



*NINDS Udall Centers of Excellence for
Parkinson's Disease Research:
University of Iowa*

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

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
Buffy coat (2 aliquots)	X
Plasma (6 x 1.5ml)	X

Kit Ordering – Biosend.org


NINDS BioSEND


[Accessing Biospecimens](#)[Banking Samples](#)[Active Studies](#)[About BioSEND](#)

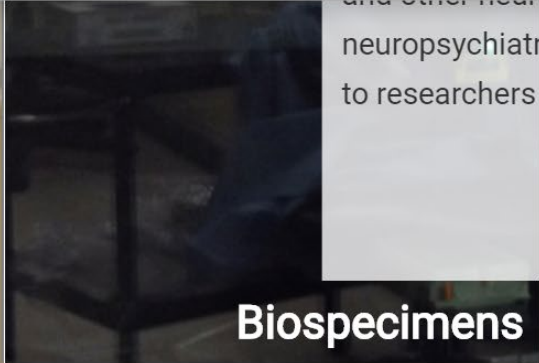
[AJPDP Study Resources](#)[CHANGE-HD Study Resources](#)[DLB Study Resources](#)[DVRP Study Resources](#)[EpiBioS4Rx Study Resources](#)[LBD Study Resources](#)[LETBI Study Resources](#)

[MBPS Study Resources](#)[PBS Study Resources](#)[PHD3 Study Resources](#)[PSP Study Resources](#)[SBPD Study Resources](#)[CRC-SCA Study Resources](#)[READISCA Study Resources](#)

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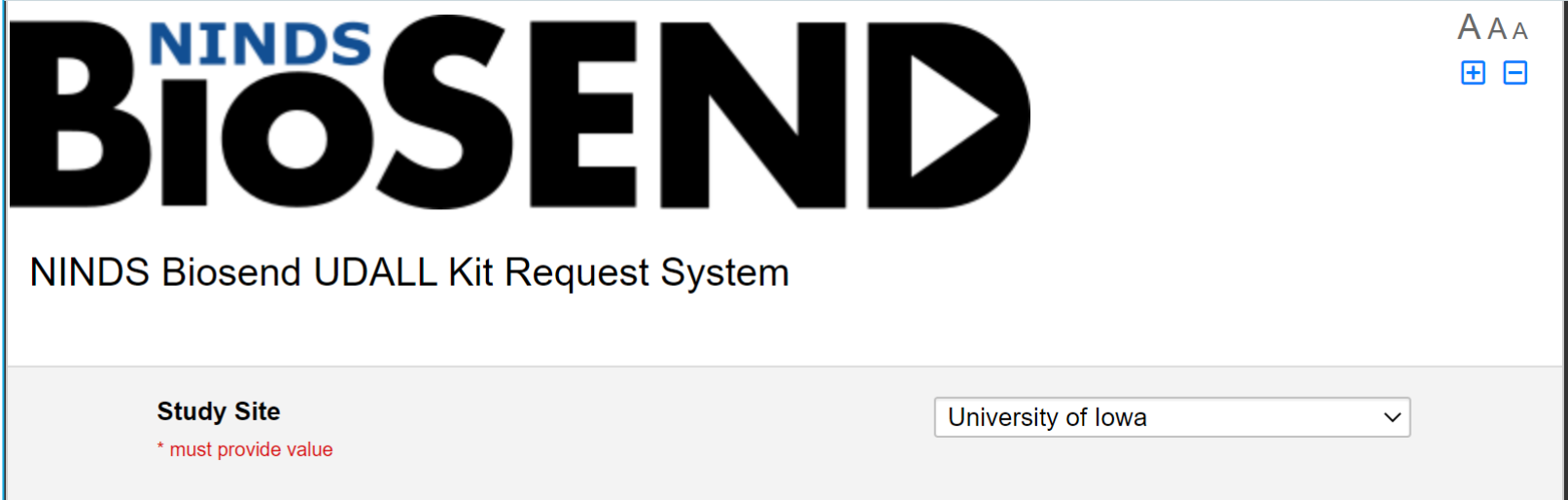
**About BioSEND**

**Banking Samples**

**Biospecimens**

BioSEND Kit Request Module

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



The screenshot shows the NINDS BioSEND Kit Request System interface. At the top, the logo "NINDS BioSEND" is displayed in large, bold, black letters, with "NINDS" in blue. Below the logo, the text "NINDS Biosend UDALL Kit Request System" is visible. In the top right corner, there are three "A" icons for font size adjustment and two square icons with a plus and minus sign. Below the title, there is a light gray section containing a "Study Site" label and a red asterisk with the text "* must provide value". To the right of this is a drop-down menu showing "University of Iowa" with a downward arrow.

