

Skin Transplantation in Mice
IACUC Standard Procedure
Effective Date: June 2016



Description of procedure:

Preparation of Donor Tissue: The donor mouse is euthanized per the UCSF Euthanasia Policy for Rodents. The tail is removed and cleaned with 70% ethanol. The skin is removed with a sterile scalpel blade, making a slit around the circumference of the tail and then down the middle. Using sterile forceps, the tail skin is pulled off the bone in one complete piece. Skin is placed in a Petri dish lid with dermis down and cut into square segments. Alternatively, ears and trunk skin can be used as source of grafts. Ears free of ear tags and wounds are cleaned with 70% ethanol and then cut at the base with sterile scissors. In a clean dry Petri dish peel the skin on the back of the ear to use as graft. Discard the skin from the inner side of the ear. Trunk skin can be cleaned with 70% ethanol, cut with scissors and trimmed to the desired sizes. The prepared grafts are kept moist with dermal side down on top of sterile PBS-soaked gauze placed in a Petri dish.

Grafting Procedure: Recipient mice are anesthetized following the UCSF Anesthesia Guidelines. Analgesics are administered in accord with the protocol. The surgical site is shaved or clipped and disinfected with betadine or chlorhexidine. Using sterile curved scissors, an area of skin slightly larger than the skin graft is carefully snipped away, being careful not to cut the panniculus (graft size specified in protocol). The donor skin graft is placed onto the prepared graft bed, and secured with a piece of non-adhering gauze (Adaptec) pad. Sutures can be used at the four corners of the graft to immobilize the graft. The wound is secured with an adhesive strip the mouse is recovered. Between day 5 and 7, engraftment of the donor skin should be verified using visual examination. To do this, mice are anesthetized and the adhesive strips and gauze are lifted to reveal the graft. After 7-14 days, the adhesive strips and gauze can be removed. Transplanted mice will be followed until graft rejection or until a time specified in the protocol, when they will be euthanized for study.

The protocol must identify:

- The size of the skin graft
- Analgesic type, route of administration and frequency
- Antibiotic type route and frequency if necessary
- Experimental endpoint

Agents:

This procedure requires anesthesia, systemic analgesics, and antibiotics. All agents administered to animals should be listed in the "Agents" section of the RIO IACUC protocol.

Adverse Effects:

Adverse effects should be listed in the "Adverse Effects" section of the RIO IACUC protocol.

Examples of potential adverse effects include: Skin graft rejection or infection

Here is link to a video article.

<http://www.jove.com/video/634/murine-skin-transplantation>