Specimen Collection and Preparation

Blood Specimen Collection Tubes

Laboratory test results are dependent on the quality of the specimen submitted. It is important that all specimens and request forms be properly labeled.

Label Specimen with:
- Patient's legal name (first and last)
- Date of birth
- Date and time of collection
- Collector's initials
- Specimen source when applicable

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

Plasma: Collect a sufficient amount of blood with indicated anticoagulant to yield the necessary plasma volume. Gently mix the blood collection tube by inverting 6 to 10 times immediately after collection. If required, separate plasma from cells by centrifugation within 20 to 30 minutes.

Serum: Collect a sufficient amount of blood to yield the necessary serum volume. Allow blood to clot at ambient temperature for at least 30 minutes, then separate serum from clot by centrifugation.

Whole Blood: Collect a sufficient amount of blood with indicated anticoagulant. Gently mix blood collection tube by inverting 6 to 10 times immediately after collection.

The following is a list of collection tubes referred to in the "Specimen Required" section of the lab catalog:

Gold Top Serum Gel: This tube contains a clot activator and serum gel separator and is used for a variety of tests.
Note: Invert tube to activate clotting. Let the specimen stand for 30 minutes before centrifugation. If frozen serum is required, pour off the serum into a plastic vial and freeze. Do not freeze Vacutainer® tubes.

Grey Top: (Potassium Oxalate/Sodium Fluoride): This tube contains potassium oxalate as an anticoagulant and sodium fluoride used to preserve glucose in whole blood. This tube is used for special chemistry tests.

Lavender Top (K2EDTA): This tube contains EDTA as an anticoagulant and is used for most hematological tests. Invert the tube several times immediately after collection to prevent coagulation.

Light Blue Top (3.2% Sodium Citrate): This tube contains sodium citrate as an anticoagulant and is used for coagulation studies. The ratio of blood to anticoagulant is critical for valid coagulation results. Tube should not be over filled or under filled, fill to fill line on tube.

Mint Green (Lithium Heparin) Plasma Gel: This tube contains lithium heparin as an anticoagulant and is used for most routine chemistry tests. Invert the tube several times immediately after collection to prevent coagulation.

Dark Green (Sodium Heparin): This tube contains sodium heparin as an anticoagulant and is used for collecting heparinized plasma or whole blood for special tests. Invert the tube several times immediately after collection to prevent coagulation

Pink (K_2EDTA): This tube contains EDTA as an anticoagulant and is used for most Blood Bank procedures. Invert the tube several times immediately after collection to prevent coagulation
Note: For transfusion purposes the specimen must be labeled with a Blood Bank wristband number.

Red (No Gel): This is a plain tube containing no clot activators or anticoagulant and is used for collection of serum for selected chemistry tests and immunohematology.

Royal Blue EDTA: This tube contains EDTA as an anticoagulant and has a special stopper formulation that provides low levels of trace elements. It is used for trace element analysis. Invert the tube several times immediately after collection to prevent coagulation. (Tube typically has a light purple notch and stripe on the label.)

Royal Blue No Additive: This tube contains a clot activator and has a special stopper formulation that provides low levels of trace elements. It is used for trace element analysis. (Tube typically has a red notch and stripe on the label.)
Note: Invert tube to activate clotting. Let the specimen stand for 30 minutes before centrifugation. If frozen serum is required, pour off the serum into a plastic vial and freeze. Do not freeze Vacutainer® tubes.

Yellow (ACD): This tube contains trisodium citrate citric acid and dextrose as a preservative and is used for special tests.

Special Handling

It is important to note that some specimens should be sent on ice, at room temperature, or within 15 minutes of collection. Please review the test in the lab catalog for any special handling instructions.

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Collection Times and Nomenclature

Collection times are determined by the physician's order based on medical necessity and the patient's condition. Some procedures require specified timing. Order priorities that can be used to place orders are as follows:

Stat: Extreme emergency; STAT tests are done on a priority basis as received.

Timed: Tests are ordered for collection at a specific time.

