



Energy Balance

Version: 1

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Summary:

The Promethion from Sable Systems (Las Vegas, NV) assesses several key metabolic characteristics of mice such as energy expenditure, preferred metabolic substrate, meal patterns, activity, live body mass. These are measured by individually housing the mice in the Promethion System cages for several days during which numerous parameters are continuously measured (food and water intake, weight, activity, O₂ and CO₂).

Reagents and Materials:

Material	Vendor
Promethion system	Sable Systems International
Minispec Body Composition Analyzer	Bruker
Scale	

Protocol:

1. One week prior to the experiment start date, mice are singly housed for acclimation.
2. On the day of the experiment start date, mice are weighed and body composition is assessed.
3. The mice are placed in the cages of the Promethion system, one mouse per cage. The cages are housed in a light and temperature controlled chamber. Default temperature is 23°C, but it can be set from 10 to 40° to monitor mice in hypothermic or at thermoneutrality conditions. Likewise, the light cycle is set on a 12:12h cycle (6am-6pm) but can be modified to suit to study circadian rhythms.
4. Mice are left undisturbed for 5 days during which all the measurements are made.
5. After 5 days, the mice are removed from the cages, and body composition and weight are measured again.