
Lab Dept: Coagulation

Test Name: PLASMINOGEN ACTIVATOR INHIBITOR

General Information

Lab Order Codes: PAI1

Synonyms: Plasminogen Activator Inhibitor 1 Activity; PAI-1 Antigen

CPT Codes: 85415 – Plasminogen activator

Test Includes: Plasminogen Activator Inhibitor 1 antigen level reported in ng/mL.

Logistics

Test Indications: Identification of heredity elevation or deficiency of plasminogen activator inhibitor type 1. Determination of risk for veno-occlusive disease associated with bone marrow transplantation. Differential diagnosis of impaired fibrinolysis. Prognostic marker of occurrence or recurrence of thrombosis.

Lab Testing Section: Coagulation - Sendouts

Referred to: Mayo Medical Laboratories (MML: PAI1)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 7 – 12 days, testing performed once weekly on Thursday.

Special Instructions: See [Patient Preparation](#). PAI-1 has a circadian rhythm, high in the early morning and falling in the afternoon and evening. This change should be considered when planning PAI-1 plasma studies. The PAI-1 antigen reference range is based on fasting morning samples in adults.

Specimen

Specimen Type: Whole blood

Container: Light Blue (Buffered Na Citrate 3.2 %) top tube

Draw Volume: 2.7 mL blood in a 3 mL tube (Minimum:1.8 mL in a 2 mL tube)

Processed Volume:	1 mL (Minimum: 0.3 mL) plasma
Collection:	Routine venipuncture. Do Not use the first 2 mL of blood collected. If the patient's hematocrit is >55%, contact laboratory to obtain a special tube. Mix thoroughly by gentle inversion.
Special Processing:	Lab Staff: PAI-1 is unstable and must be processed and frozen within 3 hours of specimen collection. Double spin required: Centrifuge specimen for 5 minutes, aliquot/transfer plasma to a plastic tube. Spin plasma again for 5 minutes. Remove plasma to another plastic vial and freeze specimen immediately at < or = -40 degrees C. Forward promptly. Note: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. Each coagulation assay requested, must have its own vial.
Patient Preparation:	It is recommended, but not required that specimen should be early morning fasting specimen (before 10 am).
Sample Rejection:	Improper tube; clotted samples; overfilled tubes; underfilled tubes; mislabeled or unlabeled specimens

Interpretive

Reference Range:	3 - 72 ng/mL Note: Based on fasting and early morning collections in adults.
Critical Values:	N/A
Limitations:	The plasminogen activator inhibitor type 1 (PAI-1) level shows a diurnal variation with the highest levels occurring in the morning. The PAI-1 level increases during pregnancy and decreases rapidly after delivery. The extremely rare presence of anti-mouse antibodies in certain patients may lead to anomalous results. Inappropriate specimen collection and processing may lead to platelet activation and release of platelet PAI-1. Consequently, care must be taken to remove all platelets and minimize platelet activation during specimen collection and processing.
Methodology:	Enzyme-Linked Immunosorbent Assay (ELISA)
References:	Mayo Medical Laboratories December 2017 Harmening DH (1997) Clinical Hematology and Fundamentals of Hemostasis

Updates:

2/1/2008: Method change, units change. Now performed at Fairview, previously forward to SE Blood Center of Wisconsin.

5/24/2010: Tubing of patient specimens is no longer prohibited.

2/16/2012: Fairview now forwards test to Blood Center of Wisconsin.

4/12/2012: Test moved from Fairview forward to Blood Center of Wisconsin to Mayo Medical Laboratories.

12/20/2017: Updated CPT