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# Cutting FFPE Sections for Imaging Mass Cytometry

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**We use this protocol and it's working**

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## Abstract

FFPE block are cut into thin sections.

## Materials

### MATERIALS

- ✕ FFPE block
- ✕ Rotary Microtome **Thermofisher Catalog #HM355S**
- ✕ FFPE Block Cooling Unit **Catalog #TES99.430**
- ✕ Stretching table
- ✕ Deionized Water
- ✕ Microtome Blade
- ✕ Brushes
- ✕ Glass Slides Superfrost 25×75×1.0mm **Thermo Fisher Scientific Catalog #10.0344.01**

### Safety warnings

- ! The microtome blade is very sharp, care must be taken to avoid injury.

## Cooling the FFPE Block

### 1 1.1 Cool down the FFPE block

- a. Switch on the cooling device and set it to 4°C
- b. Put the FFPE block into the cooling device.

## Switching on the microtome

### 2 1.2 Prepare the microtome

- a. Connect the cooling unit in the back with the cable and switch it on at the front.
- b. Switch on the microtome using the button at the back of the machine.
- c. Install the water bath with the filter.
- d. Add deionised water to the water bath and lower the compartment until the grid is slightly covered with water.
- e. Place a fresh blade in the blade holder.
- f. Check the water flow. If water is not flowing rinse the tubing with a syringe filled with water.
- g. Set the water flow to 3 or 4.
- h. Fix the precooled FFPE block to the specimen clamp holder.
- i. Adjust the angle between blade and FFPE block by unlocking the clamping lever and then adjusting the orienting screws accordingly.
- j. Set the trimming (Trim) and cutting (Feed) thickness by pressing the top knob once or twice, respectively.
- k. Unlock the wheel with the mechanical hand wheel brake on the right-hand side underneath the wheel.

### 1.3 Switch on the stretching table

- a. Switch it on and set it to 37°C.

## Cutting

### 3 1.4 Trimming

- a. Always use a new sharp blade.
- b. Trim carefully and make sure that your cutting angle is fine, if needed readjust.
- c. As soon as you think you are cutting tissue, take up a cut and have a look under the microscope.
- d. Exchange the water bath before starting cutting sections that you intend to collect.

### 1.5 Cutting

- a. Cut in a uniform and gentle rotation.
- b. Let the cut slide down into the water bath.
- c. Wait until the cut is flattened before taking it up on a glass slide.



- d. Wipe the glass slide dry on the bottom side before placing it on top of the stretcher.
- e. Exchange water on a regular basis if sample produces a lot of paraffin debris and between samples.

## Switching off

### 4 1.6 Switching off the microtome

- a. Block the wheel to avoid any injuries as soon as you are done cutting
- b. Dispose of the blade
- c. Stop the water flow by turning the wheel down to 0.
- d. Discard the water, clean the water bath, filter and grid, place them to dry.
- e. Clean the water slide.
- f. Clean the microtome from paraffin debris.
- g. Switch off the microtome at the back and disconnect the cooling block.
- h. Switch off the FFPE Block cooling device.

## Section drying and storage

### 5 1.7 Drying sections

- a. Dry the sections overnight or for **1-2 hours** at 37°C. Do not extend the drying for too long.

### 1.8 Storage of FFPE sections

- a. Store all FFPE fresh cut and dried sections at -80°C or stain them within a week.