



SAVINGS PER YEAR*

**65
mice**

saving
animals

**17030
CHF**

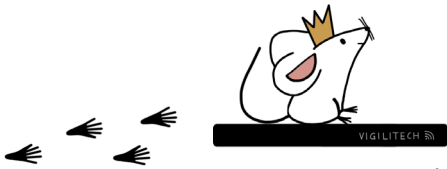
saving
costs**

**208
hours**

saving
time

* The savings are calculated for a lab of 10 people performing daily research (1 experiment/person/day).

** The saving costs include: working hours CHF 7280; mice (price incl. housing) CHF 6500; material CHF 3250.



FACT SHEET



mice used for scientific purposes annually

500 000
in Switzerland

10.5 M
in the EU (& Norway)

111 M
in the US

192 M
globally

MARTA Pad

contact-independent monitoring of



heart rate
390-900 bpm

Expected heart rate for mice is between 400-550 beats/minute and is dependent on strain & age.



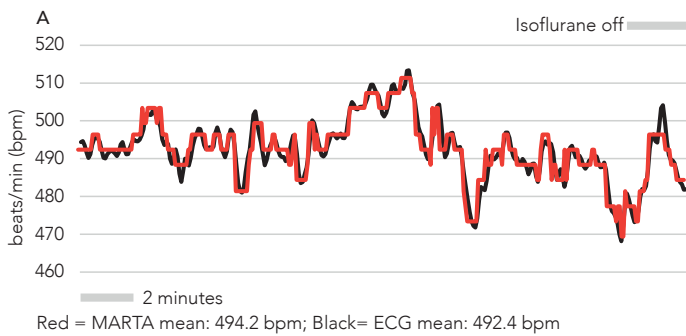
breathing rate
37.5-225 rpm

Expected breathing rate for mice is between 50-150 breaths/minute and is dependent on strain & age.



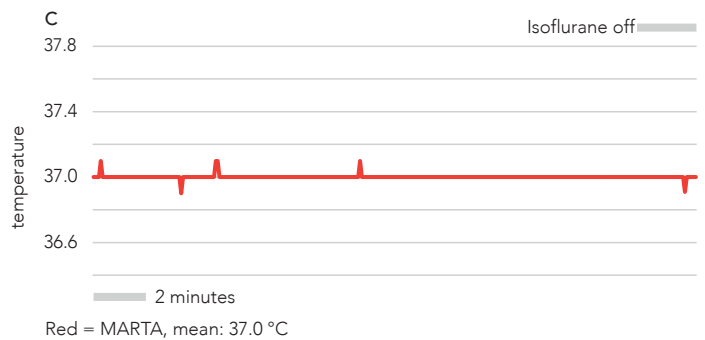
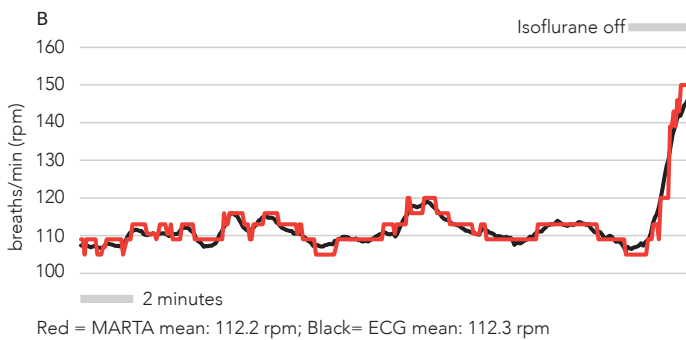
temperature
30-45 °C

Expected body temperature for mice is between 36.5-37.5 °C



MARTA compared with ECG-measurements

The figures A-C show an example data set of heart rate (bpm) and breathing rate (rpm) and temperature from C57BL/6 mice with 2 % isoflurane anaesthesia. Statistical analysis showed a calculated deviation for heart and breathing rate with MARTA of <1 % compared to ECG (15 recordings; N=5, C57BL/6). MARTA is a novel way to measure heart & breathing rate less invasively during all steps of animal studies.



MARTA is designed for in-vivo studies such as surgeries and/or imaging with anaesthetised mice. For stereotaxic surgery, MARTA Pad is compatible with the Kopf Instruments Model 900 Small Animal Stereotaxic Instrument. Preferably, MARTA is used with isoflurane anaesthesia (1.5-2 %). Inhalant anaesthetics are strongly recommended in mice to finely regulate, change anaesthetic depth and minimize experimental variables due to animal distress.

YES sterilization
waterproof
virtual assistant

NO electrodes
optical sensors
extra monitors

Tested mouse strains
C57BL/6, BALB/C, RjOrl:SWISS
Animal positions
belly-down, side, belly-up (soon)

Distortion
no distortion due to separate sensors for heart and breathing rate

Technical Data

length	162.0 mm
width	92.0 mm
height	31.2 mm
weight	625 g
service life	4 years
battery lifetime	3 h



screen size	1.54"
dimensions	45.24 x 29.14 mm
resolution	128 x 64 pixel
screen	Oel Display Modul
touch fields	8
monitoring start time	16 sec