Use of Dimethylbenzanthracene (DMBA)

1.0 Purpose and Scope:

To provide guidance for the use of Dimethylbenzanthracene (DMBA) in the laboratory and animal facility environment. DMBA is used at UW-Madison in cancer research to initiate tumors.

2.0 Definitions:

- *Carcinogen*: cancer-causing substance or agent
- *Lipophilic*: the ability to dissolve or attach to lipids (fats)
- *Neoplastigen*: a substance or agent that contributes an abnormal proliferation of cells that may be benign, pre-malignant (carcinoma in situ) or malignant (cancer).
- *Tumorigen*: An agent that directly causes tumors to form.
- *Teratogen*: a substance or agent that causes developmental malformations

3.0 Guidance:

DMBA 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 the following)*
   - Fume Hood

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

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

4. Waste Disposal: *(Select both options 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](http://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)*
DMBA is a carcinogen, neoplastigen, tumorigen, and teratogen that can cause cancer and heritable genetic damage. DMBA is a yellow powder. Avoid contact with skin. Wear PPR when handling. Aerosolization or excretion in the feces/urine, blood or other surfaces of animals injected with DMBA is minimal and poses little risk. Because of the high level of carcinogenicity of DMBA, precautions are warranted when handling animals and their waste. Pregnant and lactating women should avoid exposure to DMBA and animals that have been administered DMBA.

5.0 References:

“Chemical Safety Practices Recommendations DMBA” NIH April 2014

“DMBA 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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<tr>
<td>3</td>
<td>2/27/13</td>
<td>Clarified waste handling</td>
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<td>4</td>
<td>11/9/15</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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