

**Renal Capsule Grafting  
In Rats and Mice**  
IACUC Standard Procedure  
Effective Date: October 2021



**Description of procedure:**

Follow anesthesia and analgesic regimens as outlined in Section I., Agents, in the IACUC protocol under which surgery is performed and in [UCSF Rodent Anesthesia Guideline](#). Surgical plane of anesthesia is required and multimodal analgesia (e.g., local anesthetic, NSAID, opioid) is recommended. Sterile survival surgery must follow [IACUC surgery guidelines](#).

A small incision (1-2cm) is made in the back of the animal, the dermis is dissected and the left flank body wall incised to expose the left kidney. A small incision is made in the kidney capsule, and a small pocket created between capsule and kidney parenchyma. The graft is inserted into this pocket, or cells infused via Hamilton syringe and tubing (if infusing cells avoid overflow and ensure capsule sealing). It is recommended that grafts do not exceed 2mm in any dimension as it may result in central necrosis of the graft prior to establishment of vascularization. Hemostasis is verified, and the kidney is placed back into the abdominal cavity. Two layer-closure: The peritoneum is closed with absorbable sutures and the skin is closed with surgical clips or sutures. Recover animal according to UCSF Rodent [Anesthesia Guideline](#). Bilateral grafting is not recommended, and must be justified and approved by the IACUC.

**Agents:**

This procedure requires appropriate anesthetic and analgesic agents. All agents administered to animals should be listed in the "Agents" section I of the RIO application.

**Potential adverse effects to be considered:**

Infection, parenchyma bleeding, graft rejection.