CLINICAL TEST LIST

Procedures for Hemostasis and Thrombosis

labcorp

Test No.	Test Name	Profile Includes	Specimen Requirements
Bleeding Profiles and Screening Tests			
116004	Abnormal Bleeding Profile	PT; aPTT; thrombin time; platelet count	5 mL EDTA whole blood, one tube citrated whole blood (unopened), and 2 mL citrated plasma, frozen Minimum: 5 mL EDTA whole blood, one tube citrated whole blood (unopened), and 1 mL citrated plasma, frozen
117866	Prolonged Protime Profile	Factor II activity; factor V activity; factor VII activity; factor X activity; fibrinogen activity; dilute prothrombin time confirmation ratio	3 mL citrated plasma, frozen Minimum: 2 mL citrated plasma, frozen
117796	Prolonged Activated Partial Thromboplastin Time (aPTT) Profile	Factor VIII activity; factor IX activity; factor XI activity; factor XII activity; lupus anticoagulant with reflex	3 mL citrated plasma, frozen Minimum: 2 mL citrated plasma, frozen
117028	PT Mixing Study		2 mL citrated plasma, frozen Minimum: 1 mL citrated plasma, frozen
117199	aPTT Mixing Studies	aPTT; aPTT 1:1 mix normal plasma (NP); aPTT 1:1 mix saline; aPTT 1:1 mix, incubated; aPTT 1:1 mix NP, incubated control	2 mL citrated plasma, frozen
117180	Reptilase Time		1 mL citrated plasma, frozen
015230	Thrombin Time		1 mL citrated plasma, frozen
117170	Thrombin Mixing Study	Thrombin time; reflex to thrombin time 1:1 mix and thrombin neutralization	2 mL citrated plasma, frozen
Factor Assays and Profiles			
117250	Contact Factor Evaluation Profile	Factor XI activity; factor XII activity; high molecular weight kininogen (Fitzgerald factor); prekallikrein (Fletcher factor)	2 mL citrated plasma, frozen
500041	Extrinsic Pathway Coagulation Factor Profile	Factor II activity; factor V activity; factor VII activity; factor X activity	2 mL citrated plasma, frozen Minimum: 1 mL citrated plasma, frozen
500033	Intrinsic Pathway Coagulation Factor Profile	Factor VIII activity; factor IX activity; factor XI activity; factor XII activity	2 mL citrated plasma, frozen Minimum: 1 mL citrated plasma, frozen
086231	Factor II Activity		1 mL citrated plasma, frozen
086249	Factor V Activity		1 mL citrated plasma, frozen
800599	Factor VII Activity		1 mL citrated plasma, frozen
086270	Factor VII Antigen		1 mL citrated plasma, frozen
086264	Factor VIII Activity		1 mL citrated plasma, frozen
086295	Factor VIII Activity, Chromogenic		1 mL citrated plasma, frozen
086015	Factor VIII Antigen		1 mL citrated plasma, frozen
086298	Factor IX Activity		1 mL citrated plasma, frozen
086310	Factor IX Antigen		1 mL citrated plasma, frozen
086306	Factor X Activity		1 mL citrated plasma, frozen
086314	Factor XI Activity		1 mL citrated plasma, frozen
086322	Factor XII Activity		1 mL citrated plasma, frozen
086330	Factor XIII		1 mL citrated plasma, frozen
086340	Factor XIII Activity		1 mL citrated plasma, frozen
001610	Fibrinogen Activity		4.5 mL, 2.7 mL, 1.8 mL whole blood or citrated plasma, frozen
117052	Fibrinogen Antigen		1 mL citrated plasma, frozen
336624	Fibrinogen Evaluation Profile	Fibrinogen activity; fibrinogen antigen; thrombin mixing study	One 2 mL aliquot frozen citrate plasma for Fib Activity and Thrombin Mx and one 1 mL frozen citrate plasma aliquot for fibrinogen antigen
117359	High Molecular Weight Kininogen (HMWK)		1 mL citrated plasma, frozen
086075	Prekallikrein (Fletcher Factor) Assay		1 mL citrated plasma, frozen

