



Longitudinal Imaging Biomarkers of Disease Progression in DLB

BIOSPECIMEN COLLECTION & PROCESSING

Overview

1. Specimen uniformity and quality
2. Site Equipment
3. Procedures
 - Kit Ordering
 - Sample Labels
 - Sample Collection and Processing
 - Shipping Closures
4. Contact Information

Specimen Uniformity and Quality

GENERAL REMINDERS

Specimen Uniformity and Quality

Most biomarkers are sensitive to *time* and *temperature*

- Standardization of processing across sites is key
- Reference the *BioSEND Specimen Collection, Processing, and Shipment Manual* as needed
- Do not replace or supplement any kit components without first receiving approval from BioSEND/NINDS

Questions? Email biosend@iu.edu

Site Equipment


Sites will need to supply the following items:

- Gloves
- Alcohol wipes
- Butterfly needles
- Tourniquet
- Gauze pads
- Bandages
- Microcentrifuge tube rack
- Sharps bin and lid
- Crushed ice
- Pipettes and pipette tips
- Centrifuge capable of maintaining 4°C
- -80°C Freezer
- Dry ice

Biospecimen Collection Protocol

	BL	6M	12M	24M	36M	48M
DNA (6ml)	X					
Whole Blood (6ml)	X	X	X	X	X	X
Plasma (6 x 1ml)	X	X	X	X	X	X
Serum (6 x 1ml)	X	X	X	X	X	X
RNA (2 x 2.5ml)	X	X	X	X	X	X
CSF (10 x 1ml)	X		X	X	X	X

Kit Ordering – Biosend.org



Accessing
Biospecimens

Banking
Samples

Active Studies

About
BioSEND

AJPD Study Resources

CHANGE-HD Study Resources

DLB Study Resources

DVRP Study Resources

EpiBioS4Rx Study Resources

LBD Study Resources

LETBI Study Resources

MBPS Study Resources

PBS Study Resources

PHD3 Study Resources

PSP Study Resources

SBPD Study Resources

CRC-SCA Study Resources

READISCA Study Resources


SPARX3 Study Resources

Udall Study Resources


Holiday Closures

Shipping Information

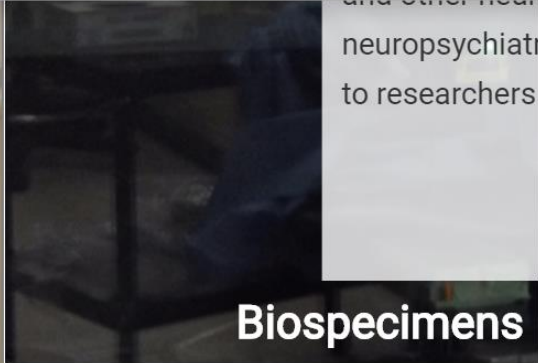
Sample Shipment Form



About BioSEND



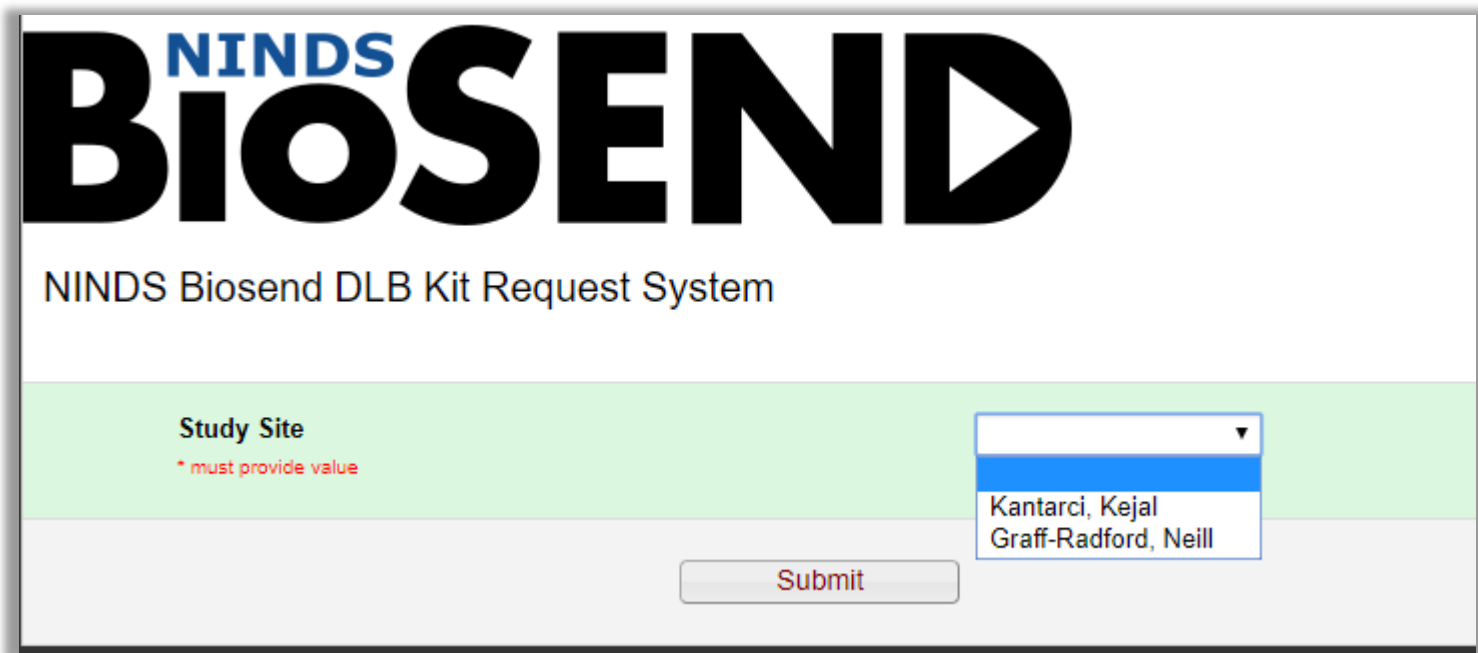
Banking Samples



Biospecimens

BioSEND Kit Request Module

- <http://kits.iu.edu/biosend/dlb>
- **Choose your site from the drop-down list.**



The screenshot shows the NINDS BioSEND DLB Kit Request System interface. At the top, the logo "NINDS BioSEND" is displayed in large, bold letters, with "NINDS" in blue and "BioSEND" in black. Below the logo, the text "NINDS Biosend DLB Kit Request System" is centered. The form has a light green background. On the left, the label "Study Site" is followed by a red asterisk and the text "* must provide value". To the right of this label is a drop-down menu with a blue header bar and two visible options: "Kantarci, Kejal" and "Graff-Radford, Neill". Below the drop-down menu is a "Submit" button with a red outline.

