Coagulation Studies

The Mayo Clinic Coagulation Laboratory has been performing coagulation factor testing on mailed-in specimens for many years. Accurate results can only be obtained on properly prepared specimens. The physician interpreting results may be misled by abnormal results obtained in mishandled specimens.

To ensure the best possible specimen, follow collection requirements as closely as possible.

1. **Patient should be fasting,** if possible; for certain tests, the patient cannot be receiving anticoagulant medication (heparin or warfarin/Coumadin®).
2. **Draw blood from the patient into light blue-top (sodium citrate) vacuum tube(s)** (those used for prothrombin time/ activated partial thromboplastin time containing 3.2% sodium citrate). If the patient's hematocrit is ≤25% or ≥55%, the volume of anticoagulant in the tube should be adjusted. Use the following formula to determine the correct anticoagulant volume:

   anticoagulant volume=(100-hematocrit)/(595 - hematocrit) x volume of specimen

   The tubes must fill completely. A clean venipuncture is essential to avoid activation of coagulation by tissue thromboplastin. Specimens containing fibrin clots will, in most cases, be rejected.
3. **The specimen must be double-centrifuged to prepare a platelet-free plasma specimen.** Immediately centrifuge specimen at 1,500 x G for 10 minutes, at 4° C, if possible. Carefully remove plasma from cells avoiding the platelet/buffy coat. Dispense specimen into a plastic tube. Centrifuge the plasma in the plastic tube at 1,500 x G for 10 minutes, at 4° C, if possible. Remove the top portion of plasma leaving approximately 250 µL in the bottom to *discard.* The double-centrifuged plasma should be aliquoted (0.5-1 mL each) into clearly labeled plastic tubes. **(Glass vial is not acceptable.)** The number of tests ordered will determine the aliquots needed, generally 1 aliquot per test.
4. **Patient specimens should be frozen at ≤-40° C,** if possible, and sent together in the same container with at least *5 lbs* of dry ice. They must arrive in a frozen state.
5. **Please include the requested information** (see individual test descriptions) as the testing and interpretations are dependent on clinical history in many of the more complex abnormalities.
6. Careful specimen handling will most often ensure acceptable specimens and valid results.

Pediatric Hemostasis References

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Reviewed 2012