DOSING TECHNIQUES AND LIMITS

Table of Contents
1. Purpose
2. Administration Routes and Volumes
3. General Procedures
4. Training
5. References

Purpose
Administration of experimental materials must comply with the investigator’s Animal Use Protocol (AUP) as approved by the Animal Care and Use Committee (ACUC), including approved dosing techniques, volumes, and frequencies. The Office of Laboratory Animal Care (OLAC) and veterinary staff train investigators in various dosing techniques. The veterinary staff may administer substances for veterinary care purposes using accepted clinical techniques ensuring volumes administered do not adversely affect animal health.

Administration Routes and Volumes
Routine routes for administering substances vary by species and include oral, subcutaneous (SQ), intramuscular (IM), intravenous (IV), and intraperitoneal (IP). Routine dosing limits are outlined in Table 1.

Table 1. (Maximum dose from Dielhl et al. 2001)

<table>
<thead>
<tr>
<th>Species</th>
<th>Oral (ml/kg)</th>
<th>SQ (ml/kg)</th>
<th>IP (ml/kg)</th>
<th>IM (ml/site)</th>
<th>IV rapid bolus (ml/kg)</th>
<th>IV slow infusion (ml/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GP</td>
<td>MD</td>
<td>GP</td>
<td>MD</td>
<td>GP</td>
<td>MD</td>
</tr>
<tr>
<td>Mouse</td>
<td>10</td>
<td>50</td>
<td>10</td>
<td>40</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Rat</td>
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<td>40</td>
<td>5</td>
<td>10</td>
<td>10</td>
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<tr>
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<td>15</td>
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<td>2</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
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<td>15</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
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<td>15</td>
<td>2</td>
<td>5</td>
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</tbody>
</table>

GP = Good Practice
MD = Maximal Dose
General Procedures
When applicable, new, sterile needles must be used for each dosing episode. Clean gavage needles or feeding tubes should be used for each oral dosing episode. Do not reuse needles between animals or between dosing episodes.

Training
The OLAC offers free training for dosing in a variety of laboratory species. In addition, OLAC provides dosing service for investigators for a nominal fee.

References