



## **Copley Hospital, Inc. Laboratory Services Directory**

### **COAGULATION SPECIMEN HANDLING**

#### **COLLECTION:**

1. **ANTICOAGULANT:** Use 3.2% (0.105M) buffered sodium citrate anticoagulant. (NOTE: The majority of coagulation tests require sodium citrate anticoagulant but there are exceptions. Refer to the individual tests in the directory for specific specimen requirements.)
2. If using the vacutainer system (preferably siliconized) with a butterfly apparatus, the coagulation tube must not be the first drawn. If only coagulation specimens are being collected, draw at least two ml of blood into a tube, then discard that tube before drawing the coagulation specimen.
3. Immediately after filling the tube, invert the tube **GENTLY** five or six times to mix.
4. The sample must be drawn as atraumatically as possible to avoid contamination with tissue factor, activation of clotting factors or platelets, and hemolysis. Avoid leaving the tourniquet on for an extended time, excessive pumping of hand, or slapping to raise the vein. If a good blood flow has been established, loosen the tourniquet before drawing the coagulation sample.
5. **HEMOLYSIS IS UNACCEPTABLE** for the more specialized coagulation tests. Screening tests (Protime, APTT, Fibrinogen, D-dimer, and Fibrinogen), will be performed on a slightly to moderately hemolyzed specimen. **MARKEDLY HEMOLYZED SPECIMENS WILL BE REJECTED.**
6. **UNDERFILLED TUBES ARE UNACCEPTABLE.** Even though minimum PLASMA requirements for a test may be as little as 0.1 ml, the **MINIMUM WHOLE BLOOD REQUIREMENT IS A FULL COAG TUBE.** Tubes that are filled with less than 90% of the stated tube volume should be rejected. Coagulation testing and accurate test results are based on a ratio of 9 parts of blood to 1 part anticoagulant and since the anticoagulant stops blood from clotting by removing a portion of the calcium from plasma, under filling the tube removes too much calcium leading to inaccurate results.

### **COAGULATION SPECIMEN HANDLING - continued**

#### **PROCESSING:**

1. Whole blood tubes for Coagulation testing must be stored at Room temperature and must not be refrigerated.
2. Prothrombin Time/INR is stable at Room Temperature for up to 24 hours.
3. Activated Partial Thromboplastin Time (PTT), Fibrinogen and D-Dimer are stable at room temperature for 4 hours. **DO NOT FREEZE A WHOLE BLOOD SAMPLE FOR COAGULATION TESTS.** If shipping is delayed the specimen must be spun and the plasma frozen. The plasma must remain frozen until the test is performed.
4. **SPECIMENS MUST BE CHECKED FOR CLOTS.** This may be done before centrifuging the specimen or after the plasma has been removed. If several tubes are drawn and the plasma is to be pooled and aliquoted, it is preferable that the tubes be checked for clots prior to centrifugation in case one of the several tubes to be used for the pool is clotted. **CLOTTED TUBES (EVEN TINY CLOTS) MUST BE REJECTED.**
5. If a tabletop centrifuge is used, the specimen should be spun at maximum speed (in a refrigerated centrifuge, if available) for a minimum of 10 minutes. Transfer the plasma to plastic vials and freeze at the lowest temperature available. The plasma should be sent to the laboratory stored on dry (or wet) ice.

#### **SPECIMEN REQUIREMENTS**

All the screening tests (Protime, APTT, Fibrinogen, D-dimer) or any combination of the listed screening tests can be performed on a single 1.5 ml plasma aliquot.

Each additional test requires a separate 0.5 ml aliquot of plasma.

### **COAGULATION SPECIMEN HANDLING - continued**

#### **LABELS**

Tubes should be labeled with the patient's full name, date, type of sample (if other than citrate) and time of draw.

#### **PATIENT INFORMATION**

Please note on the test request if the patient is on heparin or coumadin. Include the last dose if known. Some tests (in addition to the Protime and the APTT) are affected by the presence of heparin or coumadin.

**PLEASE REFER TO INDIVIDUAL TEST DESCRIPTIONS FOR EXCEPTIONS TO THIS PROTOCOL.**