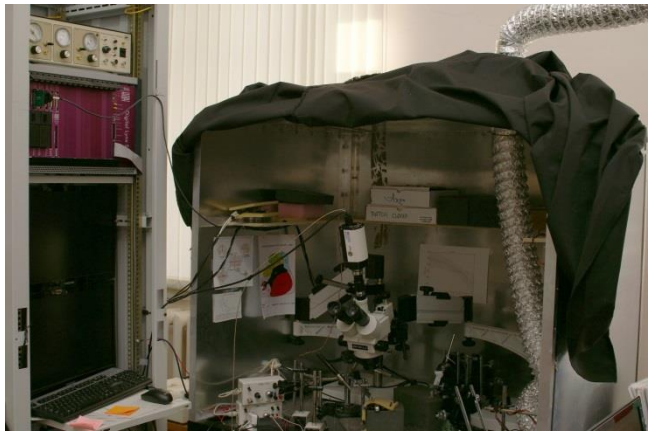


Aud. 024v. SRL Neurobiology
OpenLab Neurobiology

Experimental facility “In vivo 1” is designed for electrophysiological studies on small laboratory animals (mice and rats) in vivo. The unit is equipped with a unique 256-channel extracellular amplifier of biopotentials Digital Lynx SX (NeuraLynx, USA), allowing simultaneous registration of the network neuronal activity from different brain regions of the animal being studied using multi-channel extracellular electrodes on a silicon basis.

The main building of KFU. Duration 30 min Contact: Zakharova Yuliya Pavlovna, tel 233-78-24.

Department of human and animal physiology.
Laboratory of Neurobiology. OpenLab Neurobiology. Aud. 024B



The experimental facilities In vivo-2 and In vivo-3

The experimental facilities In vitro-1 and In vitro-2

The experimental facilities: In vivo-2 and In vivo-3 are similar to the In vivo-1, with the only difference that are equipped with 128-channel amplifier variants of the extracellular biopotentials Digital Lynx SX (NeuraLynx, USA).

Experimental facilities In vitro
In vitro 1 and 2 are designed for electrophysiological studies in slices of the brain of small laboratory animals (mice and rats) in vitro. Facility In vitro-1 is equipped with 4-channel patch-clamp amplifier EPC-10 Quadro (HEKA elektronik, Germany). Facility In vitro-2 includes 2-channel patch-clamp amplifier MultiClamp 700B (Axon Instruments, USA) and 16-channel extracellular amplifier of biopotentials, made to order.

The main building of KFU. Aud. 024B. Duration 30 min. Contacts: Zakharova Julia Pavlovna, tel. 233-78-24.

Educational environment

OpenLab

"Motor Neurorehabilitation"

017B aud.

Educational and scientific laboratory of motion physiology. It conducts research on the evaluation of the organization of neural networks of the spinal cord in humans.

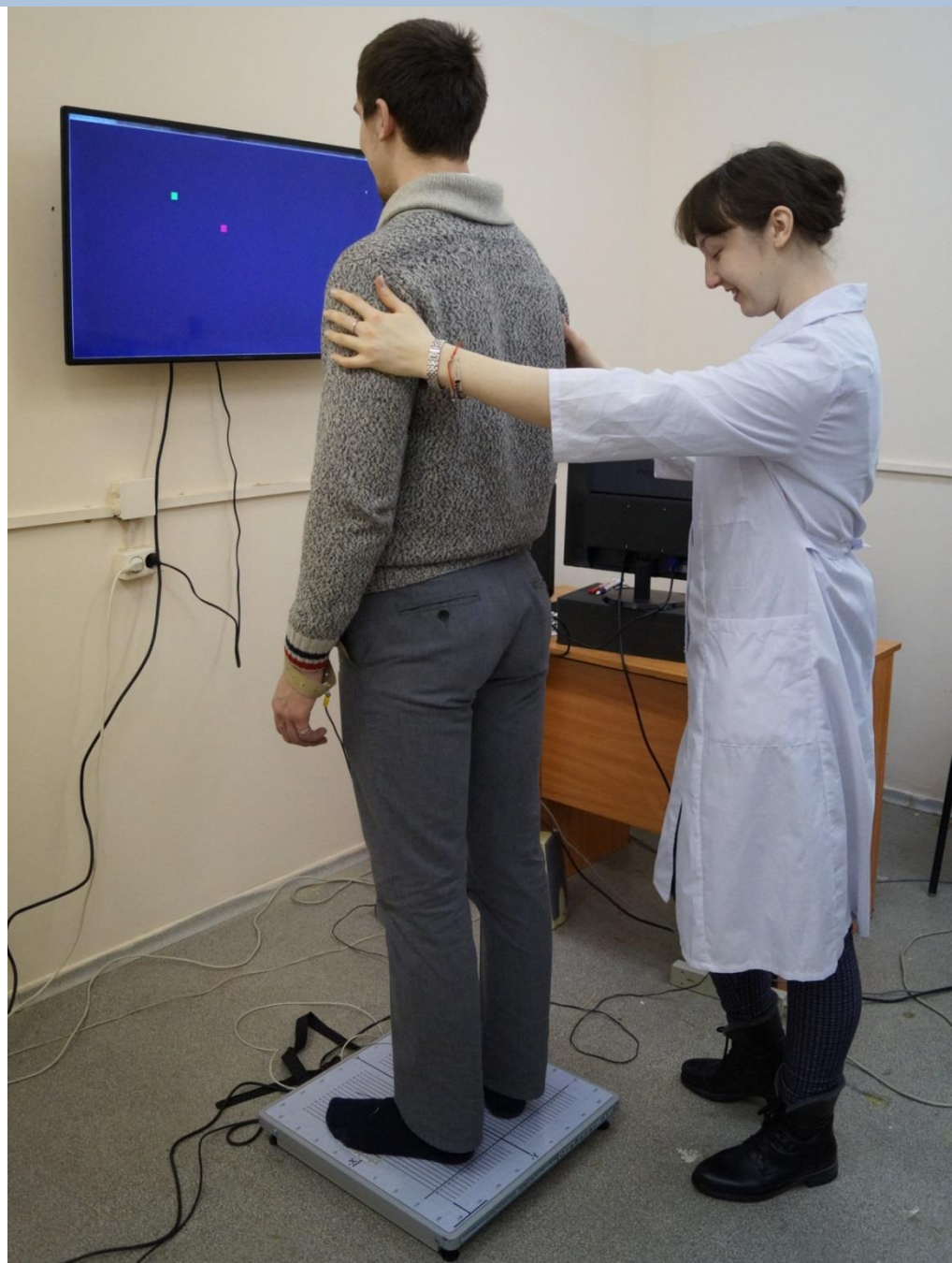
The Neuro-MVP-4 device is used for the destruction of the central and peripheral nervous system, primary-muscle diseases and pathology of neuromuscular transmission. For the subsequent analysis of the parameters of the motor responses and the speed of propagation of the excited magnetic stimuli (magnetic stimulator Neuro MS), minimally invasive magnetic stimulation is used.

The main building of KFU.
Duration of the excursion 15 min.
Contacts: Baltina Tatiana Valerievna,
233-78-44,
Tvbaltina@gmail.com

Department of human and animal physiology

OpenLab
"Motor Neurorehabilitation"
017B aud.

The hardware and software complex "Stabilograf" is used to study the static-dynamic stability of a person. The stabilometric platform is a hardware-measuring system that captures the parameters of the human body's vibration in the form of analog signals, processes the obtained data, converts them into the required format and transfers them to the computer for further processing and presentation.

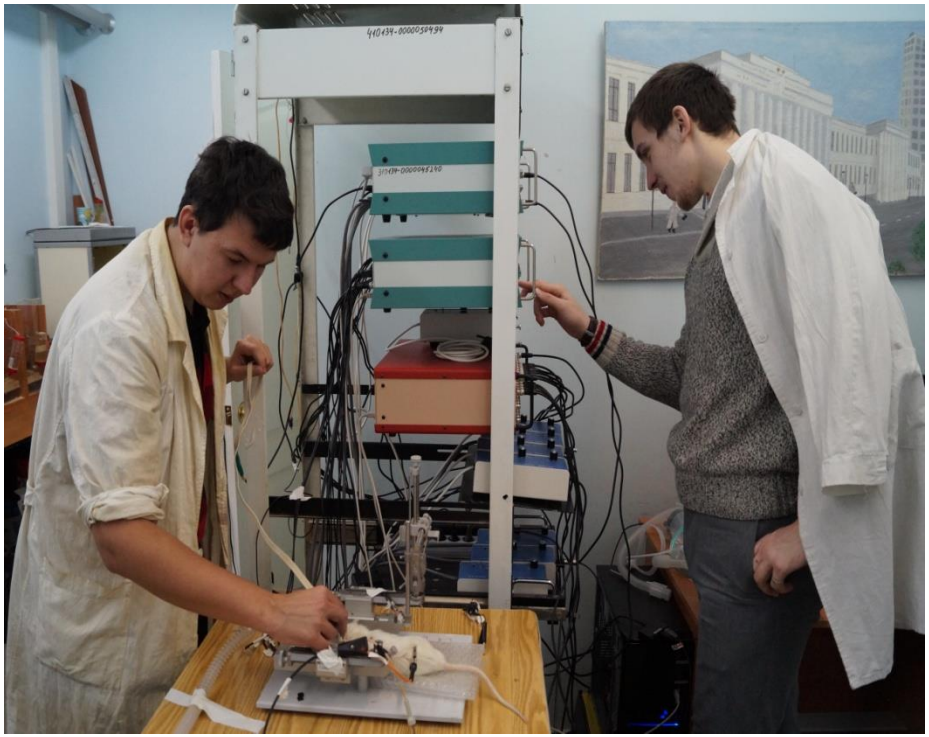


Educational environment

OpenLab "Motor Neurorehabilitation“
006B aud.

Electro-physiological unit DataWave Technologies for recording and amplifying biological signals in small laboratory animals (rats, mice).

The educational and scientific laboratory studies the mechanisms of development of acute neuronal trauma and mechanisms of plasticity of neural networks in conditions of adaptation to gravitational changes.

