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Datasheet for ABIN612695

Fibronectin ELISA Kit

1 Image

Overview

Quantity:	96 tests
Target:	Fibronectin
Reactivity:	Human
Method Type:	Competition ELISA
Detection Range:	0.781-50 µg/mL
Minimum Detection Limit:	0.781 µg/mL
Application:	ELISA

Product Details

Purpose:	The AssayMax Human Fibronectin ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for detection of fibronectin in human plasma and serum samples. This assay employs a quantitative competitive enzyme immunoassay technique that measures human FN in approximately 3 hours. A polyclonal antibody specific for FN has been pre-coated onto a 96-well microplate with removable strips. FN in standards and samples is competed with a biotinylated FN protein sandwiched by the immobilized antibody and streptavidin-peroxidase conjugate. All unbound material is washed away and a peroxidase enzyme substrate is added. The color development is stopped and the intensity of the color is measured.
Brand:	AssayMax™
Sample Type:	Plasma, Serum
Analytical Method:	Quantitative
Detection Method:	Colorimetric

Product Details

Components: Human Fibronectin Microplate: A 96-well polystyrene microplate (12 strips of 8 wells) coated with a polyclonal antibody against FN. Human Fibronectin ELISA Kit Catalog No. EF1045-1
Sample insert for reference use only
2 Sealing Tapes: Each kit contains 3 precut, pressure sensitive sealing tapes that can be cut to fit the format of the individual assay. Human Fibronectin Standard: Human FN in a buffered protein base (65 g, lyophilized). Biotinylated Human Fibronectin Protein (1x): 1 vial, lyophilized. MIX Diluent Concentrate (10x): A 10-fold concentrated buffered protein base (30 ml). Wash Buffer Concentrate (20x): A 20-fold concentrated buffered surfactant (30 ml). Streptavidin-Peroxidase Conjugate (SP Conjugate): A 100-fold concentrate (80 l). Chromogen Substrate: A ready-to-use stabilized peroxidase chromogen substrate tetramethylbenzidine (8 ml). Stop Solution: A 0.5 N hydrochloric acid to stop the chromogen substrate reaction (12 ml).

Material not included: Microplate reader capable of measuring absorbance at 405 nm. Pipettes (1-20 µL, 20-200 µL, and multiple channel). Deionized or distilled reagent grade water. Incubator (37 °C)

Target Details

Target: Fibronectin

Alternative Name: Fibronectin (FN) ([Fibronectin Products](#))

Background: Fibronectin (FN, cold-insoluble globulin) is a major component of blood plasma, the extracellular matrix, and is a specific ligand for several integrin adhesion receptors (1). FN plays an important role not only in cell adhesion (2) and wound healing (3) but also in embryogenesis (4) and hematopoiesis (5).

Gene ID: 2335

UniProt: [P02751](#)

Application Details

Sample Volume: 25 µL

Assay Time: 4 h

Plate: Pre-coated

Protocol:

- Step 1. Add 25 µL of Standard or Sample and 25 µL of Biotinylated Protein per well. Incubate 2 hours.
- Step 2. Wash, then add 50 µL of SP Conjugate per well. Incubate 30 minutes.
- Step 3. Wash, then add 50 µL of Chromogen Substrate per well. Incubate 25 minutes.

- Step 4. Add 50 μ L of Stop Solution per well. Read at 450 nm immediately.

