Cerebral Autosomal Dominant Arteriopathy with Sub-cortical Infarcts and Leukoencephalopathy Study

COLLECTION AND SHIPMENT TRAINING

Version 1
Contact Information

Questions?

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Email: zdpotter@iu.edu

General NCRAD Contact Information

Phone: 1-800-526-2839

Email: alzstudy@iu.edu
Training Overview: CADASIL

- Collection Schedule
- Kit Request Module
  - Specimen Labels
  - Handling/Processing Study Specimens
- Incomplete or Difficult BloodDraws and Redraws
  - Packaging Sample Shipments
  - Sample Form
  - NCRAD Website
- Common Nonconformance Issues
  - Questions?
# CADASIL Blood-Based Collection Schedule

<table>
<thead>
<tr>
<th></th>
<th>Visit 1 (Baseline)</th>
<th>Visit 2 (18 month)</th>
<th>Visit 3 (36 month)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RNA</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Serum</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Plasma</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>Buffy Coat</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Kit Request Module

http://kits.iu.edu/cadasil
CADASIL Kit Request Module

- Enter your email to receive a confirmation email after you submit your kit request.
- Choose your site from the drop-down list.
- The coordinator name and contact information will appear.
- Verify that this information is accurate. Correct if necessary.
CADASIL Kit Request Module

- Indicate the quantity needed of each kit
  - Once selected, kit components of the chosen kit will appear at the bottom of the screen

- You can order extra supplies individually by selecting “Yes” here.

- Please indicate the soonest date you will need the requested supplies
  - We typically return requests within 2-3 weeks from the order date.

- Click “Submit” to turn in your request.

- **Note: You can order more than one type of kit in a single kit request**
Specimen Labels
Provided by NCRAD
Four Label Types

- Kit Number Labels
- Collection Tube Labels
- Site and CADASIL ID Labels
- Cryovial Tube Labels
Kit Number Labels

• Used to track patient samples and provide quality assurance – Will be placed on the following locations:
  1. Blood Sample and Shipment Notification Forms
  2. Cryoboxes that house aliquots during shipping
  3. One extra label provided
Collection Tube Labels

- Collection Tube labels have 4 components:
  - 10-digit specimen barcode
  - Study name
  - Specimen type
  - Kit number

- Will be placed on the following locations:
  - All Collection Tubes
Subjects will be identified by their Site and PTID.

Sites will be responsible for handwriting this onto the provided labels:
- Must use fine point permanent marker.

Will be placed on the following locations:
- All Collection Tubes.
Cryovial Tube Labels

- Only one label to be placed on each 2.0 mL cryovial
  - **Serum**
    - From SST tube
  - **Plasma**
    - From EDTA tube
  - **Buffy Coat**
    - From EDTA tube
Blood Collection Tubes

Label 1: Site and CADASIL ID Label

<table>
<thead>
<tr>
<th>Site ID:</th>
</tr>
</thead>
</table>

| PTID: CC |

Label 2: Collection Tube Label

0042127379
CADASIL
PLASMA
Kit #: 422430

All collection tubes will have two labels:
- The handwritten Site and PTID label
- The collection tube label
Labeling Biologic Samples

- Label all collection and aliquot tubes before cooling, collecting, processing or freezing samples.
- Label only 1 subject’s tubes at a time to avoid mix-ups.
- Wrap the label around the tube horizontally. Label position is important for all tube types.
- Make sure the label is completely adhered by rolling between your fingers.
- Do NOT cover barcode on cryovial with label.
Labeling Biologic Samples

Collection Tube Label

Site and PTID Label
Handling/Processing Study Specimens
# Site Required Equipment