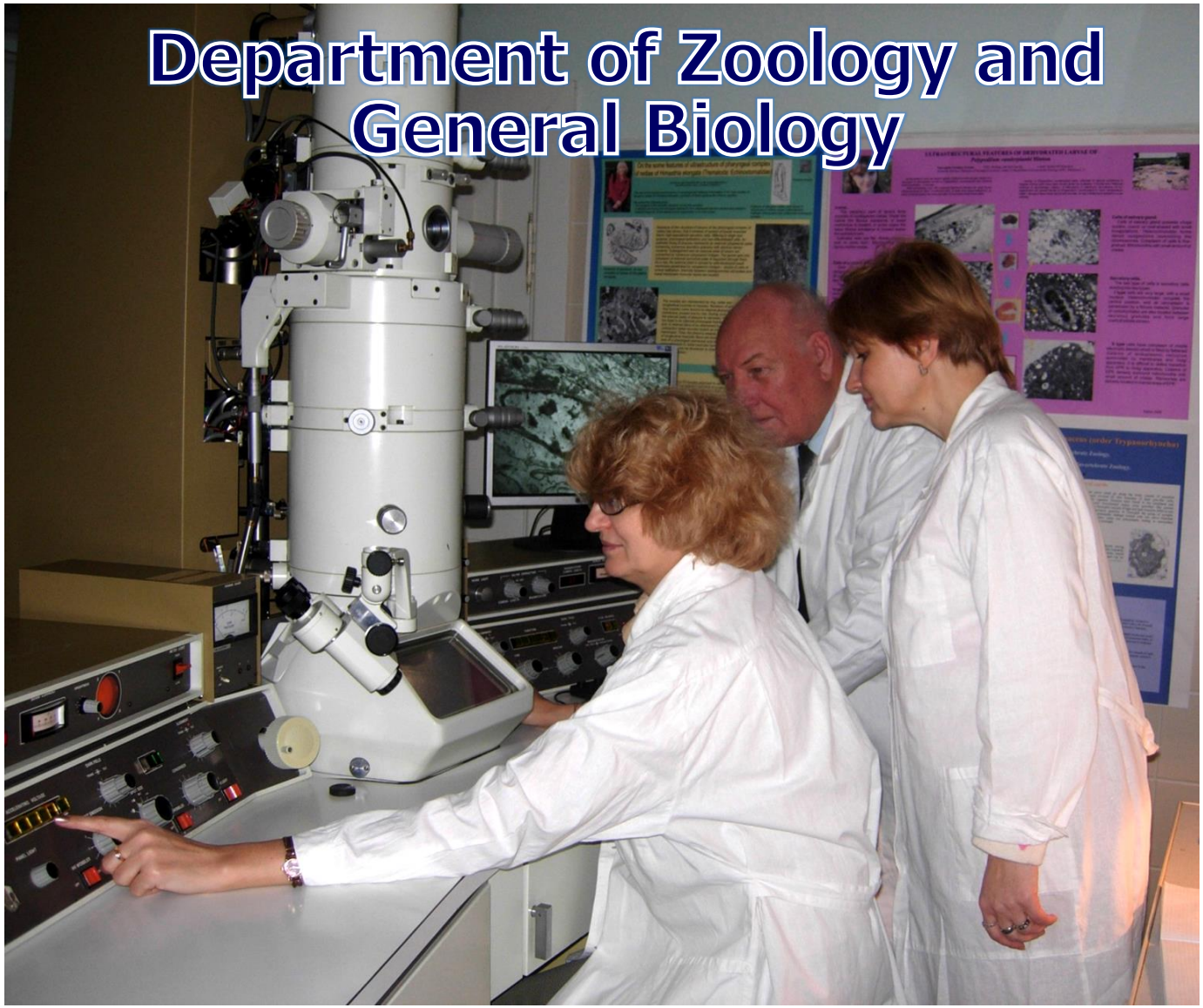


Department of Human Health Protection

Building KFU , Levobulachnaya str., 44 bld.
Duration 20-30 minutes.
Contacts: Zefirov Timur Lvovich, 292-92-66

4.04 Aud.
Device the Power Lab for record of isometric reduction

4.02 aud.
The isolated heart system according to Langendorf is designed to work on the isolated heart of small animals (mice, rats or guinea pigs).



011 aud IFMB

Department of Zoology and General Biology

Educational and Scientific Laboratory of Electron Microscopy

The transmission electron microscope JEM-100 CX allows to conduct research of biological objects at the ultrathin level (800 thousand times increase): fine histology of pathological and reconstructed tissues, cellular level of organization of various organ systems.

The main building of KFU.
Duration 20 min.
Contacts: Zabotin Yaroslav Igorevich, 231-52-36

Educational environment

008 and 011 aud.

Department of Zoology and General Biology

Educational and Scientific Laboratories of Hydrobiology, of Electron Microscopy

Research microscopes (bioluminescence, phase contrast, video, 3D-visualization, electronic scanning) allow to solve a wide range of problems in various fields of biology, histology, biomedicine.

Multifunctional Microscope Axio Imager A2

Digital video microscope Hirox KH-7700

Electronic raster (Scanning) microscope Hitachi NV-1000

The main building of KFU. Duration 30 min. Contacts: Kadirov Azat Gilmkhanovich, 231-52-88

Department of Botany and Plant Physiology

202 aud.
Educational and scientific laboratory of plant metabolism and signaling
High-pressure chromatography system for protein separation and purification - BiologicDuoFlow from BioRad - allows to solve a wide range of problems in various fields of biology, histology, biomedicine.

Portable gas analyzer - GFS 3000 (Walz, Germany) is designed to study the parameters of gas exchange of plants, allows to solve a wide range of problems in the field of plant physiology, ecology and agriculture. Determines the parameters of photosynthesis and transpiration in laboratory and field conditions.

Kremlin, 18, Eastern half-caliper. Duration 15 min. Contacts:
Vorobyov Vladimir Nikolaevich, 233-78-26

Department of Botany and Plant Physiology

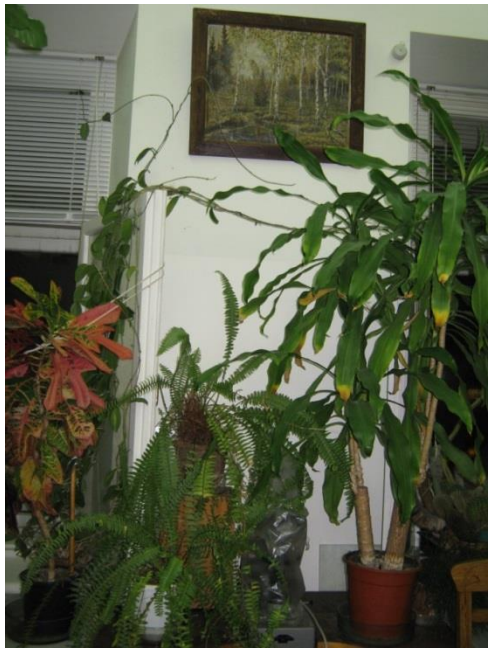
314 the aud.

Paleobotanical museum cabinet of prof. Baranov

Collections of fossils of woody plants of different geological epochs and Baranov's paintings of the reconstructed paleoflora

The main building of KFU.
Duration 20 min.
Contacts: Idrisova Guzel Immamutdinovna, 231-52-94

Educational environment



310 and 311 audiences, the Department of Botany and Plant Physiology A collection of fixed preparations for phytopathology, gives an idea of the fungal and bacterial diseases of plants. Collection of living plants of different geographical zones. In the collection there are representatives of most departments of higher plants - psilotoid, fern-like, gymnosperms and angiosperms, including those with a specific life form or unusual morphological features (cacti, needle, monster, banana, dracaena).

The main building of KFU. Duration 30 min.
Contacts: Demina Galina Vladimirovna, Kadyrova Louise Ravilevna,
231-52-92, 231-52-94

Zoo museum

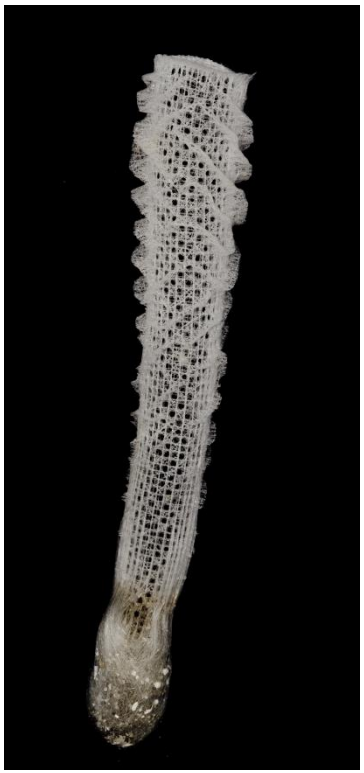
The Zoo Museum of the Kazan Federal University is one of the oldest repositories of this profile in Russia, and is one of the most important zoo museums in the country due to the richness and historical value of the collections.

Today the museum consists of eight halls located on the facade of the second floor of the eastern wing of the main building of the university.

The museum collection includes exhibits from twenty-three types of animals. Its funds include 3.5 thousand units of vertebrate storage, 750 items of insects (30-40 thousand copies), 4 thousand copies and units of other invertebrates. Among them are rare representatives of the fauna, as well as the only in Russia stuffed zebra quagga, that was completely exterminated by man.

Zoo museum

In the first hall of the museum, collections of invertebrate animals from protozoa to mollusks and crustaceans are demonstrated. At the beginning of the exposition you can see plaster models of shells of amazing protozoa - foraminifera, living on the bottom of the seas and oceans, ajour skeletons of sponges.



The following showcases will acquaint visitors with coelenterates - deadly siphonophores, sea flowers - sea anemones and builders of atolls and reefs - madrepore corals.

Next, the exposition with a collection of worms unfolds. Here you can see parasites of humans and animals, curative leeches and edible polychaetes. Excursionists will see echinoderms, a collection of mollusc shells and various cancers from the smallest plankton forms to one of the largest representatives - the king crab. The exposition closes with the collection of microscopic equipment of the late 19th and early 20th centuries.

