

Section 10.5 **Procedures in obtaining solid tissue specimens from surgical cases**

Aim: Keeping ischemic time low by following procedures on accessioning the specimen and deciding on processing protocol

Purpose: To ensure that specimen acquisition and processing leads to specimens that are preserved in an optimal state.

Upon retrieval of case the specimen will be given a tracking number in Oncore BSM (repository database) by the TRS Pathologist Assistant. The Pathologist Assistant will obtain surgical tissue samples (preferred tumor and nat or lesion and nat) as soon as is possible so that the specimen can be process and/or frozen quickly. Ischemia time is recorded for quality control purposes (time from surgical resection to preservation).

Procurement Steps

Step #1

Large specimens from surgical procedures are brought to the pathology surgical gross room where the TRS Pathologist Assistant expedites its handling. The Pathologist Assistant and the Attending Pathologist assess/gross the specimen for diagnostic (patient care needs) before acquisition of partial specimen into our repository.

Step#2

Specimens from consented study patients and/or surgical cases of interest for de-identified procurement are supervised by the TRS Technicians from time of acquisition to time of delivery for processing in the Surgical Pathology Suite. To monitor the quality of samples, the time between removal of the specimen from the patient and time of preservation (ischemic time) is recorded. The TRS Pathology Assistant ensures that the specimen collection technician freezes, fixes, places in culture media, or otherwise preserves the tissue in an appropriate manner.

Step#3

Collected tissue specimens are routinely processed in the following ways:

1. Once piece is placed into formalin fixative and used for both quality assurance/control and as part of our paraffin block archives which can be accessed by researchers who need human tissue for immunohistochemistry, Laser Capture Microdissection (LCM) or Tissue Micro Array (TMA) projects.
2. As many pieces as is possible are cut on a clean surface using a new scalpel into small aliquots (0.1gms – 0.5gms) , placed into properly labeled cryovials and quickly frozen by immersing the cryovials into liquid nitrogen for 30 seconds. These piece will most likely be used by researchers who want to do extraction techniques.

Researchers may also request :

1. A “fresh” tissue piece to be placed in a media of their choice
2. A piece be frozen in OCT compound for cutting cryostat sections (used for IHC and/LCM techniques)
3. Fresh pieces being cut for uniform thickness using a Vibratome (Vibratome Slices)

Step#4

Processing and storage of all collected biospecimens until distribution to a researcher is done at the TRS lab located at The Cancer Institute of New Jersey in room 4530 and rm 2050.

Tissue pieces destined for paraffin block are fixed in formalin for 24 hours. Tissue are then placed into 70% alcohol until they are processed into paraffin wax and embedded. TAS laboratory technicians will cut one slide from each paraffin block which is stained with Hematoxylin and Eosin (H&E). This H&E stained slide will be looked at by the TAS Pathologist to ensure that it is a quality piece of tissue. The Pathologist will verify; tissue type, percentage of tumor, percentage of normal, fixation quality, cutting quality and staining quality. Processed wax tissue blocks are then filed by the TRS de-identification number (tracking number) and stored at room temperature in the TAS laboratory (rm 2050).

Tissues are frozen at the collection site (RWJUH surgical gross room) in liquid nitrogen. They remain in liquid nitrogen at the collection site until the end of the day when they are brought back and placed into our TRS -80 degree freezers. Freezer locations are recorded in our repository database. All freezers are alarmed with dialing devices for immediate notification of problems to TAS staff.