
 <b>University of Zurich</b> Institute of Laboratory Animal Sciences	<b>Standard Operating Procedure</b>  <b>SOP</b>	<b>Page 1 of 6</b>
<b>Date: 08.11.2022</b>	<b>Scoring Post-Application of Binder Proteins</b>	<b>LTK-RES-41-C-EN</b> <b>Version: C</b>

<b>This SOP replaces:</b>	Version: B
<b>Reason for Change:</b>	Response to veterinary Office Zurich
<b>Related SOPs:</b>	SOP-LTK-TRT-7 iv injection SOP-LTK-TRT-10 ip injection SOP-LTK-TRT-11 sc injection SOP-LTK-RES-3 Stereotactic Injection SOP-LTK-RES-4 Implantation of osmotic minipumps SOP-LTK-TRT-43 Buprenorphine analgesia
<b>Indication of Use:</b>	Application of proteinaceous binder molecules (e.g. antibodies, nanobodies, DARPIs, cytokines, etc ) other than in chow and water to mice
<b>Aim of SOP:</b>	This SOP describes how animals have to be observed and their health status scored after application of proteinaceous binder molecules through injection, feeding or other routes of application.
Generated at: 07.11.2022	Checked and approved at: 08.11.2022
by: Michal Beffinger	by: Johannes vom Berg

**Responsible Persons:** Animal experimentators with Modul 1 and registered on permit

**Method:** Observation, weight

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**Units and Formulas:** g, scoring points

**1. Parameters**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Reaction to stimulus</li> <li>• Minimal Mouse Grimace Scale</li> <li>• Injection site/intervention site inflammation/ulceration/necrosis</li> <li>• Respiration</li> <li>• Fur/body</li> <li>• Feces</li> <li>• Blood in cage</li> </ul> | <ul style="list-style-type: none"> <li>reaction to hand in the cage</li> <li>see attachment B</li> <li>check for</li> <br/> <li>check frequency</li> <li>check coat appearance and posture</li> <li>check consistency</li> <li>check cage walls and bedding</li> </ul> |
|---|--|

**2. Score points (description)**


Score points	Stimulus reaction	Grimace Scale	Injection site	Respiration	Fur/body
<b>0</b>	immediate movement	0	normal	normal	normal
<b>1</b>	normal but after many stimuli	1	inflamed	increased	dull, unkempt coat
<b>2</b>	slow movement after many stimuli	2	ulcerating	heavy	pilo erection
<b>3</b>	no reaction after stimuli	-	necrosis	very heavy/ dyspnea	hunched posture, sunken flanks, loss of skin turgor

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<b>Machine:</b> <ol style="list-style-type: none"> <li>1. Scale</li> <li>2. Laminar flow/changing station</li> </ol>
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<b>Safety:</b> Follow the rules of the animal facility and "Einschliessungsverordnung"
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<b>Method Description:</b> <b>repeat this procedure 4 hours after first dosing, then daily:</b> <ol style="list-style-type: none"> <li>1. The cage is placed under a sterile hood/changing station. A second empty cage is placed next to the cage.</li> <li>2. Mice are observed with regard to the scoring scheme (above and attachments), cage checked</li> <li>3. Reaction to hand in cage is observed</li> <li>4. Individual mice are lifted and placed on the grid. Whenever possible, cup handling is used instead of lifting mice by the tail.</li> <li>5. The mice are checked (injection site, fur, body, breathing)</li> <li>6. The weight is measured.</li> <li>7. The animal is placed in the new cage.</li> <li>8. Weight and scoring are recorded.</li> <li>9. The next animal is scored</li> <li>10. All animals are returned to homecage</li> </ol>
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**Analysis:**

Score:

- 0 → severity 0
- 1 → severity 1 apply analgesia (see SOP LTK-TRT-43 Buprenorphine analgesia)  
euthanize within 24h
- 2 → severity 2 euthanize immediately
- 3 → severity 3 euthanize immediately

**Documentation:**

1. Fill-in the scoring sheet Attachment A
2. Put severity score in iRATS


**Problem management:**

In case of different observations divergent from normal physiology, contact the group leader or a vet

**Literatur:**

1. Template of the KVET Zurich (Scoresheet Veta Vorlage)
2. Langford, D.J., Bailey, A.L., Chanda, M.L., Clarke, S.E., Drummond, T, E., et al. (2010). Coding of facial expressions of pain in the laboratory mouse. Nature Methods 7, 447-449



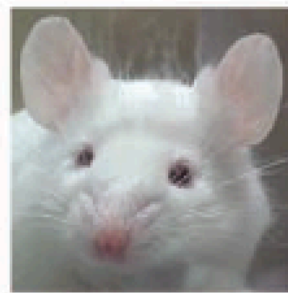
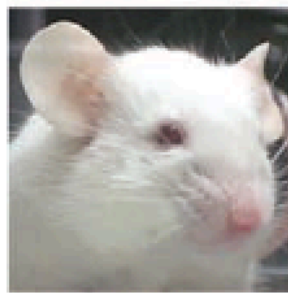
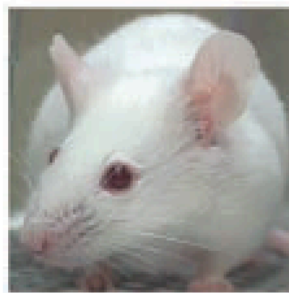
 <p><b>University of Zurich</b><sup>UZH</sup> Institute of Laboratory Animal Sciences</p>	<p align="center"><b>Standard Operating Procedure</b></p> <p align="center"><b>SOP</b></p>	<p align="center">Page 6 of 6</p>
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**Attachment B**  
**Minimal Mouse grimace scale**

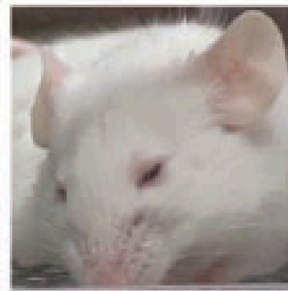
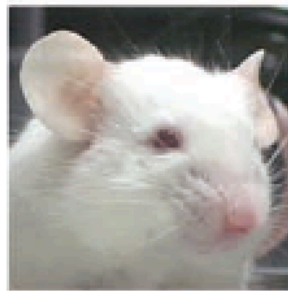
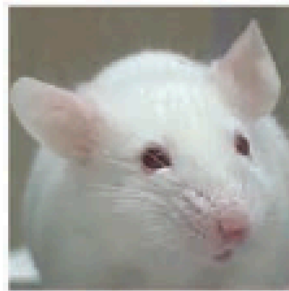
**0**

**1**

**2**



Nose bulge



Cheek bulge