

FIBRINOGEN



3 x 2 ml, 60 tests

88 01 99

PRINCIPLE

Participating in the final step of the plasmatic coagulation cascade, fibrinogen is the coagulation factor I, whose clotting is activated by thrombin.

By adding a relatively large amount of thrombin to diluted citrated plasma, the clotting time depends on the fibrinogen in the sample only.

The dilution of plasma limits the coagulation in the presence of inhibitors (Heparin or Fibrinogen/Fibrin degradation products).

REAGENTS

Reagent: high concentration of bovine thrombin
Buffer: Tris / EACA (ϵ -aminocaproic acid as anti-fibrinolytic reagent)

PREPARATION OF WORKING SOLUTION

Dissolve one vial with 2 ml of distilled water, mix gently until a homogenous suspension is obtained.

To assure a homogenous suspension that will provide a representative sample, the reagent is agitated continuously.

STABILITY

The working solution is stable for
2 days at +15° - +25 °C,
4 days at +2° - +8 °C, and
3 months at -20 °C

The reagent can be frozen and defrosted twice without a significant decrease in activity.

SAMPLE

Citrated plasma with low platelet amount: Blood taken by venous puncture with minimum stasis should be collected in polystyrene or silicone tubes with anti-coagulant. A solution of 3.8 %trisodium citrate 5.5-hydrate is used with a ratio of 1 volume per 9 volumes of blood. Centrifuge immediately at 3000 rpm for 10 minutes and perform the test within the next 4 hours.

OPERATING PROCEDURE

Dilute the sample 1:10 with Tris/EACA buffer (100 μ l plasma + 900 μ l buffer)

Place 200 μ l of diluted plasma in a test tube preheated to 37 °C:

Incubate for 2 minutes at 37°C then add 200 μ l of fibrinogen reagent

Simultaneously to addition of the fibrinogen reagent, start the stop watch and measure the clotting time.

In case that fibrinogen values are [1] lower than 100 mg/dl or [2] higher than 400 mg/dl, it is advised to repeat the determination with a different dilution (see below).

Case [1]: dilute the sample 1:5 (1 + 4) and divide the result by 2.

Case[2] dilute the plasma 1:20 (1 + 19) and multiply the result by 2.

RESULTS

The results, given in seconds, are converted in mg/dl by using the conversion table supplied with the kit (see inside the package or backside of this methodsheet).

NORMAL VALUES

170 - 450 mg/dl (or 1.70 – 4.50 g/L)

NOTE

In case of fibrinolytic therapy, very high levels of fibrinogen/fibrin degradation products (F.D.P.) can simulate a low level of fibrinogen.

POSSIBLE ERRORS

1. Incorrect incubation time.
2. Incomplete mixing of the blood sample with citrate solution.
3. Incorrect incubation of plasma and/or reagent.
4. Plasma and/or reagent contamination.
5. Use of glass syringes and test tubes.

BIBLIOGRAPHY

1. A. Clauss: Gerinnungsphysiologische Schnell-Methode zur Bestimmung des Fibrinogens. Acta Haematologica 17, 237 - 246 (1957)