The main building of KFU. Duration 15-30 min.
Contacts: Bespyatykh Andrey V., 231-52-88.

Zoo museum

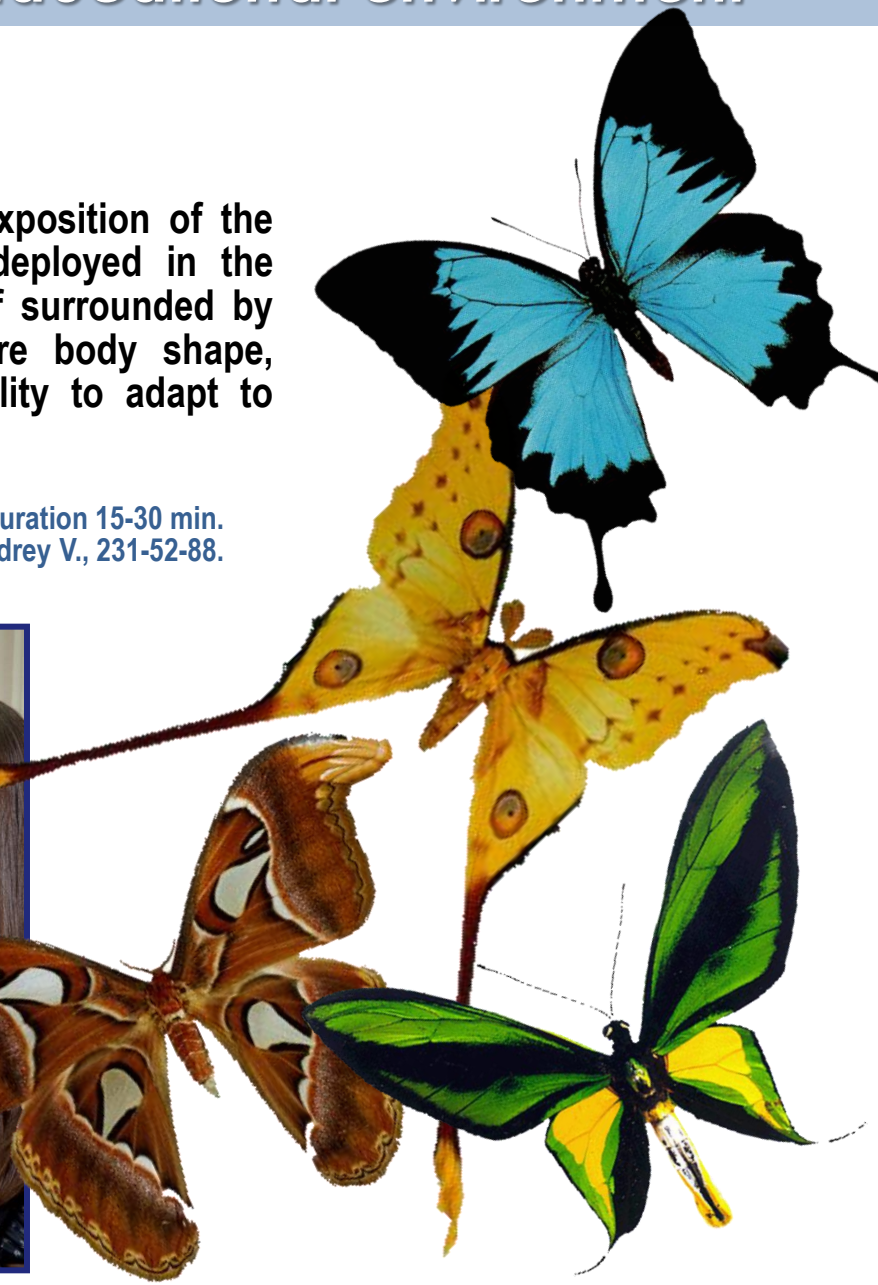
1 hall. *Aud. 220*

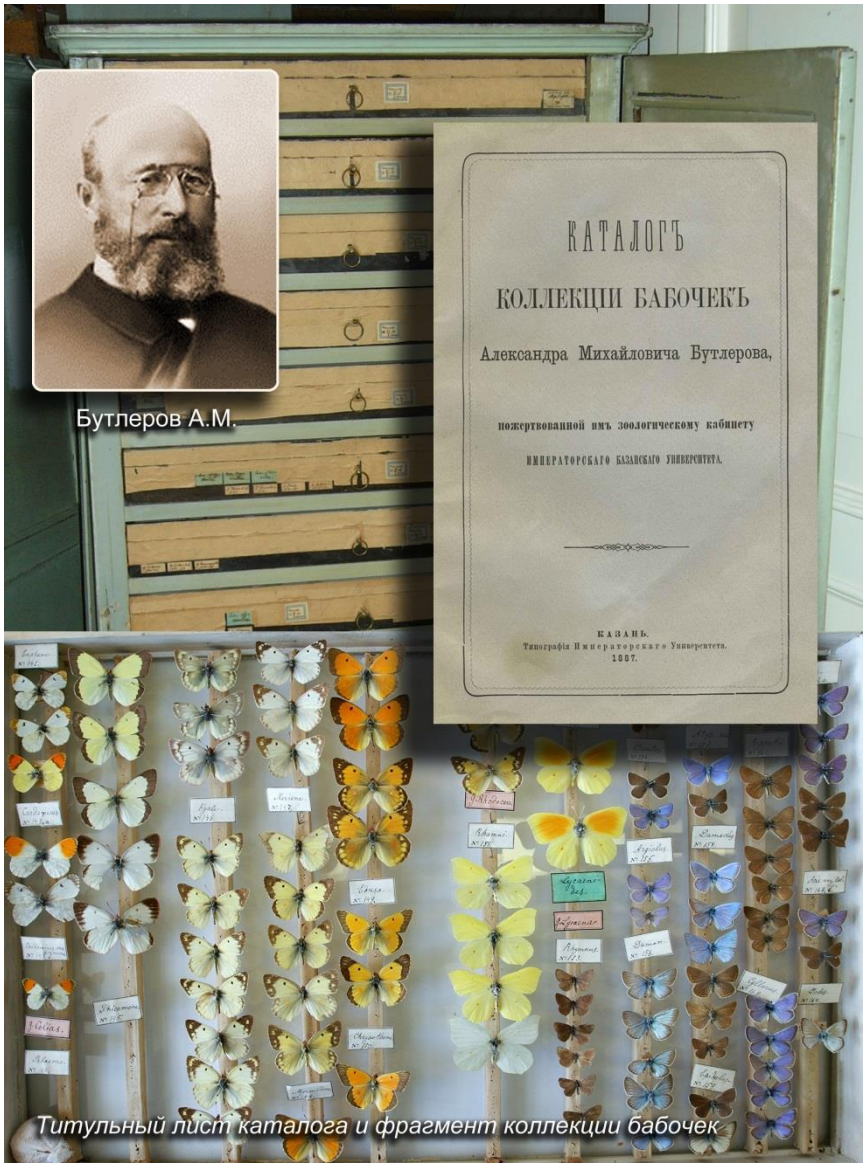
The main building of KFU. Duration 15-30 min.
Contacts: Bespyatykh Andrey V., 231-52-88.

Zoo museum

About ten thousand specimens of insects are in the exposition of the entomological department of the museum, which is deployed in the second hall. In the entomological hall you find yourself surrounded by amazing creatures, amazing imagination with a bizarre body shape, richness and brightness of colors and a fantastic ability to adapt to environmental conditions.

The main building of KFU. Duration 15-30 min.
Contacts: Bespyatykh Andrey V., 231-52-88.





Титульный лист каталога и фрагмент коллекции бабочек

Zoo museum

Many outstanding scientists, writers, politicians were passionate collectors of butterflies.

Among them are Vladimir Nabokov, Alexander Butlerov, Prince Nikolai Romanov and one of the richest people on the planet, the banker Walter Rothschild. In the entomological exposition there is a bird-eye of Rothschild, named after its discoverer.

Here visitors can see a collection of butterflies by A.M. Butlerov, that he has donated to the zoological cabinet of the Imperial Kazan University in 1887.

To work with this unique collection only experts are allowed

The main building of KFU. Duration 15-30 min.
Contacts: Bespyatykh Andrey V., 231-52-88.

Zoo museum

The third room of the zoomuseum will transfer the excursionists to the atmosphere of the laboratory of the zoologist-researcher of the late XIX - early XX century. Visitors will get acquainted with tools and techniques for conducting zoological research at the dawn of the Kazan University.

The room displays restored samples of laboratory furniture, equipment and instruments.

The main building of KFU. Duration 15-30 min.
Contacts: Bespyatykh Andrey V., 231-52-88.

Zoo museum

Here is a collection of madreporal corals, equipped with interactive illumination

The main building of KFU. Duration 15-30 min.
Contacts: Bespyatykh Andrey V., 231-52-88.

