SAMENA Manual of Procedures Update: Version 1

Section	Change
Document Footer	This is the first version.

South Asia, Middle East, and North Africa Study

in collaboration with the

National Centralized Repository for Alzheimer's Disease and Related Dementias

Biospecimen Collection, Processing, and Shipment Manual of Procedures

Version 1.0
July 2025

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1.0 Abbreviations

AD	Alzheimer's Disease
DNA	Deoxyribonucleic Acid
EDTA	Ethylene Diamine Tetra-acetic Acid
IUGB	Indiana University Genetics Biobank
NCRAD	National Centralized Repository for Alzheimer's Disease and Related Dementias
PHI	Protected Health Information
RBC	Red Blood Cells
RCF	Relative Centrifugal Force
RPM	Revolutions Per Minute
SAMENA	South Asia, Middle East, and North Africa
UPS	United Parcel Service

2.0 Purpose

The collection of biofluids is an important part of the South Asia, Middle East, and North Africa (SAMENA) Study. The purpose of this manual is to provide study staff (PIs, study coordinators, phlebotomists) at the various study sites with instructions for collection and submission of biological samples for SAMENA study visits. It includes instructions for biospecimen submission to NCRAD located in Indianapolis at Indiana University.

Sites will collect and send the following samples to NCRAD:

- Serum
- Plasma
- Buffy Coat (DNA extraction)
- Whole Blood

This manual includes instructions for collection of blood, fractionation of blood from collection tubes, aliquoting, labeling, storage prior to shipping, and shipping to NCRAD.

This manual also includes instructions for collection of saliva, labeling, storage prior to shipping, and shipping to NCRAD.

These procedures are relevant to all study personnel responsible for processing specimens being provided to NCRAD for the SAMENA protocol.

3.0 NCRAD Information

3.1 NCRAD Contacts

Tatiana Foroud, PhD, NCRAD Principal Investigator
Phone: 317-274-2218

Kelley Faber, MS, CCRC, Project Manager
Phone: 317-274-7360
Email: kelfaber@iu.edu

Michael Edler, PhD, Laboratory Director
Phone: 317-278-2209
Email: mcedler@iu.edu

Zoë McManus, BA, CCRP, Study Coordinator
Phone: (317) 278-9086
Email: zdpotter@iu.edu

General NCRAD Contact Information
Phone: 1-800-526-2839 or 317-278-8413
Email: alzstudy@iu.edu
Website: https://ncrad.org
SAMENA Study Specific Webpage:
NCRAD - The SAMENA Active Study Page

3.2 Sample Shipment Mailing Address

NCRAD
Indiana University School of Medicine
351 West 10th Street
TK-217
Indianapolis, IN 46202
alzstudy@iu.edu

3.3 Hours of Operation

Indiana University business hours are from 8 AM to 5 PM Eastern Time, Monday through Friday.

Frozen samples must be shipped **Monday-Wednesday only**.

Check weather report to make sure impending weather events (blizzards, hurricanes, etc.) will not affect the shipping or delivery of the samples: Service Alerts and Shipping Updates.

3.4 Holiday Observations

Date	Holiday
January 1	New Year's Day
3rd Monday in January	Martin Luther King, Jr Day
4th Monday in May	Memorial Day
June 19	Juneteenth (observed)
July 4	Independence Day (observed)
1st Monday in September	Labor Day
4th Thursday in November	Thanksgiving
4th Friday in November	Friday after Thanksgiving
December 25	Christmas Day
December 26-31	Winter Break

Please note that between December 24th and January 2nd, Indiana University will be open Monday through Friday for essential operations **ONLY** and will re-open for normal operations on January 2nd. If at all possible, biological specimens for submission to Indiana University should **NOT** be collected and shipped to Indiana University after the second week in December. Should it be necessary to ship blood samples for DNA extraction to Indiana University during this period, please contact the Indiana University staff before December 20th by e-mailing alzstudy@iu.edu, so that they can arrange to have staff available to process incoming samples.

Please see visit NCRAD - Holiday Closures for additional information.

- Please note that courier services may observe a different set of holidays.
- Please be sure to verify shipping dates with your courier prior to any holiday.
- **Weekend/holiday delivery must be arranged in advance with NCRAD staff.**

4.0 Laboratory Collection

4.1 Site Required Equipment

The following materials and equipment are necessary for the processing of specimens at the collection site and are to be **supplied by the local site:**

- Personal Protective Equipment: lab coat, nitrile/latex gloves, safety glasses
- Tourniquet
- Alcohol Prep Pad
- Gauze Pad
- Bandage
- Butterfly needles and hub
- Microcentrifuge tube rack
- Sharps bin and lid
- Wet Ice Bucket
- Wet Ice
- Pelleted dry ice

In order to process samples consistently across all projects and ensure the highest quality samples possible, project sites must have access to the following equipment:

- **Centrifuge capable of ≥ 2000 x g with refrigeration to 4°C**
- **-80°C Freezer**

In order to ship specimens, you must provide:

- Pelleted dry ice (about approximately 45 lbs. per shipment)

4.2 Biospecimens Collection Schedule

Frozen samples are to be submitted according to the shipping methods outlined in Section 8.0. Guidelines for the processing, storage location, and timing of sample collection are listed in the tables below.

4.2.1 Blood-Based Biomarker Collection Schedule

	Serum	Plasma	DNA	Whole Blood
All Visits	**X**	**X**	**X**	**X**
Store/Ship:	**Rutgers & NCRAD**	**Rutgers & NCRAD**	**NCRAD**	**NCRAD**

Whole blood is collected in three different types of tubes for shipment to NCRAD: (1) 10 mL Red-Top Serum Determination tube, (3) 10 mL Purple-Top EDTA tubes, and (1) 6 mL Purple-Top EDTA tube.

- The (1) 10 mL Red-Top Serum Determination tube is processed locally into serum fractions. It is then aliquoted, frozen at the study site, and shipped to NCRAD.
  - **Note: The Rutgers site will keep the 3 x 500 uL Serum aliquots.**
- The (3) 10 mL Purple-Top EDTA tubes are processed locally into plasma and buffy coat fractions. They are then aliquoted, frozen at the study site, and shipped to NCRAD.
  - **Note: The Rutgers site will keep the 3 x 500 uL Plasma aliquots.**
- The (1) 6 mL Purple-Top EDTA tube is processed locally into whole blood fractions. It is then aliquoted, frozen at the study site, and shipped to NCRAD.

Consent forms must specify that any biological samples and de-identified clinical data may be shared with academic and/or industry collaborators through NCRAD. A copy of the consent form for each participant should be kept on file by the site investigator.

Frozen samples are to be submitted according to the shipping methods outlined in Section 8.0 for the processing, storage location, and timing of sample collection are listed in the following table.

4.3 Biospecimen Collection Chart

4.3.1 Blood Collection

Sample Type	Tube Type	Number of Tubes Supplied in Kit	Aliquot Volume	# Aliquots Shipped to NCRAD	# Aliquots Stored at Rutgers	Ship/Store
Whole blood for isolation of serum	**Serum Determination (Red-Top) Collection Tube (10 mL)**	1	**N/A**	**N/A**	**N/A**	**N/A**
	SERUM: 0.5 mL cryovials with **clear-caps**	3	**0.5 mL** serum aliquot per 0.5 mL cryovial	**0**	**3**	**Frozen**
		7	**0.2 mL** serum aliquot per 0.5 mL cryovial	**7**	**0**	
	SERUM: 2.0 mL cryovials with **red-cap**	1	**1.5 mL** serum aliquot per 2.0 mL cryovial	**1**	**0**	
Whole blood for isolation of plasma & buffy coat (for DNA extraction)	**EDTA (Purple-Top) Blood Collection Tube (10 mL)**	3	**N/A**	**N/A**	**N/A**	**N/A**
	PLASMA: 0.5 mL cryovials with **clear-caps**	3	**0.5 mL** plasma aliquot per 0.5 mL cryovial	**0**	**3**	**Frozen**
		7	**0.2 mL** plasma aliquot per 0.5 mL cryovial	**7**	**0**	
	PLASMA: 2.0 mL cryovials with **purple-caps**	6	**1.5 mL** plasma aliquot per 2.0 mL cryovial	**6**	**0**	
	BUFFY COAT: 2.0 mL cryovials with **blue-caps**	3	**~1.0 mL** buffy coat aliquot per 2.0 mL cryovial	**3**	**0**	
Whole Blood	**EDTA (Purple-Top) Blood Collection Tube (6 mL)**	1	**N/A**	**N/A**	**N/A**	**N/A**
	Whole Blood: 2.0 mL cryovials with **green-cap**	5	**1.0 mL** whole blood aliquot per 2.0 mL cryovial	**5**	**0**	**Frozen**

If a sample is not obtained at a particular visit, this should be recorded in the notes section of the **Biological Sample and Shipment Notification Form** (see Appendix B). Submit a copy to NCRAD with a reason provided for the omission.

5.0 Specimen Collection Kits, Shipping Kits, and Supplies

NCRAD will provide: 1) Blood based sample collection kits for research specimens to be stored at NCRAD, the Blood Supplemental Supply Kit, and the Frozen Blood Shipment Supply Kit (with the exception of pelleted dry ice and equipment supplies listed in Section 4.1). The provided materials include blood tubes, pipettes, boxes for serum/plasma/buffy coat/whole blood aliquots, as well as shipping labels to send materials to NCRAD. Kit Number Labels, PTID Labels, Collection Tube Labels and Aliquot Labels will all be provided by NCRAD. Collection Tube and Aliquot Labels will be pre-printed with study information specific to the type of sample being drawn. Ensure that all tubes are properly labeled during processing and at the time of shipment according to Section 6.1.