<table>
<thead>
<tr>
<th><strong>BLOOD COLLECTION/SAFETY EQUIPMENT</strong></th>
<th><strong>PROCESSING/STORAGE EQUIPMENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Personal Protective Equipment:</td>
<td>1) Centrifuge capable of ≥ 2000 x g</td>
</tr>
<tr>
<td>1) Lab coat, nitrile-latex gloves, safety glasses</td>
<td>with refrigeration to 4°C and room temperature</td>
</tr>
<tr>
<td>2) Tourniquet</td>
<td>2) -80°C Freezer</td>
</tr>
<tr>
<td>3) Alcohol Prep Pad</td>
<td>3) Wet Ice Bucket</td>
</tr>
<tr>
<td>4) Gauze Pad</td>
<td></td>
</tr>
<tr>
<td>5) Bandage</td>
<td></td>
</tr>
<tr>
<td>6) Butterfly needles and hub</td>
<td></td>
</tr>
<tr>
<td>7) Microcentrifuge tube rack</td>
<td></td>
</tr>
<tr>
<td>8) Sharps bin and lid</td>
<td></td>
</tr>
<tr>
<td>Tube Type</td>
<td>Number of Tubes Drawn</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>1. PAXgene™ Blood Collection Tube (2.5 mL)</td>
<td>2</td>
</tr>
<tr>
<td>2. SST (Tiger-Top) Blood Collection Tubes (8.5 mL)</td>
<td>1</td>
</tr>
<tr>
<td>3. EDTA (Lavender-Top) Blood Collection Tube (10 mL)</td>
<td>4</td>
</tr>
</tbody>
</table>
# Aliquot Cap Colors

<table>
<thead>
<tr>
<th>Cap Color</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red Cap</strong></td>
<td>Serum</td>
</tr>
<tr>
<td><strong>Purple Cap</strong></td>
<td>Plasma</td>
</tr>
<tr>
<td><strong>Gray Cap</strong></td>
<td>Buffy Coat</td>
</tr>
<tr>
<td><strong>Blue Cap</strong></td>
<td>Residual (plasma and serum)</td>
</tr>
</tbody>
</table>

- **Red Cap** (8 x 0.75 mL and 1 x 2 mL)  
- **Purple Cap** (8 x 0.75 mL and 12 x 2 mL)  
- **Gray Cap** (4 x 2.0 mL)  
- **Blue Cap** (2 x 2.0 mL)
RNA Collection

• 2 x PAXgeneTM Blood Collection Tube (2.5 mL)
  • Both tubes are to be shipped to NCRAD frozen, without processing at the collection site.
RNA Preparation (2.5ml PAXgene™ Tube)

**Step One**
- Store tubes at room temperature.
- Label tubes with pre-printed labels prior to blood draw.

**Step Two**
- Collect blood in PAXgene™ 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**
- Store tubes at -80°C in a wire rack until shipment.

[Diagram showing the steps with PAXgene™ Blood RNA Tube images]

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NCRAD
Serum Collection

- 96 cell cryobox with 0.75 mL cryovials
- 48 cell cryobox with 2.0 mL cryovials

1 x SST (Tiger-Top) Blood Collection Tubes (8.5 mL)
- Create up to (8) 0.25 mL serum aliquots
- Create up to (1) 1.5 mL serum aliquots
- Create up to (1) 1.5 mL residual serum aliquot
SST (Tiger-Top) Blood Collection Tubes (8.5 mL) for Serum x 1

- **Step One**
  - Store tubes at room temperature.
  - Label tubes with preprinted labels prior to blood draw.

- **Step Two**
  - Collect blood in (1) 8.5 Tiger-Top tube allowing blood to flow for 10 seconds and ensure blood flow has stopped.

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

- **Step Four**
  - Allow blood to clot for 30 minutes.
  - Within 2 hours of blood draw, centrifuge samples at 2000 x g at room temperature for 10 minutes.

- **Step Five**
  - Adhere preprinted labels to the red-cap cryovials.
  - Aliquot 0.25 mL into each 0.75 mL cryovial tube and aliquot 1.5 mL into the 2.0 mL cryovial tube.
  - If a residual aliquot is created, document specimen number on Sample Notification Form.
  - Store serum aliquots at -80°C until shipment.

