Use of 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP)

1.0 Purpose and Scope:

To provide guidance for the use of MPTP in the laboratory and animal facility environment. MPTP is used at UW-Madison in animal research for a variety of research applications.

2.0 Definitions:

Neurotoxic: Toxic to the nervous system.

3.0 Guidance:

MPTP is not 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 the following and Other including the information listed for Other)*
   - Fume Hood OR Externally Ducted Biosafety Cabinet
   - Other – A written exposure plan must be in place and Selegiline must be available in the event of an exposure. Selegiline supple must be checked monthly to ensure good condition and that it is not expired. Selegiline must be located in an area that is immediately accessible from all areas where MPTP is used. Selegiline can have serious or fatal interactions with common foods and medications; these foods and medications must be discontinued 24 hrs prior to beginning work with MPTP. (Attach appendix 1 for foods of concern.) Before starting any medication or starting work with MPTP, inform your physician that you work with MPTP and may be required to take Selegiline for an exposure.

2. **Containment animals** – (Containment equipment required for chemical administration and handling animals after exposure to the chemical): *(Select the following and include the additional information for Other)*
   - Fume Hood OR Externally vented Biosafety Cabinet
   - Other: Animals must be chemically or physically restrained prior to MPTP administration.
     For Rodents: Microisolator containment caging is required (disposable caging is recommended).

3. **PPE needed** - (for handling live animals, carcasses or animal waste/dirty bedding): *(Select the following and include additional information for Other)*
- Exam gloves – nitrile OR Exam gloves – latex
- Safety glasses/goggles
- Lab coat or disposable gown
- Other – Two pairs of chemical resistant gloves. Frequent glove changes are recommended. Mucosal protection (N95 respirator) is required when there is a high splash potential or when handling animals outside of a fume hood/ducted BSC.

**NOTE:** For rodents: a disposable lab coat with Tyvek sleeves. For Primates: A Tyvek jumpsuit.

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)*
   MPTP is considered very hazardous and all employees must be properly trained by their PI/Supervisor prior to starting work with MPTP. MPTP is a neurotoxin that causes permanent symptoms of Parkinson's disease. Injection of MPTP causes rapid onset of Parkinsonism, hence, quick treatment of exposures to MPTP with selegiline will prevent the development of Parkinson’s symptoms.

5.0 **References:**


“1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine SDS”

6.0 **Document Revisions:**

<table>
<thead>
<tr>
<th>Revision Number</th>
<th>Revision Date</th>
<th>Description of Revision</th>
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<tbody>
<tr>
<td>1</td>
<td>12/21/11</td>
<td>PPE clarification</td>
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<tr>
<td>2</td>
<td>7/18/12</td>
<td>Selegiline interactions, amended cage cleaning</td>
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<tr>
<td>3</td>
<td>9/25/12</td>
<td>Removed “required” from 3.4 heading</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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</table>
Appendix I

Selegiline Food Interactions

☐ Cheese (strong or aged)
☐ Sour cream
☐ Wine (particularly red)
☐ Champagne
☐ Figs
☐ Raisins
☐ Bananas
☐ Avocados
☐ Bean curd
☐ Yogurt
☐ Papaya products
☐ Meat tenderizers
☐ Fava beans
☐ Protein extracts
☐ Dietary supplements
☐ Caffeine
☐ Beer
☐ Herring
☐ Anchovies
☐ Caviar
☐ Shrimp paste
☐ Liver (particularly chicken)
☐ Sausage
☐ Chocolate
☐ Soy sauce

Food and drug restrictions should begin at least 24 hours prior to beginning work with MPTP and is continued until risk of exposure is over.