Datasheet for ABIN612755

Prothrombin ELISA Kit

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Overview

Quantity:	96 tests
Target:	Prothrombin (F2)
Reactivity:	Human
Method Type:	Sandwich ELISA
Minimum Detection Limit:	0.03 µg/mL
Application:	ELISA

Product Details

Purpose:	The AssayMax Human Prothrombin ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for detection of human Prothrombin in plasma, milk, urine, and cell culture supernatants
Brand:	AssayMax
Sample Type:	Plasma, Cell Culture Supernatant
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Cross-Reactivity (Details):	This kit has 70% cross-reactivity with human thrombin.
Components:	Human Prothrombin Microplate: A 96-well polystyrene microplate (12 strips of 8 wells) coated with a monoclonal antibody against human Prothrombin. 1 Sealing Tapes: Each kit contains 3 pre-cut, pressure-sensitive sealing tapes that can be cut to fit the format of the individual assay. Human Prothrombin Standard: Human Prothrombin in a buffered protein base (32 µg, lyophilized). Biotinylated H. Prothrombin Antibody (100x): A 100-fold concentrated biotinylated

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	polyclonal antibody against Prothrombin (80µl). EIA Diluent Concentrate (10x): A 10-fold concentrated buffered protein base (30 ml). Wash Buffer Concentrate (20x): A 20-fold concentrated buffered surfactant (30 ml, 2 bottles). Streptavidin-Peroxidase Conjugate (SP Conjugate): A 100-fold concentrate (80µl). 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 450 nm. Pipettes (1-20 µL, 20-200 µL, 200-1000µLand multiple channel). Deionized or distilled reagent grade water.

Target Details

Target:	Prothrombin (F2)
Alternative Name:	Prothrombin (F2 Products)
Background:	Prothrombin is also known as Factor II. The conversion of Factor x to xa changes prothrombin into its active form, thrombin, which then accelerates the formation of fibrin. The level of the plasma prothrombin in the circulating blood decreases during its passage through the pulmonary capillaries. The bleeding tendency in acute chloroform intoxication is due to deficiency in both plasma fibrinogen and plasma prothrombin. On the other hand, in severe Alzheimer's disease, prothrombin was localized within the wall and neuropil surrounding microvessels. It has been reported that plasma prothormbin level increases in sepsis patients , and in chronic gastrointestinal disorders.
Pathways:	Complement System, Peptide Hormone Metabolism, Regulation of G-Protein Coupled Receptor Protein Signaling

Application Details

Sample Volume:	50 µL
Assay Time:	< 4 h
Plate:	Pre-coated
Protocol:	This assay employs a quantitative sandwich enzyme immunoassay technique that measures human Prothrombin in less than 4 hours. A monoclonal antibody specific for human Prothrombin has been pre-coated onto a 96-well microplate with removable strips. Prothrombin in standards and samples is sandwiched by the immobilized antibody and biotinylated polyclonal antibody specific for human prothrombin, which is recognized by a streptavidin-

