

# METABOLIC PHENOTYPING UNIT

## HEAD OF UNIT:

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The Unit, established in December 2014, is equipped with an EchoMRI-700 - Whole Body Magnetic Resonance Analyzer and with a TSE PhenoMaster Metabolism Unit for 8 Mice and 8 rats to facilitate research focusing on the regulation of energy homeostasis and metabolic phenotyping of novel transgenic mice.

EchoMRI-700 - Whole Body Magnetic Resonance Analyzer allows very quick and precise analyses of body composition without the need of anesthesia. The equipment can be used for mice but also for large rats up to 700 g. The system determines the total body fat content, the lean body mass and the free and total water content of the animals.

These measurements are necessary to understand the nature of the body-weight change caused by pharmacological or genetic manipulations, but also for normalization of indirect calorimetry data with lean body mass.

The TSE PhenoMaster Metabolism Unit can be used to monitor the energy expenditure, substrate utilization, food and liquid intake, body weight and locomotor activity of rats or mice. The climate chamber housing the metabolic cages allows performing the experiments in a wide temperature range including thermoneutral conditions. With the help of the Stellar Telemetry system, the indirect calorimetry measurements can be combined with monitoring of the core body temperature and heart rate.

Combination of metabolic phenotyping with optogenetics or central drug administration can help to understand the physiological role of neuronal pathways discovered by *ex vivo* and *in vitro* methods.

The facility can be used by researchers of the Institute, but it is also open for collaborative projects with researchers working in other academic institutes or in universities. A researcher, Mónika Tóth PhD can provide help for the users of the laboratory.

