

**TEST: DETECTION OF β -FIBRINOGEN G455A GENE
POLYMORPHISM BY PCR**

PRINCIPLE

Fibrinogen (Factor I) is a glycoprotein, synthesized in the liver, that participates in the coagulation cascade. Fibrinogen converts to fibrin in the presence of thrombin. Elevated fibrinogen levels have been associated with increased risk for atherosclerosis and deep venous thrombosis as well as cardiovascular diseases. Fibrinogen is composed of three pairs of polypeptide chains (named α , β and γ) which are linked by disulfide bonds. These three chains are encoded by three different genes (α , β and γ , respectively), that are located on chromosome 4.

A common G \rightarrow A polymorphism at position -455 in the promoter region of the β -fibrinogen gene has been associated with elevated fibrinogen levels (for the AA homozygous carriers).

The β -fibrinogen G455A gene polymorphism can be identified by specific amplification of an 103-bp DNA fragment (either G-specific or A-specific) of β -fibrinogen gene, by PCR. The amplification product can be visualized by gel electrophoresis.

SPECIMEN COLLECTION AND PREPARATION:

Collect 10ml blood by standard venipuncture techniques in lavender top EDTA tubes. Specimens should be delivered to the lab immediately or stored overnight at room temperature. Shipment to the laboratory should be by the same day or overnight, at room temperature. Peripheral blood specimens that are clotted, frozen or have not been collected in EDTA tubes are not acceptable.

METHOD: Polymerase chain reaction (PCR)

REFERENCES:

van't Hooft F et al. *Arteriosler Thromb Vasc Biol* 1999;19:3063-3070

REPORTING RESULTS:

<u>Results</u>	<u>Base Pairs</u>
Normal (GG)	177, 103 (G-specific)
Heterozygous (GA)	177, 103 (G-specific and A-specific)
Homozygous (AA)	177, 103 (A-specific)

Turnaround time: Two Weeks