



UBC ANIMAL CARE CENTRE NEWS

Preventing Injuries from "Sharps"

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Animal Care Centre Rodent Strains

The Rodent Breeding Unit of the ACC maintains production colonies of Wistar and Sprague Dawley rats, as well as C57BL/6 mice. Timed-matings and pups are available.

Please place your orders via email to order@interchange.ubc.ca or fax to 604-822-3505.

Please be aware that you cannot use the Pcard to purchase live animals.

In accordance with UBC Policy #91, all animals must be purchased through the Animal Care Centre.



Many research protocols involve the use of hypodermic needles and glassware which could lead to a "sharp" related injury. A "sharp" is any item that is capable of causing a wound or breaks in the skin such as hypodermic needles, scalpel blades or broken glassware. An injury from a "sharp" can be minor, requiring only first aid; more serious injuries from "sharps" contaminated with biological, chemical or radioactive substances in which immediate medical attention must be sought and post-exposure protocols must be followed.

Injuries from sharps can be prevented using proper precautions. In addition to wearing the personal protective equipment required in all labs (such as fastened lab coats and gloves), a designated "sharps" container should be placed within easy reach of the location where the sharps are being used. Position the sharps container low enough in the work area so that you can readily visualize the opening. Immediately dispose of a used hypodermic syringe and needle, as a unit, directly into a sharps container. Do not remove the needle from the syringe before placing in the sharps container. These containers should also be used for scalpel or surgical blades. Broken glassware should be disposed of in designated, labeled broken glassware bin. Contaminated glassware must be treated and disposed of separately

from uncontaminated, clean broken glass.

Avoid recapping needles whenever possible.

A safer option is to use shielded or retractable needles for injections. Shielded needles have no caps to replace since a shield can be moved into place to cover the needle. Retractable needles are designed to retract the needle into the hub after injection. These needles are standard in the human care field to help prevent needle stick injuries.



Shielded Needles

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ANIMAL CARE CENTRE ANNOUNCEMENTS

New Training Coordinator

Welcome, Gayle Smith, AHT, RLAT, our new Training Coordinator at the Animal Care Centre. Gayle is not new to UBC. She worked here as a technician for six years before completing her AHT degree at Thompson Rivers University. We are pleased to have her back! Gayle is heavily involved in teaching our core rodent courses including Rodent Biology and Husbandry, Rodent Anesthesia and Rodent Surgery. She is also available to work directly with individuals or small groups interested in learning specific techniques. If you have any questions about training, please contact Gayle at trainacc@interchange.ubc.ca.

Rodent Courses

Another series of courses including Rodent Biology, Rodent Anesthesia and Rodent Surgery will be offered again starting in January. For details, please visit our website: www.animalcare.ubc.ca.

December 2008: Sprague-Dawley Rats are once again for sale from the Animal Care Centre!

Teaching/Training Corner

There have been many requests to incorporate a breeding component within the Animal Care Centre courses. This topic is too vast to effectively combine with the current courses; it deserves much more attention on its own. Beginner and advanced breeding courses are in the works – stay tuned....in the meantime, here are some great on-line resources that discuss breeding schemes, numbers of breeding mice needed to maintain your specific colonies, trouble shooting and solutions for problem breeders, breeding transgenics, and much more.

From Charles River:

<http://www.actstraining.com/resources/index.html>

“An Introductory Guide to Breeding Mice and Rats”
“Trouble Shooting Transgenic Colony Performance”

<http://www.actstraining.com/resources/Introduction%20to%20Breeding%20Mice%20and%20Rats.pdf>

“Breeding 101”

From Jackson Labs:

<http://jaxmice.jax.org/manual/index.html#breeding>

Request a copy of *“Breeding Strategies for Maintaining Mice Colonies”*

Disinfection and Sterilization

If you haven't heard it enough from us lately, alcohol is not a sterilant and is not suitable for sterilizing or disinfecting medical and surgical materials or equipment. Why you might ask again? Alcohol lacks sporicidal activity and cannot penetrate protein-rich materials. Fatal post-operative wound infections have occurred when alcohol was used to disinfect surgical instruments which were contaminated by bacterial spores. But if you don't believe us, take it from the Center for Disease Control (CDC) in their new 2008, [Guideline for Disinfection and Sterilization in Healthcare Facilities](#). This very

extensive document covers all of the classes of disinfectants and much more.

