

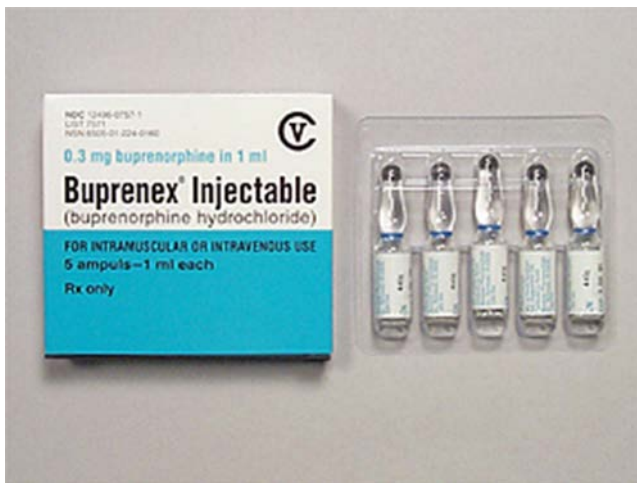


DLAR News Bulletin

Fall – 2015

Dilution of Buprenorphine HCl (Buprenex) for use in research rodents

MICE: Standard dose for mouse = 0.05 - 0.2 mg/kg SQ



In a recent survey summarized on CompMed, the comparative medicine listserv, current practices for diluting buprenorphine HCl were described. The following instructions are based on that information. Because of the concentration of standard solutions of buprenorphine for injection, it is difficult to accurately measure doses in a 1ml syringe for administration to rodents. It is safer and more precise to prepare a diluted solution, although several precautions about sterile technique, labeling and shelf life should be observed.



MATERIALS:

- 1 ampule of Buprenex (0.3 mg/ml)

- 1 10-ml sterile vial of sterile water for injection or sterile saline for injection
- 1 10-ml sterile syringe with needle and 0.2 millipore filter [filter optional]

MIXING INSTRUCTIONS (1:10 solution) = 0.03 mg/ml (revise if needed for a 1:20 solution)

Draw up entire contents of 10 ml sterile saline vial, replace 9 ml saline in same vial, add 1 ml buprenorphine. Some recommend that a sterile filter be used for drawing up the buprenorphine because of potential glass vial shards. *Always use aseptic techniques in these preparations.*

LABELING - "Buprenorphine HCl – 1:10 solution. [0.03 mg/ml] Buprenex expiration date _____. Expiration date of diluted solution = _____. Date prepared _____. Initials of person preparing solution _____.

STORAGE – Buprenex is light sensitive. Always store in dark place and protect from light. This is a controlled substance and should be secured and logged accordingly.

EXPIRATION OF DILUTED PREPARATIONS- not to exceed 30 days. Use aseptic technique for removing and administering buprenorphine. The expiration of the original solution prevails when dating diluted solutions.

STANDARD VOLUME DOSE FOR MICE of a 1:10 solution: Administer at rate of 0.1 ml / 30 gm mouse SQ (Delivered dose; 0.1 mg/kg).

RATS: Standard dose for rats = 0.01 - 0.05 mg/kg SQ

MATERIALS for preparing 1:5 dilution:

- 1 ampule of Buprenex (0.3 mg/ml)
- 2 10-ml sterile vial of sterile water for injection or sterile saline for injection
- 1 10-ml sterile syringe with needle and 0.2 millipore filter [filter optional]

MIXING INSTRUCTIONS (1:5 solution) = 0.06 mg/ml

Draw up entire contents of 10 ml sterile saline vial, replace 4 ml saline in same vial, add 1 ml buprenorphine. Some recommend a sterile filter be used for drawing up the buprenorphine because of potential glass vial shards. *Always use aseptic techniques in these preparations.*

LABELING - Buprenorphine HCl – 1:5 solution. [0.06 mg/ml] Buprenex expiration date _____. Expiration date of diluted solution = _____. Date prepared _____. Initials of person preparing solution _____.

STORAGE – Buprenex is light sensitive, always store in a dark place and protect from light. This is a controlled substance and should be secured and logged accordingly.

EXPIRATION OF DILUTED PREPARATIONS- not to exceed 30 days. Use aseptic technique for removing and administering buprenorphine. The expiration of the original solution prevails when dating diluted solutions.

STANDARD VOLUME DOSE FOR RAT OF 1:5 solution =0.05 ml/ 100 gm BW (i.e., 0.1ml for 200 gm rat SQ)

Buprenorphine is an effective analgesic to manage pain in rodents. For optimal effect, it should be administered BEFORE any surgical incision, ordinarily prior to or during anesthesia induction. Its estimated to be efficacious as a pain medication for approximately 12 hours.

****The above can be referenced in IACUC protocol applications as “DLAR Guidelines for Diluting, Labeling and Administering Buprenorphine HCl”***

For additional information, please contact DLAR at 419-383-4310