Icahn School of Medicine at Mount Sinai

Toxin Standard Operating Procedure (SOP)[1]

SOP Title	
SOP Number (version)	
IBC registration(s)	

Section 1. Laboratory-specific information	
Building/Room(s)	
Department/Institute	
SOP author	
LSO	
PI name	
PI signature	

Section 2. Toxin hazard information

Toxin[2]	**LD_{50} in µg/kg body weight**	**Potential Hazards**	**Signs/Symptoms of Exposure**	**Occupational Health Requirements[3]**

Section 3. Usage *in vivo*

Dosage in vivo:						**Frequency of administration:**					
Route of administration:	☐	**IM**	☐	**IP**	☐	**Intranasal**					
☐	**IV**	☐	**SQ**	☐	**Oral**	☐	**Topical**				
Routes of shedding:	☐	**Urine**	☐	**Feces**	☐	**Respiratory**					
☐	**Blood**	☐	**Saliva**	☐	**None**	☐	**Other**				
Anticipated *in vivo* half-life:											

Section 4. Other hazards

☐ **Sharps Hazards**	
☐ **Other Biological Hazards**	
☐ **Chemical Hazards**	
☐ **Radiological Hazards**	

[1] Please refer to Section VIII-G, *Toxin Agents*, and Appendix I, *Guidelines for Work with Toxins of Biological Origin*, of the *Biosafety in Microbiological and Biomedical Laboratories* (*BMBL*, 6th Edition) for guidance on handling and use of toxins of biological origin, including appropriate physical and chemical inactivation procedures for specific toxins.

[2] Biological toxins should be described in the corresponding IBC registration.

[3] Please list vaccinations or antitoxins required or recommended for this toxin.

Section 5. Personal Protective Equipment (PPE)					
☐	Laboratory Coat	☐	Fluid-Resistant Gown	☐	Surgical Mask
☐	Gloves	☐	Shoe Covers	☐	N95 Respirator
☐	Eye Protection	☐	Fluid-Resistant Sleeves	☐	PAPR
☐	Other PPE				

Section 6. Equipment and Engineering Controls		
☐	Biological Safety Cabinet[4]	
☐	Chemical Fume Hood	
☐	Down Draft Table	
☐	Cage Changing Station	
☐	Individually Ventilated Caging	
☐	Static Caging	
☐	Disposable Caging	
☐	Centrifuge	
☐	Aerosol-Generating Equipment	
☐	Other equipment	

Section 7. Biological Waste Management				
☐	Steam Sterilizer (Autoclave)		Location:	
☐	Chemical Disinfectant(s)		Location:	
☐	Other Disinfectant(s)		Location:	

[4] Researchers should not handle dry powder toxins inside BSCs that recirculate HEPA-filtered air back into the laboratory. BSC HEPA filters must be considered contaminated with toxin.

Section 8. Toxin Inactivation			
Method[5,6]	**Treatment Time**	**Dilution**	**Location**

Section 9. Disposal practices for toxin-contaminated waste, including carcasses

Section 10. Transport Procedure(s)

[5] Toxin inactivation methods include steam autoclave, dry autoclave, 1:10 dilution of household bleach (5 - 6 % sodium hypochlorite), Quaternary ammonium disinfectant, Peroxide-based disinfectant, 2.5% sodium hypochlorite with 0.25 N sodium hydroxide, etc.

[6] Autoclaving can be used with protein toxins (ricin, botulinum toxin, and SEB), but should not be used with low molecular weight toxins, including T-2 Mycotoxin, Brevetoxin, Microcystin, Tetrodotoxin, Saxitoxin, Palytoxin, conotoxins, and domoic acid.

Section 11. Spill Response Procedure[7,8]

Section 12. Protocol Procedure

[7] Spills involving dry toxin powder have an increased risk of inhalational exposure. Spill response PPE should include respiratory protection, gloves, safety glasses or goggles, and lab coat.

[8] Laboratorians must immediately evacuate the laboratory area for a spill of dry toxin powder outside the BSC.

Section 13. Protocol Procedure Continued (attach additional sheets if necessary)

Section 14. Documentation of training and understanding.

The Principal Investigator must ensure that all laboratory personnel receive training on the content of this SOP.

By signing this SOP, I confirm that I have read and understand the content of this SOP.

Name	Signature	Date

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