5.1 Specimen Collection Kit Contents

Collection kits contain the following (for each participant) and provide the necessary supplies to collect samples from a given participant. Do not replace or supplement any of the tubes or kit components provided with your own supplies unless you have received approval from the NCRAD Study team to do so. *Please store all kits at room temperature until use.*

Blood-Based Kit

Quantity	SAMENA Blood-Based Kit Components
1	Serum Determination (Red-Top) Blood Collection Tube (10 mL)
3	EDTA (Purple-Top) Blood Collection Tube (10 mL)
1	EDTA (Purple-Top) Blood Collection Tube (6 mL)
1	Cryovial (2.0 mL) with red-cap *for serum*
6	Cryovial (2.0 mL) with purple-cap *for plasma*
20	Cryovial (0.5 mL) with clear-cap *for serum and plasma*
3	Cryovial (2.0 mL) with blue-cap *for buffy coat*
5	Cryovial (2.0 mL) with green-cap *for whole blood*
1	50 mL conical polypropylene tube
4	Disposable graduated transfer pipette (1 mL)
5	Pre-printed Collection Tube Label
35	Pre-printed Aliquot Label
3	Pre-printed Kit Number Label
6	Label for handwritten PTID
1	Resealable bag
1	81-Slot Cryovial box

Blood-Based Supplemental Kit

Quantity	SAMENA Blood-Based Supplemental Kit Components
5	Serum Determination (Red-Top) Blood Collection Tube (10 mL)
10	EDTA (Purple-Top) Blood Collection Tube (10 mL)
5	EDTA (Purple-Top) Blood Collection Tube (6 mL)
10	Cryovial (2.0 mL) with red-cap *for serum*
20	Cryovial (2.0 mL) with purple-cap *for plasma*
50	Cryovial (0.5 mL) with clear-cap *for serum or plasma*
25	Cryovial (2.0 mL) with blue-cap *for buffy coat*
25	Cryovial (2.0 mL) with green-cap *for whole blood*
5	50 mL conical polypropylene tube
10	Disposable graduated transfer pipette (1 mL)
10	Label for handwritten PTID
3	Resealable bag
5	81-Slot Cryovial box
5	Plastic Biohazard bag with absorbent sheet (large)
5	UN3373 Sticker
5	UPS Blue Dry Ice Sticker
5	Fragile Label
5	UPS Airbill Sleeve

Frozen Blood Shipping Kits

Quantity	SAMENA Frozen Blood Shipping Kit
4	Plastic Biohazard bag with absorbent sheet (large)
1	Shipping box/Styrofoam container (large)
1	UN3373 Sticker
1	UPS Blue Dry Ice Sticker
1	Fragile Label
1	UPS Airbill Sleeve
1	Resealable bag

Individual Supplies

Quantities	Items Available upon request within the NCRAD kit module.
By Request	Serum Determination (Red-Top) Blood Collection Tube (10 mL)
By Request	EDTA (Purple-Top) Blood Collection Tube (10 mL)
By Request	EDTA (Purple-Top) Blood Collection Tube (6 mL)
By Request	Cryovial (2.0 mL) with red-cap *for serum*

By Request	Cryovial (2.0 mL) with purple-cap *for plasma*
By Request	Cryovial (0.5 mL) with clear-cap *for serum or plasma*
By Request	Cryovial (2.0 mL) with blue-cap *for buffy coat*
By Request	Cryovial (2.0 mL) with green-cap *for whole blood*
By Request	50 mL conical polypropylene tube
By Request	Disposable graduated transfer pipette (1 mL)
By Request	Label for handwritten PTID
By Request	Resealable bag
By Request	81-Slot Cryovial box
By Request	Plastic Biohazard bag with absorbent sheet (large)
By Request	UN3373 Sticker
By Request	UPS Blue Dry Ice Sticker
By Request	Fragile Label
By Request	UPS Airbill Sleeve
By Request	Shipping box/Styrofoam container (large)

5.2 Kit Supply to Study Sites

Each individual site will be responsible for ordering and maintaining a steady supply of kits from NCRAD. We advise sites to keep a supply of each kit type on hand to avoid running out prior to a scheduled study visit. In addition, keep in mind when kits on hand expire so you are prepared for study visits. Please go to https://redcap.link/SAMENA and follow the prompts to request the desired kits and/or extra supplies.

Please allow **THREE** weeks for kit orders to be processed and delivered.

Due to ongoing supply limitations, we ask that you please only order as many kits and extra supplies that you will be able to use in the next 30 days. Doing so allows us to fulfill as many kit requests as possible without depleting stock for other kit requests in our queue. If we are not able to fulfill any part of your request due to supplies being out of stock, we will reach out about those individually.

6.0 Blood Collection and Processing Procedures

Important Note: In order to ensure the highest quality samples are collected, processed, and stored, it is essential to follow the specific collection, processing, and shipment procedures detailed in the following pages. Please read the following instructions first before collecting any specimens. Have all your supplies and equipment out and

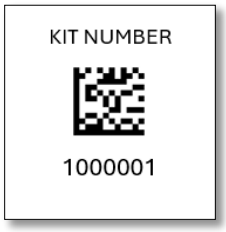
prepared prior to drawing blood. **Please note that the centrifuge may take 30 minutes to cool, so please plan accordingly.**

SPECIFIC INSTRUCTIONS FOR COLLECTION AND PROCESSING OF EACH SAMPLE ARE DETAILED ON THE FOLLOWING PAGES.

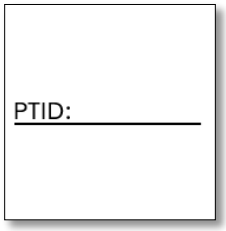
6.1 Labeling Samples

Label Type Summary:

1. Kit Number Label
2. PTID Label
3. Collection Tube Label
4. Aliquot Tube Label

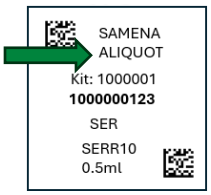


The **Kit Number Labels** do not indicate a specimen type but are affixed on the Biological Sample and Shipment Notification Forms and on the outside of the cryovial box.

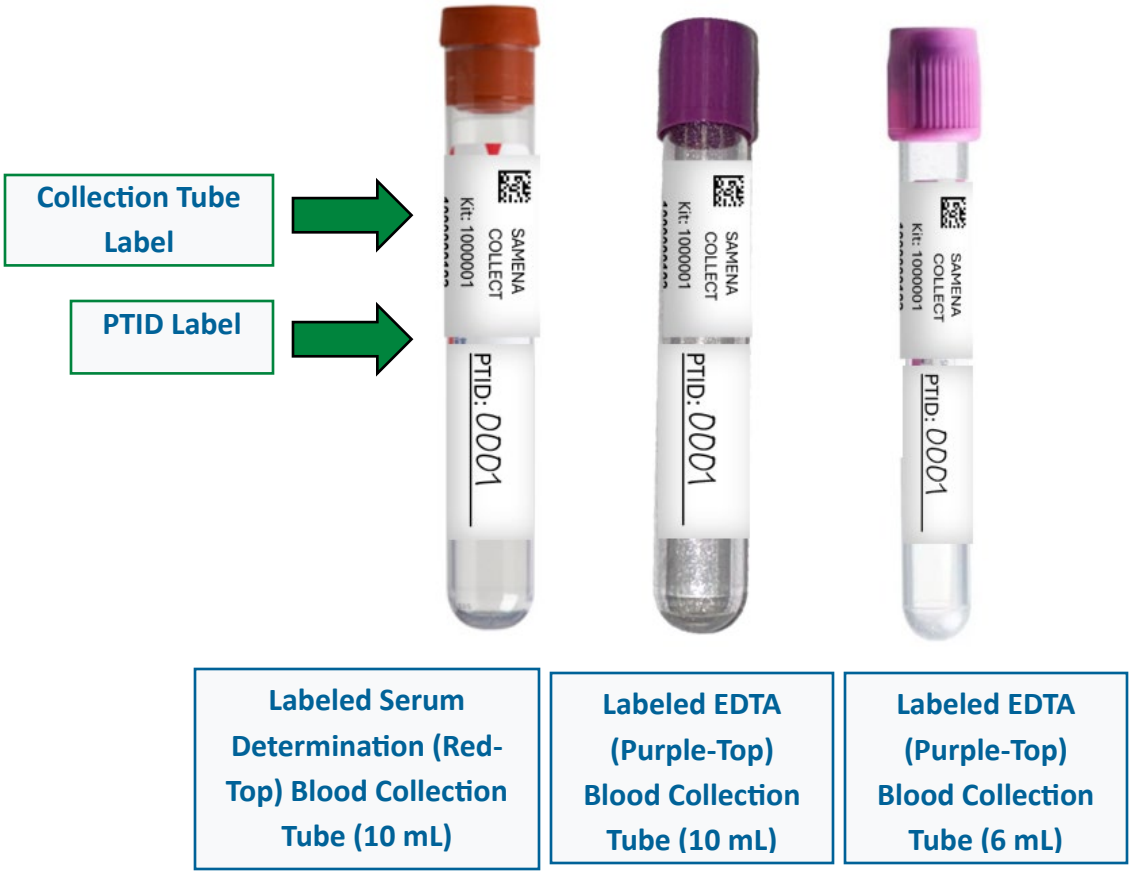


The **PTID Labels** are used to document the individual's unique PTID. Place one label on each blood collection tube.

