**Purpose**

Brain tumors are difficult to treat either by surgical resection, conventional chemotherapy or radiotherapy. In some instances, molecular subclassification of brain tumors has become an important piece of information to determine prognosis, diagnosis or therapy. In addition, deep sequencing studies provided by MiOncoSeq project may unveil new therapeutic targets unique to certain tumors. The treating oncologist will identify the patients that may benefit from this protocol.

The purpose of this procedure is to standardize and clarify roles and responsibilities of each party involved in this multidisciplinary effort.

**Procedure**

* Only brain tumors that are surgically resected as excisional biopsies are eligible for this protocol. Needle or stereotactic biopsies are not to be included.
* This protocol is for brain tumor surgeries performed at the University of Michigan only. There is a different protocol for cases considered for MiOncoseq that comes from outside institutions. Please use appropriate protocol.

**Surgical Team Responsibilities:**

1. A representative fragment of the lesion needs to be sent to the frozen lab to confirm lesional tissue and viability of the specimen.
2. Sufficient tissue to achieve final diagnosis and appropriate grading will be sent as permanent sections in formalin. ***Diagnosis and proper grading of the tumor is a priority.***
3. In patients that may qualify for MiOncoSeq studies, once steps 1 and 2 have taken place, additional fresh tissue from the lesion should be sent to the frozen lab **ASAP**:
4. Use a SEPARATE container to put the fresh tissue in a telfa pad.
5. Label the container with patient’s identifiers (name, DOB, MRN, location of the tumor/lesion) and use designed label provided by the pathology department (see below)
6. It is the clinical team’s responsibility to have labels handy prior to surgery.
7. Specimens should be handed to a pathology personnel in the frozen room and not to be left on the counter unattended.

**Fresh**

**For MiOncoSeq**

**Pathology, Frozen Section Team Responsibilities:**

MiOncoSeq specimen should come from the OR soon after (<30 min) the frozen diagnosis has confirmed the lesion.

1. Accession the specimen as a separate part as **gross only** to avoid printing cassette.
2. In the gross description dictate as follows:
3. For **UMHS specimens**: “Specimen entirely frozen for possible MiOncoSeq studies and stored in Dr. Giordano’s lab”.

*Soft Code***:** UMHS-MIONC**.** *Dictation Code***:** UMHS MiOncoseq

1. For **Mott specimens**: “Specimen entirely frozen for possible MiOncoSeq studies and placed on hold in the -70C freezer in Mott Frozen lab”.

*Soft Code***:** MOTT-MIONC**.** *Dictation Code***:** MOTT MiOncoseq

1. **During working hours at UMHS:** PA or resident contact Procurement Technologist at Dr. Giordano’s lab (dpostiff@med.umich.edu; Barikdar@med.umich.edu or page Deborah Postiff @ 8952) and they will handle the specimen from there.
2. **After working hours** **at UMHS:** PA/resident on call accessions freezes the tissue and store in HistoChill. Tissue procurement personnel should be notified (e-mail or pager see above) by the person who freezes the specimen. Tissue procurement personnel will store the specimen as appropriate the next working day**.**
3. **During working hours at Mott**: PA accessions, freezes and stores specimen in the -70C freezer in Mott Frozen lab
4. **After working hours** **at Mott:** Resident on call accessions, freezes the tissue and store in in the -70C freezer in Mott Frozen lab
5. See freezing procedure in appendix 1 at the end of this document.



See Freezing Procedure in Appendix 1 at the end of this document.

**Clinician Responsibilities to proceed with MiOncoSeq studies of in house cases**

1. It is the clinical team’s responsibility to properly consent the patient to proceed with MiOncoseq studies prior to sending material to the pathology department. For more information visit <http://mctp.med.umich.edu/physicians/mi-oncoseq-study> or contact MiOncosseq coordinator. As of January of 2016 the adult MiOncoseq coordinator is Erica Rabban (ericafw@med.umich.edu) and the pediatric one is Jacob Williams (jacwilli@med.umich.edu). The clinician should discuss with the MiOncoseq team the case to determine priority and specific questions to be answered.
2. The clinician should discuss with the patient the possibility of insufficient viable tissue for testing from either FFPE or frozen material
3. The clinician should be aware of turnaround time for results and discuss expectations on this regard with the patient.

