

Fibrinogen Assay Kit

Coagpia™ Fbg

General Precautions

1. This product is for *in vitro* diagnostic use only, and must not be used for any other purposes.
2. Clinicians should make a comprehensive clinical decision based on assay results in conjunction with clinical symptoms and other examination results.
3. Influence on assay values resulting from drug administration is described in Precautions for Use in the package insert for the relevant drugs. In particular, carefully read the section on influence on clinical test results.
4. This product should be used only as directed. Reliability of values cannot be guaranteed if this product is used for purposes or tested by methods other than those stated.
5. Thrombin reagent contains ingredients derived from human blood tested negative for HIV-antibody, HCV-antibody and HBsAg. However, please handle this product as if potentially infectious.
6. If the reagents come in contact with the eyes or mouth, rinse thoroughly with water as first aid, and seek medical treatment if necessary.
7. Read the user's manual of your automated analyzer prior to using this kit. Parameters for different automated analysers are available upon request.
8. Perform a quality control test prior to assay to ensure accuracy.

Description (Kit Components)

Component	Ingredients
Sample Dilution Solution	HEPES Buffer Solution
Thrombin Reagent	Thrombin

Intended Use

For the measurement of fibrinogen in plasma

Fibrinogen is an acute phase reactive protein that is synthesized by hepatic parenchymal cells. Fibrinogen plasma concentrations increase due to infectious diseases, malignant tumours and thrombotic diseases in the acute phase and decrease due to hepatic parenchymal lesions (due to decreased production), disseminated intravascular coagulation (DIC) syndrome (due to progressive fibrinogen consumption) and other conditions.¹⁾ Fibrinogen measurements are used to understand the pathological condition and to supplement the diagnosis of these diseases.

Assay Principle

1. Assay Principle

Coagpia™ Fbg is a reagent that determines fibrinogen concentrations in plasma based on the principle of the thrombin time method. After a certain amount of thrombin is added to a diluted

plasma sample, the time taken for fibrin to form from blood fibrinogen (coagulation time: sec) is measured. Since coagulation time is dependent on the fibrinogen concentration in the test sample, fibrinogen concentration (mg/dL) is determined by using a calibration curve prepared from plasma containing known fibrinogen concentrations.

Procedural Precautions

1. Sample Collection and Storage

- 1) Samples
Plasma (citrated plasma) can be used. Do not use plasma containing anticoagulants other than sodium citrate.
- 2) Sample Preparation
Promptly mix nine parts of blood sample with one part of 3.2% sodium citrate. Centrifuge in a refrigerated centrifuge at 1500G for 15 minutes to separate plasma.²⁾ Transfer the plasma into a separate plastic test tube and refrigerate or store on ice.
- 3) Sample Storage
 - i) Start the assay promptly after blood collection. If the sample has been stored at 2-10°C, perform assay within 3 days, and if it has been stored at -28°C or below, perform assay within 4 days.⁴⁾ Bring samples to room temperature (15-30°C) before use.
 - ii) To prevent denaturing of fibrinogen, thaw frozen samples quickly at 37°C. Avoid repeated freezing and thawing, which can produce inaccurate results.

2. Interfering Substances

- 1) Assay results will not be affected by free bilirubin (up to 25 mg/dL), conjugate bilirubin (up to 25 mg/dL), hemoglobin (up to 500 mg/dL), formazin turbidity (up to 3000 units), intralipose (up to 4%) and heparin sodium (up to 8 U/mL).

3. Other Precautions

- 1) Use Calibrator for Coagpia™ (SEKISUI MEDICAL CO., LTD.) as the calibration material.
- 2) When the concentration of a sample exceeds the measurement range, dilute the plasma 20 fold with sample dilution solution and repeat the measurement.
- 3) Other dilution solutions can be used in place of the sample dilution solution. Please contact SEKISUI MEDICAL CO., LTD. for information.

Assay Procedure

1. Preparation

- 1) Sample Dilution Solution: Ready-to-use
- 2) Thrombin Reagent: Ready-to-use

2. Assay Method

This product is compatible with various types of automated analyzers. Below is a general example of the assay procedure.

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(Preparation of Samples)

Plasma sample	+	Sample dilution solution	$\xrightarrow{37^{\circ}\text{C}}$	Sample
10 μL		90 μL		100 μL

(Measurement of Coagulation Time)

Sample	+	Thrombin reagent	$\xrightarrow{37^{\circ}\text{C}}$	Measure
100 μL		50 μL		Coagulation time

Calibration material: Calibrator for Coagpia™ (value assigned by SEKISUI MEDICAL CO., LTD.)

