

## Tips for Specimen Submission to the SWOG Biospecimen Bank



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## Overview of Specimen Receipt

- We receive several different specimen types for SWOG protocols:
  - FFPE tissue (blocks, slides)
  - Fresh blood, bone marrow, and urine
  - Frozen blood products and urine
  - Frozen tissue
- We accept all specimen types Monday – Friday.
  - Shipments of fresh blood and bone marrow may be received on Saturday for immediate processing.



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## Overview of the Biopathology Center (BPC)

- The SWOG Biospecimen Bank is part of the Biopathology Center at The Abigail Wexner Research Institute at Nationwide Children's Hospital.
- We serve as the biorepository for several other major groups and organizations:
  - SWOG
  - Children's Oncology Group (COG)
  - NRG Oncology
  - GOG Foundation
  - Sarcoma Alliance for Research through Collaboration (SARC)
  - NCI Early-Phase and Experimental Clinical Trials (EET)



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## Specimen Collection

- Protocol sections that provide guidance for specimen collection are:
  - 9.0 Study Calendar
    - Includes general information about specimen collection time points.
    - Does not include all specimen collection details. Refer to section 15.0 for complete list of specimen collection time points.
  - 12.0 Discipline Review
    - States whether the protocol includes quality control pathology review or central review.
  - 15.0 Special Instructions
    - Provides details about specimen requirements (specimen types and time points), collection, specimen labeling, processing and shipment.
- Biospecimen Processing and Submission Procedures
  - Located under the Biospecimen Resources tab on the SWOG website.
  - Provides general specimen processing instructions (instructions in the protocol take precedence over these instructions).
  - Provides instructions for specimen labeling (including templates) and shipment (laboratory addresses provided on Packing List from Specimen Tracking System).



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## Overview of Specimen Receipt

On an average day, the BPC receives 100-170 packages, which may contain upwards of 1,000 specimens for all groups!



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## Standard Specimen Labeling: Tissue

Specimen Container/Type	Required Data	Required on each specimen	Can be on package (e.g., plastic bag) for identical specimens
FFPE Block Cassette	<ul style="list-style-type: none"> <li>SWOG Participant ID</li> <li>Participant initials (Last, First Middle)</li> <li>Collection date</li> <li>Surgical Pathology ID (SPID)<sup>1</sup></li> <li>Block Number<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>SWOG Participant ID</li> <li>Surgical Pathology ID<sup>1</sup></li> <li>Block number<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Participant initials (Last, First Middle)</li> <li>Collection date</li> <li>Tissue type (if required)               <ul style="list-style-type: none"> <li>Primary tumor (P)</li> <li>Metastatic tumor (M)</li> <li>Normal tissue (N)</li> </ul> </li> </ul>
FFPE Tissue Slide	<ul style="list-style-type: none"> <li>SWOG Participant ID</li> <li>Participant initials (Last, First Middle)</li> <li>Collection date</li> <li>Surgical Pathology ID (SPID)<sup>1</sup></li> <li>Block Number<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>SWOG Participant ID</li> <li>Surgical Pathology ID<sup>1</sup></li> <li>Block Number<sup>1</sup></li> <li>Tissue thickness (microns, if required)</li> </ul>	<ul style="list-style-type: none"> <li>Participant initials (Last, First Middle)</li> <li>Collection date</li> <li>Tissue type (if required)               <ul style="list-style-type: none"> <li>Primary tumor (P)</li> <li>Metastatic tumor (M)</li> <li>Normal tissue (N)</li> </ul> </li> </ul>

<sup>1</sup>From the pathology report corresponding to the tissue removal procedure



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## Tissue Labeling Examples



### FFPE Tissue Slides in slide case

- Slides labeled with SPID, Block #, and SWOG participant ID
- All other labeling requirements on slide case



### FFPE Tissue Block

- Block labeled with SPID, Block #, and SWOG participant ID
- All other labeling requirements on plastic bag



