Tamoxifen Preparation

Materials:
• Tamoxifen (SIGMA: T-5648)
• Corn oil (SIGMA: C-8267)
• 37°C incubator
• 42°C incubator
• Rocker
• Vortex
• Scintillation vial
• 5 ml syringe
• 18 G needle
• Animal Feeding Needles (Popper; cat No. 9921, size: 20GX1.1/2)
  Can be purchased from Fine Scientific Tools
• 20 mg/ml final conc

Procedure:
1. Place 5 ml of corn oil in scintillation vial.
2. Heat corn oil in 42°C for 30 min. In the meantime, take the Tamoxifen out and equilibrate at RT before weighing.
   *** Corn oil goes bad very quickly and a bottle should be opened and used every 5-6 months. Using old corn oil for gavage causes markedly increased rates of abortion in mice.
3. Add 100 mg Tamoxifen into the pre-heated 5 ml corn oil (20 mg/ml final concentration).
4. Wrap vial with aluminium foil.
5. Place on a rocker at 37°C for several hours.
6. If Tamoxifen is not going into solution you can vortex frequently and break clumps using a 5ml syringe with 18 G needle.
7. Place at 4°C - good for up to one month.
8. Method of administration: we administer the Tamoxifen to live mice using the gavage technique. For gavaging we use the animal feeding needles as indicated above. The amount we administer can range between 1-7mg/40g mouse.

Notes:
1. A safe volume to gavage in mice is ~0.5ml/50g body weight.

2. Calculating the amount of Tamoxifen to be gavaged can be tricky. Be aware that at later embryonic stages that you must consider two things. 1. The weight of the pups at each stage will increase rapidly. 2. In addition to their weight, the number of pups in each pregnant dam will be different. Therefore, the differences b/t females can be significant and thus the amount of Tamoxifen gavaged must be carefully considered in order to achieve consistent results. So, even though many people prefer to gavage a standardized amount based on survival rates of
the pups, amount of reporter allele recombination etc, you should consider
weighing each pregnant female and adjust the final volume as necessary. That
being said, the weight of the pregnant female can be considered the sole
determining factor for the gavage calculation when the pups are at early
embryonic stages since their weight contributes less to the total weight of the
animal (mom + pups).

This protocol was adapted from the Joyner Lab.