3. Calculation of Fibrinogen Concentration (mg/dL)

- 1) Use sample dilution solution to perform 5, 10 and 20 fold dilutions of Coagpia™ calibrator.
- 2) Add thrombin reagent to each of the above diluted specimens and measure coagulation time.
- 3) Plot fibrinogen concentrations (mg/dL) on the x-axis and coagulation times on the y-axis to prepare a calibration curve. 5, 10 and 20-fold diluted fibrinogen concentration values are double, equal to, and half the indicated values, respectively.
- 4) Dilute the plasma sample 10 times with sample dilution solution. Calculate the concentration of fibrinogen (mg/dL) using a pre-prepared calibration curve based on the coagulation time measurements that were performed after thrombin reagent was added.

Some measuring instruments (blood coagulation analyzers) may automatically carry out steps 1) - 4) to calculate the fibrinogen concentration (mg/dL).

4. Precautions for Use

After completing the assay, seal the bottle and store at 2-10°C.

Assessment of Results

1. **Reference Interval**³⁾
200-400 mg/dL

Performance

1. **Sensitivity**
Coagulation Time:
Normal plasma diluted 10 fold per fibrinogen 300 mg/dL: 7-13 seconds
Normal plasma diluted 20 fold per fibrinogen 150 mg/dL: 15-24 seconds
2. **Accuracy**
80-120% of the expected assay value
3. **Within-run Reproducibility**
Coefficient of variation $\leq 10\%$
(Test methods used for 1.-3. are in-house methods.)
4. **Measurement Range** (on Coaglex 800 blood coagulation analyzer)⁴⁾
40-800 mg/dL
5. **Correlation**⁴⁾
 $N = 87, r = 0.990, y = 1.03x + 0.68$

Reference Method: Coagulation time method (MHLW approved IVD)

6. **Standard Calibration Material**
NIBSC standard material (98/612)

Precautions and Warnings

1. Handling Precautions

- 1) All samples used in the test should be handled as if potentially infectious for HIV, HBV and HCV. To prevent infection, use disposable gloves and avoid mouth pipetting during the test.
- 2) ProClin300, which possesses skin-irritative potential, has been added as an antiseptic agent in both the sample dilution solution and the thrombin reagent. Therefore, if the reagents come in contact with skin or clothes, rinse immediately with water, and consult a doctor if skin irritation develops.

2. Precautions for Use

- 1) This product should be stored as directed. Avoid freezing. Freezing can cause deterioration of the reagents, which can produce inaccurate results.
- 2) Do not use expired reagents. Reliable assay values cannot be obtained if expired reagents are used.
- 3) Do not replenish the reagents.
- 4) Do not perform the assay under direct sunlight.

3. Precautions for Disposal

- 1) Before disposal, used samples and containers must be soaked in sodium hypochlorite solution of concentration greater than 0.1% for more than an hour or autoclaved at 121°C for 20 minutes.
- 2) To prevent infections from spilled samples or sample-contained solutions, wipe the spill area thoroughly with sodium hypochlorite solutions at concentration of greater than 0.1%.
- 3) The reagents and samples should be disposed as medical waste or industrial waste in accordance with waste disposal regulations.
- 4) The reagents should be disposed in consideration of water pollution control regulations or related regulations.

4. Other Precautions

Do not use the containers for any other purposes.

Storage and Shelf Life

1. Storage temperature: 2-10°C
2. Shelf life: 2 years from the date of manufacture (The expiration date is printed on the outside of the package.)

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Package Contents

Description		Configuration
Coagpia™ Fbg	Sample Dilution Solution	10 mL x 10
	Thrombin Reagent	3 mL x 10

References

- 1) The Japanese Society for Laboratory Hematology:
Standard Laboratory Hematology, p136-139
Ishiyaku Pub, Inc. (2003)
- 2) The Japanese Society for Laboratory Hematology:
Standard Laboratory Hematology, p75-78
Ishiyaku Pub, Inc. (2003)
- 3) Kanai, Masamitsu: Clinical examination method
summary, p 419, Kanehara Co., Ltd. (2005)
- 4) SEKISUI MEDICAL CO., LTD. In-house data

Marketing Authorization Holder

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