

Prothrombin Time (PT) Assay Kit (One-Stage Method)

Cat. No.: P1522036 | Pack size: 100 T | Storage: 2-8°C

Overview

Clotting time refers to the time required for venous blood to clot completely after being drawn from the body. It is a screening assay reflecting the activity of various coagulation factors in the intrinsic coagulation system. Prothrombin Time (PT) is determined by adding excess tissue thromboplastin and calcium ions to test plasma. Prothrombin is converted into thrombin, which further transforms fibrinogen into fibrin. The time required for platelet-poor plasma to coagulate is recorded, with the International Sensitivity Index (ISI) as the reference.

Prothrombin Time (PT) Assay Kit (One-stage Method) is used to measure prothrombin time in plasma from human and animal blood. It reflects not only the level of prothrombin but also the plasma concentrations of Factor V, Factor VII, Factor X and fibrinogen. This kit serves as a screening reagent kit for the extrinsic coagulation system. For Research Use Only. Not intended for clinical diagnosis or other applications.

Contents & Storage

Item No.	Appearance	Components	50 T	Storage
P1522036A	Liquid	Sodium Citrate Anticoagulant (109 mM)	20 mL	2-8°C
P1522036B	Liquid	PT Thromboplastin Solution	15 mL	2-8°C

Materials to Be Prepared

1. Sodium citrate anticoagulant blood collection tubes (optional), blood collection needles, tourniquets.
2. Centrifuge, timer or stopwatch, water bath.

Operating Procedures (For Reference Only)

1. Preparation of test plasma: Mix fresh venous blood sample with 109 mM sodium citrate anticoagulant at a ratio of 9:1, invert gently to homogenize. Centrifuge at 3000 r/min for 10-15 min. Collect the supernatant (platelet-poor plasma) and transfer into plastic test tubes or centrifuge tubes to avoid platelet activation. Normal control plasma shall be prepared in parallel.
2. Pipette 0.07 mL test plasma and 0.14 mL PT Thromboplastin Solution separately, incubate both at 37°C water bath for 3 min.
3. Combine test plasma (including normal control plasma) with PT Thromboplastin Solution, start the stopwatch immediately. Tilt the tube gently and continuously. Record the time until the liquid stops flowing. Repeat the test 2-3 times and calculate the average value as Prothrombin Time (PT).

Prothrombin Time Ratio (PTR) = PT of test plasma / PT of normal reference plasma

International Normalized Ratio (INR) = PTR^{ISI}

Reference Intervals

PT value (venous blood from healthy subjects): 10-14 s. A measured value ≥ 3 s longer than the normal control value is considered clinically significant. The above values are for reference only. Reference ranges may vary due to reagent batches, instruments, samples and operators. Each laboratory is recommended to establish its own reference interval.

ISI value: <2.0

Precautions

1. A normal control sample must be tested simultaneously in all operations.
2. Plasma shall be collected using sodium citrate anticoagulant tubes. EDTA, heparin, oxalate and other anticoagulants are not allowed. Samples should be tested promptly after collection; storage at room temperature shall not exceed 1 h, and storage at 4°C shall not exceed 4 h. Long-term low-temperature storage is generally not recommended.
3. Blood collection must use disposable plastic syringes or siliconized glass syringes. Blood storage must adopt plastic tubes or siliconized glass tubes. Ordinary glass containers shall not be used to prevent activation of coagulation factors.
4. Blood drawing should be smooth with sufficient anticoagulation. Avoid hemolysis and tissue contamination during sampling.
5. Plasma separation requires centrifugation above 3000 g for more than 10 min to ensure complete removal of platelets.
6. Plasma pre-incubation shall not exceed 5 min; pre-incubation of PT Thromboplastin Solution shall not exceed 15 min.
7. Incubation temperature shall be precisely controlled at $37 \pm 1^\circ\text{C}$; either higher or lower temperature will prolong PT.
8. Sufficient light is required during operation. The endpoint of prothrombin time is defined as the initial visible turbidity and clot formation.
9. When hematocrit (Hct) is outside the range of 20-55%, the ratio between anticoagulant and blood shall be adjusted according to the formula below: Anticoagulant volume (mL) = $(100\% - \text{Hct}) \times \text{Blood volume (mL)} \times 0.00185$.
10. This product is For Research Use Only. Not intended for clinical diagnosis or any other applications.
11. For your safety and health, wear a lab coat and disposable gloves during operation.

Storage and Shipping

Item	Information
Storage	Store at 2-8°C
Shipped In	Wet ice
Stability And Storage	Store at 2-8°C long term (6 months).

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office for your region; for general inquiries, the North American office is the corporate primary.

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Limitations & Disclaimer

- ☐ For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.
- ☐ This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to verified businesses, institutions, and qualified professionals for research and development purposes.
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