The **Collection and Aliquot Tube Labels** for blood derivatives are placed on all collection and aliquot tubes. ***Note****: Aliquot Tube Labels will have "ALIQUOT" under the study name.*



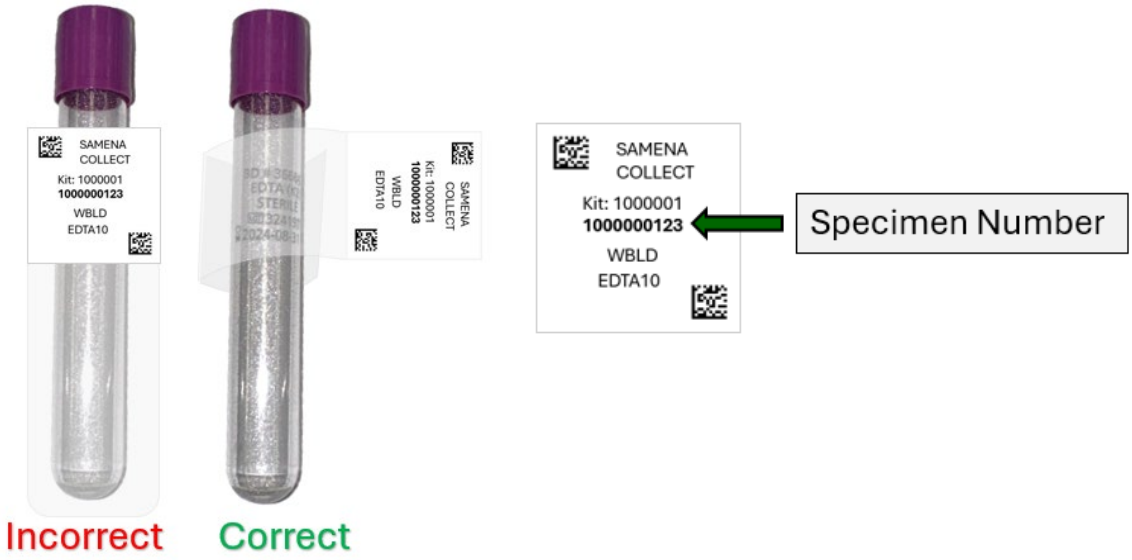
Important Note: **Each collection tube will contain two labels**: the Collection Tube Label and the PTID Label. Be sure to place labels in the same configuration consistently among tubes, with the barcoded label near the top of the tube and the handwritten PTID label.



In order to ensure the label adheres properly and remains on the tube, please follow these instructions:

- Place Aliquot Labels on **ALL** cryovials and place Collection Tube Labels on **ALL** collection tubes **BEFORE** sample collection, sample processing, or freezing. This should help to ensure the label properly adheres to the tube before exposure to moisture or different temperatures.
- Using a fine point permanent marker, fill-in and place the PTID Labels on the collection tubes only (Serum Determination and EDTAs) **BEFORE** sample collection, processing, or freezing. These labels are placed on collection tubes in addition to the Collection Tube Label.

- The Collection Tube Labels contain 2D barcodes on the top left-hand and bottom right-hand side of the label. Place label horizontally on the tube with the barcode toward the tube cap.



- Place Aliquot Labels horizontally on the 0.5 mL and 2.0 mL cryovial tubes (wrapped around sideways if the tube is upright).

- Take a moment to ensure the label is **completely adhered** to each tube. It may be helpful to roll the tube between your fingers after applying the label.

If there are any unused cryovials, please do not send the empty cryovials to NCRAD. These unused cryovials (ensure labels are removed) can be saved as part of a supplemental supply at your site or the cryovials can be disposed of per your site's requirements.

6.2 Video List

The following training videos are available to assist you with the specimen processing, aliquoting, and shipping processes.

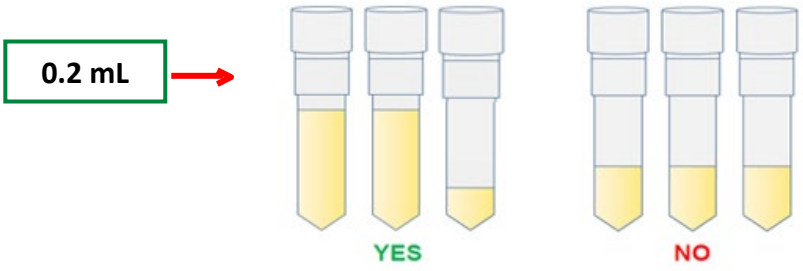
- SAMENA MOP Training
- Blood Processing and Aliquoting - Example
  - Please note that this video is an example. The processing procedures shown in this video differ from the SAMENA protocol. Please follow the processing procedures outlined in this manual.
- Frozen Shipping

6.3 Filling Aliquot Tubes (Serum, Plasma, and Whole Blood)

In order to ensure that NCRAD receives a sufficient amount of sample for processing and storage, and to avoid cracking of the tubes prior to shipment, each cryovial should be filled to the assigned volume with the respective biological material after processing is completed (refer to detailed processing instructions for average yield per sample).

Over-filled tubes may burst once placed in the freezer, resulting in a loss of that sample.

Aliquot the remaining biological material as the residual volume and ship to NCRAD. Essentially, all material should be shipped to NCRAD, ensuring maximum amount in as many cryovials as will allow after processing the sample. For example, if 1.5 mL of sample is obtained, you should fill 7 cryovial tubes each with 0.2 mL, and one additional cryovial tube with the remaining <0.2 mL.

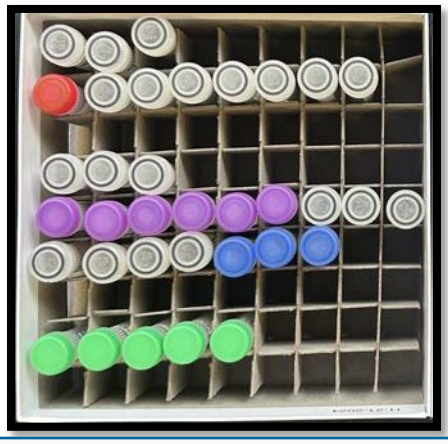


Please note: It is critical for the integrity of the samples that study staff note if an aliquot tube contains a residual volume. Please record the specimen number and volume of the residual aliquot on the Biological Sample and Notification Form.

To assist in the preparation and aliquoting of samples, colored caps are used for the cryovial tubes. The chart below summarizes the association between cap color and type of cryovial.

Cryovial Type	Sample Type
2 mL Red-cap Cryovial	Serum
2 mL Purple-cap Cryovial	Plasma
0.5 mL Clear-cap Cryovial	Serum and Plasma
2 mL Blue-cap Cryovial	Buffy Coat
2 mL Green-cap Cryovial	Whole Blood

Red-cap Cryovial | Purple-cap Cryovial | Clear-cap Cryovial | Blue-cap Cryovial | Green-cap Cryovial



81-Slot Cryobox with Serum, Plasma, Buffy Coat, And Whole Blood Aliquots

6.4 Serum Determination (Red-Top) Blood Collection Tube (10 mL) for Serum x 1

Whole Blood Collection for Isolation of Serum: Serum Determination (Red-Top) Blood Collection Tube (10 mL) (for processing of serum aliquots).

Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

1. Store empty Serum Determination (Red-Top) Blood Collection Tube (10 mL) tube at room temperature, 64°F - 77°F (18 °C – 25 °C) before use.

2. Set centrifuge to 4°C to pre-chill before use. Please note that the centrifuge could take 30 minutes to chill completely.

3. Place completed PTID label and pre-printed **"WBLD SERR10"** collection tube label (with "COLLECT" under the study name) on the Serum Determination (Red-Top) Blood Collection Tube (10 mL). Place the pre-printed "**SER SERR10 0.5ml**" aliquot labels on (3) 0.5 mL cryovials with clear-cap, place "**SER SERR10 1.5ml**" aliquot label on (1) 2.0 mL cryovial with red-cap, and place the "**SER SERR10 0.2ml**" aliquot labels on (7) 0.5 mL cryovials with clear-cap. Aliquot labels will have "ALIQUOT" under the study name.

4. Using a blood collection set and a holder, collect blood into **Serum Determination (Red-Top) Tube (10 ml)** using your institution's recommended procedure for standard venipuncture technique.

   The following techniques shall be used to prevent possible backflow:

   a. Place donor's arm in a downward position.
   b. Hold tube in a vertical position, below the donor's arm during blood collection.
   c. Release tourniquet as soon as blood starts to flow into last collection tube.
   d. Make sure tube additives do not touch the stopper or the end of the needle during venipuncture.

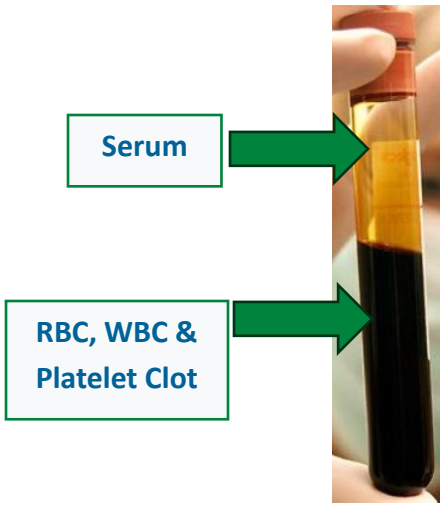
5. Allow at least 10 seconds for a complete blood draw to take place in the tube. **Ensure that the blood has stopped flowing into each tube before removing the tube from the holder.** The tube with its vacuum is designed to draw 10 ml of blood into the tube.

