Librae Incapacitance Tester

Measures weight balance in rodents

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Librae Incapacitance Tester

Fully automated thanks to the unique AutoStart feature that identifies immobility windows to optimize test repeatability and save operator time

Librae Incapacitance tester is available for mice (SKU 47883 that comes with restrainer for mouse SKU 47880-003 (1)) and rats (SKU 47882 that comes with restrainer for mouse SKU 47880-002 (2)). Fast cleaning of foot pads because they are conveniently attached magnetically for easy removal (3)

Background

Also called "Incapacitance Tester" or "Static Weight Bearing", it is the classic method to assess unilateral pain (especially joint pain, but also neuropathic pain, etc.), as when the animal stands on the force sensors (one per hind paw), it makes a natural adjustment to the degree of pain, by adapting weight distribution on both rear paws.

Shifts in pain distribution between limbs serve as indicators of pain severity, offering a quantitative and simple method to quantify the extent of weight distribution imbalances caused by pain.

Weight bearing devices can also be used in longitudinal studies to understand pain progression and effectiveness of treatments, to screen potential drug candidates as well as in translational studies.

Typical device applications

Weight distribution is especially important in conditions where musculoskeletal and neurological systems are affected. The most typical is Osteoarthritis, a degenerative joint disease where joint cartilage breaks down. It is broadly used also in rheumatoid arthritis, where the autoimmune mechanism ends up with joint inflammation and relative pain.

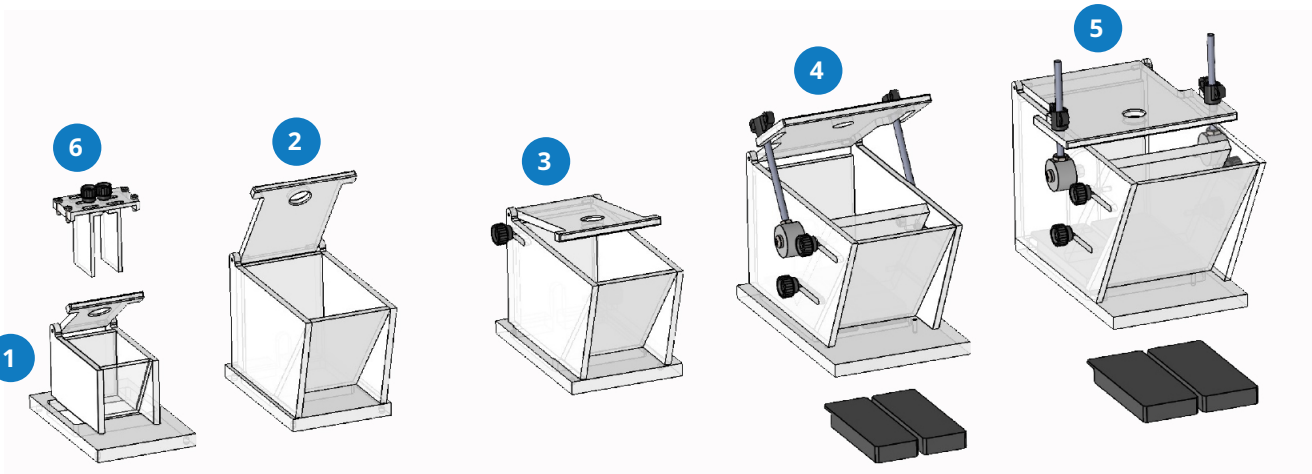
The altered sensation typical of neuropathic pain, especially when unilateral nerve injury models are used, can lead to abnormal weight distribution, quantifying how neuropathic pain influences weight balance. The same applies to diabetic neuropathies.

Also stroke can lead to altered weight distribution as a result of the associated motor impairments and adaptations to their motor deficits, resulting in abnormal weight distribution. Recovery of weight distribution is tracked during injury rehabilitation studies.

In summary, weight distribution measurement is a valuable tool in pharmacology, phenotyping, validation of animal models, translational studies, for a broad number of treatments and diseases.

Product Description

- Automation of the measurement process using AutoStart, a unique feature that identifies immobility windows to optimise test repeatability and save operator time.
- Option to switch to manual mode with the included foot pedal for hands free operation.
- Quick calibration of high quality, precision force sensors (0.1g resolution) using the reference weight supplied.
- Maximum weight 2200 gr.
- Quick, seamless management of settings and data, using large, bright, colour touch screen.
- Visualization of test data as left/right weight histograms and scatter charts displaying trend data.
- Recorded parameters include average paw weight, Standard Deviation, Left/Right ratio and more.
- Data is saved in universal .csv format for spreadsheets including Microsoft Excel. Easy transfer of data using supplied USB key.
- No screws or protruding parts that can cause interference with the rodents and possibly compromise experiment results.
- Fast cleaning of foot pads (within seconds) because they are conveniently attached magnetically for easy removal.



Animal restrainers are available in different dimensions for mice and rats: (1) restrainer for mouse SKU 47880-003, (2) restrainer for rat up to 200 gr SKU 47880-002, (3) restrainer for rat up to 250 gr SKU 47880-004 with adjustable wall, (4) restrainer for rat up to 350 gr SKU 47880-007 with adjustable roof, (5) restrainer for rat up to 500 gr SKU 47880-008 with adjustable roof, (6) reducer for small animal to be used only with Librae Incapacitance tester restrainer 47880-003 SKU 47880-323.

