

Delta Phenomics, your CRO for animal behavior

Delta Phenomics is an innovative CRO offering fast and reliable animal behavior testing services. We provide a wide palette of standard tests as well as advanced paradigms, including automated gait analysis and home cage testing in the PhenoTyper®. Using flexible software tools, the PhenoTyper can be programmed for a diversity of test protocols. Delta Phenomics excels in continuous longitudinal observations with automated behavioral data collection and analysis of large data sets. This approach offers superior reliability and objectivity of measurements and allows the distinction of main effects from side-effects. High-throughput behavioral screening by Delta Phenomics delivers very rich data and comprehensive results, for the same cost as traditional testing methods.

Animal models

Delta Phenomics has rodent models for:

- Parkinson's disease
- Pain
- Aging
- Depression
- Schizophrenia (DISC-1 mouse)
- Anxiety
- Social behavior

Behavioral domains

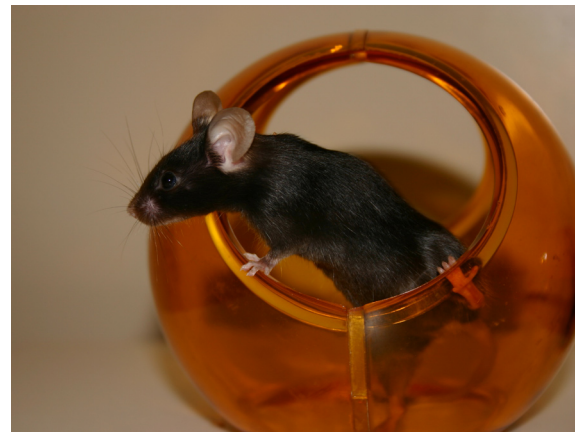
Our tests cover multiple domains of behavior, providing a broad range of measurements. A small selection:

- *Exploration*: movement, velocity, path shape, visits to zones (e.g. shelter); any time interval (e.g. 15 min); any duration (24/7)
- *Activity*: locomotion, circadian rhythm
- *Liquid intake*: preference, number of licks
- *Cognition*: place preference, discriminative avoidance, object recognition (learning and memory)
- *Anxiety and fear*: approach/avoidance of a focused light beam on the food dispenser

- *Anhedonia*: appetitive and consummatory aspects of palatable food
- *Pain*: movement characteristics, time budget (feeding, sleeping, etc.), Von Frey
- *Motor performance*: gait patterns and disorders, grip strength

Application areas

- *Behavioral phenotyping of mutants*: expected and unexpected effects of gene manipulation
- *Safety pharmacology*: wide-spectrum analysis of behavior
- *CNS drug discovery*: behavioral profiling of compounds



Automated home cage testing in the PhenoTyper

Flexibility in test design and execution are key assets of Delta Phenomics. A prime example are studies with the PhenoTyper, in which animals can be observed from a few hours up to several months. A PhenoTyper test can consist of multiple protocols; the test conditions can be programmed, fine-tuned and time-sequenced as dictated by the research protocol. In this way, numerous behavioral parameters can be obtained in a single test. By observing the animals 24/7 we not only optimize the use of animal resources, we also make sure to cover the period when rodents are most active. Most PhenoTyper tests last several days or longer. By allowing the animal to habituate to the homecage, behavio-

ral effects are not obscured by novelty responses. Finally, our advanced data analysis software takes full advantage of the large and complex data sets and extracts information that remains hidden with conventional methods.

Facilities and staff

- 400 m² animal house and test laboratories
- Equipment for anesthesia, stereotactical manipulation and surgery
- Behavioral test equipment: PhenoTyper, CatWalk, open field, Morris water maze, elevated plus maze, radial arm maze, Barnes maze, Von Frey filament system, grip strength meter
- Modern data collection and analysis software tools: video tracking, test automation, statistics (EthoVision®, The Observer®, UltraVox™, MatMan™, and Theme™)
- Animal technicians skilled in biotechnical operations, surgery and various routes of drug administration

Consultancy and training

Besides carrying out studies for you in our laboratory, we can assist you at your location:

- Advice on the design and operation of animal test facilities
- Installation of test equipment and software
- Assistance with the design of experiments and test protocols
- Analysis of complex data sets produced by behavioral test systems
- Training in behavioral test methods, techniques and tools

Delta Phenomics and Noldus IT

Delta Phenomics is a sister company of Noldus Information Technology, a leading manufacturer of behavior research tools. For you as a client, this has important benefits. Delta Phenomics has easy

access to key measurement technology and analysis software, allowing us to tailor test paradigms to your demands or to develop novel paradigms with you. Furthermore, prior to investing in a PhenoTyper or CatWalk system for in-house testing, you can commission a pilot study to Delta Phenomics, to validate the system with your own reference compounds.

Pricing of test services

Below are indicative prices of standard experiments (4 groups of 10 animals, e.g. 3 doses + 1 control):

- *One-trial tests*
(open field, elevated plus maze, etc.)
€ 5.000 to € 10.000
- *Multiple-trial test*
(Morris maze, CatWalk gait analysis, etc.)
€ 15.000
- *PhenoTyper study, 5 days*
€ 15.000
- *PhenoTyper study, 3 weeks*
€ 20.000
- *PhenoTyper study, longitudinal*
(e.g. 3 months*)
€ 30.000

* Longitudinal PhenoTyper studies, for assessing slowly developing age-related changes or effects of special diets on health and behavior, use an intermittent continuous observation schedule (e.g. every other week).