Summary of the coagulation and fibrinolysis cascades

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Figure 1. Summary of the coagulation and fibrinolysis cascades. (a) The coagulation cascade, which favours clot formation, is initiated in vivo by tissue factor and factor VIIa (FVIIa) and leads to the conversion of prothrombin to thrombin by the prothrombinase complex (FXa and FVa). Subsequent cleavage of fibrinogen by thrombin, along with the aggregation of platelets, can result in formation of a thrombus. The fibrin clot is further stabilised by FXIII, which is also activated by thrombin, and the clotting process is magnified by other positive-feedback loops (not shown). (b) Plasmin-mediated fibrinolysis, resulting in fibrin degradation products and clot lysis, occurs following the conversion of plasminogen to plasmin by tissue-type plasminogen activator (tPA). Plasminogen activator inhibitor 1 (PAI-1) rapidly inhibits tPA. α-2-Antiplasmin (α-2-AP) inactivates plasmin by forming a 1:1 inhibitory complex with circulating plasmin. Thrombin-activatable fibrinolysis inhibitor (TAFI) cleaves the C-terminal lysine residues of fibrin, preventing the co-activation of plasminogen by fibrin (fig001dea).