

HUMAN IGFBP1 ELISA KIT

FOR THE QUANTITATIVE DETERMINATION OF HUMAN TOTAL IGFBP1 CONCENTRATIONS IN SERUM AND PLASMA



ALWAYS REFER TO LOT SPECIFIC PROTOCOL PROVIDED WITH EACH KIT FOR INSTRUCTIONS. PROTOCOL MUST BE READ BEFORE USING THIS PRODUCT.

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

PRODUCT INFORMATION:

ELISA NAME	HUMAN IGFBP1 ELISA KIT
Catalog No.	SK00051-01
Lot No.	
Formulation	96 T
Standard Range	125 ~ 8000 pg/mL
Sensitivity	60 pg/mL
Sample Volume	100 µL per well
Sample Type	Serum, EDTA Plasma
Specificity	Human IGFBP1 (free)
Calibration	Human IGFBP1 Recombinant
Dilution Factor	Pretreatment required (Optimal dilutions should be determined by each laboratory for each application)
Intra-assay Precision	6 - 8%
Inter-assay Precision	8 - 12%
Storage	2 – 8°C
This kit contains sufficient materials to run 40 samples duplicated provided that assay is run according to protocol.	

ORDER CONTACT:

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DESCRIPTION

This Human IGFBP1 (Total) ELISA Kit contains the necessary components required for the quantitative measurement of recombinant and/or natural total human IGFBP1 from the pretreated serum and plasma in a sandwich ELISA format.

This immunoassay contains recombinant human IGFBP1 and antibodies raised against this protein. Results from this immunoassay have shown to accurately quantify recombinant and natural free IGFBP1 samples.

ASSAY OVERVIEW

This assay employs the quantitative sandwich ELISA format. The plate is pre-coated with an antibody specific for human IGFBP1. The capture antibody can bind to the human IGFBP1 in the standard and samples. After washing the plate of any unbound substances, a biotinylated antibody against human IGFBP1 is added to the wells. After another washing of the plate, Streptavidin-HRP Conjugate is added. After the last wash to remove any unbound enzyme, a substrate solution (TMB) is added to the wells and color develops in direct proportion to the amount of human IGFBP1 bound in the standard solutions or samples. A standard curve can be established and sample values can be read off the standard curve.

PROCEDURAL LIMITATIONS

_FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.

_This ELISA kit should not be used beyond the expiration date on the kit label.

_Do not mix reagents with those from other lots or sources.

_It is important that the Dilution Buffer selected for the standard curve be consistent with the samples being assayed.

_Each laboratory must determine the optimal dilution factors for the samples being assayed with a pretest. If samples generate values that are not within the dynamic range of the standard curve, further concentrate or dilute the samples as required with Dilution Buffer and repeat the assay.

_Any modifications in buffers, pipetting technique, washing technique, incubation time or temperature, as well as kit age can cause a change in signal.

_Not all interfering factors have been tested in the immunoassay, therefore the possibility of interference cannot be excluded.

COMPONENTS PROVIDED

DESCRIPTION	CODE	QUANTITY
IGFBP1 Microplate - 96 well polystyrene microplate (12 strips of 8 wells) coated with antibody against IGFBP1.	051-01-01	1 plate
IGFBP1 Standard – 8 ng/vial of IGFBP1 in a buffered protein base with preservative; lyophilized.	051-01-02	1 vial
Detection Antibody Concentrate – 1.2 mL/vial, 10-fold concentrate of biotinylated IgG against IGFBP1 with preservative; lyophilized.	051-01-03	1 vial
Positive Control - one vial of IGFBP1; lyophilized.	051-01-04	1 vial
Streptavidin HRP Conjugate - 120 µL of 100-fold concentrated Streptavidin-HRP Conjugate.	SAHRP	1 vial
Dilution Buffer - 60 mL of buffered protein based solution with preservative.	DB18	1 bottle
Wash Buffer - 50 mL of 10-fold concentrated buffered surfactant, with preservative.	WB01	1 bottle
Pretreatment Solution A	PTSA	1 bottle
Pretreatment Solution B	PTSB	1 bottle
TMB Substrate Solution - 11 mL of TMB substrate solution.	TMB01	1 bottle
Stop Solution - 11 mL of 0.5M HCl.	S-STOP	1 bottle
Plate Sealer	EAPS	1 piece
Plastic Pouch	P01	1 piece

STORAGE

Unopened Kit: Store at 2 – 8°C for up to 8 months. For longer storage, unopened Standard, Positive Control and Detection Antibody Concentrate should be stored at -20°C or -70°C. Do not use kit past expiration date.