Zoo museum

Department of Vertebrate Zoology
Comparative-anatomical hall and fund storages

Skulls and skeletons of vertebrates are represented in the hall. The collections of the museum contain holotypes of 10 species of fish, a large collection of birds of E.A. Eversman

The main building of KFU.
Duration 10 min.
Contact: Belyaev Alexander, Khairutdinov Ildar, Alexandr Bespalov, Svetlana Lazareva, Valerian Garanin, Oleg Tumanov, 231-52-96

Department of Vertebrate Zoology
Ichthyological Hall

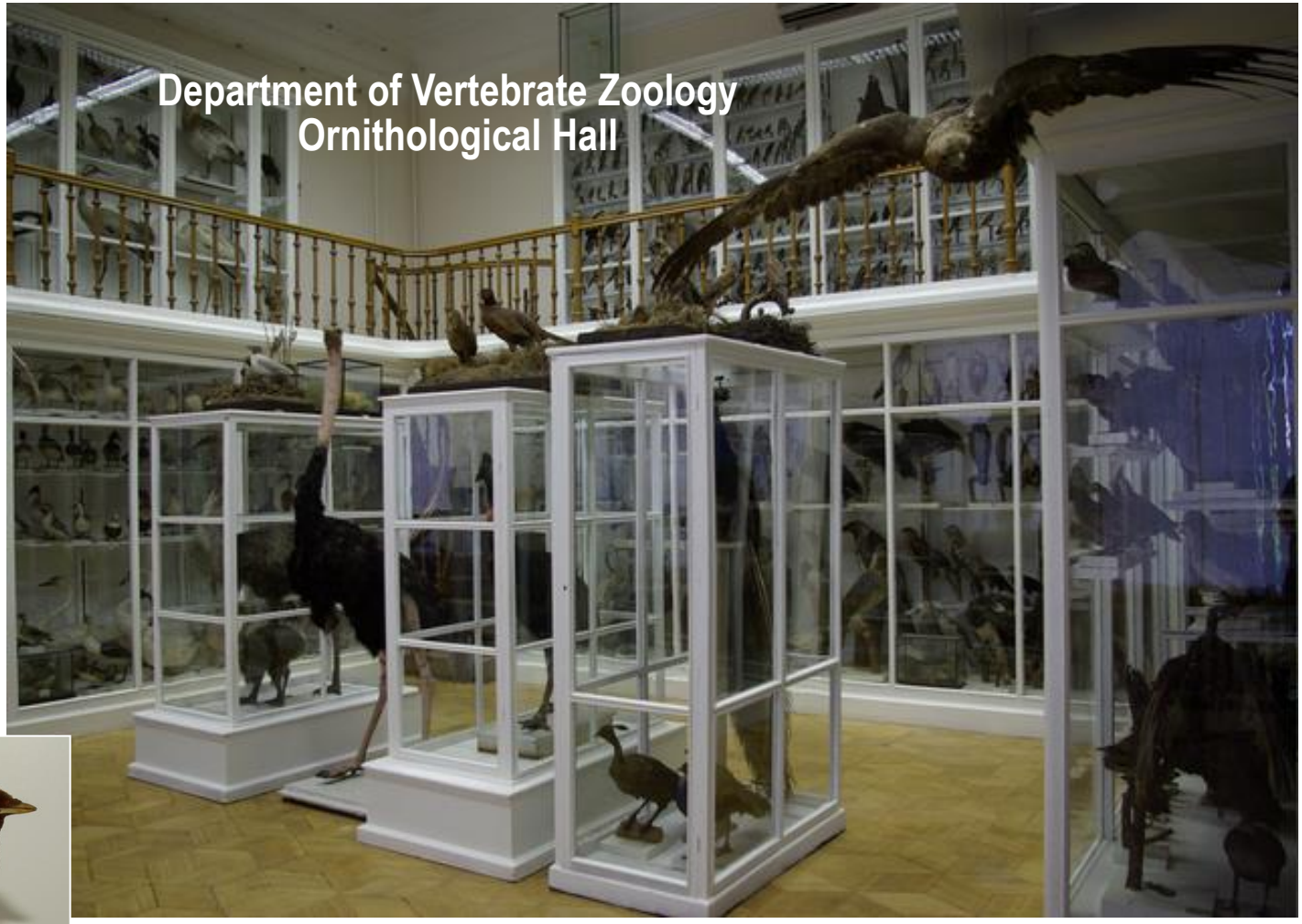
Zoo museum

In the hall is a fairly large collection of fish of the world fauna. Interesting hybrids of sturgeon. There are specimens caught in water bodies where they do not currently meet (Caspian salmon, taimen)

The main building of KFU. Duration 10 min.
Contact: Belyaev Alexander, Khairutdinov Ildar, Alexandr Bespalov, Svetlana Lazareva, Valerian Garanin, Oleg Tumanov, 231-52-96

Zoo museum

The exposition consists of one and a half thousand stuffed birds. Among the exhibits are a large number of rare and specially protected species of world fauna: birds of paradise, South American tinamas, trumpeter and goatsin, kiwis, Australian honey-plants, South Asian nectaries.



The main building of KFU. Duration 20 min.
Contact: Belyaev Alexander, Khairutdinov Ildar, Alexandr Bespalov, Svetlana Lazareva, Valerian Garanin, Oleg Tumanov, 231-52-96

Zoo museum

Department of Vertebrate Zoology Theriological Hall

In the hall are collected about three hundred exhibits of mammals - from perverters to higher primates. Among the unique exhibits of the museum, the only in Russia stuffed extinct zebra quagga.

The main building of KFU. Duration 20 min.
Contact: Belyaev Alexander, Khairutdinov Ildar, Alexandr Bespalov, Svetlana Lazareva, Valerian Garanin, Oleg Tumanov, 231-52-96

Botanical Museum

315 and 316 aud. The largest collection of herbariums of the Middle Volga region. More than 120 thousand units of storage, mainly higher plants and lichens. Systematic and nominal collections. There are small collections of mushrooms and bryophytes.

The main building of KFU. Duration 20 min.
Contacts: Lyubarsky Sergey Evgenievich, 233-72-91

Interdisciplinary laboratory building of biomedical research and pharmaceutics
Kazan, Paris Commune str, building 9
1st floor – duration 20-30 min
Grigoryeva Tatiana Vladimirovna 293-02-80
3rd floor - duration 15-30 min
Bulatov Emil Rafalevich 8-927-481-5767
Bulatovemil@gmail.com
5th floor - duration 15-30 min
Miftakhova Regina Riftovna 8-937-774-7838
Regina.miftakhova@gmail.com

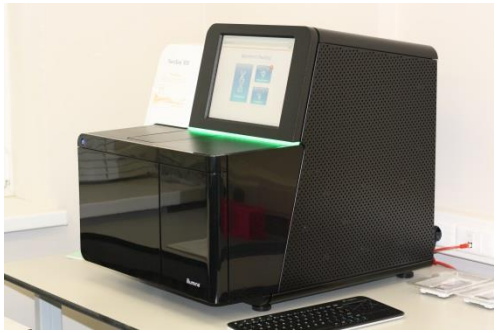
Interdisciplinary Center for Proteomic and Genome Research

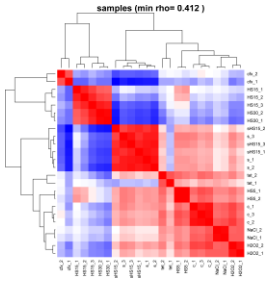
Studies in the field of molecular biology: decoding of genomes, transcriptomic and proteomic profiling, metagenomic analysis of communities, quantitative and qualitative analysis of analytes in various media.

Genomics, transcriptomics

Bioinformation analysis

Characteristics of protein complexes





Quantitative proteomics LC-MS

Laboratory building at P. Commune, 9. 1 floor
Duration 30 min.
Contacts: Grigorieva Tatyana Vladimirovna, 293-02-80

Educational environment

System for DNA fragmentation Covaris

Bioanalyzer for checking the quality of libraries for sequencing

Rooms 114, 115, 118, 119, 120

Sample preparation laboratories

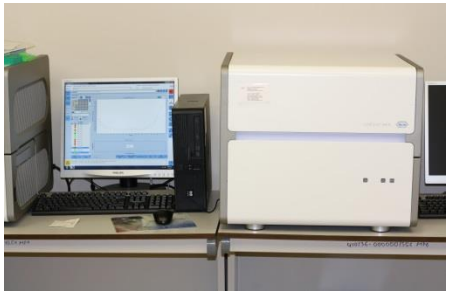
Isolation of proteins and nucleic acids, their fragmentation, selective purification and preparation for further analysis.

Electrophoretic separation of proteins and nucleic acids. Differential staining and visualization of proteins after two-dimensional gel electrophoresis.

Laboratory building at P. Commune, 9.
1 floor. Duration 30 min.
Contacts: Grigorieva Tatyana Vladimirovna, 293-02-80

Educational environment

Sequencer 3730 (Life Technologies)



Analyzer for real-time PCR analysis Light Cycler 480 (Roche)

Sequencer 454 GS Junior (Roche)

High-performance sequencer SOLiD 5500 (Life Technologies)

Room 106

Laboratory of PCR and Sequencing

Capillary sequencer 3730 allows the nucleotide sequence of individual DNA fragments up to 1600 bp in length.

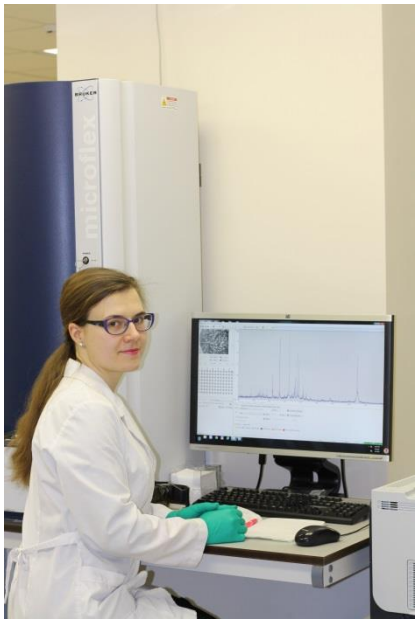
High-performance sequencer SOLiD 5500 is used for mass reading of hundreds of millions of short fragments of total DNA and allows for metagenomic analysis of communities.

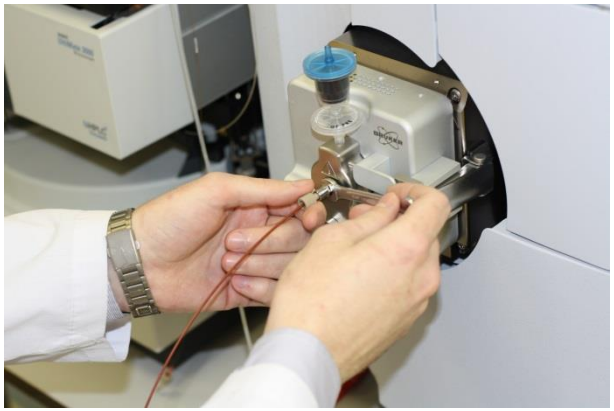
PCR analyzers in real time allow the quantitative evaluation of DNA and determine the expression level of individual genes.

