

## **Standard Operating Procedure**

### **Title: Blood Sample Collection, Storage and Use**

#### **Purpose**

This SOP is covered under University of Toronto ethics protocol #34019 for the collection of blood samples from healthy donors. This SOP requires phlebotomy training. No one should attempt to draw blood without having first undertaken a phlebotomy training course.

#### **Materials and equipment**

- Lab coat
- Sterile nitrile gloves
- Safety glasses
- Absorbent pad
- BD Vacutainer Safety Lok blood collection kit
- BD Microtainer contact activated lancets
- Anticoagulant EDTA blood tubes
- Clot activator tubes with rubber stops
- Alcohol wipes
- Bandages
- Sterile gauze
- 10% sodium hypochlorite

Any breach of the skin (scratch, cut, wound) needs to be protected from contact with biological agents. Cover open wounds, cuts, scratches, and grazes with waterproof dressings and gloves. If you exhibit any open wounds (broken skin) in areas that cannot be covered by dressings or clothing, re-evaluate the work in process. Suggestions for mitigating the exposure in the case of broken skin that cannot be covered include, for example where the wound is on the face, work with a full-face shield; work in the BSC, or have someone else do the work.

#### **A) Blood sample collection:**

- 1) Participants volunteered by contacting a designated member of the lab. Recruited participants consented to all procedures on themselves as well as the samples, by signing a consent form approved by the REB.
- 2) Blood is drawn by a qualified phlebotomist in a Biosafety Level 2 location (LM 630). The phlebotomist must wear a lab coat, sterile nitrile gloves, and safety eye glasses.
- 3) The benchtop should be covered with an absorbent pad as a precaution against accidental blood spills.
- 4) Alcohol wipes from a first aid kit are used to disinfect the puncture site on the participant prior to blood collection.
- 5) The phlebotomist should use commercially sourced BD Vacutainer Safety Lok™ Blood collection kits and sterile disposable needles and syringes, to draw venous blood. BD Microtainer contact

activated lancets are used to collect finger-prick samples. The samples were collected in anticoagulant (EDTA) blood collection tubes, or clot activator tubes with rubber stops.

- 6) Once filled, immediately cap the tubes and disinfect the outside by wiping with 70% ethanol.
- 7) After completing the draw, puncture sites should be cleaned with sterile gauze, and covered with a band-aid from the first aid kit. Blood soaked gauze and absorbent pads should be disinfected in 10% bleach (sodium hypochlorite) for 30 minutes and disposed in biohazardous waste containers.
- 8) Disinfect the needles, tubing, and syringes in a 10% bleach solution and disposed of in biohazardous sharps waste containers.
- 9) After completing the procedure and cleaning up, the phlebotomist must wash their hands

**B) Using samples in experiments:**

- 10) The collected samples can be processed on a DMF instrument following **“Handling of human samples for diagnostic assays on digital microfluidics” SOP.**

**C) Sample storage and disposal:**

- 11) Samples can be stored for up to two weeks in a 4°C refrigerator. Samples older than two weeks must be disinfected by emptying the tubes into a 10% bleach solution, and the disinfected tubes were disposed of as biohazardous waste.