

FORENSIC BIOLOGY SEROLOGY PROCEDURES MANUAL

Processing of Postmortem Specimens		
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Processing of Postmortem Specimens

1 Receipt of postmortem specimens

1.1 This task should be performed reasonably soon after a batch of samples arrives in the laboratory. The assigned Criminalist will report to the postmortem (PM) processing supervisor/exam supervisor and perform any and all tasks related to PM processing.

1.2 Specimens from all five boroughs are delivered to the laboratory in sealed red plastic containers (PM bins). The LIMS system will automatically update the PM bin's chain of custody once the PM bin's custody has transferred from the Evidence Unit to the Forensic Biology Personnel.

Note: If samples arrive late in the day, inventory PM bins (Step 1.3) and store samples in a cage/refrigerator. Samples will be processed the next day.

1.3 To inventory the contents of the PM bins, proceed with the following:

1.3.1 Inventory each container separately. Check for completeness and record any discrepancies.

1.3.1.1 Report any discrepancies to the PM supervisor.

1.3.1.2 For discrepancies or problems with the inventory, refer to Section 4 "Troubleshooting" and proceed as specified.

1.3.1.3 Some discrepancies may require an email to the ME along with documentation in LIMS. Refer to the Postmortem Evidence Discrepancies section (under the Notetaking section) of the [Evidence Exam Manual](#) and the [PM Processing and PM Evidence SignIn](#) LIMS Procedure Manual.

1.3.2 Verify that the appropriate letter designation of "B" for Forensic Biology is present on the ME label of the submitted specimen containers. If a different letter designation is present (i.e., "H" for Histology or "T" for Toxicology), contact the Evidence Unit for transfer of those specimens to the appropriate department.

1.4 Fill out the PM documentation for each bin. The LIMS system will automatically create the chain of custody for each sample and record the packaging and processing as the analyst unpacks the postmortem evidence and exemplar samples.

1.5 Ensure that the PM items all have barcode labels and are stored in an appropriate container (See Table 1).

1.5.1 **If items are not packaged properly or the packing is received especially soiled, wipe down or repackage according to Table 1.** Seal the package with Evidence Tape or using a heat-

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sealer for the KAPAK™ bag. Initial and date all seals. Note: the evidence tape should not obscure the ME # on the barcode label.

Table 1

Sample	Packaging
Bloodstain cards	KAPAK™ bag
Hair, Nails, Trace Evidence*	Coin envelopes placed into KAPAK™ bag
Oral, vaginal, anal, penile, and bladder swabs*	Coin envelopes placed into KAPAK™ bag
Bone	Plastic specimen container
Muscle or soft tissue	Plastic specimen container or 15 ml Falcon tube

* Store samples from the same ME # in the same KAPAK bag.

1.6 Once inventoried and processed, store samples in the appropriate storage area (See Table 2).

Table 2

Room Temperature (20°C)	Freezer (-20°C)
<ul style="list-style-type: none"> - Bloodstain cards - Fingernails - Oral, vaginal, anal, penile, and bladder swabs - SAK - Hair - Other Trace Evidence 	<ul style="list-style-type: none"> - Bone - Muscle or Soft Tissue - Product of conception (POC)

1.7 Spray the inside of the PM bins with disinfectant and let air dry. Set the bins aside in the designated area for pick up.

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2 Creating a Stain Card from a Blood Vial (non-vouchered vial bloods)

- 2.1 This procedure should be used if blood, in liquid form, is sent as an exemplar. A new blank stain card will be utilized to collect and retain the blood sample.
- 2.2 Refer to the [Creating a Bloodstain Card in LIMS manual](#) for LIMS specific directions.
- 2.3 Application of blood onto Stain Card
 - 2.3.1 Create the bloodstain card in a biological safety cabinet with the blower on. Turn the blower on 15 minutes prior to use. [See QC125- Biological Safety Cabinet/Fume Hood: Operation and Maintenance manual](#).
 - 2.3.2 Obtain a new bloodstain card. Place item sticker on bloodstain card. On the bottom of the blank stain card write in:
 - 2.3.2.1 FB number
 - 2.3.2.2 Name of victim/complainant
 - 2.3.2.3 Initial and date of person creating the blood stain card (EA)
 - 2.3.2.4 Witness will also initial and date the bloodstain card
 - 2.3.2.4.1 Witness should check FB number, victim/complainant's name is written correctly on stain card.
 - 2.3.3 It is advisable that a new lint free wipe be used to open the vial stopper.
 - 2.3.4 Retrieve a sterile plastic dropper and aspirate blood before slowly adding 3-4 drops on each outlined circle on the stain card. Allow the blood to fill up each outlined circle.
 - 2.3.5 Discard the remaining blood into a conical tube containing bleach and discard the conical tube and dropper into a biohazard container.
 - 2.3.6 Rinse the blood vial and cap with 10% bleach and under running water in a sink. Pat dry and allow the vial and cap to dry before repackaging into the original packaging.
 - 2.3.7 Allow the stain card dry in the hood with the blower on. If the stain card needs to dry overnight, check the stain card into the hood in LIMS.
 - 2.3.8 Once the stain card is dried, package the dry stain card into a Kapak and heat seal the Kapak. On the Kapak:
 - 2.3.8.1 Affix the EC sticker

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2.3.8.2 Handwrite the FB number

2.3.8.3 EA initial and date across the heat seal

3 Assignment of case numbers

3.1 Assignment of case numbers is performed upon request for testing (i.e., by ME or ADA) or when vouchered evidence is received. Requests for testing are received and vetted by the DNA Sign-In Team.