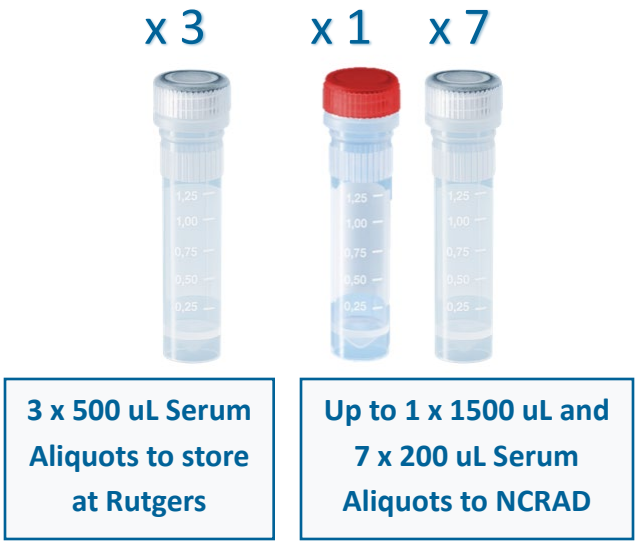
6. Immediately after blood collection, gently invert/mix (180 degree turns) each tube 5 times.

7. **Allow blood to clot at room temperature by placing it upright in a vertical position in a tube rack for 30 minutes.** If sample is not clotted allow it to set up to 60 minutes to clot, checking in 10-minute intervals.

8. After 30 minutes of clotting, centrifuge the collection tube for 10 minutes at 2000 rcf (x g) at 4°C. Serum samples need to be spun, aliquoted, and stored at -80°C within 2 hours of the time of collection. **It is critical that the tube be centrifuged at the appropriate speed to ensure proper serum separation (see worksheet in Appendix A to calculate RPM with a particular rotor, or refer to: http://www.sciencegateway.org/tools/rotor.htm)**.
   a. Equivalent rpm for spin at 2000 x g
   b. While centrifuging, record the centrifugation start time on the Biological Sample and Shipment Notification Form (Appendix B).

9. Remove the serum, being careful not to disturb the clot at the bottom of the collection tube, by tilting the tube and placing the pipette tip along the lower side of the wall without touching the clotted pellet, so that serum is not contaminated by pellet material. Using a pipette, transfer serum into the pre-labeled cryovials. Be sure to only place **serum** in cryovials with red-caps and clear-caps labeled as follows: Aliquot 0.5 mL per clear-cap cryovial with "**SER SERR10 0.5ml**", 1.5 mL per red-cap cryovial with "**SER SERR10 1.5ml**", and 0.2 mL per clear-cap cryovial with "**SER SERR10 0.2ml**" (11 total vials). The Serum Determination (Red-Top) Blood Collection Tube (10 mL) tube should yield, on average, 3-5 mL of blood serum. Place residual serum (<0.2 mL) in a 0.5 mL clear-cap cryovial. **If a residual aliquot (<0.2 mL) is created, document the last four digits of the barcode and volume on the Biological Sample and Shipment Notification Form.**





10. Place the labeled cryovials in the 81-cell cryobox and place on pelleted dry ice. Transfer to -80°C Freezer when possible. Store all samples at -80°C until the 1500 uL and 200 uL serum aliquots are shipped to NCRAD on pelleted dry ice. Record time aliquots placed in freezer and storage temperature of freezer on Biological Sample and Shipment Notification Form.
    a. **Important Note:** Rutgers will keep the 500 uL serum aliquots in 0.5 mL clear-cap cryovials on site.

11. Dispose of collection tube with pellet in the bottom of the tube according to your site's guidelines for disposing of biomedical waste.

Serum Determination (Red-Top) Blood Collection Tube (10 mL) for Serum x 1

Step 1

- Store tubes at room temperature.
- Label Collection Tube and Cryovials with pre-printed labels prior to blood draw.

Step 2

- Collect blood in (1) 10 mL Red-Top tube, allowing blood to flow for 10 seconds and ensure blood flow has stopped.

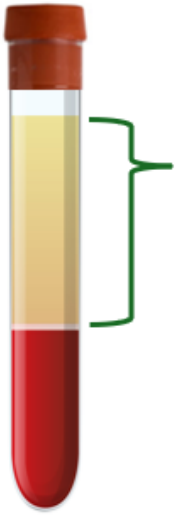
Step 3

- Immediately after blood draw, invert tube 5 times to mix samples.

Step 4

- Allow blood to clot at room temperature by placing it upright in a vertical position in a tube rack for 30 minutes.

Step 5



- Within 2 hours of blood draw, centrifuge samples at 2000 x g at 4°C for 10 minutes.

Step 6

X 3 @ 500uL

- Using a clean pipette, aliquot 0.5mL of serum from collection tube to pre-labeled clear-cap 0.5mL serum cryovials.
- **Store serum aliquots upright at -80°C at Rutgers site.**

Step 7

X 1 @ 1500uL

X 7 @ 200uL

- Aliquot 1.5mL of serum from collection tube to pre-labeled red-cap 2.0mL serum cryovial.
- Aliquot 0.2mL of serum from collection tube to pre-labeled clear-cap 0.5mL serum cryovials.
- **Store serum aliquots upright at -80°C until shipment to NCRAD.**

Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

6.5 EDTA (Purple-Top) Blood Collection Tube (10 mL) for Plasma and Buffy Coat x 3

Whole Blood Collection for Isolation of Plasma and Buffy Coat: EDTA (Purple-Top) Blood Collection Tubes (10 mL) (for processing of plasma aliquots and buffy coat aliquots).

Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

1. Store empty EDTA (Purple-Top) Blood Collection Tube (10 mL) tube at room temperature, 64°F - 77°F (18 °C – 25 °C) before use.

2. Set centrifuge to 4°C to pre-chill before use. Please note that the centrifuge could take 30 minutes to chill completely.

3. Place completed PTID label and pre-printed **"WBLD EDTA10"** collection tube label (with "COLLECT" under the study name) on the EDTA (Purple-Top) Blood Collection Tube (10 mL). Place the pre-printed "**PLA EDTA10 0.5ml**" aliquot labels on (3) 0.5 mL cryovials with clear-cap, place "**PLA EDTA10 1.5ml**" aliquot label on (6) 2.0 mL cryovial with red-cap and place the "**PLA EDTA10 0.2ml**" aliquot labels on (7) 0.5 mL cryovials with clear-cap. Aliquot labels will have "ALIQUOT" under the study name.

4. Using a blood collection set and a holder, collect blood into the **(3) EDTA (Purple-Top) Blood Collection Tubes (10 mL)** using your institution's recommended procedure for standard venipuncture technique.

The following techniques shall be used to prevent possible backflow:

   a. Place donor's arm in a downward position.
   b. Hold tube in a vertical position, below the donor's arm during blood collection.
   c. Release tourniquet as soon as blood starts to flow into last collection tube.
   d. Make sure tube additives do not touch the stopper or the end of the needle during venipuncture.

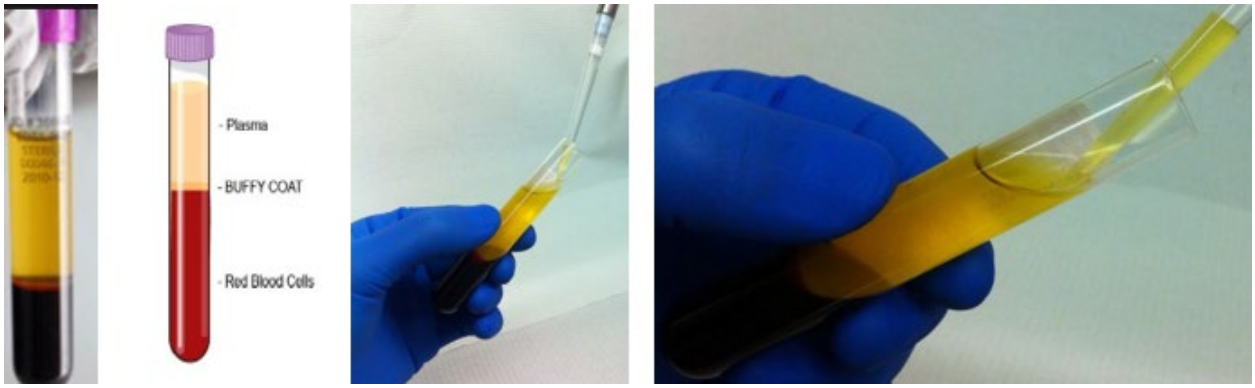
5. Allow at least 10 seconds for a complete blood draw to take place in each tube. **Ensure that the blood has stopped flowing into the tube before removing the tube from the holder.** The tube with its vacuum is designed to draw 10 mL of blood into the tube.
    a. If complications arise during the blood draw, please note the difficulties on the 'Blood Sample and Shipment Notification Form' (Appendix B). Do not attempt to draw an additional EDTA tube at this time. Process blood obtained in existing EDTA tube.

