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Plantar Test
(Hargreaves Apparatus)

For Rats

For Mice

Cat. No. 37370

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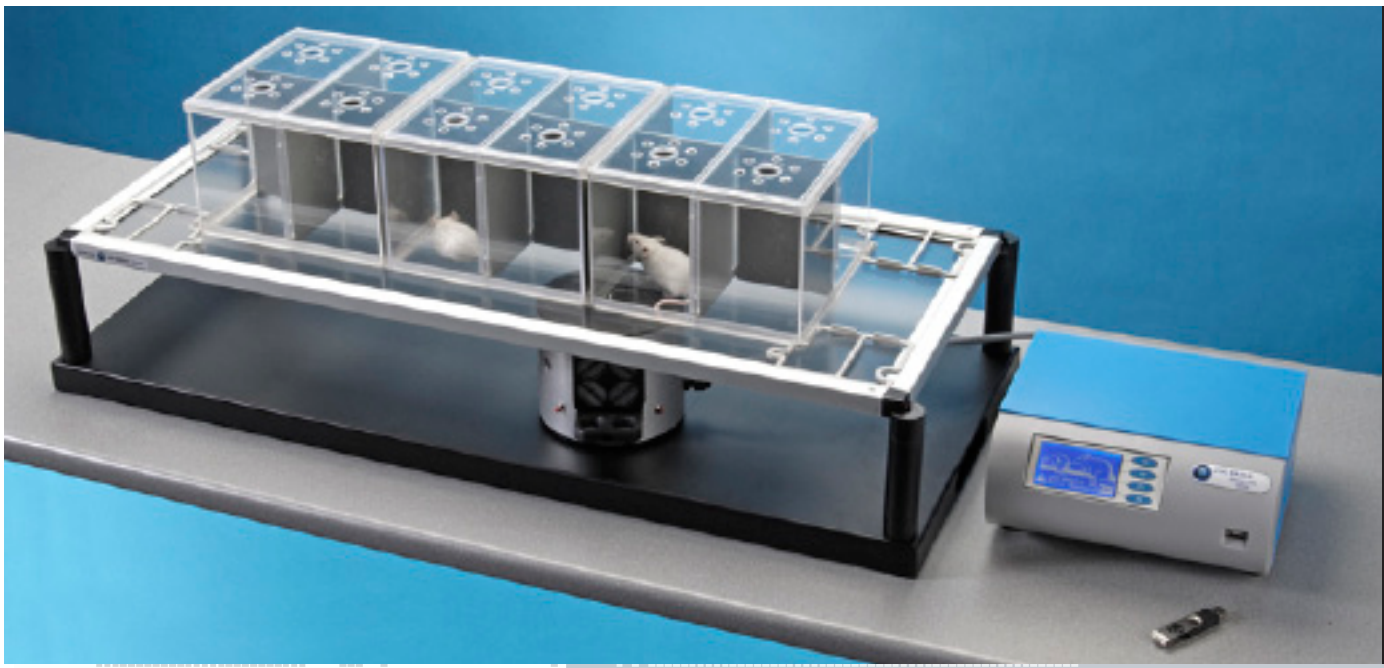
General

Determination of acute nociceptive thermal threshold in laboratory animals has primarily relied upon the tail flick and hot plate methods.

Although both methods are used frequently in pharmacological studies, they are not without limitation. In addition, neither method has been extended to investigating behavioural responses to hyperalgesia.

The Plantar Test represents a remarkable advance in methodology, as it combines the best features of all other methods of measuring pain sensitivity. Unique to the Plantar Test, **the animal is unrestrained and unhandled during experiments.**



Main Features

- Automatic detection of paw withdrawal (no visual score needed!)
- I.R. intensity adjustable in the interval 01-99 (in one digit steps)
- Software included
- Modular animal enclosure, from 3 to 12 spaces, conveniently designed to restrain mice or rats
- Optional 37300 Radiometer for calibration
- Data portability via the included memory key
- NEW: orofacial stimulation by optional holders

Ugo Basile: more than 10,000 citations

Instrument Description

The Instrument basically consists of:-

- a Movable I.R. (infra-red) Source
- a Controller (the picture shows the optional printer 37000-145 mounted on the top panel)

- a framed Glass Pane (86x35cm) supported by columns on a base latform onto which the movable source glides
- a modular enclosure of new design, in which the 3 spaces can be further divided into 2 or 4 by removable partitions, obtaining up to 12 spaces

After the acclimation period, the I.R. source placed under the glass floor (see the picture) is positioned by the operator directly beneath the hind paw. A trial is started by depressing a key on the I.R. source.