3.2 **For cases that will be assigned an FB case number:** Check LIMS to determine if FB case numbers have been assigned to the ME numbers.

3.2.1 If a FB # for the ME # is previously assigned, the PM samples will be signed into the pre-existing case numbers.

3.2.2 If a FB # for the ME # is not previously assigned, review and assign the PM samples to an FB case number. Enter the appropriate information into LIMS. See the [PM Processing and PM Evidence SignIn](#) LIMS Procedure Manual.

3.3 Upon electronically assigning a FB # to the ME #, LIMS will create a unique PM number for each specimen.

3.3.1 Exception: For Missing Persons cases (unknown victim), the PM sexual assault evidence (PM SAK or PM orifice/penile swabs) should be placed on a separate chain of custody from the other PM samples.

3.3.2 PM SAKs are transferred to the Evidence Unit for storage. All other specimens are placed in retained storage.

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4 Troubleshooting

Issue	Recommended Action
Unlabeled specimen	<p>Criminalist I: For an unlabeled specimen, do not process; notify supervisor. Give the specimen back to the Evidence Unit</p> <p>Criminalist IV: Contact ME who performed the autopsy as well as Deputy ME. Refer to Postmortem Evidence Discrepancies section (under the Notetaking section) of the Evidence Exam Manual and PM Processing and PM Evidence SignIn</p>
Unscannable label	For an unscannable label, process as long as the ME number is legible.
Unreadable but scannable barcode label	<p>Criminalist I: Consult a Crim IV and Scan barcode and generate new label. Use new label to confirm ME# and place label on stain card. Continue with processing.</p> <p>Criminalist IV: Log into CMS for the associated Case Worksheet and confirm all the items for the ME case are present. If so, inform Crim I they can continue with processing.</p>
Broken blood vials/ Blood vial with a detached rubber stopper	<p>FBio should not be receiving any blood vials, however if received;</p> <p>Criminalist I: Do not process. Record discrepancy and reach out to LIMS Superusers for guidance (they will need to delete the sample). Clean out the bin with bleach.</p> <p>Criminalist IV: Email the Medical Examiner, Evidence Unit Supervisors, and Molecular Genetics to inform them what happened and that there is no sample.</p>
Missing or more items in PM bin than listed in LIMS	Criminalist I: Return to the EU; Return extra item(s) and keep bin if greater than number of listed items. Return the entire bin if number of items is less than number of items listed.

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Issue	Recommended Action
Wrong item type, ME#, EC# on LIMS EU sticker	Criminalist I: Return to the EU to be fixed, then it can be recollected. i.e., PM SAK listed as “PM SAK/ Other” should be fixed to “PM SAK/ PM SAK”
Non-postmortem evidence (i.e., swabs from a bag, ties used to bind the decedent’s hands, rubber gloves, or HIV testing tubes) received in PM bin	Criminalist I: Consult the exam supervisor. Non-postmortem items should be returned to the EU.
PM organs/tissue received with wrong description (ie. heart tissue received in a container labeled bone)	Criminalist I: Refrigerate and consult with exam supervisor. If being processed, assign appropriate item description when unpacking bin in LIMS. Immediately store in refrigerator after processing.
QR code sticker missing from additional items	Criminalist I: Type any keystroke in the scan search bar instead of scanning sticker (i.e., type “2” for the 2nd item received in PM bin with the same ME#). Then proceed as usual.
Swabs for a PM SAK received outside kit	Criminalist I: Inventory as usual and store swabs in the appropriate PM box in Cage A
RNAlater® (liver/spleen/heart) samples	Criminalist I: Notify the exam supervisor and return to the Evidence Unit Criminalist IV: Email the Medical Examiner, Evidence Unit Supervisors, and Molecular Genetics to inform them we mistakenly received this sample(s). In the email inform all parties to inform the EU on how to proceed. Return the sample(s) to the Evidence Unit.
Wet items received in the PM bins	Criminalist I: Consult the exam supervisor. Place wet stain cards in the hood to dry completely. Complete discrepancy procedure outline in manual.
Post-mortem items appear to be decomposed (ie. green or black in color)	Criminalist I: Inventory as normal. Follow-up may be needed by a X-Team supervisor if decedent is unknown and testing is needed; bone sample may need to be requested.

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Issue	Recommended Action
Bone samples appear to be less than one inch in size	Criminalist I: Inventory as normal. Follow-up may be needed by a X-Team supervisor if decedent is unknown and testing is needed.
An item is located in an emptied PM bin (in LIMS)	Criminalist I: Contact LIMS Superusers and physically return the PM bin to the EU. Transfer in LIMS is not possible. Preventative Step: Do not rescan any EC#s after successfully unpacking bin in LIMS (or after clicking “save & take custody”).
PM evidence container (EC#) is mistakenly marked as empty	Criminalist I: In LIMS: Forensic Biology (PM) -> Historical PM Evidence Packages LIMS tram stop: search EC# and click “Mark Unempty” Then proceed as usual.
An error message pops up after clicking “Mark Reviewed” in LIMS	No issue if all proceeding steps correctly performed. Usually, a result of more than 1 item being associated with the same ME# but they are not all in the same unpacked PM bin.