

## ARCHIVED FFPE SECTIONS (SLIDES) FOR GENOMIC AND PROTEOMIC ANALYSIS

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### PURPOSE

The purpose of this procedure is to generate and ship FFPE sections (mounted on glass slides) of sufficient quality and quantity for (1) genomic analysis including WGS/WES and RNA-Seq, and (2) global proteomic analysis including TMT labeling and 24 basic reverse phase fractions per sample.

### SAMPLE REQUIREMENTS

1. There is no limit on age of blocks used for cutting sections.
2. To assure data quality, all samples should have  $\geq 25\%$  tumor cellularity, and  $\leq 25\%$  necrosis.
  - a. If the sample does not meet these requirements, we will perform macrodissection if possible. Please consult with the Paulovich Lab.
3. Please record fixation time or provide a note if fixation time is not known. For all samples, fixation time in neutral buffered formalin should be a minimum of 6 hours and a maximum of 72 hours. Fixation time begins when the specimen is placed in formalin (not when sectioned during gross examination) and ends when the cassettes are no longer in formalin.
4. The required number of FFPE sections for genomics and proteomics is listed below (**Table 1**).
5. We request 10 micron ( $\mu\text{m}$ ) thick sections mounted onto glass slides for genomics and proteomics.
6. In addition, we request two “bookend” sections (i.e. one section before and one section after the entire set of sections for genomics and proteomics) of 4-5  $\mu\text{m}$  thickness mounted onto glass slides for H&E staining. We use these slides to document tumor cellularity and when analyzing the molecular data.
  - a. Staining can be done either at the sample collection site or at FHCC.
  - b. Stained or unstained, bookend H&E slides should be sent to FHCC for image analysis.
7. Please label all slides with the date of sectioning and a combination of two forms of identification for tracking (e.g., a de-identified coded sample identification number, site ID, study ID, slide number).
8. All slides (bookend H&E slides plus the slides for genomics and proteomics) must be vacuum packed and stored at 4°C as soon as possible (within 1 day of sectioning) to avoid preanalytical variations (e.g., oxidation).
9. Slides should be shipped for analysis as soon as possible and within 2 weeks of sectioning.

**Table 1. Required Number of Sections for Genomics and Proteomics**

| Sample          | Genomics and Proteomics |                                       |                    | Bookend H&E       |                    |
|-----------------|-------------------------|---------------------------------------|--------------------|-------------------|--------------------|
|                 | Cross-Sectional Area    | Section Thickness                     | Number of Sections | Section Thickness | Number of Sections |
| Surgical biopsy | 100 mm <sup>2</sup>     | 10 µm                                 | 5                  | 4-5 µm            | 2                  |
| Surgical biopsy | 50 mm <sup>2</sup>      | 10 µm                                 | 10                 | 4-5 µm            | 2                  |
| Surgical biopsy | 36 mm <sup>2</sup>      | 10 µm                                 | 13                 | 4-5 µm            | 2                  |
| Surgical biopsy | 25 mm <sup>2</sup>      | 10 µm                                 | 18                 | 4-5 µm            | 2                  |
| Surgical biopsy | < 25 mm <sup>2</sup>    | Please consult with the Paulovich Lab |                    |                   |                    |

## INSTRUCTIONS FOR GENERATING AND SHIPPING FFPE SECTIONS

### Reagents and Supplies:

- Charged slides (Leica Biosystems #3800040 or equivalent)
- Microscope slide box (Heathrow Scientific #HS15991A or equivalent)
- Silica gel packets (Electron Microscopy Sciences #71206-01 or equivalent)

### Equipment:

- Microtome (Leica # RM2255 or equivalent)
- Vacuum sealer (Anova #ANVS01-US00 or equivalent)

### Detailed Instructions:

1. Cut sections onto warm water bath, no more than 50°C.
2. Mount all sections on charged glass slides.
3. Label the slide numbers sequentially and annotate the thickness of the section as well.
4. Cut one bookend 4-5 µm section for H&E staining immediately before the sections for genomics and proteomics analysis are collected.
  - a. Staining can be done either at the sample collection site or at FHCC. Stained or unstained, this slide should be sent to FHCC for image analysis.
5. Cut the required number of 10 µm thick sections based on the sample's cross-sectional area (see **Table 1** above).
  - a. 10 µm sections may be easier to cut from room temperature or lightly chilled paraffin blocks.
6. Immediately after all sections for genomics and proteomics have been collected, cut one bookend 4-5 µm section for H&E staining.
  - a. Staining can be done either at the sample collection site or at FHCC. Stained or unstained, this slide should be sent to FHCC for image analysis.
7. Air dry all slides overnight at room temperature.
8. Place all slides (both bookend H&E slides plus the slides for genomics and proteomics) into a slide box along with a silica gel packet.
9. Vacuum pack the slide box using a vacuum sealer and store the box at 4°C.

- a. All slides must be vacuum packed and stored at 4°C as soon as possible (within 1 day of sectioning) to avoid preanalytical variations (e.g., oxidation).
10. Transport or ship vacuum-packed samples on wet ice (i.e., ice packs) in a leak-proof container or outer package.
  - a. Please DO NOT use dry ice.
11. Please label the outer package clearly and durably with the words “Diagnostic Specimen”, and the name, address, and phone number of both the sender and the recipient.
12. Please email the Paulovich Lab before sending samples to coordinate shipping and ensure safe receipt (preferably on a Monday; see Main Contact and Backup Contact info below).
  - a. Please DO NOT ship samples on Fridays for delivery on Saturdays. If samples must be shipped for weekend delivery, please call and/or email the lab ahead of time and include the tracking number to ensure proper receipt.
13. Please ship by **Fed Ex** priority overnight or next day delivery (Fed Ex account information will be provided by email) to the following address:

Fred Hutchinson Cancer Center  
ATTN: Rose Pletcher  
1100 Fairview Avenue North  
Paulovich Lab E2-420  
Seattle, WA 98109-1024, USA

Main Contact: Rose Pletcher  
Email: [rpletche@fredhutch.org](mailto:rpletche@fredhutch.org)  
Phone: +1 (206) 667-2613

Backup Contact: Travis Lorentzen  
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