Up to (8) 0.25 mL aliquots
Up to (1) 1.5 mL aliquot

(1) Residual Aliquot
Plasma Collection

4 x EDTA (Lavender-Top) Blood Collection Tube (10 mL)
- Create up to (8) 0.25 mL plasma aliquots
- Create up to (12) 1.5 mL plasma aliquots
- Create up to (1) 1.5 mL residual plasma aliquot

NOTE: When pipetting plasma from the plasma tube into the cryovials, be very careful to pipette the plasma top layer only, leaving the buffy coat and the red blood cell layers untouched.
Buffy Coat Collection

4 x EDTA (Lavender-Top) Blood Collection Tube (10 mL)
- Create up to (4) 1.5 mL buffy coat aliquots
  - Expected to have a reddish color from the RBCs.
  - Be sure to only place the buffy coat from one EDTA tube into each cryovial.

48 cell cryobox with 2.0 mL cryovials

Buffy Coat layer

Buffy Coat Aliquot (Please use GRAY CAP cryovial)

Buffy Coat
Plasma and Buffy Coat Preparation (10ml Lavender-Top Tube X 4)

**Step One**
- Store tubes at room temperature.
- Label tubes with preprinted labels prior to blood draw.

**Step Two**
- Collect blood in EDTA Tubes 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**
- Preferably within 30 minutes, centrifuge samples at 2000 x g at room temperature for 10 minutes.
- Samples need to be spun, aliquoted, and frozen within 2 hours from the time of collection.

**Step Five**
- Pool all plasma from the 4 EDTA tubes into a 50 mL conical tube and invert gently 3 times to mix the plasma.
- Up to (8) 0.25 mL aliquots
- Up to (12) 1.5 mL aliquots

**Step Six**
- Adhere preprinted labels to the gray cap cryovials.
- Aliquot .25 mL into each .75 mL cryovial tube and aliquot 1.5 mL into each 2.0 mL cryovial tube.
- If the residual aliquot is created, document specimen number and volume on Sample Notification Form.
- Store plasma aliquots at -80°C until shipment.

**Step Seven**
- Adhere preprinted labels to the purple cap cryovials.
- Using a clean pipette tip, collect the buffy coats (may have residual plasma and some RBCs included).
- Transfer the buffy coats into the cryovial tubes.
- Store buffy coat aliquots at -80°C until shipment.
Incomplete or Difficult Blood Draws and Redraws

***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.

Redraws will be scheduled for samples submitted to NCRAD.
Situations may arise that prevent study coordinators from obtaining the total amount scheduled for biofluids. In these situations, please follow the below steps:

1. If the biofluids 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 ‘Biological Sample and Shipment Notification Form’ within the “Notes” section.
      ii. Complete the ‘Biological 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 biofluids at a scheduled visit are not collected:
   a. Contact the CADASIL Global Coordinator and a 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.
Packaging Sample Shipments
# Sample Shipment Summary

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Tube Type</th>
<th>Number of Tubes Supplied in Kit</th>
<th>Processing/Aliquoting</th>
<th>Tubes to NCRAD</th>
<th>Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood for RNA extraction</td>
<td>PAXgene™ Blood Collection Tube (2.5 mL)</td>
<td>2</td>
<td>N/A</td>
<td>2</td>
<td>Frozen</td>
</tr>
<tr>
<td>Whole blood for isolation of serum</td>
<td>SST (Tiger-Top) Blood Collection Tubes (8.5 mL)</td>
<td>1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>SERUM: 0.75 mL cryovials</td>
<td>8</td>
<td>0.25 mL serum aliquot per 0.75 mL cryovial (Micronic™ red cap)</td>
<td>8</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>SERUM: 2.0 mL cryovials</td>
<td>1</td>
<td>1.5 mL serum aliquot per 2.0 mL cryovial (Micronic™ red cap)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SERUM RESIDUAL: 2.0 mL cryovials</td>
<td>1</td>
<td>1.5 mL serum aliquot per 2.0 mL cryovial (Micronic™ blue cap)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Whole blood for isolation of plasma &amp; buffy coat (for DNA extraction)</td>
<td>EDTA (Lavender-Top) Blood Collection Tube (10 mL)</td>
<td>4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>PLASMA: 0.75 mL cryovials</td>
<td>8</td>
<td>0.25 mL plasma aliquot per 0.75 mL cryovial (Micronic™ purple cap)</td>
<td>8</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>PLASMA: 2.0 mL cryovials</td>
<td>12</td>
<td>1.5 mL plasma aliquot per 2.0 mL cryovial (Micronic™ purple cap)</td>
<td>12</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>PLASMA RESIDUAL: 2.0 mL cryovials</td>
<td>1</td>
<td>1.5 mL plasma aliquot per 2.0 mL cryovial (Micronic™ blue cap)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BUFFY COAT: 2.0 mL cryovials</td>
<td>4</td>
<td>1 mL buffy coat aliquot per 2.0 mL cryovial (Micronic™ gray cap)</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
Frozen Shipment Packaging

