Instructions for Use

Fibrinogen (Human) ELISA

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REF EIA-5414

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(v3 L61 - 21Q1)

Please use only the valid version of the Instructions for Use provided with the kit.
Verwenden Sie nur die jeweils gültige, im Testkit enthaltene, Gebrauchsanweisung.
Si prega di usare la versione valida dell'inserto del pacco a disposizione con il kit.
Por favor, se usa solo la version valida de la metodico técnico incluido aqui en el kit.

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For Research Use Only, NOT for Diagnostic Purposes

1 INTENDED USE

The Fibrinogen test kits are a highly sensitive two-site enzyme linked immunoassay (ELISA) for measuring Fibrinogen in biological samples of humans.

2 INTRODUCTION

Soluble Fibrinogen (FIB) circulates in the blood and provides the material from which the insoluble fibrin clot is formed during blood coagulation. Fibrinogen is an acute phase reactant that may be a useful marker for infection and inflammation.

This ELISA kit can be used to measure Fibrinogen in biological samples.

3 PRINCIPLE OF THE ASSAY

The principle of the double antibody sandwich ELISA is represented in Figure 1.

In this assay the Fibrinogen present in samples reacts with the anti-Fibrinogen antibodies which have been adsorbed to the surface of polystyrene microtiter wells.

After the removal of unbound proteins by washing, anti-FIB antibodies conjugated with horseradish peroxidase (HRP), are added. These enzyme-labeled antibodies form complexes with the previously bound FIB.

Following another washing step, the enzyme bound to the immunosorbent is assayed by the addition of a chromogenic substrate, 3,3',5,5'-tetramethylbenzidine (TMB).

The quantity of bound enzyme varies directly with the concentration of FIB in the sample tested; thus, the absorbance, at 450 nm, is a measure of the concentration of FIB in the test sample.

The quantity of FIB in the test sample can be interpolated from the standard curve constructed from the standards, and corrected for sample dilution.

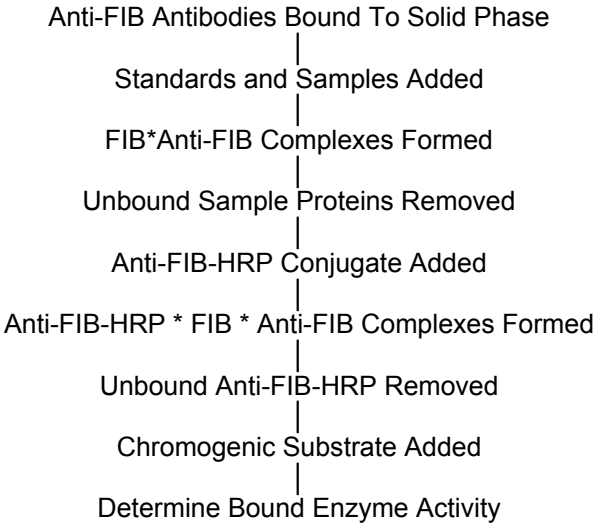

Figure 1.

4 REAGENTS

(Quantities sufficient for 96 determinations)

1. **Diluent Concentrate** (Running Buffer)
   One bottle containing 50 mL of a 5X concentrated diluent running buffer.
2. **Wash Solution Concentrate**
   One bottle containing 50 mL of a 20X concentrated wash solution.
3. **Enzyme-Antibody Conjugate 100X**
   One vial containing 150 µL of affinity purified anti-Human Fibrinogen antibody conjugated with horseradish peroxidase in a stabilizing buffer.
4. **Chromogen-Substrate Solution**
   One vial containing 12 mL of 3,3',5,5'-tetramethybenzidine (TMB) and hydrogen peroxide in citric acid buffer at pH 3.3.
5. **Stop Solution**
   One vial containing 12 mL 0.3 M sulfuric acid.
   WARNING: Avoid contact with skin.
6. **Anti-Human Fibrinogen ELISA Microplate**
   Twelve removable eight (8) well micro well strips in well holder frame.
   Each well is coated with affinity purified anti-Human FIB.
7. **Human Fibrinogen Calibrator**
   One vial containing a lyophilized Human Fibrinogen calibrator.

FOR IN VITRO USE ONLY

5 REAGENT PREPARATION

1. Diluent Concentrate

The Diluent Solution supplied is a 5X Concentrate and must be diluted 1⁄5 with distilled or deionized water (1 part buffer concentrate, 4 parts dH_2O).

2. Wash Solution Concentrate

The Wash Solution supplied is a 20X Concentrate and must be diluted 1⁄20 with distilled or deionized water (1 part buffer concentrate, 19 parts dH_2O).
Crystal formation in the concentrate is not uncommon when storage temperatures are low. Warming of the concentrate to 30 °C - 35 °C before dilution can dissolve crystals.

