

Hemostasis and Thrombosis

Notes □



The sample requirements for each test offered by the Florida Hospital Center for Hemostasis and Thrombosis are detailed separately. The following specimen handling information is essential and should be used in conjunction with the *Tests Available* listing.

Note 1: 4.5 ml venous blood should be added to blue top tubes each containing 0.5 ml of 3.2% sodium citrate. Please note that stated normal ranges might not be correct if blood is collected into 3.8% sodium citrate. Short-sampled tubes give erroneous results and will not be accepted. Tubes should be kept cool (NOT frozen) and delivered to our laboratory within 2 hours. If delivery cannot be achieved in this time, separate plasma as soon as possible by spinning at 2,500 x g for at least 15 minutes. The use of a refrigerated centrifuge is preferable. If multiple tests have been requested on the same patient, divide the plasma into a corresponding number of 0.5 or 1.0 ml aliquots in plastic tubes (refer to stated minimum volumes of each test) and freeze at -20°C or below. **Frozen plasma must not be allowed to thaw during transport and must be shipped on dry ice.**

Note 2: Specimens for DNA-based (PCR) assays may be supplied as whole blood or as the cells that remain after separation of plasma. We prefer to receive citrated (Blue Top) samples to avoid possible confusion with samples that require clot-based tests. These samples should be shipped on regular ice and must NOT be frozen. Because we prefer to reflexively test for FV Leiden in the event of an abnormal APCR test, the residual cells should accompany requests for the latter.

Note 3: Samples for Platelet Function Analyzer (PFA)-100 test, Platelet Aggregation, Direct Platelet Antibody Test, Platelet Glycoprotein Analysis (flow cytometry), Sonoclot Analysis and Thromboelastography **must** be supplied as whole blood. Do NOT separate or freeze. Samples should arrive in our laboratory within 3 hours of collection and should be maintained at or near room temperature (15-25°C). **Do not refrigerate or freeze.**

Note 4: For heparin (anti-Fxa) assays, please state the type of heparin level required – unfractionated (regular) heparin, low molecular weight heparin or danaparoid sodium (Orgaran). Non-Florida Hospital clients should supply a sample of the patient's heparin with the blood sample and test request. For accurate results, it is necessary for us to calibrate the assay with the same material being administered to the patient.

Note 5: Plasma for homocysteine **should be separated as soon as possible after collection of the blood sample**. Plasma left in contact with the red cells for extended periods may have spuriously elevated homocysteine levels.

Note 6: Tests for Lupus Anticoagulant require extra precautions in sample handling. If blood cannot be delivered to our laboratory within 2 hours, separate as described in Note 1. Plasma should then be re-centrifuged to ensure that it is platelet-free ($<10 \times 10^9/l$) OR filtered through a 0.45 μ m filter before freezing. Failure to observe these additional precautions may lead to falsely negative results.

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TEST DESCRIPTION	CPT	SPECIMEN REQUIREMENTS	TEST FREQUENCY
Activated Partial Thromboplastin Time (APTT)	85730	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Activated Protein C Resistance Screening Test (APCR).	85307	1 BT (see Notes 1 and 2) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml. Send residual cells from BT if separated.	Twice weekly
Alpha-2-Antiplasmin Activity (AP)	85410	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Anti-β2 Glycoprotein I (IgG/IgM/IgA) (AB2G)	86146 x 3	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Anticardiolipin Antibody (IgG/IgM) (ACA)	86147 x 2	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Antiphospholipid Antibody (IgG/IgM) Test (APA)	86148 x 2	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Antithrombin Antigen (AT-Ag)	85301	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Antithrombin Activity (AT)	85300	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Twice weekly
Circulating Anticoagulant (see Inhibitor Screen)			
Clotting Kinetics (Sonoclot™ Analyzer)	85348	1 BT (see Note 3). Minimum volume 5 ml. Call 407-303-2449 to schedule (9 am – 3 pm).	Daily (M – F). Local samples only.
Dilute Russell's Viper Venom Time (DRVVT)		See Lupus Anticoagulant Screen/Confirm	
Factor II Activity (FII)	85210	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor II Gene (20210A) Mutation		See Prothrombin 20210 Gene Mutation	
Factor V Activity (FV)	85220	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor V Leiden (DNA-based test for the FV Leiden gene mutation).	83891 83892 83894 83898 x2 83912	1 BT (see Note 2). Residual cells from separated BT are also suitable.	Weekly
Factor VII Activity (FVII)	85230	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor VIII Activity (FVIII)	85240	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily

