

Spontaneous micturition (metabolic cages)

Objectives:

Metabolic cages coupled to a weighing device (figure 1) allow the repeated monitoring of diuresis and renal function, as well as the evaluation of spontaneous micturition in conscious rat / mice. Moreover, the urinary excretion rate of a wide variety of substances can be biochemically determined in 24h-urine samples collected on ice, limiting thus the possible degradation of the excreted substance.



Figure 1: Metabolic cage with weighing device for spontaneous micturition evaluation

Summarized methodology for spontaneous micturition evaluation:

After a first stay in metabolic cages without data collection to reduce animal stress, the animals are placed in metabolic cages for one or more 24h periods. During each 24h period, the spontaneous micturition is monitored by expelled urine volume weighing by the mean of a weighing device placed underneath, connected to a SartoCollect software (figure 2).

The water/food consumption can also be monitored and 24h-feces or -urine samples can also be collected on ice.

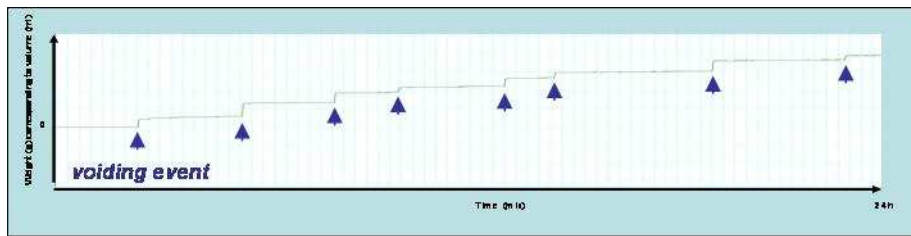


Figure 2: Example of recording over 24h (male normal rat)

Endpoints:

- Diuresis
- Frequency of voiding event per hour
- Mean volume per voiding event on the overall 24h or per hour

Links to applicable therapeutic areas / targeted disorders:

- Lower urinary tract

- * BPH (Benign prostatic Hyperplasia)
- * SCI (Spinal Cord Injury)
- * NDO (Neurogenic Detrusor Overactivity)
- * OAB (Overactive Bladder)
- * IC (Interstitial Cystitis)