Reagent Preparation: Freshly dilute all reagents and bring all reagents to room temperature before use. MIX Diluent Concentrate (10x): If crystals have formed in the concentrate, mix gently until the crystals have completely dissolved. Dilute the MIX Diluent Concentrate 10-fold with reagent grade water. Store for up to 30 days at 2-8 °C. Human Fibronectin Standard: Reconstitute the 65 g of Human Fibronectin Standard with 1.3 mL of MIX Diluent to generate a 50 g/mL standard stock solution. Allow the standard to sit for 10 minutes with gentle agitation prior to making dilutions. Prepare duplicate or triplicate standard points by serially diluting from the standard stock solution (50 g/mL) 2-fold with MIX Diluent to produce 25, 12.5, 6.25, 3.125, 1.563, and 0.781 g/mL solutions. MIX Diluent serves as the zero standard (0 g/mL). Any remaining stock solution should be frozen at -20 °C and used within 30 days. Avoid repeated freeze-thaw cycles. 4 Standard Point Dilution [FN] (μ g/mL) P1 1 part Standard (50 g/mL) 50 P2 1 part P1 + 1 part MIX Diluent 25 P3 1 part P2 + 1 part MIX Diluent 12.5 P4 1 part P3 + 1 part MIX Diluent 6.25 P5 1 part P4 + 1 part MIX Diluent 3.125 P6 1 part P5 + 1 part MIX Diluent 1.563 P7 1 part P6 + 1 part MIX Diluent 0.781 P8 MIX Diluent 0.0 Biotinylated Human Fibronectin Protein (1x): Reconstitute Biotinylated Human Fibronectin Protein with 3 mL of MIX Diluent to produce a stock solution. Allow the vial to sit for 10 minutes with gentle agitation prior to use. Any remaining stock solution should be frozen at -20 °C and used within 30 days. Wash Buffer Concentrate (20x): If crystals have formed in the concentrate, mix gently until the crystals have completely dissolved. Dilute the Wash Buffer Concentrate 20-fold with reagent grade water. SP Conjugate (100x): Spin down the SP Conjugate briefly and dilute the desired amount of the conjugate 100-fold with MIX Diluent. The undiluted conjugate should be stored at -20 °C.

Sample Collection: Plasma: Collect plasma using one-tenth volume of 0.1 M sodium citrate as an anticoagulant. Centrifuge samples at 3000 x g for 10 minutes and collect plasma. A 100-fold sample dilution is suggested into MIX Diluent, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or 3 below for up to 3 months. Avoid repeated freeze-thaw cycles (EDTA can also be used as an anticoagulant. Heparin is not recommended). Serum: Samples should be collected into a serum separator tube. After clot formation, centrifuge samples at 3000 x g for 10 minutes and remove serum. A 100-fold sample dilution is suggested into MIX Diluent, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or below for up to 3 months. Avoid repeated freeze-thaw cycles. Refer to Sample Dilution Guidelines for further instruction. Guidelines for Dilutions of 100-fold or Greater (for reference only, please follow the insert for specific dilution suggested) 100x 10000x A) 4 μ L sample: 396 μ L buffer (100x) = 100-fold dilution Assuming the needed volume is less than or equal to 400 μ L.

A) 4 μ L sample : 396 μ L buffer (100x) B) 4 μ L of A : 396 μ L buffer (100x) = 10000-fold dilution
Assuming the needed volume is less than or equal to 400 μ L. 1000x 100000x A) 4 μ L sample :
396 μ L buffer (100x) B) 24 μ L of A : 216 μ L buffer (10x) = 1000-fold dilution Assuming the
needed volume is less than or equal to 240 μ L. A) 4 μ L sample : 396 μ L buffer (100x) B) 4 μ L of
A : 396 μ L buffer (100x) C) 24 μ L of B : 216 μ L buffer (10x) = 100000-fold dilution Assuming the
needed volume is less than or equal to 240 μ L.

