

Intranasal Instillation in Rodents
IACUC Standard Procedure
Effective Date: February 2022

Description of procedure:

Intranasal instillation techniques are used to deliver various substances to the upper and lower respiratory tract. Anesthesia is recommended for this technique.

Recommended maximum volume:

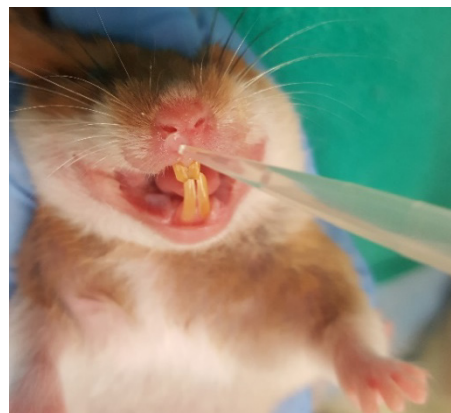
Species (adult)	Volume (mL)
Mouse	< 0.05
Rat	0.1
Hamster	0.05

Supplies needed:

- Appropriately sized pipette and tips

Procedure:

1. Anesthesia is recommended for chemical restraint and to allow precise administration of compound but is not required. After induction of anesthesia, the respiratory rate of the animal is monitored carefully for depth of anesthesia.
2. The animal is held by the scruff with the nose positioned to facilitate dosing.
3. The dose will be applied with the pipette on the nostrils drop by drop carefully to allow the animal to inhale.
4. Observe that the animal is breathing normally before allowing to recover from anesthesia.



Potential complications:

- Unresolved respiratory distress
- Suffocation
- Inaccurate dosing due to sneezing (deep sedation or light anesthesia may decrease this)
- Consult LARC veterinary staff if complications occur

References:

1. da Silva-Couto L, Ribeiro-Romão RP, Saavedra AF, da Silva Costa Souza BL, Moreira OC, Gomes-Silva A, Rossi-Bergmann B, Da-Cruz AM, Pinto EF. Intranasal vaccination with leishmanial antigens protects golden hamsters (*Mesocricetus auratus*) against *Leishmania (Viannia) Braziliensis* infection. *PLoS Negl Trop Dis*. 2015 Jan 8;9(1):e3439.
2. Southam DS, Dolovich M, O'Byrne PM, Inman MD. Distribution of intranasal instillations in mice: effects of volume, time, body position, and anesthesia. *Am J Physiol Lung Cell Mol Physiol*. 2002 Apr;282(4):L833-9.