

## STANDARD OPERATING PROCEDURE

<b>Procedure:</b>	<b>Working with human blood and tissue</b>
<b>School/Department:</b>	School of Molecular Bioscience
<b>SOP prepared by:</b>	Kai Lin Ek, Markus Hofer
<b>Version:</b>	SMB047.1

### Section 1 - Personal Protective Equipment (PPE)

1. Lab coat or lab gown
2. Latex or Nitrile gloves
3. Enclosed footwear
4. Safety glasses

### Section 2 – Potential Hazards + Safety precautions

1. Working with human blood and tissue involves a risk of infection with microbial pathogens. Viruses such as HIV and hepatitis B and C are the main concern. Vaccination of the researcher against hepatitis B and an antibody titer check is required before starting work. Risk of infection to researcher is addressed by wearing protective equipment (especially gloves), being aware of risk of needlestick injuries, and handling ALL blood products as potential biohazards.
2. Experiments involving blood sampling pose multiple risks. Risk of subject fainting should be addressed by giving plenty of fluids prior to sampling, ensuring subject remains seated in a stable chair during sampling, and for at least 10 min afterwards. Risk of infection to subjects from sampling is addressed by using sterile equipment, good aseptic technique, use of single-use lancets for finger pricks and swabbing the sample site with isopropanol or ethanol prior to sampling.
3. Do not work with human blood/plasma if you are pregnant or trying to get pregnant – the developing baby is more susceptible to viral diseases and infections than an adult.

### Section 3 – Procedure

1. Read and understand the SOP for working with human blood, plasma and other potentially infectious tissue. If anything is unclear or if you are unsure of the risks, consult your supervisor before starting any hands-on work.
2. All personnel working with human blood or tissue must be trained by qualified staff and be vaccinated against HBV.
3. All procedures and handling of blood, plasma and other products must occur in suited and designated areas. PPE including safety goggles must be worn at all times when handling potentially infectious material.
4. Before commencing work, ensure that the spill kit is stocked: apron, gloves, goggles, paper towels and Viraclean.

#### Collection and processing of human blood and plasma

5. Finger-tip blood collection can only be performed by a trained staff member, disposable gloves must be worn and **a new pair of gloves** must be used when collecting blood from different subjects.
6. Collection of venous blood samples can only be performed by a registered nurse or staff members who have completed the venepuncture course.
7. Gloves should be changed and disposed of into designated biohazard waste bins. Change gloves frequently (at least between different subjects).
8. All blood samples are collected and assays must be performed on surface protected with absorbent bench coat.
9. All blood spills to be cleaned up immediately using Viraclean disinfectant according to the spills procedure below.
10. Wash hands thoroughly after collecting blood samples and performing assays when leaving.

### Section 4 – Disposal / Spills / Incidents

1. All human blood, plasma and tissue and contaminated waste must be disposed of into designated biohazard waste containers.
2. Upon completion of blood collection for the day, all used bench coat, paper towels and gloves should be disposed of into designated biohazard waste bin and double bagged. All waste must

be autoclaved.

3. Blood collection surfaces and hand warming buckets are sprayed with Viraclean (to 1/10 dilution) and cleaned daily.
4. Always dispose of sharps (of ANY type) into an approved sharps disposal container (eg. yellow hard plastic bottle with snap-on cap). Do NOT put any type of sharps into other waste disposal containers eg. autoclave bags or regular garbage bags. Don't overfill sharps containers. They typically have a line on the outside about 3/4 of the height of the container. When the container is 3/4-full, cap the container and dispose of it.
5. Sealed sharps containers and biohazard bags are transported via the weekly car run to Room 225 and placed in the PC2 cage for treatment via autoclave (biohazard bags) and/or autoclave and incineration (sharps containers).
6. All spills must be cleaned up immediately and thoroughly with Viraclean. Clean up personnel must wear appropriate PPE. Restrict access until completion of clean up. Apply Viraclean liberally to the spill and absorb wet spill with absorbent paper. Wipe the surface by working from the periphery to the centre of the spill. Discard absorbent material into biohazard waste container. Then disinfect the cleaned surface. Using a fresh piece of absorbent paper, ensure Viraclean contacts all surfaces to be disinfected and allow to dry for 10 mins. Dispose of all material and PPE into biohazard waste container. Wash hands thoroughly after clean-up procedures.
7. All incidents and injuries must be reported to your supervisor, and must be logged on Riskware within 24 hours. If in doubt contact the Chair of the WHS committee or the WHS officer.

#### **Section 5 – Repairs / Certification / Validation**

1. Completion of the Peripheral Venous Venepuncture Course
2. Training by senior research staff for the collection of finger-tip blood samples.

#### **Section 6 – Relevant Material safety data sheets**

1. All staff should be familiar with the risks of handling human blood/tissues
2. MSDS for Viraclean disinfectant

#### **Section 7 - References**

1. NSW Health policy directive "Occupational Assessment, Screening and Vaccination against specified infectious diseases".
2. See the SOP for use and disposal of sharps (SMB046) on the School website.
3. See the SOP for the cleanup of biohazard spills (SMB004) on the School website.
4. Educational DVD on "How to clean and disinfect blood spills using Viraclean".

#### **SOP Consultation, Training and Approval**

Print names and enter signatures and dates to certify that the persons named in this section have been consulted/trained in relation to the development and implementation of this Standard Operating Procedure. WHS Representative (WHS Committee) certifies that consultation has taken place.

<b>Position</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
Supervisor			
employee / student			
employee / student			
employee / student			
employee / student			
employee / student			
employee / student			
employee / student			
employee / student			