NINDS BioSEND

NINDS Biosend UDALL Kit Request System

Study Site
* must provide value

University of Iowa

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****

* must provide value

☐ Baseline Visit Kit

☐ Extra Supplies

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

Select Supply Option

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 Visit Kit <input type="checkbox"/> Extra Supplies <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
Baseline Visit Kit Quantity <small>* must provide value</small>	<input type="text" value="2"/>
Comments	<div></div> <div>Expand</div>
Each Baseline Kit Contains: Blood Collection Kit Contents: 2 - Lavender-top EDTA tube (10 ml), glass 8 - Siliconized cryovial (2ml) 2 - Disposable transfer pipette (3ml) 1 - Cryobox, 25-slot 1 - Shipping label packet 1 - Airway bill envelope 1 - Shipping container for dry ice shipments 1 - Biohazard bag with absorbent sheet 2 - Individual tube bubble pouch 1 - Specimen label set	

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 Visit Kit <input checked="" type="checkbox"/> Extra Supplies <small>Please specify in comments if you need kits before the standard two week shipment time.</small>
Individual Tube Bubble Pouch	<input type="radio"/> 2 <input type="radio"/> 4 reset
25-Slot Cryobox	<input type="radio"/> 2 <input type="radio"/> 4 reset
Siliconized Cryovial (2 ml)	<input type="radio"/> 10 <input type="radio"/> 20 reset
Airway bill envelope	<input type="radio"/> 2 <input type="radio"/> 4 reset
Shipping Container for Dry Ice Shipments	<input type="radio"/> 2 <input type="radio"/> 4 reset
Biohazard Bag with Absorbent Sheet	<input type="radio"/> 2 <input type="radio"/> 4 reset

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 UDALL Kit Request System

Study Site: University of Iowa

University of Iowa
[Contact Name]
[Shipping Address]
[Phone]
[Email]

Is the contact name above correct? ☒ Yes ☐ No

Is the shipping address above correct? ☐ Yes ☐ No

Is the e-mail address above correct? ☒ Yes ☐ No

Is the phone number above correct? ☒ Yes ☐ No

Kit Type
Please allow two weeks for shipment
☒ Baseline Visit Kit
☐ Extra Supplies

Baseline Visit Kit Quantity: 2

Comments

Each Baseline Kit Contains:
Blood Collection Kit Contents:
2 - Lavender-top EDTA tube (10 ml), glass
8 - Silicized cryovial (2ml)
2 - Disposable transfer pipette (3ml)
1 - Cryobox, 25-alel
1 - Shipping label packet
1 - Airway bill envelope
1 - Shipping container for dry ice shipments
1 - Biohazard bag with absorbent sheet
2 - Individual tube bubble pouch
1 - Specimen label set

Submit



Sample Labeling

Labels are provided by Indiana University

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

ST-10001234:
UDALL-IOWA:
BL



BioSEND

Case Labels

0001234567



BioSEND

ST-10001234

BL

PLASMA

Specimen Labels

Case Label

ST-10001234:

UDALL-IOWA:

BL



BioSEND



Subject Number



Study – Site &
Visit

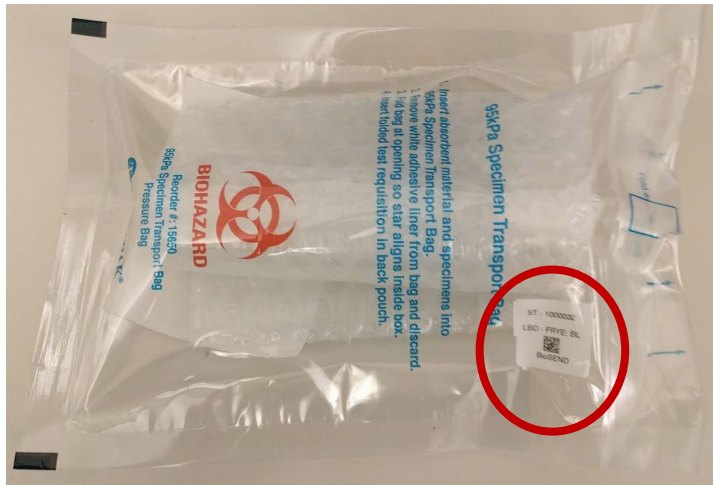


Biorepository Name

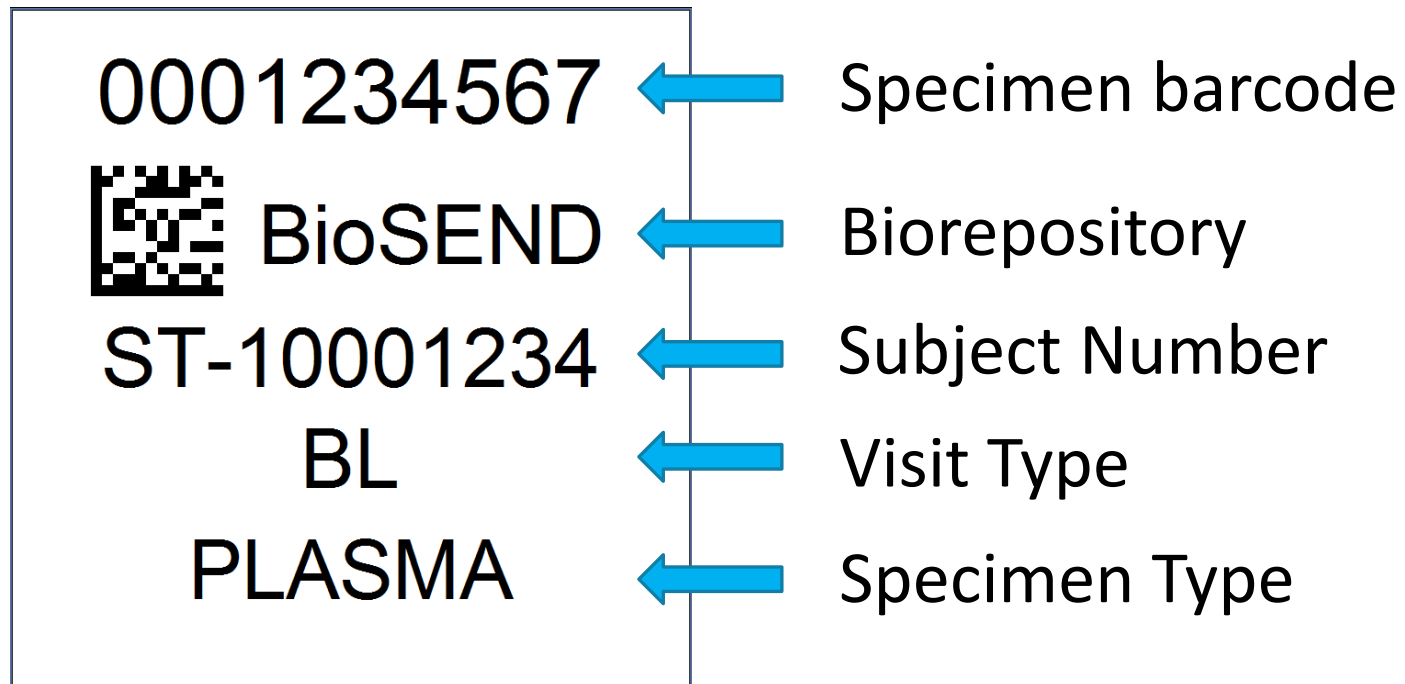
Case Labels

Case labels are placed:

