UBC ANIMAL CARE COMMITTEE
POLICY 006

Policy on Acceptable Methods of Rodent Blood Withdrawal

Date Approved: November 21, 2007

All methods of blood withdrawal should be previously approved by the UBC Animal Care Committee in the form of an approved protocol. All personnel performing these methods should be previously trained in the technique and proper rodent handling. A UBC Veterinarian should be consulted if training or assistance is needed with these methods.

Chronic Blood Withdrawal:

In sequential blood sampling (over a period of time), the maximum blood withdrawal for survival for rodents is 1.5% of lean body weight or 15% of blood volume every 14 days. For example, a 20g mouse could have 300 ul (0.3 ml) removed safely over a 2 week period.

Acute or Single Blood Withdrawal:

The maximum blood withdrawal for survival as a single time point in rodents is 1% lean body weight or 10% of blood volume. For example, a 20g mouse could have 200 ul (0.2 ml) removed safely at one time.

Approved Methods (See SOPs for more details on how to perform these procedures (www.animalcare.ubc.ca)):

Route	General Anesthesia Required	Extra Training Required*	Comments
Saphenous Vein Puncture	No	No	Good for repeated small bleeds or one large bleed. Low potential for tissue damage.
Tail Vein Puncture	No	No	Use of a needle preferred resulting in less tissue damage to tail
Cardiac Puncture	Yes	No	Non-Survival only: Animal must be deeply anesthetized and not recover from anesthesia
Facial Vein Puncture	No	Yes	Good for single large samples but high potential for complications
Jugular Vein	Yes	No	For rats only. Limited application, poor for repeated sampling
Tail Amputation	Yes	No	May only be done ONE time at the same time as genotyping. Only soft tissue may be

			removed and not bone (approx 2mm of tail tip only).
Via Catheter/Cannulae	Yes	No	Blood withdrawal from indwelling catheters should be done in accordance with this policy.

*A training session with approval by the UBC Training Coordinator is mandatory.

Non-Approved Methods:

Route	Reasons for non-approval
Retro-orbital bleeding	Potential for serious damage to eye or death of the animal
Penile or Lingual Vein	Potential for thrombosis leading to blockage of the urethra or swelling of the tongue
Amputation of a body part: Tail or Toe (exception is single use of tail, see above)	Can lead to granuloma formation resulting in a mass at the end of the tail leading to pain, repeated amputation results in cutting of bone, samples are hemolyzed and contaminated with other tissue fluids
Cardiac puncture as a survival procedure	Damage to the lungs and/or heart, potential to lacerate major vessel resulting in death, bleeding into pericardium resulting in cardiac arrest