



# PRECLINICAL PHENOTYPING

## STUDYING MOUSE MODELS FOR COMPLEX DISEASES

Mouse models for human diseases have become a crucial tool in biomedical research to improve our understanding of molecular mechanisms of human disorders and develop new therapeutics. Basic research findings increasingly demand precise matching of genomic and phenotypic models to ensure insights can be translated into therapeutic approaches.

The VBCF Preclinical Phenotyping facility (pcPHENO) provides access to expertise and state-of-the-art equipment for in vivo testing of mouse models provided by the user or commercial suppliers. Thus, VBCF offers to complement the individual expertise of research labs with our experience in creating surgical mouse models and providing pharmacological treatments.

The pcPHENO facility offers an exceptionally wide range of behavioral tests that can reveal impairment of or deficits in neurological areas such as learning and memory, motoric and sensory function as well as emotions and social behavior of mouse models. Such measurements can be combined with various metabolic parameters (circadian measurements of respiration, food/liquid intake, calorie consumption, and activity) in highly controlled environments.

pcPHENO continuously expands its services to include specialized surgical services, optical imaging, and dissection/perfusion services. Additionally, the portfolio covers cardiovascular measurements via implantable telemetry. These transmitters continuously record both the cardiovascular parameters and the locomotor activity in the home cage. Other transmitters for measurements of blood glucose levels, body temperature and other parameters are available upon request. These recordings can also be performed inside the PhenoMaster equipment, a highly versatile screening platform, to measure metabolic and physiological parameters in parallel.

The pcPHENO team is closely embedded with the Vienna Biocenter (VBC) researchers who can use our services in "full-service mode" or get trained to use the different test systems and perform the procedures independently. We advise throughout the project, ensuring compliance with all animal welfare regulations and implementation of the 3Rs.

The VBCF pcPHENO team thrives on a mindset for technical support, and we appreciate the close interactions with some of the most outstanding researchers at the VBC. The VBCF is a diverse workplace, and our small team works with complex technologies to provide state-of-the-art services in comprehensive phenotyping.

## VBCF PC PHENO TEAM



## SERVICES AND METHODOLOGIES

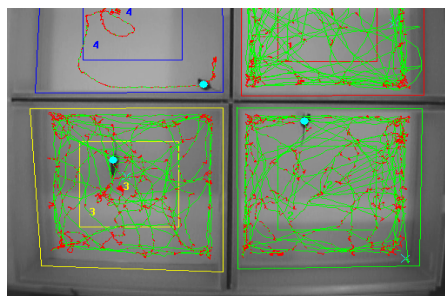
- Wide range of mouse behavioral tests (motoric function, learning and memory processes, anxiety-like and depressive behavior, social behavior, repetitive behavior, sensory functions, and more)
- Cardiovascular and body temperature measurements
- Surgical services (implantation, microdialysis, blood and cerebrospinal fluid sampling, stereotactic injections, and more)
- Organ harvesting/perfusions
- Measurements of metabolic parameters

## EQUIPMENT

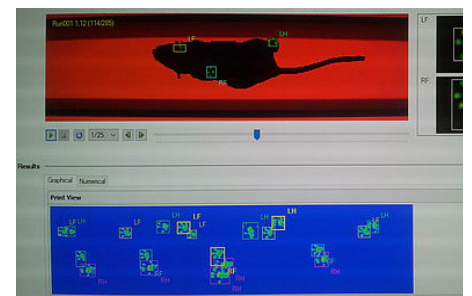
- **PhenoMaster system** (measure metabolic parameters in the circadian cycle under controlled environmental conditions)
- **IntelliCage** (automated assessment of cognitive and other behavioral functions of individual mice in a social environment in a home cage setting)
- **CatWalk** (high-throughput gait analysis)
- **Various other equipment** for testing of standard behavioral paradigms
- **Telemetry transmitters** (continuous measurement of core body temperature, locomotor activity, ECG, blood pressure)



PhenoMaster system



Tracking of movement in an open field test



Gait and footprint analysis using the CatWalk system

## CONTACT

Preclinical Phenotyping

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