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# Tail Immersion Test V.2

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**Protocol status:** Working
**We use this protocol and it's working**

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## Abstract

The tail immersion test measures pain response (tail flick latency) to thermal stimuli, and can be used to evaluate the effectiveness of and tolerance to analgesics (e.g. oxycodone).

## Guidelines

2 people (i.e. a dipper and a timer) are required to perform this test. Each timepoint that this test is performed must be done by the same people.

## Materials

MATERIALS

Water

- Water bath (Fisherbrand™ Isotemp™ GPD 02 Water Bath)
- 1000 mL beaker
- Thermometer
- Towel or pee pad
- Stopwatch

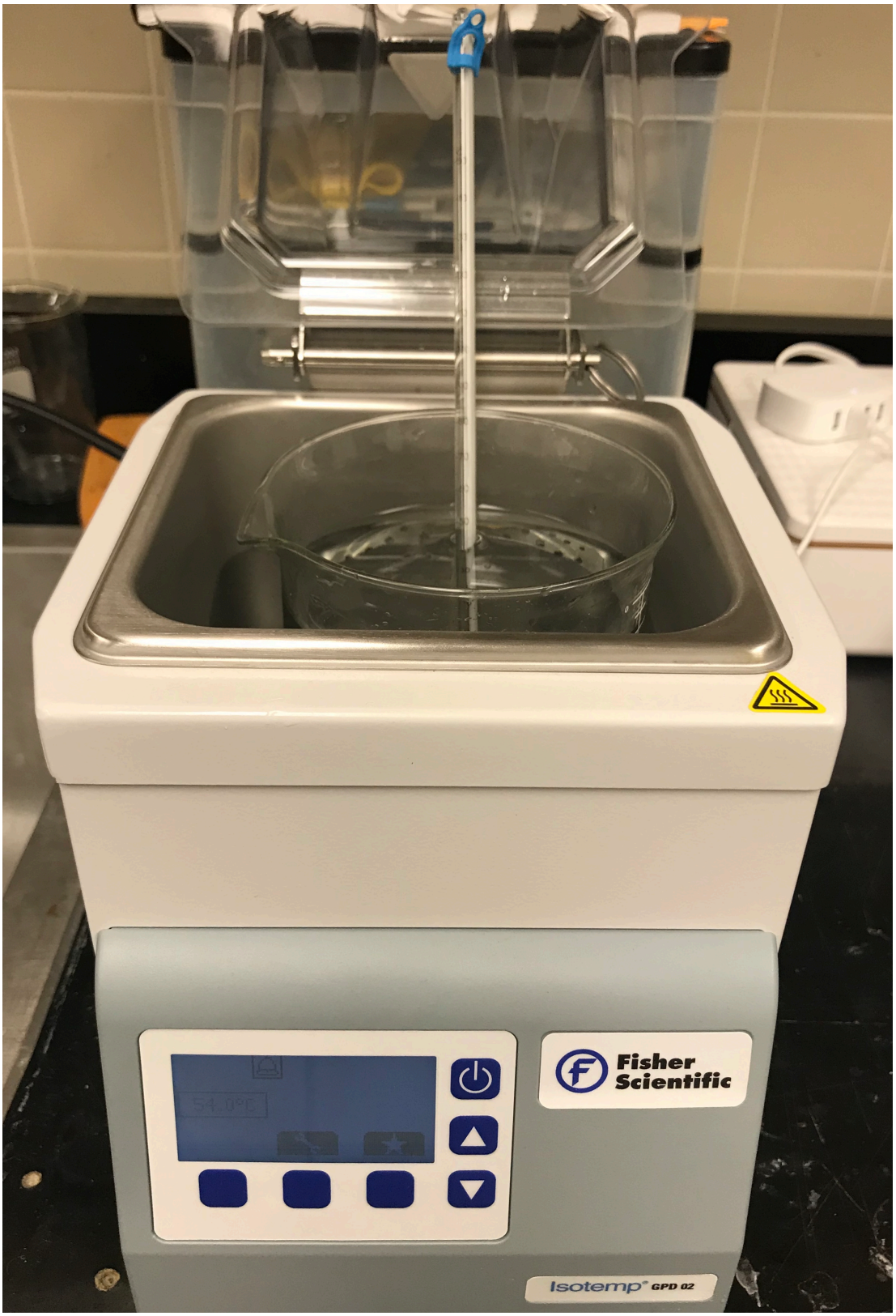
## Before start

Set up water bath:

1. Fill approximately one-third of the Fisherbrand™ Isotemp™ GPD 02 Water Bath machine with water.
2. Fill beaker with approximately 900 mL water, then place beaker inside the water bath.
3. Keep a thermometer inside the beaker.
4. Turn the machine on (power switch located on the rear of the machine). The home screen will appear displaying the set point of the water temperature which should be 54°C.
5. Press the power button on the front of the machine to begin heating the bath. The screen will display the actual water temperature in the machine.
6. Allow time for the temperature inside the beaker to reach 52°C before beginning experiment.

**Note**

The set point will heat the water inside the beaker to the desired temperature for this experiment (52°C). Maintaining 52°C inside the beaker is critical, so keep track of this temperature by checking the thermometer frequently throughout the experiment.




Set up of water bath. Display screen shows the set point of the temperature inside the water bath.

## General Procedure

1 Pick up rat from its home cage and wrap it in a towel or pee pad to restrain it, leaving tail exposed.

2 The dipper will hold the restrained animal over the water bath and count down before dipping 1 cm of the distal tail into the water. As soon as the tip of the tail is submerged, the timer will start the stopwatch to begin timing the rat's tail flick latency.

> **Note**
>
> Animal must be relaxed with its tail being straight and still before immersing it in the bath.

3 As soon as tail flick reflex is observed, the timer will stop the stopwatch and record the tail flick latency.

> **Note**
>
> Tail flick reflex is indicated as animal attempting to withdraw its tail from the water (i.e. flicking the tip of its tail up).

> **Note**
>
> Do not allow more than 10 seconds to pass without observing a tail flick. Finish the procedure and record the time as 10 seconds to avoid tail damage.

4 Dry the rat's tail and return it back to its home cage.