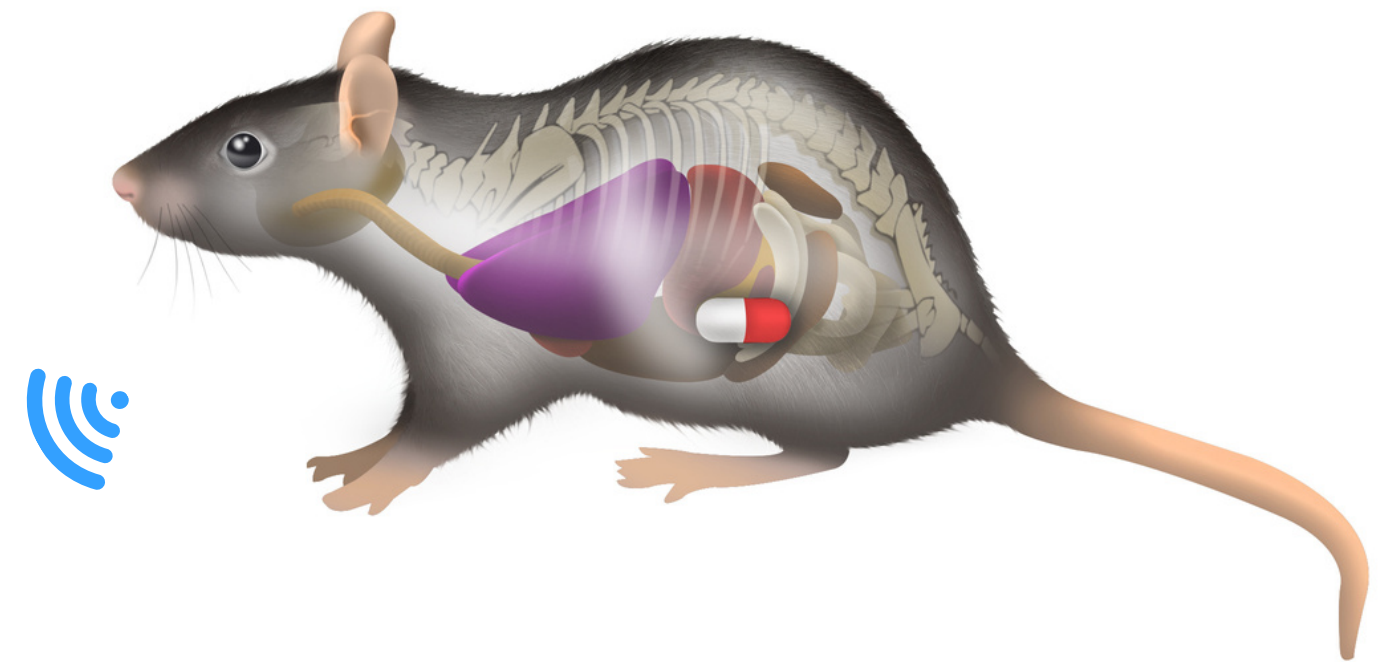




**ANIPILL<sup>®</sup>  
SYSTEM**



## Anipill<sup>®</sup> brochure

**Innovative solution for reliable, accurate and continuous core temperature monitoring in many species.**

# Summary

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Current animal field applications **slide 2**

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# Current animal field applications

