

## Fostering Guidelines

IIMT Transgenic Center  
9-10-04

### 1. Verification:

- Verify need for caesarian sections by double checking the surgery date and the due date.

### 2. Timing:

- Perform c-sections on females carrying pups derived from blastocysts and B6 pronuclear eggs by noon of day 20 (day 1 = day of egg transfer).
- Perform c-sections on females carrying pups derived from F1C eggs by 5 PM of day 20 or if necessary because of the lack of fosters, wait to perform c-sections until early AM on day 21.

### 3. Techniques:

- Sacrifice mouse by cervical dislocation.
- Remove both horns of uterus from mouse and place on wet paper towel.
- Open entire uterus with small scissors exposing pups.
- Remove amniotic sac and yolk sac by tearing or cutting with iridectomy scissors.
- Pinch umbilical cord for 2 or 3 seconds and cut distal (toward placenta) to the area that was pinched.
- If litter is large (>5 pups) remove pups quickly from uterus and spend less time cleaning each pup until all pups are on the warming tray.
- Using a kimwipe, blot fluid from nose, mouth and body very gently. Be careful to not rub the end of the nose as it will cause abrasions.
- Place pup on warming tray and continue removing amniotic fluid from mouth and nose by using a rolled-up kimwipes as a wick.
- If necessary, gently pinch the flank of the pup with blunt forceps to elicit a response (crying).
- Be sure umbilical cord is not resting on warming tray as this will result in it vasodilation dilation and excessive bleeding.

- Pups should be breathing on their own within 2 minutes.
- Evaluate the entire group of pups on the warming tray and determine the ones that need extra attention ie., intermittent breathing, cyanotic, gasping. Spend extra time reviving these pups – prodding, wiping and wicking.
- When a pup is fully recovered it should be pink in color, moving on the tray and vocalizing (squeaking).
- Leave the pups in a petri dish on the tray about 10 mins., or until they are pink in color, animated and moving.
- Discard/euthanize pups with visible developmental abnormalities (ie, liver evisceration, intestinal hernia, or open eye lids). The mothers will not care for these pups and they will be neglected and die.
- Note on the card the number of live pups, number of reabsorptions, the number of abnormal pups, the number of pups fostered and to which female.  
(F to WT / F to # XXXX).

3. Fostering:

- Evaluate the status of the foster (B6CBAF1) colony (How many pups do you have to foster, which genotype and how many foster mothers do you have available).
- Preferences of foster mothers:
  - a. Previous day foster female
  - b. Same day foster female
  - c. 2 days foster female
  - d. if B6CBAF<sub>1</sub> foster – 3 day female is acceptable if necessary.
- Preferably select fosters that have well formed nests (cone shaped and with pups that have visible milk in abdomen).
- Do not remove any pups from foster female until immediately before fostering

- If you need to add wild-type pups to the group of pups to be fostered, take the requisite number out from the nest, shorten the tail by cauterizing it and place the short tail wild-type pups with the group of pups to be fostered.
- If there are 4 pups or less delivered by c-section then add WT pups to 6 and foster. The smallest acceptable natural delivery litter is 4 pups. If a female delivered less than 4 pups, then foster the pups to a B6CBAF<sub>1</sub> female and add WT pups to obtain 6 pups.
- Place pups in a covered petri dish and transport to the foster room.
- Open the cage in the hood.
- Do not remove any pups from foster female until immediately before fostering.
- Gently push foster female out of the nest and remove all of her remaining pups.
- Place the group of pups to be fostered (WT and experimental) into the nest and reshape the nest in an attempt to recreate the shape of the original nest.
- If you are using an ICR foster female – they can handle large litters (8-12 pups).
- If you are using a B6CBAF<sub>1</sub> female – they prefer smaller litters (5-8 pups).
- Watch the female for a few minutes to verify that she is a “reasonably” good mother. Within ~ 5 minutes she should re-enter the nest. If after ~ half a hour she is still excessively nervous, out of the nest and stressed, consider moving the pups to a different female.
- Record on the original card:
  - # of pups
  - # of dead pups & abnormalities
  - # of pups fostered and to which female
- Foster card:
  - # of pups fostered and from which female
  - # of short tail WT pups added
- If the water bottle sipper tube is poking into the nest, reverse the direction of the top.
- Check the litter the next day to assess if any pups failed to survive. If needed, supplement the litter with marked – short tailed WT pups or move the remaining pups to another female.

4. Alternatives (No WT foster mothers available)
  - Foster pups to female with the same construct/clone.
  - Foster pups to different construct/clone female if coat color/cut tails are different.  
Unlikely scenario!
  - Use good female from another construct to feed/care for pups initially (4-6 hours), then give pups to older foster mother. Obviously this takes some time and patience and practice!
  
5. Things not to do:
  - Do not place the cage with the foster female and pups on a warming tray. This will cause excessive heating of the pups, poor husbandry and the pup will die.
  - Do not pinch the pups with your fingers. This is difficult to do and pinching/prodding is best done with a forceps.
  - Don't leave pups on the warming tray for more than 20 minutes.
  - Don't leave fully recovered pups on a warming tray without being placed in a petri dish. They will wander off!
  - If you think a foster female is "nervous" and a poor mother – she probably is!  
Reconsider your choice of females.

## Fostering Guidelines

(Top Ten List)

9-10-04

1. Verify dates. If unsure – check the book.
2. Check status of foster colony – what is available?
3. Perform c-section on females carrying small litters first.
4. Leave pups on warming tray until pink & breathing normally.
5. Move pups to the foster mother (petri dish in a cage), not mother to the pups.
6. If # of pups delivered by c-section is 4 or less, add WT pups to 6 and foster. If natural litter is less than 4 pups – move pups to foster female and supplement to six pups.
7. If nest is under sipper tube, rotate wire top!
8. Place cards in file box – not pockets!
9. Preferences for mothers: previous day, same day, 2 day old.
10. Select optimal moms first – nice nest and she is in it!