

*Abstract: "Molecular mechanisms of formation and dissolution of fibrin clot"*

Blood coagulation and fibrinolysis are two highly coordinated processes playing a critical role in haemostasis. Activation of the coagulation cascade in response to a vascular injury results in generation of thrombin, an active clotting enzyme that converts blood coagulation protein fibrinogen into fibrin. Spontaneous polymerization of fibrin results in formation of an insoluble fibrin clot (blood clot), which seals damaged vasculature preventing the loss of blood in normal haemostasis, or causes thrombosis in pathological conditions. The formation of fibrin clot also triggers activation of fibrinolytic system and generation of active fibrinolytic enzyme plasmin. Plasmin degrades polymeric fibrin into soluble fragments (fibrinolysis) thus disintegrating the clot during normal wound healing; in pathological conditions, fibrinolysis may result in excessive bleeding (haemorrhage). This presentation focuses on recent studies of the structure of fibrinogen and fibrin and molecular mechanisms of the formation and dissolution of fibrin clot.