

Specimen Collection and Preparation

Laboratory test results are dependent on the quality of the specimen submitted. It is important that all specimens and request slips be properly labeled with name of patient, collection date, and origin (source) of specimen when applicable.

If there is any doubt or question regarding type of specimen that should be collected, it is imperative that Holland Hospital Laboratory Services be called at 616-355-3801 to clarify the order and specimen requirements.

Blood Collection

Most laboratory tests are performed on anticoagulated whole blood, plasma, or serum. In general, specimens should be refrigerated until placed in the courier box for transport to the laboratory. Please see alphabetical test listings for specific requirements.

- **Plasma:** Draw a sufficient amount of blood with indicated anticoagulant to yield necessary plasma volume. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw. If required, separate plasma from cells by centrifugation within 20 to 30 minutes.
- **Serum:** Draw a sufficient amount of blood to yield necessary serum volume. Allow blood to clot at ambient temperature, and then, separate serum from clot by centrifugation within 20 to 30 minutes. Caution: avoid hemolysis.
- **Whole Blood:** Draw a sufficient amount of blood with indicated anticoagulant. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw.

Phlebotomy Draw Order:

1. Blood cultures
2. Portex Blood Sample Syringe (Heparin syringe for VBG)
3. Blue – sodium citrate
4. Gold/Orange – serum separator tube (SST), a clot activator
5. Red – non barrier, a clot activator
6. Serum RB Plain
7. Mint – lithium heparin
8. Green – sodium heparin
9. Lavender – ethylenediaminetetraacetic acid (EDTA)
10. Pink – EDTA
11. EDTA RB
12. Gray – sodium fluoride/potassium oxalate
13. Yellow- Acid B

Draw order for Microtainer:

1. Lavender – EDTA
2. Mint – lithium heparin
3. Gold - SST

Histopathology Collection Sample Submission

Fixation of surgical specimens: Specimens may be submitted without fixative if they are delivered to the Surgical Pathology Laboratory promptly or if a frozen section is requested. When a fixative is used, it should be 10% buffered formalin. Specimens received in fixative should have enough fixative in the container to accommodate the specimen. Please call the Department of Pathology at 616-394-3185 if there are questions regarding the handling of specimens.

To assure proper and expedient handling of tissue specimens, a correct and accurately completed requisition and specimen container will minimize delays in processing and in issuing the final report.

Labeling of specimen containers and histopathology

requisition: The following information is to be recorded on a requisition using a stamp/plate, typewriter, or neatly printed:

- Patient's name
- Doctor's name
- Sex
- Date of birth and age
- Address
- Preoperative diagnosis
- Surgeon/Doctor
- Clinical data and operative procedure
- Source of specimen and location

Each specimen container must be labeled on its side with the following:

- Patient's name
- Source of specimen and location (if applicable)
- Patient's Date of Birth

Office specimens: Additional information is required for proper billing of office specimens:

- Telephone number of patient
- Person responsible (relationship) for bill
- Insurance through employer or private
- Medicare or Medicaid number
- Marital status

Reasons for specimen rejection or delay in processing:

- Specimen container not identified with patient's name, date of birth and/or source of specimen
- No specimen received with requisition
- No requisition received with specimen
- Dissimilar correlation between specimen and requisition (i.e., requisition states "left" and specimen states "right")

- Source of specimen not indicated on requisition or no clinical diagnosis is indicated on requisition
 - Course of action:
 - Unlabeled specimens, if irretrievable, may be returned to their origin for identification along with the Holland Hospital Laboratory Services Patient Identification Form
 - Incomplete requisitions will result in a delay in processing until the proper information can be obtained
 - If the birth date, anatomic site of the specimen, or clinical diagnosis are not present on the requisition, the laboratory will call for this data before processing the specimen
- Royal Blue-Top Tube: There are 2 types of royal blue- top Monoject® tubes—1 with the anticoagulant EDTA and the other plain. These are used in collection of whole blood or serum for trace element analysis. Refer to the individual metals test listings to determine tube type necessary.
- Special Collection Tubes: Some tests require specific tubes for proper analysis. Please contact Holland Hospital Laboratory Services prior to patient draw to obtain correct tubes for metal analysis or other tests as identified in individual test listings.
- Yellow-Top Tube (ACD): This tube contains ACD—used for collection of whole blood for special tests.

Specimen Collection Tubes Available

The following is a list of tubes referred to in Holland Hospital Laboratory Services specimen requirements:

- Gold-Top Tube (Serum Separator): This tube is plastic and contains a clot activator and serum gel separator—used for various laboratory tests.

Note: Invert tube to activate clotting; let stand for 20 to 30 minutes before centrifuging. If frozen serum is required, pour off serum into plastic vial and freeze. Do not freeze VACUTAINER®.
- Green-Top Tube (Sodium Heparin): This tube contains sodium heparin—used for collection of heparinized plasma or whole blood for special tests.

Note: After tube has been filled with blood, immediately invert tube several times to prevent coagulation.
- Mint-Top Tube (Lithium Heparin): This tube contains lithium heparin and a plasma gel separator—used for collection of various chemistry tests.

Note: After tube has been filled with blood, immediately invert tube several times to prevent coagulation.
- Grey-Top Tube (Potassium Oxalate/Sodium Fluoride): This tube contains potassium oxalate as an anticoagulant and sodium fluoride as a preservative—used to preserve glucose in whole blood and for some special chemistry tests.

Note: After tube has been filled with blood, immediately invert tube several times to prevent coagulation.
- Lavender-Top Tube (EDTA): This tube contains EDTA as an anticoagulant—used for most hematological procedures.

Note: After tube has been filled with blood, immediately invert tube several times to prevent coagulation.
- Light Blue-Top Tube (Sodium Citrate): This tube contains sodium citrate as an anticoagulant—used for collection of blood for coagulation studies.

Note: It is imperative that tube be completely filled. Ratio of blood to anticoagulant is critical for valid prothrombin time results. Immediately after draw, invert tube 6 to 10 times to activate anticoagulant.
- Red-Top Tube: This tube is a plain VACUTAINER® containing no anticoagulant—used for collection of serum for selected chemistry tests as well as clotted blood for Immunohematology.