To view or download this document, go to:

www.cdc.gov/ncidod/dhqp/



Sharps, Continued



Retractable
Needles

Recapping of needles causes more injuries than it prevents. However, if it is absolutely necessary to recap needles, for example, as part of a medical procedure or protocol, you could use a mechanical device such as forceps or hemostats to replace the cap on the needle, or use the one-handed "scoop" technique

One-handed "scoop" technique – With one hand, hold the syringe with attached needle and scoop or slide the cap, which is lying on a

horizontal surface, onto the needle's sharp end. Once the point of the needle is fully covered, you can tighten the cap by pushing the end of the cap against a solid object (such as a table surface; do not use your hands).

Broken Glassware: Avoid handling any broken, contaminated glassware directly by hand, even if wearing gloves. Use a device such as tongs, forceps, brush and dustpan, or even two pieces of cardboard.

- DO NOT overfill sharps containers.
- DO NOT attempt to force a sharp item into a container or retrieve a discarded item.

For more information regarding the handling and disposal of sharps and broken glass, visit Health, Safety and Environment's website: www.hse.ubc.ca

Surgical and Anesthetic Supplies

If you are lucky enough to work in one of the UBC related hospital facilities, having access to surgical and anesthetic supplies may be easy. However, for some of you, finding the supplies that you require might be difficult. The following are some supplies that you can order directly through the Animal Care Centre. Note that we order these supplies through a veterinary distributor so it may take a week or more to get your supplies in.

Surgeon Preparation

Bouffant Caps Medium or Large	100/box	Less than \$10 per box
Surgical Mask Earloop or Tie-on	50/box	Around \$5 per box
Sterile Surgical Gloves (Size 6 thru 9)	50 pair	Around \$40 per box
Hibitane (Chlorhexidine Scrub)	3.8 L	Around \$50 per bottle
Proiodine Detergent	5.0L	Around \$30

Anesthetic Supplies

Sterile Empty Vials (30ml or 50ml)	10/box	Around \$40 per box
Sterile Water	250ml	Around \$5
Lactated Ringers	500 ml	Less than \$4 per bag
Isopto Tears, Tear Gel, or Lacrilube	tube	Less than \$10
Ster-L-Jelly	142g	Less than \$5
Needles 26 to 23 gauge	100/box	Less than \$6

Surgery Supplies

Guaze 2X2 or 4X4	200/bag	Less than \$3 or \$6
Sterile Scalpel Blades #15	100/box	Around \$20
Autoclave Film (Bags)	100 feet	Less than \$35
Vet Drape (Blue Disposable Drape)	100 yards	Less than \$130
Suture (Viracryl, Monocryl, Nylon) 4-0	36 packs/box	Between \$100-200
Oster Clipper two speed	1 clipper	Around \$200

Please remember that these prices are based on Nov 2008 prices. Other supplies are available, so if you need help finding something just ask!

QUIZ CORNER-BASIC RAT FACTS

- What is the tidal volume of the rat?
 - 0.5 to 1 ml
 - 0.6 to 2 ml
 - 1 to 3 ml
- What is the heart rate of the rat?
 - 200-320 bpm
 - 220-400 bpm
 - 250-450 bpm
- What is the diploid number of the rat?
- What is the Suborder of the rat?
 - Myomorpha
 - Cricetidae
 - Erinaceidae
- What is the fat composition of rat milk?
 - 5%
 - 13%
 - 21%
- The rat has what type of incisors:
 - Hypsodont
 - Brachyodont
 - Selenodont
- Rats are classified as:
 - Seasonally polyestrous
 - Continuously polyestrous
 - Polyestrous with spontaneous ovulation
- The hematocrit or PCV (Packed cell volume) of the rat is:
 - 23%-35%
 - 37%-44%
 - 37%-50%
- The normal rectal temperature of a rat is:
 - 37.7 C
 - 37.0 C
 - 35.7 C
- The normal respiratory rate in a rat is:
 - 70-100
 - 140-200
 - 50-70

Animal Care Centre Diagnostic Laboratory

Our lab offers a wide variety of diagnostic services for both sentinel and research animals. We offer a full range of parasitology, bacteriology and necropsy services. To aid in the efficiency of the diagnostic process, here are a few tips to remember when submitting samples:

- Bacteriology testing is ONLY done on Mondays and Tuesdays
- Our lab runs on an appointment basis ONLY, please schedule a time and date for any routine testing
- Please submit samples with the correct submission form. Without this form, we cannot guarantee that the sample will be processed quickly and correctly
- All submissions should be submitted promptly to avoid post mortem changes. It is recommended for most diagnostics that animals are shipped to us live

For more information on our services, please feel free to browse our website:

<http://www.animalcare.ubc.ca/dls/index.htm>



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6199 South Campus Road
Vancouver, BC
V6T 1W5**

**Phone: 604-822-6283
Fax: 604-822-3505**



Weekly Order Deadline!

