



VERSION 2

DEC 13, 2022

WORKS FOR ME

1

Iodine-starch sweating assay V.2

DOI

dx.doi.org/10.17504/protocols.io.bp2l69d1klqe/v2[Fanglin Lu](#)¹¹MD, MS

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COMMENTS 0

ABSTRACT

This protocol outlines the procedure for assessing the sudomotor function in mice under restraint stress and under systemic pilocarpine stimulation. Both two kinds of sweating assays were based on the iodine-starch reaction.

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PROTOCOL CITATION

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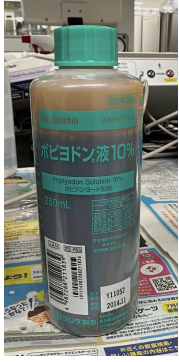
PROTOCOL INTEGER ID

73852

GUIDELINES

Please follow the Animal Research: Reporting of *In Vivo* Experiments (ARRIVE) guideline.
It is favorable to not perform these two different kinds of sweating assays on the same day.

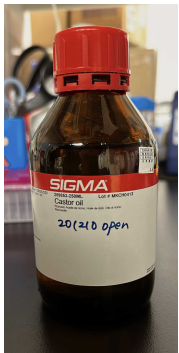
MATERIALS TEXT



10% povidone–iodine solution (Yoshida Pharmaceutical Co., Ltd.)



Starch (FUJIFILM Wako Pure Chemical Corp., Osaka, Japan; catalog number: 193-09925)



Caster oil (Sigma-Aldrich, St. Louis, MO; catalog number: 259853)



Mini makeup brushes (we use them instead of cotton buds)



Microscope (Olympus SZ61) with digital camera Moticam 1080



Self-made restrainer (The nose piece is **BROKEN. USE A NEW ONE.**)

Note

Pilocarpine hydrochloride (Sigma-Aldrich; catalog number: PHR1493)

BEFORE STARTING

Check if the restraint tube is intact.

Prepare 100% starch–castor oil (1 g starch per 1 mL castor oil)

Prepare pilocarpine (diluted in 150 μ L 0.9% saline).

Restraint stress-induced sweating

- 1 The mouse is immobilized in a self-made restraint tube.



self-made restraint tube

- 2 Apply 10% povidone–iodine solution to the plantar surface of bilateral hind paws with a cotton bud. Once dry, coat the skin surface with a suspension of 100% starch–castor oil.



- 3 Changes on footpads are video-recorded for 3 min. The number of dark spots was counted for each paw.

3m

Expected result



Pilocarpine-induced sweating

7m 10s


- 4 The mouse is placed in the supine position under sevoflurane anesthesia (4 volume% in 1 L/min oxygen).

1m

Note

- 5 Apply 10% povidone–iodine solution to the plantar surface of bilateral hind paws with a cotton bud. Once dry, coat the skin surface with a suspension of 100% starch–castor oil.



- 6 Inject 100 µg pilocarpine hydrochloride intraperitoneally.  150 µL diluted in 0.9% saline

- 7 Changes on footpads are video-recorded for 5 min. The number of dark spots was counted for each paw.

Expected result

