Specimen Collection and Preparation

The following are general instructions for specimen collection and transport. Some tests have specific instructions which vary from these general ones. Always follow the specific instructions for each test.

Blood Collection

Most laboratory tests are performed on anti-coagulated whole blood, plasma, or serum. In general, specimen should be refrigerated until placed in the courier box for transport to the laboratory. Please see our individual test directory section for specific requirements.

- Plasma: Draw a sufficient amount of blood with the indicated anticoagulant to yield the necessary plasma volume. Gently mix blood draw 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 the 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 the indicated anticoagulant. Gently mix blood draw tube by inverting 6 to 10 times immediately after draw.

Specimen Tube Draw Order

The following is a list of tubes referred to in the Lake Lab Services (LLS):

- Blood Culture Bottles
- Red-top tube (plain, no additive)- chemistry, serology, etc
- Royal Blue (plain, no additive) - heavy metal
- Light Blue-top (sodium citrate additive)- coagulation
- Red and Yellow SST tops (clot activator additive)- chemistry
- Green-top (lithium heparin additive, sodium heparin additive)- chemistry
- Lavender-top (EDTA additive)- hematology
- Royal blue (EDTA additive)- heavy metal
- Grey-top (potassium oxalate/sodium fluoride additive)- chemistry
- Yellow (ACD additive) - special hematology.

Specimen Draw Tubes

If more than 1 tube type is required on a patient, please draw tubes in the following order to assure specimen integrity:

- Blood Culture Bottles: 
  Please refer to the entry for Blood Culture (Adult) Routine or Blood Culture (Pediatric) Routine for specific collection instructions related to this test.

  Adults: These are 2 plastic 40 mL bottles; one with a green top containing 10 mL of growth medium (Aerobic) and one with an orange top containing 20 mL of growth media (Anaerobic). Blood should be dispensed into the orange (anaerobic) bottle before the green (aerobic) bottle.

  Pediatric: this is 1 plastic 20 mL bottle with 4 mL of growth medium. Pediatric draw volume is dependent upon weight. Please refer to the entry Blood Culture (Pediatric) Routine for weight dependent specimen volumes for this test.

- Red-Top Tube: This tube is a plain VACUTAINER containing no anticoagulant-used for drawing serum for selected chemistry tests as well as clotted blood for immunohematology.

- Royal Blue-Top Tube (Plain, no additive): There are 2 types of royal blue top tubes-this tube refers to the royal blue top tube with NO additive. This is used for drawing whole blood or serum for trace element analysis. Refer to individual metals in individual test listings to determine tube type necessary. Please call LLS at 225-765-8811 or 877-LAKELAB (525-3522) for assistance, if required.

- Light Blue-Top (Sodium Citrate) Tube: This tube contains sodium citrate as an anticoagulant-used for drawing blood for coagulation studies. Note: It is imperative that tube be completely filled. The ratio of blood to anticoagulant is critical for valid prothrombin time results. Immediately after draw, gently invert tube 6 to 10 times in order to activate anticoagulant.

- Red and Yellow SST-Top Tube (clot activator additive): This tube contains a clot activator and serum gel separator-used for various laboratory tests. 
  Note: Gently invert tube to activate clotting; let stand for 20 to 30 minutes before centrifuging for 10 minutes. If frozen serum is required, aliquot off serum into plastic vial, label properly, and freeze. Do not freeze serum gel tube.

- Green-Top (Lithium Heparin or Sodium Heparin additive) Tube: This tube contains either sodium heparin or lithium heparin-used for drawing heparinized plasma or whole blood for special tests.
  Note: After tube has been filled with blood, immediately invert tube several times in order to prevent coagulation.
• **Lavender-Top (EDTA) Tube:** This tube contains EDTA as an anticoagulant-used for most hematological procedures.  
  **Note:** It is imperative the tube is allowed to fill to proper capacity to maintain proper ratio of blood to anticoagulant. Immediately after tube has been filled with blood, gently invert several times in order to prevent coagulation.

• **Royal Blue-Top Tube (with EDTA additive):** There are 2 types of royal blue top tubes- this tube refers to the royal blue top tube containing the EDTA additive. These are used for drawing whole blood or serum for trace element analysis. Refer to individual metals in individual test listings to determine tube type necessary. Please call LLS at 225-765-8811 or 877-LAKELAB (525-3522) for assistance, if required.

• **Grey-Top (Potassium Oxalate/Sodium Fluoride) Tube:** 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 in order to prevent coagulation.  

• **Yellow-Top (ACD) Tube:** This tube contains ACD-used for drawing whole blood for special tests.  

• **Special Collection Tubes:** Some tests require specific tubes for proper analysis. Please contact LLS at 225765-8811 or 877-LAKELAB (525-3522) prior to patient draw to obtain correct tubes for metal analysis or other tests as identified in individual test listings.