6. **CRITICAL STEP: Immediately after blood collection, <u>gently</u> invert/mix (180 degree turns) the EDTA tubes 8-10 times.**

7. **CRITICAL STEP: Immediately after inverting the EDTA tubes, place them on wet ice until centrifugation begins.**

8. Centrifuge balanced tubes for 10 minutes at 2000 rcf (x g) 4°C. **It is critical that the tubes be centrifuged at the appropriate speed and temperature to ensure proper plasma separation (see worksheet in Appendix A to calculate RPM.)**
    - Equivalent rpm for spin at 2000 x g
    - While centrifuging, remember to record all times, temperatures and spin rates on the Blood Sample and Shipment Notification Form.
    - Record original volume drawn for each tube in spaces provided on the **Blood Sample Shipment and Notification Form (Appendix B).**
    - Plasma samples need to be spun, aliquoted, and placed in the freezer within 2 hours from the time of collection.
    - Record time aliquoted on the Biological Sample Shipment and Notification Form (Appendix B).

9. Remove the plasma by tilting the tube and placing the pipette tip along the lower side of the wall, being careful not to agitate the buffy coat and packed red blood cells at the bottom of the tube (see below). Using a disposable graduated transfer pipette, transfer plasma from all Purple-Top EDTA tubes into the 50 mL conical tube. Mix the plasma by gently inverting the conical tube 3 times.

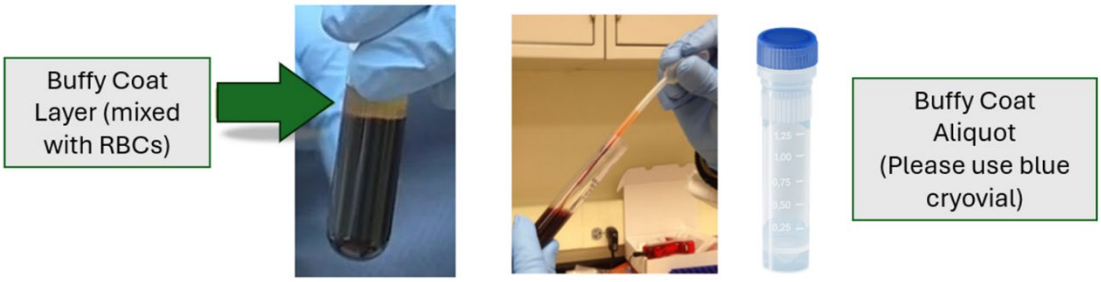


NOTE: When pipetting plasma from the plasma tubes into the 50 mL conical tube, be very careful to pipette the plasma top layer only, leaving the buffy coat and the red blood cell layers untouched.

10. Using a pipette, transfer plasma from the 50 mL conical tube into the pre-labeled cryovials. Be sure to only place **plasma** in cryovials with purple-caps and clear-caps labeled as follows: Aliquot 0.5 mL per clear-cap cryovial with "**PLA EDTA10 0.5ml**", 1.5 mL per purple-cap cryovial with "**PLA EDTA10 1.5ml**", and 0.2 mL per clear-cap cryovial with "**PLA EDTA10 0.2ml**" (16 total vials). Each EDTA tube should yield, on average, 4-5 mL of plasma. Take caution not to disturb the red blood cells at the bottom of the tube. Place residual serum (<0.2 mL) in a 0.5 mL clear-cap cryovial. **If a residual aliquot (<0.2 mL) is created, document the last four digits of the barcode and volume on the Biological Sample and Shipment Notification Form.**
11. Place the labeled cryovials in the 81-cell cryobox and place on pelleted dry ice. Transfer to -80°C Freezer when possible.
12. After plasma has been removed from each EDTA (Purple-Top) Blood Collection Tube (10 mL), aliquot **buffy coat** layer (in the top layer of cells mixed with RBCs - see figure below) into labeled cryovial with blue-cap using a clean pipette. The buffy coat aliquot is expected to have a reddish

color from the RBCs. Be sure to place buffy coats into cryovials with the blue-caps and "**BC EDTA10**" Aliquot Labels.

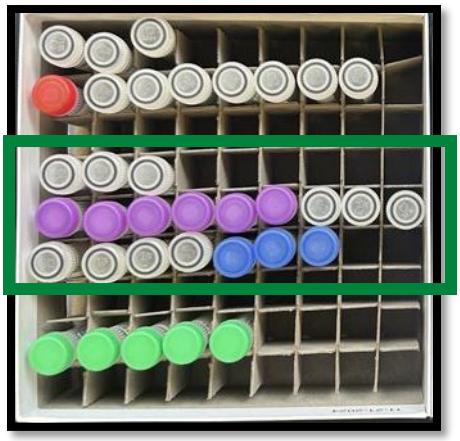
13. Dispose of tubes with red blood cell pellet according to your site's guidelines for disposing of biomedical waste.



14. Place the labeled cryovials in the 81-cell cryobox and place on pelleted dry ice. Transfer to -80°C Freezer when possible. Store all samples at -80°C until the 1500 uL plasma, 200 uL plasma, and buffy coat aliquots are shipped to NCRAD on pelleted dry ice. Record time aliquots placed in freezer and storage temperature of freezer on Biological Sample and Shipment Notification Form.
    a. **Important Note:** Rutgers will keep the 500 uL plasma aliquots in 0.5 mL clear-cap cryovials on site.

3 x 500 uL Plasma Aliquots to store at Rutgers

Up to 1 x 1500 uL and 7 x 200 uL Serum Aliquots and 3 x Buffy Coat Aliquots to NCRAD



EDTA (Purple-Top) Blood Collection Tube (10 mL) for Plasma and Buffy Coat x 3

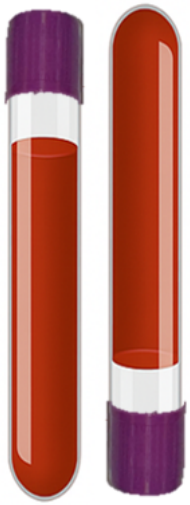
Step 1

- Store tubes at room temperature.
- Label Collection Tube and Cryovials with pre-printed labels prior to blood draw.

Step 2

- Collect blood in (3) 10 mL Purple-Top tube, allowing blood to flow for 10 seconds and ensure blood flow has stopped.

Step 3

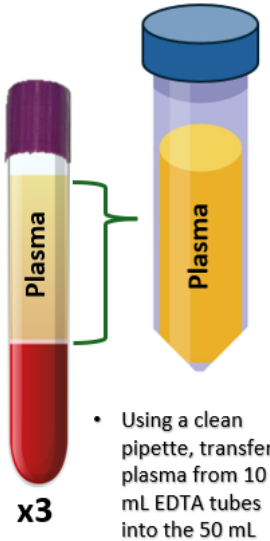


- Immediately after blood draw, invert tube 8-10 times to mix samples.

Step 4

- Immediately after inverting the EDTA tubes, place them on wet ice until centrifugation begins.
- Within 2 hours of blood draw, centrifuge samples at 2000 x g at 4°C for 10 minutes.

Step 5

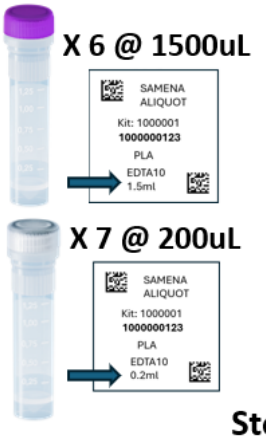


- Using a clean pipette, transfer plasma from 10 mL EDTA tubes into the 50 mL conical tube.
- Mix the plasma by gently inverting the conical tube 3 times.

Step 6

- Using a clean pipette, aliquot 0.5mL of plasma from collection tube to pre-labeled clear-cap 0.5mL plasma cryovials.
- **Store plasma aliquots upright at -80°C at Rutgers site.**

Step 7



- Aliquot 1.5mL of plasma from collection tube to pre-labeled purple-cap 2.0mL plasma cryovial.
- Aliquot 0.2mL of plasma from collection tube to pre-labeled clear-cap 0.5mL plasma cryovials.
- **Store plasma aliquots upright at -80°C until shipment to NCRAD.**

Step 8

- Using a clean pipette, transfer each buffy coat layer from EDTA tubes to pre-labeled blue-cap buffy coat cryovials (do not pool buffy coats).
- Store buffy coat aliquots upright at -80°C until shipment to NCRAD.

Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

6.6 EDTA (Purple-Top) Blood Collection Tube (6 mL) for Whole Blood x 1

Whole Blood Collection for Isolation of Whole Blood: EDTA (Purple-Top) Blood Collection Tubes (6 mL) (for processing of whole blood).

Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

1. Store empty EDTA (Purple-Top) blood collection tube at room temperature, 64°F - 77°F (18 °C – 25 °C) before use.

2. Place completed PTID Label and pre-printed "**WBLD EDTA6**" Collection Tube Label (with "COLLECT" under the study name) on the EDTA (Purple-Top) Blood Collection Tube (6 mL). Place pre-printed "**WBLD EDTA6**" Aliquot Labels (with "ALIQUOT" under the study name) on the (5) 2 mL cryovial tubes with green-caps.

3. Using a blood collection set and a holder, collect blood into the **(1) EDTA (Purple-Top) Blood Collection Tube (6 mL)** using your institution's recommended procedure for standard venipuncture technique.

The following techniques shall be used to prevent possible backflow:

   a. Place donor's arm in a downward position.
   b. Hold tube in a vertical position, below the donor's arm during blood collection.
   c. Release tourniquet as soon as blood starts to flow into tube.
   d. Make sure tube additives do not touch the stopper or the end of the needle during venipuncture.

