

Overview

Useful For

Establishing laboratory evidence of disseminated intravascular coagulation

Testing Algorithm

Initial testing includes prothrombin time (PT), activated partial thromboplastin time (APTT), thrombin time (TT), fibrinogen, D-dimer, and disseminated intravascular coagulation/intravascular coagulation and fibrinolysis (DIC/ICF) profile interpretation.

If PT is >13.9 seconds, then PT mix will be performed at an additional charge.

If aPTT is > or =38 seconds, then aPTT mix and dilute Russell viper venom time (dRVVT) will be performed at an additional charge.

If dRVVT ratio is > or =1.20, then dRVVT mix and dRVVT confirmation will be performed at an additional charge.

If fibrinogen is <150 mg/dL, or clinically indicated, then PT-fibrinogen will be performed at an additional charge.

If D-dimer is >500 ng/mL fibrinogen equivalent units (FEU), then soluble fibrin monomer will be performed at an additional charge.

If aPTT mix is > or =38 seconds and TT is <35.0 seconds (no evidence of heparin), then platelet neutralization procedure will be performed at an additional charge.

If TT is > or =25.0 seconds, then reptilase time will be performed at an additional charge.

Special Instructions

- [Coagulation Guidelines for Specimen Handling and Processing](#)
- [Coagulation Patient Information](#)
- [Coagulation Profile Comparison](#)

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
ADICI	DIC/ICF Prof Interpretation	No	Yes
APTSC	Activated Partial Thrombopl Time, P	Yes, (order APTTP)	Yes
TTSC	Thrombin Time (Bovine), P	Yes	Yes
CLFIB	Fibrinogen, Clauss, P	Yes, (order FIBTP)	Yes
DIMER	D-Dimer, P	Yes, (order DDITT)	Yes
PTSC	Prothrombin Time (PT), P	Yes, (order PTTP)	Yes

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
RTSC	Reptilase Time, P	Yes	No
DRV1	Dilute Russells Viper Venom Time, P	Yes, (order DRV11)	No
PNP	Platelet Neutralization Procedure	No	No
PTMSC	PT Mix 1:1	No	No
APMSC	APTT Mix 1:1	No	No
DRV2	DRVVT Mix	No	No
DRV3	DRVVT Confirmation	No	No
F_2	Coag Factor II Assay, P	Yes	No
FACTV	Coag Factor V Assay, P	Yes	No
F_7	Coag Factor VII Assay, P	Yes	No
F8A	Coag Factor VIII Activity Assay, P	Yes	No
F_9	Coag Factor IX Assay, P	No	No
F_10	Coag Factor X Assay, P	Yes	No
F_11	Coag Factor XI Assay, P	Yes	No
F_12	Coag Factor XII Assay, P	Yes	No
STACL	StacLOT LA, P	No	No
PTFIB	PT-Fibrinogen, P	Yes	No
SOLFM	Soluble Fibrin Monomer	No	No

Method Name

PTSC, APTSC, TTSC: Optical Clot-Based

CLFIB: Clauss

DIMER: Latex Immunoassay (LIA)

NY State Available

Yes

Specimen
Specimen Type

Plasma Na Cit

Ordering Guidance

This profile will not detect all bleeding disorders such as von Willebrand disease. For patients with amyloidosis and bleeding symptoms, obtaining a limited bleeding diathesis profile is suggested.

Multiple coagulation profile tests are available. See [Coagulation Profile Comparison](#) in Special Instructions for testing that is performed with each profile.

Shipping Instructions

Send the 5 aliquot tubes in the same shipping container.

Necessary Information

If priority specimen, mark request form, give reason, and request a call-back.

Specimen Required

Patient Preparation: Patient should not be receiving Coumadin or heparin. If so, note on request.

Specimen Type: Platelet-poor plasma

Collection Container/Tube: Light-blue top (3.2% sodium citrate)

Submission Container/Tube: 5 Plastic vials

Specimen Volume: 5 mL in 5 plastic vials, each containing 1 mL

Collection Instructions:

1. For complete instructions, see [Coagulation Guidelines for Specimen Handling and Processing](#) in Special Instructions.
2. Centrifuge, transfer all plasma into a plastic vial, and centrifuge plasma again.
3. Aliquot plasma (1 mL per aliquot) into 5 separate plastic vials, leaving 0.25 mL in the bottom of centrifuged vial.
4. Freeze plasma immediately (no longer than 4 hours after collection) at -20 degrees C or, ideally < or =-40 degrees C.

Additional Information: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.

Forms

1. [Coagulation Patient Information](#) (T675) in Special Instructions.
2. If not ordering electronically, complete, print, and send a [Coagulation Test Request](#) (T753) with the specimen.

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Minimum Volume

5 mL in 5 plastic vials, each containing 1 mL

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma Na Cit	Frozen (preferred)	14 days	

Clinical & Interpretive**Clinical Information**

Disseminated intravascular coagulation (DIC) and intravascular coagulation and fibrinolysis (ICF), collectively termed DIC/ICF is a consumptive hemorrhagic and microthrombotic disorder that manifests as clinical bleeding or thrombosis. Conditions associated with DIC/ICF can include sepsis, trauma (eg, head injury, severe tissue injury), obstetric complications (eg, amniotic fluid embolism, abruptio placentae), malignancies, vascular disorders (eg, hemangiomas, aortic aneurysm), and immunologic disorders.