Urgent: Specimen will be collected ASAP.

Routine: Tests ordered for routine collection are collected as soon as is reasonable possible. STAT, Urgent and Timed collections have priority.

Specimens to be collected during early morning rounds should be ordered as routine for the desired date at 5:00 a.m. The specimen will be collected between 4:00 a.m. and 6:00 a.m. On the weekends, this time window may extend slightly later.

"Add-On" Tests

The "Add-On" order can be used to order tests on a specimen already in the laboratory. If the specimen is not satisfactory (quantity not sufficient, too old, wrong type, etc.), the ordering source will be contacted to see if a different specimen can be collected or if the order should be cancelled. Add-On tests may be ordered with a priority of STAT, urgent or routine.

Nursing Home & Assisted Living Center Specimen Collection

Norman Regional Laboratory Services (NRLS) provides specimen collection for laboratory testing to nursing homes and assisted living centers (Client) under the following guidelines:

- The Client and NRLS shall mutually establish a routine schedule for phlebotomy services prior to the commencement of services. NRLS provides phlebotomy and courier services 24 hours per day, 7 days per week. The Client shall submit routine and standing laboratory orders no later than the day prior to the scheduled collection date. NRLS will perform specimen collections during the agreed-upon collection times using the orders provided.
- STAT and non-routine specimen collection and pickup services are available 24 hours per day, 7 days per week and may be requested outside of scheduled collection days and times. STAT services may incur a $25 fee. To request specimen collection or pickup services, the Client shall contact NRLS Customer Service at (405) 515-1100.

It is the responsibility of the Client to inform physicians of the facility's assigned collection day(s) and the guidelines for laboratory services.

Safe Handling of Laboratory Specimens

Place all specimens in a leak-proof container with a secure closure. Avoid snap-top closures as they can produce a spray when opened. DO NOT contaminate the outside of the specimen container with hazardous materials.

If the specimen container is non-breakable, insert the container into a plastic bag and seal the bag closed. If the specimen container is breakable, insert the container into a separate rigid, non-breakable container for transporting to the laboratory. Plastic bags or rigid containers used in transporting biohazardous specimens must be labeled with orange universal biohazard labels.

Keep laboratory request forms and other papers free from biohazard contamination. DO NOT store specimen containers and papers in the same plastic bag. Affix papers or orders to the outside of the plastic bag or, insert papers in the outside sleeve of the plastic bag.

Remove needles from all syringes. Place a protective cap on the syringe tip to prevent leakage. Discard used needles appropriately. **Do not send syringe with needle attached.**

Secure urine container lids to avoid specimen leakage.

Genetic Testing

Many genetic tests require forms to be filled out and sent with the specimen to the referral lab. Look under Special Instructions in the catalog for any forms that need to be included with the specimen.

Norman Regional
LABORATORY SERVICES

Document Control Form #: LAB.CP.07.997

Form Name: General Processing Guidelines

General Processing Guidelines:

Refrigerate

DO NOT SPIN

Refrigerate

DO NOT SPIN

Refrigerate

DO NOT SPIN

Exception:

Some EDTA & Na Citrate tubes may need spun/separated within a specific timeframe for specimen stability. Check Lab Catalog if you are uncertain.

Pink (EDTA Plasma)



Lavender (EDTA Plasma)



Blue (NA Citrate)



Place sample on ice immediately after collection, centrifuge and separate plasma from cells within 15 mins of collection

Gray (Oxalate/Fluoride)



Stop! Wait 

Centrifuge & Refrigerate

Mint (Lithium Heparin)



Stop! Wait 

Centrifuge & Refrigerate

Gold (SST)



Stop! Wait 

Centrifuge, Aliquot & Refrigerate

Red (No Additive) must separate



Refer to lab catalog for required metal free processing/handling/aliquot for specific test



Urine Collection Processing:



Urine Cup



No Additive



Yellow Urine Preservative



Boric Acid

***Please make sure Patient Name, DOB & Collection Time is Written on all tubes and containers**