NINDS BioSEND

NINDS Biosend DLB Kit Request System

Study Site
* must provide value

Kantarci, Kejal
Graff-Radford, Neill

Submit

Confirm Shipping Info

Confirm site information:

- Study site
- Shipping address
- Contact name
- Email
- Phone Number

Indiana University

Carolyn Dunifon
Indiana University School of Medicine
351 West 10th Street
TK-217
Indianapolis, IN 46202
(317) 274-5751
biosend@iu.edu

Is the contact name above correct?

* must provide value

☐ Yes

☐ No

reset

Is the shipping address above correct?

* must provide value

☐ Yes

☐ No

reset

Is the e-mail address above correct?

* must provide value

☐ Yes

☐ No

reset

Update Information

Provide corrected/updated information, as needed

Is the contact name above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No	reset
New Contact Name <small>* must provide value</small>	<input type="text"/>	
Is the shipping address above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No	reset
New Shipping Address <small>* must provide value</small>	<div><input type="text"/></div> <div>Expand</div>	
Is the e-mail address above correct? <small>* must provide value</small>	<input type="radio"/> Yes <input checked="" type="radio"/> No	reset
New e-mail Address <small>* must provide value</small>	<input type="text"/>	

Kit Type

Kit Type **Please allow two weeks for shipment** <i>* must provide value</i>	<input type="checkbox"/> Baseline or Annual Visit Kit <input type="checkbox"/> 6-Month Visit Kit <input type="checkbox"/> Supplemental Kit <input type="checkbox"/> Extra Supplies <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
--	---

Multiple kit types available

Baseline Kits



- BioSEND creates ST numbers for baseline kits
- ST#s serve as the biorepository subject identifier
- Enter kit quantity

Kit Type **Please allow two weeks for shipment** <small>* must provide value</small>	<input checked="" type="checkbox"/> Baseline or Annual Visit Kit <input type="checkbox"/> 6-Month Visit Kit <input type="checkbox"/> Supplemental Kit <input type="checkbox"/> Extra Supplies <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
CSF Sprotte® Needle Gauge <small>* must provide value</small>	<input type="radio"/> 22 <input type="radio"/> 24 reset
Baseline or Annual Visit Kit Quantity <small>* must provide value</small>	<input type="text"/> <small>If you need more than 10 kits or labels, please use the file upload option or submit multiple requests.</small>

Important Note: ST-Numbers

Please note: the ST-Number provided in a BL kit can be used for any subject's BL visit. **This ST number is a subject identifier** and will need to stay linked to the patient through the entirety of the study.

Annual Visits

Baseline or Annual Visit Kit Quantity	<input type="text" value="2"/>
<small>* must provide value</small>	<small>If you need more than 10 kits or labels, please use the file upload option or submit multiple requests.</small>
<p>If you going to request more than 10 kits/labels or prefer to upload a file with the Biorepository ID and Visit, you may download this template file and fill in the relevant information.</p> <p>Attachment:  BioSEND Kit IDs Template.xlsx (0.01 MB)</p>	
<p>If you are using the provided template to upload Biorepository IDs and Visits, please upload your template file here.</p> <p> Upload document</p>	
1st Kit Visit ID (only if not using file upload option)	<input type="text" value="ST-00012345"/> <small>e.g. ST-00012345</small>
1st Kit Visit Month	<input type="text" value="12 Month"/>
2nd Kit Visit ID (only if not using file upload option)	<input type="text" value="ST-0012346"/> <small>e.g. ST-00012345</small>
2nd Kit Visit Month	<input type="text" value="36 Month"/>

Please provide ST-Number and time point. We are unable to complete your request without this information

Supplemental Kit

Contains a variety of
extra kit components

Kit Type

****Please allow two weeks for shipment****

* must provide value

- ☐ Baseline or Annual Visit Kit
- ☐ 6-Month Visit Kit
- ☒ Supplemental Kit
- ☐ Extra Supplies

Please specify in comments if you need kits before the standard two week shipment time.

Supplemental Kit Quantity

* must provide value

If you need more than 10 kits or labels, please use the file upload option or submit multiple requests.

Comments

Expand

Each Supplemental Kit Contains:

- 2 100 ml absorbent sheets
- 2 6-tube bubble pouches
- 2 Cryoboxes
- 20 Siliconized sterile cryogenic vials (2 ml)
- 2 Screw-top centrifuge tubes (15 ml)
- 2 Screw-top centrifuge tubes (50 ml)
- 2 Biohazard bags
- 2 Vacutainer® - PAXGene® tubes (2.5 ml)
- 2 Monoject- Lavender-top EDTA tubes (10 ml)
- 2 Vacutainer® - Purple-top EDTA tubes (6 ml)
- 2 Vacutainer® - Red-top serum tubes (10 ml)
- 2 Disposable transfer pipettes (1ml)
- 2 Warning label packets

Extra Supplies

Allows you to choose specific supplies and particular quantities

Kit Type **Please allow two weeks for shipment** <small>* must provide value</small>		<input type="checkbox"/> Baseline or Annual Visit Kit <input type="checkbox"/> 6-Month Visit Kit <input type="checkbox"/> Supplemental Kit <input checked="" type="checkbox"/> Extra Supplies
		<small>Please specify in comments if you need kits before the standard two week shipment time.</small>
6-Tube Bubble Pouch	<input type="radio"/> 2 <input type="radio"/> 4	reset
Cryobox	<input type="radio"/> 2 <input type="radio"/> 4	reset
Siliconized Sterile Cryogenic Vial (2 ml)	<input type="radio"/> 10 <input type="radio"/> 20	reset
FedEx® return Airbill	<input type="radio"/> 2 <input type="radio"/> 4	reset
Lumbar Puncture Trays with Lidocaine	<input type="radio"/> 2 <input type="radio"/> 4	reset
Needles - Introducer	<input type="radio"/> 5	reset

Multiple Orders

Kit Type **Please allow two weeks for shipment** <i>* must provide value</i>	<input checked="" type="checkbox"/> Baseline or Annual Visit Kit <input checked="" type="checkbox"/> 6-Month Visit Kit <input checked="" type="checkbox"/> Supplemental Kit <input checked="" type="checkbox"/> Extra Supplies <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
--	---

You can order more than one type of kit in a single kit request

Submit Request

- Click “Submit” to send order to BioSEND; staff will confirm receipt of your order
- Please allow two week turn-around time for kit shipments
- If urgent request needed, please note date needed by in comments and email BioSEND

NINDS BioSEND
Ninds Biosend LDB Kit Request System

Study Site: Scherzer, Clemens
* must provide value

Harvard Medical School - Scherzer, Clemens
Kara Page
65 Landsdowne St
Rm #327
Cambridge, MA 02139
(617) 768-8677
kjpage@partners.org
ksburke@partners.org

Is the contact name above correct?
* must provide value
☒ Yes
☐ No
[reset](#)

Is the shipping address above correct?
* must provide value
☒ Yes
☐ No
[reset](#)

Is the e-mail address above correct?
* must provide value
☒ Yes
☐ No
[reset](#)

Kit Type
****Please allow two weeks for shipment****
* must provide value

☐ Baseline or Annual Visit Kit
☐ 6-Month Visit Kit
☐ Supplemental Kit
☐ Extra Supplies

Please specify in comments if you need kits before the standard two week shipment time.