These disorders can cause formation of thrombin and fibrin intravascularly, which can result in widespread fibrin deposition contributing to thrombosis and organ failure or, conversely, can result in bleeding due to consumption of coagulation proteins and platelets. DIC/ICF is not a disease, rather it is a syndrome that is secondary to an underlying disorder.

Reference Values

An interpretive report is provided.

Interpretation

An interpretive report will be provided.

Cautions

No significant cautionary statements

Clinical Reference

Boender J, Kruij MJ, Leebeek FWG: A diagnostic approach to mild bleeding disorders. *J Thromb Haemost.* 2016 Aug;14(8):1507-1516. doi: 10.1111/jth.13368

Performance

Method Description**Prothrombin Time:**

The prothrombin time (PT) assay is performed on the Instrumentation Laboratory ACL TOP. Patient plasma is incubated and combined with a PT reagent containing recombinant human tissue factor, synthetic phospholipids, calcium chloride, polybrene, and buffer. Tissue thromboplastin (phospholipid and recombinantly-derived human tissue factor) and calcium are added to citrated plasma, bypassing the action of platelets and factors VIII, IX, XI, and XII in the intrinsic procoagulant pathway. The tissue thromboplastin-factor VII/VIIa complex activates factor X. Activated factor X (factor Xa) forms a complex with factor Va, calcium, and phospholipid to activate factor II (prothrombin) to thrombin. Thrombin then acts on fibrinogen (factor I) to form fibrin which clots, providing the assay endpoint (the "prothrombin time").(Package insert: HemosIL RecombiPlasTin 2G. Instrumentation Laboratory Company; R4, 03/2019)

Activated Partial Thromboplastin Time:

The activated partial thromboplastin time (aPTT) assay is performed on the [Instrumentation Laboratory](#) ACL TOP. Patient plasma is combined and incubated with an aPTT reagent containing phospholipid, a negatively charged contact factor activator, and buffer. After a specified incubation time, calcium is added to trigger the coagulation process in the mixture. Subsequently, the time to clot formation is measured optically using a wavelength of 671 nm. Mixing studies (see APMSC / Activated Partial Thromboplastin Time [APTT] Mix 1:1, Plasma) using normal pooled plasma are performed in the Special Coagulation Laboratory on samples with a prolonged aPTT, to assist in discriminating between factor deficiency states and coagulation inhibitors, unless further testing is not indicated.(Package insert: HemosIL SynthASil. Instrumentation Laboratory Company; R11, 06/2017)

Thrombin Time:

The thrombin time (TT) assay is performed on the Instrumentation Laboratory ACL TOP. Patient plasma is combined with a bovine thrombin reagent containing bovine albumin, calcium chloride, and buffer immediately triggering the coagulation process in the mixture. Time to clot formation is measured optically using a wavelength of 405 nm.(Package insert: HemosIL Thrombin Time. Instrumentation Laboratory Company; R1 12/2018)

Fibrinogen:

The Clauss fibrinogen assay is performed using the HemosIL Fibrinogen-C kit on the Instrumentation Laboratory ACL TOP. Patient plasma, containing fibrinogen, is mixed with reagent containing excess thrombin. The excess thrombin converts the fibrinogen in the patient plasma to fibrin. The amount of time it takes to form a clot is inversely proportional to the amount of fibrinogen present in the patient plasma.(Package insert: HemosIL Fibrinogen-C. Instrumentation Laboratory Company; R7, 06/2017)

D-Dimer:

D-dimer is assayed in plasma by adding polystyrene latex particles coated with monoclonal antibodies specific for D-dimer domain. The latex particles agglutinate in the presence of soluble fibrin degradation products (FDP) containing the D-dimer domain. The degree of agglutination is directly proportional to the concentration of D-dimer in the sample and is determined by measuring the decrease of transmitted light caused by the aggregates (turbidimetric immunoassay). (Package insert: HemosIL D-Dimer HS 500. Instrumentation Laboratory Company; R6 04/2018)

PDF Report

No

Specimen Retention Time

See individual test IDs

Performing Laboratory Location

Rochester

Fees & Codes**Test Classification**

See Individual Test IDs

CPT Code Information

85610-PTSC

85730-APTSC

85670-TTSC

85379-DIMER

85384-CLFIB

85390-26-ADICI

[85210-Factor II \(if appropriate\)](#)

85220-Factor V (if appropriate)

85230-Factor VII (if appropriate)

85240-Coagulation factor VIII assay (if appropriate)

85250-Factor IX (if appropriate)

85260-Factor X (if appropriate)

85270-Factor XI (if appropriate)

85280-Factor XII (if appropriate)

85366-Soluble fibrin monomer (if appropriate)

85385-PT-Fibrinogen (if appropriate)

85597-Platelet neutralization for lupus inhibitor (if appropriate)

85598-Staclot LA (if appropriate)

85611-PT mix 1:1 (if appropriate)

85613-DRVVT (if appropriate)

85613-DRVVT mix (if appropriate)

85613-DRVVT confirm (if appropriate)

85635-Reptilase time (if appropriate)

85732-APTT mix 1:1 (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
ADIC	DIC/ICF Prof	98125-8

Result ID	Reporting Name	LOINC®
APTSC	Activated Partial Thrombopl Time, P	14979-9
CLFIB	Fibrinogen, Clauss, P	48664-7
TTSC	Thrombin Time (Bovine), P	46717-5
603323	Reviewed by	18771-6
603182	DIC/ICF Prof Interpretation	69049-5
DIMER	D-Dimer, P	48067-3
INRSC	INR	6301-6
PTSEC	Prothrombin Time (PT), P	5902-2