Few examples



## ANIMAL PHYSIOLOGY

- Thermoregulation
- Chronobiology
- Sleep research



## DISEASES MODEL, INFLAMMATION AND TOXICOLOGY



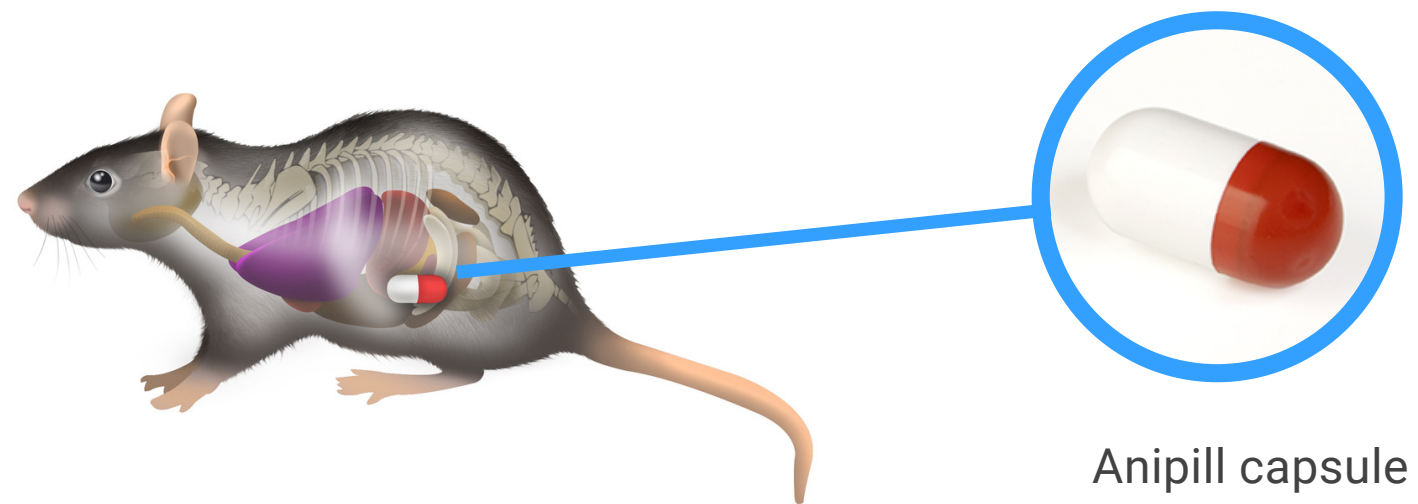
## VIROLOGY, INFECTIOLOGY AND VACCINE DEVELOPMENT



## RACING ANIMAL - RESCUE ANIMAL

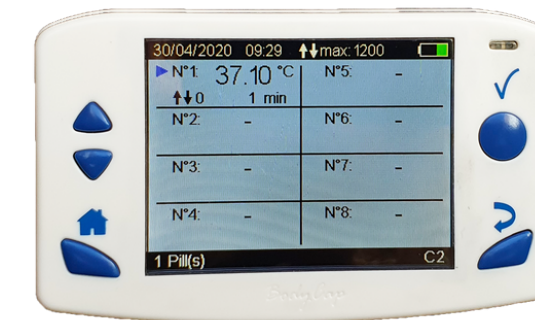
# Introduction

## Anipill<sup>®</sup>: the essentials



Anipill capsule

RF 433Mhz



Anilogger  
monitor



Activation box to turn on the pill



Anilogger Manager  
software

Communication range in real time : from 1 to 3 m (animal size & environment depending)

# About Anipill®

## Specifications



### ANIPILL® CAPSULE SPECIFICATION

|                              |   |
|------------------------------|---|
| Sterile device               | Yes (via Ethylene oxide)                    |
| Size (diameter x length)     | 8.9mm x 17.7mm                              |
| Weight                       | 1.7g  |
| Temperature accuracy         | +/- 0.2 °C (+/- 0.36°F)                     |
| Temperature resolution       | 0.01°C (0.03202°F)                          |
| Life duration                | 20 days to 10 months                        |
| Shelf life                   | 2 years                                     |
| Measurement period available | 1min, 2min, 5min, 15min, 1h                 |
| Temperature range            | 25°- 45°C (77-113°F) below 25°C, consult us |

### The mean lifetime

| Measurement period | Lifetime  |
|--------------------|-----------|
| 1min               | 1 month   |
| 2min               | 3 months  |
| 5min               | 5 months  |
| 15min              | 8 months  |
| 1h                 | 10 months |