## Labeling Templates

Label	Example Label	Specimen Types
<a href="#">Basic labels</a> or MS Word Version for <a href="#">Download</a>		<ul style="list-style-type: none"> <li>Blood/blood products (e.g., plasma, serum, buffy coat)</li> <li>Bone Marrow Aspirate and Bone Marrow Biopsy</li> <li>Urine, Stool, Other biofluids</li> </ul>
<a href="#">Time-based labels</a> or MS Word Version for <a href="#">Download</a>		<ul style="list-style-type: none"> <li>Specimens collected for studies where multiple samples are collected during the same day and the lab requires collection time to differentiate them for processing</li> </ul>
<a href="#">Tissue label</a> or MS Word Version for <a href="#">Download</a>		<ul style="list-style-type: none"> <li>FFPE tissue (blocks, slides, scrolls/curis)</li> <li>Frozen tissue</li> </ul>
<a href="#">Tissue label (with microns)</a> or MS Word Version for <a href="#">Download</a>		<ul style="list-style-type: none"> <li>When the protocol requires microns, for:</li> <li>FFPE tissue slides or scrolls</li> </ul>
<a href="#">Basic with Laterality</a> or MS Word Version for <a href="#">Download</a>		<ul style="list-style-type: none"> <li>When the protocol requires laterality, for:</li> <li>Bone Marrow Aspirate</li> <li>Bone Marrow Biopsy</li> </ul>



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## Standard Specimen Labeling: Biofluids

Includes blood, bone marrow, plasma, serum, urine, stool, etc.

Specimen Container/Type	Required Data	Required on each specimen	Can be on package (e.g., plastic bag) for identical specimens
Collection tubes	<ul style="list-style-type: none"> <li>SWOG participant ID</li> <li>Participant initials (Last, First Middle)</li> <li>Collection date</li> <li>Specimen type (blood, bone marrow, stool, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>SWOG Participant ID</li> <li>Participant initials (Last, First Middle)</li> <li>Specimen type</li> <li>Laterality (bone marrow) – right (R) or left (L) if more than one</li> </ul>	<ul style="list-style-type: none"> <li>Collection date</li> </ul>
Cryovial	<ul style="list-style-type: none"> <li>SWOG participant ID</li> <li>Participant initials (Last, First Middle)</li> <li>Collection date</li> <li>Specimen type (plasma, serum, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>SWOG Participant ID</li> <li>Participant initials (Last, First Middle)</li> <li>Specimen type</li> </ul>	<ul style="list-style-type: none"> <li>Collection Date</li> </ul>

Note: Missing or **discrepant** information will result in the Bank contacting the submitting institution, which can delay specimen processing, and may require a waiver.

**We cannot assume any information!**



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## Preparing the shipment

- Verify that **all specimen labels** include **all required information**.
  - Requirements are indicated in Section 15 of the protocol and/or the SWOG Biospecimen Resources webpage.
- Verify that the information on **STS packing list** matches the **specimens shipped**.
  - Double check specimen label information (e.g., collection dates).
  - Ensure that the number of specimens matches the number on the STS packing list (e.g., for 2 10-mL tubes of blood, quantity = 2, not 20).
- Confirm that all **required paperwork** is included.
  - Packing List
  - Redacted Pathology Report (FFPE tissue only)
    - More information on next slide
  - Include SWOG patient ID# on all paperwork.



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## Biofluid Labeling Examples



### Blood Tube

- Labeled with SWOG Participant ID, initials (Last, First Middle order), collection date, and specimen type
- Label can be placed horizontally or vertically, **not covering manufacturer information and expiration date**



### Frozen plasma or serum

- Labeled with SWOG participant ID, initials (Last, First Middle order), collection date, and specimen type
- Label wrapped around the vial with a flag, or overlapping the label itself on the tube
- Label prior to freezing to help the label adhere



## Pathology Reports and Tissue Types

- Pathology reports are required for formalin-fixed paraffin-embedded (FFPE) tissues – including blocks, slides, and scrolls
  - Label pathology report with the SWOG participant ID (handwritten or typed)
  - Do not redact participant initials, Surgical Pathology ID (SPID)/Accession #, Block #, diagnosis, or collection date.
- SWOG Bank definitions of tissue type:
  - Primary:** the initial source of tumor tissue, including residual tumor from the primary site. Must make biological sense for tumor type (e.g., colon cancer in colon tissue).
  - Metastatic:** tumor tissue collected at sites separate from the primary lesion, including local and distant metastatic tumor and residual tumor from metastatic site (e.g., lung tumor biopsy for prostate cancer).
  - Normal:** tissue that does not contain tumor, including lymph nodes negative for tumor.



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## Shipping Considerations

- Unless otherwise stated in the protocol, frozen specimens or FFPE tissues (blocks, slides, or scrolls) may be batch shipped.
  - Do not include more than 5 participants/50 samples in one shipment.
  - Package each participant's specimens separately.
  - If there are multiple time points for each participant, then include fewer than 5 participants in the shipment.
- Pack specimens according to the season
  - Frozen Specimens
    - ALWAYS include plenty of dry ice to prevent thawing, regardless of weather.
  - Ambient Specimens
    - Warmer months (April-September): Include a cold pack (not frozen!), unless otherwise stated in the protocol or kit instructions (e.g., cfDNA Streck tubes must never be shipped with a cold pack).
    - Colder months (October-March): Insulate well (e.g., bubble wrap) to prevent specimens from freezing.
- Specimens shipped **FedEx Priority Overnight** arrive in the morning – other carriers or shipping methods may delay receipt.