	peroxidase conjugate. All unbound material is then washed away and a peroxidase enzyme substrate is added. The color development is stopped and the intensity of the color is measured.
Reagent Preparation:	Freshly dilute all reagents and bring all reagents to room temperature before use. If crystals have formed in the concentrate, mix gently until the crystals have completely dissolved. 2 EIA Diluent Concentrate (10x): Dilute the EIA Diluent 1:10 with reagent grade water. Store for up to 1 month at 2-8°C. Standard Curve: Reconstitute the 32 g of Prothrombin Standard with 1 ml of EIA Diluent to generate a stock solution of 32 g/ml. Allow the standard to sit for 10 minutes with gentle agitation prior to making dilutions. Prepare duplicate or triplicate standard points by serially diluting the standard solution (32 g/ml) 1:4 with EIA Diluent to produce 8, 2, 0.5, 0.125 and 0.0313 g/ml solutions. EIA Diluent serves as the zero standard (0 g/ml). Any remaining solution should be frozen at -20°C. Standard Point Dilution [Prothrombin] (g/ml) Stock solution (32 g/ml) P1 32.000 P2 1 part P1 + 3 parts EIA Diluent 8.000 P3 1 part P2 + 3 parts EIA Diluent 2.000 P4 1 part P3 + 3 parts EIA Diluent 0.500 P5 1 part P4 + 3 parts EIA Diluent 0.125 P6 1 part P5 + 3 parts EIA Diluent 0.031 P7 EIA Diluent 0.000 Biotinylated H. Prothrombin Antibody (100x): Spin down the antibody briefly and dilute the desired amount of the antibody 1:100 with EIA Diluent. Any remaining solution should be frozen at -20°C. Wash Buffer Concentrate (20x): Dilute the Wash Buffer Concentrate 1:20 with reagent grade water. SP Conjugate (100x): Spin down the SP Conjugate briefly and dilute the desired amount of the conjugate 1:100 with EIA Diluent. Any remaining solution should be frozen at -20°C.
Sample Collection:	Plasma: Collect plasma using one-tenth volume of 0.1 M sodium citrate as an anticoagulant. Centrifuge samples at 2000 x g for 10 minutes and assay. Dilute samples 1:250 into EIA Diluent. The undiluted samples can be stored at -20°C or below for up to 3 months. Avoid repeated freeze-thaw cycles. (Heparin can also be used as anticoagulant.) Cell Culture Supernatants: Centrifuge cell culture media at 3000 x g for 10 minutes to remove debris. Collect supernatants and assay. Store samples at -20°C or below. Avoid repeated freeze-thaw cycles. Milk: Collect milk using sample tube. Centrifuge samples at 600 x g for 10 minutes. Milk dilution is suggested at 1:8 in EIA Diluent, however, the user should determine the optimal dilution factor. Store samples at -20°C or below for up to 3 months. Avoid repeated freeze- thaw cycles. Urine: Collect urine using sample tube. Centrifuge samples at 600 x g for 10 minutes and assay. Store samples at -20°C or below for up to 3 months. Avoid repeated freeze-thaw cycles.
Assay Procedure:	Prepare all reagents, working standards and samples as instructed. Bring all reagents to room temperature before use. The assay is performed at room temperature (20 - 30 °C). Remove excess microplate strips from the plate frame and return them immediately to the foil pouch with desiccant inside. Reseal the pouch securely to minimize exposure to water vapor and store

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	in a vacuum desiccator. Add 50 µL of Standard or sample per well, and cover wells and incubate for two hours. Start the timer after the last sample addition. Wash five times with 200 µL of Wash Buffer manually. Invert the plate each time and decant the contents, hit it 4-5 times on absorbent paper towel to completely remove the liquid. If using a machine wash six times with 300 µL of Wash Buffer and then invert the plate, decant the contents, hit it 4-5 times on absorbent paper towel to completely remove the liquid. Add 50 µL of Biotinylated Prothrombin Antibody to each well and incubate for one hour. Wash a microplate as described above. Add 50 µL of Streptavidin-Peroxidase Conjugate per well and incubate for 30 minutes. Turn on the microplate reader and set up the program in advance. Wash a microplate as described above. Add 50 µL of Chromogen Substrate per well and incubate for about 10 minutes or till the optimal blue color density develops. Gently tap plate to ensure thorough mixing and break the bubbles in the well with pipette tip. 3 Add 50 µL of Stop Solution to each well. The color will change from blue to yellow. 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 high 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 on the y-axis. The best-fit line can be determined by regression analysis using log-log or four-parameter logistic curve-fit. Determine the unknown sample concentration from the Standard Curve and multiply the value by the dilution factor. Standard Curve The curve is provided for illustration only. A standard curve should be generated each time the assay is performed.
Assay Precision:	Intra-assay and inter-assay coefficients of variation were 4.6% and 7.1% respectively.
Restrictions:	For Research Use only

Handling

Handling Advice:	Prepare all reagents (working diluent buffer, wash buffer, standards, biotinylated- antibody, 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 protocol. However, the user should determine the optimal dilution factor. Spin down the SP conjugate vial and the biotinylated-antibody vial before opening and using contents. The kit should not be used beyond the expiration date.

Handling

Storage:	4 °C/-20 °C
Storage Comment:	Store components of the kit at 2-8°C or -20°C upon arrival up to the expiration date. Opened EIA Diluent may be stored for up to 1 month at 2-8°C. Store reconstituted reagents at -20°C or below. Opened unused strip wells may return to the foil pouch with the desiccant pack, reseal along zip-seal. May be stored for up to 1 month in a vacuum desiccator.