EVOLUTION OF VERTEBRATE HEMOSTATIC SYSTEM

Summary

The extremely complicated systems of proteins are a result of many series of duplications and shuffling of domains in genomes of predecessors of nowadays living creatures. Fibrinogen, a key blood clotting protein, is characteristic only for vertebrates. The protein could not be found in chordates like lancelet or sea squirt by biochemical nor bioinformatic methods. It can be supposed that fibrin polymerization triggered by thrombin occurred within the 50–100-million-year time between the appearance of protochordates and vertebrates. The whole complicate system of haemostasis and its regulation started to form about 450 million years ago. The fully developed contact phase of blood coagulation seems to be the latest evolutionary achievement of mammals.