All samples shipped frozen to NCRAD Monday-Wednesday ONLY

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

Include copy of Blood Sample Shipment and Notification Form

Batch shipping should be performed every (3) three months or when specimens from 4 participants accumulate, whichever is sooner.
Frozen Shipment Packaging

- Place all frozen labeled aliquots of plasma, buffy coat, serum, and residual aliquots from the same subject in the cryoboxes. Place both cryoboxes from the same subject into the biohazard bag with absorbent sheet.
- Place frozen (2) PAXgene™ tubes in provided bubble wrap tube sleeves, seal, and place in biohazard bag with cryoboxes. Seal biohazard bag according to the instructions on the bag.

Place kit number label(s) on cryoboxes.
Frozen Shipment Packaging

- Place 2-3 inches of dry ice in the bottom of the Styrofoam shipping container, then insert the cryoboxes laying upright.
- Fully cover the cryoboxes with about 2 inches of dry ice in the provided shipper.
- Each Styrofoam shipper must contain about 45 lbs (20 kg) of dry ice.
- Fill shipper to the top with dry ice!
Frozen Shipping –
Dry Ice
Requirements

Dry Ice label should not be covered with other stickers and must be completed or the shipping carrier will reject/return your package!

Net weight of dry ice in kg

20 kg of Dry Ice
Creating Airbills/Scheduling Pickups
Log into the ShipExec Thin Client: https://kits.iu.edu/UPS

Click on the “Shipping” dropdown and click on “Shipping and Rating”
Finding Your Contact Information

- On the right side of the screen, choose the name of your study from the “Study Group” drop down menu
  - *This step must be done 1st*

- On the left side of the screen, Click on the magnifying glass icon
Finding Your Contact Information

- On the right side of the screen, a list of all the site addresses within the study you selected should populate.

- User can filter the search for their address further by filling in the “Company”, “Contact”, or “Address 1” fields.

- Hit “Search” when ready.

- Once you have found your site address, click on the “Select” button to the left of the address.

- If any information needs to be updated, please reach out to the NCRAD Coordinator of your study.
Verify Information

- Please verify that both the shipping information AND study reference are correct for this shipment
Entering Shipment Information

• Frozen shipments
  • Enter the total weight of your package in the “Weight” field
  • Enter the dry ice weight in the “Dry Ice Weight” field
  • The “Dry Ice Weight” field cannot be higher than the “Weight” field (will receive an error message)
Need to request UPS Pickup?

• Click on the “Pickup Request” button
• Fill out all fields for the pickup request
• Enter in the “Earliest Time Ready” and “Latest Time Ready” in 24-hour format
  • Users must schedule pickup minimum 1 hour before “Earliest Time Ready”
• Choose a name and number that is the best to contact if the UPS driver has questions related to picking up your package
• Entering the Room Number and Floor will help the UPS driver locate your package
  • Room number field is free text
  • Floor field is numerical only
• Hit “Save” when done
Shipping Packages

- If all fields in “Ship From” and “Shipment Information” fields are completed, and pickup request is completed (if necessary), click Ship in the bottom right corner of the page
Accessing Airbill

