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**Lab Dept:** Coagulation

**Test Name:** PLASMINOGEN ACTIVATOR INHIBITOR

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***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.

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***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.

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***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)

<b>Processed Volume:</b>	1 mL (Minimum: 0.5 mL) plasma
<b>Collection:</b>	Routine venipuncture. <b>Do Not</b> 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.
<b>Special Processing:</b>	<b>Lab Staff:</b> 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.
<b>Patient Preparation:</b>	It is recommended, but not required that specimen should be early morning fasting specimen (before 10 am).
<b>Sample Rejection:</b>	Improper tube; clotted samples; overfilled tubes; underfilled tubes; mislabeled or unlabeled specimens

***Interpretive***

<b>Reference Range:</b>	3.0 – 72.0 ng/mL  Note: Based on fasting and early morning collections in adults.
<b>Critical Values:</b>	N/A
<b>Limitations:</b>	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.
<b>Methodology:</b>	Enzyme-Linked Immunosorbent Assay (ELISA)
<b>References:</b>	<a href="#">Mayo Medical Laboratories</a> 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