

Immunization to Determine Immune Status and Antibody Production in Mice

IACUC Standard Procedure
Effective Date: August 2025

Description of procedure:

Mice are injected intraperitoneally or subcutaneously once with protein or peptide antigens in adjuvant as described in your protocol (e.g., mice are injected IP or SC with the antigen/adjuvant precipitate 1-100 ug protein in 5-10% alum or other suitable adjuvant in 100-200 µL sterile saline). If given subcutaneously, no more than 50 µL may be injected per site.

The purpose of this procedure is to monitor antibody production in response to the foreign antigens. 50-100 µL of blood will be collected at various time points per UCSF blood collection guidelines as specified in the protocol ([sub-mandibular blood collection is preferred](#)) to establish the change in antibody titer. The mice are typically euthanized at the end of the 14-day period per the [UCSF Policy on Euthanasia](#); however, they may be kept alive for a longer period to study long-term immunity. In this scenario, animals are re-immunized after 4-6 weeks and subsequently bled several days after the booster immunization to monitor secondary or memory antibody response. When use of Complete Freund's Adjuvant is justified, CFA is only used for the primary immunization.

The protocol must identify:

- The antigen and adjuvant to be used
- The time points for blood collection
- If secondary immunization will be performed
- Experimental endpoint

Agents:

This procedure requires antigen, adjuvant, and may warrant anesthesia. All non-pharmaceutical agent use must be justified and all agents administered to animals should be listed in the "Agents" section of the RIO IACUC protocol.

Adverse Effects:

Potential adverse effects include: skin irritation or ulceration. Adverse effects should be listed in the "Adverse Effects" section of the RIO IACUC protocol.

Alternatives Considerations Search:

<u>Date of Search</u>	<u>Key Words</u>	<u>Search Site</u>	<u>Years Covered</u>
9/5/2025	Immunization, immune status, antibody production, antigen, Complete Freunds Adjuvant, CFA, adjuvant, alternative, refinement, distress, pain, mouse	PubMed	1965-2025