Shipment Receipt

- 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 Request Status”. Enter in the Pickup No. listed on receipt into PRN field and submit.
Accessing Airbill

- Print out the UPS air waybill
- Fold the UPS air waybill and slide it inside the plastic UPS sleeve (NCRAD will provide these in kit requests)
- Peel the back off the plastic UPS sleeve and stick the sleeve to your package, making sure it is laying as flat as possible along the surface of the package.
Reprint Airbills/Voiding Shipments

• To reprint airbill or void a shipment, click “History” at the top of the ShipExec Thin Client portal

• If your shipment doesn’t automatically pop up, enter in the date of shipment and then click “Search”
### Reprint Airbill

- Click the print icon to reprint airbill

<table>
<thead>
<tr>
<th>Action</th>
<th>Global MSN</th>
<th>Tracking Number</th>
<th>Shipper Reference</th>
<th>Consignee Reference</th>
<th>Ship Date</th>
<th>Weight</th>
<th>Rated Weight</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9506</td>
<td>1Z976R8W8430841976</td>
<td></td>
<td>6683830</td>
<td>2020-12-08</td>
<td>20 LB</td>
<td>20 LB</td>
<td></td>
</tr>
</tbody>
</table>
Void Shipment

- To void a shipment, click on the “X” symbol
Blood Sample and Shipment Notification Form
A copy of the sample form *must* be emailed to NCRAD prior to the date of sample arrival.

Please include sample forms in all shipments of frozen samples.

Email: alzstudy@iu.edu
Appendix B: Biological Sample and Shipment Notification Form

<table>
<thead>
<tr>
<th>appendbimage</th>
<th>Appendix B: Biological Sample and Shipment Notification Form</th>
</tr>
</thead>
</table>

**Appendix B: Biological Sample and Shipment Notification Form**

**To:** [Kidney Center]  
**Email:** alzula@uk.edu  
**Phone:** 1-800-526-2839

**IPS tracking #: 121417688W**  
**Phone:** 1-800-526-2839  
**Email:**

**Stains:** CADASIL  
**Site ID:** [Site ID]  
**CADASIL HERD #:** [HERD ID]  
**Patient Barcode:** [BARCODE]

**Sex:** M  
**Month of Birth:** [Month]

**Visits:**  
**Baseline:**  
**30 Months:**

**Blood Collection:**

| Specimen Number | Original volume drawn | Time drawn | Tube
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DNA (PAgPase™ Tubes):**

| Specimen Number | Original volume drawn | Time drawn | Tube
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Blood Processing:**

<table>
<thead>
<tr>
<th>Serum (Red-top) Tube (8.5 mL)</th>
<th>Number of 0.25 mL serum aliquots created (red cap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spin started: [HH:MM]</td>
<td>Number of 1.5 mL serum aliquots created (red cap)</td>
</tr>
</tbody>
</table>
| Duration of centrifuge: [Min] | Number of residual serum aliquots less than 1.5 mL in blue cap: [ml]
| Temp of Centrifuge: [°C]      | Specimen number of residual serum aliquot (last four digits): [Code]
| Rate of centrifuge: [kG]      | Specimen number of residual serum aliquot (last four digits): [Code]
| Original volume drawn: [ml]   | Time aliquots placed in freezer: [HH:MM] |
| Time aliquots placed in freezer: [HH:MM] | Storage temperature in freezer: [°C] |

