



Standard Operating Procedure (SOP)

<b>Title:</b>  <b>Radioactive cages management</b>	<b>SOP No.</b> SAIL-PET-SOP-09
	<b>Version No.</b> 02
	<b>Effective Date:</b> July 28, 2017
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## 1. Purpose

This SOP describes and outlines the proper handling of cages of animal exposed to radioisotopes following an experiment with the Mediso SPECT/CT and PET/CT scanners.

## 2. Scope

Applicable to all studies involving scanning with the SPECT/CT and PET/CT scanner.

## 3. Responsibility

- 3.1 The SPECT/CT/PET technician, under the supervision of the SAIL Manager, is responsible for maintaining safety and security standards within the SPECT/CT/PET facility.
- 3.2 The SPECT/CT/PET technician, under the supervision of the SAIL Manager, is responsible for properly labeling radioactive cages and calculate radioactivity decay time.
- 3.3 The SPECT/CT/PET technician, under the supervision of the SAIL Manager, is responsible for changing the cages containing long-lived radioisotopes.

## 4. Materials

- Radioactivity warning cage signs
- Radioactivity warning door sign

## 5. Radioactivity Safety and Conduct

- 5.1 Only the SPECT/CT/PET technician is permitted to handle radioactive-labelled animal cages.
- 5.3 A certified radioactivity dosimeter must be worn at all times when in the SPECT/CT/PET scanner facility.

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## 6.Procedure

### 6.1 Short-lived radioisotopes (Fluorine-18, Technitium-99m)

- 6.1.1 Following completion of PET or SPECT scan, add a radioactivity warning cage sign behind the cage card. ARD staff are instructed to not manipulate the cages as long as the warning sign is on the cage.
- 6.1.2 Flip the radioactivity warning sign located on the door of the holding room dedicated for radioactive animals (E.S2.8434) to indicate that radioactive animals are present..
- 6.1.3 After 10 half-lives post-radioisotopes injection (20 hours for F-18, 60 hours for Tc-99m), remove the radioactivity warning cage sign and flip the radioactive warning sign on the holding room door to indicate that no radioactive animals are present. ARD staff may now proceed with regular cage and animal handling.

### 6.2 Long-lived radioisotopes (Indium-111, Iode-125)

- 6.2.1 Following completion of PET or SPECT scan, add a radioactivity warning cage sign behind the cage card. ARD staff are instructed to not manipulate the cages untouched as long as the warning sign is on the cage.
- 6.2.2 Flip the radioactivity warning sign located on the door of the holding room dedicated for radioactive animals (E.S2.8434) to indicate that radioactive animals are present.
- 6.2.3 During the time the cages are considered radioactive, proceed with cage change (every two weeks for mice and every week for rats) by handling the cages behind a lead shield and disposing the bedding and feces in a solid waste disposal box specific for the radioisotope. Accumulate the cages that need to be replaced aside in room E.S2.8434 and label them clearly as radioactive to avoid ARD staff to bring them to washing before the radioactivity time is over.
- 6.2.4 After 10 half-lives post-radioisotopes injection (30 days for In-111, 20 months for I-125), remove the radioactivity warning cage sign and flip the radioactive warning sign on the holding room door to indicate that no radioactive animals are present. ARD staff may now proceed with cage and animal handling. Bring the cages that were let aside to the cage washing service.

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## 7. References

McGill Radiation Safety Policy Manual, Edition 6.0

## 8. Appendices

None