Test No.	Test Name	Profile Includes	Specimen Requirements
Factor Inhibitor Reflex Profiles			
086233	Factor II Activity With Inhibitor Reflex	Factor II Activity with reflex to Factor II Inhibitor Bethesda	2 mL citrated plasma, frozen
086250	Factor V Activity With Inhibitor Reflex	Factor V Activity with reflex to Factor V Inhibitor Bethesda	2 mL citrated plasma, frozen
086252	Factor VII Activity With Inhibitor Reflex	Factor VII Activity with reflex to Factor VII Inhibitor Bethesda	2 mL citrated plasma, frozen
086010	Factor VIII Activity With Inhibitor Reflex	Factor VIII Activity with reflex to Factor VIII Inhibitor Bethesda	2 mL citrated plasma, frozen
504722	Factor VIII Chromogenic Bethesda Profile, for Patients on Emicizumab	Factor VIII Activity, Factor VIII (Chromogenic), Factor VIII Chromogenic Nijmegen Bethesda	2mL citrated plasma, frozen
086300	Factor IX Activity With Inhibitor Reflex	Factor IX Activity with reflex to Factor IX Inhibitor Bethesda	2 mL citrated plasma, frozen
117365	Factor X Activity With Inhibitor Reflex	Factor X Activity with reflex to Factor X Inhibitor Bethesda	2 mL citrated plasma, frozen
086302	Factor XI Activity With Inhibitor Reflex	Factor XI Activity with reflex to Factor XI Inhibitor Bethesda	2 mL citrated plasma, frozen
086304	Factor XII Activity With Inhibitor Reflex	Factor XII Activity with reflex to Factor XII Inhibitor Bethesda	2 mL citrated plasma, frozen
Anticoagulant Therapy			
117085	Apixaban		1 mL plasma, room temperature
117904	Factor X, Chromogenic		1 mL citrated plasma, frozen
500465	Fondaparinux Anti-Xa		1 mL citrated plasma, frozen
117101	Heparin Anti-Xa		1 mL citrated plasma, frozen
005207	Partial Thromboplastin Time (PTT), Activated		4.5 mL, 2.7 mL, 1.8 mL whole blood or plasma, frozen
005199	Prothrombin Time (PT)		4.5 mL whole blood or plasma, frozen
117050	Rivaroxaban		1 mL plasma, room temperature
von Willebrand Factor			
086282	von Willebrand Factor Disease (vWD) Profile	von Willebrand factor activity (VWF:Ag); von Willebrand factor antigen (VWF:Ac); VWF:Ac/VWF:Ag ratio; Factor VIII (FVIII); FVIII/ VWF:Ag ratio; Interpretation	2 mL citrated plasma, frozen
086284	von Willebrand Factor Disease (vWD) Reflex Profile	von Willebrand factor activity (VWF:Ag); von Willebrand factor antigen (VWF:Ac); VWF:Ac/ VWF:Ag ratio; Factor VIII (FVIII); FVIII/ VWF:Ag ratio. If 1) VWF:Ac is <30% or 2) VWF:AC is 30-50% with VWF:Ac/ VWF:Ag ratio <0.7, then von Willebrand Factor (vWF) Multimers and Collagen-binding Activity (CBA) Profile are added,	3 mL citrated plasma, frozen
164509	von Willebrand Factor (vWF) Activity	Measures the ability of vWF to bind to platelet glycoprotein Ib (GPIb)	1 mL platelet-poor citrated plasma, frozen
086280	von Willebrand Factor (vWF) Antigen		1 mL citrated plasma, frozen
117169	von Willebrand Factor (vWF) Collagen-binding Activity (CBA)	vWF collagen-binding activity (VWF:CB); vWF antigen (VWF:Ag); VWF:CB / VWF:Ag ratio	2 mL citrated plasma, frozen
117245	von Willebrand Factor (vWF) Multimers		2 mL citrated plasma, frozen
184080	DDAVP (Desmopressin) Challenge Profile	Factor VIII (x3); von Willebrand factor activity (x3); von Willebrand factor antigen (x3).	2 mL per time point (separate tubes for baseline, 1 hour and 4 hour collections)