From 20g to 40kg, above consult us



### Equipement



### ANIPILL® ACTIVATOR: to turn on the pill

|            |                    |
|------------|--------------------|
| Size       | 69mm x 59mm x 31mm |
| Shelf life | 2 years            |



### ANIOLOGGER® MONITOR SPECIFICATION: to visualize and record the data collected

|                            |                      |
|----------------------------|----------------------|
| Size                       | 120mm x 70mm x 15mm  |
| Number of pills associated | Up to 8 pills        |
| Storage                    | 85 300 data per pill |
| Autonomy                   | 24/36h               |



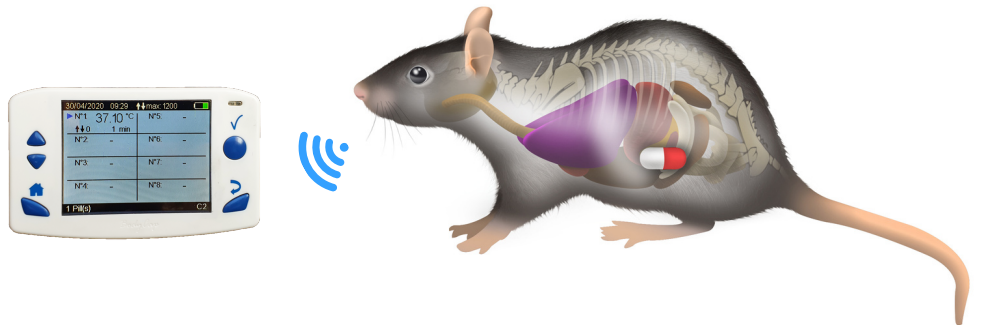
### 3 main parameters may impact the performance of the system

- Animal specie
- Metallic environment
- The use of real time vs synchronization


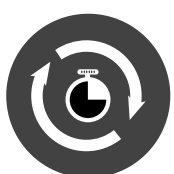

We can advise & help you to define the best configuration for your specific protocol.

# About Anipill®: To sum up


## Animal core temperature monitoring




### Technical specifications:


- **PILL INTERNAL MEMORY**  
Embedded memory in the pill allows to continuously store the last 2000 collected data independently of the life duration.
- **MEASUREMENT PERIOD**  
The sampling period can be changed all along the experiment.
- **SIMPLE WAY OF WORKING**  
After the capsule activation and implantation (2min process), the capsule automatically collects and transmits accurate and reliable temperature data to the Anilogger monitor.


### Other:

- **ADD MARKERS**  
Markers can be added all along the experiment to highlight a specific event.

### Scientific advantages:

- **NO DATA LOSS**  
No data loss even if the animal is put out of the communication range for a while.
- **REAL TIME & A POSTERIORI DATA RECOVERY**  
If the monitor is in the communication range of the pill, you can collect real time data. If not the monitor will synchronize the missing data as soon as the pill and the monitor are in the same communication range.
- **LONG TERM MONITORING**  
Anipill capsules have a 2-year shelf life and are able to monitor core temperature from 20 days to 10 months depending on the sampling period used.
- **TIME SAVER**  
Save time thanks to quick and easy implementation.

- **LIGHTWEIGHT & TINY**  
Capsules are lightweight 1.7g and measure 17.7mm x 8.9mm

- **USED IN SEVERAL ANIMAL SPECIES**  
Designed for animals from 20g to 40kg. (above consult us)



