

## Clotting factor analysis



### **Description, significance:**

The activities of the various coagulation factors can be determined using certain test approaches. These are standardized to the activity of a reference normal plasma (=100%) and are therefore given as a % of the norm.

To determine single factors activities, the patient's plasma is mixed with normal plasma that completely lacks the factor to be determined (factor depleted plasma) and the appropriate clotting time is then measured (APTT for factors XII, XI, IX, VIII, PT for factors X, II, V). The factor activity is calculated using a calibration curve. Factor XIII and fibrinogen are determined with other methods. Coagulation disorders can be clarified more precisely through single factor determinations. The decrease in a single clotting factor activity indicates either a congenital clotting disorder or autoantibodies against the factor. A reduction in several factors indicates impaired synthesis (liver disease; factor V low) or vitamin K deficiency (factor V normal).

### **Reference ranges:**

varies depending on the test system, usually between 80-120%.

### **Increased values:**

have no clinical relevance

### **Decreased values:**

Depending on the factor, there is a certain risk of bleeding when the activity is reduced. For details see information text on hemophilia.

### **Preamalytics:**

The single factor activities are automatically determined from citrate plasma. Care must be taken to collect blood accurately, avoid contamination, fill the blood tube correctly and mix well with the citrate. The blood sample must be sent to the laboratory as quickly as possible.

### **Influencing/disturbing factors:**

Anticoagulants, hematocrit, contamination with heparin

### **References:**

Thomas L, Laboratory and Diagnosis, 2023, Release 5: <https://www.labor-und-diagnose.de/index.html>

Parameter catalog of the Clinical Institute for Laboratory Medicine, Med.Univ.Wien and AKH Vienna: <https://www.akhwien.at/default.aspx?pid=3982>

List of services for clinical chemistry, Univ.Klinikum Ulm: <https://www.uniklinik-ulm.de/zentrale-einrichtung-klinische-chemie/leistungskatalog.html>