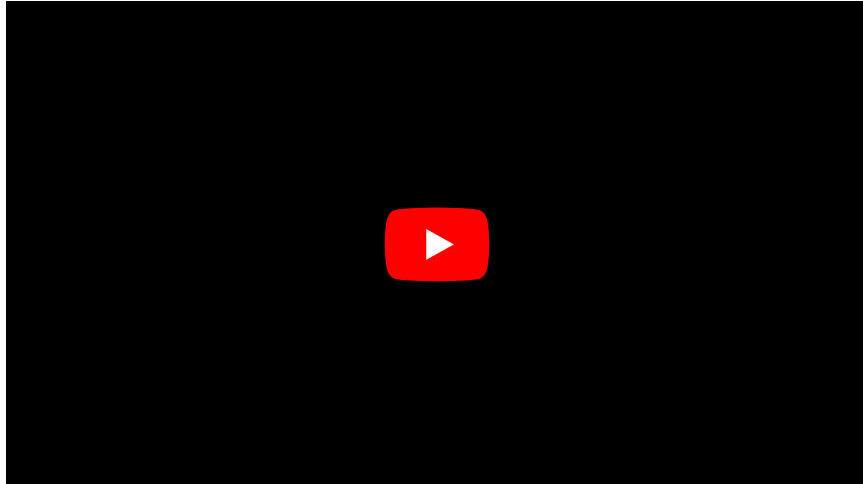


# Coagulation factors

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<br><i>Alternate Name</i>   | 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<br>"tissue factor"  | factor VIIa cofactor   |
| IV     | Ca <sup>2+</sup>  | binding of coagulation factors to phospholipids  |
| V      | proaccelerin, <i>labile factor</i> , <i>accelerating globulin</i>                                   | 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)<br>antihemophilic factor A - antihemophilic globulin (AHG)              | factor IX cofactor   |
| IX*    | The Christmas Factor<br>plasma thromboplastic component (PTC) - antihemophilic factor B             | activates factor X   |
| X*     | Stuart-Prower factor**  | activates factor II  |
| XI     | plasma thromboplastin precursor<br>plasma thromboplastin antecedent (PTA) - antihemophilic factor C | activates factor IX  |
| XII    | The Hageman factor<br><i>glass factor</i>   | activates factor XI, VII and prekallikrein   |
| XIII   | fibrin stabilizing factor<br><i>The Laki-Lorand Factor</i>  |  |
|        | von Willebrand factor   | binds to factor VIII, enables platelet adhesion  |
|        | high molecular weight kininogen (HMWK)<br><i>The Fitzgerald Factor</i>                              | supports the mutual activation of XII, XI and prekallikrein                                  |
|        | prekallikrein (PKK)<br>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.

