Buprenorphine is an effective analgesic to manage pain in rodents. Because of the concentration of standard buprenorphine solutions, it is difficult to accurately measure doses in a 1ml syringe for administration to rodents. Thus, it may be safer and more precise to use a diluted solution if sterile technique, labeling and shelf life precautions are followed.

**Materials**

- 1ml Buprenorphine (0.3 mg/ml)
- 9ml sterile saline or sterile water for injection
- 10ml sterile syringe with needle
- Sterile empty glass vial
- 0.2 millipore filter [filter optional]

**Instructions for making a 1:10 solution = 0.03 mg/ml**

1. Using aseptic technique, add 9ml sterile saline and 1 ml of buprenorphine to a sterile glass vial. Gently shake several times to mix.
2. Label the vial with the following information:
   a. “Buprenorphine HCl dilution [0.03 mg/ml]”
   b. A unique identification number for controlled substance tracking purposes
   c. Expiration date*
   d. Date prepared
3. *Expiration date of diluted buprenorphine is the earliest expiration date of the individual components or 6 months, whichever is soonest.
4. Storage – Buprenorphine is light sensitive. Always store in dark place and protect from light. This is a controlled substance and should be secured and logged accordingly.
5. Always use aseptic techniques when preparing and handling injectable medications.
6. If original buprenorphine container is a glass ampule, a sterile filter may be used for drawing up the buprenorphine to remove any possible glass shards.

**Dosage**

1. Mouse dose: 0.05-0.2 mg/kg SC.
   a. A 25g mouse would receive 0.04-0.17ml of diluted buprenorphine solution.
2. Rat dose: 0.01-0.05 mg/kg SC.
   a. A 250g rat would receive 0.08-0.42ml of diluted buprenorphine solution.

**Reference**