

University of Pennsylvania-Radiology

Small Animal Imaging Facility

Standard Operating Procedure

Title: Guideline for Longitudinal Imaging Studies at the Small Animal Imaging Facility

SOP Number: 4.04

Version Number: 2

Effective Date: October 10, 2023

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Review Date: October 10, 2023

Approval: Katie Zaifert, Director of Regulatory Compliance

I. Purpose: This SOP will provide guidelines for conducting longitudinal imaging studies at the Small Animal Imaging Facility (SAIF) located in Smilow Center (also called SCTRC) and John Morgan Basement.

II. Responsibilities and Scope: All researchers conducting longitudinal animal imaging studies (i.e., MRI/ MRS, PET/ SPECT, CT, Optical, and/or Ultrasound) at the SAIF must adhere to this SOP.

III. Definitions:

- A. Longitudinal imaging studies: This refers to multiple imaging studies conducted on a set of research animals, which may involve one or more imaging modalities and take place over multiple days.

IV. Procedures:

- A. After obtaining an approved IACUC protocol, investigators must complete the "SAIF Application Form" (SOP 4.05) to apply for approval from the Animal Oversight Subcommittee (AOS) of the Small Animal Imaging Facility. Imaging studies can only be initiated after receiving the necessary approval.
- B. Prior to transferring animals to the SAIF housing areas in Smilow Center 1-141 or John Morgan B100, investigators must complete the AOS request for housing form (SOP 4.05) and receive approval from SAIF.
- C. Instrumentation available for longitudinal animal imaging studies in the SAIF
 - 1. Prior to using any imaging modalities, all researchers must contact the relevant sub-core technical director to receive instrument training and learn the appropriate scheduling procedures.
 - a. Investigators wishing to use MRI/ MRS instruments for their imaging studies (SOP 4.07) should contact Steve Pickup (pickup@pennmedicine.upenn.edu).

- b. Investigators wishing to use PET, SPECT, or CT for their imaging studies (SOP 4.09) should contact Eric Blankemeyer (eriblack@pennmedicine.upenn.edu).
- c. Investigators wishing to use optical instruments for their imaging studies (SOP 4.08) should contact Ching-Hui Huang (Chinghu@pennmedicine.upenn.edu)
- d. Investigators wishing to use Ultrasound for their imaging studies (SOP 4.06) should contact Susan Schultz (susan.schultz@pennmedicine.upenn.edu)

V. Directions: None

VI. Safety Considerations:

- A. When scheduling multiple imaging modalities on the same day, PET/SPECT imaging with radioisotopes must be the last performed.
- B. It is important for researchers to exercise caution while using Isoflurane gas anesthesia during animal preparation (SOP 2.04).

VII. References:

- A. SAIF SOP 4.05 Instructions for Completing the SAIF Research Application Form
- B. SAIF SOP 4.06 Guideline for the Ultrasound Imaging of Small Animals in the Small Animal Imaging Facility
- C. SOP 4.07 Guideline for the MRI/MRS Animal Studies at the Small Animal Imaging Facility
- D. SOP 4.08 Guideline for the Optical/Bioluminescence Imaging Studies at the Small Animal Imaging Facility
- E. SOP 4.09 Guideline for the Nuclear Imaging of Small Animals
- F. SOP 2.04 Safe Use of Inhaled Isoflurane Gas

VIII. Attachments: None

IX. Document History:

Version Number	Effective Date	Author	Reason
1	November 10, 2005	I. Lee	New
2	January 2, 2006	I. Lee	Revised