

Gene test information

PLASMINOGEN ACTIVATOR INHIBITOR 1 (PAI-1)**• Background**

The type 1 plasminogen activator inhibitor (PAI-1) is a primary regulator of the fibrinolytic system in vivo. PAI-1 binds to tissue plasminogen activator and inhibits plasminogen activation, which decreases fibrinolysis. A single guanosine insertion/deletion (4G or 5G) 675 base pairs from the start site of the genes promoter region affects an individual's predisposition for thrombosis. Studies have shown a correlation between PAI-1 levels in plasma and the 4G/5G polymorphism. Subjects with the 4G/4G genotype have plasma PAI-1 concentrations that are 25% higher than those with the 5G/5G genotype. Increased PAI activity may be associated with increased risk for venous thrombosis and myocardial infarction. The prevalence of the 4G/4G genotype in the normal population is 26%.

• Indications for testing

- Patients presenting with family histories of early heart disease or venous thrombosis
- Pregnant women with past complications during pregnancy.

References:

Tsantes AE et al. Association between the plasminogen activator inhibitor-1 4G/5G polymorphism and venous thrombosis. A meta-analysis. *Thromb Haemost.* 2007;97:907-13.

Fabbro D et al. Association between plasminogen activator inhibitor 1 gene polymorphisms and preeclampsia. *Gynecol Obstet Invest.* 2003;56:17-22.