Assay Procedure:

Prepare all reagents, standard solutions, and samples as instructed. Bring all reagents to room temperature before use. The assay is performed at room temperature (20-25 °C). Remove excess microplate strips from the plate frame and return them immediately to the foil pouch with desiccants inside. Reseal the pouch securely to minimize exposure to water vapor and store in a vacuum desiccator. Add 25 μ L of Human Fibronectin Standard or sample per well and immediately add 25 μ L of Biotinylated Human Fibronectin Protein to each well (on top of the standard or sample). Gently tap plate to ensure thorough mixing. Break any bubbles that may have formed. Cover wells with a sealing tape and incubate for 2 hours. Start the timer after the last addition. Wash five times with 200 μ L of Wash Buffer manually. Invert the plate each time and decant the contents, hit 4-5 times on absorbent material to completely remove the liquid. If using a machine, wash six times with 300 μ L of Wash Buffer and then invert the plate, decanting the contents, hit 4-5 times on absorbent material to completely remove the liquid. 5 Add 50 μ L of Streptavidin-Peroxidase Conjugate to each well. Gently tap plate to thoroughly coat the wells. Break any bubbles that may have formed. Cover wells with a sealing tape and incubate for 30 minutes. Turn on the microplate reader and set up the program in advance. Wash the microplate as described above. Add 50 μ L of Chromogen Substrate to each well. Gently tap plate to thoroughly coat the wells. Break any bubbles that may have formed. Incubate for 25 minutes or till the optimal blue color density develops. Add 50 μ L of Stop Solution to each well. The color will change from blue to yellow. Gently tap plate to ensure thorough mixing. Break any bubbles that may have formed. Read the absorbance on a microplate reader at a wavelength of 450 nm immediately. If wavelength correction is available, subtract readings at 570 nm from those at 450 nm to correct optical imperfections. Otherwise, read the plate at 450 nm only. Please note that some unstable black particles may be generated at low concentration points after stopping the reaction for about 10 minutes, which will reduce the readings.

Calculation of Results:

- Calculate the mean value of the duplicate or triplicate readings for each standard and sample.
- To generate a standard curve, plot the graph using the standard concentrations on the x-axis and the corresponding mean 450 nm absorbance (OD) on the y-axis. The best-fit line can be determined by regression analysis using log-log or four-parameter logistic curve-fit.

Application Details

- Determine the unknown sample concentration from the standard curve and multiply the value by the dilution factor.

Assay Precision: Intra-assay and inter-assay coefficients of variation were 5.1% and 7.3% respectively.

Restrictions: For Research Use only

Handling

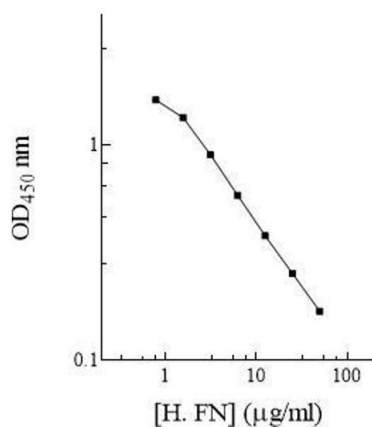
Handling Advice: This product is for Research Use Only and is not intended for use in diagnostic procedures. Prepare all reagents (diluent buffer, wash buffer, standard, biotinylated protein, and SP conjugate) as instructed, prior to running the assay. Prepare all samples prior to running the assay. The dilution factors for the samples are suggested in this insert. However, the user should determine the optimal dilution factor. Spin down the SP conjugate vial before opening and using contents. The Stop Solution is an acidic solution. The kit should not be used beyond the expiration date.

Storage: 4 °C/-20 °C

Storage Comment: Upon arrival, immediately store components of the kit at recommended temperatures up to the expiration date. Store SP Conjugate at -20°C. Store Microplate, Diluent Concentrate (10x), Wash Buffer, Stop Solution, and Chromogen Substrate at 2-8°C. Unused microplate wells may be returned to the foil pouch with the desiccant packs and resealed. May be stored for up to 30 days in a vacuum desiccator. Diluent (1x) may be stored for up to 30 days at 2-8°C. Store Standard and Biotinylated Protein at 2-8°C before reconstituting with Diluent and at -20°C after reconstituting with Diluent.

Images

Human Fibronectin Standard Curve



ELISA

Image 1.