

Guidelines for the Use of Tribromoethanol/Avertin Anesthesia

Alternative anesthetics should be considered before the use of Tribromoethanol.

Tribromoethanol, (manufactured as Avertin outside the U.S.), produces surgical anesthesia in most rodents, with good skeletal muscle relaxation and only a moderate degree of respiratory depression. Proper storage is essential as the decomposition products are toxic. Repeated administration to the same animal may also be unsafe.

I. Materials

2,2,2 tribromoethanol (Aldrich T4, 840.2 or equivalent)

Tert-amyl alcohol (Aldrich 15, 246-3 or equivalent)

II. Stock solution

Add 5 ml T-amyl alcohol to 5 g tribromoethanol, (tbe), in a dark bottle to make a 100% stock solution. Shake or stir gently until the solid is dissolved. Stock solution is light sensitive and evaporates rapidly. Do not leave the bottle open longer than is necessary. Label, date and refrigerate in tightly sealed, dark bottle. Yellowing of the solution indicates toxic degradation products and the stock must be replaced. (If the original solution's pH was greater than 5, a drop of Congo Red dye can be added to 5 mls anesthetic stock solution to test for decomposition products, which lower the pH. If the solution turns purple with the addition of the dye, or if crystallization or any other discoloration is noted, the anesthetic should be discarded.) Otherwise, **unused stock solution should be discarded after 6 months.**

III. Working solution

Mix 0.1 ml stock solution with approximately 7.9 ml normal saline, (or PBS), in a sterile amber bottle with a rubber stopper and crimp seal. Heat to improve solubility, and mix well by vortexing until dissolved. The solution must be purchased sterilely or filter sterilization through 0.2 micron filter is required. Label, date and refrigerate when not in use. (Leave out of refrigerator for approximately one hour prior to administration.) **Unused working solution should be discarded after one month.**

IV. Dosage and Anesthetic Effects

The working solution is administered intraperitoneally at 0.4-0.8 ml/mouse, (approximately 0.2 ml/10 grams of body weight). (Inadvertent intravenous injection will cause death within minutes.) It will take about five minutes for the mouse to become fully anesthetized, (evidenced by lack of response to toe or tail pinch). An additional 0.05-0.1 ml can be given to effect, allowing sufficient

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time after administering the additional anesthetic to observe the effect. Note that the effective dosage is dependent upon the weight of the mouse. Due to variability of response amongst mice, Avertin must be administered to effect. The mouse will remain anesthetized for approximately 30-60 minutes and recover within 1-2 hours. Anesthetized animals should be kept warm for the duration of anesthesia, including surgery.

**Note: Repeated administration of Tribromoethanol/ Avertin is contraindicated and would require a written justification to the ACUC committee.*

Adapted from information provided by Jim Wallace, Science Associates, and various other sources.