# Mouse Ulcerative Dermatitis

This SOP (Standard Operating Procedure) describes the procedure for reviewing and treatment of mouse ulcerative dermatitis. It is approved by the NUS Institutional Animal Care and Use Committee (IACUC). Any deviation must be approved by the IACUC in advance.

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## 1. INTRODUCTION

Ulcerative dermatitis is a common skin condition affecting laboratory mice. The cause is unknown but is likely to be multifactorial with an epigenetic component. Ulcerative dermatitis may be spontaneous (in C57BL/6 and related strains) or may occur secondary to a break in the skin.

Skin lesions tend to be pruritic, progressive and poorly treatable. They are commonly located at the nape, in the cervical area, between the scapula, in the axillary area or a combination of these. Small shallow lesions may progress to excoriation, ulceration and skin degloving.

Prognosis for a mouse with moderate to severe ulcerative dermatitis (Refer to Appendix A – Classification for Ulcerative Dermatitis) is poor. Secondary complications that can occur due to this condition include secondary bacterial infection, skin contractures interfering with the animal’s normal functions and poor breeding capabilities.

## 2. PROCEDURES

**a.** Mice found with ulcerative dermatitis must be identified and reported following routine sick animal reporting procedure (Refer to SOP #507.01 - Sick Animal Reporting Procedure). Animals with severe lesions should be separated immediately.
b. A veterinary staff member will contact the Principal Investigator (PI) or designated alternate to provide information on the condition and determine which treatments are compatible with their study.

c. If scientific justification has been provided, showing that no treatment is appropriate for the study requirements, animals must be monitored closely to ensure that their well-being is not compromised and they are not exhibiting signs of pain and distress (See Section 3 on ‘Humane Endpoints’). Animals showing signs in section 3 must be euthanized.

d. If the PI does not need the affected animal for further research OR if the lesions are too severe (See Section 3 and Appendix A ‘Classification of Ulcerative Dermatitis), the animal must be euthanized.

e. If the animal has mild to moderate ulcerative dermatitis (See Appendix A – Classification of Ulcerative Dermatitis) and the PI has opted to treat the animal, recommended treatment will be an antibiotic ointment for dry lesions; antibiotic powder for moist/wet skin lesions. Other treatment: green clay therapy and Maropitant citrate upon consultation with a CM vet.

f. Any lesions around the eye will be treated with an antibiotic ophthalmic ointment.

g. Mice undergoing treatment will be reassessed after 14 days. If they start showing symptoms consistent with those described in Section 3, they must be euthanized.

3. HUMANE ENDPOINTS

a. Ulcerative lesion (exceeding 3mm in diameter) on face involving sensory areas (eyes, ears and oral cavity).

b. Ulcerative lesions that impair animal’s normal functions including ambulation, grooming, eating and drinking.

c. Loss of >20% body weight of age matched control animal.

d. Self mutilation and body deformities due to presence of lesions.

e. Skin lesions classified as severe or moderate (see Appendix A) or unresponsive to 14 days treatment.

f. Lesions>1.5cm in diameter.

4. REFERENCES


- University of Michigan, Unit for Laboratory Animal Medicine, *Guidelines for Ulcerative Dermatitis in Mice*.

- The University of British Columbia, Animal Care Committee, *Guideline on Murine Ulcerative Dermatitis*. 
• Nicole Martel, Cindia Careau. Techtalk Vol16/No.5 October 2011, Green Clay Therapy for Mice Topical Dermatitis
• Misty J Williams, Jodi A. Carlson Scholz, Caroline Zeiss, Yanhong Deng, Steven R Wilson, Rebekah Franklin and Peter Smith. 2011. Maropitant Citrate for Treatment of Ulcerative Dermatitis in Mice with a C57BL/6 Background. JAALAS Vol.50, No2 Pages 221-226.
5. APPENDIX

Appendix A

Classification of Ulcerative Dermatitis

<table>
<thead>
<tr>
<th>Mild:</th>
<th>Moderate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any ulcerative lesion smaller than 1 cm in diameter, but not on head or extremities.</td>
<td>Any ulcerative lesion up to 1.5cm in diameter.</td>
</tr>
<tr>
<td>Any lesion not characterized by scratching.</td>
<td>Any lesion involving the head or extremities.</td>
</tr>
<tr>
<td></td>
<td>Any lesion that is continually scratched.</td>
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</tbody>
</table>

This type of ulcerative dermatitis may resolve naturally without treatment.

This type of ulcerative dermatitis seldom resolves naturally and requires treatment or euthanasia.

<table>
<thead>
<tr>
<th>Severe:</th>
<th>Animals with such lesions are usually unresponsive to treatment. Hence, they will be recommended for euthanasia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any ulcerative lesion larger than 1.5cm in diameter.</td>
<td>Ulcerative lesion &gt;0.3cm on face</td>
</tr>
<tr>
<td>Multiple ulcerative lesions.</td>
<td>Ulcerative lesion &gt;0.3cm on face</td>
</tr>
</tbody>
</table>