

## D-Dimer

**Analyte:** D-Dimer

**Specimen Type:** Citrate Plasma, Heparin Plasma, Inquire for additional option(s)

**Optimum Volume:** 0.5 mL

**Stability:**

2-8 Degrees C	-20 Degrees C	-70 Degrees C
3 days	6 months	2 years

**Reporting Units:** ng/mL

**Method:** ELISA

**Biological or Clinical Significance:**

Before clot formation, prothrombin must be converted to thrombin. When the level thrombin exceeds the ability of antithrombin and other inhibitors to neutralize it fibrinopeptides are released from the soluble plasma protein, fibrinogen. Molecular polymerization occurs with the formation of soluble fibrin that is then stabilized with covalent cross-linking by FXIIIa activity to produce an insoluble clot. Degradation of this stabilized fibrin network begins immediately as the result of the action of the fibrinolytic enzyme, plasmin, in process known as fibrinolysis. Under normal physiological conditions, excess plasmin is rapidly neutralized by alpha-2-antiplasmin within the region of the clot. A variety of fibrinogen degradation products (XL-FDPs) are formed, depending on the extent of the fibrinolysis. The smallest fragment is the plasmin-resistant species D-dimer. D-dimer measurements therefore reflect this sequence of events: thrombin activation, clot formation, and subsequent clot lysis.

Elevated XL-FDP indicates reactive fibrinolysis and is seen in a number of arterial and venous occlusive disease states including acute myocardial infarction (MI), deep vein thrombosis (DVT), pulmonary embolism (PE), disseminated intravascular coagulation (DIC) and other coagulation disorders.

**Principle of Test Method:**

The D-Dimer assay is a solid-phase ELISA that employs the quantitative sandwich enzyme immunoassay principle.

**References:**

1. Schutgens REG, Haas FJLM, Ruven HJT, Spannagl M, Horn K, Biesma DH. No influence of heparin plasma and other (pre)analytic variables on D-dimer determinations. Clin Chem 2002; 48:1611-1613.