Pyrosequencer Junior is used for full genome sequencing of small genomes and metagenomic analysis of communities (16S rRNA).

Laboratory building at P. Commune, 9.
1 floor. Duration 30 min.
Contacts: Grigorieva Tatyana Vladimirovna, 293-02-80

Educational environment





Rooms 107-109

Laboratory Mass spectrometry

Mass spectrometers of different resolution, as well as their combination with liquid chromatographs, allow solving a wide range of problems:

Rapid identification of microorganisms;

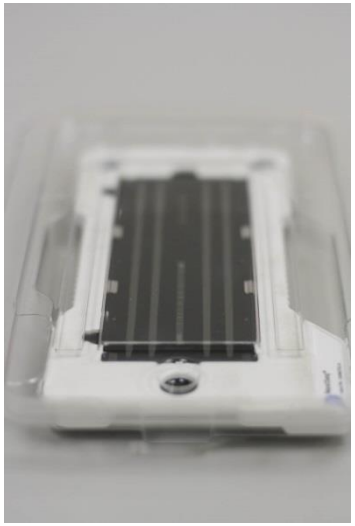
Identification of individual proteins and analysis of their fine structure;

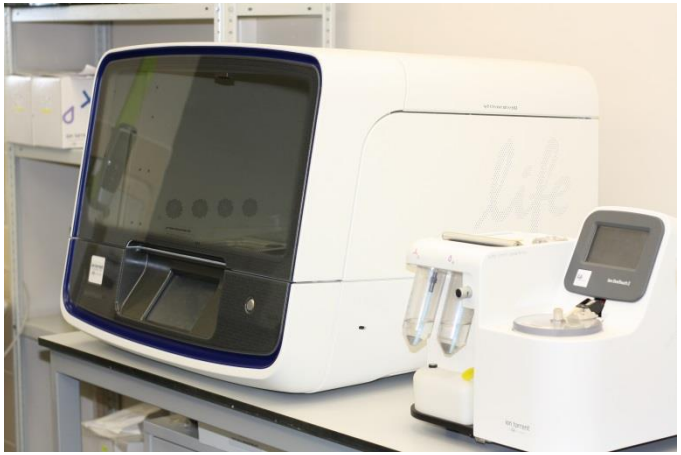
A qualitative proteomic analysis of protein mixtures;

Multiple quantitative analysis of known analytes in various mediums.

Laboratory building at P. Commune, 9.
1 floor. Duration 30 min.
Contacts: Grigorieva Tatyana Vladimirovna, 293-02-80

Educational environment





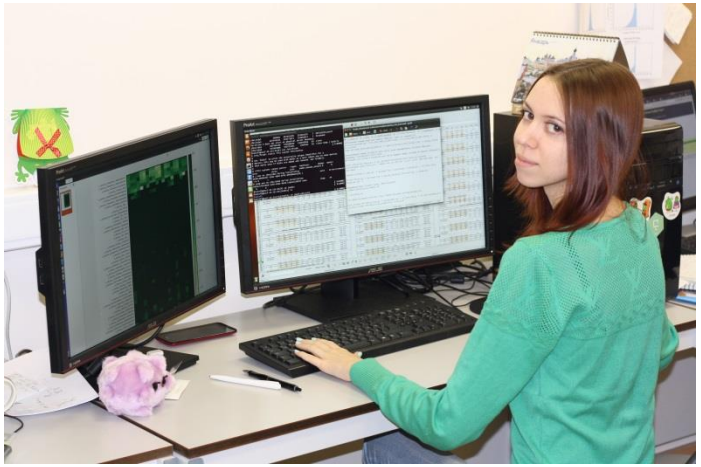
Room 116

Next Generation Sequencing Laboratory

Ion Proton semiconductor sequencers are mainly used in combination with Ampliseq technology for the analysis of exogenous samples.

High-performance sequencer NextSeq 500 (Illumina) allows to solve a wide range of tasks, including transcriptional profiling and decoding of the human genome.

Laboratory building at P. Commune, 9.
1 floor. Duration 30 min.
Contacts: Grigorieva Tatyana Vladimirovna, 293-02-80



Interdisciplinary Center for Proteomic and Genome Research

Room 214

Laboratory of bioinformatics

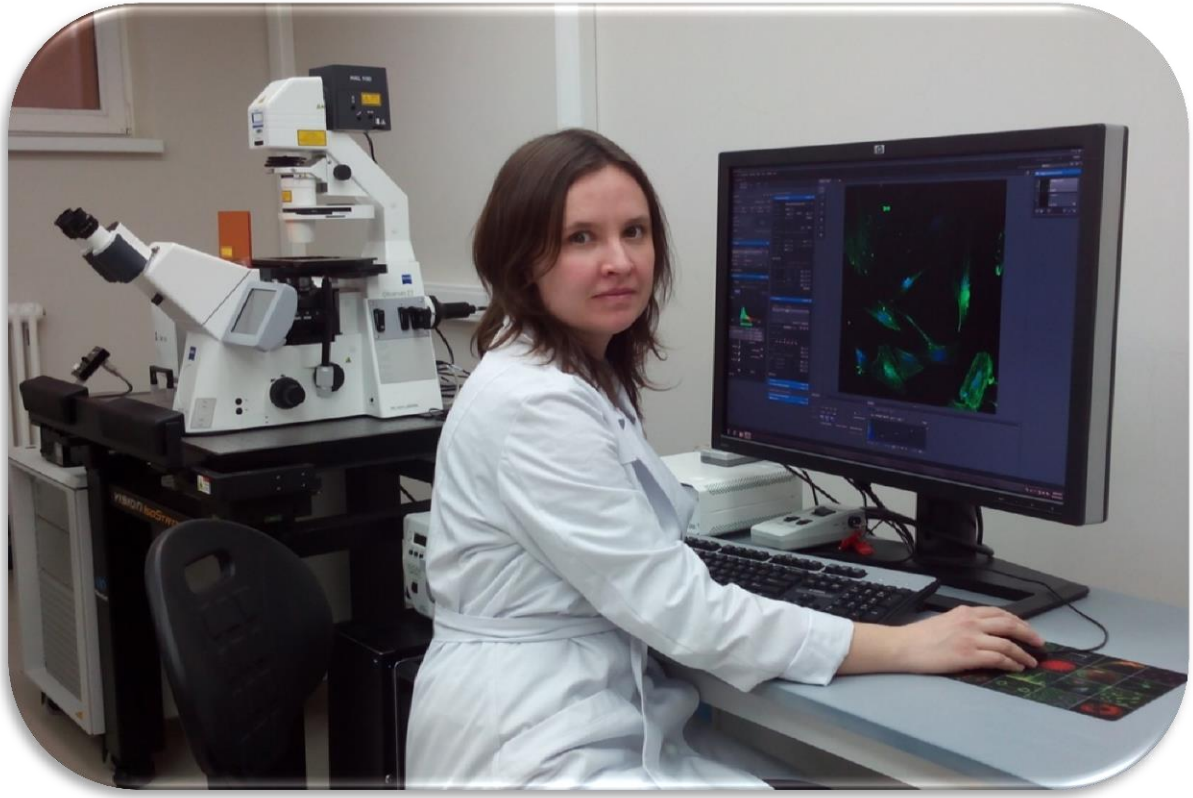
A high-performance computing cluster allows to work with large amounts of data (Big data) obtained from sequencers and mass spectrometers.

An analysis of the structure of microbial communities, assembling and annotation of genomes, transcriptomic and exomal analysis is carried out.

Laboratory building at P. Commune, 9.
1 floor. Duration 30 min.
Contacts: Grigorieva Tatyana Vladimirovna, 293-02-80

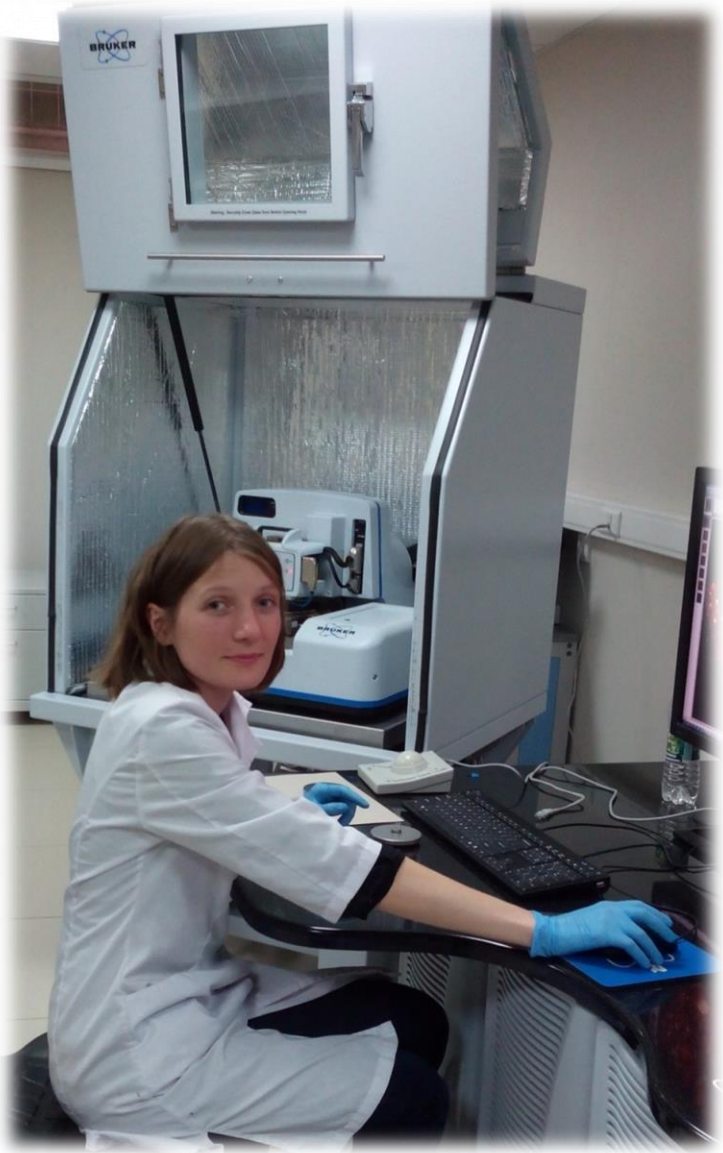
SRL "Bionanotechnology"

Lab. 004 **Laboratory of confocal microscopy**



The analysis of changes in the fine structure of the cell is carried out with the help of confocal microscopy in the presence of various nanomaterials, as well as the study of dynamic processes taking place in living cells.