When the animal feels pain and withdraws its paw, the I.R. source switches off and the reaction time counter stops. The withdrawal latency to the nearest 0.1s is automatically determined and recorded.

Data Acquisition

The 37370 is a microprocessor controlled unit. The experimental data, stored in its internal memory can be directly exported to the PC USB or serial ports.

Communication is managed by the dedicated CUB Data Acquisition Windows®-based Software Package **52050-10**, included as standard, which enables the user to route the experimental data to the PC and store them into individual files, to be managed by most statistical analysis packages available on the market.

The 37370 is provided with a **memory key**, to record all the experimental data of one or more sessions and to program the experiment parameters from a remote PC.

Calibration Radiometer

Each Plantar Test Unit is accurately calibrated via an **Heat-Flux I.R. Radiometer Cat. 37300.**

The end user should consider this extremely useful optional accessory, which enables the experimenter to:

i) Make sure that two or more units deliver thermal nociceptive stimuli (expressed in mW per square cm) of **exactly the same intensity**.

ii) Measure the I.R. energy (1mW for the duration of 1s corresponds to 1mJ) **in absolute terms**

Ordering Information

37370	**Plantar Test (Hargreaves' test)**, complete with following standard accessories:
37370-001	Plantar Test Controller
37370-002	Emitter/Detector Vessel, with cable
37000-003	Platform
37370-327	Supporting columns
37000-006	Modular Animal Enclosure
37370-005	Framed Glass Pane
37370-302	Instruction manual (on the USB key)
52050-10	CUB Software (USB key) with USB cable
E-WP 008	Mains Cord

Optional Spares & Accessories

37000-145	Panel-Mount Printer
37300	Heat-Flux I.R. Radiometer
E-HR 002	Replacement Bulb
37370-278	Additional stimulation base, complete with glass pane and animal enclosure
37100	Set of two **Durham Holders** for **orofacial** stimulation (see separate datasheet)

Physical

Universal Mains	85-264 VAC - 50-60Hz - 20 W max.
Dimensions	86 x 40 x 35 cm (assembled)
Weight	13.00 Kg
Packing	98 x 49 x 47 cm
Shipping Weight	27.50 Kg approx

Bibliography

Method Paper:

- K.M.Hargreaves, R.Dubner, F.Brown, C.Flores & J.Joris: "**A New and Sensitive Method for Measuring Thermal Nociception in Cutaneous Hyperalgesia**" Pain 32: 77-88, **1988**.
- D.C. Yeomans & H.K. Proudfit: "**Characterization of the Foot Withdrawal Response to Noxious Radiant Heat in the Rat**" Pain 59: 85-97, **1994**.

Papers mentioning UB model:

- D. Piomelli et alia: "**Anandamide suppresses pain initiation through a peripheral endocannabinoid mechanism**" Nature NSC, **2010**
- L. Mannelli et alia: "**Effects of the Neutrophil Elastase Inhibitor EL-17 in Rat Adjuvant-Induced Arthritis**" Rheumatology 10.1093, **2016**
- S. Castany et alia: "**The Antinociceptive Effects of a δ-Opioid Receptor Agonist In mice with Painful Diabetic Neuropathy: Involvement of Heme Oxygenase 1**" Neurosc.Letters 614: 49-54, **2016**
- Z.Z. Huang et alia "**Mir-500-Mediated GAD67 Downregulation Contributes to Neuropathic Pain**" J. Neurosci 36(23): 6321-6331, **2016**
- T.A. Nees et alia: "**Early-Onset Treadmill Training Reduces Mechanical Allodynia and Modulates Calcitonin Gene-Related Peptide Fiber Density in Lamina III/IV in a Mouse Model of Spinal Cord Contusion injury**" Pain 157(3): 687-697, **2016**
- V. Carozzi et alia: "**Chemotherapy-Induced Peripheral Neurotoxicity in Immune-Deficient Mice: New Useful Ready-to-Use Animal Models**" Exp. Neurology 264: 92-102, 2015