Coagulation factors

Coagulation cascade:

Coagulation factors are proteins that circulate in plasma in an **inactive state**. Their main function is to enable **hemocoagulation** (blood clotting). Most of them are produced by the liver.

Factor	Name ***Alternate Name***	Function
I	fibrinogen	cleavage of several peptides produces monomeric fibrin, which further forms a fibrin network
II*	protrombin	its active form (IIa) activates factors I, V, VII, VIII, XI, XIII, protein C and platelets
III	tissue thromboplastin "tissue factor"	factor VIIa cofactor
IV	Ca^{2+}	binding of coagulation factors to phospholipids
V	proaccelerin, *labile factor, accelerating globulin*	factor X cofactor – ensure the conversion of prothrombin to active thrombin
VI	older name for factor Va	–
VII*	proconvertin	activates factors IX, X
VIII	antihemophilic factor (AHF) antihemophilic factor A – antihemophilic globulin (AHG)	factor IX cofactor
IX*	The Christmas Factor plasma thromboplastic component (PTC) - antihemophilic factor B	activates factor X
X*	Stuart-Prower factor**	activates factor II
XI	plasma thromboplastin precursor plasma thromboplastin antecedent (PTA) - antihemophilic factor C	activates factor IX
XII	The Hageman factor *glass factor*	activates factor XI, VII and prekallikrein
XIII	fibrin stabilizing factor *The Laki-Lorand Factor*	
	von Willebrand factor	binds to factor VIII, enables platelet adhesion
	high molecular weight kininogen (HMWK) *The Fitzgerald Factor*	supports the mutual activation of XII, XI and prekallikrein
	prekallikrein (PKK) The Fletcher Factor	activates factor XII and prekallikrein, cleaves HMWK
	kallikrein	
	platelet phospholipids	

* vitamin K dependent

** named after the first two patients (Mr R. Stuart and Miss A. Prower) in whom factor X deficiency was described

Links

Related articles

- Hemocoagulation
- Examination of blood coagulation
- Vitamin K-dependent coagulation factors

References

- GANONG, William F. *Přehled lékařské fyziologie.* 20. edition. Galén, 2005. pp. 546–549. ISBN 80-7262-311-7.
- KITTNAR, Otomar, et al. *Lékařská fyziologie.* 1. edition. Praha : Grada, 2003. 790 pp. ISBN 978-80-247-3068-4.