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



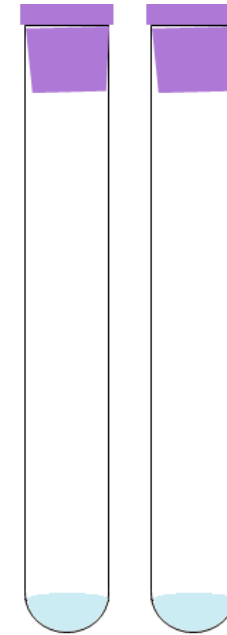
Specimen Label



Sample Collection and Processing

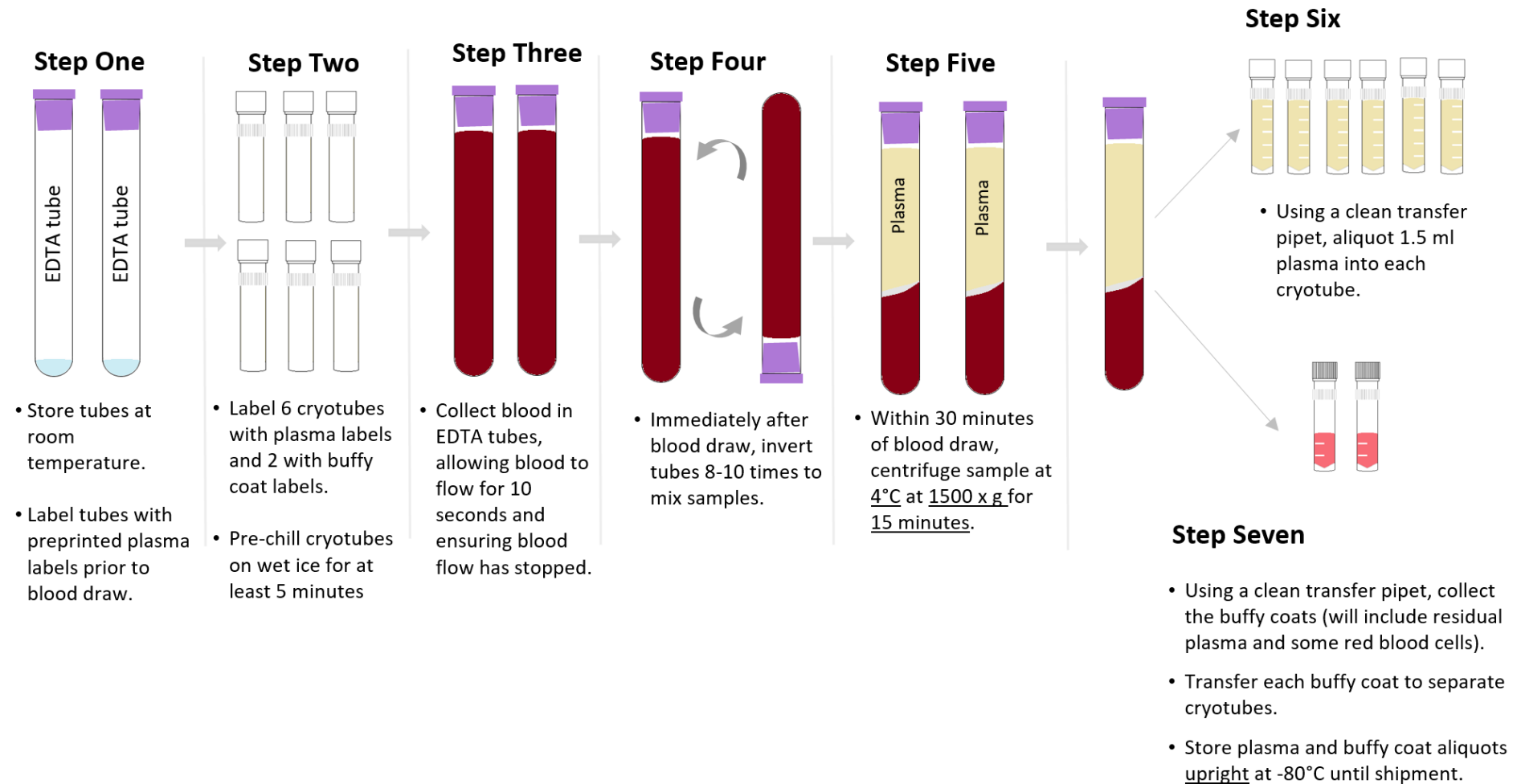
Blood Tube Draw Order

10ml EDTA



1

Sample Collection and Processing: Plasma & Buffy Coat



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

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
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)

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 Frozen Samples

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

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



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!

The image shows a Class 9 Dry Ice Label template. It features a large diamond shape with a black and white striped pattern. The label includes the following text and fields:

- 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 (indicated by a red arrow pointing to the "kg." field)
- Dry Ice kg.
- Your name & address (indicated by a red arrow pointing to the "Shipper's Name and Address" field)
- Shipper's Name and Address
- UN 1845
- IU information and address (indicated by a red arrow pointing to the "Consignee Name and Address" field)
- Consignee Name and Address
- 9
- 06426 1/01 RRD

Shipping Samples

UPS resources available on BioSEND website






Accessing Biospecimens

Banking Samples

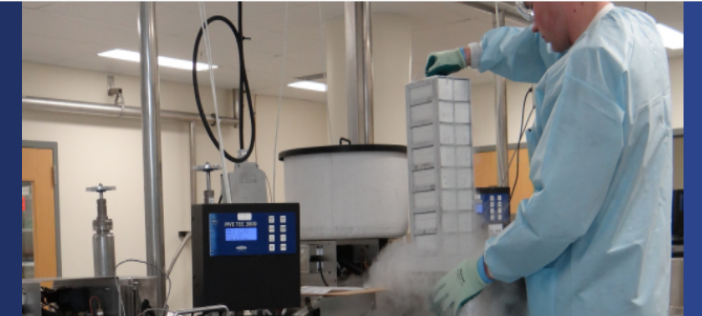
→ Active Studies

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

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Morris K. Udall Centers of Excellence for Parkinson's Disease Research Active Study Page



Welcome Udall Study staff, coordinators, and PI's. This section encompasses study specific tools and resources for your reference. If you have any questions, comments, or new ideas please contact biosend@iu.edu or by phone directly at (317)278-0594.

Study Resources

- [Kit Request Module](#)
- [Study Specific Sample Notification Forms](#)
- [Udall Manual of Procedures](#)

Downloads


- [Sample Shipment Form \(pdf\)](#)
- [Rochester Manual](#)
- [UAB Manual](#)
- [Rochester Training Slides](#)
- [UAB Training Slides](#)

Additional Resources

- [Online Sample Form](#)

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"/>

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
June 19	Juneteenth (observed)
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