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## Common Specimen Quality Issues

Issue	Prevention
Specimen that should be frozen arrived thawed or with insufficient dry ice	<ul style="list-style-type: none"> <li>Choose an appropriately-sized container.</li> <li>Add dry ice to the bottom ~1/3, add the specimens, and then add dry ice to the top of the container.</li> </ul>
Blood / bone marrow is hemolyzed or clotted	<ul style="list-style-type: none"> <li>Thoroughly mix the specimen with anticoagulant in the tube immediately after collection. Do not shake or vortex, but gently invert tube 8 – 10 times after collection.</li> </ul>
Specimen arrived in a cracked, broken, or leaking container	<ul style="list-style-type: none"> <li>Always use plastic collection tubes if submitting frozen specimens.</li> <li>Do not overfill cryovials (~1.5 mL liquid can be frozen in a 2-mL cryovial).</li> <li>Package specimens carefully – if it rattles, don't ship it!</li> <li>Be generous with bubble wrap – it's both a good insulator and specimen protectant.</li> <li>Do not ship cracked, broken, or leaking specimens.</li> </ul>
Incorrect specimen type received (e.g., protocol indicates to send whole blood, and blood arrives processed)	<ul style="list-style-type: none"> <li>Refer to the protocol – verify that you are using the <b>most current</b> version.</li> <li>If the protocol is unclear – email the Bank.</li> </ul>



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## Shipping Considerations

- Remember when shipping, that even if weather is fine where you are, the specimens are traveling from your city ➡ FedEx Hub ➡ bank in Columbus, Ohio.



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## Common Shipment Issues

Issue	Prevention
Missing Paperwork	<ul style="list-style-type: none"> <li>STS packing list is <i>always</i> required.</li> <li>Pathology reports are required for all formalin-fixed paraffin-embedded (FFPE) tissue submissions – including blocks, slides, and scrolls.</li> </ul>
Missing information on specimen label	<ul style="list-style-type: none"> <li>Include all required labeling information on all specimens submitted.</li> <li>Refer to protocol for any protocol-specific labeling requirements.</li> </ul>
STS Packing List does not match specimens	<ul style="list-style-type: none"> <li>All specimen labeling information (identifiers, collection date, etc.) must correspond with the information entered in the STS.</li> <li>The number of specimens (e.g., number of tubes, vials, glass slides, etc.) received must match the STS packing list.</li> </ul>
Insufficient dry ice	<ul style="list-style-type: none"> <li>Include lots of dry ice <i>all year round</i>.</li> <li>Keep in mind that dry ice will sublimate at a rate of 5-10 lbs. every 24 hours.</li> </ul>



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## Impact of Specimen Submission Issues

- Additional time spent by the submitting site to resolve issues
  - Responding to phone calls, emails, and queries
  - Completing waivers for identifier issues
- Submission issues may delay the biobank marking specimens as received in the Specimen Tracking System
- Unresolved issues may prevent the specimen from being used in the planned research



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## Helpful Sites

### SWOG Biospecimen Processing and Submission Procedures

- <https://www.swog.org/clinical-trials/biospecimen-resources/biospecimen-processing-and-submission-procedures>
  - [Specimen Labeling](#)
  - [Specimen Collection and Processing Instructions](#)
  - [Specimen Tracking and Documentation Requirements](#)
  - [Specimen Packaging and Shipping Guidelines](#)

### BPC Kit Management

- Order biospecimen collection kits (when provided, refer to protocol) – select SWOG sponsor group.
- Users must be registered.
- <https://kits.bpc-apps.nchri.org/>



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## Contact Information

### **Solid Tissue, Myeloma & Lymphoma Division**

SWOG Biospecimen Bank #201  
614-722-2865  
[bpcbank@nationwidechildrens.org](mailto:bpcbank@nationwidechildrens.org)

### **Leukemia Division**

SWOG Biospecimen Bank #200  
614-722-3270  
[bpcmlab@nationwidechildrens.org](mailto:bpcmlab@nationwidechildrens.org)

SWOG Biospecimen Bank  
Nationwide Children's Hospital  
2200 International Street  
Columbus, OH 43228

*Up to date laboratory address can be found on Packing List printed from Specimen Tracking System.*



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## Questions?



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