Please have your outside supplier orders faxed to us by Wednesday at Noon for delivery the week following. This will allow us to get back to you with any offers, changes, etc. Orders from the Rodent Breeding Unit should be faxed by Noon the day prior to delivery at the latest. More notice is required for larger orders. We appreciate your cooperation!

Delivery Times for Animals

Animals are delivered to departments between the following times (barring unforeseen circumstances).

Rodent Breeding Unit deliveries:
Daily 8:00am to 10:00am

Charles River: Monday/Tuesday
11:00am to 1:00pm

Other U.S. Suppliers: Wednesday & Thursday 11:00am to 1:00pm

Rodent Pup Orders

A reminder to those who order rat and mouse pups without mothers that they must be used within two hours of receipt. Beyond this time, they can experience hypothermia and hunger.

Ordering via Email

We think you will find that the most efficient way of ordering animals and supplies is via email. Download order forms www.animalcare.ubc.ca/eforms/index.htm and send completed forms with a relevant message in the subject line to: order@interchange.ubc.ca. We will confirm receipt of your order and keep in touch regarding offers, delivery dates, etc. Please do not send orders to our personal email addresses!

Animal Models of Cancer Pain

When we think of potential sources of pain in animals, commonly we think of surgical or traumatic pain, but we forget about the pain associated with cancer. Pain is one of the most common and distressing symptoms experienced by both human and animal oncology patients with advanced cancer. Not surprisingly, animals with advanced cancer respond similarly to humans with advanced cancer. Yet one more way to connect pain experienced by animals with that experienced by humans. This connection then allows animals to be used as subjects of studies designed to alleviate pain, both in humans and animals. Pacharinsak and Beitz review "Animal Models of Cancer Pain" in the June 2008 edition of Comparative Medicine.

Pain intensity is individual, both in humans and animals and additionally depends on the type of cancer and the tumor location. Pain in both animals and humans has been treated with opioids, NSAIDs, corticosteroids, local anesthetics. Unfortunately, what seems like a myriad of pain control leaves many humans and animals with advanced disease in pain, as these drugs often fail to control more advanced pain. In addition, just like when they are used to treat surgical or other pain, these drugs can have significant side effects making them unsafe for certain situations. The opioid class of drugs can cause sedation, respiratory depression and interfere with gastrointestinal motility. The NSAIDs can lead to gastric ulceration and renal toxicity.

Rodents are mainly used as subjects of cancer pain. Bone cancer is one of the most painful cancers in humans and animals, and represents a very common occurrence of pain as advanced breast, prostate and lung cancers often metastasize to bone. Pacharinsak and Beitz outline the various "models" of bone cancer pain in rodents. In addition, non-bone cancer pain, pain due to cancer invasion and pain due to chemotherapy-related peripheral neuropathy are reviewed.

The development of new modalities to treat cancer pain would have a huge benefit in both human and veterinary medicine. The issue of quality-of-life is more important now than ever, as both humans and pet animals continue to live longer. The animals used as subjects for these studies will increase our basic knowledge of tumor pain in terms of anatomy, neurobiology, physiology, pharmacology and molecular mechanisms. Because the animals used for these studies will experience pain, these studies must have a high degree of scientific justification and should only be pursued when there is no other alternative to the use of animals.

Pacharinsak and Beitz, Animal Models of Cancer Pain, Comparative Medicine, Vol 58, No 3, June 2008.

Answers to Quiz Corner

- B. 0.6 to 2 ml.** Important when anesthetizing and/or ventilating an animal.
- C. 250-450beats per minute.** Important when monitoring heart rate during anesthesia.
- 42.** 42 pairs of chromosomes.
- A. Myomorpha.** Order Rodentia, Suborder Myomorpha, Genus Rattus, Species Novegicus.
- B. 13%.** Now you know why not to feed your rats cow's milk.
- A. Hypsodont.** Open-rooted incisors that keep on growing!!
- B. Continually polyestrous.** Having estrus cycles continually throughout the year.
- C. 37-50%.** Be cautious of blood sampling in order to not affect PCV.
- A. 37.7 degrees C.** Important for monitoring temperature during anesthesia.
- A. 70-100 breaths per minute.** Important for monitoring the health of your rats or while the animal is under anesthesia.