

Plasma mixing studies



Description, significance:

Plasma mixing studies are used to detect coagulation inhibitors in the patient's plasma. The starting point is an extended clotting time in a global test system. This is usually the APTT, but the PT or the dRVVT can also be used. During the plasma mixing study, the patient's plasma is mixed 1+1 with normal plasma (other dilutions are also possible) and the clotting times of the patient's plasma, the 1+1 mixture and the normal plasma are measured. A first measurement is carried out immediately after mixing, a second measurement after 2 hours of incubation at 37°C, as some factor inhibitors have time- and temperature-dependent kinetics. If there is a congenital coagulation factor deficiency, the clotting time of the mixture will almost normalize (due to the addition of the normal plasma). If inhibitors (factor-specific autoantibodies or lupus anticoagulants) are present, the clotting time of the 1+1 mixture will still be pathological. The test is considered positive if the clotting time of the mixture is at least 5 seconds longer than that of normal plasma.

Preanalytics:

The plasma mixing study is performed in 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:

Anticoagulant therapy (heparins, LMWH, DOACs)

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>