



Iodine-starch sweating assay V.1

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COMMENTS 0

VERSION 1

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WORKS FOR ME

1

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.

PROTOCOL CITATION

Fanglin Lu 2022. Iodine-starch sweating assay. **protocols.io**
<https://protocols.io/view/iodine-starch-sweating-assay-ckb8usrw>

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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-castor oil (FUJIFILM Wako Pure Chemical Corp., Osaka, Japan; catalog number: 193-09925;
Caster oil (Sigma-Aldrich, St. Louis, MO; catalog number: 259853).
Pilocarpine hydrochloride (Sigma-Aldrich; catalog number: PHR1493)
Cotton buds
Microscope with digital camera Moticam

RECODE STARTING

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 µL 0.9% saline).

Restraint stress-induced sweating

- 1 The mouse is immobilized in a self-made restraint tube. 6m
- 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. 2m
- 3 Sweat droplets are visualized as dark-colored spots because of iodine–starch reactions. Changes on footpads are video-recorded for 3 min. The number of dark spots was counted for each paw. 1m

Pilocarpine-induced sweating

- 4 The mouse is placed in the supine position under sevoflurane anesthesia (4 volume% in 1 L/min oxygen) . 7m 10s
- 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. 1m
- 6 Inject 100 µg pilocarpine hydrochloride (diluted in 150 µL 0.9% saline) intraperitoneally. 10s
- 7 Sweat droplets are visualized as dark-colored spots because of iodine–starch reactions. Changes on footpads are video-recorded for 5 min. The number of dark spots was counted for each paw. 5m