Test Definition: CLFIB

Fibrinogen, Clauss, Plasma

Overview

Useful For

Detecting increased or decreased fibrinogen (factor 1) concentration of acquired or congenital origin

Monitoring severity and treatment of disseminated intravascular coagulation and fibrinolysis

Method Name

Only orderable as part of a profile or reflex. For more information, see:
ALBLD / Bleeding Diathesis Profile, Limited, Plasma
APROL / Prolonged Clot Time Profile, Plasma
AATHR / Thrombophilia Profile, Plasma and Whole Blood
ADIC / Disseminated Intravascular Coagulation/Intravascular Coagulation and Fibrinolysis (DIC/ICF) Profile, Plasma
ALUPP / Lupus Anticoagulant Profile, Plasma

Clauss

NY State Available

Yes

Specimen

Specimen Type

Plasma Na Cit

Specimen Required

Only orderable as part of a profile or reflex. For more information, see:
ALBLD / Bleeding Diathesis Profile, Limited, Plasma
APROL / Prolonged Clot Time Profile, Plasma
AATHR / Thrombophilia Profile, Plasma and Whole Blood
ADIC / Disseminated Intravascular Coagulation/Intravascular Coagulation and Fibrinolysis (DIC/ICF) Profile, Plasma
ALUPP / Lupus Anticoagulant Profile, Plasma

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Fibrinogen, also known as factor 1, is a plasma protein that can be transformed by thrombin into a fibrin gel ("the clot"). Fibrinogen is synthesized in the liver and circulates in the plasma as a disulfide-bonded dimer of 3 subunit chains. The biological half-life of plasma fibrinogen is 3 to 5 days.

An isolated deficiency of fibrinogen may be inherited as an autosomal recessive trait (afibrinogenemia or hypofibrinogenemia) and is one of the rarest of the inherited coagulation factor deficiencies.

Acquired causes of decreased fibrinogen levels include acute or decompensated intravascular coagulation and fibrinolysis (disseminated intravascular coagulation), advanced liver disease, L-asparaginase therapy, and therapy with fibrinolytic agents (eg, streptokinase, urokinase, tissue plasminogen activator).

Fibrinogen function abnormalities, dysfibrinogenemias, may be inherited (congenital) or acquired. Patients with dysfibrinogenemia are generally asymptomatic. However, the congenital dysfibrinogenemias are more likely than the acquired to be associated with bleeding or thrombotic disorders. While the dysfibrinogenemias are generally not associated with clinically significant hemostasis problems, they characteristically produce a prolonged thrombin time clotting test. Congenital dysfibrinogenemias usually are inherited as autosomal codominant traits.

Acquired dysfibrinogenemias mainly occur in association with liver disease (eg, chronic hepatitis, hepatoma) or kidney diseases associated with elevated fibrinogen levels.

Fibrinogen is an acute-phase reactant, so a number of acquired conditions can result in an increase in its plasma level:
-Acute or chronic inflammatory illnesses
-Nephrotic syndrome
-Liver disease and cirrhosis
-Pregnancy or estrogen therapy
-Compensated intravascular coagulation

The finding of an increased level of fibrinogen in a patient with obscure symptoms suggests an organic rather than a functional condition. Chronically increased fibrinogen has been recognized as a risk factor for development of arterial and venous thromboembolism.

Reference Values

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APROL / Prolonged Clot Time Profile, Plasma
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ADIC / Disseminated Intravascular Coagulation/Intravascular Coagulation and Fibrinolysis (DIC/ICF) Profile, Plasma

ALUPP / Lupus Anticoagulant Profile, Plasma

Males: 200-500 mg/dL
Females: 200-500 mg/dL
In normal full-term newborns and in healthy premature infants (30-36 weeks gestation) fibrinogen is near adult levels (>150) and reaches adult levels by less than 21 days postnatal.

Interpretation

This test assesses levels of functional (clottable) fibrinogen (see Cautions). Fibrinogen may be decreased in acquired conditions such as liver disease and acute intravascular coagulation and fibrinolysis and disseminated intravascular coagulation. Fibrinogen may be decreased in rare conditions including congenital afibrinogenemia or hypofibrinogenemia. Fibrinogen may be elevated with acute or chronic inflammatory conditions.

Cautions

In patients with dysfibrinogenemias, this assay may give spuriously low results.

In patients with markedly elevated plasma levels of fibrin degradation products (eg, thrombolytic therapy or disseminated intravascular coagulation and fibrinolysis), clottable fibrinogen determined by this method may be lower than when measured by an end point method (eg, nephelometric) assay.

Patients with antibodies to bovine thrombin (which can arise in association with surgical application of topical bovine thrombin) may have spuriously decreased fibrinogen when assayed by this assay.

The presence of heparin above 1.0 U/mL may cause erroneously low kinetic estimates of fibrinogen, or make it impossible to measure fibrinogen by the nephelometric end point technique. In these cases, end point determinations of clottable fibrinogen by a gravimetric/spectrophotometric (biuret) technique or fibrinogen immunoassay may be helpful.

Clinical Reference

Favaloro EJ, Lippi G. eds. Hemostasis and Thrombosis: Methods and Protocols. 1st ed. Humana Press; 2017

Performance

Method Description

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.(Favaloro EJ, Lippi G. eds. Hemostasis and Thrombosis: Methods and Protocols. 1st ed. Humana Press; 2017)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available
1 day

Specimen Retention Time
7 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
85384

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CLFIB	Fibrinogen, Clauss, P	48664-7

Result ID	Test Result Name	Result LOINC® Value
CLFIB	Fibrinogen, Clauss, P	48664-7