<table>
<thead>
<tr>
<th>Plasma &amp; Buffy Coat (Lavender-top) Tube (20 mL)</th>
<th>Number of 0.25 mL plasma aliquots created (purple cap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spin started: [HH:MM]</td>
<td>Time aliquoted: [HH:MM]</td>
</tr>
<tr>
<td>Duration of centrifuge: [Min]</td>
<td>Number of 1.5 mL plasma aliquots created (purple cap)</td>
</tr>
</tbody>
</table>
| Temp of Centrifuge: [°C]                        | Number of residual plasma aliquots less than 1.5 mL in blue cap: [ml]
| Rate of centrifuge: [kG]                        | Specimen number of residual plasma aliquot (last four digits): [Code]
| Original volume drawn - EDTA #1: [ml]           | Specimen number of residual plasma aliquot (last four digits): [Code]
| Original volume drawn - EDTA #2: [ml]           | Time aliquots placed in freezer: [HH:MM] |
| Original volume drawn - EDTA #3: [ml]           | Storage temperature in freezer: [°C] |
| Original volume drawn - EDTA #4: [ml]           |                                    |

**Aliquots:**

| Alloquots - Buffy coat #1: [ml] | Buffy coat aliquot #1 (last four digits) |
| Alloquots - Buffy coat #2: [ml] | Buffy coat aliquot #2 (last four digits) |
| Alloquots - Buffy coat #3: [ml] | Buffy coat aliquot #3 (last four digits) |
| Alloquots - Buffy coat #4: [ml] | Buffy coat aliquot #4 (last four digits) |

**Notes:**

Version (DD: 2022)
It is critical that the tube be centrifuged at the appropriate speed to ensure proper serum and plasma separation. Use Rate of Centrifugation Worksheet to calculate RPM.

Appendix A: Rate of Centrifugation 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.

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 at alzstudy@iu.edu
Noncomformance Issues
Nonconformance Issues

- Sample aliquots and collection tubes frozen at an angle/inverted
  - Recommendation: Place aliquots in cryoboxes/tube rack in freezer upright until shipment

- Fields left blank on Blood Sample and Shipment Notification Form
  - Last time subject ate often left blank/unknown
  - Incorrect data reported on Sample and Shipment Notification Forms
  - Recommendation: Complete Sample Notification forms during the participant study visit as samples are processed.
Nonconformance Issues

All frozen samples for a participant not sent within one shipment box (plasma and buffy coat aliquots should be kept together)

Aliquots arriving to NCRAD without labels

Sample forms not scanned to NCRAD the day before shipment

Recommendation:
Ship Samples to NCRAD utilizing the Notification Form, by PTID. Do not throw away labels until samples are packed and shipped.
Nonconformance Issues

Multiple low volume aliquots

Recommendation:
Lay out cryovials in a row and aliquot in order until sample is depleted

1.5 ml

YES

NO
NCRAD Website: Helpful Pages

NCRAD - CADASIL Active Study Page

https://ncrad.org/holiday_closure.html

<table>
<thead>
<tr>
<th>Date</th>
<th>Holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1</td>
<td>New Year’s Day</td>
</tr>
<tr>
<td>3rd Monday in January</td>
<td>Martin Luther King, Jr Day</td>
</tr>
<tr>
<td>4th Monday in May</td>
<td>Memorial Day</td>
</tr>
<tr>
<td>June 19</td>
<td>Juneteenth (observed)</td>
</tr>
<tr>
<td>July 4</td>
<td>Independence Day (observed)</td>
</tr>
<tr>
<td>1st Monday in September</td>
<td>Labor Day</td>
</tr>
<tr>
<td>4th Thursday in November</td>
<td>Thanksgiving</td>
</tr>
<tr>
<td>4th Friday in November</td>
<td>Friday after Thanksgiving</td>
</tr>
<tr>
<td>December 25</td>
<td>Christmas</td>
</tr>
</tbody>
</table>

https://ncrad.org/shipping_address.html

Shipping Address

NCRAD
Harvard University School of Medicine
161 W. 10th St. 9th Fl.
Hoboken, NJ 07030

UPS Shipping Resources

To generate an waybill and schedule UPS pickups for shipments to NCRAD, please visit the UPS ShipExec™ Thin Client website. For instructions on how to use the UPS ShipExec™ Thin Client website, please refer to the NCRAD UPS ShipExec™ Thin Client Guide.

Navigating UPS ShipExec™

Watch a quick tutorial on how to do this. OR, see the link below.

[Video Tutorial]
Contact Information

Questions?
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