Comments

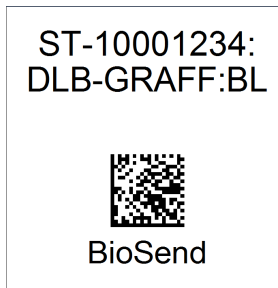
[Expand](#)

Submit

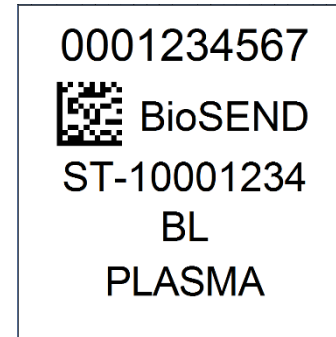
Sample Labelling

Labels are provided by Indiana University

- Please check that all samples are properly labelled with correct specimen type and visit



Case Labels



Specimen Labels

Case Label

ST-10001234:
DLB-GRAFF:BL



BioSend



Subject Number



Study – PI & Visit

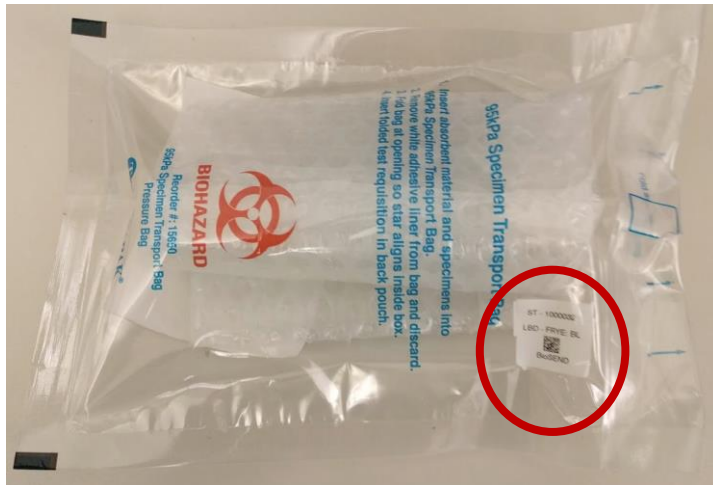


Biorepository Name

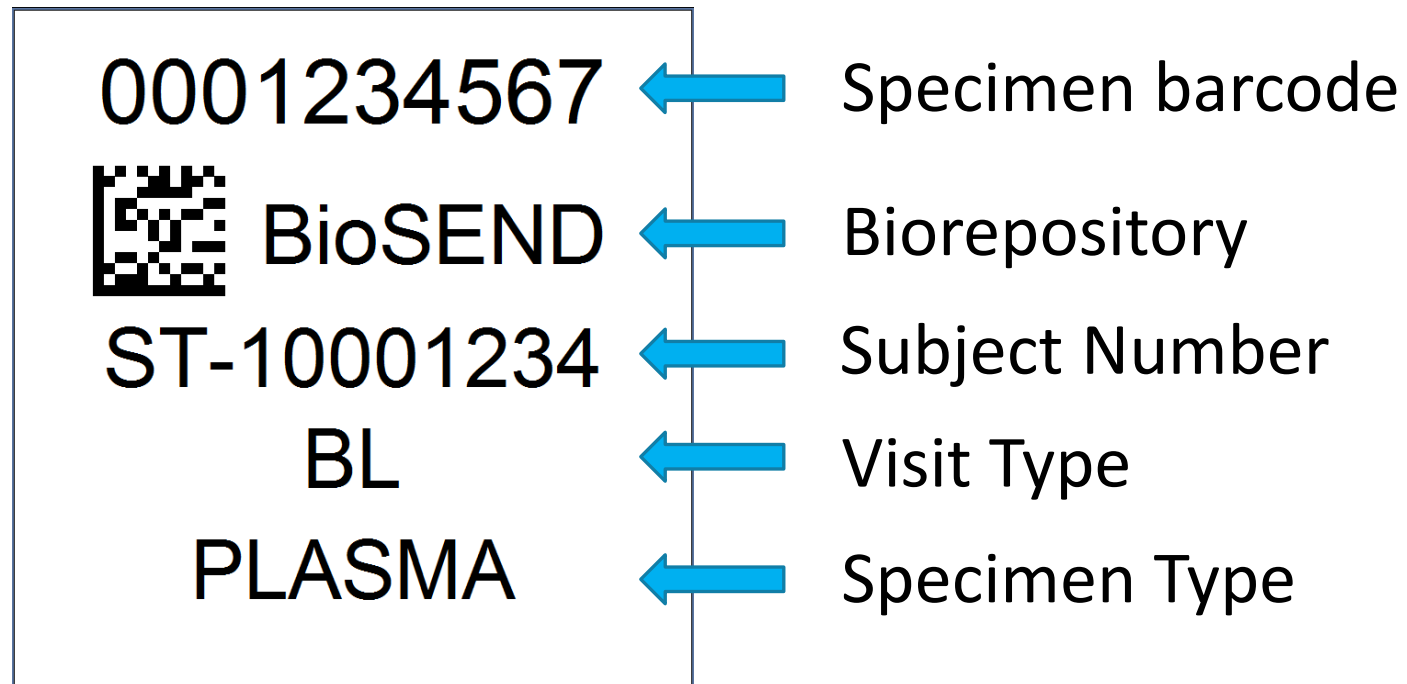
Case Labels

Case labels are placed:

- On the plastic biohazard bags
- On the lid of frozen shippers

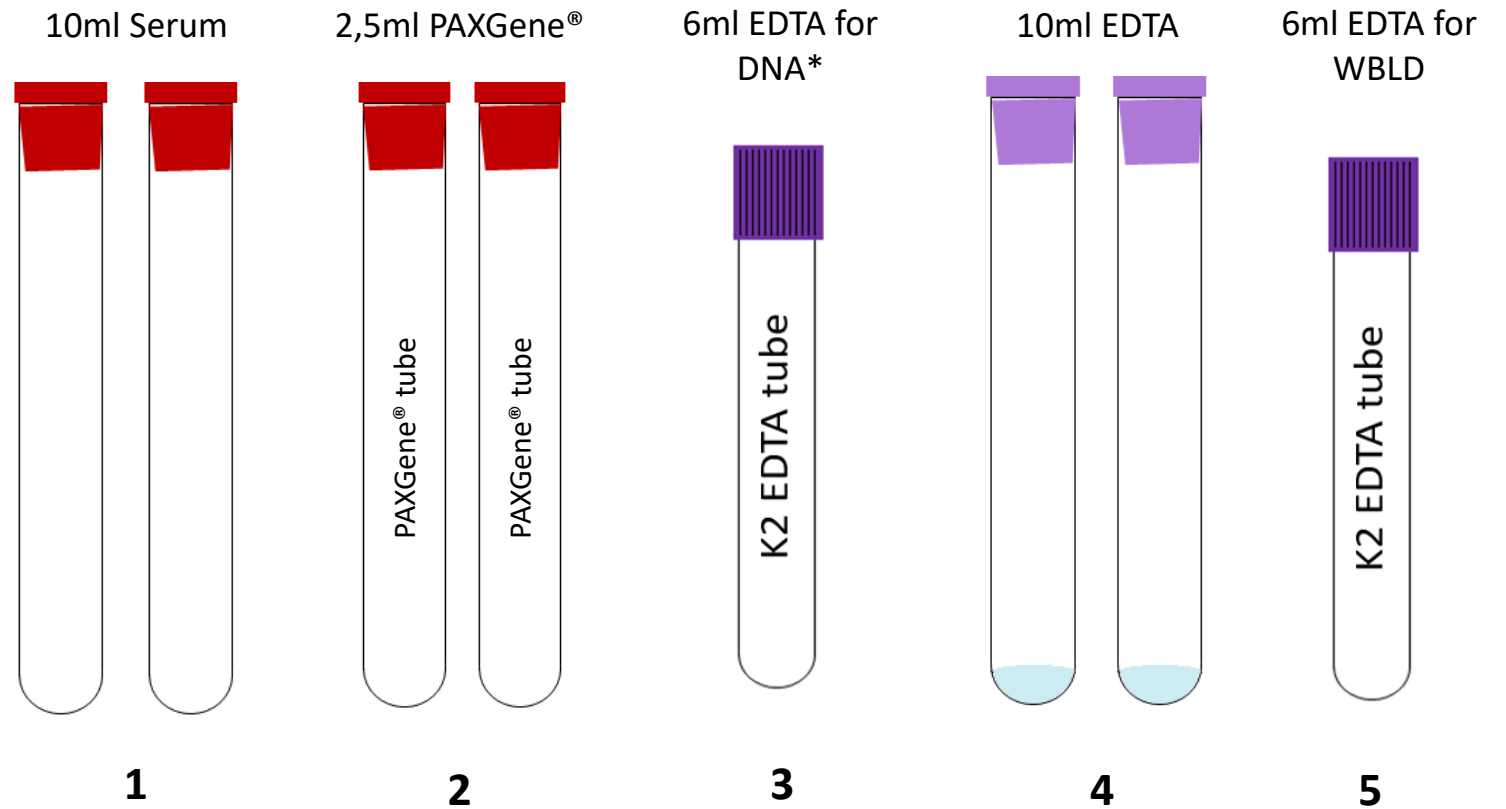


Specimen Label



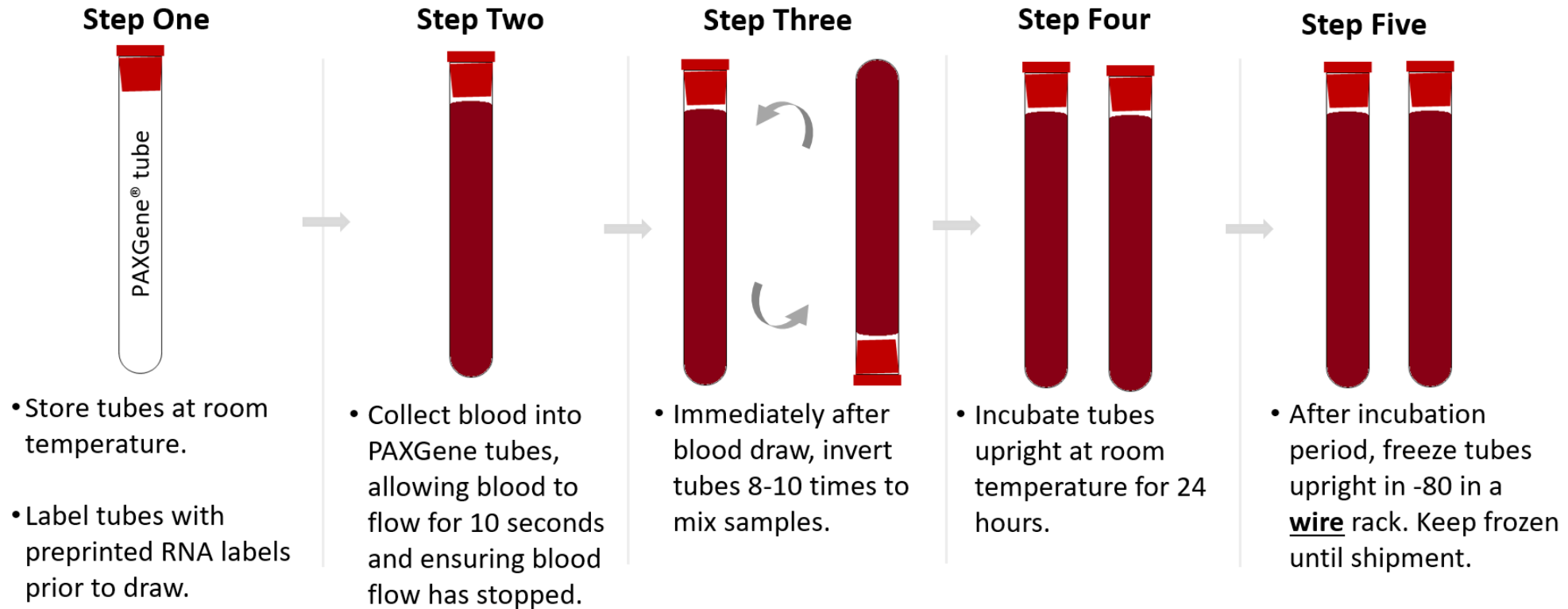
Sample Collection and Processing

Blood Tube Draw Order

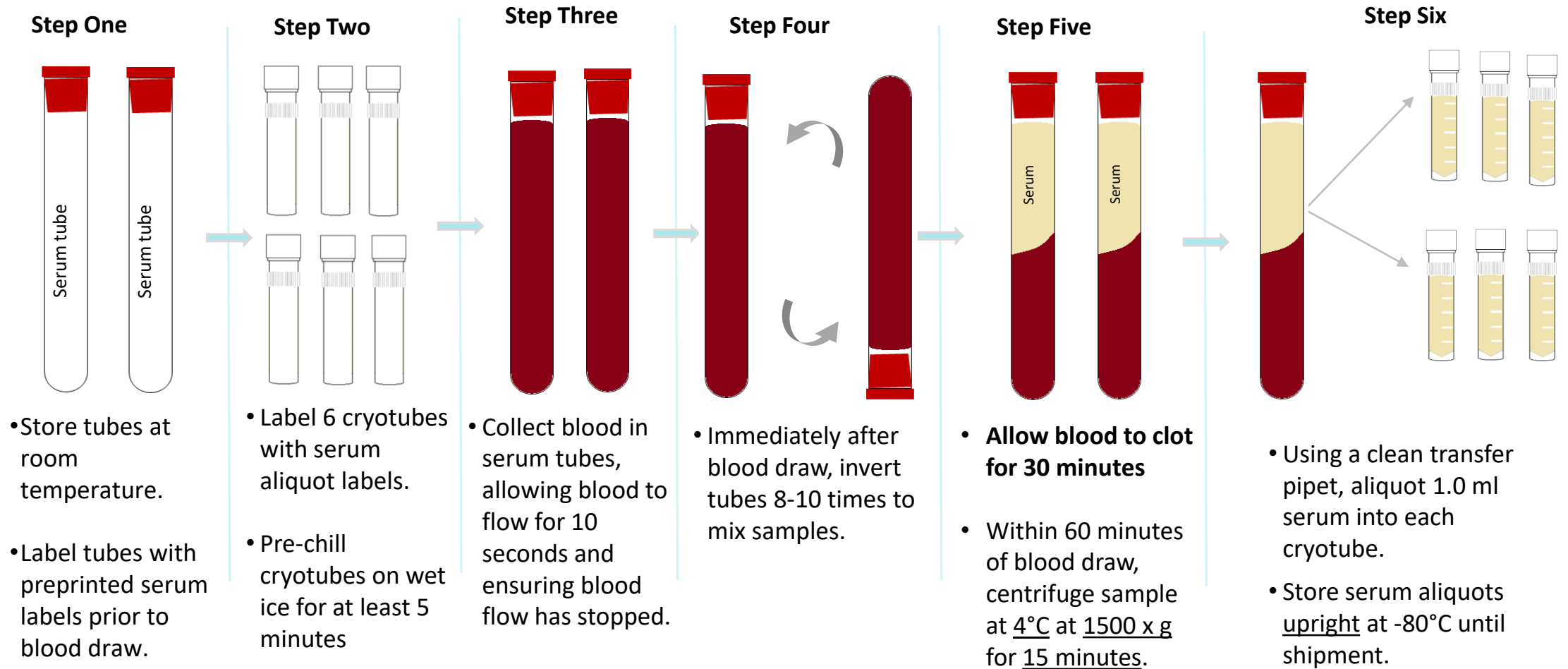


**6ml EDTA for DNA collected at BL visit only*

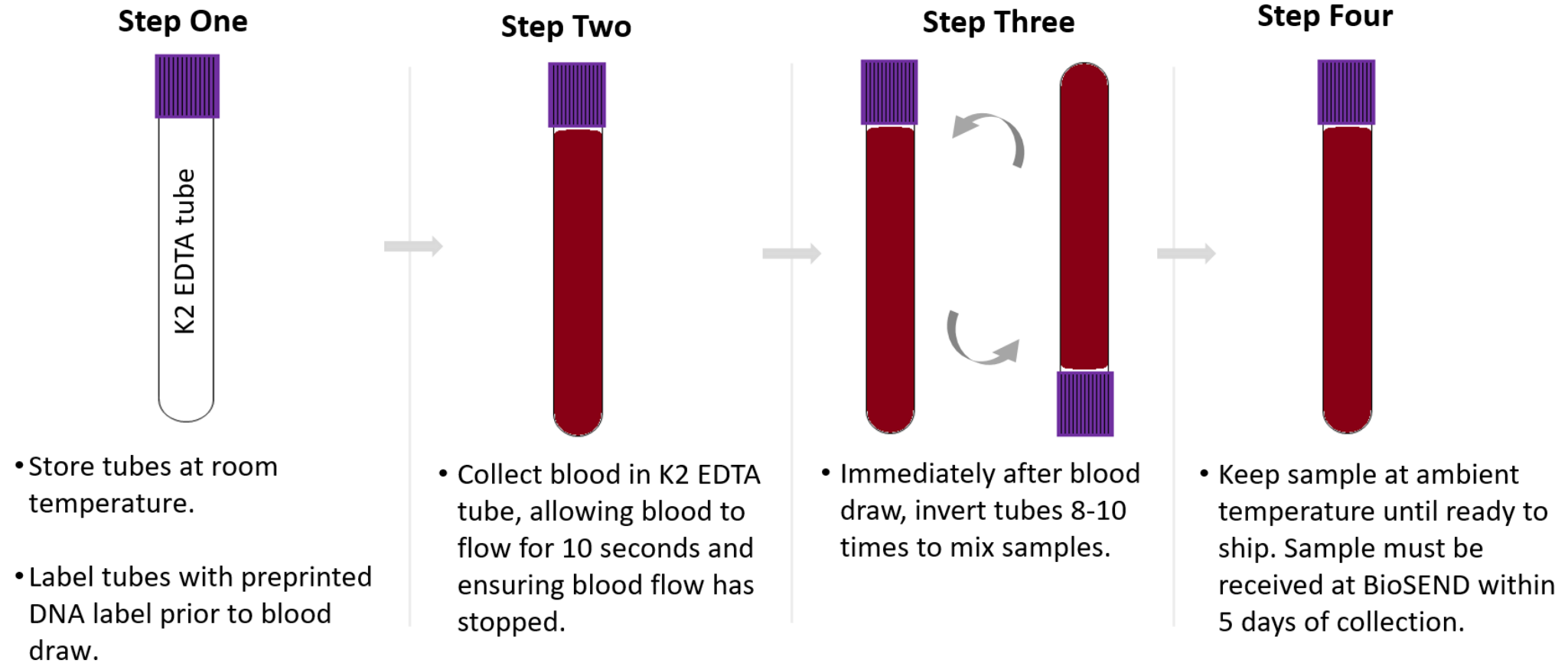
Sample Collection and Processing: RNA



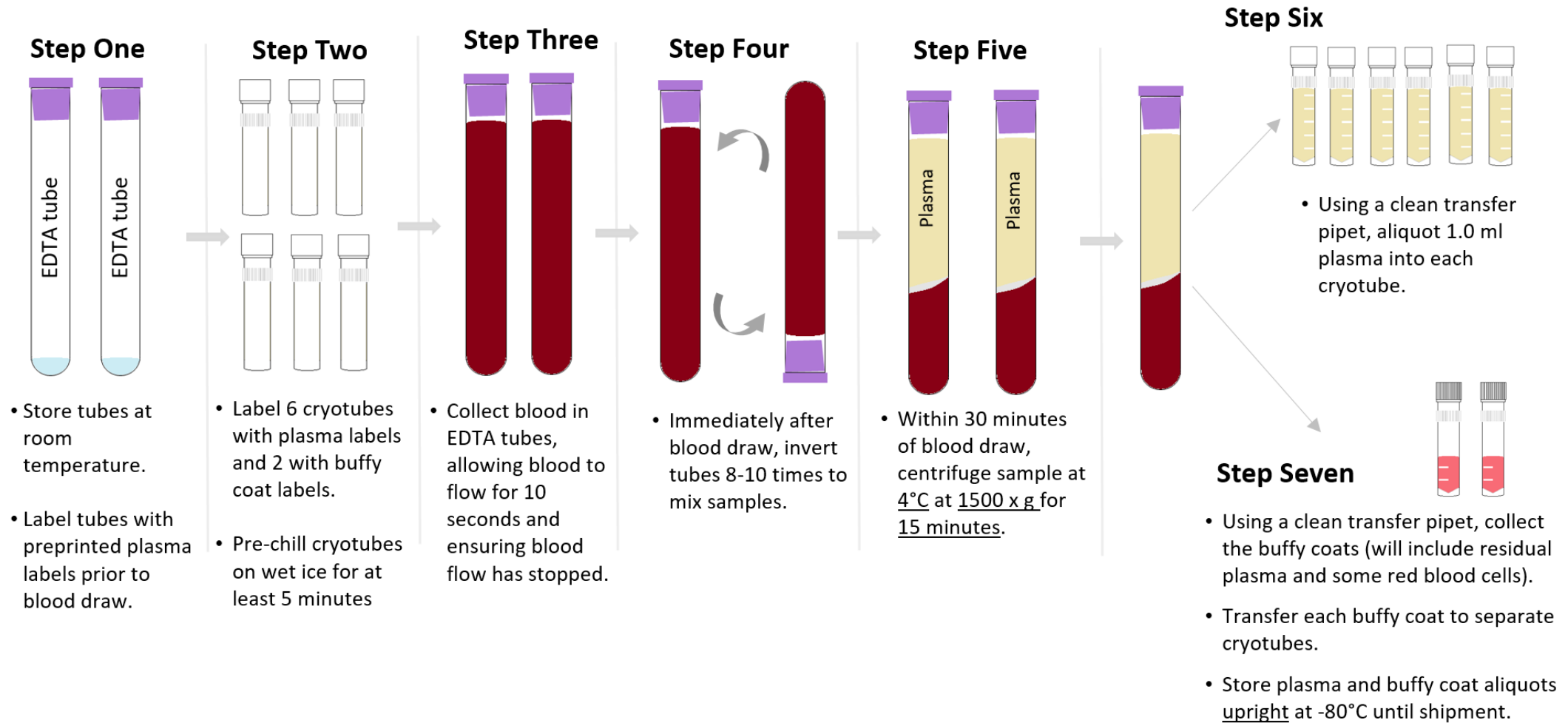
Sample Collection and Processing: Serum



Sample Collection and Processing: DNA



Sample Collection and Processing: Plasma & Buffy Coat



Sample Collection and Processing: Whole Blood

Step One



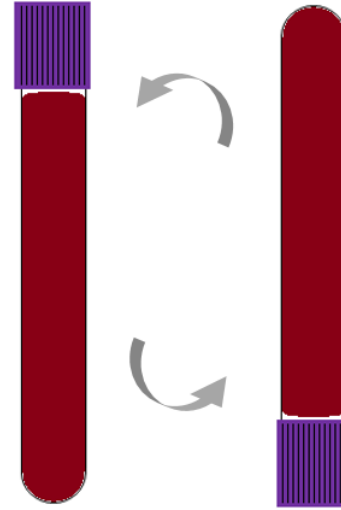
- Store tubes at room temperature.
- Label tubes with preprinted WBLD label prior to blood draw.

Step Two



- Collect blood in 6ml EDTA tube, allowing blood to flow for 10 seconds and ensuring blood flow has stopped.

