

UF | ICBR Cytometry

University of Florida, Interdisciplinary Center for Biotechnology Research

<https://biotech.ufl.edu>

CTAC / ICBR SOP : Use of the IVIS System Vaporizer

Title: Operation of the IVIS Spectrum Gas/Vapor Anesthetic System

Materials Required:

- Experimental subject
- Bottle of Isoflurane (anesthetic)
- Vaporizer filler tube and screw neck mount
- Oxygen source

Purpose:

To utilize the anesthetic system in order to anesthetize and recover an experimental subject.

Background:

Animals are anesthetized while using this instrument in order that they are immobile while the data is being captured. Anesthesia by gas/vapor inhalation, follows a two stage process. The anesthetic is initially delivered at a higher rate to induce anesthesia, then reduced to maintain anesthesia. Typical settings for the average adult mouse and / or rat will be induction at 2.5% and maintenance at 1.5%.

System operation method:

Fill the vaporizer part of the system with isoflurane (see [CTAC ICBR SOP Filling the Vaporizer \(https://ctac.mbi.ufl.edu/ctac-icbr-sop-filling-the-ivis-system-vaporizer/\)](https://ctac.mbi.ufl.edu/ctac-icbr-sop-filling-the-ivis-system-vaporizer/)), or ensure that it is filled sufficiently to be between the high and low marks. Dial should be in the 'OFF' position

Turn on oxygen tank cylinder, affixed to the wall. Open valve all the way open (100% flow, counter clockwise).

Turn the system oxygen knob (green) to the ON position.

Place Experimental subject(s) in the induction chamber and secure lid.

Gently open the induction chamber toggle by lifting it up from the vertical to the horizontal. Ensure the toggle for the nosecone manifold inside the IVIS machine line is closed. NOTE: Do **NOT** 'snap' toggles open / closed – be gentle with these valves.

Depress the locking mechanism and turn the vaporizer dial to 2.5% (for an average subject). Subject(s) should begin to fall asleep within 1-2 minutes (for an average subject).

When the animal(s) doesn't respond to the rocking/jiggling of the induction chamber, turn the vaporizer dial to 1.5% (for an average subject).

Open toggle for the nosecone manifold inside the IVIS machine line.

Allow a minimum of 90 seconds to elapse to flush the normal room air from the lines supplying the machine manifold, replacing this with anesthetic vapor.

Immediately open the induction chamber and remove subject(s) and place their nose in the nosecones within the IVIS machine. Only once the subject's nose is in place should the rest of the body be aligned in whichever plane / position is required.

The toggle in the chamber line may be left open or closed, dependent upon how many subjects will be imaged and user processing. The anesthetic will continue to flow into this box while open, and more isoflurane use will be experienced.

Begin imaging subject(s) using IVIS Spectrum. After removal from the vapor anesthetic, recovery time is less than 1 minute.

After your imaging is completed:

Turn off the system vaporizer dial. This will click into the OFF position.

Turn off the vaporizer oxygen knob, and close the main valve on the oxygen tank, turning it clockwise until it will not turn any more.

Push the switch for the evacuation pump to ON to evacuate all anesthesia vapor from the IVIS Spectrum chamber and vaporizer lines. Run for 3 minutes, then turn off.

Execute the sanitization of the work area according to [CTAC / ICBR SOP : Sanitization of IVIS Spectrum after Use \(https://ctac.mbi.ufl.edu/ivis-spectrum-how-to-documents-and-sops/ctac-icbr-sop-sanitization-of-ivis-spectrum-after-use/\)](https://ctac.mbi.ufl.edu/ivis-spectrum-how-to-documents-and-sops/ctac-icbr-sop-sanitization-of-ivis-spectrum-after-use/).