COAGULATION-SPECIMEN INTEGRITY

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PURPOSE

To provide guidance in determining acceptability of coagulation samples sent for testing to the lab.

POLICY

The integrity of specimens meant for coagulation assays can be affected by pre-analytical process variables such as venipuncture device, type of collection tube, sample transport delays, storage conditions, and the blood to anticoagulant ratio. It is important to visually examine received specimens to ensure they are acceptable for testing. When a coagulation specimen is received by the tech, they should inspect the specimen for hemolysis, lipemia, appropriate tube, appropriate sample volume, and any problem that might affect testing. It is important to note that the only acceptable type of collection tube is a 3.2% dihydrate trisodium citrate (light blue top) tube.

EQUIPMENT/SUPPLIES

2.7 or 1.8 mL 3.2% Sodium citrate tube (Blue top)
IL Coagulation Analyzer

STEPS

1. When the patient specimen is brought to the testing area, the tech must inspect the tube to ensure that is the acceptable collection tube and is filled to the appropriate level, as underfilling or overfilling results in an anticoagulant imbalance and can artificially prolong or shorten clotting times. (See BD Vacutainer® Plus Plastic Citrate Tube Draw Volume Guide)

2. Visually inspect the tube for hemolysis or lipemia when loading the specimen.

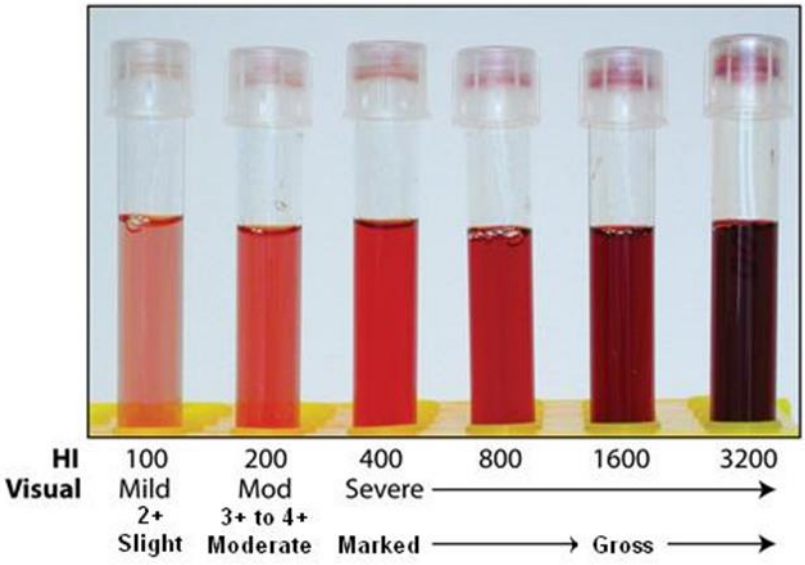
   Note: The presence of lipemia and/or hemolysis is unacceptable with Thrombin Time Assay.

Lipemia:

3. If **gross** lipemia is present, testing must be done with a clarified specimen. Ultracentrifuge an aliquot of the sample.

The result from the clarified specimen must be appended with the Chartable smartphrase ".**AIR**" which reads "Specimen grossly lipemic. Testing performed on ultracentrifuged plasma."

Hemolysis: If hemolysis is present, determine the graded amount present by reviewing specimen color against the color photo (see tubes with varying degrees of hemolysis and use the chart to determine action to be taken.



Level of Hemolysis	Action Needed
Slight	Report result.
Moderate	Before you put the sample on the analyzer, go to result entry and select the hemolysis mnemonic button. Click the magnifying glass and highlight the Coag Hemolysis Interference comment. Click Accept x2. This comment needs to be added on each test ordered.
Marked or Gross	Cancel and request redraw of the coagulation test using the redraw function in the LIS. Specify the reason for redraw as "Hemolyzed". Document who the redraw is requested to in the comment field.

Note: Resulting the hemolysis mnemonic will automatically append the following footnote:

"Testing performed on hemolyzed specimen. Moderate hemolysis (as low as 0.9%) can influence the reliability of coagulation testing, causing falsely elevated PT and D-Dimer results & falsely low PTT and Fibrinogen results. Sample recollection is recommended."

REFERENCES

Clinical and Laboratory Standards Institute. Collection, Transport, and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Hemostasis Assays; Approved Guideline—Fifth Edition. CLSI document 2008;H21–A5:Vol 28 No 35

Laga AC, Cheves TA, Sweeney JD: The Effect of Specimen Hemolysis on Coagulation Test Results. Am J Clin Pathol 2006;126:748–755 Laga AC, Cheves TA, Sweeney JD: The Effect of Specimen Hemolysis on Coagulation Test Results. Am J Clin Pathol 2006;126:748–755