

## INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC)

### Guidelines for Blood Collection in the Guinea Pig

The following information represents MGH IACUC-approved general laboratory guidelines for blood collection in guinea pigs.

1. Too much blood collected at any one time may cause hypovolemic shock, physiological stress and even death. If small volumes are collected too frequently, anemia can result.
2. Generally, 15% of the total blood volume can be collected at one time every 2-4 weeks or 1% of the total blood volume can be collected at intervals of 24 hours or more. Total blood volume can be calculated as approximately 6% of the animal's body weight.
3. The estimated volume at exsanguination is approximately half of the total blood volume.

#### EXAMPLE

Average Adult Weight	Total Blood Volume	Maximum Sample Every 2-4 Weeks	Maximum Sample Every 24 h	Estimated Exsanguination Volume
800 grams	48.0 ml	7.2 ml	0.48 ml	24.0 ml

4. Important considerations when collecting blood
  - Collect the minimum amount of blood necessary
  - The choice of anesthetics is an important consideration when collecting blood in hamsters due to physiologic effects of the anesthetic. Consult with your [facility veterinarian](#).
5. The following table provides information on the collection sites available for use.
  - Consult with your [facility veterinarian](#) for advice on the best site to use for your experimental model.

- Training is available if you are not experienced in blood collection techniques. Contact your [facility veterinarian](#) for more information.

Collection Site	Advantages	Disadvantages
<b>Orbital Sinus or Plexus</b>	<ul style="list-style-type: none"> <li>• Large volumes of blood can be collected</li> </ul>	<ul style="list-style-type: none"> <li>• Anesthesia is required</li> <li>• Requires training</li> </ul>
<b>Lateral Saphenous Vein</b> ( <a href="#">demonstration of procedure</a> )	<ul style="list-style-type: none"> <li>• Anesthesia not required</li> <li>• Excellent technique for serial blood sampling</li> <li>• Moderate volume of blood can be collected</li> </ul>	<ul style="list-style-type: none"> <li>• Requires some specialized training</li> <li>• Some specialized equipment required</li> </ul>
<b>Cephalic vein</b>	<ul style="list-style-type: none"> <li>• Anesthesia not required</li> </ul>	<ul style="list-style-type: none"> <li>• For collection of small quantities of blood only</li> </ul>
<b>Anterior Vena Cava</b>	<ul style="list-style-type: none"> <li>• Maximum volume of blood can be collected</li> </ul>	<ul style="list-style-type: none"> <li>• Requires anesthesia</li> <li>• Requires skill</li> <li>• Risk of cardiac tamponade</li> </ul>
<b>Cardiac Puncture</b>	<ul style="list-style-type: none"> <li>• Maximum volume of blood can be collected</li> </ul>	<ul style="list-style-type: none"> <li>• Requires deep anesthesia.</li> <li>• Non-survival procedure only</li> </ul>

If you have questions or comments about any of the above techniques, contact your [facility veterinarian](#)