

# TPP Set-Up for Thermal Place Preference

Cat. No. 35250 / 35260



## General

Both heat and cold evoke **thermosensation**, which, may elicit feelings of pain. Thermosensation is an essential sensory function which involves a variety of transducer molecules.

The TPP (or **2-choice temperature test**), is a thermal sensitivity assessment tool designed to emphasize integrated learned responses to thermal stimuli applied by the surface on which the animal stands.

It documents escape behaviour in awake, unrestrained animals to innocuous and noxious heating or cooling of the floor; rodents learn to minimize pain by escaping to the opposite side; escape latency can be recorded.

The **Ugo Basile Thermal Place Preference Test** allows monitoring temperature preferences and nociceptive thresholds in rodents (mice and rats), by assessing the rodent's **temperature preference**.

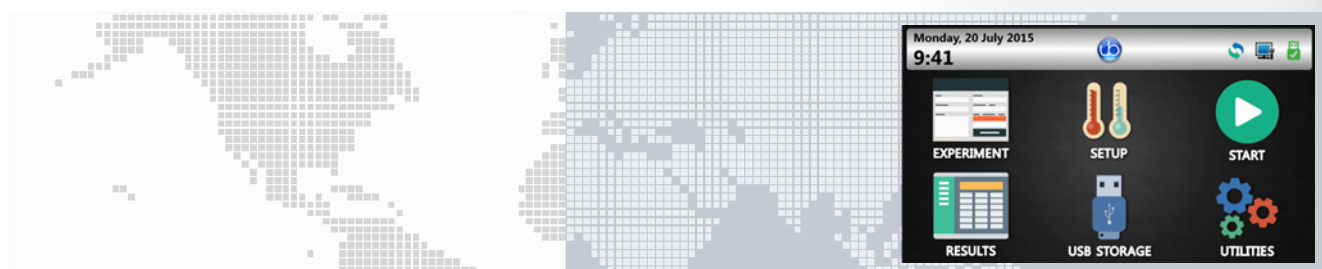
The TPP Test allows an unrestrained animal (either rat and mouse) to move freely between two 2 compartments set at different temperatures, thus choosing its preferred position (**comfort zone**).



for Rats

for Mice

MONITORING NOCICEPTION  
THRESHOLDS IN BOTH HOT  
AND COLD STIMULATION



## Main Features

- **OPERATING TEMPERATURE:**  
Hot/Cold Plate: adjustable in the range -5.0 to 65.0°C, with 0.1°C increments  
Hot Plate: from room temperature to 65°C
- **PRECISION:** +/- 0.1°C
- **CONTROLS:** 4"3 touch-screen to set and monitor the test
- **OPERATING MODES:** fixed or ramping temperature, for dynamic experiments
- **DATA PORTABILITY:** via the USB Memory-Key, included as standard

**Instrument Description**

The Ugo Basile Set-Up for TPP consists of:

- a **Hot/Cold Plate 35150**
- an additional **Hot Plate 35150-002**
- a set including **special tubes**, and a **corridor** for either mouse or rat (respectively **35250-003** and **35260-002**), to interconnect the two plates.

Both 35150 and 35150-002 are standard devices, complete with all accessories (see the related datasheet), to be used as independent devices.

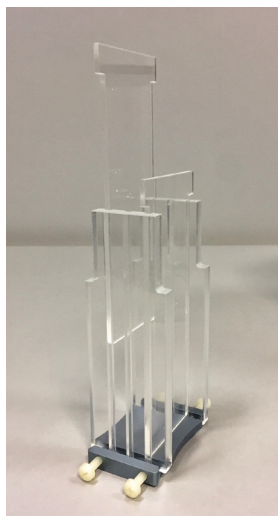
The Heating Plate **35150-002** is a basic unit, in which temperature can be preset from the front panel from room temperature to 65°C.

The Hot/Cold Plate NG **35150** is a more sophisticated device, allowing setting the temperature on the 4"3 touch-panel, in the range -5 to 65°C, with 0.5°C increments, with 0.1°C precision.



The extremes of this ample range can be reached, provided room temperature remains in the interval 18-24°C.

Two working modes allow for testing at **fixed** temperature or at increasing/decreasing temperature (**RAMP**).



The set of accessories for mouse **35250-003** consists of two special tubes, with a 45x95(h)mm opening, connected by a metal bridge, whose width was minimized to 4cm.

The enclosures for rat have 87x110(h)mm opening and a 4cm wide bridge.

The tube on the Hot/cold side is provided with a lid to reduce humidity condensation on the plate at low temperatures.

Users interested in **testing both rats and mice** may order one of the two set-up and the set of tubes for the other species.

**Rationale of the Test**

The TPP Test allows an unrestrained rodent to move **freely** between two compartments set at different temperatures, via the metal bridge which connects the two areas, thus choosing its preferred position (**comfort zone**). This behavioural protocol provides data about temperature preferences and nociceptive thresholds associated to both hot and cold stimulation.

Unlike ther tests, the TPP Test is operator-independent: using the traditional hot/cold plates, the researcher measures the reaction time of an animal exposed to a certain temperature or ramp, by marking specific stereotypes while in the "2-Temperatures Choice Test" the nociceptive response is given by the animal choice to move to one or the other environment.

The animal response can be **visually observed** by the user, and marked manually or on a **manual scoring software** (as ANYmaze Take Note).

In alternative, more detailed information on the animal behaviour can be obtained and recorded automatically via **ANYmaze** or other **videotracking system**. In the latter case, information will include: time spent in each temperature zone, animal activity, zone trespassing, distance run by the animal (total or by zone), etc.

**Ordering Information**

- 35250** **TPP, Set-Up for Thermal Preference, Mouse**
- 35260** **TPP, Set-Up for Thermal Preference, Rat**

**Individual components:**

- 35150** Hot/Cold Plate NG, complete
- 35150-002** Additional Heating Plate, complete
- 35250-003** Set of Tubes and corridor for Mice
- 35260-002** Set of Tubes and corridor for Rats

**Optional Videotracking:**

- 60000-TN** ANYmaze Take Note (manual scoring)
- 60000** ANYmaze Full Version
- 47400-040** USB Camera

**Physical**

Universal input	85-264 VAC, 50-60Hz
Dimensions	50(w)x37(d)x47(h)cm, with restrainers
Weight	14.4Kg
Shipping Weight	20Kg approx.
Packing	68x34x28cm (2 boxes) + 45x34x26cm

**Bibliography**

**Method Paper:**

- Aziz Moqrich et alia: "Impaired Thermosensation in Mice Lacking TRPV3, a Heat and Camphor Sensor in the Skin" *Science* 04 Mar 2005: Vol. 307, Issue 5714, pp. 1468-1472 DOI: 10.1126/science.1108609