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Urine Processing and Storage

1.0 PURPOSE

Urine samples are received from patients that have agreed to submit their samples for research purposes. Urine samples are obtained from patients at the various ARGO collaborating hospitals and medical centres. Processed urine products are an important addition to the ARGO biobanking resource network.

2.0 SCOPE

This Standard Operating Procedure (SOP) describes how urine should be processed, accessioned and stored. The SOP does not cover detailed safety procedures for handling urine and it is recommended that personnel follow institutional biosafety guidelines as per our safety manual.

3.0 ROLES AND RESPONSIBILITIES0

This SOP applies to all ARGO personnel that are responsible for the processing of urine to obtain urine components for storage in the biobank.

ARGO Personnel	**Responsibility/Role**
Research Assistant	Receive, process, and store urine and urine products.

4.0 MATERIALS, EQUIPMENT AND FORMS

Materials and Equipment
BD Vacutainer sterile collection cups 120ml
Streck Cell-Free DNA BCT Tubes 10 ml
2.0 ml cryotubes
Centrifuge
Transfer pipets or micropipettes

Storage boxes
PPE
Appropriate racks to hold tubes while processing
Appropriate labels for collection tubes and urine collection/processing worksheets
Urine collection/processing Log folder

5.0 PROCEDURES

This procedure is intended to ensure that urine samples obtained are processed in a safe and efficient manner while eliminating the risks of contamination and loss.

5.1 Timing for Urine Collection and Processing

5.1.1 Urine will be collected at different protocol-specific time points.
5.1.2 Transport the midstream urine (MSU) sample immediately through ice pack from the recruitment point to the laboratory.
5.1.3 Dispense the MSU into labeled cryovial.
5.1.4 The urine must be frozen within one hour of passage of the urine
5.1.5 Arrange into a PCR rack and store in the appropriate labeled compartment of the -80°C freezer

Samples that need to be centrifuged

5.1.6 For other urine samples, the time requirement for sample processing depends on the intended use and therefore, amount of time to process the sample should be recorded.

5.1.7 Midstream urine samples are collected in plain sterile collection cups. Then 10ml should be transferred to a Streck tube within six hours of collection.

5.1.8 The Streck tube should be inverted about 8 times before processing to ensure thorough mixing of the urine with the preservative/fixative solution. The sample should be stored at room temperature to be processed within seven days of collection.

5.2 Verification of Identification Information on Tubes

As applicable, verify the accuracy of patient information (in keeping with privacy and ethical policies) and ensure that it corresponds with the information on labels on urine collection cup and requisition form.

5.3 Separation of Cells and Supernatant

Urine is separated into cells and supernatant by the following procedure:

5.3.1 Spin Streck tube in the Allegra X30R centrifuge at 1600 x g for 10 minutes, ensure the centrifuge is balanced.

5.3.2 Using an appropriate transfer pipette or micropipette, transfer the supernatant into individual microcentrifuge tubes until all the supernatant is distributed among microcentrifuge tubes. Be sure to avoid the cell pellet at the bottom of the Streck tube when collecting urine supernatant and leave a small amount of urine.

5.3.3 Once transferred, place microcentrifuge tubes in micro-centrifuge for 10min at 14000 x g.

5.3.4 Transfer supernatant into multiple labelled cryovials. Discard the initial micro-centrifuge tubes used.

5.3.5 The cell pellet remains at the bottom of the Streck tube. Resuspend cell pellet in 200-500uL of supernatant and transfer to labeled cryovial.

5.3.6 Store the cell pellet and supernatant cryovials in the corresponding URINE box in the liquid nitrogen tank.

5.3.7 Record the box number and location of the tubes in RedCAP

6.0 APPLICABLE REFERENCES, REGULATIONS AND GUIDELINES

6.1 IP Best Practices for Repositories I. Collection, Storage and Retrieval of Human Biological Materials for Research. International Society for Biological and Environmental Repositories (ISBER) http://www.isber.org/Search/search.asp?zoom_query=best+practices+for+repositories

6.2 US National Biospecimen Network Blueprint http://biospecimens.cancer.gov/resources/publications/reports/nbn.asp

7.0 REVISION HISTORY

SOP Number	Date Revised	Author	Summary of Revisions