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1. Overview

Purpose

The following are appropriate dosing volumes for the various laboratory animal species. Figures represent the maximum volume not to be exceeded for a single once per day administration. The veterinary staff is available to discuss appropriate volumes for species not listed.

All administered substances must be approved by the IACUC. Volumes that exceed those listed must be stated in the IACUC protocol, scientifically justified, and should be discussed with a ULAR veterinarian prior to submission.

2. Maximum Dosing Volumes (ml/kg)

	GAVAGE	IV[1]	IP	SC[2]	IM[3]
MOUSE	10	5	10	5	3[b]
RAT	10	5	10	5	2
RABBIT	10	5	5[a]	5	0.3
SWINE	10	5	5[a]	5	0.3

1 – Volumes near the maximum must be given verry slowly, e.g., over a period of one minute or longer.

2 – More than one site should be used when administering larger volumes or frequent administration subcutaneously. The veterinary staff should be consulted in making this decision.

3 – Appropriate volumes for intramuscular administration may vary depending on the irritancy of the solution. If the potential for irritancy exists and/or larger volumes need to be used, injection of smaller volumes into multiple sites is recommended.

a – The intraperitoneal route of administration is infrequently used in rabbits and swine.

b – The intramuscular route of administration is infrequently used in mice. **The thigh muscle is the preferred injection site for this species.**

3. Responsibilities

3.1 Drexel University IACUC Responsibilities

The Drexel University IACUC and the IACUC Office are responsible for maintaining this guidance document, training, and monitoring. All exceptions to this policy must be approved by the IACUC. For inquiries regarding these procedures, please contact the Director of Animal Welfare, a part of the Office for Research & Innovation (ORI), or the Attending Veterinarian

4. Resources

- Harkness, J.E. and Wagner, J.E., The Biology and Medicine of Rabbits and Rodents, 4th ed., Williams & Wilkins, 1995.
- Foster, H.L., Small, J.D., and Fox, J.G., The Mouse in Biomedical Research, Vol. III, Academic Press, 1983.
- Gay, W.I., Ed., Methods of Animal Experimentation, Vol. I, Academic Press, 1965.
- Hull, R.M., Guideline limit volumes for dosing animals in the preclinical stage of safety evaluation, Human and Exptl Tox, 14, 305, 1995.
- Diehl, et.al., A Good Practice Guide to the Administration of Substances and Removal of Blood Including Routes and Volumes, Journal of Applied Toxicology, 21, 15–23 (2001)
- Hawk, Leary, Morris. Formulary for Laboratory Animals, 3rd Ed., 2005, Blackwell Publishing
- K. E. Quesenberry and I. W. Carpenter, Ferrets, Rabbits, and Rodents Clinical Medicine and Surgery, 2nd Edition, Saunders, (Elsevier), St. Louis, Missouri

5. Revisions

Edition 001/Effective Date: 12/2003 – Original Document
Edition 001/Review Date: 03/21/2012 – Original Document
Edition 001/Review Date: 07/2018 – Original Document
Edition 001/Review Date: 09/2021 – Original Document
Edition 002/Revision Date: 9/11/2024 and Effective Date: 9/17/2024 – Revised Document.

- Updated formatting to new template.
- Removed cat dosing volumes