

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 LUH laboratory be called at 303-651-5075 to clarify the order and specimen requirements.

Blood Collection

Most laboratory tests are performed on anticoagulated plasma, serum, or whole blood. In general, specimens should be refrigerated until placed in courier box for transport to laboratory. Please see our individual test directory section 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. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw. 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.

Specimen Collection Tubes Available

The following is a list of tubes referred to in Longmont United Hospital Laboratory's (LUH) specimen requirements:

- **Dark Green-Top (Sodium Heparin) Tube:** 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 in order to prevent coagulation.
- **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.

- **Lavender-Top (EDTA) Tube:** 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 in order to prevent coagulation.
- **Light Blue-Top (Sodium Citrate) Tube:** 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. The ratio of blood to anticoagulant is critical for valid prothrombin time results. Immediately after draw, invert tube 6 to 10 times in order to activate anticoagulant.
- **Pink-Top Tube:** This tube contains EDTA as an anticoagulant-used ONLY for Blood Bank.
- **Red-Top Tube:** This tube is a plain VACUTAINER® containing no anticoagulant-used for collection of serum for selected chemistry tests.
- **Royal Blue-Top Tube:** There are 2 types of royal blue-top Monoject® tubes-one with anticoagulant EDTA and the other plain. These are used in collection of whole blood or serum for trace element analysis. Refer to individual metals in individual test listings to determine tube type necessary.
- **Serum Separator Tube (SST®) Gold-Top or Tiger-Top:** This tube 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 for 10 minutes. If frozen serum is required, pour off serum into plastic vial and freeze. Do not freeze VACUTAINER®.

Specimen Collection-Order of Draw

	Tube	Comments
1	Royal Blue	Metal Testing, Lead, Mercury, Cadmium, Nickel, Etc.
2	Blood Cultures	Draw Aerobic Bottle First
3	Blue Top	Sodium Citrate
4	Yellow/Gold/Red/Speckled Red	Serum Tubes
5	Green	Heparin Tubes
6	Lavender	Liquid EDTA
7	Pink	Blood Bank Tube-Liquid EDTA
8	Grey	Oxalate
9	Other Additive Tubes	ACD Yellow: ACD Anticoagulant