Auburn University Risk Management and Safety **Standard Operating Procedure**	*Effective Date:* 02/15/2017		*SOP Number:* AP – 104 - 1
	Supersedes AP-104	*Superseded:*	*Page:* **1 of 4**
Subject: **Care of Mice and Rats Dosed with Streptozotocin**	*Approval* Donna Tucker — Risk Management and Safety		
	Approval: P. E. Lyndon, DVM — Lab Animal Health		

I. PURPOSE

To protect personnel while they are caring for mice and rats after the animals have been dosed with streptozotocin.

II. SCOPE

This procedure applies to managing mice and rats, their bedding, and other potentially contaminated materials in animal care facilities after the animals have been dosed with streptozotocin.

III. GENERAL GUIDELINES

Streptozotocin is included in the NIOSH List of Antineoplastic and other Hazardous Drugs in Healthcare Settings, 2016. Many of these drugs are cytotoxic, the majority are hazardous to males or females who are actively trying to conceive, women who are pregnant or may become pregnant, and women who are breast feeding. These drugs are an occupational hazard to healthcare workers and should be handled with recommended engineering controls and personal protective equipment (PPE). **Please refer to the Auburn University Fetal Risk Policy at: https://sites.auburn.edu/admin/universitypolicies/Policies/FetalRiskPolicy.pdf**

Follow all IACUC training requirements at https://cws.auburn.edu/OVPR/pm/compliance/iacuc/training

All cage changes performed up to 72 hours (3 days) after the final dose of streptozotocin AND until contaminated bedding is changed will follow these procedures.

Facility Managers will review the animal care SOP with animal care technicians prior to the employees working with animals that have been dosed with hazardous drugs or hazardous chemicals.

IV. MANDATORY INVESTIGATOR ITEMS

- Post signage on animal housing room door warning that the animals have been dosed with a hazardous drug - streptozotocin. (Example included with this guideline).
- All cage changes performed up to 72 hours (3 days) after the final dose of streptozotocin AND until contaminated bedding is changed will follow these procedures. Therefore Investigators must label cage cards with the dates and times of administration and coordinate with the facility manager.
- Place a copy of the drug's Safety Data Sheet (SDS) in the Notebook outside the animal housing room.

V. SAFE HANDLING PROCEDURES

PPE Requirements

Cover open cuts or irritated skin with an impervious bandage during animal care.

All personnel working with animals that have been dosed with streptozotocin shall don the following PPE:

- Closed front disposable gown with long sleeves and elastic or knit cuff.
- Nitrile gloves. Gloves should be long enough to cover gown cuffs.
- Safety glasses, goggles, or face shields. If these items will be reused they must be washed with water and detergent, and stored in a clean place.
- Disposable shoe covers.
- Disposable hair bonnet
- Full Face Respirator with N100 or multi-gas/vapor P100 cartridges if engineering ventilation controls are unavailable. Safety glasses are not needed while wearing a full face respirator.

Animal Care Procedures

- House animals that have been dosed with streptozotocin in ventilated racks during dosing and for 72 hours (3 days) post dosing. If ventilated racks are not available contact Risk Management and Safety (334-703-8186) https://cws.auburn.edu/rms regarding respirator use. Dust/surgical masks do not provide protection.
- Open cages in a Biological Safety Cabinet or a chemical fume hood that is assigned to the room. This includes opening cages for animal care, cage changing, or for experiment related reasons. If this is not possible, contact Risk Management and Safety (334-703-8186) https://cws.auburn.edu/rms regarding respirator use. Dust/surgical masks do not provide protection.
- Perform cage dumping in a Biological Safety Cabinet or a chemical fume hood (or wear respirator as stated above). Dump bedding and leftover feed into a yellow waste container lined with a bag. Yellow container and bag will be supplied by RMS. To order waste containers and bags contact Steven Nolen at 703-3859 or Billy Cannon at 703-0419 at least three days prior to beginning of experiment.
- After dumping shavings, spray cage interiors and exteriors, feeders, water bottles and other cage parts with a 10% bleach solution and allow to air dry or allow at least 5 minutes of contact time then wipe out and place wipe into the waste bag.
- Mop animal room floor and wipe down all surfaces including knobs and handles with a 10% bleach solution after cage changes have been completed. Note: When animals are housed in micro-isolator caging a Full Face Respirator with N100 or multi-gas/vapor P100 cartridges is required during aerosol producing procedures including room cleaning.
- The facility manager will verify the date and time the last dose of streptozotocin was given to the animals. Standard room care can resume upon completion of the cage change that takes place at least 72 hours (3 days) after the animals receive their last verified dose of streptozotocin.

