

Microbiological laboratory

The microbiological laboratory performs microbiological analyses of food and fodder in accordance with PN-EN ISO standards and methods taking into account the individual requirements of customers. The laboratory can make strains with the characteristics desired by the customers available for testing based on its own collection of *Lactobacillus* and *Bifidobacterium*. It also conducts research on the health-promoting properties of *Lactobacillus* and *Bifidobacterium* strains, especially their antibacterial properties in relation to potentially pathogenic bacteria. It carries out on-demand research on the multiplication of the biomass of bacterial strains, its ultrafiltration, and then lyophilization to ensure maximum survival of bacterial cells. The offer of the laboratory is addressed mainly to companies in the food industry, producers of fodder and its components as well as research bodies.

Sensory laboratory

The laboratory conducts tests of the sensory quality of food and its changes resulting from the quality of the raw material, parameters of the technological process, conditions, and storage time. Market services include training in food sensory analysis, consultations, expert opinions, and product evaluation. The assessments are run out in a modern sensory laboratory by a high-qualified team of experts. The laboratory takes advantage of discriminant tests, quantitative tests, and sensory descriptive analysis (QDA) methods to conduct analytical research and consumer research. The results of both types of research are used to compile a "map of preferences". The offer is dedicated to agri-food companies and research units.

Metabolomics Laboratory

The laboratory conducts research, analyses, and expert opinions applicable to the food and processing industry as well as human and animal nutrition. Research is carried out on the spectrum of metabolites present in human and animal organisms and plant tissues - the metabolome, enabling the assessment of the impact of the consumed diet on the health condition of humans/animals (biomarker analysis). Qualitative and quantitative changes of bioactive compounds in technological processes are analysed on a range of compounds present in the raw material and food / feed, and after ingestion of their metabolites in biological fluids of the body (bioavailability test). The laboratory is supplied with modern analytical systems with high sensitivity and low detection limit of the tested compounds and precise sample preparation systems.

Animal laboratory

The animal laboratory provides services in the form of in vivo nutritional tests on laboratory animals and tests in the field of immunology. It assures zootechnical and veterinary care services during experiments performed by external entities. The laboratory offers substantive and technical assistance in designing diets and the experimental system, preparing diets, carrying out nutritional and balance experiments, humane completion of the procedure, and collecting and securing biological material. Depending on the needs, the laboratory performs a wide range of analyses of the collected material from animals (blood, urine, feces, digestive tract content, organs, and internal tissues), indicating the nutritional status and health status of

animals. The offer of the laboratory is addressed to the veterinary, medical, pharmaceutical, and agri-food companies as well as scientific institutions.

Laboratory of analysis and imaging of cells and tissues

The laboratory provides analysis and imaging of cells and tissues designed for supporting and planning advanced research using microscopic techniques of in vitro culture and cytometric analyses of cell populations. The laboratory prepares paraffin tissues or freeze sections on slides, performs histochemical staining, immunohistochemical and immunocytochemical labelling. The laboratory also offers microscopic, in vivo analysis of cell cultures by the use of contrasting methods and with fluorescence labelling, including spatial modelling, digitization and archiving of confocal scans, analysis of protein expression, migration, interactions, apoptosis of calcium ion content. Primary and cultivate cell lines along with culture analysis are isolated using fluorescence and confocal microscopy and flow cytometry with the option of sorting selected cell populations. The laboratory runs long-term banking and storage of cell lines, including genetically modified cells. The offer of the laboratory is addressed to companies in the veterinary, medical, and pharmaceutical sectors as well as research and industry units.

Laboratory of Biotechnics and Reproductive Biotechnology

In the laboratory, CASA analysis (Computer Analysis of Sperm Movement) is conducted on fish, birds, and mammals, measurement of sperm concentration and viability, semen plasma osmolality, and analysis of sperm cytometric parameters. The laboratory offers large-scale cryopreservation of fish semen (salmon, sturgeon, perch, and carp). The offer is addressed to clients such as fish, mammal, and bird breeders.

Proteomics Laboratory

The proteomics Laboratory offers a quantitative analysis of samples based on 2D-DIGE, identification of protein fractions after 2DE, and homogeneous protein preparations after 1D-PAGE using the MALDI-TOF / TOF mass spectrometer. The laboratory consults and prepares samples for quantitative proteomic analyses like extraction and measurement of protein concentration, desalination, and concentration of samples. It also labels protein samples in accordance with the protocol for quantitative proteomic analyses. The research carried out by the laboratory aims at determining the molecular weight of a homogeneous protein preparation and basic bioinformatics analysis of proteins, analysis of post-translational modifications of proteins (nitrosylation, glutathionylation, phosphorylation), and Western blot analysis. The offer of the laboratory is addressed mainly to research units.