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Platelet Studies, Heparin-induced Thrombocytopenia (HIT) and ADAMTS13 Testing			
117913	ADAMTS13 Activity		0.5 mL citrated plasma, frozen
117921	ADAMTS13 Activity Reflex Profile	ADAMTS13 activity with reflex to ADAMTS13 antibody when activity is less than 30%	1 mL citrated plasma, frozen
117915	ADAMTS13 Antibody		0.5 mL citrated plasma, frozen
117320	AspirinWorks® (11-Dehydro Thromboxane B2)		9 mL urine (random), frozen
150075	Heparin-induced Platelet Antibody (HIPA)		1 mL serum, frozen Minimum: 0.5 mL serum frozen
150031	Heparin-induced Platelet Antibody With Reflex to Serotonin Release Assay		2 mL serum, frozen
117150	Platelet Antibody Profile	Antibodies to HLA class I antigens and platelet-specific glycoproteins IIb/IIIa, Ib/IX, Ia/IIa, and GP-IV	0.5 mL serum, refrigerate up to 48 hours, freeze if longer storage is needed
Thrombosis/Fibrinolysis Markers and Profiles			
117310	Fibrinolysis Profile	α2-Antiplasmin; D-dimer, quantitative (automated); euglobulin lysis time; fibrin degradation products; plasminogen activator inhibitor 1 activity; plasminogen activity; tissue plasminogen activator antigen	
117410	Markers of Coagulation Activation	D-dimer quantitative, prothrombin fragment 1+2; thrombin antithrombin complex	2 mL citrated plasma, frozen
117739	α2-Antiplasmin		1 mL citrated plasma, frozen
115188	D-Dimer		2 mL citrated plasma, frozen
086145	Euglobulin Clot Lysis Time (ECLT)		2 mL citrated plasma, frozen
115402	Fibrinogen Degradation Products (FDP), Plasma		1 mL citrated plasma, frozen
146787	Plasminogen Activator Inhibitor 1 (PAI-1) Activity		0.5 mL citrated plasma, frozen
146790	Plasminogen Activator Inhibitor 1 (PAI-1) Antigen		0.5 mL platelet-poor citrated plasma, frozen
117713	Plasminogen Activity		1 mL citrated plasma, frozen
117340	Plasminogen Antigen		1 mL citrated plasma, frozen
117230	Prothrombin Fragments 1&2		1 mL citrated plasma, frozen
015045	Thrombin Antithrombin Complex		1 mL citrated plasma, frozen
146010	Tissue Plasminogen Activator (tPA) Antigen		1 mL citrated plasma, frozen

Test No.	Test Name	Profile Includes	Specimen Requirements
Thrombotic Risk Markers – Inherited			
117762	Activated Protein C Resistance (APCR)		1 mL citrated plasma, frozen
015594	Antithrombin (AT) Deficiency Profile	Antithrombin activity; antithrombin antigen	1 mL citrated plasma, frozen
015040	Antithrombin (AT) Activity		1 mL citrated plasma, frozen
015057	Antithrombin (AT) Antigen (Immunologic)		1 mL citrated plasma, frozen
706994	Homocyst(e)ine		2 mL plasma (preferred) or serum
283655	Protein C Deficiency Profile	Protein C antigen; protein C, functional	1 mL citrated plasma, frozen
080465	Protein C Antigen		1 mL citrated plasma, frozen
117705	Protein C, Functional		1 mL citrated plasma, frozen
117754	Protein S Deficiency Profile	Protein S, total; protein S, free; protein S, functional	1 mL citrated plasma, frozen
164517	Protein S Antigen	Protein S, total; protein S, free	1 mL citrated plasma, frozen
164530	Protein S Antigen:Factor VII Antigen Ratio	Protein S, Total; factor VII antigen; protein C:factor VII ratio	2 mL citrated plasma, frozen
164519	Protein S, Free		1 mL citrated plasma, frozen
164525	Protein S, Functional		1 mL citrated plasma, frozen
086275	Protein C Antigen:Factor VII Antigen Ratio	Protein C antigen; factor VII antigen; protein C:factor VII ratio	2 mL citrated plasma, frozen
Antiphospholipid Syndrome – Lupus Anticoagulant			
117054	Lupus Anticoagulant Comprehensive	LA-sensitive activated partial thromboplastin time (aPTT); dilute prothrombin time (dPT); thrombin time. If any of these three screening tests is extended, reflex testing is performed and additional charges/CPT code(s) will apply.	3 mL citrated plasma, frozen Minimum: 2 mL citrated plasma, frozen
117892	Lupus Anticoagulant With Reflex		2 mL citrated plasma, frozen Minimum: 1 mL citrated plasma, frozen
Antiphospholipid Syndrome – Antiphospholipid Antibody			
164535	Antiphospholipid Syndrome (APS) Assessment	Thrombotic Risk, Acquired Profile, Dilute Prothrombin Time, Fibrinogen Activity (CET)	2.6 mL frozen plasma, 2 mL serum
161836	Anticardiolipin Antibodies (ACA), IgA, Quantitative	IgA anticardiolipin antibodies, quantitative	1 mL serum, room temperature
161950	Anticardiolipin Antibodies (ACA), IgA, IgG, IgM, Quantitative	Anticardiolipin antibodies, IgA, quantitative; anticardiolipin antibodies, IgG, quantitative; anticardiolipin antibodies, IgM, quantitative	1 mL serum, room temperature
161802	Anticardiolipin Antibodies (ACA), IgG, IgM, Quantitative	Anticardiolipin antibodies, IgG, quantitative; anticardiolipin antibodies, IgM, quantitative	1 mL serum, room temperature
161810	Anticardiolipin Antibodies (ACA), IgG, Quantitative	IgG anticardiolipin antibodies, quantitative	1 mL serum, room temperature
161828	Anticardiolipin Antibodies (ACA), IgM, Quantitative	Anticardiolipin antibodies, IgM, quantitative	1 mL serum, room temperature
117985	Antiphosphatidylserine, IgG and IgM		1 mL serum, room temperature
163915	β2-Glycoprotein 1 Antibodies, IgA, IgG, IgM	Semiquantitative results for IgG, IgM, and IgA antibodies against β2-glycoproteins	1 mL serum, room temperature Minimum: 0.5 serum, room temperature
163002	β2-Glycoprotein 1 Antibodies, IgG, IgM	Semiquantitative results for IgG and IgM antibodies against β2-glycoproteins	1 mL serum, room temperature Minimum: 0.5 serum, room temperature
163900	β2-Glycoprotein 1 Antibodies, IgA	Semiquantitative results for IgA antibodies against β2-glycoproteins	1 mL serum, room temperature Minimum: 0.5 serum, room temperature
163882	β2-Glycoprotein 1 Antibodies, IgG	Semiquantitative results for IgG antibodies against β2-glycoproteins	1 mL serum, room temperature Minimum: 0.5 serum, room temperature
163908	β2-Glycoprotein 1 Antibodies, IgM	Semiquantitative results for IgM antibodies against β2-glycoproteins	1 mL serum, room temperature Minimum: 0.5 serum, room temperature