Disposal Procedures

- All soiled bedding, uneaten feed, PPE etc. will be bagged and placed in a yellow container marked "Chemo Waste Only" and managed by Risk Management and Safety (RMS). Risk Management will provide bags and containers. To seal waste bags gooseneck and securely tape the bag. Place sealed bag into yellow container. Schedule yellow container waste pickups by calling Steven Nolen at 703-3859 or Billy Cannon at 703-0419.
- Water remaining inside the animal's water bottle can be poured into the drain.
- Double bag animal carcasses and place in a cooler for RMS pickup and disposal. Schedule carcass pickups by submitting a waste pickup request via AIM at: https://aim.auburn.edu/aim
- Unused or surplus stocks of Streptozotocin and waste resulting from the spill of Streptozotocin must be disposed of through RMS Chematix **https://chematix.auburn.edu/Chematix/**

Animal Bite Procedures

- Put the animal back in its cage.
- Wash the wound for 15 minutes with soap and vigorously running water directed at the wound.
- Inform your supervisor. Employees (including student employees) complete a Report an On-The-Job-Injury Claim at https://cws.auburn.edu/rms/pm/claims .
- Seek medical attention. Take a copy of the SDS with you to aid in the evaluation of exposure to Streptozotocin.

References:

Ann. Occup. Hyg., Vol. 57, No. 4, pp. 456–469, 2013 © The Author 2012. Published by Oxford University Press on behalf of the British Occupational Hygiene Society doi:10.1093/annhyg/mes087 456
Evaluation of Decontamination Efficacy of Cleaning Solutions on Stainless Steel and Glass Surfaces Contaminated by 10 Antineoplastic Agents Thomas Queruau Lamerie,1 Susanne Nussbaumer,2,5 Bertrand Décaudin,1,3* Sandrine Fleury-Souverain,2 Jean-François Goossens,4 Pascal Bonnabry2,5 and Pascal Odou1,3

Cleaning surfaces contaminated w/ Chemo drugs
CDC.gov http://www.cdc.gov/niosh/topics/antineoplastic/sampling.html
Decontamination and Deactivation of Antineoplastic Agents

Girotti, Nicole, Dr. "Guidelines for the Use of Streptozotocin in Animal Research." Guideline. Western University, 2015.

Management and Disposal Guidelines for U-Listed Antineoplastic (Chemotherapy) Waste. Retrieved from http://des.nh.gov/organization/commissioner/p2au/pps/hs/pphfp/documents/toxic.pdf

NIOSH [2016]. NIOSH list of antineoplastic and other hazardous drugs in healthcare settings, 2016. By Connor TH, MacKenzie BA, DeBord DG, Trout DB, O'Callaghan JP. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication Number 2016-161 (Supersedes 2014-138)

Prudent Practices in the Laboratory: Handling and Disposal of Chemicals (1995). Retrieved from http://www.nap.edu/openbook.php?record_id=4911&page=232

Robert, Jacques, and Luca Gianni." Pharmacokinetics and Metabolism of Anthracyclines." *Cancer Surveys* Volume 17 (1993) Pages: 219-252.

Streptozocin; SDS Sigma-Aldrich, Saint Louis, MO, Revision Date August 9, 2016, http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=US&language=en&productNumber=S0130&brand=SIGMA&PageToGoToURL=%2Fcatalog%2FAdvancedSearchPage.do%3FTabSelection%3DRelatedInformation (Accessed 8/25/2016)

United States. Department of Health and Human Services. National Institute for Occupational Safety and Health. *NIOSH Alert: Preventing Occupational Exposures to Hazardous Drugs in Health Care Settings*. DHHS (NIOSH) Publication No. 2004-165

United States. Department of Health and Human Services. National Institute for Occupational Safety and Health, *Personal Protective Equipment for Healthcare Workers Who Work with Hazardous Drugs*, 2009.

Zanosar (Generic Name: Streptozocin); Package, Insert Drugs.com https://www.drugs.com/monograph/zanosar.html (accessed 8/25/2016)

WARNING!

TOXIC CHEMICAL HAZARD

Carcinogen (Topical & Respiratory)

Reproductive Hazard (Mutagen)

Other (Specify): Kidney Toxin

See Safety Data Sheet

Principal Investigator: _____

Agent(s)/Concentration: Streptozotocin Dose: _____

Date/Time Administered: _____ Route: _____

Required PPE:

- nitrile gloves, closed-front gown, shoe covers, hair cover, and face shield, safety glasses or goggles
- Open cages in a biological safety cabinet or chemical fume hood.
- Dump bedding in biological safety cabinet or chemical fume hood.
- Don Full Face Respirator with N100 or P100 multi-gas/vapor cartridges if engineering ventilation controls are unavailable.

Emergency Contact	Name	Work Phone	Afterhours Number
Primary			
Secondary			