# Example of research studies

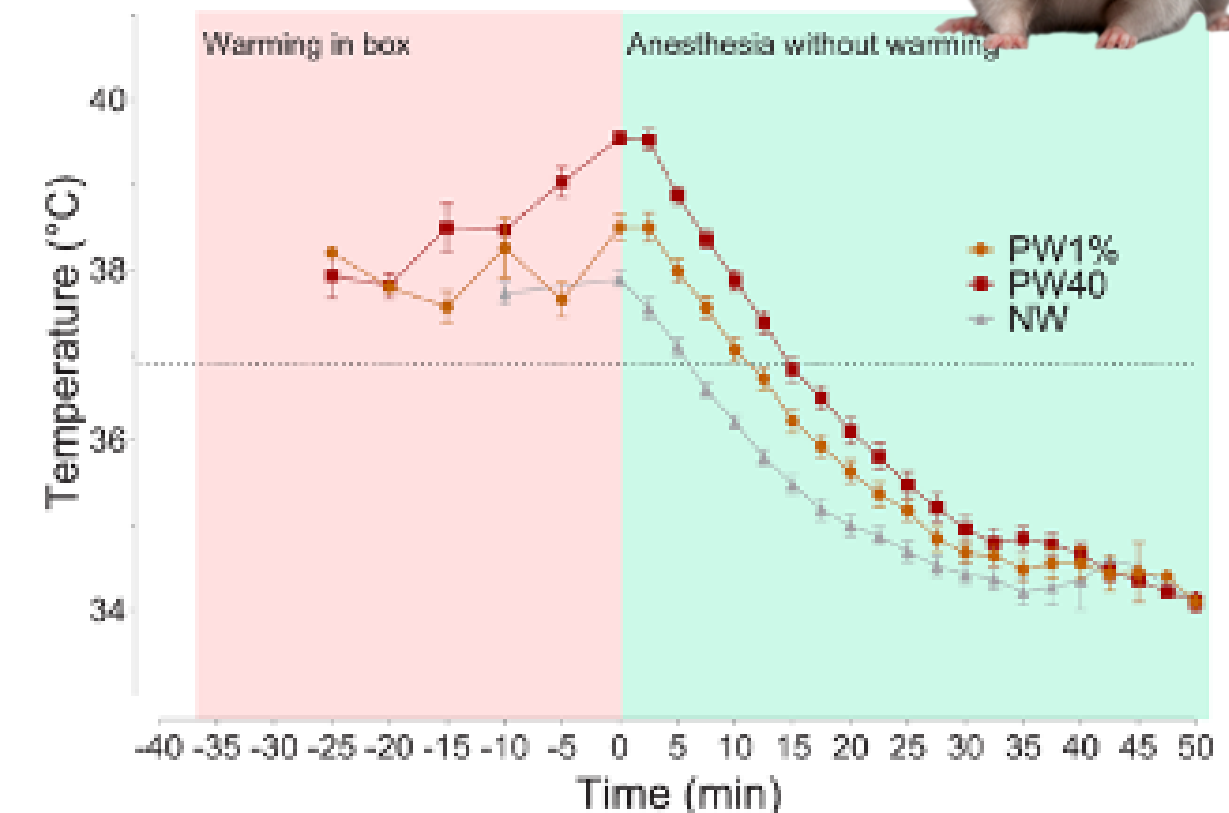
## Animal physiology - Thermoregulation

CORE TEMPERATURE CHANGES IN RATS PRE-WARMED TO 40°C (PW40, N = 17), 1% ABOVE BASELINE TEMPERATURE (PW1%, N = 17) OR WITHOUT WARMING (NW, N = 17).



### ANIPIILL® ADDED VALUE

- 1 Continuous core temperature control
- 2 Real time AND *a posteriori* data recovery
- 3 Define individual thermoregulatory profile



### Publications:

Laperrousaz et al., (2018) Lipoprotein Lipase Expression in Hypothalamus is involved in the Central Regulation of Thermogenesis and the Response to Cold Exposure

Meyer et al., (2017) Body Temperature Measurements for Metabolic Phenotyping in Mice

Rufiange et al., (2020) Pre-warming before general anesthesia with isoflurane delays the onset of hypothermia in rats

