PURPOSE & Description

The purpose of this SOP is to delineate the minimum standards for the use of Complete Freund’s Adjuvant (CFA) when administered to rodents by injection. CFA is a mineral oil containing a suspension of whole or pulverized heat-killed mycobacteria which can be emulsified together with a solution of the antigen of interest to form a water-in-oil emulsion and is effective in potentiating cellular and humoral antibody responses to injected immunogens.

Scope

This SOP applies to the Principal Investigator (PI) and their laboratory staff.

This SOP applies to the administration of CFA into animals; once injected into the animal CFA no longer poses a hazard.

Responsibilities

PIs are responsible for training of their laboratory staff and continued participation in following safety guidelines.

Definitions

* **Clear time** – The period of time required to allow for excretion of a hazardous chemical before standard handling practices can be used.
* **Safety-engineered sharps** –a non-needle sharp or needle device with a built-in safety feature or mechanisms that effectively reduces the risk of an exposure incident. More information on safety engineered sharps can be found here: [[UF EHS Safety-Engineered Sharps Fact Sheet](https://webfiles.ehs.ufl.edu/Safety_Eng_Sharps.pdf#:~:text=What%20is%20a%20safety-engineered%20sharp%3F%20The%20U.S.%20Occupational,effectively%20reduces%20the%20risk%20of%20an%20exposure%20incident.%E2%80%9D)](https://webfiles.ehs.ufl.edu/Safety_Eng_Sharps.pdf#:~:text=What%20is%20a%20safety-engineered%20sharp%3F%20The%20U.S.%20Occupational,effectively%20reduces%20the%20risk%20of%20an%20exposure%20incident.%E2%80%9D).

Hazard Identification & Control Measures

**Potential Hazards**

* **Physical Hazards**
  + Needlestick
* **Chemical Hazards**
  + Respiratory sensitization
  + Skin corrosion/irritation
  + Acute Toxicity- Oral
  + Serious eye damage/irritation

**Engineering Controls / Administrative Controls**

* Use of an Animal Transfer Station (ATS) or higher engineering control such as a Biosafety Cabinet (BSC) or Chemical Fume Hood (CFH) is required for agent administration
* Syringes used for injection should comply with the details outlined in [UF EHS Safety-Engineered Sharps Fact Sheet](https://webfiles.ehs.ufl.edu/Safety_Eng_Sharps.pdf#:~:text=What%20is%20a%20safety-engineered%20sharp%3F%20The%20U.S.%20Occupational,effectively%20reduces%20the%20risk%20of%20an%20exposure%20incident.%E2%80%9D).
* Rodents should be appropriately restrained prior to administration, as described in the approved Animal Use Protocol (AUP).
* Gloves should be changed frequently, at a minimum when contaminated with CFA or torn.
* Hands and arms should be washed with soap and water upon completion of procedure.

**Personal Protective Equipment (PPE)**

* Appropriate lab attire including skin protection, closed shoes, and eye protection.
* Long-sleeve gown or long-sleeve dedicated lab coat
* Gloves

Procedure

* Prior to working with chemicals in rodents, all work must be described in an approved AUP.

Special Handling and Storage Requirements

* CFA could be shed into the bedding at the injection site; however, this does not pose a hazard and may be treated as regular waste.
* CFA storage and transport containers should be shatter-resistant, rigid, shock-resistant, leak-proof, and made of a non-reactive material which can be easily cleaned and decontaminated in the event of a leak.
* Personal protective equipment as described above must be worn when handling CFA, in addition to any PPE requirements of the animal room. Hands and arms should be washed with soap and water after removing PPE.
* Needles and sharps used with CFA must be disposed of immediately in a sharps container. Do not reuse, bend, or recap needles. Safety-engineered sharps should be used whenever possible.
* An approved solution must be used for decontamination of equipment and areas exposed to CFA (e.g. Peroxigard).

Waste Disposal Procedures

* Contaminated and/or potentially contaminated laboratory PPE and laboratory consumables are disposed of as regular waste.
* Contaminated and/or potentially contaminated bedding and PPE originating within the animal facility are disposed of as regular waste.
* Liquid waste must be discarded through [UF EHS Hazardous Waste Management](https://www.ehs.ufl.edu/forms/hazardous-waste-forms/).
* Rodents euthanized or found dead are disposed of following standard procedures and require no additional handling procedures.

Emergency Response (Spill & Accident Procedures)

**Spills**

* If a small spill occurs, clean up with an approved solution (e.g. Peroxigard). Collect spilled material and clean up material into appropriately labeled, nonmetallic waste container.
* For large spills, call EH&S Chemical and Radioactive Waste Disposal group at 352-392-8400 for clean-up assistance.
* See [UF EHS Spill Response](https://www.ehs.ufl.edu/departments/research-safety-services/hazardous-waste-management/spill-response/#:~:text=Call%20EH&S%20Chemical%20and%20Radioactive%20Waste) for additional information.

Emergency Response (Spill & Accident Procedures) cont.

**Needlesticks**

* Allow to bleed freely. If necessary, control bleeding by applying direct pressure with a sterile gauze or bandage.
* Immediately wash with copious quantities of soap and water.
  + If eyes or mucous membranes are exposed, irrigate the area for at least 15 minutes with water.
* Seek medical treatment.
* Report the incident to the PI/supervisor and Environmental Health and Safety (352) 392-1591 and submit an online Injury /Incident Report (<https://apps.ehs.ufl.edu/incidents/>).

**If an emergency occurs outside of normal work hours, contact the University Police Department at 352-392-1111 or call 911.**

**Emergency Contact Numbers:**

* Principal Investigator: xxx-xxx-xxxx
* Lab Manager: xxx-xxx-xxxx
* Poison Control Center: 800-222-1222
* Emergency: 911
* EH&S: 352-392-1591

**Physical Address on Campus:**

[Add your lab’s address here.]

References

* [[UF EHS Safety-Engineered Sharps Fact Sheet](https://webfiles.ehs.ufl.edu/Safety_Eng_Sharps.pdf#:~:text=What%20is%20a%20safety-engineered%20sharp%3F%20The%20U.S.%20Occupational,effectively%20reduces%20the%20risk%20of%20an%20exposure%20incident.%E2%80%9D)](https://webfiles.ehs.ufl.edu/Safety_Eng_Sharps.pdf#:~:text=What%20is%20a%20safety-engineered%20sharp%3F%20The%20U.S.%20Occupational,effectively%20reduces%20the%20risk%20of%20an%20exposure%20incident.%E2%80%9D)
* [UF EHS Spill Response](https://www.ehs.ufl.edu/departments/research-safety-services/hazardous-waste-management/spill-response/#:~:text=Call%20EH&S%20Chemical%20and%20Radioactive%20Waste)
* [UF EHS Hazardous Waste Management](https://www.ehs.ufl.edu/forms/hazardous-waste-forms/)

Documents and attachments

List applicable forms and attachments here.