MAYO CLINIC LABORATORIES

Test Definition: PTMSC

Prothrombin Time Mix 1:1, Plasma

Overview

Useful For

Screening test to detect a deficiency of 1 or more of the clotting factors of the extrinsic coagulation system (I, II, V, VII, X) due to hereditary deficiency or acquired conditions such as liver disease, vitamin K deficiency, or a specific factor inhibitor

Determining the cause of a prolonged prothrombin time, factor deficiency versus factor inhibitor

Method Name

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

Optical Clot-Based

NY State Available

Yes

Specimen

Specimen Type

Plasma Na Cit

Necessary Information

Heparin or Coumadin therapy should be noted.

Specimen Required

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

Reject Due To

Gross	Reject

hemolysis	
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

This test is only performed when the prothrombin time (PT) is abnormally prolonged. See PTSC / Prothrombin Time (PT), Plasma for an interpretation of results.

Reference Values

Only orderable as a reflex. For more information see:
ALUPP / Lupus Anticoagulant Profile, Plasma
ALBLD / Bleeding Diathesis Profile, Limited, Plasma
AATHR / Thrombophilia Profile, Plasma and Whole Blood
APROL / Prolonged Clot Time Profile, Plasma
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9.4-12.5 seconds

Interpretation

Prolongation of the prothrombin time (PT) can occur as a result of deficiency of 1 or more coagulation factors (acquired or congenital in origin), or the presence of an inhibitor of coagulation such as heparin, a lupus anticoagulant, a "nonspecific" inhibitor such as a monoclonal immunoglobulin, or a specific coagulation factor inhibitor.

PT mixing study, using equal volume patient and normal pool plasma, may be performed on specimens with a prolonged PT to assist in differentiating coagulation factor deficiencies from coagulation inhibitors. Correction of the PT mix to within the normal reference range usually indicates a coagulation factor deficiency (normal plasma in the mixture ensures at least 50% activity of all coagulation factors). If the prolonged PT is due to an inhibitor (specific coagulation factor inhibitor, lupus anticoagulant, heparin, etc), the PT mix typically fails to correct a prolonged PT. However, the presence of a weak inhibitor may be missed by the PT mixing study.

Accurate interpretation of both PT and PT mixing study results may often require additional testing. For example, the thrombin time test is helpful for identifying or excluding the presence of heparin, the platelet neutralization procedure (using a modified activated partial thromboplastin [APTT] method) for identifying or excluding lupus anticoagulant, the APTT and dilute Russell viper venom time for further assessment of the common procoagulant pathway, and coagulation factor assays to detect and identify deficient or abnormal factors. These assays are available as components of reflexive and interpretive testing panels in the Special Coagulation Laboratory:
ALUPP / Lupus Anticoagulant Profile, Plasma

ALBLD / Bleeding Diathesis Profile, Limited, Plasma
AATHR / Thrombophilia Profile, Plasma and Whole Blood
APROL / Prolonged Clot Time Profile, Plasma
ADIC / Disseminated Intravascular Coagulation/Intravascular Coagulation and Fibrinolysis (DIC/ICF) Profile, Plasma

Cautions

Prothrombin time (PT) mixing studies have no utility when the patient PT is normal.

Lipemic specimens may interfere with the instrument clot detection mechanism.

Clinical Reference

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

Performance

Method Description

The prothrombin time (PT) mix assay is performed on the Instrumentation Laboratory ACL TOP. Patient plasma is combined in a 1:1 ratio with normal pooled plasma then incubated. After a specified incubation time, a PT reagent containing phospholipid, calcium chloride, buffer and a preservative 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.(Package insert: HemosIL RecombiPlasTin 2G. Instrumentation Laboratory Company; 03/2019)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

1 to 4 days

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

85611

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
PTMSC	PT Mix 1:1	5959-2

Result ID	Test Result Name	Result LOINC® Value
PTMSC	PT Mix 1:1	5959-2