Step Three



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

Step Four



- Transfer to -80°C. Store upright and keep frozen until shipment to BioSEND.

Blood Collection: Troubleshooting

Issue #1: Collection tube with little/no vacuum

Always check expiration dates before beginning blood draw and discard expired tubes

- Tubes expire on last day of month printed on tube

Store tubes at ambient temperature

- Extreme temperatures can affect vacuum

Keep extra collection tubes from supplemental kit nearby during blood draw to replace “bad” tubes. These can also be requested through the Kit Request Module.

If frequent occurrence, report tube type and lot numbers to Indiana University

Blood Collection: Troubleshooting

Issue #2: Hemolyzed (pink/red) plasma & serum

Cause: Blood Collection Methods	Corrective Action
Improper venipuncture site	Draw from median cubital, basalic, and cephalic veins from antecubital region of arm
Prolonged tourniquet use	Tourniquet should be released after no more than 1 min, excessive fist clenching should be avoided
Not allowing alcohol to dry on skin before venipuncture	Without touching, allow the venipuncture site to air dry
Lumen of needle too close to inner wall of vein (indicated by slow blood flow)	
Use of too large/small bore needle resulting in excess force applied to blood	Avoid using too small/large needle. Needle size dependent on the subject's physical characteristics & amount of blood to be drawn. Most commonly used sizes are 19 – 23.
Pulling/pushing plunger too fast while drawing/transferring blood	Avoid drawing the syringe plunger too forcefully when collecting blood
	Ensure all blood collection assemblies are fitted securely, to avoid frothing