This elisa kit is for one time use only. Streptavidin-HRP Conjugate 100-fold concentrated solution and TMB Substrate Solution can be stored at 2 – 8°C for up to 8 months (**DO NOT FREEZE** and **PROTECT**

FROM LIGHT). All other components may be stored at 2 – 8°C for up to 8 months.

ADDITIONAL MATERIALS REQUIRED

- Microplate reader capable of absorbance measurement at 450 nm.
- Microplate shaker (250 – 300 rpm).
- Microplate washer or manifold dispenser.
- 100 mL and 500 mL graduated cylinders.
- Multi-channel Pipette, Pipettes and pipette tips.
- Deionized or distilled water.

PRECAUTION

This kit should be handled by those persons who have been trained in and can follow the principles of good laboratory practice. Wear protective clothing such as laboratory overalls, safety glasses and gloves. Care should be taken while handling solutions in this kit to avoid contact with skin or eyes, especially with the stop solution because it contains diluted hydrochloric acid. Wash immediately with water in case of contact on skin or eyes.

SAMPLE COLLECTION AND STORAGE

Serum - Use a serum separator tube (SST) and allow samples to clot for 30 minutes before centrifugation for 15 minutes at 1000 x g. Remove serum and assay immediately or aliquot and store samples at ≤ -20°C. Avoid repeated freeze-thaw cycles.

Plasma - Collect plasma using EDTA, heparin, or citrate as an anticoagulant. Centrifuge for 15 minutes at 1000 x g within 30 minutes of collection. Assay immediately or aliquot and store samples at ≤ -20°C. Avoid repeated freeze-thaw cycles.

Optional: Use Aprotinin (enzyme inhibitor) for ALL sample collection to prevent sample degradation. 0.5 TIU per ml of sample solution.

SAMPLE PRETREATMENT

Due IGFBP1 was bound to protein ligands in serum and plasma samples, all samples require pretreatment to release IGFBP1 as free form.

Optimal dilutions should be determined by each laboratory for each application.

Use polypropylene test tubes.

REAGENT PREPARATION

Bring all reagents to room temperature before use.

Wash Buffer - If crystals have formed in the concentrate, warm to room temperature and mix gently until the crystals have completely dissolved. Dilute 50 mL of Wash Buffer Concentrate into deionized or distilled water (450 mL) to prepare 500 mL of 1x Wash Buffer.

IGFBP1 Standard - Reconstitute the IGFBP1 standard with 1 mL of Dilution Buffer. This reconstitution produces a stock solution of 8 ng/mL. Allow the standard to sit for a minimum of 15 minutes with gentle agitation prior to making dilutions. Pipette 250 µL of Dilution Buffer into tubes #1 to #5. Use the stock solution to produce a dilution series (below). Mix each tube thoroughly before the next transfer. The **8 ng/mL** standard serves as the high standard. The Dilution Buffer serves as the zero standard (0 ng/mL).

TUBE	STANDARD	DILUTION BUFFER	CONCENTRATION
Stock	Powder	1000 µl	8 ng/ml
# 1	250 µl of stock	250 µl	4 ng/ml
# 2	250 µl of 1	250 µl	2 ng/ml
# 3	250 µl of 2	250 µl	1 ng/ml
# 4	250 µl of 3	250 µl	0.5 ng/ml
# 5	250 µl of 4	250 µl	0.25 ng/ml
# 6	250 µl of 5	250 µl	0.125 ng/ml

Positive Control – Reconstitute the Positive Control with 1 mL of Dilution Buffer to prepare working solution.