Test No.	Test Name	Profile Includes	Specimen Requirements
Thrombotic Risk Profiles			
117155	Thrombotic Risk Assessment	Thrombophilia Risk, Acquired and Thrombophilia Risk, Congenital (see below)	2.6 mL frozen plasma and 2 mL serum
117145	Thrombotic Risk, Acquired	Anticardiolipin Antibodies (ACA), IgA, IgG, IgM Quantitative; Antiphosphatidylserine, IgG and IgM; B2-Glycoprotein 1 Antibodies, IgA, IgG, IgM; Lupus Anticoagulant Reflex; Thrombin Mixing Study	2 mL citrated plasma, frozen
117140	Thrombotic Risk, Congenital	Activated Protein C Resistance (APCR); Antithrombin (AT) Activity; Protein C, Functional; Protein S, Free	2 mL citrated plasma, frozen
117185	Thrombotic Risk, Congenital (Extended)	Activated Protein C Resistance (APCR); Antithrombin (AT) Activity; Factor VIII Activity; Homocyst(e)ine; Plasminogen Activator Inhibitor 1 (PAI-1) Activity Protein C, Functional; Protein S, Free	3 mL frozen plasma and 1.2 mL plasma or serum
Disseminated Intravascular Coagulation (DIC) Profiles			
116012	Disseminated Intravascular Coagulation (DIC) Profile	D-dimer; fibrinogen; fibrinogen degradation products (FDP), plasma; platelet count; partial thromboplastin time (PTT); prothrombin time (PT)	5 mL EDTA whole blood, one citrated whole blood tube, and 1 mL sodium citrate plasma, frozen
117853	Disseminated Intravascular Coagulation (DIC) Profile, Comprehensive Plus	α2-Antiplasmin; antithrombin activity; D-dimer; factor V activity; factor VIII activity; fibrinogen antigen; international normalized ratio (INR); plasminogen; platelet count; prolonged activated partial thromboplastin time (aPTT); prothrombin time (PT)	5 mL EDTA whole blood, one citrated whole blood tube, and 2 mL sodium citrate plasma, frozen
Molecular Analysis/Next Generation Sequencing			
511162	Factor II (Prothrombin), DNA Analysis		Buccal swab kit or 7 mL whole blood
511154	Factor V Leiden Mutation Analysis		Buccal swab kit or 7 mL whole blood
630320	Complement and Coagulation Mediated TMA (aHUS) Genetic Analysis	C3, CD46, CFB, CFH, CFHR1, CFHR2, CFHR3, CFHR4, CFHR5, CFI, DGKE, PLG, THBD, MMACHC, C5 (c.2653C>T(p.Arg885Cys) and c.2654G>A(p.Arg885His))	Whole blood, oral swab, or extracted DNA
630619	Factor VIII (Hemophilia A) Genetic Analysis	F8	Whole blood, oral swab, or extracted DNA
630373	Factor IX (Hemophilia B) Genetic Analysis	F9	Whole blood, oral swab, or extracted DNA
630413	Factor XIII Genetic Analysis	F13A1, F13B	Whole blood, oral swab, or extracted DNA
630420	Fibrinogen Genetic Analysis	FGA, FGB, FGG	Whole blood, oral swab, or extracted DNA
630446	Plasminogen Genetic Analysis	PLG	Whole blood, oral swab, or extracted DNA
630452	Genetic Platelet Disorders Panel	ANO6, AP3B1, BLOC1S3, BLOC1S6, DTNBP1, FGA, FGB, FGG, GP1BA, GP1BB, GP6, GP9, HPS1, HPS3, HPS4, HPS5, HPS6, ITGA2B, ITGB3, LYST, MYH9, P2RY12, PLA2G7, PLAU, RASGRP2, TBXA2R, TBXAS1, VIPAS39, VPS33B, VWF, WAS	Whole blood, oral swab, or extracted DNA
630461	Thrombocytopenia Genetic Analysis	ACTN1, ADAMTS13, ANKRD26, CD36, CYCS, ETV6, FERMT3, FLI1, FLNA, GATA1, GFI1B, GNE, HOXA11, HRG, MPL, NBEA, NBEAL2, ORAI1, RBM8A, RUNX1, STIM1, STXBP2, THPO, TUBB1, VWF, WAS	Whole blood, oral swab, or extracted DNA
630360	Thrombotic Microangiopathy (TMA) Comprehensive Genetic Analysis, Includes TTP and aHUS	ADAMTS13, C3, CD46, CFB, CFH, CFHR1, CFHR2, CFHR3, CFHR4, CFHR5, CFI, DGKE, PLG, THBD, MMACHC, C5 (c.2653C>T(p.Arg885Cys) and c.2654G>A(p.Arg885His))	Whole blood, oral swab, or extracted DNA
630313	Thrombotic Thrombocytopenic Purpura (TTP)/ADAMTS13 Genetic Analysis	ADAMTS13	Whole blood, oral swab, or extracted DNA
630468	von Willebrand Disease Genetic Analysis	GP1BA, VWF	Whole blood, oral swab, or extracted DNA

