

ITN093AI DARE-APS: Whole Blood Preservation with Smart Tubes Standard Operating Procedure

Instructions: Study personnel must be trained and authorized by the site Principal Investigator to perform blood processing. Personnel performing blood processing are required to read and understand the following **ITN093AI DARE-APS: Whole Blood Preservation with Smart Tubes Standard Operating Procedure**. The following procedures MUST be followed for all specimens.

1. Purpose

To describe the procedure for preservation of whole heparinized blood using Smart Tubes.

2. Required Supplies

Items Supplied by ITN:

- Smart Tubes
- Sodium heparin vacutainers

Items Supplied by Clinical Sites:

- Pipettes and pipetting system for 1mL volume
- 70% ethanol
- Gloves, goggles, lab coat

Equipment Supplied by Clinical Sites:

- BSL 1-2 Safety Cabinet
- -70 to -80°C Mechanical Freezer (preferably on back-up power and monitored for maintenance of temperature)

3. Procedures

General Precautions:

- Informed consent must be obtained from all participants before any research procedures, including specimen collection, are performed.
- Always follow appropriate precautions for handling of human specimens, including appropriate use of personal protective equipment.
- Perform all processing in a BSL 1-2 Safety Cabinet.
- Always use sterile technique.
- Always prepare materials and workspace by wiping with 70% ethanol.

Storage of Reagents:

- Store Smart Tubes and sodium heparin vacutainers at room temperature.

Collection of Blood Specimen:

Collect blood sample into sodium heparin vacutainer using standard technique:

1. Ensure sample draw closely matches collection tube volume.
2. Invert tube 10-20 times immediately after collection to mix thoroughly. DO NOT SHAKE.
3. Store sample at room temperature.
4. One milliliter of blood from one sodium heparin vacutainer will be used for preservation with Smart Tubes. Following this procedure, the vacutainer with 1mL less blood and all other sodium heparin vacutainers should be stored at ambient temperature and shipped overnight to the ITN PBMC processing core facility, per standard ITN procedure, as outlined in the ITN093AI DARE-APS Lab Manual.

Whole blood preservation with Smart Tubes:

1. Preservation of whole blood with Smart Tubes should occur **within 2 hours of blood draw**.
2. Carefully open one sodium heparin vacutainer and one Smart Tube.
3. Transfer 1mL of blood from the vacutainer to the Smart Tube.
4. Immediately cap the Smart Tube and gently invert 6 times to ensure mixing.
5. Make sure the cap is screwed on securely, then bend the Smart Tube in the middle until the ampule inside breaks.
6. Gently invert 10 times to ensure mixing.
7. Incubate at room temperature for 10 minutes.
8. Immediately transfer the Smart Tube to a -80°C freezer. Do not freeze Smart Tubes in Styrofoam racks, as it slows the cooling process.
9. Store Smart Tube at -80°C until shipment.