3. Enzyme-Antibody Conjugate

Calculate the required amount of working conjugate solution for each microtiter plate test strip by adding 10 µL Enzyme-Antibody Conjugate to 990 µL of 1X Diluent for each test strip to be used for testing.

Mix uniformly, but gently. Avoid foaming.

4. Chromogen-Substrate Solution

Ready to use as supplied.

5. Stop Solution

Ready to use as supplied.

6. Anti-Human Fibrinogen ELISA Microplate

Ready to use as supplied.
Unseal Microtiter Pouch and remove plate from pouch. Remove all strips and wells that <u>will not</u> be used in the assay and place back in pouch and re-seal along with desiccant.

7. Human Fibrinogen Calibrator

Add 1.0 mL of distilled or de-ionized water to the Human Fibrinogen Calibrator and mix gently until dissolved.

The calibrator is now at a concentration of **7.680 µg/mL (the reconstituted calibrator should be aliquoted and frozen if future use is intended)**.

Human Fibrinogen standards need to be prepared immediately prior to use (see the following chart).

Mix well between each step. Avoid foaming.

Standard	ng/mL	Volume added to 1x Diluent	Volume of 1x Diluent
6	400	**50 µL** Fibrinogen Calibrator	**910 µL**
5	200	300 µL standard 6	300 µL
4	100	300 µL standard 5	300 µL
3	50	300 µL standard 4	300 µL
2	25	300 µL standard 3	300 µL
1	12.5	300 µL standard 2	300 µL
0	0		600 µL

6 STORAGE AND STABILITY

The expiration date for the package is stated on the box label.

1. Diluent

The 5X Diluent Concentrate is stable until the expiration date.

The 1X working solution is stable for at least one week from the date of preparation. Both solutions should be stored at 4 °C - 8 °C.

2. Wash Solution

The 20X Wash Solution Concentrate is stable until the expiration date.

The 1X working solution is stable for at least one week from the date of preparation.

Both solutions can be stored at room temperature (16 °C - 25 °C) or at 4 °C - 8 °C.

3. Enzyme-Antibody Conjugate

Undiluted horseradish peroxidase anti-FIB conjugate should be stored at 4 °C - 8 °C and **diluted immediately prior to use**.

The working conjugate solution is stable for up to 1 hour when stored in the dark.

4. Chromogen-Substrate Solution

The Substrate Solution should be stored at 4 °C - 8 °C and is stable until the expiration date.

5. Stop Solution

The Stop Solution should be stored at 4 °C - 8 °C and is stable until the expiration date.

6. Anti-Human Fibrinogen ELISA Microplate

Anti-Human FIB coated wells are stable until the expiration date, and should be stored at 4 °C - 8 °C in sealed foil pouch with desiccant pack.

7. Human Fibrinogen Calibrator

The lyophilized Human Fibrinogen calibrator should be stored at 4 °C or frozen until reconstituted.

The reconstituted calibrator should be aliquoted out and stored frozen (Avoid multiple freeze-thaw cycles).

The working standard solutions should be prepared immediately prior to use and are stable for up to 8 hours

Indications of Instability

If the test is performing correctly, the results observed with the standard solutions should be within 20 % of the expected values.

7 SPECIMEN COLLECTION AND HANDLING

Blood should be collected by venipuncture.

The serum should be separated from the cells after clot formation by centrifugation.

For plasma samples, blood should be collected into a container with an anticoagulant and then centrifuged.

Care should be taken to minimize hemolysis, excessive hemolysis can impact your results.

Assay immediately or aliquot and store samples at -20 °C. Avoid repeated freeze-thaw cycles.

1. *Precautions*
   For any sample that might contain pathogens, care must be taken to prevent contact with open wounds.
2. *Additives and Preservatives*
   No additives or preservatives are necessary to maintain the integrity of the specimen. Avoid azide contamination.
3. *Known interfering substances*
   Azide and thimerosal at concentrations higher than 0.1% inhibits the enzyme reaction.

8 MATERIAL PROVIDED

See "REAGENTS"

9 MATERIALS REQUIRED BUT NOT PROVIDED

- Precision pipette (2 µL to 200 µL) for making and dispensing dilutions
- Test tubes
- Microtiter washer/aspirator
- Distilled or Deionized H_2O
- Microtiter Plate reader
- Assorted glassware for the preparation of reagents and buffer solutions
- Timer

10 ASSAY PROTOCOL

10.1 Dilution of Samples

The assay for quantification of FIB requires that each test sample be diluted before use.

A 1/200 dilution is appropriate for most serum samples, and a 1/10,000 dilution is appropriate for most plasma samples.

For absolute quantification, samples that yield results outside the range of the standard curve, a lesser or greater dilution might be required.

