

IV Injection Recommendations for mice

For i.v. injections to mice, LASP recommends use of the lateral tail vein or lateral saphenous vein. Briefly confining the mouse within a commercial or custom mouse-restrainer may be helpful. Dilation of the vein is accomplished by warming the mouse using a heat lamp or warming device or by immersion of the tail in warm water. For optimal dilation, up to five minutes of supplemental heat may be necessary. The time will be dependent on the distance from the heat source and the animals will be monitored carefully to prevent being burned or overheated by the heat source. Compression of the vein proximally may or may not be required.

Generally, the solution to be injected should be warmed to at least room temperature, be sterile, and have a pH between 4.5 and 8.0, with 7.4 being optimal. Changing needles also serves to keep the injection needle from becoming dulled if it is passed through a stoppered vial. The vein is best entered in the proximal 1/3 of the tail, and a successful injection is obvious to the user, based on lack of resistance as the plunger is depressed. Mastering of the injection technique takes practice, and training sessions may be scheduled by contacting the LASP Veterinarian or Veterinary Associate.

The maximum volume that may be injected depends on numerous factors, including the mouse's size and background strain and properties of the compound, cells, or vehicle. For guidance on volume see ACUC Policy, "Maximum Injection Volume and Needle Size Recommendations." (<https://ncifrederick.cancer.gov/lasp/acuc/bethesda/Media/Documents/IvInjectionRecommendationsForMice.pdf>) For cell injections, over-concentration may lead to embolism in lung capillaries and death of the recipient thus higher volumes (0.5 mL or more with justification) may be necessary. The tendency to clump is cell-line-dependent and the experimental literature should be consulted for optimal concentration of cells based on the cell line in use.