Contacts: Ravil Faridovich Fakhrullin
Kazanbio@gmail.com



RSL "Bionanotechnology"

lab. 006

Laboratory of Atomic-Force Microscopy

Using an atomic force microscope, it is possible to obtain images of both physical, biological and chemical objects. Also it's possible to study the interaction of two objects: to measure the forces of friction, elasticity, adhesion, and also to move individual atoms, to precipitate and remove them from any surface. We are engaged in determining the surface structure of nanomaterials and cells.

RSL "Bionanotechnology

lab. 518

Laboratory of Nanotoxicology

The work in this laboratory is aimed at identifying potential toxicity of nanomaterials for humans and ecosystems. We use a variety of models to detect the toxicity of nanomaterials. Recently, we developed a new method for transporting nanomaterials to Caenorhabditis elegans nematodes using nanoparticle-coated cells that are used as "nanowaves".

RSL "Bionanotechnology"

lab. 509

Laboratory of Physical and Chemical Methods

In this laboratory, zeta-potential and hydrodynamic dimensions of colloidal particles are determined, as well as work on spectral analysis of nanomaterials using a spectrophotometer.

RSL "Bionanotechnology"

lab. 508

Laboratory of Cell Culture and Tissue Engineering

Work with different types of nanomaterials is carried out on human cell cultures using the latest equipment. Biopolymer matrices with the use of hallouzite nanotubes have been developed, multicellular clusters from human cells functionalized with magnetic nanoparticles have been obtained.

Scientific and educational center of pharmaceutics

lab. 325 Chromatography system AKTA Pilot (GE)

The system is designed for "cleaning biological specimens" (proteins, nucleic acids) on a semi-industrial scale.
The device is equipped with columns for:
affinity, ion-exchange and exclusion chromatography

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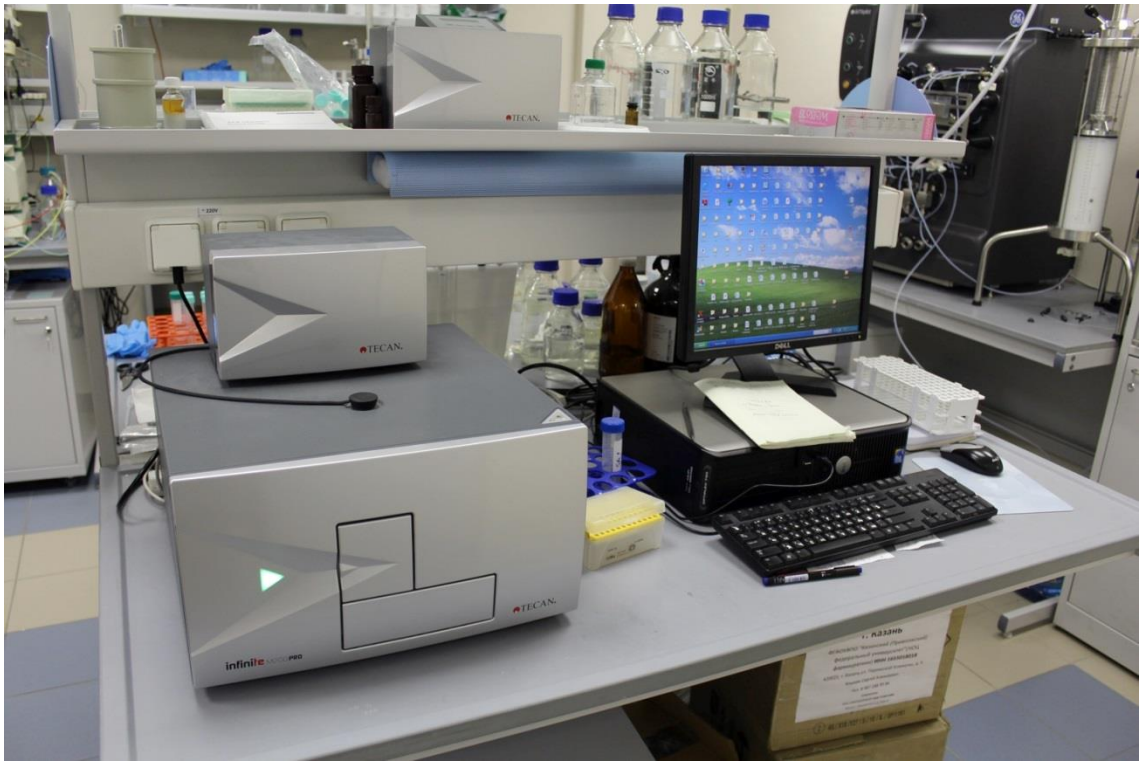
lab. 325 Microplate reader Infinite M200Pro (TECAN)



The device is designed for optical analysis of samples (fluorescence, luminescence, absorption).
It can be used as a luminometer, photometer, microplate fluorimeter for a wide range of tasks.

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lab. 324 Shaker-incubator three-tiered Multitron Standart, (Infors HT)

The incubator is designed for mixing biological fluids, for incubation and cultivation of cell cultures according to the program specified by the operator. Can be used for bacterial cells, as well as cells of insects.

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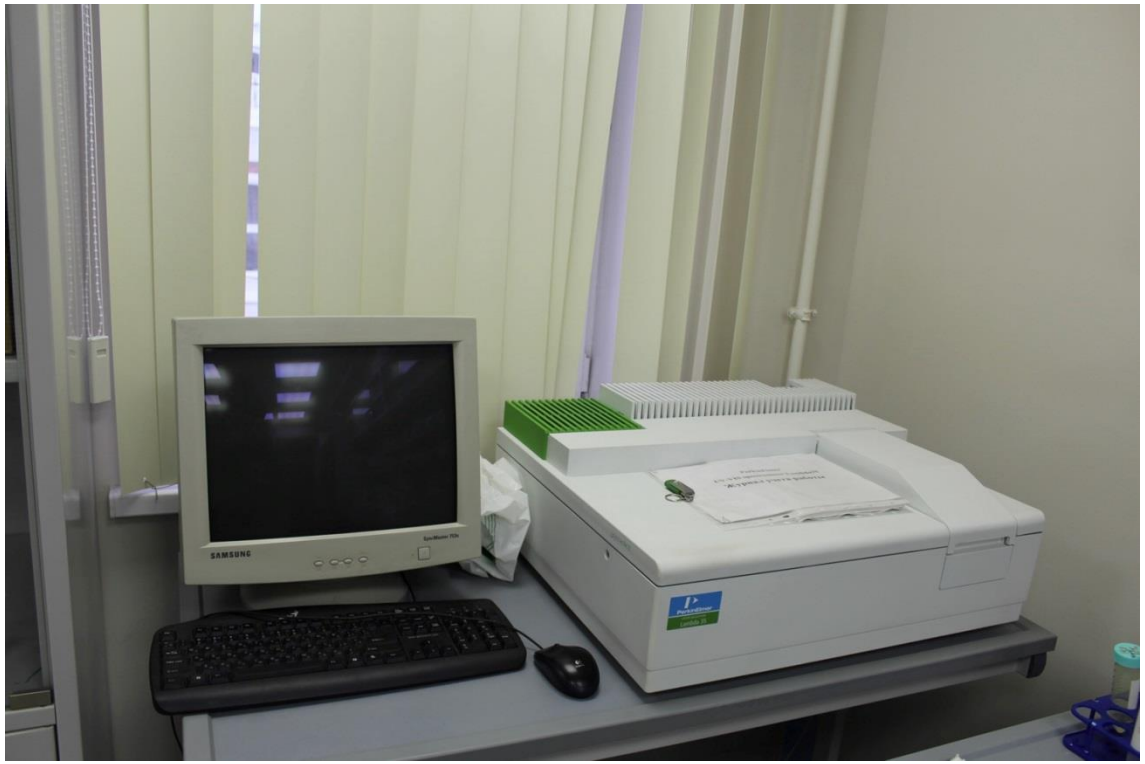
lab. 324 Spectrophotometer Lambda 35 (Perkin Elmer)



The device is designed for recording absorption spectra in the UV and visible regions of the spectrum.
A universal spectrometer for both routine analysis and scientific research, with a variable spectral gap of 0.5; 1.0; 2.0 and 4.0 nm.
Distinctive features of the device are: two-beam optical scheme, a wide range of measurement methods, high photometric accuracy and low noise level; built-in verification system.