# Example of research studies

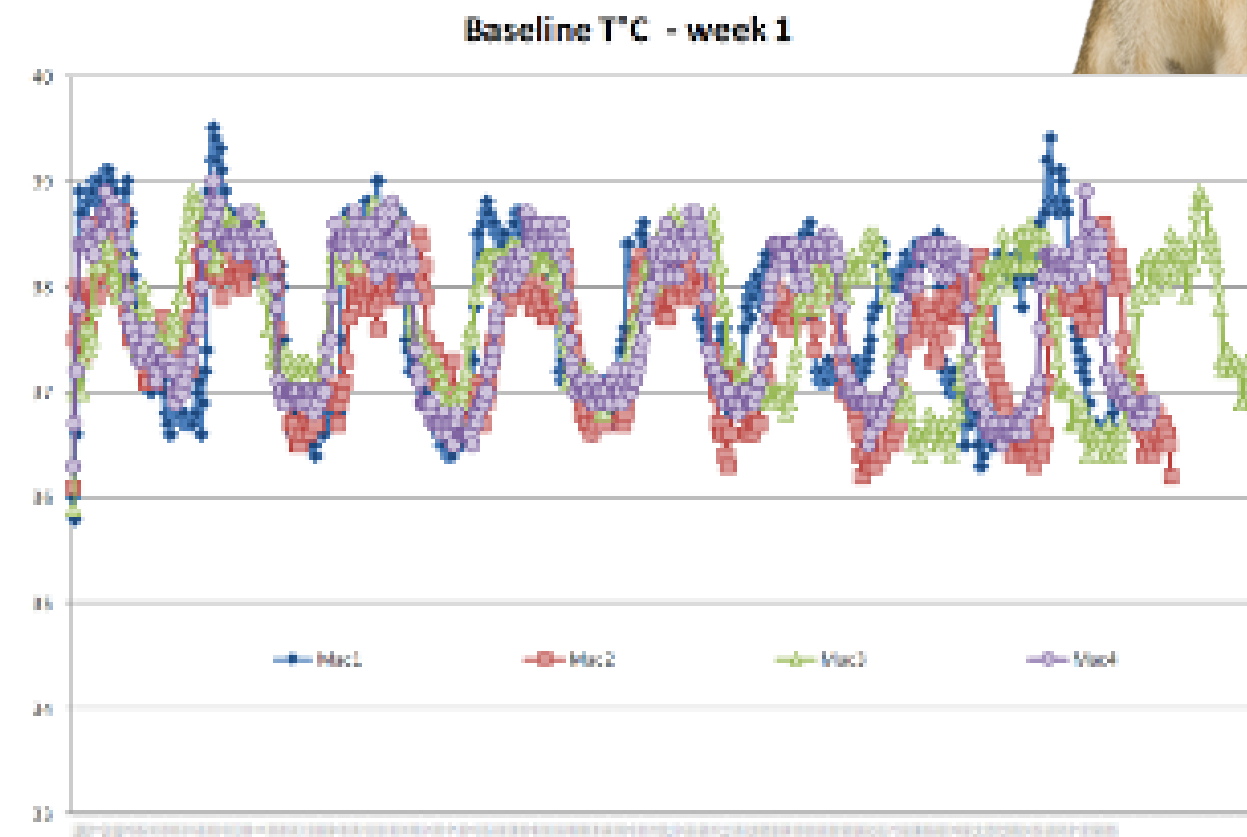
## Animal physiology - Chronobiology & Sleep research

### MEASUREMENTS RETRIEVED FROM ANIPILL® CAPSULES IMPLANTED IP IN NON HUMAN PRIMATES



#### ANIPILL® ADDED VALUE

- 1 Easy access to a long-term core temperature monitoring
- 2 Real time AND *a posteriori* data recovery
- 3 Assessment of individual CBT rhythm



#### Publications:

Tattersall et al., (2016) Novel energy-saving strategies to multiple stressors in birds: the ultradian regulation of body temperature

Schulze et al., (2018) Body temperature of bitches in the first week after parturition measured by ingestible loggers

Guisle et al., (2020) Circadian and sleep/wake-dependent variations in tau phosphorylation are driven by temperature