Detection Antibody Concentrate – Reconstitute the Detection Antibody Concentrate with 1.2 mL of Dilution Buffer to produce a 10-fold concentrated stock solution. Pipette 10.8 mL of Dilution Buffer into a 15 mL centrifuge tube and transfer 1.2 mL of 10-fold concentrated stock solution to prepare working solution.

Streptavidin HRP Conjugate – Pipette 11.88 mL of Dilution Buffer into a 15 mL centrifuge tube and transfer 120 µL of 100-fold concentrated stock solution to prepare working solution. **Note:** 1x working solution of Streptavidin-HRP Conjugate is one time use only.

ELISA PROTOCOL

Bring all reagents and samples to room temperature before the start of the assay. Blank, standard dilutions, positive control and samples should be assayed in duplicate. ELISA Protocol may need further optimization.

1. Prepare all reagents and working standards as directed in the previous sections.
2. Remove excess microplate strips from the plate frame, return them to the plastic pouch with the desiccant pack.
3. Add 100 μ L per well of Dilution Buffer to Blank wells.
4. Add 100 μ L of Standard dilutions, samples, or positive control per well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
5. Aspirate each well and wash, repeating the process three times for a total of four washes. Wash by filling each well with 1x Wash Buffer (300 μ L) using a squirt bottle, manifold dispenser, or autowasher. Complete removal of liquid at each step is essential to good performance. After the last wash, remove any remaining Wash Buffer by aspirating or decanting. Invert the plate and blot it against clean paper towels.
6. Add 100 μ L of Detection Antibody working solution to each well. Cover with plate sealer. Incubate for 2 hours on microplate shaker at room temperature.
7. Repeat the aspiration/wash as in step 5.
8. Add 100 μ L of Streptavidin-HRP working solution to each well. Cover with plate sealer. Incubate for 60 minutes on microplate shaker at room temperature. **Protect from light.**
9. Repeat the aspiration/wash as in step 5.
10. Add 100 μ L of TMB Substrate Solution to each well. Incubate for 5-10 minutes on microplate shaker at room temperature. **Protect from light.**
11. Add 100 μ L of Stop Solution to each well. The color in the wells should change from blue to yellow. If the color in the wells is green, or if the color change does not appear uniform, gently tap the plate to ensure thorough mixing.
12. Determine the optical density of each well within 15 minutes, using a microplate reader set to 450 nm.

CALCULATION OF RESULTS

Create a standard curve by plotting the log of the known concentrations of the standard dilutions (x-axis) versus the log of its corresponding O.D. (y-axis) and draw the best fit line through the points. It is recommended to use computer software capable of generating a log-log curve fit to more accurately quantify the standard dilutions.

If samples have been diluted, the concentration read from the standard curve must be multiplied by the dilution factor.

TYPICAL STANDARD CURVE









This standard curve is provided for demonstration only. A new standard curve should be generated for each set of samples assayed.

STANDARD (PG/ML)	CORRECTED (450NM)
Blank	0 (0.114)
125	0.050
250	0.118
500	0.226
1000	0.479
2000	0.856
4000	1.527
8000	2.470

SPECIFICITY

PROTEINS	CROSS-REACTIVITY (%)
Human IGFBP1 (free form)	100
Human IGFBP 3	0
Human IGFBP7	0

SUMMARY OF ASSAY PROCEDURE

PREPARE REAGENTS, SAMPLES AND STANDARDS

Add 100 µl of standard dilutions, samples, or positive control to the well. Incubate 2 hours on the plate shaker at RT.

Aspirate and wash 4 times.

Add 100 µl of Detection Antibody working solution to each well. Incubate 2 hours on the plate shaker at RT.

Aspirate and wash 4 times.

Add 100 µl of Streptavidin HRP working solution to each well. Incubate 60 minutes on the plate shaker at RT. Protect from light.

Aspirate and wash 4 times.

Add 100 µl of TMB Substrate Solution to each well. Incubate 5-10 min on the plate shaker at RT. Protect from light.

Add 100 µl of Stop Solution to each well. Read 450nm within 15 min.