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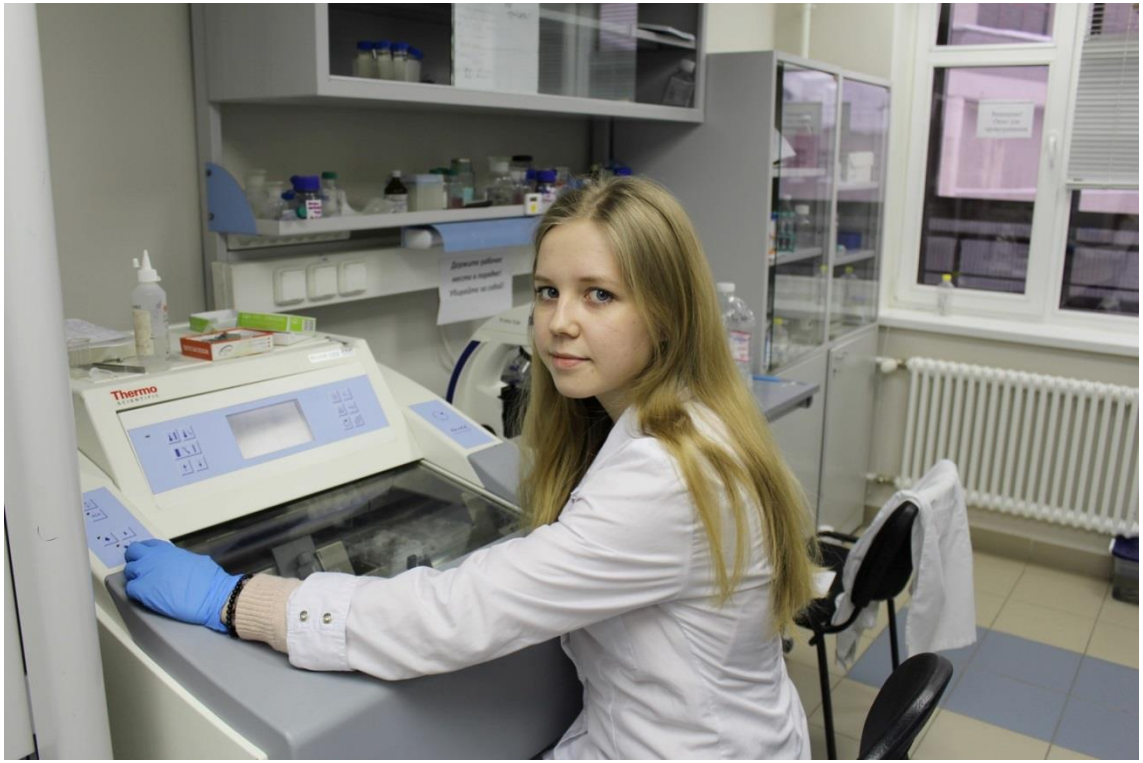
lab. 335 Microtome cryostat HM560 Cryo-Star (Thermo)



The device is intended for preparation of cryosections of biological tissues for subsequent immunohistochemical and immunofluorescent analysis. Can be used to make slices of frozen tissue without pre-fixation.

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lab. 328

Inverted research class microscope AxioOberver.Z1 (Carl Zeiss)

The device is intended for optical examination of samples by the following methods: light field, dark field, phase contrast, differential-interference contrast, polarization, luminescence, negative and positive phase contrast, varel-contrast.

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lab. 337

Real-Time CFX384Touch (BioRad)

High-speed device for carrying out PCR with the ability to register reaction products in real time. Can be used to solve the following tasks: real-time PCR (up to 5 dyes in one tube); PCR with end point analysis; PCR without analysis of the results; Analysis of melting curves, including HRM; FRET analysis; Selection of the optimal temperature for PCR.

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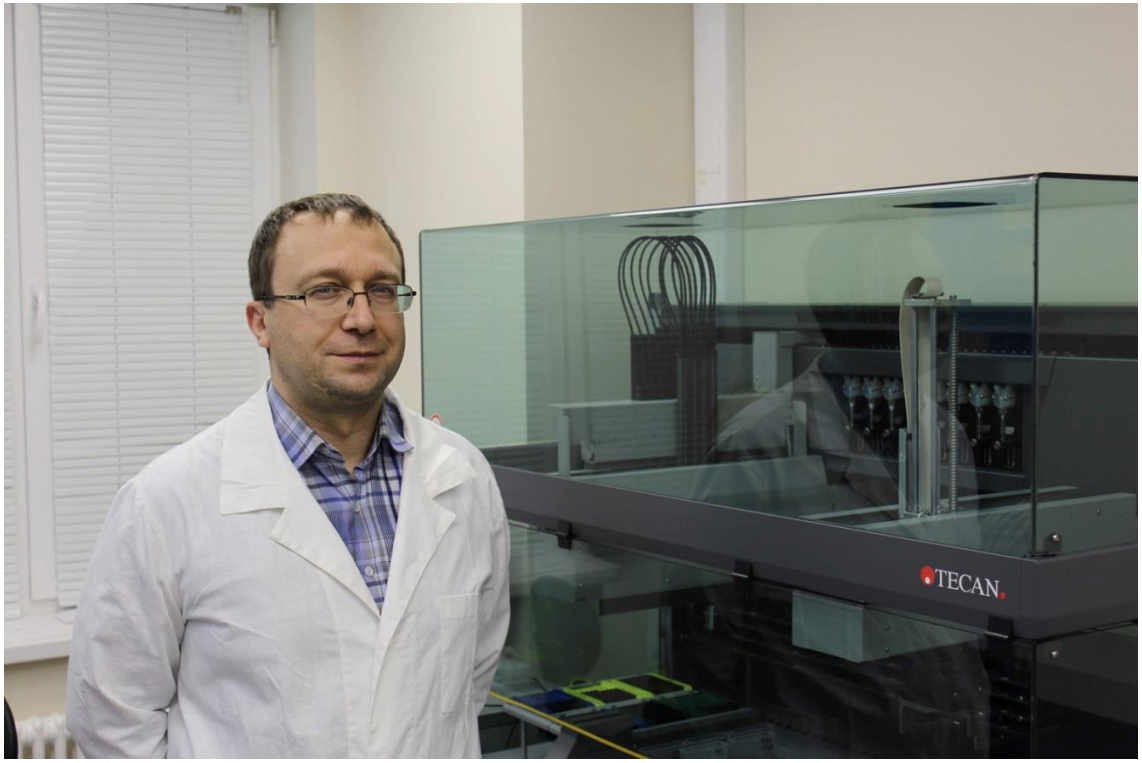
lab. 341 Automatic pietroasa station Freedom EVO 150 with a built-in reader Infinite M200Pro



Automatic modular analyzer for sample preparation.The system allows to automate all the basic molecular biological techniques for the isolation and purification of nucleic acids by means of vacuum filtration, magnetic particles and hybridization. Used for the manipulations required in ELISA, PCR analyses and preanalytical sample preparation.

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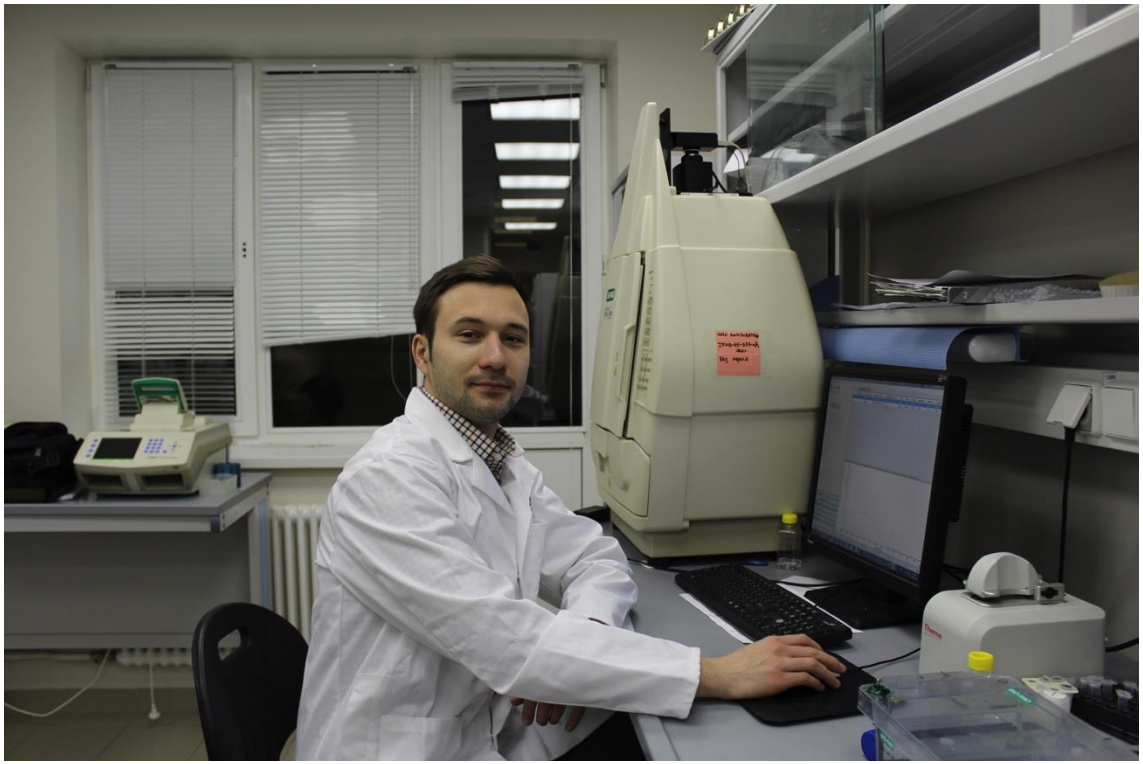
lab. 337

Gel-documentation system ChemiDoc XRS Plus (BioRad)



The system is equipped with a compact photo lab, a transilluminator and a high-resolution CDD camera. Allows you to detect images in the area of visible light, fluorescence, chemiluminescence. It is equipped with software for the analysis of gels and blots.