4. Allow at least 10 seconds for a complete blood draw to take place. **Ensure that the blood has stopped flowing into the tube before removing the tube from the holder.** The tube with its vacuum is designed to draw 6 mL of blood into the tube. Record total amount of blood drawn into EDTA tube on the Biological Sample and Shipment Notification Form.
   a. If complications arise during the blood draw, please note the difficulties on the 'Blood Sample and Shipment Notification Form'

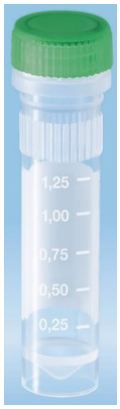
(Appendix B). Do not attempt to draw an additional EDTA tube at this time. Process blood obtained in existing EDTA tube.

5. **CRITICAL STEP: Immediately after blood collection, gently invert/mix (180 degree turns) the EDTA tube 8-10 times.**

6. Using a pipette, transfer whole blood from the 6 mL EDTA tube into the pre-labeled cryovials labeled "WBLD EDTA6" with "ALIQUOT" under the study name (5 total vials with 1 mL in each). The EDTA tube should yield, on average, 6 mL of whole blood. Be sure to only place **whole blood** in cryovials with green-caps and labeled with "WBLD EDTA6" labels with "ALIQUOT" under the study name.

7. Place the labeled cryovials in the 81-slot cryobox and place on pelleted dry ice. Transfer to **-80°C Freezer when possible**. Store all samples at **-80°C until shipped** to NCRAD on pelleted dry ice. Record time aliquots placed in freezer and storage temperature of freezer on Biological Sample Shipment and Notification Form (Appendix B).

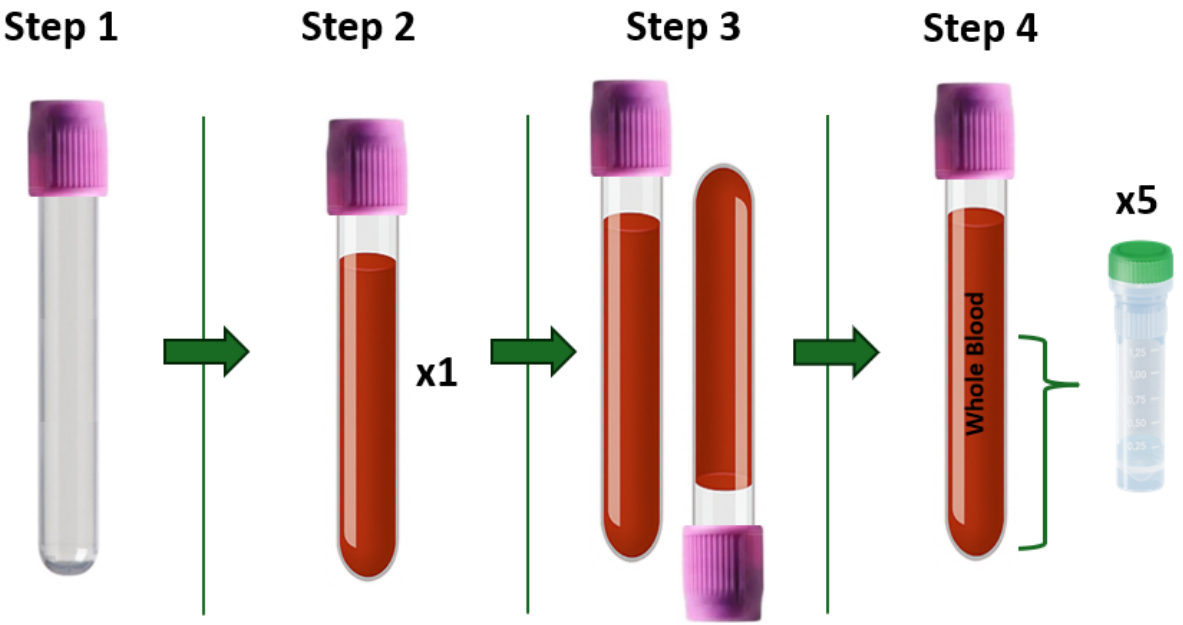
x 5



Whole Blood Aliquots (up to 5 possible)

8. Dispose of tubes according to your site's guidelines for disposing of biomedical waste.

EDTA (Purple-Top) Blood Collection Tube (6 mL) for Whole Blood x 1



- Store tube at room temperature.
- Label Collection Tube and Cryovials with pre-printed labels prior to blood draw.

- Collect blood in (1) 6 mL Purple-Top tube, allowing blood to flow for 10 seconds and ensure blood flow has stopped.

- Immediately after blood draw, invert tube 8-10 times to mix samples.

- Using a clean pipette, aliquot 1.0 mL of whole blood to (5) green-cap cryovials.
- Store whole blood aliquots upright at -80°C until shipment to NCRAD.

Important Note: Ensure all tubes are not expired prior to collection and processing of samples.

Version (07.2025)

7.0 Incomplete or Difficult Blood Draws

Important Note: If challenges arise during the blood draw process, it is advised that the phlebotomist discontinue the draw. Attempt to process and submit any blood-based specimens that have already been collected to NCRAD.

Situations may arise that prevent study coordinators from obtaining the total amount scheduled for biospecimens. In these situations, please follow the below steps:

1. *If the biospecimens at a scheduled visit **are partially** collected:*
    a. Attempt to process and submit any samples that were able to be collected during the visit.
    b. Document difficulties on the 'Biological Sample and Shipment Notification Form' prior to submission to NCRAD
        i. Indicate blood draw difficulties at the bottom of the 'Blood Sample and Shipment Notification Form' within the "Notes" section.
        ii. Complete the 'Blood Sample and Shipment Notification Form' with tube volume approximations and number of aliquots created.
    c. Contact a NCRAD coordinator and alert them of the challenging blood draw.
2. *If the biospecimens at a scheduled visit **are not** collected:*
    a. Inform your team and contact the NCRAD coordinator to alert them of the challenging blood draw or circumstances as to why biofluids were not collected.
    b. Schedule participant for a re-draw visit as quickly as possible.

8.0 Frozen Packaging and Shipping Instructions (Blood)

ALL study personnel responsible for shipping should be certified in biospecimen shipping. If not available at your University, training and certification is available through the CITI training site (Course titled "Shipping and Transport of Regulated Biological Materials" at https://www.citiprogram.org/).

SHIP ALL FROZEN SAMPLES MONDAY-WEDNESDAY ONLY!
BE AWARE OF HOLIDAYS!!
BE AWARE OF INCIPIENT INCLEMENT WEATHER THAT MAY DELAY SHIPMENT/DELIVERY OF SAMPLES

Sample Type	Tube Type / Aliquot Volume	# Aliquots Shipped to NCRAD	# Aliquots Stored at Rutgers	Ship/Store
Whole blood for isolation of serum	**Serum Determination (Red-Top) Collection Tube (10 mL)**	N/A	N/A	N/A
	0.5 mL serum aliquot per 0.5 mL cryovial	0	3	Frozen
	0.2 mL serum aliquot per 0.5 mL cryovial	7	0	
	1.5 mL serum aliquot per 2.0 mL cryovial	1	0	
Whole blood for isolation of plasma & buffy coat (for DNA extraction)	**EDTA (Purple-Top) Blood Collection Tube (10 mL)**	N/A	N/A	N/A
	0.5 mL plasma aliquot per 0.5 mL cryovial	0	3	Frozen
	0.2 mL plasma aliquot per 0.5 mL cryovial	7	0	
	1.5 mL plasma aliquot per 2.0 mL cryovial	6	0	
	~1.0 mL buffy coat aliquot per 2.0 mL cryovial	3	0	
Whole Blood	**EDTA (Purple-Top) Blood Collection Tube (6 mL)**	N/A	N/A	N/A
	1.0 mL whole blood aliquot per 2.0 mL cryovial	5	0	Frozen

The most important issue for shipping is to maintain the temperature of the samples. The frozen samples must never thaw; not even the outside of the tubes should be allowed to defrost. This is best accomplished by making sure the Styrofoam container is filled completely with pelleted dry ice.

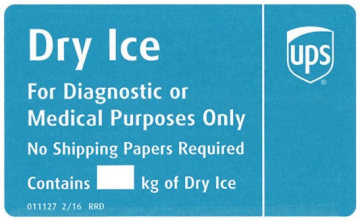
Large Frozen Shipper:	**Small Frozen Shipper:**
** 45 lbs. of dry ice pellets	**10 lbs. of dry ice pellets
AND	**AND**
• Fits up to 4 x 81-slot cryoboxes	• Fits up to 1 x 81-slot cryoboxes

Specimens being shipped to NCRAD should be considered as Category B UN3373 specimens and as such must be tripled packaged and compliant with IATA Packing Instructions 650. *See the Latest Edition of the IATA Regulations for complete documentation.*

Triple packaging consists of a primary receptacle(s), a secondary packaging, and a rigid outer packaging. The primary receptacles must be packed in secondary packaging in such a way that, under normal conditions of transport, they cannot break, be punctured, or leak their contents into the secondary packaging. Secondary packaging must be secured in outer packaging with suitable cushioning material. Any leakage of the contents must not compromise the integrity of the cushioning material or of the outer packaging.