**MiOncoSeq Team Responsabilites**

1. Once the patient is properly consented, MiOncoseq coordinator will contact via e-mail our neuropathology assistant at Path-Neuropath-admin@med.umich.edu and/or Pritula, Lilly lillyp@med.umich.edu with the following information:

Date of Enrollment: \_\_\_\_\_\_\_\_\_\_\_\_
PO #:\_\_\_\_\_\_\_\_\_\_\_\_
Patient’s Initials: \_\_\_\_\_\_\_\_\_\_\_\_
DOB: \_\_\_\_\_\_\_\_\_\_\_\_
MRN#: \_\_\_\_\_\_\_\_\_\_\_\_
Diagnosis: \_\_\_\_\_\_\_\_\_\_\_\_
Normals: \_\_\_\_\_\_\_\_\_\_\_\_
Type of specimen:

* Fresh Frozen: Y/N Date of Surgery (ies):\_\_\_\_\_\_\_\_\_
* FFPE: Y/N Date of Surgery (ies):\_\_\_\_\_\_\_\_\_

 Surgeon: \_\_\_\_\_\_\_\_\_\_\_\_

 (\*)Tumor content: \_\_\_\_\_\_\_\_\_\_%

 (\*)Pathology Description: \_\_\_\_\_\_

 (\*)To be filled by pathologists from the fresh H&E section taken from the tissue to be sequenced (Fresh frozen and/or FFPE).

1. MiOncoSeq personnel are responsible to pick up assets from pathology department.
2. For Fresh Frozen specimens, the tissue can be found in either the Mott Frozen Section Lab if the surgery was done at Mott or in Dr. Giordano’s lab if the operation was done at the main ORs at UMHS. Refer to the gross description section of the final pathology report for your reference.
3. For FFPE specimens, neuropath assistant will contact MiOncoSeq coordinator when the block (s) is available to pick up. Neuropath admin is located in MedSci 1, 5th floor. There is a designated shelf on her desk labeled “MiOncoSeq”. Only pick up assets that Neuropath admin has released.
4. Once a fresh cut is obtained from either the frozen or FFPE material, MiOncoSeq coordinator will bring slides to neuropathology assistant.
5. A copy of the completed template and PowerPoint images are emailed to Mandy Davis, Marta Hernandi-Mueller, Rhonda McDougall, Javed Siddiqui, Erica Rabban, and Jacob Williams as soon as completed and returned to neuropath admin. The PO slide is then available for pickup within 24 hours after email is sent.
6. MiOncoseq team in conjunction with clinician will schedule the cases for Precision Medicine Tumor board and notify the pathologists via neuropath admin Path-Neuropath-admin@med.umich.edu regarding date of meeting and cases to be discussed.
7. MiOncoSeq Team will provide a final written report faxed to the neuropathology division 734-615-2965
8. MiOncoSeq Team will include participating neuropathologists in any future publications or proposals resulted from this effort.

**Neuropathology Section Responsibilities**

1. Neuropathology assistant will pull slides and FFPE blocks from the files in a timely manner. For recent cases it may take up to 3-4 working days. For older cases (more than 2 years) it may take up to 2 weeks depending on the location of the assets.
2. If there are any difficulties (e.g. delay locating assets, insufficient tissue, etc.) the neuropathology assistant will notify the clinician and MiOncoseq team in a timely manner.
3. Neuropathology assistant will assign the assets to be reviewed by a neuropathologist on schedule. Note that the neuropathologist that selected the block might be different than the one who reads the fresh HE (PO#) from the case to be sequenced. Therefore, the contact person is the neuropathology administrative assistant who takes care of scheduling.
4. Once the assets are present in the neuropathology section, the neuropathologist will review them and return them within 24-48 hours.
5. Neuropathology assistant should always enter a note in Soft for each accession number, indicating the block that was sent to MiOncoSeq and the date, in order to account for all the assets.
6. The neuropathologists will provide estimated percentage of tumor content and a representative picture of the tumor form the section to be sequenced along with a short pathology description.
7. At least one representative from the neuropathology section will attend Precision Medicine Tumor Boards to contribute with the discussion of the case as a member of the team caring for the patient.
8. Neuropathologists participating in this project will be available to provide scientific feedback in manuscript(s) or proposal(s) derived from this effort.

**Appendix 1**

Freezing Procedure: (See next page).

**Appendix 1**

Freezing Procedure