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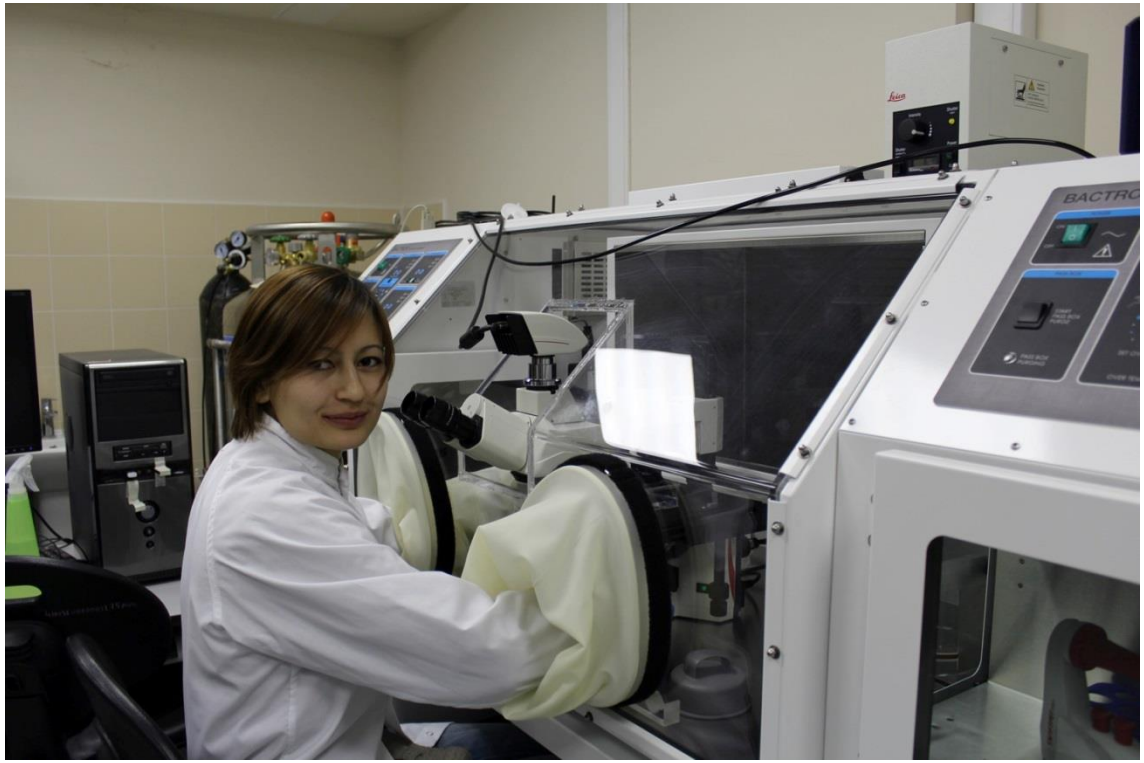
lab. 513

Hypoxic chamber Bactrox



The tailor-made dual anaerobic station is an isolated glove box with a built-in incubator for the construction of stable anaerobiosis in studies of microorganisms and cells sensitive to the presence of oxygen. Allows screening of anti-cancer drugs on cell lines under conditions of hypoxia, imitating the micro-environment of the tumor.

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lab. 519 Cellular sorter BD FACSAria™ III Cell Sorter (BD Biosciences)

High-performance device for immuno-phenotyping and sorting of different cell populations using fluorescent activated cell sorting.
Supports 6 lasers of different wavelengths: 633 nm, 561 nm, 488 nm, 445 nm, 405 nm and 375 nm.

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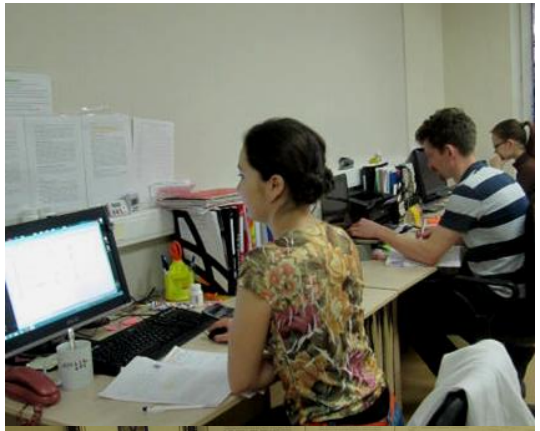
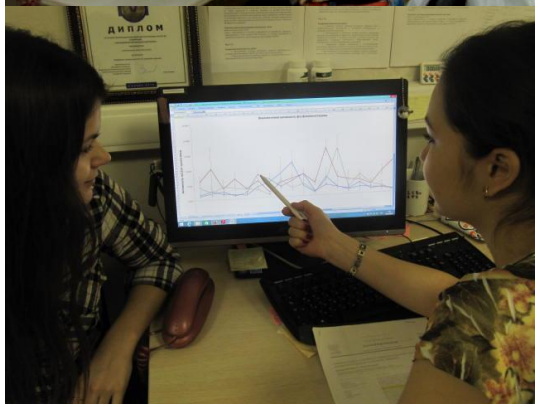
OpenLab "Microbial biotechnologies"

Aud.216





In OpenLab "Microbial biotechnology" scientific research projects are being implemented:

- "Bacterial efflux system“
- "Molecular and genomic mechanisms of cellular aging,
- "New biotechnology of microbial enzymes and metabolites based on bacilli,
- "Development of effective phytase expression systems for the specific production of myo-inositol phosphates".

OpenLab "Microbial biotechnology" conducts research in the field of genomics (reconstruction of metabolic pathways of microorganisms, research of metagenomes of microbial communities), proteomics (proteins and peptides involved in metabolic processes of cells), metabolomics (study of secondary metabolites of microbial cells) to create new progressive microbial biotechnologies for practice.

OpenLab "Microbial biotechnologies"
P.Communy str. 9, aud. 216.
Contacts: Nigmatullina Lilia, tel. 293-71-09

OpenLab "Microbial biotechnologies"

The laboratory is equipped with modern equipment (laminar box for performing sterile works, spectrophotometers, PCR amplifiers, shaker-incubators, etc.) for solving a wide range of tasks in the field of microbiology, biochemistry and molecular biology.

Aud. 201

OpenLab "Microbial biotechnologies"
P.Communy str. 9, aud. 216.
Contacts: Nigmatullina Lilia, tel. 293-71-09

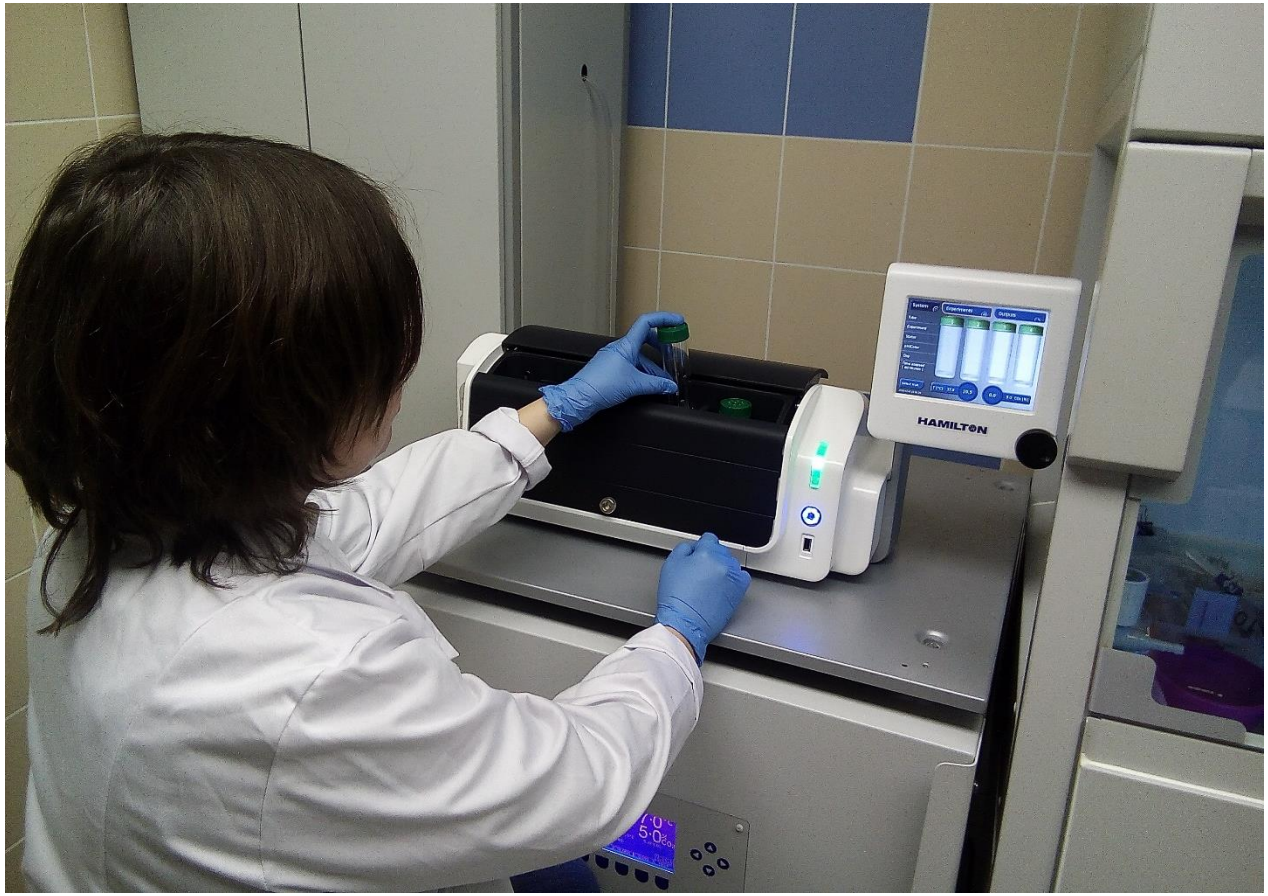
OpenLab "Microbial biotechnologies"

The laboratory is equipped with equipment for carrying out work on the biochemistry and physiology of plants. There is a climate chamber for growing plants, which allows you to maintain a standard level of illumination, humidity and temperature. A muffle furnace that heats up to 1000 ° C and is used to determine the amount of substances in the ash. The hybridization furnace is used for Southern blott analysis.

Aud. 031

OpenLab "Microbial biotechnologies"
P.Communy str. 9, aud. 216.
Contacts: Nigmatullina Lilia, tel. 293-71-09

OpenLab "Reprogramming of somatic cells"



REC of Pharmaceutics KFU. Room 521.

BioLevitator is a desktop automated bioreactor-CO2 incubator, designed specifically to increase the productivity of adhesive cells. The use of magnetic microcarriers, to which adherent cells adhere, makes it possible to work with culture as with "pseudosuspension“ 3D-culture.

REC of Pharmaceutics KFU. Room 521. Duration 30 min. Contacts: Zakharova Julia Pavlovna, tel. 233-78-24.

OpenLab "Reprogramming of somatic cells"

REC of Pharmaceutics KFU. Room 521.

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Institute of Fundamental Medicine and Biology of KFU

We invite the university entrants to enter our institute - the place of receiving high-quality higher education in the field of medicine and biology!