Packing and Labeling Guidelines:

- The primary receptacle (frozen cryovials) must be leak proof and must not contain more than 1L total.
- The secondary packaging (biohazard bag) must be leak proof and if multiple blood tubes are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent direct contact with adjacent blood tubes.
- Absorbent material must be placed between the primary receptacle (within the cryovial box containing the frozen cryovials) and the secondary packaging. The absorbent material should be of sufficient quantity in order to absorb the entire contents of the specimens being shipped. Examples of absorbent material are paper towels, absorbent pads, cotton balls, or cellulose wadding.
- A shipping manifest of specimens being shipped must be included between the secondary and outer packaging.
- The outer shipping container must display the following labels:
    - Sender's name and address
    - Recipient's name and address
    - Responsible Person
    - The words "Biological Substance, Category B"
    - UN3373
    - UPS Dry Ice label, and net weight of pelleted dry ice contained



8.1 Frozen Packaging Instructions

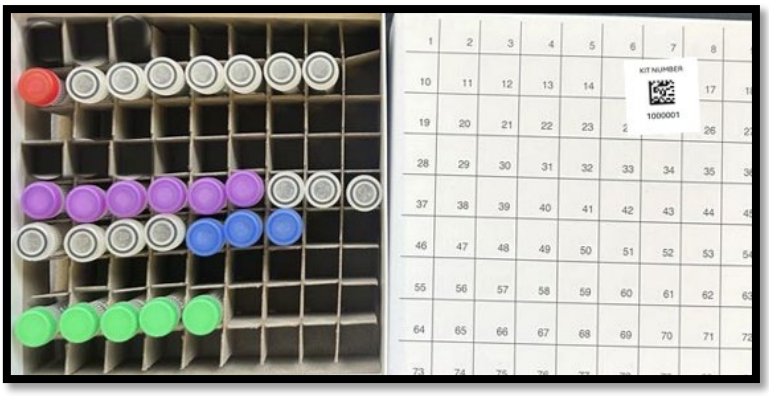
1. On the day of scheduled pick-up, begin packaging specimens on pelleted dry ice **~1 hour before UPS arrives**. Hold samples in -80°C freezer until it is time to package the specimens on pelleted dry ice for shipment. If storage in a -

80°C freezer until UPS pick-up is not possible, package shipments not more than 4 hours before the expected pick-up time.

1. **Important Note:** If shipping samples same day of collection, place samples upright on pelleted dry ice for 2 hours before shipment to ensure samples are completely frozen.

2. Notify NCRAD **IN ADVANCE** of shipment by emailing NCRAD coordinators at: alzstudy@iu.edu.
    1. Attach/include the following to/in the email:
        a. Completed Blood Sample and Shipment Notification Form to the email notification. (See Appendix B for an example of the NCRAD sample form)
        b. Shipment tracking number.
    2. If email is unavailable, please call NCRAD and do not ship until you've contacted and notified NCRAD coordinators about the shipment in advance.

3. Place all frozen labeled aliquots of serum, plasma, buffy coat, and whole blood from the same participant in the 81-slot cryobox.
    1. Each cryobox will hold approximately 29 cryovial samples. Place serum, plasma, buffy coat, and whole blood aliquots within one cryobox (8 serum, 13 plasma, 3 buffy coat, and 5 whole blood) per participant blood draw (see below):

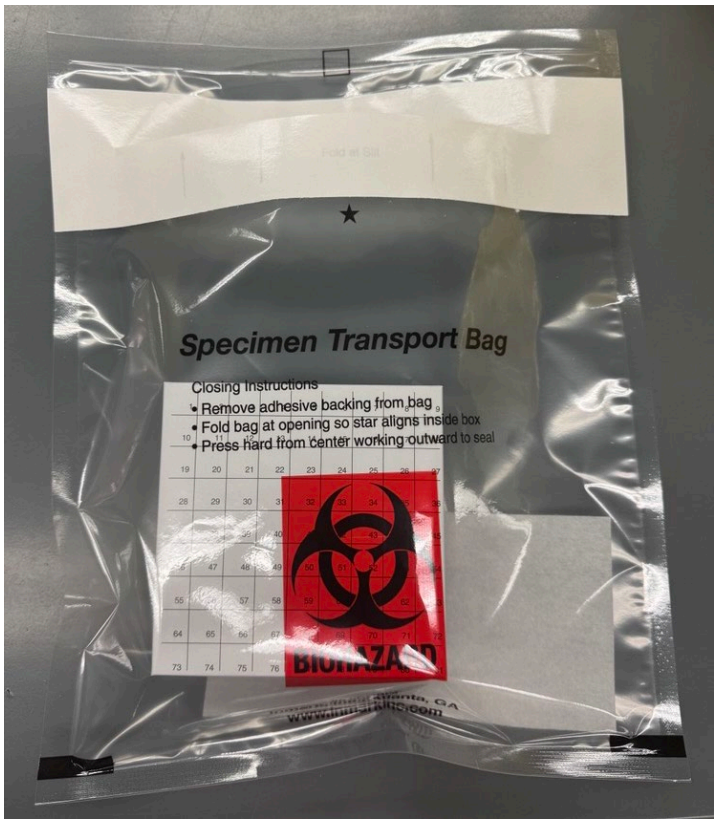


    2. Cryoboxes should contain all of the specimens from the same participant, per time point.

3. **Batch shipping should be performed every 3 months or when specimens from 4 participants accumulates, whichever is sooner.**

4. Label the outside of the cryoboxes with the kit number label.

5. Place cryobox in the clear plastic biohazard bag (do NOT remove the absorbent material found in the bag) and seal according to the instructions on the bag.
    1. See below: Cryobox with serum, plasma, buffy coat, and whole blood aliquots in biohazard bag with absorbent sheet.



6. Place approximately 2-3 inches of pelleted dry ice in the bottom of the Styrofoam shipping container.

7. Place the biohazard bags into the provided Styrofoam-lined shipping container on top of the pelleted dry ice. Please ensure that cryoboxes are placed so the cryovials are upright in the shipping container.

8. Fully cover the cryoboxes with approximately 2 inches of pelleted dry ice.

9. The inner Styrofoam shipping container must contain approximately 30-45 lbs. (or 21kg) of pelleted dry ice. The pelleted dry ice should fill the inner box entirely to ensure the frozen state of the specimens.

Full Shipping Container with Batched Samples and Dry Ice

10. Replace the lid on the Styrofoam carton. Place the completed Blood Sample and Shipment Notification Forms (Appendix B) in the package on top of the Styrofoam lid for each participant with samples included in the shipment, and close and seal the outer cardboard shipping carton with packing tape.

11. Complete the UPS Dry Ice Label:
    1. Net weight of pelleted dry ice in kg (must match amount on the airbill)
    2. Do not cover any part of this label with other stickers, including pre-printed address labels.

! IMPORTANT !

Complete the UPS Dry Ice label or UPS may reject or return your package.

12. Apply all provided warning labels (UN3373, Blue UPS Dry Ice, and Fragile Label) and the pre-printed UPS return label to the outside of package, taking care not to overlap labels.

13. Specimens should be sent to the below address via UPS Next Day Air. Frozen shipments should be sent **Monday through Wednesday (Monday through Tuesday for Canadian and other international sites)** to avoid shipping delays on Thursday or Friday. UPS does not replenish pelleted dry ice if shipments are delayed or held over during the weekend.

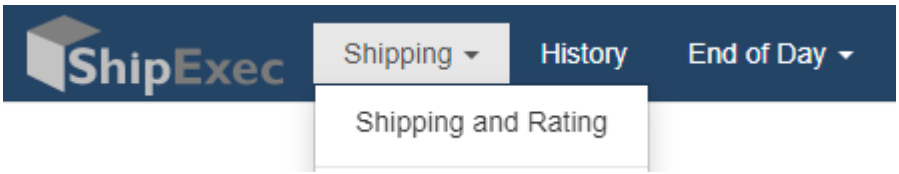
    NCRAD
    351 West 10th Street TK-217
    Indianapolis, IN 46202
    Phone: 1-800-526-2839

14. **IMPORTANT:** Use UPS tracking to ensure the delivery occurs as scheduled and is received by NCRAD.

In addition to tracking and reconciliation of samples, the condition and number of samples received are tracked by NCRAD for each sample type. Investigators and clinical coordinators for each project are responsible to ensure the requested amounts of each fluid are collected to the best of their ability and that samples are packed with sufficient amounts of pelleted dry ice to avoid thawing in the shipment process.

8.2 Frozen Shipping Instructions

1. Log into the ShipExec™ Thin Client at ShipExec™ Thin Client.
    a. If a new user or contact needs access, please reach out to your study contact for access.
2. Click “Shipping” at the top of the page and select “Shipping and Rating.”



3. Select your study from the “Study Group” drop down on the right side of the main screen. Choosing your study will automatically filter the address book to addresses within your study.

4. Click on the magnifying glass icon in the “Ship From” section to search for your shipping address.

   a. Search by Company (site), Contact (name), or Address 1 (first line of your site’s street address). Click Search.
   b. Click Select to the left of the correct contact information.
5. Verify that both the shipping information AND study reference are correct for this shipment.
   a. If wrong study contact or study reference, click Reset in the bottom right of the screen to re-search for the correct information.
6. Enter Package Information:
   a. Frozen shipments:
      i. Enter the total weight of your package in the “Weight” field.
      ii. Enter the dry ice weight in the “Dry Ice Weight” field.
      iii. If the “Dry Ice Weight” field is higher than the “Weight” field, you will receive an error message and need to re-enter these values.
   b. Click “Ship” in the bottom right of the page when complete.
7. If your site does not already have a daily UPS pickup, you will need to schedule one:
   a. Click the blue “Pickup Request” button.