If unsure of sample level, a serial dilution with one or two representative samples before running the entire plate is highly recommended.

1. To prepare a **1/200 dilution** of sample, transfer 2 µL to 398 µL of 1X diluent.
   This gives you a 1/200 dilution. Mix thoroughly.
2. To prepare a **1/10,000 dilution** of sample, transfer 5 µL of sample to 495 µL of 1X diluent.
   This gives you a 1/100 dilution.
   Next, add 5 µL of your 1/100 diluted sample to 495 µL of 1X diluent.
   You now have a 1/10,000 dilution of your sample. Mix thoroughly at each stage.

10.2 Procedure

1. Bring all reagents to room temperature before use.
2. Pipette 100 µL of
   Standard 0 (0.0 ng/mL) in duplicate
   Standard 1 (12.5 ng/mL) in duplicate
   Standard 2 (25 ng/mL) in duplicate
   Standard 3 (50 ng/mL) in duplicate
   Standard 4 (100 ng/mL) in duplicate
   Standard 5 (200 ng/mL) in duplicate
   Standard 6 (400 ng/mL) in duplicate
3. Pipette 100 µL of sample (in duplicate) into pre designated wells.
4. Incubate the microtiter plate at room temperature for sixty (60 ± 2) minutes.
   Keep plate covered and level during incubation.
5. Following incubation, aspirate the contents of the wells.
6. Completely fill each well with appropriately diluted Wash Solution and aspirate. Repeat three times, for a total of four washes.
   If washing manually:
   completely fill wells with wash buffer, invert the plate then pour/shake out the contents in a waste container. Follow this by sharply striking the wells on absorbent paper to remove residual buffer.
   Repeat 3 times for a total of four washes.
7. Pipette 100 µL of appropriately diluted Enzyme-Antibody Conjugate to each well.
   Incubate at room temperature for thirty (30 ± 2) minutes.
   Keep plate covered in the dark and level during incubation.
8. Wash and blot the wells as described in Steps 5/6.
9. Pipette 100 µL of TMB Substrate Solution into each well.
10. Incubate in the dark at room temperature for precisely ten (10) minutes.
11. After ten minutes, add 100 µL of Stop Solution to each well.
12. Determine the absorbance (450 nm) of the contents of each well. Calibrate the plate reader to manufacturer's specifications.

Stability of final reaction mixture

The absorbance of the final reaction mixture can be measured up to 2 hours after the addition of the Stop Solution. However, good laboratory practice dictates that the measurement be made as soon as possible.

11 RESULTS

1. Subtract the average background value from the test values for each sample.
2. Using the results observed for the standards construct a Standard Curve. The appropriate curve fit is that of a four-parameter logistics curve. A second order polynomial (quadratic) or other curve fits may also be used.
3. Interpolate test sample values from standard curve.
   Correct for sera dilution factor to arrive at the Fibrinogen concentration in original samples.

12 LIMITATION OF THE PROCEDURE

1. Reliable and reproducible results will be obtained when the assay procedure is carried out with a complete understanding of the information contained in the package insert instructions and with adherence to good laboratory practice.
2. Factors that might affect the performance of the assay include proper instrument function, cleanliness of glassware, quality of distilled or deionized water, and accuracy of reagent and sample pipettings, washing technique, incubation time or temperature.
3. Do not mix or substitute reagents with those from other lots or sources.

SYMBOLS USED

Symbol	English	Deutsch	Italiano	Español	Français
CE	European Conformity	CE-Konformitäts-kennzeichnung	Conformità europea	Conformidad europea	Conformité normes européennes
	Consult instructions for use *	Gebrauchsanweisung beachten *	Consultare le istruzioni per l'uso	Consulte las instrucciones de uso	Consulter les instructions d'utilisation
IVD	*In vitro* diagnostic medical device *	*In-vitro*-Diagnostikum *	Diagnostica in vitro	Diagnóstico in vitro	Diagnostic in vitro
REF	Catalogue number *	Artikelnummer *	No. di Cat.	No de catálogo	Référence
LOT	Batch code *	Chargencode *	Lotto no	Número de lote	No. de lot
	Contains sufficient for <n> tests *	Ausreichend für <n> Prüfungen *	Contenuto sufficiente per "n" saggi	Contenido suficiente para <n> ensayos	Contenu suffisant pour "n" tests
	Temperature limit *	Temperaturbegrenzung *	Temperatura di conservazione	Temperatura de conservacion	Température de conservation
	Use-by date *	Verwendbar bis *	Data di scadenza	Fecha de caducidad	Date limite d'utilisation
	Manufacturer *	Hersteller *	Fabbricante	Fabricante	Fabricant
	Caution *	Achtung *			
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