

**Vascular Perfusion
for Tissue Collection
IACUC Standard Procedure
Effective Date: July 27, 2021**

Description of procedure:

This is a standard procedure for the vascular perfusion of anesthetized animals with fixatives or other perfusates for preparing tissues for histology. It is a non-survival surgery.

- Animals should be fully anesthetized following the UCSF anesthesia guidelines.
- The usual route of perfusion is transcardial.
- After opening the thorax cavity:
 - 1) Cut the ribs on both sites to the level of the collar bones.
 - 2) Lift the sternum carefully, and
 - 3) Roll it back carefully to expose the thorax cavity and visualize the heart and major vessels.
 - 4) Perfusion is usually done through the aorta or left ventricle.
 - 5) The right atrium is cut open.
 - 6) Animals are transcardially perfused through the ventricular catheter with or without saline followed by fixatives or other perfusates. The perfusion solution drains through the incision in the atrium.
- Fixative or other perfusion solutions can also be infused through other large arteries and drained from an incision in a vein.
- Fixatives or other perfusion are usually infused under gravity or using appropriate pressure via pump or syringe.
- The fully perfused animal is considered euthanized. Tissues are collected for analysis.

Protocol requirements:

- Animals undergoing this procedure are Category D.
- This procedure should be listed in Section H as a non-survival surgery.
- This procedure should be listed in Section N as a method of euthanasia.

Agents:

This procedure requires anesthesia and the fixatives or other solutions for perfusion. All agents administered to animals should be listed in the "Agents" section of RIO.

Reference:

<https://www.jove.com/t/3564/whole-animal-perfusion-fixation-for-rodents>