

APTT – Activated Partial Thromboplastin – [Plasma] Analysis

Objective

The objective of this test is to measure the activated partial thromboplastin time (APTT) in plasma. This test evaluates the intrinsic and common pathways of coagulation and is used to diagnose bleeding disorders, monitor heparin therapy, and screen for clotting factor deficiencies.

Materials and Methods

Materials:

- Plasma sample from patient
- APTT reagent (e.g., partial thromboplastin and activator)
- Calcium chloride solution
- Coagulation analyzer or manual water bath
- Standard laboratory equipment (centrifuge, pipettes)

Methods:

1. Sample Collection: Collect venous blood in citrate tubes and centrifuge to obtain platelet-poor plasma.
2. Reagent Addition: Mix plasma with APTT reagent and incubate.
3. Calcium Activation: Add calcium chloride to initiate clotting and measure clotting time.
4. Interpretation: Compare patient APTT to normal reference range (control). Prolonged APTT suggests coagulation factor deficiency or anticoagulant therapy effect.
5. Quality Control: Run controls and calibrators for accurate results.

Results

- Normal APTT: 25–35 seconds (varies by laboratory)
- Prolonged APTT: Indicates factor deficiencies (VIII, IX, XI, XII), lupus anticoagulant, or heparin therapy
- Shortened APTT: Rare, may indicate high clotting factor levels

Conclusion

APTT testing is essential for evaluating the intrinsic coagulation pathway and monitoring anticoagulant therapy. Results should be interpreted with clinical history, other coagulation tests (PT, INR), and factor assays for comprehensive hemostatic evaluation.