



## HOW TO USE ANESTHESIA ON SMALL ANIMALS

<p style="text-align: center;"><b>Visual inspection of the anesthesia apparatus</b></p> <ul style="list-style-type: none"> <li>• Inspect the anesthesia equipment before starting to use it</li> <li>• When you start, the vaporizer should be filled to its max; if not, report</li> <li>• Make sure the anesthesia line and the exhaust are plugged into the chamber</li> <li>• The exhaust hole should not be completely covered with tape</li> <li>• Faults must be logged in MR logbook and reported to Kai or Tina</li> </ul>
<p style="text-align: center;"><b>Initialization of anesthesia in the anesthesia chamber</b></p> <ul style="list-style-type: none"> <li>• Place a clean paper towel on the bottom of the chamber for animal to lie on</li> <li>• Connect gas lines into the wall (oxygen O<sub>2</sub> + nitrous oxide N<sub>2</sub>O )</li> <li>• Turn on the flow of O<sub>2</sub> (300-500 cc/min) to fill the tubes and chambers</li> <li>• Put the animal in the anesthesia chamber and let it get a few min of O<sub>2</sub></li> <li>• Turn on the anesthetic gas Isoflurane to 3-4%, Sevoflurane to 6-8 %</li> <li>• If needed, turn on the flow of N<sub>2</sub>O</li> </ul>
<p style="text-align: center;"><b>Moving the animal over to a mask</b></p> <ul style="list-style-type: none"> <li>• When the animal is breathing slow and steady, move it over to a mask, either on the preparation table for tail-vein cannulation or MRI table for scanning</li> <li>• Regulate down the concentration of anesthetic gas (Isoflurane 1-2%)</li> <li>• Adjust the gas flow (400 cc/min for rats, 100 cc/min for mice)</li> <li>• Give 50% O<sub>2</sub> during maintenance of anesthesia</li> </ul>
<p style="text-align: center;"><b>Maintaining anesthesia during scanning</b></p> <ul style="list-style-type: none"> <li>• Monitor animal respiration and temperature (see separate note for details)</li> <li>• <u>Respiration</u> should be 30-70 for rats and 50-100 for mice</li> <li>• Regulate the breathing rate by increasing/decreasing Isoflurane level</li> <li>• <u>Temperature</u> should be at 37.0 °C for rats and 37.5 °C for mice</li> <li>• Regulate temperature by increase/decreasing T setting on the water heater</li> </ul>
<p style="text-align: center;"><b>To end anesthesia</b></p> <ul style="list-style-type: none"> <li>• Turn off the evaporator</li> <li>• Turn off N<sub>2</sub>O</li> <li>• Let the animal breathe pure O<sub>2</sub> (either in the chamber or mask)</li> </ul>
<p style="text-align: center;"><b>Animal care after anesthesia</b></p> <ul style="list-style-type: none"> <li>• Monitor the animal at least 5 min to make sure it recovers well</li> <li>• Provide water as the anesthetic may dehydrate the animal</li> <li>• Keep the animal warm</li> <li>• Do not leave unconscious animal in the cage as the mates might pick on him</li> </ul>
<p style="text-align: center;"><b>Disconnecting gases and turning off anesthesia</b></p> <ul style="list-style-type: none"> <li>• Disconnect the gas lines from the wall</li> <li>• Remember to disconnect both O<sub>2</sub> and N<sub>2</sub>O – If lines are left connected overnight, the user will be charged for gas leaked</li> </ul>
<p style="text-align: center;"><b>Filling up the evaporator with liquid anesthetic</b></p> <ul style="list-style-type: none"> <li>• Make sure the flow is off. Unscrew the small cap at the fill port, insert the liquid transfer tube and carefully pour Isoflurane/Sevoflurane into the basin</li> <li>• Once the gage shows full, stop filling, remove the transfer tube, position back the cap, and tighten the screw</li> <li>• Wipe off any extra liquid and wash your hands</li> </ul>
<p style="text-align: center;"><b>Cleaning the anesthesia chamber and the operation table</b></p> <ul style="list-style-type: none"> <li>• Spray with Desidos solution, let it act for 10 min, then wipe off</li> <li>• Spray with H<sub>2</sub>O and wipe off with paper towel</li> </ul>