**Supplemental Info**

1. Perfusion of Heart and Aorta
   1. Fill a 10cc syringe with 10 ml of ice cold 1x phosphate buffer solution (PBS), and attach a 25G needle to the syringe.
   2. Gently insert the needle into the left ventricle of the heart.
   3. Cut the right atrium to alleviate pressure buildup from perfusion. Perfuse the contents of the syringe into the mouse at a physiologic rate.
   4. Use sterile gauze at the opening in the right atrium to absorb perfusion fluid.
2. Primary adipose fat digestion
   1. Keep SQ/Epi/BAT samples in 1 ml of DMEF:12 and on ice till ready for digestion
   2. Using sterile tweezers, transfer fat samples to another 2 ml microcentrifuge tube containing 1 ml of collagenase type I.
   3. Mince sample with sterile scissors for 2-5 minutes until tissue is very finely chopped up.
   4. Place sample in incubator at 37 ᵒC for 1-1.5 hours. Invert every 15 minutes or rock in incubator.
   5. Remove from incubator, centrifuge at 1000 x g for 10 minutes at 4 ᵒC.
   6. If you need to keep mature adipocytes, pipet the top-most layer (mature adipocytes) into another microtube and flash freeze, then place in -80 ᵒC.
   7. Remove supernatant by vacuum while being careful not to disturb the pellet.
   8. Wash with 1 ml of PBS +Ca/+Mg. If the cells are markedly red (from RBC), wash once with 1x RBC lysis buffer (1 ml 10x RBC lysis buffer + 9 ml PBS +Ca/+Mg)
   9. Very gently resuspend cells.
   10. Let sit for 1 minute at room temperature. If using the 1x RBC lysis buffer, let sit for 3-5 minutes at room temperature on a shaker or rocker on low.
   11. Centrifuge at 1000 x g for 10 minutes at 4 ᵒC
   12. Remove supernatant by vacuum be careful not to disturb the pellet.
   13. Wash with 1 ml of PBS +Ca/+Mg.
   14. Very gently resuspend cells.
   15. Let sit for 1 minute at room temperature.
   16. Centrifuge at 1000 x g for 10 minutes at 4 ᵒC.
   17. While the samples are spinning, prepare a T25 flask (label, add 4 ml of preadipocyte growth media, and place in incubator until ready for use).
   18. Remove supernatant by vacuum be careful not to disturb the pellet.
   19. Resuspend cells in 1 ml preadipocyte growth medium and pipet into prepared T25 flask.
   20. Replace the media in 24 hours.