

Institutional Animal Care and Use Committee (IACUC)

Office of Research Integrity and Assurance

Arizona State University

Animal Protocol Review

SOP Title: [REDACTED] fication, Use, and Cleaning

Principal Investigator: [REDACTED]

Date Action: 6/25/2021

The Standard Operating Procedure (SOP) document was considered by the Committee and the following decisions were made:

The SOP was approved.

The procedures outlined in the SOP are to be followed. Any changes to the SOP need to be submitted to the committee for review and approval prior to implementation. Once changes have been reviewed and approved, those supersede prior versions of the SOP.

Signature: [REDACTED]

Date: 6/29/2021

IACUC Chair or Designee

Cc: IACUC Office
IACUC Chair

ARIZONA STATE UNIVERSITY

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Guide Tube Modification, Use, and Cleaning	26-Feb-2019	23-Jun-2021

A. Purpose

To provide a guideline for the modification, use, and cleaning of guide tubes in the NHP lab environment.

B. Identification

All investigators working with or around sharps in the NHP lab.

C. Definitions

- a. Guide tube (also refer to as a trocar or a cannula in the literature): a sharpened needle-like metal tube that protects the micro-electrode and aids in positioning the micro-electrode at an anatomical target.
- b. Micro-electrode (also referred to as an electrode, micro-wire, or micro-coil in the literature): a needle-shaped electrically conductive device used to record electrical signals from neural tissue; or used to stimulate neural tissue by introducing electrical current or an electromagnetic field.
- c. In the context of this SOP the guide tube is a modified lumbar puncture (spinal tap) needle, and the micro-electrode fits inside the guide tube.
- d. Micro-drive: a mechanism for independently and precisely moving the guide tube and the micro-electrode.

D. Procedure

1. Personal Protective Equipment (PPE)

- a. To facilitate the safest possible handling, sharps should never be handled without full PPE. Full PPE includes:
 - i. Double gloves
 - ii. Tyvek Sleeves
 - iii. Lab coat
 - iv. Face shield
 - v. Surgical mask

2. Guide Tube Modification

- a. For our purposes, spinal needles are too long to be used as manufactured and must be shortened to use them as guide tubes. The steps for this process are as follows:
 - i. The spinal needle is removed from its sterile packaging and placed in a small bench vice.
 - ii. A heat gun is used to soften the plastic hub and the plastic hub is removed, allowing the needle to lie flat for accurate measurement.
 - iii. The needle is measured and marked at the desired length with a sharpie.
 - iv. The needle is returned to the bench vice and a Dremel is used to cut it at the marked location.
 - v. All burrs are removed from the outside of the guide tube using 600 grit sandpaper, and a 1/32" fine drill bit is used to remove any burrs on the

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inside surface. It is imperative that all burrs and rough edges are completely removed.

- vi. The spinal needle is placed into a chlorhexidine sonicator bath for 60 minutes.
- vii. The modified spinal needle is now considered a guide tube.

3. Guide Tube/Micro-Electrode use in Recording and Stimulation

- a. Using forceps the guide tube is attached to the micro-drive.
- b. The micro-electrode is carefully placed into the guide tube.
- c. The micro-drive is attached to the NHP's chamber via an interface connector.
- d. The guide tube is then manually lowered through the dura.
- e. Computer-controlled drive motors position the micro-electrode at the desired anatomical location.

4. Removal and Disposal/Cleaning of Guide Tube/Micro-Electrode

- a. At the conclusion of recording the micro-electrode and the guide tube are backed out of the tissue.
- b. The micro-drive is disconnected from the NHP's chamber and placed on a level surface.
- c. The micro-electrode is removed and placed into a secure container.
- d. The guide tube is removed and placed into a hard-sided sharps container for disposal.
- e. The micro-electrode is transported to 95B and placed directly into the sonicator containing 10% chlorhexidine solution.
- f. Sonication takes place for 60 minutes.
- g. If the micro-electrode is to be used the following day, it will remain in the sonicator until use. This reduces the number of times it is necessary to handle it.
- h. If more than 24 hours will pass before the next experimental session, the micro-electrode is removed from the sonicator and stored in a labeled and puncture resistant container.

From: [REDACTED]
To: [REDACTED]
Subject: FW: Action Required: Trocar Use SOP
Date: Friday, June 25, 2021 4:47:39 PM
Attachments: [image001.png](#)
[image002.png](#)

From: Karen Kibler [REDACTED]
Sent: Friday, June 25, 2021 10:47:31 PM (UTC+00:00) Monrovia, Reykjavik
To: [REDACTED]
Cc: iacuc@asu.edu <iacuc@asu.edu>
Subject: RE: Action Required: Trocar Use SOP

Great – thanks!

[REDACTED] I'll send you a clean version to add to the protocol

Karen

From: [REDACTED]
Sent: Friday, June 25, 2021 3:46 PM
To: Karen Kibler [REDACTED]
Cc: iacuc@asu.edu
Subject: Re: Action Required: Trocar Use SOP

Hi Karen,
I agree with [REDACTED] that the additional modifications clarify the procedures, but not alter what method.
I'm okay to move forward without an additional DR.

Best,
[REDACTED]

From: Karen Kibler [REDACTED]
Sent: Friday, June 25, 2021 01:57 PM
To: [REDACTED]
Cc: [iacuc@asu.edu](#) <[iacuc@asu.edu](#)>
Subject: FW: Action Required: Trocar Use SOP

Hello [REDACTED] and [REDACTED]

There were many additional changes made to this SOP other than what had been requested under Designated Review. Please check once more to be sure that nothing was inadvertently changed that would alter the committee's decision. If there is any question at all, we should send it for DR process approval to let all members see the changes. If none of the changes altered the intent or appropriateness of the procedures they will follow, then we can consider it approved.

Thanks,