Scripps Clinic researchers make key find  
in blood-clotting process

LA JOLIA, Oct. 7 -- Research Institute of Scripps Clinic investigators have located the section of a blood platelet protein implicated in the recognition and binding of fibrinogen, a key process in the formation of blood clots.

The finding, published today in the journal Science, may lead to the development of antibodies and synthetic peptides that interfere with the thrombotic process, producing new treatments for stroke and heart attack. Efforts to produce these agents are underway at the Research Institute.

Also, since the protein segment has a similar structure to regions on other proteins concerned with cell adhesion, it may be possible to produce antibodies and other agents to control processes in which cell adhesion plays a role, such as inflammation, tissue development and the metastatic spread of tumors.

The authors of the article were Drs. Stanley D'Souza, Mark Ginsberg, Stephen Lam and Edward Plow, and Timothy Burke, all of the Research Institute's immunology department.

(More)
"This is a basic finding, and clinical applications of this work are a long way off," said Ginsberg. "However, the potential is there."

In the normal process by which bleeding is stopped, called hemostasis, fibrinogen binds to platelet receptors. Following this, the platelets aggregate, forming the initial plug that stops blood leakage.

However, synthetic peptides could block this process. Man-made peptides mimicking the structures in platelet receptors that recognize fibrinogen would be bound to fibrinogen - they would competitively inhibit the platelets' ability to bind to fibrinogen.

Also, since researchers know the structure of the receptor region involved in recognizing a specific site on fibrinogen, they may be able to produce monoclonal antibodies that react with that site, inhibiting thrombus formation.

###