Specimen Collection Procedures

Proper collection technique is critical to ensure accurate test results.

Collection of Citrated Plasma

- Blood should be collected in a light blue-top tube containing 3.2% buffered sodium citrate.
- The venipuncture must be clean with no trauma. Hemolyzed samples are not acceptable.
- Evacuated collection tubes must be filled completely to ensure a proper blood-to-anticoagulant ratio.
- The sample should be mixed immediately by gentle inversion at least six times to ensure adequate mixing of the anticoagulant with the blood.
- A discard tube is not required unless a winged collection system is used prior to collection of coagulation samples. When noncitrate tubes are collected for other tests, collect sterile and nonadditive (red-top) tubes prior to citrate (blue-top) tubes.
- Any tube containing an alternate anticoagulant should be collected after the blue-top tube. Gel-barrier tubes and serum tubes with clot initiators should also be collected after the citrate tubes.

Platelet Poor Plasma (PPP)

- Perform phlebotomy with a citrated (light blue-top) tube as described above.
- Centrifuge for 10 minutes and, using a plastic transfer pipette, carefully remove two-thirds of the plasma without disturbing the cells.
- Deliver to a plastic transport tube, cap, and recentrifuge for 10 minutes.
- Use a second plastic pipette to remove the plasma, staying clear of the platelets at the bottom of the tube.

Shipping of Frozen Samples

- Transfer the plasma into a Labcorp frozen transport tube with lavender screw cap (Labcorp No. 49482).
- The specimen should be frozen immediately and maintained frozen until tested.

High Hematocrit Samples

Patients with elevated hematocrits have a relatively low amount of plasma for a given whole blood (collection) volume. This tends to increase the plasma citrate concentration effectively. If the patient has a known hematocrit >55%, the amount of citrate in the collection tube must be decreased according to the equation in CLSI H21:

$C = (1.85 \times 10{-}3)\ (100 - Hct)\ (Vblood)$

C = volume of citrate remaining in the tube
Hct = patient's hematocrit
V = volume of blood added to the evacuated tube

Example: Patient hematocrit = 60%
Total volume = 5 mL (standard citrated plasma collection tube volume)
C = (0.00185) x (100-60) x 4.5
C = (0.00185) x 180 (or 40 x 4.5)
C = 0.333