

MUSCLE BIOPSY TISSUE FREQUENTLY ASKED QUESTIONS



This FAQ will provide you with information on how to stabilize muscle biopsy tissue specimens to ensure that they arrive at our laboratory without degradation. All fresh skeletal muscle biopsies must be received by Michigan Medicine Laboratories (MLabs) within four hours of collection during normal business hours (Monday-Friday by 5:00 PM). If the specimen delivery time is expected to be more than four hours from collection, the skeletal muscle tissue must be frozen. The frozen tissue must be received at our facility during normal business hours. Specimens cannot be accepted during observed Michigan Medicine holidays. Contact MLabs Client Services for observed holiday dates and hours. Specimens that cannot be shipped for arrival within these timeframes must be stored frozen in a -80 °C freezer until ready to ship.

For comprehensive instructions outlining the appropriate steps to submit muscle biopsy tissue to Michigan Medicine Laboratories (MLabs), refer to the Muscle Biopsy Tissue Submission Protocol. If you need further assistance, please contact our MLabs Client Services Center 800.862.7284.

Question: I am not a client; can I send my own kit?

Answer: No. Please contact MLabs Client Services to receive onboarding, training, and our MLabs collection kit prior to collecting and sending a specimen. This process ensures the biopsy tissue you send meets our specimen requirements and remains stable in shipment to our facility.

Question: Do I need to notify MLabs Client Services prior to sending a tissue biopsy specimen?

Answer: Yes, our MLabs Client Services team assists in obtaining the appropriate documentation and specimen tracking to our facility.

Question: When can I send a skeletal muscle biopsy to Michigan Medicine Laboratories?

Answer: MLabs recommends that skeletal muscle tissue arrive at Michigan Medicine Laboratories Monday through Friday between 7:00 AM-5:00 PM. Do not initiate transportation of a frozen tissue specimen if the expected arrival at our facility is during the weekend or before a long holiday. Please store the frozen tissue specimen at -80 °C and ship overnight on Monday or next non-weekend/holiday business day.

Question: What if there is a delay in shipping a package containing a frozen tissue specimen and the package is due to arrive at your facility during the weekend?

Answer: MLabs will stabilize all specimens upon receipt.

Question: Does glutaraldehyde fixative need to be stored and shipped refrigerated?

Answer: Glutaraldehyde fixative must be refrigerated until ready to ship and during storage and transport of the specimen. Samples should be shipped or transported to arrive within 24 hours. The entire kit can be refrigerated.

Question: The specimen placed into the glutaraldehyde fixative was at room temperature over the weekend. Can I still send the specimen to your laboratory?

Answer: No. The specimen containing glutaraldehyde fixative must be refrigerated during storage and transport of the specimens.

Question: When can I expect a final surgical pathology report?

Answer: Depending on the complexity of the case, a final report is routinely available one to three weeks after receiving the sample. The requesting clinician can speak directly with the neuropathologist at any time by calling MLabs Client Services at 800.862.7284.

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Question: I do not have a -80 °C freezer available; will the skeletal muscle tissue remain stable in a -20 °C freezer?

Answer: The tissue should be kept frozen ideally at -80°C. If an ultra-low freezer is not available, storage in copious amounts of dry ice is the second-best option. Very short-term storage (i.e. over a weekend) in a -20°C freezer can be used if the first two storage options are not available, but using this method increases the risk of introducing freezing artifact which inhibits microscopic interpretation. Only store at -20°C if no other option is available.

Question: I accidentally placed the whole muscle specimen in formalin. Can I still send the specimen?

Answer: Yes, you can, but interpretation will be limited as enzymatic stains will not be able to be performed. It is possible the pathologist will request a re-biopsy if the specimen is inadequate to answer the clinical question.

Question: I do not have dry ice at my facility. Can the courier provide dry ice when they pick up the specimens?

Answer: No, clients provide their own dry ice for transport of specimens back to Michigan Medicine Laboratories.

Question: I do not have liquid nitrogen at my facility. How can I stabilize the muscle specimen?

Answer: Refer to the MLabs Muscle Biopsy Tissue Submission Protocol for alternative frozen procedures.

Question: Can a frozen skeletal muscle biopsy be stored in a -20 °C cryostat?

Answer: No, the cryostat defrosts overnight, and the muscle will thaw. The specimen may not be salvageable if it thaws. Use only a medical grade refrigerator -20 °C with an alarm system if the temperature drops to ensure the tissue is preserved properly.

Question: Is talc powder the same as baby powder?

Answer: Yes, the principle is to remove extra moisture; if the talc powder or baby powder is not medicated (e.g., antifungal, etc.) it can be used.

Question: Do I need to submit a negative SARS-CoV-2 result for my patient?

Answer: No, submitting a negative SARS-CoV-2 result is no longer required for skeletal muscle biopsies. However, Michigan Medicine Laboratories cannot accept fresh or frozen skeletal muscle tissue from SARS-CoV-2 positive or equivocal patients. Only specimens fixed in formalin and glutaraldehyde will be evaluated.

Question: What happens if I have submitted a skeletal muscle biopsy on an unvaccinated and untested patient?

Answer: Michigan Medicine Laboratories can accept skeletal muscle tissue from patients who have met the referring facility COVID screening requirements for muscle biopsy.

Question: How long are tissue biopsy specimens stable when stored in the appropriate fixatives and conditions?

Answer: All surgical pathology specimens in glutaraldehyde will remain stable for 5 days when stored at 4 °C. Formalin fixed specimens will remain stable at room temperature. However, to avoid over fixation of the specimen it is best to send the specimens to our facility as soon as possible for processing.

Question: How long are muscle biopsy tissue specimens stored at Michigan Medicine Laboratories?

Answer: We follow CAP national guidelines. After all studies are performed and a final report has been issued, the remaining paraffin embedded blocks and all generated slides will be stored at room temperature for at least 10 years. The remaining frozen muscle, if any, will be stored for at least 10 years at -80 °C. Glutaraldehyde embedded tissue will be stored indefinitely.