# Example of research studies

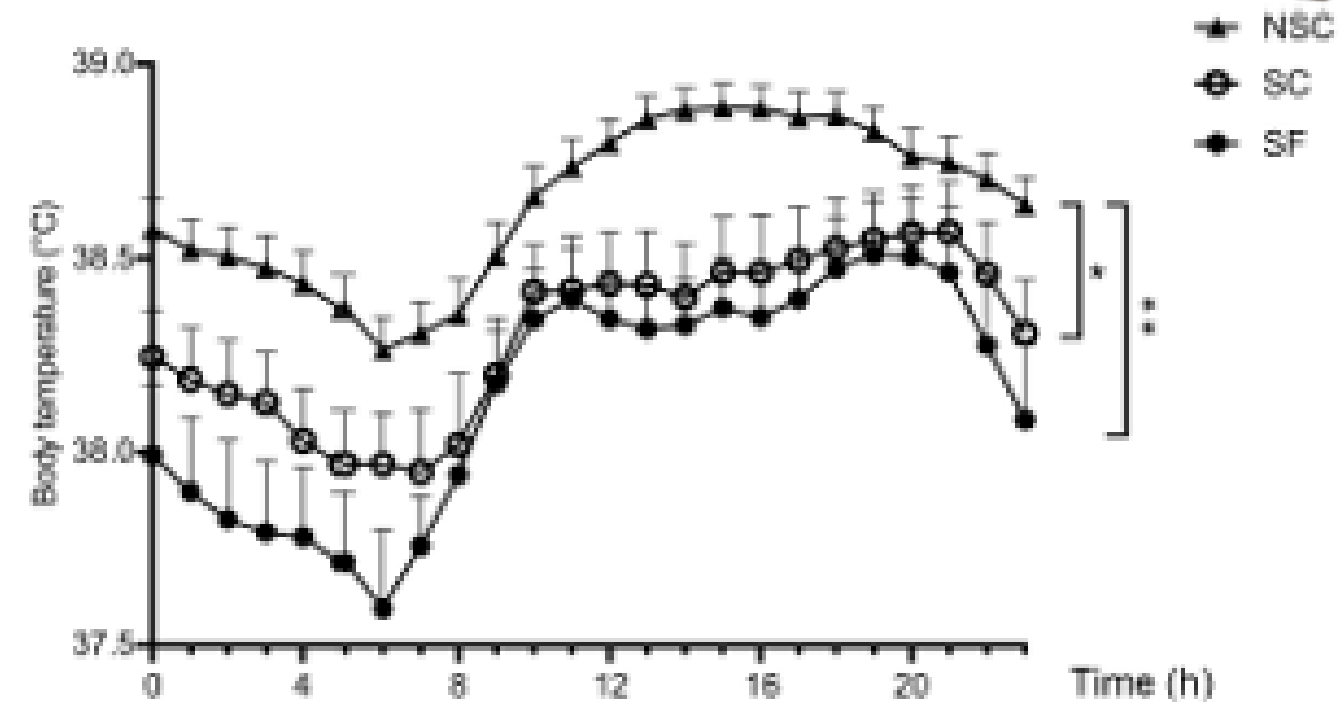
Diseases model, Inflammation and toxicology

BODY TEMPERATURE WAS SIGNIFICANTLY HIGHER IN NON-STRESSED (NSC) THAN IN STRESSED (SF AND SC) ANIMALS. (N = 12/GROUP)



## ANIPILL® ADDED VALUE

- 1 Continuous core temperature monitoring
- 2 Possibility to monitor several animals at the same time
- 3 Define individual thermoregulatory profile



## Publications:

Grusenmeyer et al, (2018), Heat Stress Mitigation Strategies for Boars and Impact of Most Effective on Sperm Parameters

Menneson et al., (2019). Validation of a Psychosocial Chronic Stress Model in the Pig Using a Multidisciplinary Approach at the Gut-Brain and Behavior Levels



# Reach Out to Us

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