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TEST DESCRIPTION	CPT	SPECIMEN REQUIREMENTS	TEST FREQUENCY
Factor VIII Inhibitor (Bethesda, Human)	85335	1 BT (see Note 1) or 2.0 ml FROZEN plasma. Minimum volume 1.0 ml.	Daily
Factor VIII Inhibitor (Bethesda, Porcine)	85335	1 BT (see Note 1) or 2.0 ml FROZEN plasma. Minimum volume 1.0 ml.	Daily
Factor IX Activity (FIX)	85250	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor X Activity (FX)	85260	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor XI Activity (FXI)	85270	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor XII Activity (FXII)	85280	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor XIII Screening Test (FXIII)	85291	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Factor Inhibitor (other than FVIII) (Bethesda, Human)	85335	1 BT (see Note 1) or 2.0 ml FROZEN plasma. Minimum volume 1.0 ml.	Daily
Fibrinogen	85384	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Fletcher Factor (Prekallikrein) Activity	85292	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Heparin Antibody	86022	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Heparin Assay (anti-FXa) for regular, low molecular weight heparin or danaparoid sodium (please state)	85520	1 BT (see note 4) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Hepzyme™ Treatment (removal of heparin before testing)	85525	n/a	n/a
Hexagonal Phase Phospholipid Neutralization Procedure		See Staclot™ LA	
Homocysteine	83090	1 EDTA (see Note 5) or 1.0 ml FROZEN EDTA plasma. Minimum volume 0.5 ml.	Weekly
Inhibitor Screen (Mixing Study), PT Factor	85610 85611	1 BT (see Note 1) or 2.0 ml FROZEN plasma. Minimum volume 1.5 ml.	Daily
Inhibitor Screen (Mixing Study), APTT Factor	85732 x 6	2 BT (see Note 1) or 2 x 2.0 ml aliquots of FROZEN plasma. Minimum volume 1.5 ml.	Daily

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TEST DESCRIPTION	CPT	SPECIMEN REQUIREMENTS	TEST FREQUENCY
Kaolin Clot Time (KCT)	85730	1 BT (see Note 6) or 1.0 ml FROZEN plasma. Minimum volume 1.0 ml	Twice Weekly
Lupus Anticoagulant Screen/Confirm (Dilute Russell's Viper Venom Test)	85613 x 2	1 BT (see Note 6) or 1.0 ml FROZEN plasma. Minimum volume 1.0 ml.	Twice Weekly
Methylenetetrahydrofolate Reductase (MTHFR). DNA test for the G677T (thermolabile) gene mutation	83891 83892 83894 83898 x2 83912	1 BT (see Note 2). Residual cells from separated BT are also suitable.	Weekly
Plasminogen Activity	85420	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Twice weekly
Plasminogen Activator Inhibitor activity (PAI-1)	85400	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Platelet Aggregation and ATP release profile (includes high and low dose Ristocetin)	85576 x 5	2 BT (see Note 3). Minimum volume 5 ml whole blood. Call (407) 303-2449 to schedule (9 am – 3 pm).	Daily (M – F). Local samples only.
Platelet Antibody Screen – Indirect (HPA-1a, 1b, -3a, -3b, -5a, -5b, Gplb/IX, GplV and HLA Class I)	86022	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Platelet Antibody Screen – Direct (HPA-1a, 1b, -3a, -3b, -5a, -5b, Gplb/IX, GplV and HLA Class I)	86022	4 BT (see Note 3). Minimum volume 10.0 ml whole blood, but depends on platelet count. Call (407) 303-2449 for advice.	Daily
Platelet flow cytometry (Gplb, GplIb/IIIa, or GplIb/IIIa Receptor Occupancy)		1 BT (see Note 3). Minimum volume 5 ml whole blood. Call (407) 303-2449 to schedule (9 am – 2 pm).	Daily (M – F) Local samples only.
Platelet Function Analyzer (PFA-100®) Collagen/Epinephrine (CEPI) Collagen/ADP (CADP)	85576 85576	2 BT (see Note 3). Minimum volume 5.0 ml whole blood.	Daily. Local samples only. (6 am – 5 pm).
Platelet Neutralization Procedure (PNP)		See Staclot -LA	
Protein C Activity	85303	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Twice weekly
Protein C Antigen	85302	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Protein S Activity	85306	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Twice weekly
Protein S Antigen – Total	85305	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly

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TEST DESCRIPTION	CPT	SPECIMEN REQUIREMENTS	TEST FREQUENCY
Protein S Antigen - Free	85306	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Prothrombin Gene Mutation. DNA test for the 20210A gene mutation.	83891 83892 83894 83898 x2 83912	1 BT (see Note 2). Residual cells from separated BT are also suitable.	Weekly
Prothrombin Time (PT)	85610	1 BT (see Note 1) or 1.0 ml FROZEN plasma	Daily
PTT-LA (Lupus Anticoagulant sensitive APTT)	83730	1 BT (see Note 6) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Twice Weekly
Reptilase Time (RT)	85635	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Ristocetin Aggregation (High/Low dose)	85576 x 2	1 BT (see Note 3). Minimum volume 5 ml. Call (407) 303-2449 to schedule (9 am – 2 pm).	Daily. Local samples only.
Shipping and Handling	n/a	n/a	n/a
Staclot LA (hexagonal phase phospholipid neutralization test for LA)	85730 85597	1 BT (see Note 6) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Daily
Thrombin Time (TT)	85670	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.2 ml.	Daily
Von Willebrand Factor Activity (Ristocetin Cofactor Activity)	85245	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.5 ml.	Weekly
Von Willebrand Factor Antigen (FVIII-Related Antigen)	85246	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 0.25 ml.	Weekly
Von Willebrand Factor Multimers (performed at University of Miami)	85247	1 BT (see Note 1) or 1.0 ml FROZEN plasma. Minimum volume 1.0 ml. A separate aliquot of plasma is required for this test.	Weekly

Additional tests

The Florida Hospital Center for Hemostasis and Thrombosis is constantly updating its test methodology and introducing new procedures. We can offer a number of tests that are not listed above. Please contact us with your specific requirements for availability and pricing.

Reflexive Testing

Please note that to better serve our clients and to aid test interpretation, some of our tests include a reflexive testing procedure. Please refer to the appropriate page, or the back of our test requisition form, for details of our reflexive test protocols.