Use of Streptozotocin (STZ)

1.0 Purpose and Scope:

To provide guidance for the use of Streptozotocin (STZ) in the laboratory and animal facility environment. STZ is used at UW-Madison in animal research for a variety of research applications, primarily Type 1 diabetes research.

2.0 Definitions:

Teratogenic: a substance or agent that causes developmental malformations
Carcinogenic: cancer-causing substance or agent
Cytotoxic: a substance or agent that is toxic to cells

3.0 Guidance:

Streptozotocin is considered a Reproductive Toxin and/or a Teratogen.

4.0 Precautions:

The following information can be used to complete the Safety section of your animal protocol.

1. **Containment preparation** – (Containment equipment required for the preparation of the chemical): (Select one of the following)
   - Fume Hood
   OR
   - Ducted Biosafety Cabinet (BSC)

2. **Containment animals** – (Containment equipment required for chemical administration and handling animals after exposure to the chemical): (Select one of the following)
   - Fume Hood
   OR
   - Ducted Biosafety Cabinet (BSC)
   
   **NOTE:** For Rodents: Microisolators or other containment type housing is required.

3. **PPE needed** - (for handling live animals, carcasses or animal waste/dirty bedding): (Select all of the following)
   - Exam gloves – nitrile
   - Safety glasses/goggles
   - Lab coat or disposable gown

4. **Waste Disposal**: (Select the following and include additional information for Other)
   - Bag animal waste/dirty bedding and place sealed bag in secondary container and place secondary container in regular trash.
- Other: Signage is required on each individual cage containing the health hazard symbol and “Agent, End date and Disposal method”.*Cage signage available at www.ehs.wisc.edu

5. Carcass disposal: *(Select the following)*
- No special precautions needed for disposal use facility standard method.

6. Chemical human risk: *(Add the following)*

STZ is carcinogenic and cytotoxic. STZ is teratogenic and is associated with embryonic and neonatal developmental delays. The toxic effects on fertility are manifested through disruption of testicular function and ovarian disruption. Pregnant and lactating women should avoid exposure to STZ and animals that have been administered STZ. Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled. May be harmful if swallowed. May be harmful if absorbed through skin. May cause skin irritation. May cause eye irritation.

5.0 References:

http://www.vcu.edu/oehs/chemical/biosafe/STZinfo.pdf

“Streptozotocin SDS”

6.0 Document Revisions:

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<tr>
<th>Revision Number</th>
<th>Revision Date</th>
<th>Description of Revision</th>
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<tr>
<td>1</td>
<td>12/21/11</td>
<td>PPE and waste handling clarification</td>
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<tr>
<td>2</td>
<td>9/25/12</td>
<td>Removed “required” from 3.4 heading</td>
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<td>3</td>
<td>2/27/13</td>
<td>Clarified waste handling</td>
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<td>4</td>
<td>11/6/15</td>
<td>Simplified Purpose and Scope; Updated Guidance and Precautions to align with Arrow; Removed post dose handling requirements; Removed Spill information; Updated References.</td>
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