

Hargreaves Test-A Brief Overview

The Hargreaves test is one of the classic experiments used to detect thermal pain responses in rodents. The test is commonly used to quantify the thermal threshold to radiation or infrared thermal stimulation in the hind paw of mice and rats.

In the [Hargreaves test](#), a radiant or infrared heat source is usually placed underneath the rodent and aimed at the plantar surface of the rodent's hind paws. The thermal threshold of the rodent hind paw was assessed by recording the time required for the experimental animal's paw to withdraw from the thermal stimulus.

Applications of Hargreaves Test

The Hargreaves testing services we offered can facilitate our clients' progress in the following related researches.

- Pain sensitization reaction triggered by nerve injury.
- Pain sensitization reaction after regeneration.
- Thermal pain recovery related experiments.

Example of Hargreaves Test

Here, we present an example of the Hargreaves experimental application, highlighting the important methodological steps to demonstrate the flow of the experiment to customers approaching it for the first time. In addition, we describe the key experimental results, showing how to analyze the data to obtain meaningful results. We hope this example will help potential customers determine if the Hargreaves test is appropriate for their research.

The research is the punctate midline myelotomy to reduce pain response in rats model of lumbar spine pain.

Punctate midline myelotomy (PMM) is considered a procedure to treat severe intractable visceral pain by interrupting the postsynaptic dorsal column pathway (PSDC) of the spinal cord. This trial assessed changes in the pain hypersensitivity response due to lumbar arthritis after PMM by the Hargreaves test.

- The hind paw of the experimental animal was given a concentrated radiant heat stimulus and the animal was free to change position at any time to avoid the stimulus. When the animal's paw is removed, the beam is automatically turned off and the delay in the appearance of pain is measured. Five minutes were allowed between each trial.
- The testing process is as follows, where Intraarticular Urokinase Plasminogen Activator (uPA) injection is used to induce lumbar spine arthritis in experimental animals.

Injection of uPA into the lumbar spine joint produces thermal hypersensitivity in the hind claw. The thermal response delay using the Hargreaves test determined the hypersensitivity response on days

3 and 7, which was mitigated by PMM. These data indicate that the hypersensitivity induced by the lumbar facet arthritis was significantly reduced for heat-related, pain-related behavior after PMM.

Our company is always customer-focused, and our flexible experimental design and clever execution help customers solve all the challenges they encounter in Hargreaves testing. We are committed to providing our customers with useful insights and recommendations for the design of their experiments and the interpretation of their data analysis.