

Surfing the blood coagulation cascade : insight into the Vital Factor Xa

Factor Xa (FXa) plays a key role in haemostasis, it is a central part of the blood coagulation cascade which catalyzes the production of thrombin and leads to clot formation and wound closure. Therefore, FXa is an attractive target for the development of new anticoagulant agents. In this review, we will first describe the molecular features of this fundamental protein in order to understand its mechanism of action, an essential background for the design of novel inhibitors by means of synthetic organic chemistry or using peptides obtained from recombinant methodologies. Then, we will review the current state of the synthesis of novel direct FXa inhibitors along with their mechanisms of action. Finally, approved reversal agents that aid in maintaining blood haemostasis by using these commercial drugs will also be discussed.

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