

Biological Agent Reference Sheet (BARS)

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BIOLOGICAL AGENT REFERENCE SHEET

Complete Freund's Adjuvant (CFA)

CHARACTERISTICS	
<i>Description</i>	CFA is an immunological agent that increases the antigenic response. It is composed of inactivated and lyophilized mycobacteria (typically <i>Mycobacterium tuberculosis</i>), mineral oil and mannide monooleate.

HEALTH HAZARDS TO RESEARCH PERSONNEL	
<i>Routes of Exposure</i>	Accidental injection, ocular exposure, and dermal exposure.
<i>Signs and Symptoms</i>	<ul style="list-style-type: none"> • Accidental injection: <ul style="list-style-type: none"> – Acute illness: severe swelling, granulomatous inflammation, pain, lesions, abscesses, necrosis, and ulceration of tissues at injection site. Skin maladies and severe pain may persist for years following the exposure incident. Influenza-like symptoms may persist for weeks post exposure. – Chronic illness: persistent fever, neurological abnormalities, tubercloid granulomas, and arthritis. Some cases of permanent organ damage, incurable autoimmune disease and chronic disease potentiating live <i>Mycobacterium tuberculosis</i> following accidental injection have been reported. • Ocular exposure: Severe irritation, scar tissue formation, and temporary/permanent vision impairment • Dermal exposure: hypersensitivity and interference with the Mantoux test following repeated skin exposure.

MEDICAL PRECAUTIONS / TREATMENT	
<i>Treatment</i>	<ul style="list-style-type: none"> • Not responsive to antibiotic therapy. • Skin injuries with a reaction can be treated with steroids.
<i>Surveillance</i>	Baseline TB test and consider annual Mantoux testing.
<i>Emory Requirements</i>	Prior to using CFA, consider alternatives. Adhere to IACUC's Policy on CFA use (see Supplemental References). Report all exposures. Also see the Guidelines for Working with Complete Freund's Adjuvant on the EHSO website.

LABORATORY HAZARDS	
<i>Tasks Associated with Exposure</i>	Mixing emulsions, preparation of doses, injection of animals, handling of contaminated carcasses and/or bedding materials.
<i>Handling</i>	Avoid inhalation, contact with skin, eyes, and clothing, and prolonged or repeated exposure.
<i>Storage</i>	Keep tightly closed when not in use. Store at temperatures between 2 and 8°C. Avoid strong oxidizing agents.

SUPPLEMENTAL REFERENCES	
<i>Emory IACUC Policy</i>	http://www.iacuc.emory.edu/policy/policy1/documents/CF_Apolicy.pdf
<i>BMBL: 5th Edition</i>	http://www.cdc.gov/OD/ohs/biosfty/bmb15/BMBL_5th_Edition.pdf
<i>Sigma-Aldrich MSDS</i>	http://www.sigmaaldrich.com/catalog/DisplayMSDSContent.do
<i>Virginia Commonwealth University</i>	http://www.vcu.edu/oehs/chemical/biosafe/CFAinfo.pdf

CONTAINMENT REQUIREMENTS	
<i>ABSL-2</i>	For work with animals and CFA.

SPILL PROCEDURES	
<i>Small</i>	Notify others working in the lab. Allow aerosols to settle. Don appropriate PPE. Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.
<i>Large</i>	Contact Emory's Biosafety Officer (404-727-8863), the EHSO Office (404-727-5922), or The Spill Response Team (404-727-2888).

EXPOSURE PROCEDURES		
<i>Mucous membrane</i>	Flush eyes, mouth or nose for 15 minutes at eyewash station.	
<i>Other Exposure</i>	Wash area with soap and water for 15 minutes.	
<i>Reporting</i>	Immediately report incident to supervisor, complete an employee incident report in PeopleSoft.	
<i>Medical Follow up</i>	7am-4pm (OIM): EUH (404-686-7941) EUHM (404-686-7106) WW (404-728-6431)	After Hours: OIM NP On Call 404-686-5500 PIC# 50464
	Needle Stick (OIM): EUH (404-686-8587) EUHM (404-686-2352)	Yerkes: Maureen Thompson Office (404-727-8012) Cell (404-275-0963)

DISPOSAL	
<i>Disposal</i>	Dispose of as biomedical waste through Stericycle.

PERSONAL PROTECTIVE EQUIPMENT (PPE)	
<i>Minimum PPE Requirements</i>	At minimum, personnel are required to don gloves, closed toed shoes, lab coat, and ANZI-approved chemical safety goggles prior to working with CFA. Additional PPE may be required depending on lab specific SOPs.
<i>Additional Precautions</i>	Respiratory protection is not required. If respiratory protection is desired, use multi-purpose combination respirator cartridges.