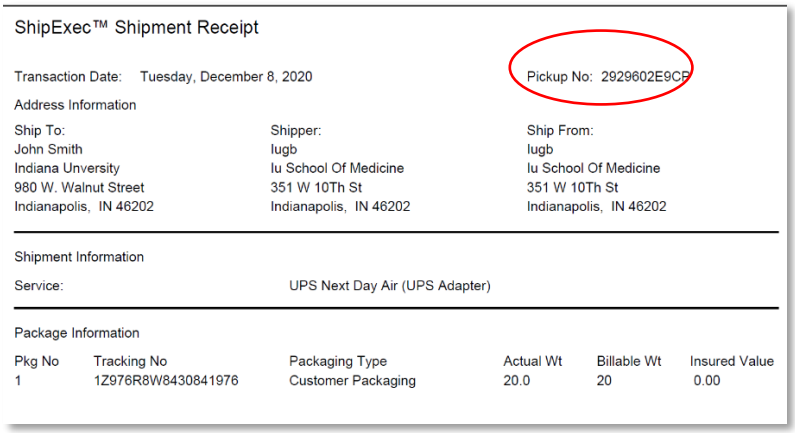
b. Enter the earliest pickup time and latest pickup time in 24-hr format.
    i. Users must schedule pickup **minimum** 1 hour before "Earliest Time Ready."
        1. "Earliest Time Ready" has to be after current time of day even if scheduling pickup for later date.
    ii. Users will get an error if attempting to schedule pick-up after institution's closing time.
c. Give a name & phone number of someone who the UPS driver can call if having issues finding the package.
d. Give the Floor and Room Number (if needed) where this package needs to be picked up from to be as descriptive as possible.
    i. Room number field is free text, Floor field is numerical only.
e. Click Save.

8. Click on "Ship" button in the bottom right corner when ready to ship the package.
    a. If you receive an error relating to the pickup request, try again leaving the "Pickup Request" details blank. Call 1-800-PICK-UPS to manually set up a pick-up instead.
9. Print the airbill that is automatically downloaded.
    a. To reprint airbill, click History at the top left of the page.
    b. Click "Detailed Report" from the dropdown menu on the right side of the page.
    c. Enter tracking number if known. Otherwise, search by ship date. Click Search.
    d. Click print icon on right side of the tracking number line under the "Action" column.
10. Fold airbill, and place inside plastic UPS sleeve.
11. Peel the back off of the UPS sleeve and stick the sleeve to the package.
12. If "Pickup Request" information was entered, a UPS Pickup is automatically scheduled at the address you are shipping from, and the pickup is charged to NCRAD.

a. If shipment occurs too late in the day for an automatic UPS pickup, you will receive an email stating that the pickup could not be scheduled, and you will need to make other arrangements.

Note:

- The "Pickup No." is the reference number to your specific pickup request in case there are any issues with your package being picked up by UPS.
- Check Pickup Status by going to UPS.com, click on the Shipping, select Schedule a Pickup, and look on the right side of screen to click on "Pickup Status". Enter the Pickup No. listed on the receipt into PRN field and submit.



ShipExec™ Shipment Receipt

Transaction Date: Tuesday, December 8, 2020

Pickup No: 2929602E9CF

Address Information

Ship To:	Shipper:	Ship From:
John Smith	Iugb	Iugb
Indiana Unversity	Iu School Of Medicine	Iu School Of Medicine
980 W. Walnut Street	351 W 10Th St	351 W 10Th St
Indianapolis, IN 46202	Indianapolis, IN 46202	Indianapolis, IN 46202

Shipment Information

Service: UPS Next Day Air (UPS Adapter)

Package Information

Pkg No	Tracking No	Packaging Type	Actual Wt	Billable Wt	Insured Value
1	1Z976R8W8430841976	Customer Packaging	20.0	20	0.00

9.0 Data Queries and Reconciliation

Sample and Shipment Notification forms must be completed on the day that samples are collected since they capture information related to the details of the sample collection and processing. These forms include information that will be used to reconcile sample collection and receipt, as well as information essential to future analyses.

NCRAD will collaborate with the data team to reconcile information captured in the database compared to samples received and logged at NCRAD. Additional discrepancies may be sent directly to the Center staff to reconcile.

Data queries or discrepancies with samples shipped and received at NCRAD may result from:

- Incorrect samples collected and shipped.
- Damaged or incorrectly prepared samples
- Unlabeled samples, samples labeled with incomplete information, or mislabeled samples.
- Discrepant information documented on the Blood Sample and Shipment Notification Form and logged at NCRAD compared to information entered into the database.

10 Appendices List

10.1 Appendix A: Rate of Centrifuge Worksheet

10.2 Appendix B: Blood Sample and Shipment Notification Form

Appendix A: Rate of Centrifuge Worksheet

Please complete and return this form by email to the NCRAD Project Manager if you have any questions regarding sample processing. The correct RPM will be sent back to you. You can also use online calculators like this one - https://www.sigmaaldrich.com/CA/en/support/calculators-and-apps/g-force-calculator

For this, you will need:
RPM
Radius of rotor – Distance from center to middle of bucket

Submitter Information

Name: Site:
Submitter e-mail:

Centrifuge Information
Please answer the following questions about your centrifuge.

Centrifuge Type
Fixed Angle Rotor: ☐ Swing Bucket Rotor: ☐

Radius of Rotation (mm):

Determine the centrifuge's radius of rotation (in mm) by measuring distance from the center of the centrifuge spindle to the bottom of the device when inserted into the rotor (if measuring a swing bucket rotor, measure to the middle of the bucket).

Calculating RPM from G-Force:

$$RCF = \left(\frac{RPM}{1{,}000}\right)^2 \times r \times 1.118 \quad \Rightarrow \quad RPM = \sqrt{\frac{RCF}{r \times 1.118}} \times 1{,}000$$

RCF = Relative Centrifugal Force (G-Force)
RPM = Rotational Speed (revolutions per minute)
R= Centrifugal radius in mm = distance from the center of the turning axis to the bottom of centrifuge

Comments:

Please send this form to NCRAD Study Coordinator
alzstudy@iu.edu

Appendix B: Blood Sample and Shipment Notification Form

Appendix B

Participant ID - SAMARTH_____

Blood Sample and Shipment Notification Form

Please email this form prior to the date of shipment.

To: Kelley Faber Email: alzstudy@iu.edu Phone: 1-800-526-2839	
General Information: _____	UPS tracking #: _____
From: _____	Date: _____
Phone: _____	Email: _____
Study: SAMENA Sex: M F Year of Birth: _____ Visit (circle number): BL Y1 Y2	Kit Label
Blood Collection:	
1.Date Drawn: _____ [MMDDYY]	2.Time of Draw: _____ [HHMM]
3.Last date subject ate: _____ [MMDDYY]	4.Last time subject ate: _____ [HHMM]

Blood Processing:

Serum (Red-Top) Tube (10 mL) x 1		Plasma & Buffy Coat (Purple-Top) Tubes (10 mL) x 3	
Time spin started:	_____ [HHMM]	Time spin started:	_____ [HHMM]
Duration of centrifuge:	_____ Minutes	Duration of centrifuge:	_____ Minutes
Temp of Centrifuge: _____ °C		Temp of Centrifuge: _____ °C	
Rate of centrifuge: _____ x g		Rate of centrifuge: _____ x g	
Time aliquoted:	_____ [HHMM]	Time aliquoted:	_____ [HHMM]
Number of 0.5 mL serum aliquots created (clear-cap) ***(Store at Rutgers site)***:	_____	Number of 0.5 mL plasma aliquots created (clear-cap) ***(Store at Rutgers site)***:	_____
Number of 1.5 mL serum aliquots created (red-cap):	_____	Number of 1.5 mL plasma aliquots created (purple-cap):	_____
Number of 0.2 mL serum aliquots created (clear-cap):	_____	Number of 0.2 mL plasma aliquots created (clear-cap):	_____
If applicable, volume of residual serum aliquot (less than 0.2 mL in clear cap):	_____ mL	If applicable, volume of residual plasma aliquot (less than 0.2 mL in clear-cap):	_____ mL
If applicable, specimen number of residual serum aliquot **(last four digits)**:	_ _ _ _	If applicable, specimen number of residual plasma aliquot **(last four digits)**:	_ _ _ _
Original blood volume drawn (1 x 10 mL Serum collection tube):	_____ mL	Original blood volume drawn (3 x 10 mL EDTA collection tube):	EDTA #1: _____ mL EDTA #2: _____ mL EDTA #3: _____ mL
Time aliquots placed in freezer:	_____ [HHMM]	Buffy coat aliquot specimen numbers **(last four digits)**:	Buffy Coat #1: _ _ _ _ Buffy Coat #2: _ _ _ _ Buffy Coat #3: _ _ _ _
Storage temperature in freezer:	_____ °C		
Whole Blood (Purple-Top) Tube (6 mL) x 1		Buffy coat volumes (~1.0 mL in blue-cap):	Buffy Coat #1: _____ mL Buffy Coat #2: _____ mL Buffy Coat #3: _____ mL
Time aliquoted:	_____ [HHMM]		
Number of 1.0 mL whole blood aliquots created (green-cap):	_____	Time aliquots placed in freezer:	_____ [HHMM]
Original blood volume drawn (1 x 6 mL EDTA collection tube):	_____ mL	Storage temperature in freezer:	_____ °C
Time aliquots placed in freezer:	_____ [HHMM]		
Storage temperature in freezer:	_____ °C		

Notes: _____

E.g., hemolysis, blood is coagulated, issues with blood collection - please specify, etc.

Version (7.2025)