Platelet count

Description, significance:
Platelets are cellular elements of the blood and are important for primary hemostasis. When the integrity of a blood vessel is violated, von Willebrand factor binds to the exposed collagen and is stretched by blood flow. This exposes the A1 domains to which platelets bind via their GP Ib/IX receptor. As a result, the platelets are activated, change their shape, release phospholipids and procoagulant factors and express GP IIb/IIIa. Other platelets can also aggregate via fibrinogen bridges. The platelet count is automatically determined as part of a blood count analysis. The analysis machines count through flow cytometry.

Reference range:
150-350 G/L

Increased values:
reactive thrombocytosis in infections, trauma, surgical procedures, pregnancy, iron deficiency
Increased autonomic production of platelets in myeloproliferative diseases (essential thrombocytosis, polycytemia vera, chronic myeloid leukemia, etc.).

Decreased values:
Thrombpcytopenia increases the risk of bleeding, especially with platelet counts below 20 G/L. The causes of thrombocytopenia are diverse. The thrombocytopenia algorithm (*Thrombo-Guide*) can be used for this purpose.

Preanalytics:
A blood count analysis is carried out automatically from EDTA whole blood using specialized equipment. Care must be taken to collect blood accurately, avoid contamination, fill the blood tube correctly and mix well with the EDTA.

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