

Specimen Submission Guidelines for Pathologic Evaluation of Unexplained Illness due to Possibly Infectious Etiology

Unexplained critical illnesses and deaths of possible infectious etiology can be challenging cases to investigate. This is especially true for cases of sudden death, for which pre-mortem specimens are unavailable, and for cases where traditional laboratory assays have been unsuccessful in identifying a specific agent. **Some of these cases have gross or histopathologic features suggestive of an infectious process, and may be submitted for evaluation by the Infectious Diseases Pathology Branch.** Performance of specific immunohistochemical, molecular, or other assays will be determined using clinical and epidemiologic information provided by the submitter and the histopathologic features identified in the submitted tissue specimens.

Collection of Tissue Specimens

Representative tissues from the major organs should be submitted for evaluation. Representative tissues should be included from all organs showing significant microscopic pathology. Preferred specimens include paraffin blocks of tissues showing gross or microscopic pathology and representative tissues in formalin (i.e. wet tissue). Fresh-frozen tissue may also be submitted for culture and molecular-based assays.

Submission of Specimens

Paraffin-embedded tissue blocks

In general, this is the preferred specimen and is especially important to submit in cases where tissues have been in formalin for a significant time. Prolonged fixation (>2 weeks) may interfere with some immunohistochemical and molecular diagnostic assays.

Wet tissue

If available, we highly recommend that unprocessed tissues in 10% neutral buffered formalin be submitted in addition to paraffin blocks.

Unstained slides

Although not optimal, if paraffin blocks are unavailable it may be possible to utilize unstained sections cut at 3–5 microns (10 slides per block) for immunohistochemistry and specials stains but *not* molecular diagnostic assays (e.g. PCR).

Fresh-frozen tissue

Send separately on dry ice

Electron Microscopy (EM) specimens

Samples fixed in glutaraldehyde and held in phosphate buffer. Sample containers are filled to the top with phosphate buffer and sent on wet ice. Do not freeze. Epoxy-embedded tissues are also accepted.

Please refer to our [General Guidelines for Shipping Pathology Specimens](#) (next page).

General Guidelines for Shipping Pathology Specimens

Infectious Diseases Pathology Branch

Packaging Guidelines

Room Temperature	Refrigerated (frozen gel packs)	Frozen (dry ice) §
<ul style="list-style-type: none"> Formalin-fixed wet tissues Formalin-fixed paraffin-embedded blocks * Glass slides with sections from paraffin-embedded blocks Glass slides with smears EM blocks / EM grids 	<ul style="list-style-type: none"> Fresh tissue Blood Wet tissue in EM fixative Stool for EM 	<ul style="list-style-type: none"> Fresh frozen tissue Serum Body fluids (BAL, CSF, urine)

* During the warmer months (June – August), it is advisable to ship the block(s) with a frozen gel ice-pack in order to prevent the melting of paraffin-embedded tissue blocks during transit.

§ When shipping frozen specimens from long distances or from international locations, it is best to use a combination of dry ice and frozen gel ice-packs. The gel ice-packs will remain frozen for a day or two after the dry ice has dissipated.

Shipping Guidelines

- All packages should be mailed for receipt by Friday.
- US Federal Holidays should be taken into consideration before mailing specimens.
- Exceptions can be made for urgent cases with prior approval.
- Please provide us the shipper's package tracking number(s).
- Specific regulations for packaging, labeling, and shipping may be found at:
 - <http://www.cdc.gov/laboratory/specimenmanagement/shipping-packing.html>
 - <http://www.cdc.gov/od/ohs/biosfty/shipdir.htm>
 - http://www.iata.org/whatwedo/cargo/dangerous_goods/Pages/infectious_substances.aspx

Supporting Documentation

- Please include
 - a cover letter outlining a brief clinical history, including relevant demographic / epidemiologic information
 - a copy of (a) the autopsy report (preliminary or final) or (b) surgical pathology report
 - copies of pertinent laboratory results (microbiology, hematology, serology, culture, and/or biochemical)
 - images (clinical and/or gross autopsy photos)
- Include the full name, title, complete mailing address, e-mail address, and telephone and fax numbers of the submitter. This will be the person to whom the final pathology report is addressed.

▶▶ **Advance consultation is REQUIRED concerning the submission of all cases.** ◀◀

All specimens should be addressed to:

Sherif R. Zaki, MD, PhD
 Chief, Infectious Diseases Pathology Branch (IDPB)
 Centers for Disease Control and Prevention (CDC)
 1600 Clifton Rd NE, MS G-32
 Atlanta, GA 30333

Phone: (404) 639-3133
 Fax: (404) 639-3043
pathology@cdc.gov