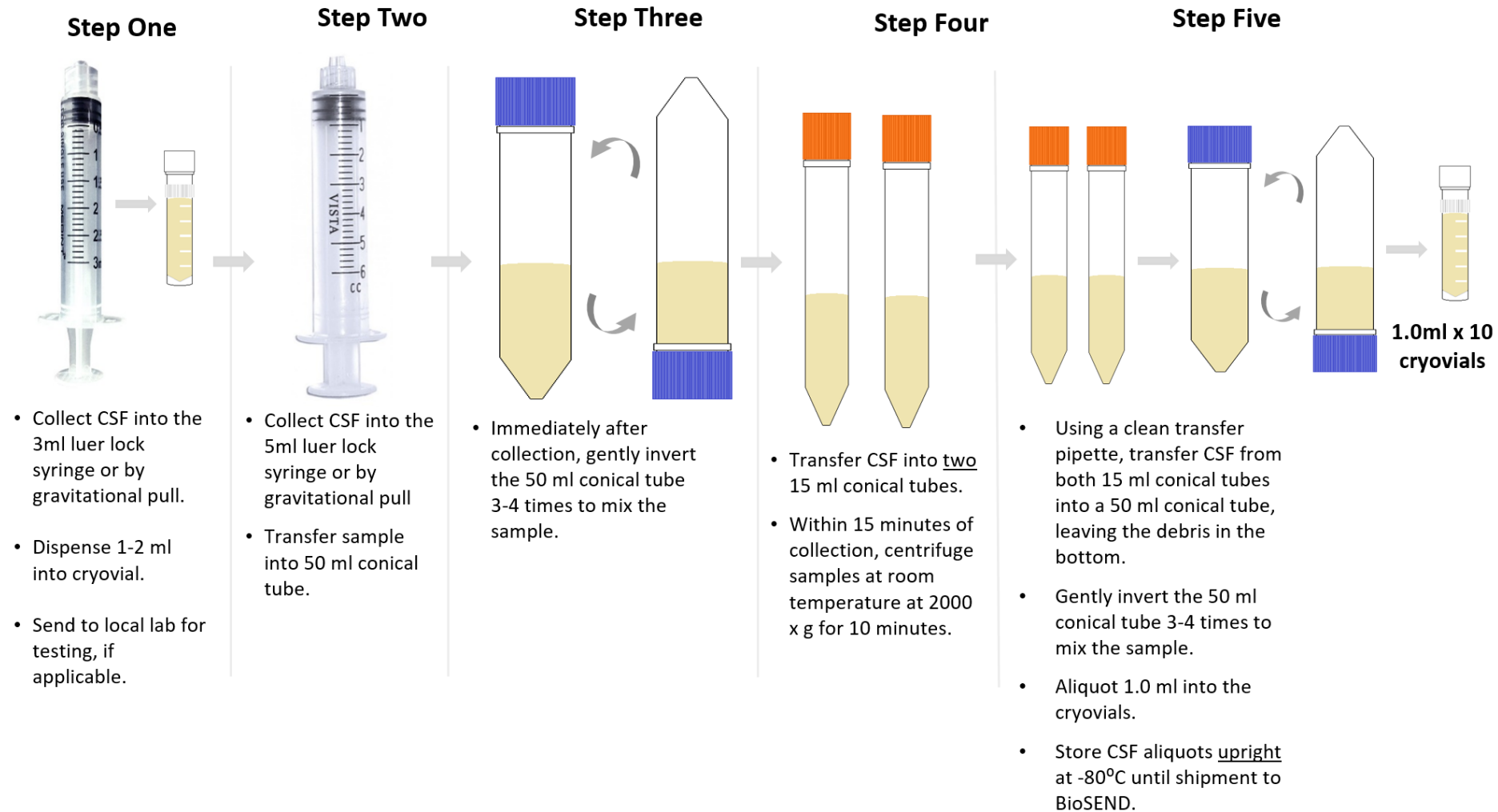
Blood Collection: Troubleshooting

Issue #2: Hemolyzed (pink/red) plasma & serum

Cause: Sample Processing Methods	Corrective Actions
Vigorous mixing/shaking	Gently invert blood collection tube when mixing additive with specimen, follow guidelines in Biologics Manual regarding number of times to invert each type of tube
Not allowing serum to clot for recommended time	Serum tubes without clot activator should be allowed to clot for 60 min in a vertical position
Exposure to excessive heat or cold	Keep samples at ambient temp
Prolonged contact of serum/plasma with cells	Do not store uncentrifuged samples beyond recommended time

Reference: BD's "Tech Talk" newsletter, Vol. 2, No. 2, October 2003
(http://www.bd.com/vacutainer/pdfs/techtalk/TechTalk_Jan2004_VS7167.pdf)

Sample Collection and Processing: CSF



Shipping Samples: Ambient

6ml EDTA for DNA is the only sample shipped ambient

- Ambient samples should be shipped Monday-Thursday only
- If collected on a Friday, hold sample at room temperature and ship to BioSEND the following Monday
- Sample(s) must be received at BioSEND within 5 days of collection

Shipping Samples

Ambient Shipper Contents

Styrofoam shipper with
outer cardboard box

IATA Contents Sheet



Biohazard bag with
absorbent material

Cool pack (place in
fridge prior to
collection/shipment)

Collection tube will be
in blood kit

Shipping Samples: Frozen

Packing and Shipping Frozen Samples

- All other samples ship frozen
- Ship frozen samples on dry ice
- Frozen samples should be shipped **only** Monday through Wednesday
- Always fill carton to **top** with dry ice
- Do not pack shipment until the day of pickup



Shipping Samples: Frozen

Packing and Shipping Frozen Samples

- Shippers use approx. 10lbs of dry ice
- Place layer of dry ice in between cryoboxes



Shipping Samples

Packing and Shipping Frozen Samples

Class 9 Dry Ice Label should not be covered with other stickers and must be completed, or courier will reject/return your package!

Shipper's Declaration not Required.

Dry Ice amount must be in kilograms.

Note: 2 lbs. = 1 kg.

Airwaybills / airbills must have the following:

1. Dry Ice; 9; UN 1845
2. $\frac{\text{Number}}{\text{(Number pks)}} \times \frac{\text{wt}}{\text{(wt)}} \text{ Kg}$

Net weight of dry ice in kg

Dry Ice kg.

