



Title: Nutritional Sciences EchoMRI™ 3 in 1 model Body Composition Analyzer

SOP Number: 068

Purpose: This Standard Operating Procedure describes the methods for the collection and measurements of whole body masses of Fat, Lean, Free Water, and Total Water of laboratory rodents (This Echo MRI 3 in 1 model has 3 vertical bores, one for live animals up to Mouse size (100 grams), one for organs or Tissue samples of up to 7 grams, and one for Biopsy samples of up to 0.3 grams)

Equipment Required:

1. Balance
2. Echo MRI Analyzer
3. Echo MRI glass tube (body composition holder) to withhold the mice (Acrylic tubes were previously used as well)

Procedure:

Rodents are weighed and their body weight is recorded. Fasting is not required prior to measuring body composition, but if necessary for the animal protocol, mice could be fasted as necessary, prior to EchoMRI measurements.

Equipment should never be turned off and if it is, it needs several hours to warm up. The computer and software can be turned on and used immediately.

1. Power on computer.
2. Open Echo MRI software via Windows 7.
3. Allow equipment to warm up.
4. Do the system test according to the instructions
Ensure the canola oil calibration tube is placed. At the end of the measurements, the canola oil standard should be put back in and left in the machine while not being used for mice.
5. Remove the rodent from its cage, do the body weight measurement, and safely place rodent in the body composition holder.
6. Tighten/loosen the container as necessary, to make sure the rodent is comfortable and tape the restrainer on.
7. Place the composition holder inside of the Echo MRI Analyzer.
8. Click scan or press F5 to bring up the identification/weight screen; then click scan or press F5 again to proceed with the scan after entering body weight and ID..
9. After the first scan is complete, lift the composition holder out of the machine. to make sure the rodent is not in any pain or discomfort. (The time of the scan step can vary depending on how the mice will stay inside the composition holder, so it is important to keep it as comfortable as possible).
10. Place the composition holder back into the machine for the second scan (While not necessary, based on experience, repeating the scan determines whether the data is accurate. Duplicate or triplicate scans can be done but are not necessary).

10. After the second scan is complete quickly remove the rodent from the composition holder and return to its proper cage.
11. Observe the rodent for any signs of distress.
12. Record body masses of Fat, Lean, Free Water, and Total Water of the rodent.
13. At the end the canola oil standard should be put back in and left in the machine while not being used for mice.

Animal Health Monitoring:

1. Animals are observed daily by animal care staff for any evidence of illness or change in behavior.
 - A. Everyone with access to the animal facility is responsible for immediately informing the facility manager or a university veterinarian when an animal becomes ill or a change in behavior is observed.
2. In the event of suspected illness:
 - A. Record your observation on the treatment/observation sheet- include the date, animal #/cage ID, the problem observed, and initials
 - B. Contact the ACS facility manager or a university veterinarian:

Dr. Tiffanie Brooks, Attending Veterinarian 806-834-8588 Office
806-239-2120 Cell Phone

Paul Stonum, Clinical Veterinarian
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660-562-4425 Cell Phone

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