Features	Benefits
Measure hind paw weight distribution	The most widely used method for weight bearing (>1,500 citations) is now updated and equipped with the latest technologies by Ugo Basile.
Autostart is a unique feature	Automate the measurement process by identifying immobility windows and starting the test without human bias.
Touch screen and USB data storage	Scientist can set control and manages instrument data quickly and seamlessly. Through a few, intuitive buttons, one can reach all the functionalities. The included USB key stores all data for optimal portability (average paw weight, Standard Deviation, Left/Right ratio, etc.). The Left/Right weight histograms and scatter charts display on line the experiment output for an immediate visual control, graphically effective and easy to follow during the test.
Reliable and easy to collect results:, software included	High quality force sensors (0.1g resolution) are easily calibrated with the provided reference weight and show no screws or other parts potentially interfering with the animal, for maximum experiment repeatability. After each test the result can be stored or discarded and data can be transferred from the instrument to a PC for MS Excel. At the end of the experiment the foot pads can be cleaned in a few seconds, being magnetically attached to the base.

Main references

- Bongjun et al., 2023, Phytoceramide Alleviates the Carrageenan/Kaolin-Induced Arthritic Symptoms by Modulation of Inflammation, Biomolecules & Therapeutics
- Batchelor et al., 2022, Refining methods to measure spontaneous pain behaviour in surgically induced murine osteoarthritis, Osteoarthritis and Cartilage
- Hyuk-Kwon et al., A cell-penetrating peptide blocks Toll-like receptor-mediated downstream signaling and ameliorates autoimmune and inflammatory diseases in mice, Experimental & Molecular medicine

Specifications - Operation

Animal weight (per paw)	From 20g to 2200g
Precision	From 0.05% to 0.1%
Measurement time	From 1s to 360s
Measurement starting mode	Manual and Automatic
Start	Start button, Pedal Switch, or Autostart
Stop	Stop button, Pedal Switch, or Elapsed Timeout
Data Export	.csv format, from USB key (provided)
TTL I/O	Start, Stop, Mode

Specifications - General

Command input and read-out	4,3 inches touch-screen (Resistive)
Power Requirements	Universal input 100-240 VAC, 50-60Hz, 15W max
Sound Level	Negligible
Operating Environment	10°C to 40°C; 5% to 95% RH (non-condensing)

Physical Librae Incapacitance tester

47880-001	30 cm x 25 cm x 12 cm

Physical Restrainers

Model SKU	Animal Range	Length Internal Base	Length Top/Roof	Height	Width
47800-003	mouse	34 mm	64 mm	55 mm	40 mm
47800-002	rat up to 200 gr	53 mm	124 mm	89 mm	64 mm
47800-004	rat up to 250 gr	54-78 mm	123-147 mm	89 mm	64 mm
47800-007	rat up to 350 gr	107 mm	189 mm	103 mm	80 mm
47800-008	rat up to 500 gr	117 mm	217 mm	123 mm	100 mm

Ordering informations

47882 - Librae for Rats	Librae Incapacitance tester, max load 2.2Kg. per paw, resolution 0.1 g, USB data export, self calibration and autostart modes, no restrainer, pedal switch, calibration weight, Included (SKU 47880-001); Librae Incapacitance tester restrainer for rat up to 200 gr in clear perspex (SKU 47880-002); Librae Incapacitance tester magnetic pads (pair left + right) (SKU 47880-321)
47883 - Librae for Mice	Librae Incapacitance tester, max load 2.2Kg. per paw, resolution 0.1 g, USB data export, self calibration and autostart modes, no restrainer, pedal switch, calibration weight, Included (SKU 47880-001); Librae Incapacitance tester restrainer for mouse in clear perspex (SKU 47880-003); Librae Incapacitance tester magnetic pads (pair left + right) (SKU 47880-321)
47885 - Librae Combo for Mice and Rats	Librae Incapacitance tester, max load 2.2Kg. per paw, resolution 0.1 g, USB data export, self calibration and autostart modes, no restrainer, pedal switch, calibration weight, Included (SKU 47880-001); Librae Incapacitance tester restrainer for mouse in clear perspex (SKU 47880-003); Librae Incapacitance tester restrainer for rat up to 200 gr in clear perspex (SKU 47880-002); Librae Incapacitance tester magnetic pads (pair left + right) (SKU 47880-321)

Optional items

47880-002	Librae Incapacitance tester restrainer for rat uo to 200 gr in clear perspex
47880-003	Librae Incapacitance tester restrainer for mouse in clear perspex
47880-004	Librae Incapacitance tester adjustable restrainer for rat up to 250 gr in clear perspex
47880-007	Librae Incapacitance tester restrainer for rat up to 350 gr in clear perspex, including 2 magnetic pads
47880-008	Librae Incapacitance tester restrainer for rat up to 500 gr in clear perspex, including 2 magnetic pads
47880-323	Reducer for small animal to be used only with Librae Incapacitance tester restrainer 47880-003

Extra warranty (standard 12 months + 12 months with product registration) available

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more than 40,000 citations in the main bibliographic search engines.

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