Your name & address

Shipper's Name and Address

UN 1845

9

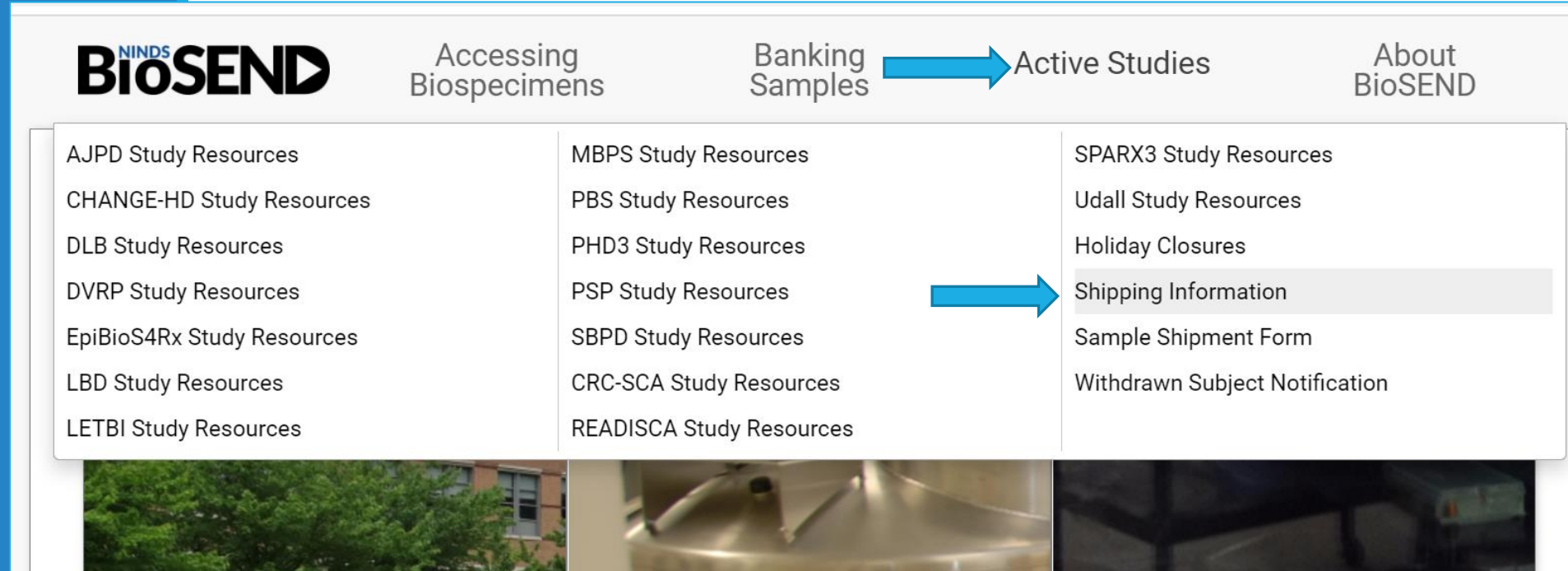
Consignee Name and Address

IU information and address

06426 1/01 RRD

Shipping Samples

UPS resources available on BioSEND website






The screenshot shows the BioSEND website's navigation bar and a dropdown menu. The navigation bar includes the NINDS BioSEND logo, and links for 'Accessing Biospecimens', 'Banking Samples', 'Active Studies', and 'About BioSEND'. A blue arrow points from 'Banking Samples' to 'Active Studies'. The 'Active Studies' dropdown menu is open, showing a list of study resources. A blue arrow points from 'PSP Study Resources' to 'Shipping Information', which is highlighted in the menu. Below the menu, there are three small images: a green tree, a close-up of a metal container, and a dark interior space.

NINDS BioSEND

Accessing Biospecimens Banking Samples → Active Studies About BioSEND

AJPD Study Resources	MBPS Study Resources	SPARX3 Study Resources
CHANGE-HD Study Resources	PBS Study Resources	Udall Study Resources
DLB Study Resources	PHD3 Study Resources	Holiday Closures
DVRP Study Resources	PSP Study Resources →	Shipping Information
EpiBioS4Rx Study Resources	SBPD Study Resources	Sample Shipment Form
LBD Study Resources	CRC-SCA Study Resources	Withdrawn Subject Notification
LETBI Study Resources	READISCA Study Resources	



Shipping Information



Shipping Samples

Links on this page to generate airwaybills, schedule pickups, request account, and view a guide for using the UPS ShipExec Thin Client system.

Shipping Address

BioSEND
Indiana University School of Medicine
351 West 10th Street
TK-217
Indianapolis, IN 46202

UPS Shipping Resources

To generate air waybills and schedule UPS pickups for shipments to BioSEND, please visit the UPS ShipExec™ Thin Client [website](#).

For instructions on how to use the UPS ShipExec™ Thin Client website, please refer to the [BioSEND UPS ShipExec™ Thin Client Guide](#)

To request a new user account for UPS ShipExec™ Thin Client or to request an update to your site's address in the system, please [use this form](#) to submit your request.

Additional Resources

[Sample Submission Form](#)
[UPS ShipExec™ Guide](#)

Contact Us

biosend@iu.edu
317-278-0594


Shipping Samples: Frozen

Please notify BioSEND ahead of shipment

- Email biosend@iu.edu with copy of Sample Form and tracking number
- OR use Online Sample form on biosend.org

Shipping Samples: Sample Form

Sample Record and Shipment Notification



Please fill out and submit this form when shipping samples to BioSEND. After submission, please print a copy of the form to include with your submission. If you prefer to not use the online system, you may download a pdf version of this form from the sidebar to the right.

Contact Information

Site Name/Number

Coordinator

Telephone

Email

Subject Information

Study

Clinical ID

GUID

Subject ID (ST# from labels)

Gender

Visit Type

Sample Information

Date Sample(s) Shipped

FedEx Tracking Number

Draw Date	Specimen Type	# of Tubes Sent	Notation of Problems
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Shipping Frozen Samples

Hold packaged samples in a -80°C freezer until pickup.

Samples should be received at BioSEND within 2 weeks of collection.



Packaging & Shipping Troubleshooting

Issue: Broken/Damaged Tubes

Cause	Preventative Action
Over filling tubes	Fill tubes to suggested volume. If any sample still remains, place in an additional tube
Improper packaging	Ensure any tubes are securely placed into the bubble wrap pouch and are placed in a separate bag from the cryobox
Rough shipping conditions	Extra bubble wrap may be needed to pad blood tubes
Extreme changes in temperature (ambient→freezer; freezer→dry ice)	Wrapping the tubes in bubble wrap before freezing may help slow the cooling process

Shipping Samples: Closures

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

*Please also consider weather when shipping. UPS will post service updates on their webpage. Please reach out to BioSEND if you are unsure if it is safe to ship.

Non-Conformance Reporting

Most common non-conformance issues:

- Samples shipped for weekend/holiday delivery
- Sample form incomplete/inaccurate
- Unlabeled or mislabeled tube(s)
- Sample hemolysis



Contacts

Indiana University

General Questions/Shipment Notifications:

biosend@iu.edu

Biorepository Project Manager:

Claire Wegel

cwegel@iu.edu

Tel: 317.278.6158

Biorepository Clinical Research Coordinator:

Carolyn Dunifon

cdunifon@iu.edu

Tel: 317.274.5751